CITY OF REDMOND FACILITIES STRATEGIC MANAGEMENT PLAN

RESOURCES

PRE-FINAL DRAFT

August 29th, 2018

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CityofRedmond
WASHINGTON

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OCCUPANT SURVEY RESULTS REPORT

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Redmond Facilities Strategic Management Plan: Occupant Survey Results

January 2016

Let's Shape Up Redmond's Facilities!

Help us create a Facilities Strategic Management Plan to guide investments in facility operation, maintenance, and upgrades.

How well are City facilities working today? What key challenges do we face? How can our facilities work better in the future?

We want to hear from you! Complete our confidential survey by January 29th for a chance to win a **Starbucks gift card.**

Visit www.surveymonkey.com/s/RedFSMP to share your opinions.

Questions about the project?
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Questions about the survey?
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Introduction

Purpose

The Redmond Facilities Strategic Management Plan is a City-led analysis which will develop recommendations for how to best operate, maintain, upgrade, and replace City building facilities, as well as provide a foundation for setting up CIP phasing and timing. The Occupant Survey was conducted for the purpose of assessing current occupant comfort and compatibility of facilities with work requirements. The survey was sent to all City of Redmond employees working at all 23 City facilities.

Response Profile

The survey was conducted on the online SurveyMonkey platform and was open January 22-29, 2016. The survey was distributed to 728 City employees via e-mail and a total of 368 responses were recorded, a response rate of 51 percent. Employees from 19 facilities and eight departments participated. The three facilities that had most responses were City Hall, the MOC, and the Public Safety Building, and the three departments that had the most responses were Public Works, Fire, and Parks and Recreation.

Key Findings

Across all City facilities, most workers feel their buildings support their work "Well" but not "Very Well".

Employees are most satisfied at the Fire Station 16 Shop, Fire Stations 17 and 18, the Senior Center, and City Hall. Among all facilities, employees believe what works well is the location of their workplaces, the size and layout of work areas, equipment and IT hardware, maintenance responsiveness, and interior lighting. Employees whose functional needs are met are also happy with their facilities.

Employees are least satisfied at Fire Stations 14 and 11 and the MOC. Public Works is the least satisfied with how their facilities support their work. Across all City buildings as a whole, employees are dissatisfied with thermal comfort, the size and layout of storage spaces, building noise, building amenities, and access to exercise facilities. Additionally, 73 percent are satisfied with maintenance responsiveness; a good goal for maintenance organizations is 90 percent.

Questions 1-3: Respondent Locations and Roles

What building do you work in primarily? Which department are you in? What is your role and position?

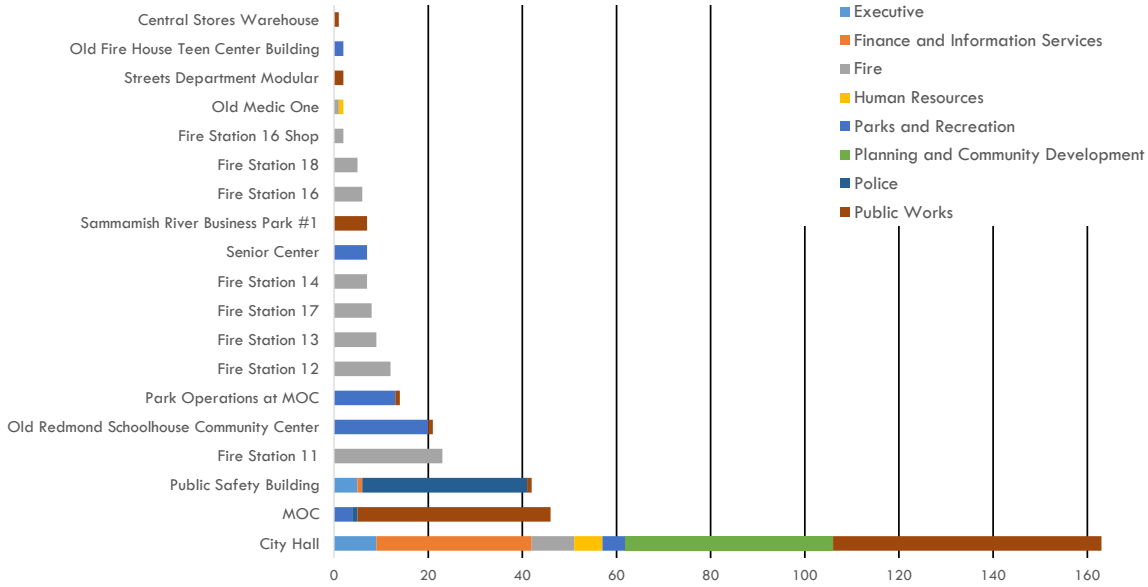

Figure 1. Distribution of respondents by location and department.

City Hall (163) had the highest number of respondents, followed by the MOC (46) and the Public Safety Building (42). By department, Public Works (111) had the most responses, followed by Fire (82), Parks and Recreation (51), Planning and Community Development (44), Police (36), Finance and Information Services (34), Executive (14), and Human Resources (7).

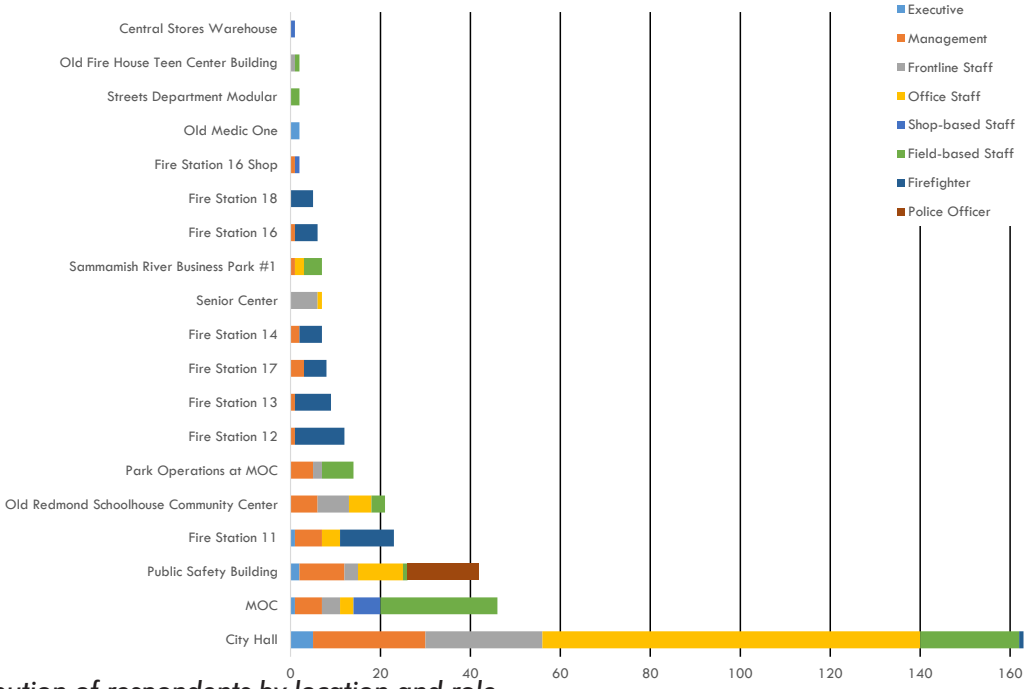

Figure 2. Distribution of respondents by location and role.

Most respondents were office staff (109), followed by management (68), field staff (66), firefighters (52), frontline staff (49), police officers (16), executives (11), and shop staff (8).

Question 4: Collocation

Is collocation or adjacency with another department, division, or resource important to your efficiency and effectiveness?

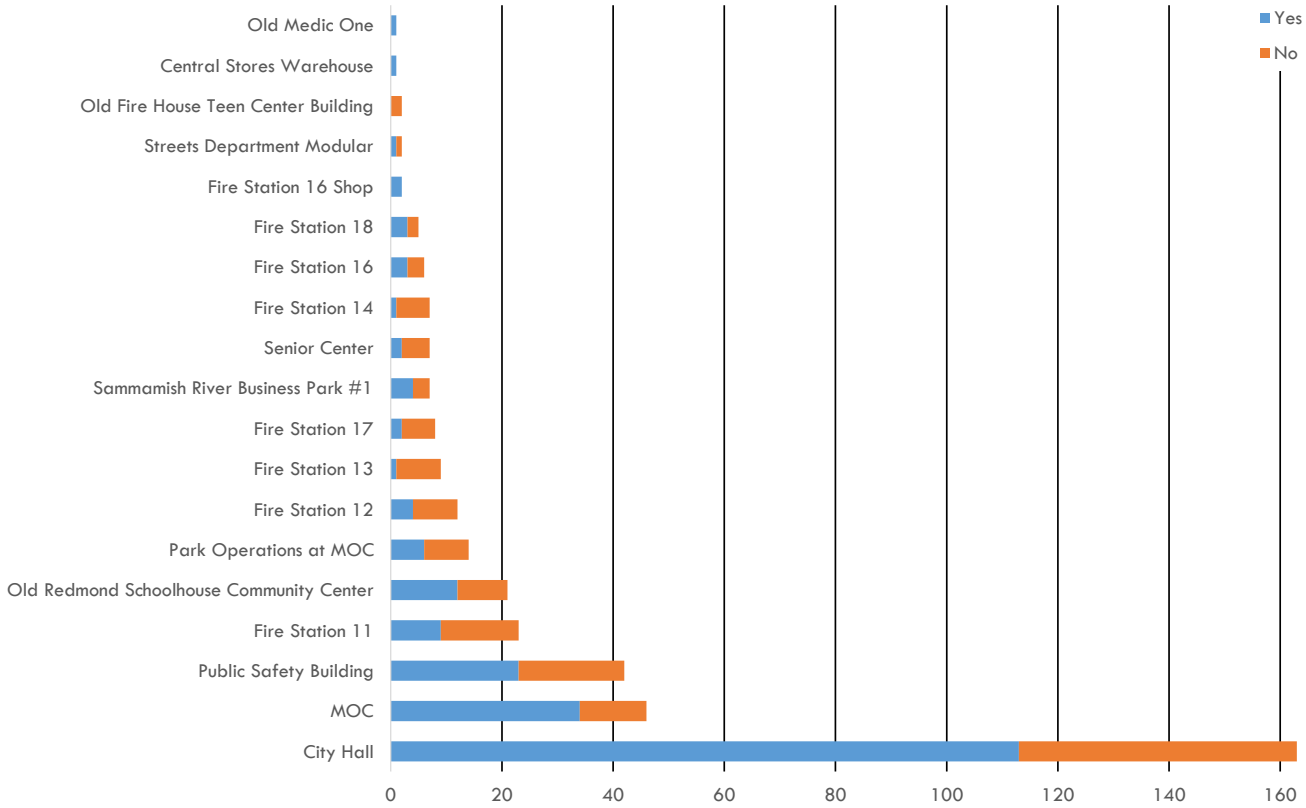

Figure 3. Distribution of respondents by building who say collocation is important.

A majority of employees (59%) feel that collocation is important. Among the three buildings with the most respondents, an even larger share (68%) feel that collocation is important.

If collocation is important, which adjacencies are important to your department?

Includes edits for clarity

Public Works
+ Planning
+ Parks and Recreation
+ Natural Resources
+ Transportation Planning
+ Finance
+ Human Resources

Fire
+ Building and Planning
+ Code Enforcement
+ Police
+ Public Works Facilities, Water, and Streets
+ Human Resources
+ Finance
+ Natural Resources
+ Fire District #34

Parks and Recreation
+ Human Resources
+ Finance
+ Planning
+ Teen Center
+ Senior Center
+ Natural Resources
+ Public Works

Planning
+ Public Works
+ Executive
+ Finance
+ Fire
+ Natural Resources
+ Parks
+ Transportation Planning

Police
+ Court
+ City Hall Cashier
+ Fire
+ Public Works Fleet

Finance
+ Police
+ Human Resources
+ Mayor's Office
+ Planning

Executive
+ All Departments
+ Mayor's Office

Human Resources
+ Finance, Payroll

Question 5: Overall Facility Satisfaction

How well does the building support your work?

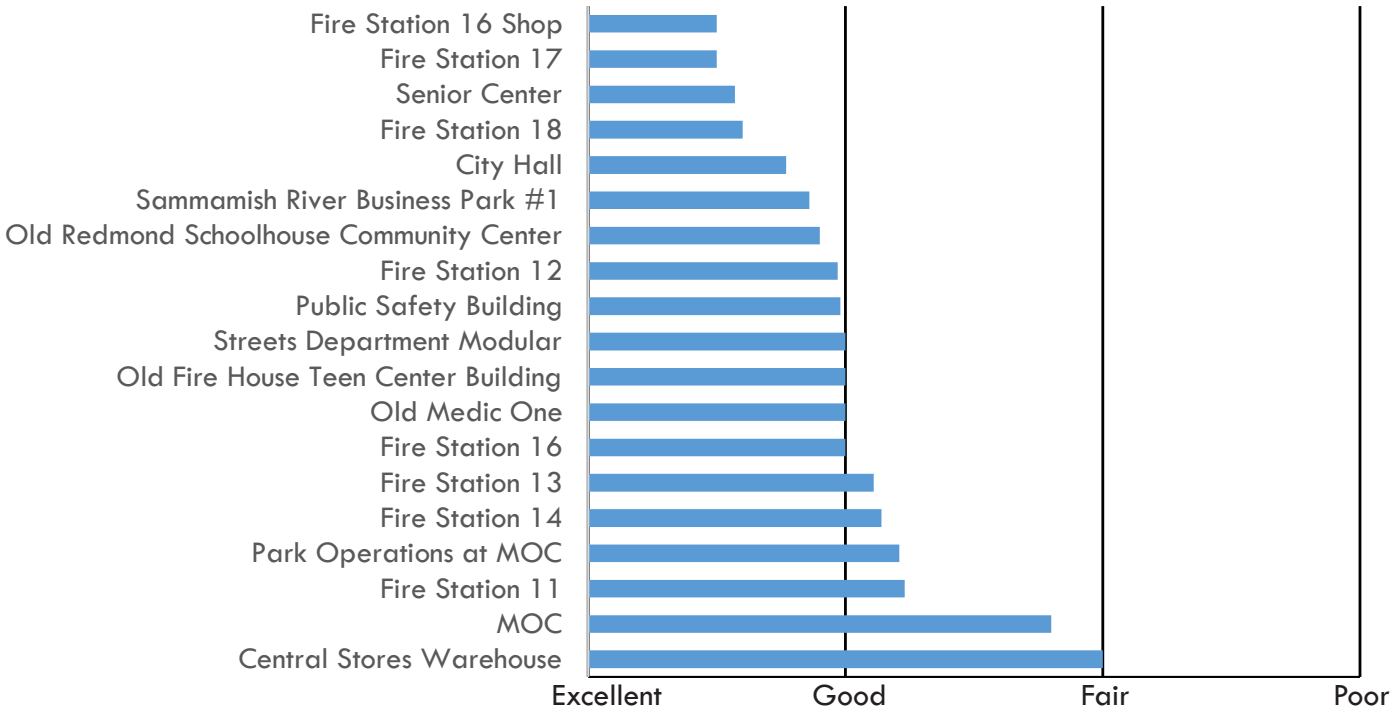

Figure 4. Average scores showing how well buildings support respondents' work.

Employees at the Fire Station 16 Shop, Fire Stations 17 and 18, the Senior Center, and City Hall were the most satisfied.

Employees of both Public Works and Parks at the MOC and the older fire stations feel their buildings support their work the least, but still ranked them "Well" on average. The Central Stores Warehouse scored the worst.

When the City Hall responses are removed, almost 25 percent of the remaining employees do not feel their building supports their work "Well" or "Very Well".

Question 6: Specific Issues Satisfaction

Please rate your overall satisfaction with the following:

	Old Medic One	Streets Department Modular	MOC	Park Operations at MOC	Fire Station 11	Sammamish River Business Park #1	Public Safety Building	Old Redmond Schoolhouse Community Center
Your thermal comfort (too hot, too cold)	4.00	3.00	2.70	3.21	3.64	2.00	3.50	3.42
Size and configuration of storage	5.00	3.50	3.61	3.71	3.32	1.86	2.80	2.26
Building amenities (signage, reception, vendors)	5.00	3.00	2.86	3.00	2.73	3.00	2.70	2.89
Noise within the building	5.00	2.50	2.84	3.07	3.23	2.71	3.08	2.58
Access to gym/exercise facilities	5.00	5.00	4.25	4.14	2.41	4.43	2.15	3.42
Size of other spaces	5.00	3.00	3.50	3.36	2.95	2.00	2.71	2.37
Access to lockers and showers	2.00	3.00	3.36	2.07	2.27	4.29	2.50	3.74
Meeting areas within the building	5.00	2.50	2.91	3.21	3.00	2.00	2.73	2.00
Quality of cleaning in restrooms	1.00	5.00	3.36	3.21	2.27	2.71	3.20	2.89
Quality of cleaning in office spaces	3.00	5.00	3.18	3.00	2.55	2.71	3.25	2.58
The security of the building	3.00	3.00	2.84	3.29	3.09	3.43	2.13	3.47
Appearance of lobby and common areas	3.00	3.00	2.82	3.14	3.05	3.00	2.63	2.74
Quality of cleaning in common areas	1.00	5.00	2.98	3.07	2.50	2.71	3.20	2.79
Building connectivity/telecommunications	5.00	3.00	3.05	3.29	2.05	3.29	2.45	2.11
Availability of commute transportation options	3.00	2.50	2.98	2.50	2.36	2.57	2.40	2.47
Furniture and fixtures	3.00	2.00	2.73	2.29	2.45	3.00	2.88	2.11
Building exterior lighting	2.00	2.50	2.75	2.29	2.68	2.29	2.38	2.50
Your facility overall	5.00	2.50	3.36	2.43	2.95	2.29	2.56	2.26
Size and configuration of your work area	5.00	2.50	3.23	3.07	2.59	1.71	2.22	2.05
Equipment and/or IT hardware	5.00	3.50	2.84	2.43	2.23	2.14	2.15	1.89
Building interior lighting	4.00	2.50	2.43	2.07	2.36	2.43	2.13	2.39
Maintenance responsiveness	4.00	2.50	2.39	2.71	2.09	1.71	2.33	2.11
Location of your workplace	2.00	2.50	2.39	1.93	1.95	1.86	1.90	1.95
Facility Average	***3.70***	***3.15***	***3.02***	***2.89***	***2.64***	***2.61***	***2.61***	***2.56***

Key	
Extremely Satisfied	1 to 2
Satisfied	2.01 to 2.49
Dissatisfied or Extremely Dissatisfied	2.50 to 5

Figure 5. From top to bottom, average satisfaction of facility criteria in order of least satiswwwfied to most satisfied. From left to right, average satisfaction of buildings in order of least satisfied to most satisfied.

Fire Station 16 Shop	Old Fire House Teen Center Building	Senior Center	Fire Station 13	Fire Station 16	Fire Station 14	City Hall	Central Stores Warehouse	Fire Station 12	Fire Station 18	Fire Station 17	***Criteria Average***
3.00	3.50	2.86	3.33	3.50	2.57	2.85	2.00	2.25	2.40	2.63	***2.97***
3.50	2.50	2.86	3.22	2.33	2.29	2.64	4.00	2.17	2.80	1.75	***2.82***
3.00	2.50	2.71	2.56	2.50	2.14	2.89	1.00	2.25	1.80	1.63	***2.76***
2.00	3.50	2.29	2.44	3.83	2.57	2.61	2.00	2.08	1.80	2.25	***2.72***
2.00	3.00	3.00	2.67	2.17	2.29	2.20	4.00	2.25	1.60	1.38	***2.67***
2.50	2.00	2.43	2.44	2.17	2.43	2.46	4.00	2.25	2.00	1.50	***2.63***
2.00	2.50	3.00	2.22	1.83	1.57	2.32	1.00	2.33	1.80	1.38	***2.52***
2.00	2.00	2.00	3.22	2.00	2.00	2.39	1.00	2.67	1.80	1.50	***2.51***
3.50	2.00	3.43	1.56	2.00	1.43	2.15	5.00	1.42	2.00	2.00	***2.50***
3.50	3.00	2.71	1.56	2.00	1.57	2.20	1.00	1.50	2.00	2.00	***2.49***
2.00	2.50	3.14	1.78	2.00	2.71	2.24	1.00	1.67	2.00	2.00	***2.47***
2.50	3.00	2.71	2.56	2.83	2.14	2.20	1.00	2.08	1.80	1.38	***2.46***
3.50	3.00	2.86	1.56	2.33	1.43	2.01	5.00	1.50	2.00	2.00	***2.40***
3.00	2.50	1.71	3.00	2.67	3.57	2.12	1.00	1.83	2.40	1.75	***2.38***
2.50	3.00	2.43	3.11	2.67	3.71	2.01	1.00	2.08	2.40	2.50	***2.35***
2.00	1.50	2.43	2.33	2.83	3.14	2.10	1.00	2.08	1.80	2.00	***2.34***
2.00	2.50	2.14	2.33	2.33	2.29	2.19	2.00	1.75	1.60	1.63	***2.30***
2.00	2.50	1.86	2.22	2.33	2.14	1.90	4.00	2.00	1.80	1.50	***2.29***
3.00	2.00	2.00	2.11	2.17	2.14	2.07	4.00	1.75	1.80	1.50	***2.28***
2.00	1.50	1.86	3.00	2.67	3.29	2.09	1.00	2.33	2.20	1.75	***2.26***
3.00	3.00	2.43	2.00	2.17	2.29	2.08	2.00	1.83	1.60	1.63	***2.17***
1.00	2.00	1.71	2.11	2.00	2.00	2.03	1.00	1.58	1.80	1.50	***2.10***
2.00	1.50	2.00	1.89	1.83	1.43	1.87	1.00	1.67	1.60	1.50	***1.92***
2.50	***2.48***	***2.46***	***2.40***	***2.40***	***2.31***	***2.24***	***2.17***	***1.97***	***1.95***	***1.77***	

Figure 5 continued

Respondents are most satisfied with the location of their workplace, maintenance responsiveness, interior lighting, equipment and IT hardware, and the size and configuration of work areas. Respondents are least satisfied with thermal comfort, the size and configuration of storage areas, building amenities such as signage, noise, and access to exercise facilities.

Respondents are most satisfied with these criteria at Fire Stations 17, 18, and 12, the Central Stores Warehouse, and City Hall. Respondents are least satisfied at the Old Medic One building, the Streets Department Modular building, the Public Works MOC, the Parks MOC, and Fire Station 11.

Question 7: Most Impactful Issues

Which of the following issues have the most impact on your work? Pick up to five.

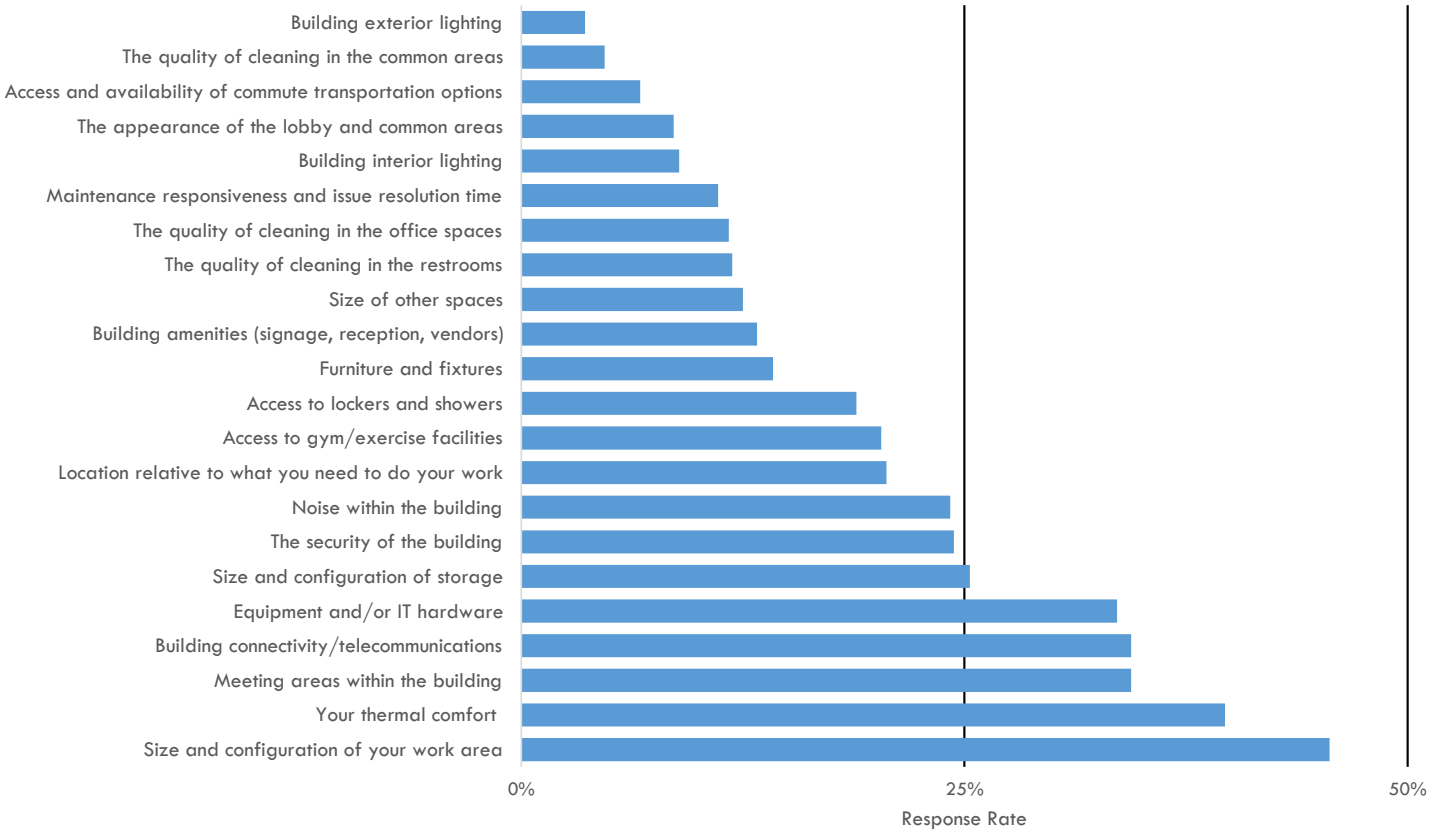

Figure 6. Rate of respondent answers on most impactful issues.

Respondents indicate the most impactful issues on their work are the size and configuration of their work areas, their thermal comfort, meeting areas, building telecommunications, and IT hardware. The least impactful issues are exterior lighting, quality of common area cleaning, access to commute options, appearance of common areas, and interior lighting.

Questions 6-7: Satisfaction with Most Impactful Issues at Select Buildings

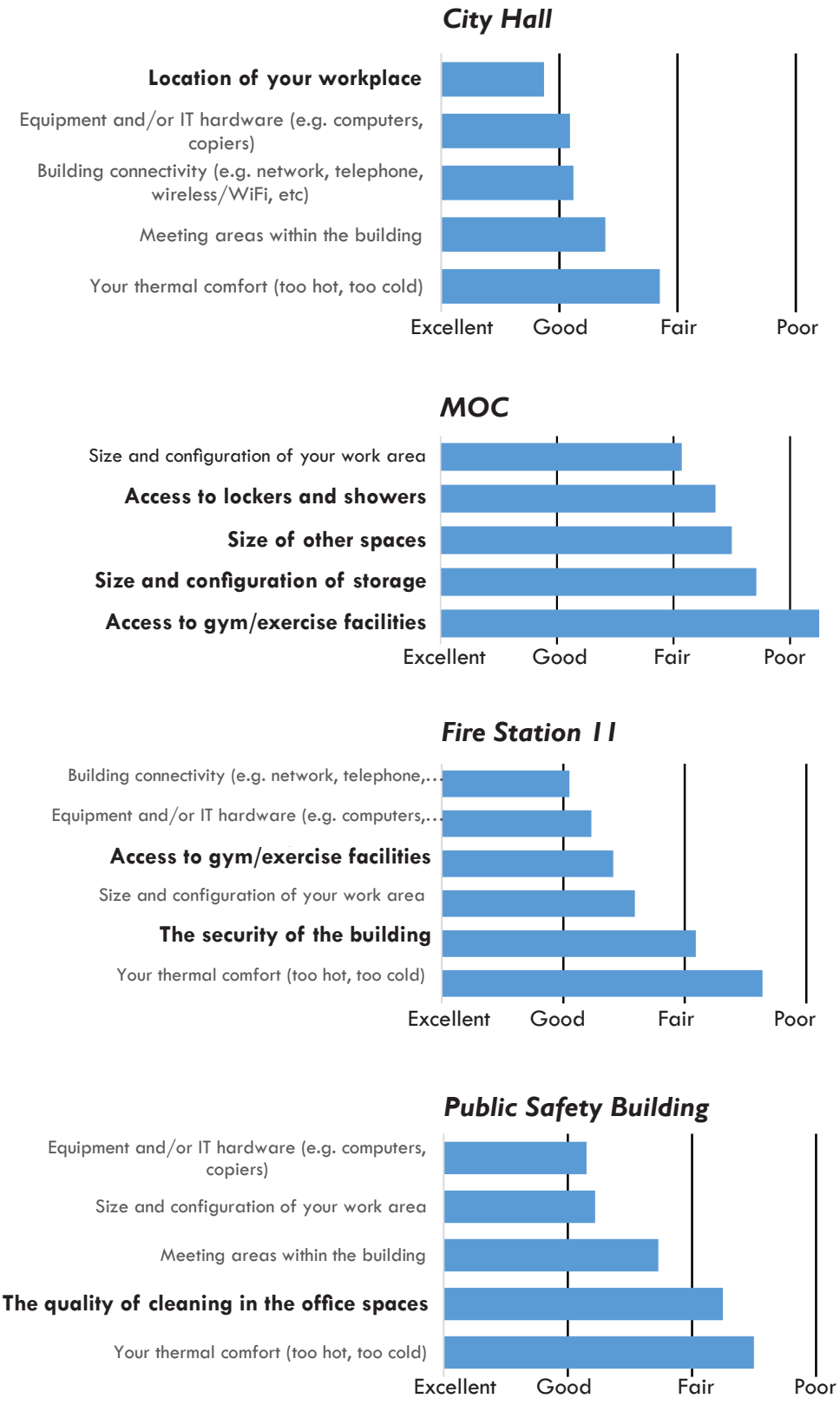

Figure 7. The four most impactful criteria at four key buildings and how satisfied respondents are with those criteria. Unique criteria are bold.

Question 8: Top Investment Priorities

Which of the following should be the top investment priorities for City of Redmond Facilities and Maintenance? Pick at least one.

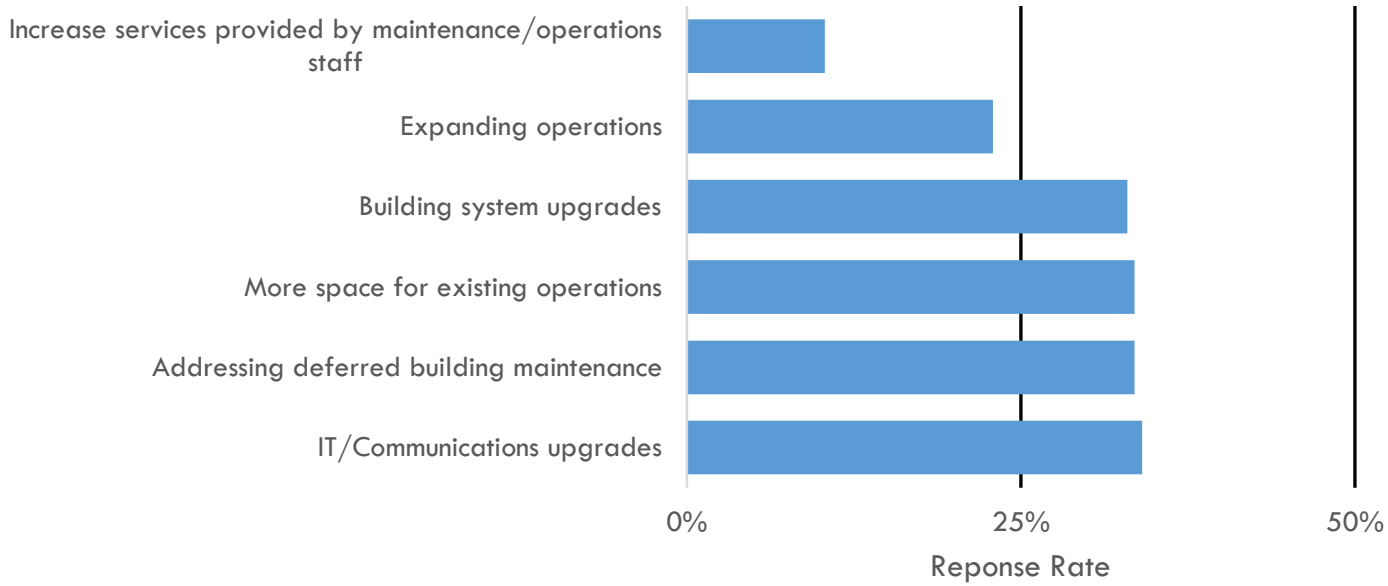

Figure 8. Rate of respondent answers on top investment priorities.

No single issue stands out as a key investment priority. Respondents ranked IT/Communications upgrades, addressing deferred maintenance, more operational space, and building system upgrades as top priorities.

Question 9: Most Important Changes

Which are the most significant factors that will change your work? Pick at least one.

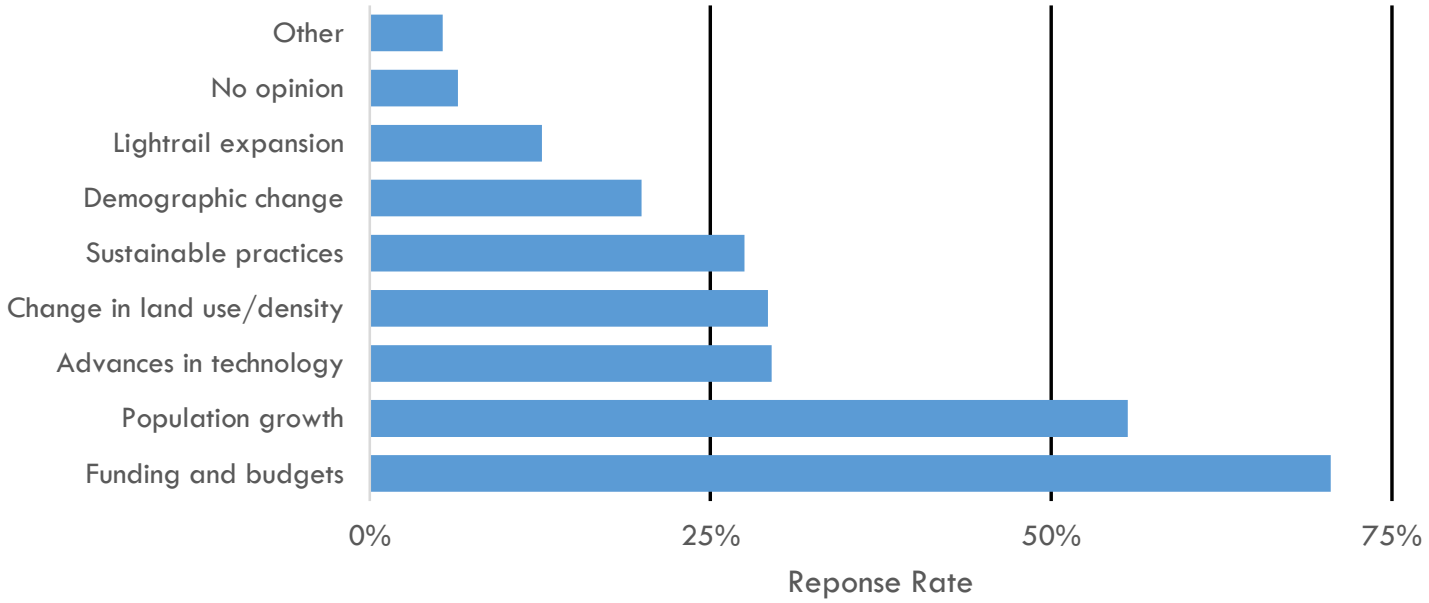

Figure 9. Rate of respondent answers on most significant factors.

A large number of respondents indicated that budgets and population growth will be the most significant factors that will change their work. Other considerable factors are advances in technology, changes in land use and density, and sustainable practices.

Written answers for those who selected "other".

Includes edits for clarity

Public Works

+ Assign vehicles to Project Managers - can visit the field more frequently
+ The current focus adding beauracracy for decisions and tracking.
+ Being more efficient in developing and constructing capital projects
+ increase department staffing
+ Commuting
+ Aging infrastructure and or new infrastructure
+ Maintenance staffing not keeping up with growing infrastructure demands

Fire

+ going to training outside our area
+ Aging infrastructure and or new infrastructure
+ For firefighters I believe we spend way too much time out of our areas for meetings and that there is technology out there that allows for webcast conferencing
+ Traffic Congestion negatively impacting response times
+ FD needs training tower / grounds.

Question 9: Most Important Changes

Continued from previous page

Parks and Recreation
+ Changes in community diversity
+ If Lake Washington SD takes back the community center or not
+ Traffic congestion around Redmond

Planning
+ More meeting spaces accessible to the public
+ Increase in land use and building permit activity

Police
+ Why is the city spending millions to repair the PD and doing nothing to fix the biggest problem which is the fact that the PD is major flooding in the garage and the PD is literally sinking into the ground. We are spending millions and not even addressing that?
+ Primary and public safety facilities located in liquefaction zone

Finance
+ Increase in technology at the City such as servers, mobile devices, cloud services, etc. which increase workload without additional or qualified help to support it.

Executive
+ More team centric space layouts

Question 10: Ideal Facilities

Which three words best describe the ideal facility to support your work? (examples: comfortable, daylit, efficient)

Figure 10. Word cloud representing the most popular words used to describe ideal facilities.

The most used words were *comfortable, efficient, clean,* and *space*. Other significant words included *secure, accessible, spacious, storage, technology, daylit, functional, safe*, and *location*.

These results were likely influenced by the survey question examples of *comfortable, daylit*, and *efficient*.

Question 11: Written Comments

Please provide any specific feedback you'd like to share with the Facility Management Team.

Includes edits for clarity

Public Works

1. City Hall is a beautiful building and it is becoming unsightly. Conference rooms are acquiring a lot of stuff on the walls and doors, business areas seem to think the conference rooms are theirs and clutter with their stuff, common hallways are cluttered with papers hanging on exterior side of hallway, folks are taping things to the exterior windows which makes the exterior of the building look poor to the public, things are being kept on window sills which add to an unsightly exterior view of the building, hanging business card racks on walls is unsightly. Need enforced guidelines for keeping all common spaces clean and tidy without taping things to the walls. There are some individual office spaces which could be classified as hoarding. Please help get City Hall cleaned up.
2. Opportunities to bring Maintenance Operations closer to City Hall should be considered.
3. We need more meeting spaces open and accessible to the public.
4. Blocking off access to the conference rooms on the 3rd floor has caused congestion in 1st floor conference rooms. Suggest opening up the third floor access to the public and putting key card readers on doors to areas that already exist. This will make scheduling meetings with outside persons easier.
5. The MOC is in need of serious attention. The disparity in appearance and function between this facility and other city facilities is extreme. This sends a message to MOC employees that they are not valued by the City.
6. City Hall is a very nice place to work. There are two things that would greatly improve my job at City Hall.
   1. City Hall is in need of a first floor that accommodates meeting rooms to meet with clients.
   2. It also need of a first floor reception area for visitors with full-time staff.
7. Give each facility a "go-to" owner and budget. Empower them to get the job done. Get out of their way.
8. As everyone knows, the MOC's shop/office areas, as well as covered storage for equipment, are too small - minor renovations have resulted in small improvements, but more space is needed. Office areas for supervisors, leads, and administrators are too small, uncomfortable (lighting, temperature, etc) and in some cases, unavailable. These seem to be primarily a result of an aging facility combined with an expanding workforce, rather than poor maintenance or management.
9. It would be great to have a new pool in Downtown.
10. Having gym access is a huge amenity. The City Hall gym is great, but it can be extremely crowded and has almost no day-use lockers available. More space in the locker rooms and gym would be awesome!
11. The HVAC noise is very loud on the first floor, in the construction division. WR has tried to fix, however it's still noisy, and not comfortable. Either too hot or too cold.
12. The new security measures have made holding and scheduling meetings with outside folks needlessly hard. Can we move the double doors to the Bytes Café back to the Bytes hallway? Leaving the Trestle Room open? Since all the interior doors on the 3rd floor have security entrances, can we unlock that floor in the elevators so the meeting rooms can be reached by outside folks? The Council Conference room is getting booked months in advance by people holding the room for possible future meetings.

Question 11: Written Comments

Public Works continued from previous page

13. Work safely, do good.
14. The Signal Shop at 90th ST is not on the available list of buildings.
15. I am very satisfied with my building. My work groups biggest challenges are not our building, but the MOC yard as a whole. We need a wash rack that doesn't freeze in the winter because we need to clean our de-icers promptly. We also need a heated parking structure so that our snow and ice equipment is ready to go at a moments notice and to prevent damage to sensitive equipment. We also need storage space for operating supplies. Equipment parking at the MOC is also getting very tight as all of the departments grow and gain additional assets we are running out of room to keep them.
16. Doing a great job for what you have to work with. Thanks for all your help keeping us afloat.
17. You do a great job for what there is to deal with and the number of buildings.
18. Go Team!
19. We do a great job with what we have to work with.
20. FYI, motion sensor faucets in 4North women's restroom are inadequate for warm water hand washing. Users have been washing hands with cold water for 10 years.
21. Have fun, good luck.
22. Need for more showers/lockers.
23. Need long term solution with real upgrades for maintenance work. New MOC with more space and new buildings.
24. None.
25. The MOC is in need of a major overhaul. The men's bathroom is way undersized and the woman's is way oversized.
26. The need for a larger locker room where more than two or three people can use at the same time, adequate shower space for more than one person, work spaces that are not crowded, a gym for at the MOC, a place to park work trucks that have water pumps in them so they don't freeze and a clean work space.
27. The facility maintenance team is an important piece of the puzzle in the operation of all city buildings and for that to happen effectively it makes most sense to have this team located centrally within the city for quick and efficient callouts to building.
28. In order to serve our customers to the best of our ability our group should be centralized in the city, creating a quicker response time for emergency situations.
29. It would be nice for a place where you could shower and sleep here if you worked all night on a emergency situation.
30. Rockin' it!
31. Thank you.

Question 11: Written Comments

Public Works continued from previous page

32. It would be nice to have a few more lockers available in the women's locker room.
33. Distant work vehicle parking requirement creates inefficiencies throughout the day for those that work randomly on the office and field. A sensible space is needed to store emergency preparedness supplies.
34. I would like to find out why the hot water temperature in the women's restroom on the 2nd floor takes so long to heat up.
35. Parking is inadequate for existing staff and visitors. Space to store equipment and vehicles is pretty well maxed out in the yard.
36. I think having all maintenance divisions organized on one campus would be extremely helpful for consistence. I also think the MOC lunch room facilities could use improvements.
37. A window instead of a wall in my cube would be nice.
38. Thanks for maintaining a great place to work.
39. Buildings that allow us to park vehicles that are needed to be on standby in a warm building so they do not freeze.
40. All work sites should be equal, meaning that the MOC furniture, equipment and work spaces should be as nice as city hall.
41. Shower is nasty, no gym.
42. The door to the storm department from the hall is still slamming shut and shaking our computers in the water quality room. It's bad!
43. I would like to say that I can work out of a closet but I just can't. We really need the proper work space and storage to be able to work efficiently.
44. The toilets on the second floor are a health issue, they do not evacuate properly. Temperature varies so much I've actually moved a meeting because the meeting room was too cold. It would be good to have one more large meeting room, and/or at least one small room with a projector. By and large I think the building is maintained pretty well. There is room for improvement.
45. Need bigger shop
46. I want MOC facilities to be upgraded, and I would like better access for all City staff for communication and access. Having MOC so far away from City Hall is not helpful at all
47. Customers do not feel welcome at City Hall =(.
48. Co-locating the MOC near City Hall is nearly impossible. But if the MOC had appropriate space for meetings, vehicles, storage of equipment, lunch room, lockers, office space, ability to secure the facility from public, ability to have safe flow of heavy equipment throughout the facility and supporting technology for video conferencing, and capacity to add computers and printers it would be great!
49. This fleet facility was built in 1977 and sufficient at that time for fleet size. Its not even close to that mark today. Needs to expand to 3X size ASAP.

Question 11: Written Comments

Public Works continued from previous page

50. Taking a big picture perspective, more funding needs to address MOC facilities. The condition of their facilities makes it seems as if the City does not care much about them.

51. I'm cold!

Fire

52. Station 11 is a poorly designed station. It is very hot in the summer and cold in the winter. It is also very loud and difficult to get rest to ensure response readiness.

53. Been very pleased with the friendliness of everyone I have met.

54. Fire Station 12 has 5 employees working at all times, but only 4 workstations.

55. From my limited experience, you are doing a great job, thank you

56. My name is Tom Norton, you are free to contact me if you have any questions. I would like the City to be proactive and plan our future needs, instead of reaction to what is happing today. What is the long term plan for offices for Fire Staff?

57. The HVAC system at station 11 was a poor design when new. I believe that it is wasteful and likely costs the COR much more money in waste than to fix.

58. None.

59. You have a big job ahead for you.

60. Appreciate the responsiveness of facilities to our needs. Many times, they are working with systems and designs that are not of their choosing and make the best of it.

61. I would like to see a form or some way of reporting concerns about facilities. As I go from facility to facility sometimes I see things that may be a concern, i.e. the parking structure, 3rd floor flooding in a certain area, from rain flooding down from 4th to 3rd onto cars. I know this structure is owned by the city, but I have no way of finding out who to report this concern to. I'm sure as we have staff like myself visiting different buildings, items can be brought to your attention that may be useful information.

62. The location of station 11 is not ideal. We have a walkway/public trail that goes through the property, which creates security issues.

63. With seven stations to maintain, I think PW does a good job. They work hard to respond to issues in a timely manner. Some items need attention but there is just so much that can be done at the moment. We understand that but it can get frustrating at times when some things don't get the attention they need.

64. Facilities does a very good job and are responsive to our requests for service. Larry Andrew has been especially helpful and proficient in problem-solving and repairs to keep our workplace efficient and well-maintained.

65. From a health standpoint removal of all carpets would make for a healthier environment. Firefighters track so much biological waste whether it be blood borne or toxic from various environments that it is impossible to deep clean carpets as with concrete bleach and water is immediately available to clean any products that are brought/carried on the soles of shoes.

Question 11: Written Comments

Fire continued from previous page

66. The city hall space planning team identified a better configuration model based upon services to the public being located on the first floor. This arrangement has many positives, however, it is very costly to make wholesale changes. The emphasis should be placed on smaller scope of work within City hall that meets some outputs identified by the space planning team.

67. Great job with work done. Probably need more staff to be faster.

68. Many fire stations have air conditioners/heaters that are either controlled too hot or too cold and cannot be controlled correctly. It would be nice to have these systems fixed some we would not have to have a fan or heater on at night to adjust for these temperature drops or rises.

69. Gutter guards need to be cleaned. Water dripping from gutters at entry areas.

70. Thank you.

71. Fire Department needs an Administration upgrade to the public area.

72. Station 12 is an old building, but it is great. I love it. Wouldn't change a thing.

73. The physical fitness room at station 13 has a drop ceiling that makes it hard to work out. A lot of firefighters cross fit and would love to see it removed in order to do overhead barbell exercises.

74. I really appreciate the great work that they all do for us.

75. There should be no carpet in any fire stations. Need to improve/install security around stations.

76. Good luck!

77. Our A/C system has never worked properly. In the summer, the dorms are too hot and in the winter they are way too cold. Also there are noisy control modules that can be heard opening and closing throughout the night. Our station also has the most trouble prone water heater I've ever seen with multiple flooding events. Replacement of these two systems would be amongst our highest priorities.

78. The Public Works Facilities Maintenance staff is a highly capable, motivated, efficient group. They respond promptly to issues that arise, despite what appears to be a limited number of them. They are courteous and reflect the City's values of Commitment to Service, Accountability, and Integrity. They are excellent ambassadors for Public Works.

79. Station 12 is bursting at the seams. Could use more space, more showers, more efficient, more locker and storage. Our call volume seems to be moving east into the Overlake and Microsoft campus area.

80. I personally feel the living quarters are far to big for a three man station. If you were to look at station 12, five personnel operate out of that station and it is far smaller presenting a smaller operational picture. Security is also an issue for me. Multiple fire stations have had items and cash stolen from lockers or day rooms. Pedestrians have wandered in off the street and attempted to use the showers. A better solution is warranted. Lastly, the connection speed for the county stations is slow. The up and down load speeds are excessive. Additionally, it would be great to have the capability to have meetings with other stations without having to leave our service areas. Thanks for listening to our input! I hope it helps.

81. The Facility Management Team is very responsive to our needs. They perform their work quietly and efficiently without interruption to the work day. They are always courteous and polite.

Question 11: Written Comments

Fire continued from previous page

82. Thanks to PW for taking on maintenance of FD facilities. This arrangement has allowed my fire crew to spend much more time training, rather than changing light ballasts, etc. PW provides timely quality work. Thanks. For several years I have asked for a safe adequate stairway to access the mezzanine area of station 18. We have some supplies there that may be needed in a timely manner, but the current portable stairway is borderline hazardous. An improved stairwell would help me do my job safely. Additionally, equipment to allow for video conferencing would allow fire crews to complete required group training, while each crew remained in their "first due" area, allowing us to provide citizens with improved response times. Our facilities are very good. Thanks. With a few tweaks they could be better.

83. The semi-opaque blinds work nicely, but because of my location, I can get hit by the sunlight pretty hard in the afternoon; a good chunk of the light still passes through the blinds.

84. It can be difficult to impossible to clean carpeted areas of all bacteria/blood born!

85. Great job by facilities assisting with day to day station issues. All the guys/gals do great work.

Parks and Recreation

86. We hear from the public that the it's either too hot or too cold. We have to constantly get the boiler or A/C fixed. The ORSCC needs a major remodel or a new building.

87. Cleaning the building should be awarded to a company that has adequate resources to meet the criteria listed on the contract. Not one or two employees to clean an entire building.

88. Getting better everyday.

89. Park Ops does an amazing job on upkeep of old historic buildings. Electrical at some point will need to be addressed. New bathroom has made a huge impact to park visitor experience. We are mostly constrained by budget in what we can provide in programming and facilities.

90. Open office space.

91. The Tech Room on the lower floor of the Park Ops building is a joke. This the "office" for 18 Maintenance Technicians and up to 20+ seasonal employees. It just is not efficient to have all these people crammed into such a small area.

92. Bathrooms are too cold not only the temperature but the water temp. Air conditioning too cold in summer/ sometimes cold air in winter through vents. Not enough large public meetings spaces. Storage area are not equal (some get more than others). When the building was in construction I suggested putting up solar panels to no avail. Cabinets in printer rooms are too high and the width isn't the the right size to hold copier paper. Employees have their backs to the door/opening of their offices or cubes, which is dangerous.

93. With regards to ORSCC, I know you are doing the best with the resources you have.

94. The work you do is GREATLY appreciated! The ORSCC is hard to maintain due to being an old building.

95. ORSCC is an old building but it doesn't have to as look old and dingy as it does. Facilities staff does wonderful job of addressing issues. Not owning the facility seems to limit changes we can make and funding we can allocate to bring the facility up to date and more attractive.

96. Overall, our facility is adequate but there is much room for improvement.

Question 11: Written Comments

Parks and Recreation continued from previous page

97. 1) "Thermal comfort" was difficult to answer. The office areas are comfortable, however, the rest of the ORSCC gets way too hot and way too cold without any current available heating & cooling methods due to the "oldness" of the bldg.
2) You should have allowed an option to a "type in" answer to attain better over-all capture of answers. Some questions were too "boxed" and could not be answered correctly within the given perimeters. Also, this building is too large to be completely cleaned at one time. The auditorium floor should be mopped more often.

98. Thanks for getting our new carpet on Feb. 12.

99. Parks MOC is deficient in kitchen/lunchroom amenities and space as well as covered storage for equipment, and computer work stations.

100. The MOC (Parks) probably Public Works needs to expand covered storage area for equipment and expand work areas for construction, and the organization of tools and supplies.

101. Farrel-McWhirter Park's buildings were not listed. The main office is in need up electrical and flooring upgrades. Our day-to-day maintenance needs are always met promptly, and Park Operations does a wonderful job keeping very old buildings in good working order.

102. Building could use more security especially in the evenings.

Planning

103. Add computer to each meeting room that has a projector.

104. It is so loud and freezing cold. I wear layers but our noses and faces get so cold on the second floor. Additionally because of how the building is constructed sound carries and it is less enjoyable to work in a loud environment.

105. Repeating request for movable furniture/adaptable floor areas in conference rooms. Should not need to rely on Bytes for large group meeting, particularly since the vending machines prevent people from hearing well.

106. Floor to ceiling walls separating divisions would be nice to help cut down on noise between divisions. Some divisions are louder than others by necessity.

107. Our area is too crowded, otherwise the second floor is OK.

108. I think it is well known that City Hall is not configured for the "customer first" approach we strive to provide. There is no reception by the front entry. There are no public services (permits, etc.) on the first floor. There are not enough conference spaces available in public spaces. The Facilities Strategic Plan needs to address that. My comment re: interior lighting probably has an easy fix. Overhead lights near windows are almost always on a dim setting. That's fine except when it's dark/almost dark outside, and then there is not enough overhead light to comfortably work. They just need to turn themselves up when it's a gloomy day or dark outside.

109. The City Hall lobby is a dead zone. The space needs to be more useful and welcoming for customers. City Hall needs to be welcoming from the street and the trail. The workout and locker rooms are great amenities. They are not cleaned and maintained as well as they used to be.

110. We always need to use a computer in the meeting room. It take a lot of time to connect the computer with fittings. It would be ideal to put a computer in the meeting room and provide a keyboard and mouse.

Question 11: Written Comments

Planning continued from previous page

111. I think having the Customer Service desk inside the Development Services Center is a bad design. Customers come in and still do not know where to go for help and adding more people into this small area adds another level of chaos and noise. If you have to have the customer service desk in the Development Services Center the employee staffing it should be a Development Services Center employee that can assist with all the related duties of the Center when they are not assisting customers. In addition, better signage is needed for this area.

112. Thank you for balancing the zones.

113. Since the security upgrades, public meetings (of which we do a lot) have become somewhat of a hassle, having to go through customer service and escort people, especially latecomers.

114. I'm in and out of my office a lot and having access to parking closer to my workspace would save time (although I do need the exercise).

115. Appreciate the great response.

116. As a relatively new employee, City Hall is a very nice place to work. I really have no complaints.

117. South/Main level is a waste of space. It should be re-configured to accommodate all visitors to this area instead of the 2nd floor.

118. The outside surfaces of City Hall are dirty/mossy. It needs to look good not dinghy.

Police

119. The PD Garage is flooding daily and reaches several inches deep at times. We are spending millions to repairs the PD and not a cent is going to address that. It floods from the walls, ceiling, cracks in the floor and even up through the drains which is opposite of I think what the drains are for.

120. Take some of my reviews with a grain of salt, as they are in large part due to the remodel project at PSB.

121. Furniture in our building is quite old - much of it is original. Makes work spaces inefficient and outdated.

122. Some of these questions were hard to answer because of the wording.

123. The PSB retrofit has been painful. Staff work in areas where active construction is going on. It has been loud, uncomfortable and longer than anticipated.

124. Prolonged down time of the police men's locker room and heat and cooling issue. Inability to fix the issue in a reasonable amount of time. Knowledge of issue that went unresolved for period of time.

125. Our building is under construction due to low attention to maintenance over the years. It is loud, noisy, and inefficient at this time.

126. The biggest problem with the Public Safety Building is the cleanliness. Sometimes garbage bags are not taken out for weeks, there is dust on shelves that is so thick and especially during this construction it has been a lot worse.

127. I believe we need to look at moving some of the city's primary public safety infrastructure (911, EOC, Police, Fire Station 11) out of the downtown area and to higher ground outside of our liquefaction zone. In a significant earthquake we may diminish our city's capacity to provide essential services because our downtown facilities becoming unusable.

Question 11: Written Comments

Police continued from previous page

128. There wasn't a space to include needs for vehicle storage, so I would also like to add a need to store PD vehicles such as MCP and emergency trailers (2). Thank you for the opportunity to share my opinion.

129. Radio reception for police is horrendous. More boosters are needed everywhere.

130. Janitorial service for common spaces, individual work areas, and bathrooms has always lacked. Seems like a "bare minimum" job instead of daily vacuuming, dusting, window cleaning, and thorough bathroom cleaning.

131. Would like to see scheduled "big cleaning" items, such as quarterly carpet cleaning, yearly upholstery cleaning, etc to maintain existing furniture/equip.

132. Critical facilities should have generator backup or at least be wired with a transfer switch so a generator could be plugged in to run critical items, like the kitchen at the Senior Center. Generated portions of City Hall should be publicized so staff can ensure critical equipment is plugged into outlets with backup power. Temperature regulation in SW corner of CH3N is horrible, sometimes way too hot and sometimes cold currents of air; it hit 80 degrees twice a couple weeks ago (one sunny day and one cloudy rainy day), before cooling down.

133. City Hall is spotless, our building cleaners do the minimum and we work in filth.

134. The restrooms don't get cleaned everyday in the lobby, the garbage cans don't get cleaned every night.

135. Police employees should have a secure parking location.

Finance

136. The city hall restrooms need to be replaced. Toilets are so poorly designed they waste water. Seldom have hot water in sinks. Stalls don't provide much privacy.

137. Restroom water is always cold, when it starts to warm up the water shuts off. should change out the faucets. HVAC system does not work properly, too hot is some areas, too cold in others

138. The City Hall building is a wonderful place to work.

139. Vacuuming seems to be less than once a month in my work area.

140. The city hall facilities are excellent, an earlier question asked what needs to be improved, but "nothing" wasn't a choice. I don't think any improvements are needed at city hall for employees. Customers need more convenient access to services, but a team is already working on that.

141. Thank you for the opportunity to take this survey!

142. Provide customer service on the 1st floor of City Hall.

143. Great work keeping the place up - friendly staff.

144. It would be really nice if the conference rooms (e.g., 3FS) were not so highly sensitive to movement. The lights should stay on for longer than three minutes without movement and/or one should have the ability to turn the lights on in these conference rooms without the threat of them turning off within a very short period of time. Perhaps make the timeout period 30 minutes? Thanks for asking.

Question 11: Written Comments

Finance continued from previous page

145. "While City Hall is a nice building to work in, the temperature fluctuates from season to season and wing to wing. It can be uncomfortable at either extreme given the time of year. Security has been improved but could be improved further. The walls are beginning to reflect the time we've been in the building so a little repair for damage and repainting would keep it looking nice.

Executive

146. There should be someone at the lobby front desk (1st floor) to direct and assist customers when they arrive at City Hall.

147. Our lobby is cold and uninviting. We need to invest in a reception area that provides services our customers without forcing them upstairs. It would be helpful to have small meeting tables in the lobby so that we can meet individual guests in the lobby for quick conversations and not need to bring them to locked areas.

148. I like City Hall, it's a beautiful building. However, there are some problems: No hot water in 4th floor bathroom-ongoing problem for over a year. The automatic faucets don't stay on and they say it takes several weeks to get the part to fix them. I wish we had the "old fashioned" faucets, they work. Or else you can get a part immediately at the hardware store. It's too cold in conference rooms & offices. This is another ongoing problem. Noise spill over between conference rooms (Gateway Grove, Red-Brick, Salmonberg). Thank you for sending this survey.

149. City Hall's a great building, but there are some very inconsistent issues with heating/cooling. Cold pockets of areas of the office and very hot in others. It seems hard to get it fixed when issues are pointed out.

150. Heating/cooling has always been variable in the building, usually too cold. Numerous work orders in the past have not resolved the issue. Granted there is remodeling still going on, but will this be fixed when the work is done? I have to keep my coat on pretty much all day long.

151. I am a new employee with the City of Redmond, but I think the City has wonderful facilities. I do not have any specific complaints or concerns at this time.

Human Resources

152. I think you do a great job.

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EXISTING CONDITIONS REPORT

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Redmond Facilities Strategic Management Plan

EXISTING CONDITIONS FINDINGS

Project #20011329
Task 4 Final Report
December 2016

This report summarizes existing conditions as of April 2016.

McKinstry
For The Life Of Your Building

City of Redmond
WASHINGTON

SSF

MAKERS
architecture · planning · urban design

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Executive Summary

The Facilities Strategic Management Plan seeks to provide guidance on how to operate, maintain, and upgrade City of Redmond facilities in both the short and long term. This effort includes a 30-year strategic plan for all City facilities, a focused master plan for the City's Maintenance Operations Campus (MOC), and an operations and maintenance plan.

The City operates facilities which support a wide range of functions that are typical of municipal government operations, including City Hall, the Public Safety Building, fire stations, community and recreation centers, parking garages, and maintenance buildings. This document presents the existing conditions of Redmond's facilities using information gathered by MAKERS during interviews, site visits, an occupant survey, and by reviewing background information.

Many facilities were not built to serve the current needs of the occupants; this affects functionality, efficiency, and service delivery. Multiple facilities have issues with the size and configuration of storage, undersized parking, inadequate security, and poor emergency response capabilities.

In addition, facility maintenance has historically been funded at levels which do not allow for proactive and preventative maintenance to occur, resulting in an accumulated maintenance backlog for many of the City's facilities. Ongoing operations and maintenance issues include a lack of a maintenance management system, which hampers efficient work order management; the inability to monitor critical systems in high-priority facilities due to the lack of an integrated building control system; and the inability to prioritize work effectively due to the undetermined status of certain facilities, such as the Pool.

Redmond anticipates significant growth over the next 30 years, both in the downtown core and in Overlake, where new facilities may be required to meet the demands of increased density and traffic congestion. While there are a number of ongoing and planned projects which will improve conditions and address immediate facility needs, many facilities will still require significant investment within the Plan's 30-year time frame.

The Municipal Campus is the largest concentration of City-owned facilities and holds potential for future development to meet current and future facility needs. The site would benefit greatly from a Municipal Campus Master Plan to guide this development in the most strategic way.

Example Facility: Fire Station 16

Public Safety Building

FIRE

The Fire Department's nine facilities include seven fire stations, a fleet maintenance building, and a storage building for the Community Emergency Response Team. Three fire stations located outside of City limits are owned by Fire District 34, but operated by Redmond through a use agreement. The quantity and locations of existing fire stations are generally adequate, but facility condition and size challenges remain. A Fire facilities plan is ongoing.

Key Challenges:

- Several stations have seismic vulnerabilities which need to be addressed in the short term to ensure critical response capabilities are preserved in a seismic event.
- Indoor fleet parking and storage space were identified as deficient at nearly every facility.
- The Fire Fleets shop is undersized and under-equipped for functions such as engine pump testing. A 2011 Fleets study recommended combining Fire Fleets and Public Works Fleets operations.
- Station security is a concern at all facilities.
- Fire Station 11 is the primary downtown station, but cannot accommodate the ladder trucks needed to access taller buildings.

POLICE

The Police Department is based out of the Public Safety Building (PSB) on the Municipal Campus. The PSB contains a variety of specialized functions in addition to department offices, including the City's 911 dispatch center and data center. While the PSB is currently undergoing a major renovation to address water intrusion and seismic deficiencies, significant issues related to building systems will need to be addressed in the near future. After existing deficiencies are addressed, this facility will likely still require a significant renovation or replacement during the Plan's 30-year time frame.

Key Challenges:

- Reconfigured spaces created through incremental renovations over time are not well served by the building's HVAC systems.
- Electrical and mechanical systems are poorly documented and coordinated and reaching the end of their useful lives.
- PSB parking is inadequate for the personal and fleet vehicles required to support 24/7 operations.

Example Facility: Teen Center

PARKS RECREATION

The Parks Department operates four facilities covered by the scope of this project: the Old Redmond Schoolhouse Community Center (ORSCC), the Redmond Pool, the Teen Center, and the Senior Center. All have significant deficiencies. The 2014 Redmond Recreation Buildings Master Plan recommended renovating the Senior Center and replacing the ORSCC, Pool, and potentially Teen Center with a combined Pool & Community Center facility. This project is currently on hold pending coordination with a stakeholder committee and development of a funding plan.

Key Challenges:

- The City leases the ORSCC from the Lake Washington School District; an April 2016 bond measure will result in termination of the City's lease by mid-2018. The City may retain partial use of the facility through a future negotiation, but the ORSCC has significant mechanical systems deficiencies and asbestos abatement needs which remain to be addressed.
- The Redmond Pool's liner, mechanical, and roof systems are failing; Redmond expects to close this facility permanently in the near future.
- The Teen Center is well-liked by users but is not purpose-built; its configuration does not adequately support its program and impedes supervision. The facility's live music programming may not be compatible with future development in the surrounding area.
- The Senior Center requires envelope repairs and building systems renewals in the near term. It is somewhat undersized and will likely require reinvestment within this project's planning period.

City Hall

MOC Campus

ADMINISTRATIVE

City Hall is the core facility for City administration, housing the majority of City department offices, City Council spaces, and several public-facing uses such as conference rooms and a customer service center used for permitting, business licenses, and bill payment. The facility was built to suit and developed by Wright Runstad in a public-private partnership; ownership was transferred to the City in 2013. Wright Runstad still manages the facility and it is anticipated that the facility will transition to City management within the next few years.

Key Challenges:

- Some spaces in City Hall are at capacity, while others are underutilized or vacant. Department locations within the building do not necessarily reflect ideal adjacencies to support collaborative relationships.
- There is a need for community meeting spaces; Council Chambers is too formal and not appropriately sized or furnished to host gatherings.
- The current configuration of public areas in City Hall does not provide the level of customer service desired by the City. Service counters for City business are located on the second floor in an undersized space, while the lobby is underutilized. Customer service center improvements have been funded in the current budget.
- The City has recorded an increase in security incidents at City Hall. In response to security concerns, access control measures have been implemented in the building.
- It is unclear at this time whether the City has the staffing and resources to take on the management of this facility.

MAINTENANCE

Park Operations and Public Works perform maintenance on City facilities and infrastructure. They are based at the 8.63 acre Maintenance and Operations Campus (MOC) in southeast Redmond. The MOC has twelve primary buildings, including administrative offices, core crew support facilities, shops, a decant facility, a fuel station used by all City departments, and multiple structures used to store vehicles and materials. MOC facilities do not support their function; their condition, size, and layout limit workforce efficiency, collaboration opportunities, emergency response, inventory security and management, and workplace quality. These deficiencies will be compounded by the Fall 2016 relocation of staff from the Sammamish River Business Park to the MOC.

Key Challenges:

- Public Works crews lack adequate reporting, dispatch, and meeting areas.
- The Public Works Emergency Operations Center (EOC) is undersized and poorly equipped with respect to A/V support and pinup or whiteboard space.
- Crew locker rooms, restrooms, and storage are undersized. Gear drying, decontamination, and laundry facilities are inadequate or nonexistent.
- Site circulation is inefficient and poorly defined, creating operational challenges and potential safety risks. One of two primary site entrances is shared with a neighboring business, compounding site congestion.
- Heated parking is required for certain vehicles but is not provided. A project is underway to retrofit the Trinity space for heated parking by 2017 or 2018.
- Outdoor fleet and staff parking will soon exceed capacity.
- The Fleets Shop is undersized and not equipped to service large vehicles.
- Warehousing, inventory control, and storage of materials and equipment is undersized, inefficient, and outdated.

Acknowledgments

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Introduction

The Facilities Strategic Management Plan seeks to provide guidance on how to operate, maintain, and upgrade City facilities in both the short and long term. It is a project with three major components: a long-term strategic investment plan for all facilities [developed primarily by MAKERS architecture and urban design (MAKERS)], a tactical operations and maintenance guide to help prioritize the Facilities department's work (developed by McKinstry), and a master plan for the City's Maintenance and Operations Campus (developed by MAKERS), which will produce recommendations for how the MOC can best support the Public Works and Park Operations departments that maintain of the City's infrastructure, facilities, and parks. These three efforts are also informed by a concurrent review of existing seismic vulnerabilities [developed by SSF Structural Engineers (SSF)]. The project scope encompasses the facilities maintained by Redmond's Facilities team, including: Fire District 34 fire stations, the Police Public Safety Building, Parks recreation buildings, and Public Works operations buildings.

This document presents the existing conditions of Redmond's facilities using information gathered by MAKERS during interviews, site visits, and by reviewing background information. McKinstry's findings are included under separate cover in their report titled "Task # 6-Existing Facility Level of Service." SSF's seismic condition analysis is included under separate cover in their "Redmond City Facilities ASCE 41-13 Seismic Study."

Future phases of work will establish desired levels of maintenance service for each City-managed facility, conduct a detailed space needs assessment of the MOC facilities, and engage stakeholders in visioning and options evaluation workshops in order to produce the Facilities Strategic Management Plan and MOC Master Plan.

PROJECT PURPOSE

- Provide guidance on how to best operate, and maintain City facilities in the near and long term
- Develop a business model that establishes desired facility management services and service levels
- Recommend optimized maintenance staffing and use of resources
- Identify the optimum use of the MOC property to meet City needs
- Recommend capital project priorities and phasing

DOCUMENT ORGANIZATION

This document introduces the guiding principles and planning context for the project, followed by an overview of the operations and existing conditions of each facility. These findings are organized in chapters by facility type: Fire Facilities, Police Facilities, Parks Recreation Facilities, Administrative Facilities, and Maintenance Facilities. The chapter on Maintenance Facilities includes a greater level of detail than the preceding chapters to inform preparation of the MOC Master Plan.

Guiding Principles

WELCOMING, SAFE, AND HEALTHY
Provide welcoming and accessible public areas and amenities. Create secure, healthy, comfortable, and inspirational work spaces for all City employees.

SUSTAINABLE AND EFFICIENT
Optimize resources through strategic investment decisions in durable and sustainable facilities and efficient building management.

FLEXIBLE AND DESIGNED FOR THE FUTURE
Anticipate growth and change; accommodate increasing flexibility, evolving technology, and changing uses; prepare for emergencies.

ACHIEVABLE
There is a realistic actionable financial strategy to execute the Plan.

This project's Guiding Principles were developed collaboratively with City staff, the project's Management Team, and City Council. Specific issues and goals discussed with City participants during the guiding principles workshop and review process are on the following pages.

WELCOMING, SAFE, AND HEALTHY

Provide welcoming and accessible public areas and amenities. Create secure, healthy, comfortable, and inspirational work spaces for all City employees.

Redmond facilities should include:

- good orientation and way-finding
- a safe and secure work environment
- showers and lockers to support field staff, bike commuters
- spaces that support field staff operations (such as drying rooms and storage for protective gear)
- daylight, good indoor air quality, comfort
- clean and well-maintained public meeting rooms and parks
- inspirational spaces that motivate employees and let them know they are valued

SUSTAINABLE AND EFFICIENT

Optimize resources through strategic investment decisions in durable and sustainable facilities and efficient building management.

Redmond facilities should include:

- sustainable and high-quality building design, materials, and fixtures
- durable, built to last construction
- a sustainable “Total Cost of Ownership”
- standardized maintenance, controls, services, and supply practices
- improved accessibility for ease of maintenance and loading/unloading
- connectivity to the public, accessibility and collocation with colleagues and collaborators

Photo credit: Knoll

FLEXIBLE AND DESIGNED FOR THE FUTURE

Anticipate growth and change; accommodate increasing flexibility, evolving technology, and changing uses; prepare for emergencies.

Redmond facilities should include:

- adequate sizes, quantities, and varieties of workspaces and storage to meet existing needs and anticipate growth
- easily reconfigurable, flexible, and collaborative spaces designed to support a diversity of uses without compromising quality and functionality
- spaces that accommodate evolving technology; spaces whose flexibility is enhanced by technology
- operations located to provide efficient service without compromising workforce connectivity
- spaces designed to provide efficient customer service
- disaster-response preparedness

ACHIEVABLE

There is a realistic actionable financial strategy to execute the Plan.

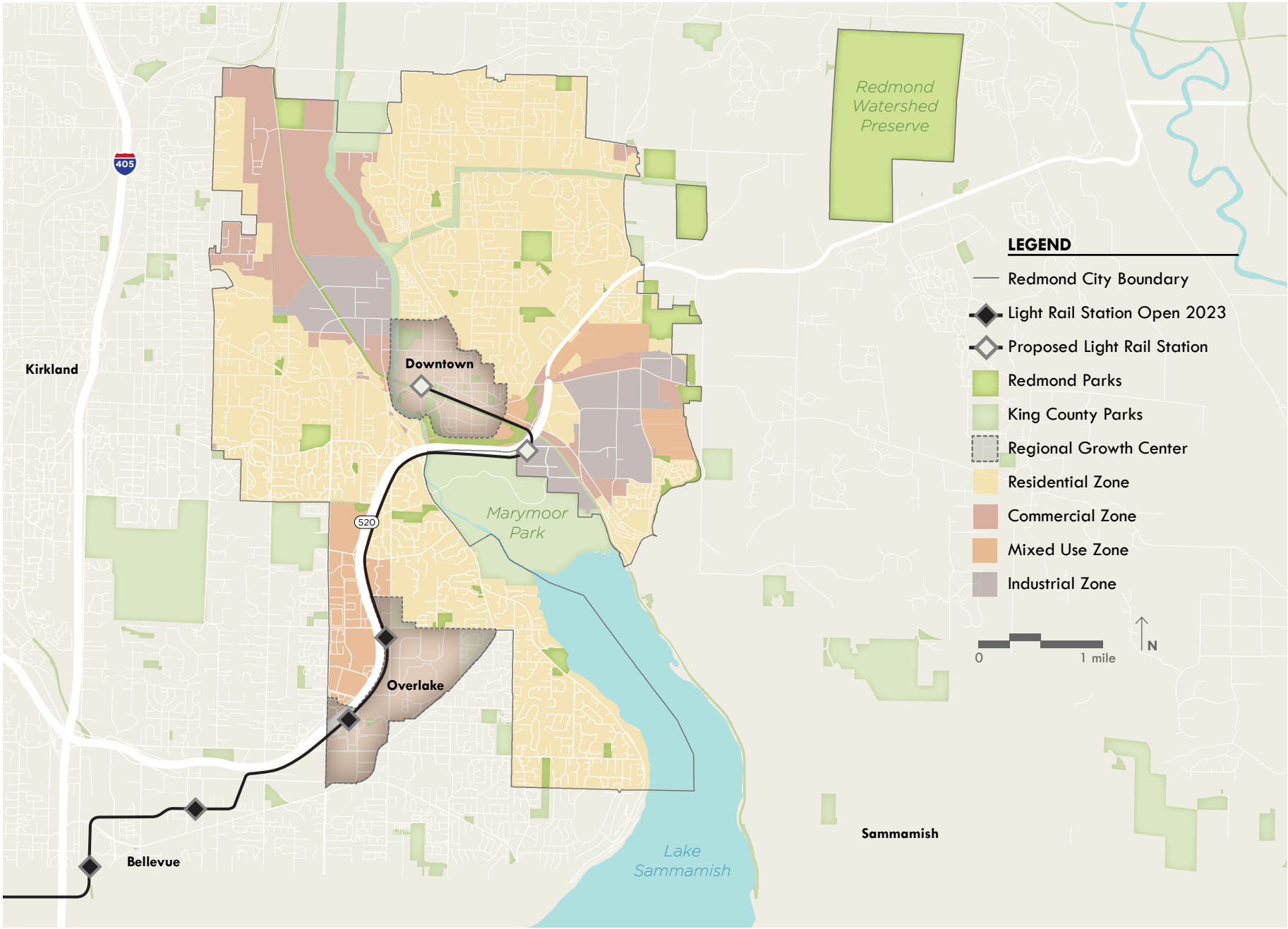


FIGURE 1. City of Redmond Context Map

Planning Context

Redmond is a suburban community approximately twelve miles from Downtown Seattle. Home to Microsoft and other technology firms and located amid forested hilltops split by the Sammamish River, residents enjoy a high quality of life that is bolstered by a strong economy.

Looking into the future, Redmond's is planning for its current population of 59,180 to grow to 78,000 by 2030. As of 2014 Redmond hosted an estimated 84,547 jobs, 4.6 percent of the central Puget Sound region's employment. The city is planning for an estimated 119,000 jobs by 2030.

As of 2013 Redmond had the largest daytime population surge in the United States, thanks in large part to the Microsoft headquarters. Only 26 percent of people who work in Redmond also live in Redmond. Conversely, about 40 percent of the residential population leaves the city to work elsewhere during the day.

The City of Redmond's Comprehensive Plan contains a 20-year vision for its growth and development. The plan challenges the community to build a strong economy, preserve a healthy natural environment, and provide equitable access to services for its citizens. Redmond recognizes it is an increasingly diverse community with a need for infrastructure investment to support higher density development. In conjunction with the Puget Sound Regional Council's Vision 2040, Redmond is planning for vibrant regional growth centers in Downtown and the Overlake neighborhood.

Overlake in particular has a current lack of urban amenities, but that is expected to change with the opening of two in-city light rail stations by 2023. The stations at Overlake Village and Overlake Transit Center will be the eastern terminus of a line that connects Bellevue, Mercer Island, and Downtown Seattle, providing reliable access to jobs and other opportunities. As of 2010 Overlake had 840 dwelling units. It is projected to have 5,730 units by 2030, an increase of over 500 percent.

Sound Transit will ask voters in November 2016 to approve another transit package that would include additional stations in southeast Redmond and in Downtown by 2028.

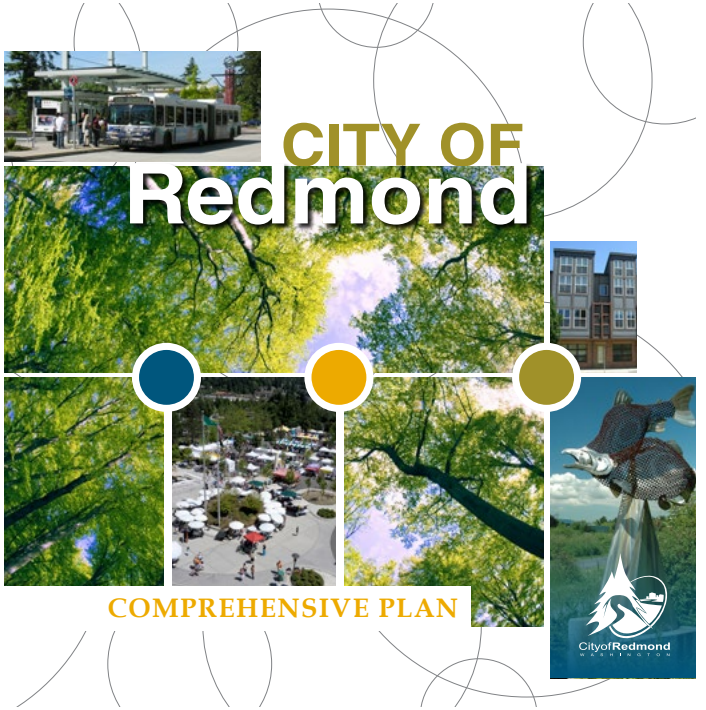


FIGURE 2. Cover Page of the Redmond Comprehensive Plan

FIGURE 3. Sound Transit East Link Light Rail Map

Sources

Population and employment: Redmond Comprehensive Plan and Redmond Community Indicators

Daytime population: Seattle Times article (http://blogs.seattletimes.com/fyi-guy/2013/06/03/census-redmond-has-largest-daytime-population-surge-in-u-s/) and City of Redmond (https://data.redmond.gov/dataset/Population-and-Jobs/tmq2-rw4m)

Light rail: Sound Transit project pages, alignment maps, and Google Earth

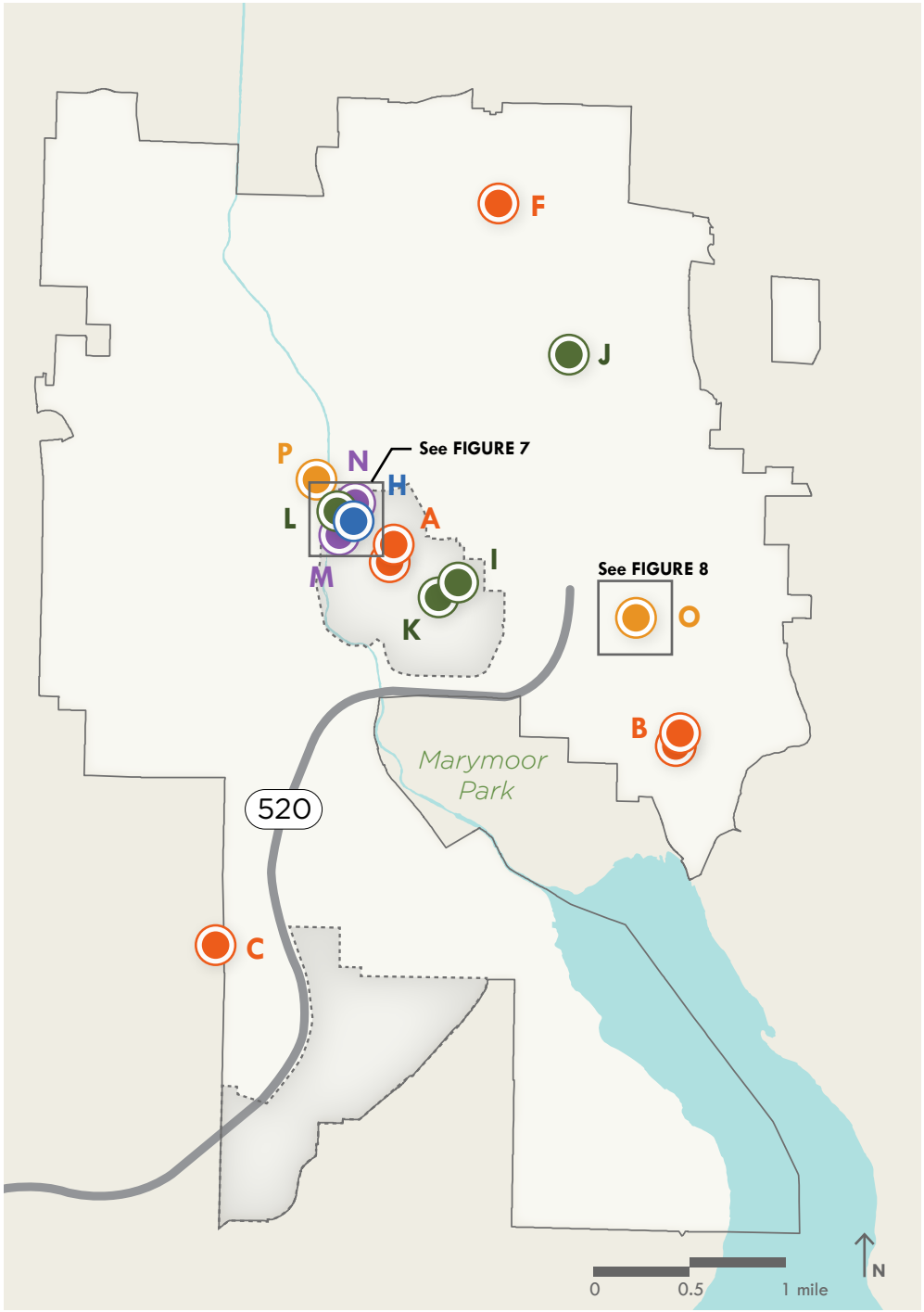


FIGURE 4. Redmond Facilities Map

REDMOND FACILITIES

FIRE (PAGE 21)
- A. Fire Station 11
- A. Old Medic One at FS 11
- B. Fire Station 16
- B. Fire Station 16 Shop
- C. Fire Station 12
- D. Fire Station 13
- E. Fire Station 14
- F. Fire Station 17
- G. Fire Station 18

POLICE (PAGE 33)
- H. Public Safety Building (PSB)
  - PSB North Parking Garage
  - PSB South Parking Garage

PARKS RECREATION (PAGE 43)
- I. Old Redmond School House (ORSCC)
- J. Redmond Pool
- K. Old Fire House Teen Center
- L. Senior Center

ADMINISTRATIVE (PAGE 55)
- M. City Hall
- N. Municipal Campus Parking Garage

MAINTENANCE (PAGE 63)
- O. Maintenance Operations Center (MOC)
  - MOC Building 1
  - Park Operations Building 8
  - Trinity Building
  - Decant Facility
  - Central Stores Warehouse
  - Streets Department Modular
- P. Sammamish River Business Park #1 & #2

Many City facilities are clustered onto two campuses: the Municipal Campus (facilities H, L, M, and N) and the Maintenance Operations Center (Facility O). See page 18 for details.

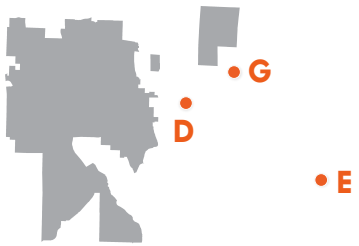


FIGURE 5. Fire District 34 Fire Stations

FIGURE 6. Approximate locations of liquefaction susceptibility

Facilities Overview

The City of Redmond occupies twenty-six main facilities which support the wide range of functions that are typical of municipal government operations. Facilities include City Hall, a police station, fire stations, community and recreation centers, parking garages, and maintenance buildings. Twenty of those facilities are staffed by City employees. Fire Stations 13, 14, and 18 are occupied via a use agreement with Fire District 34. The City of Redmond leases the Old Redmond Schoolhouse Community Center from the Lake Washington School District.

Most City facilities are located within the city limits and clustered near Downtown Redmond. The Redmond Fire Department also serves Fire District 34 in unincorporated King County; to support that work, three fire stations operated by Redmond are located outside of city limits.

Much of Downtown Redmond is located within a zone of "Low to Moderate" liquefaction susceptibility, as identified by the 2015 "King County Regional Hazard Mitigation Plan Update." See FIGURE 6.

Note: Two of the twenty-six facilities referenced here, Sammamish River Business Park Buildings #1 and #2, are to be vacated by the end of 2016. For the purposes of this project, the analysis of those facilities is limited to the future needs of the Public Works functions those buildings currently house.

FAST FACTS[1]

of Facilities
14 SITES; 26 BUILDINGS

Total Building Area
553,457 SF

Total Site Area
41.2 AC

Number of Employees
609[2]

Oldest Facility
OLD REDMOND SCHOOLHOUSE (94 YEARS)

Newest Facility
FIRE STATION 17 (4 YEARS)

Average Age of Facilities
30 YEARS

Average Condition of Facilities
FAIR

Total Observed Deficiencies
$21.4M

20-year Predicted Renewal Costs
$77.9M

1 *Fast Facts data summarizes facilities evaluated in a 2014 Facility Condition Assessment and therefore excludes small storage and support structures.*
2 *Employee counts are estimated based on organizational charts and will be updated with revised numbers.*

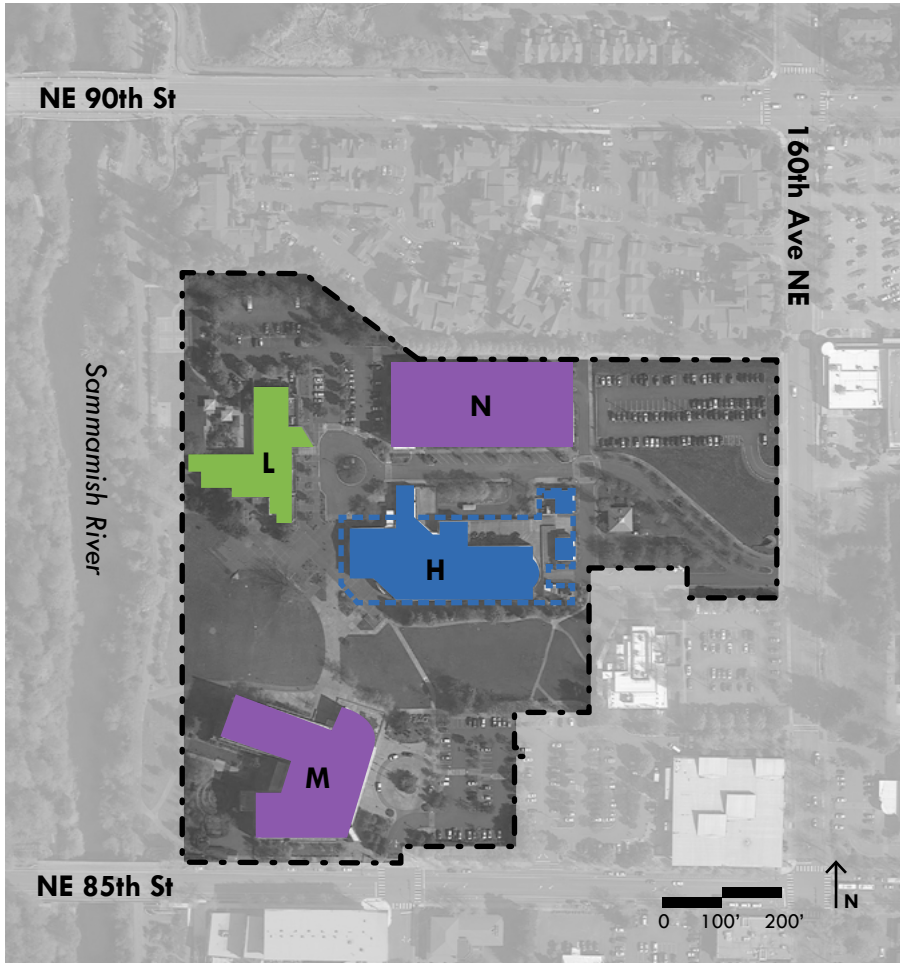


FIGURE 7. Municipal Campus Area Plan

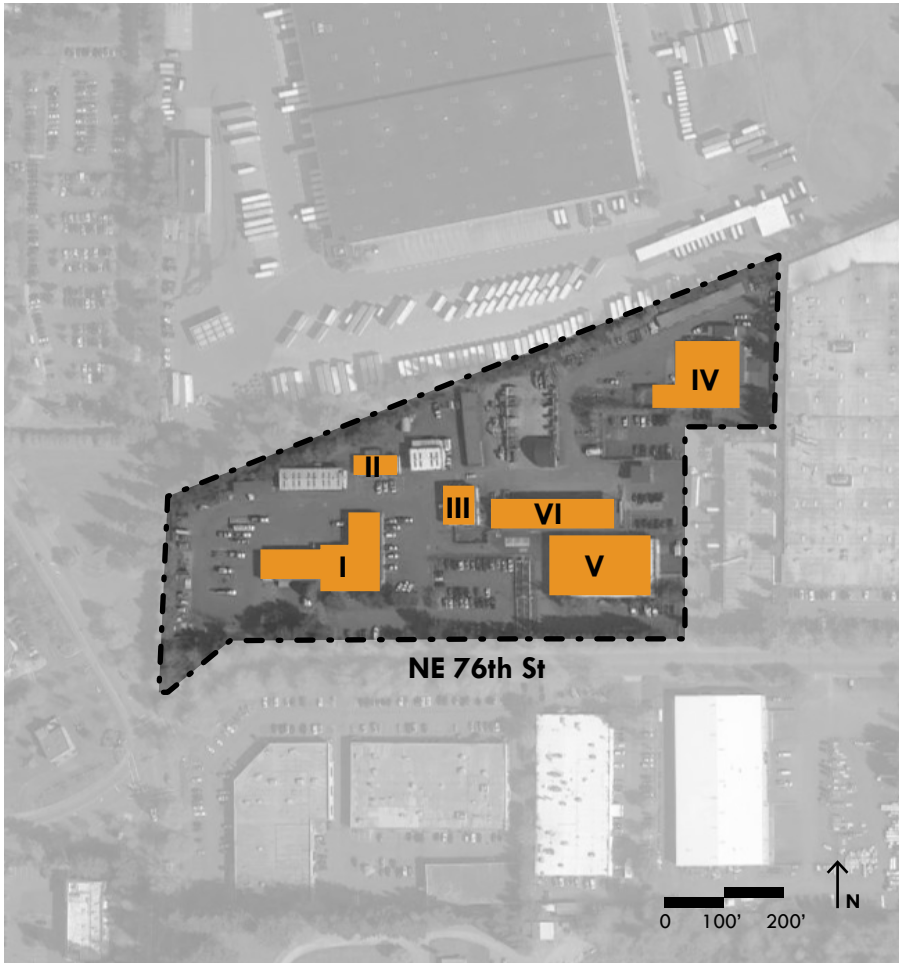
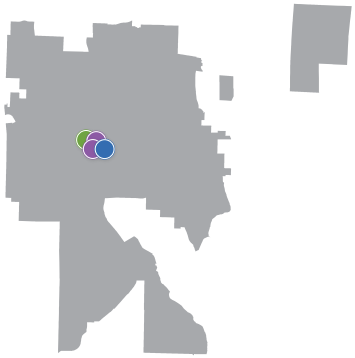
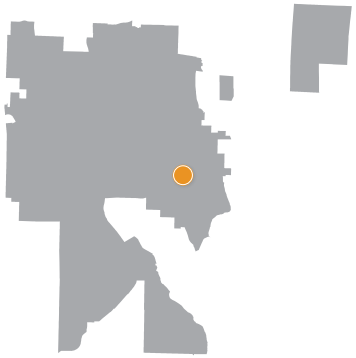


FIGURE 8. Maintenance Operations Campus Area Plan



MUNICIPAL CAMPUS

L. Senior Center
H. Public Safety Building
M. City Hall
N. Municipal Parking Garage



MAINTENANCE OPERATIONS CENTER CAMPUS

I. MOC Building 1
II. Streets Department Modular
III. Central Stores Warehouse
IV. Park Operations Building 8
V. Trinity Building
VI. Decant Facility

The existing conditions information presented in the following chapters has been compiled from facility tours, personnel interviews, existing documents provided by the City of Redmond, and an occupant survey administered by the consultant team. The survey provides qualitative information about City facilities and indicates building occupant priorities. Major findings are included in the following chapters, survey questions are included as Appendix D, and complete survey results are provided under separate cover. A full list of sources is provided in Appendix C.

Observed Deficiencies costs, 20-year Projected Renewal costs, and general building condition information were obtained from the 2014 Facility Condition Assessment conducted by Meng Analysis. They are defined as follows:

OBSERVED DEFICIENCIES
Costs for addressing observed deficiencies include contingency, contractor markup, and project soft costs in 2013 dollars.

20-YEAR PREDICTED RENEWAL COSTS
Predicted renewal costs provide an estimated cost for the renewal or replacement of facility subsystems as they reach the end of their predicted lifecycle. The purpose of these estimates is to provide typical long-term maintenance costs of existing systems. These predicted long-term maintenance costs may have some redundancy with the existing observed deficiencies recorded during the Facility Condition Assessment. As such, the 20-year predicted renewal costs should not to be added to the observed deficiencies.

GENERAL CONDITION
This is a summary assessment of the building condition that is compiled from the qualitative rating of each building's subsystem. Subsystem scores are weighted by the cost of that subsystem relative to the total replacement value of the facility; weighted average scores are then compiled for each of the City's facilities.

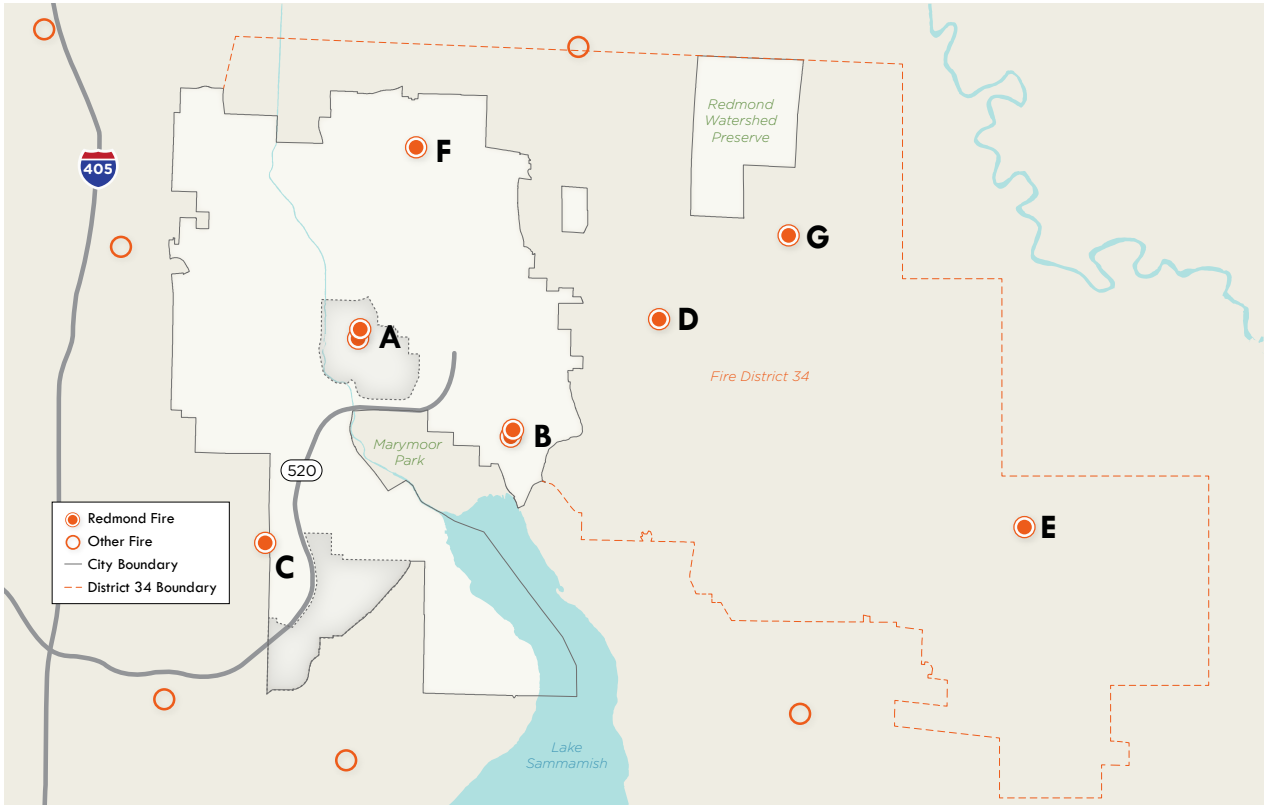


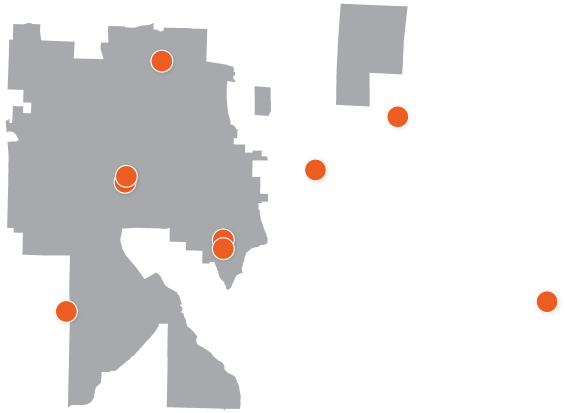
FIGURE 9. Redmond and Fire District 34 Facilities Map

FIRE FACILITIES STATISTICS SUMMARY

Map Key	Facility	# of Employees	Site Area (Acres)	Bldg Area (GSF)	Age (Years)	General Condition	Facility Replacement Value	Observed Deficiencies	20-Year Predicted Renewal Costs
A	Fire Station 11	24	1.46	23,800	35	Fair	$10,798,060	$869,376	$5,942,832
A	Old Medic One Building at FS 11	0		1,916	31	Fair	$576,620	$146,146	$206,248
B	Fire Station 16	15	1.61	9,852	20	Good	$4,469,852	$335,206	$2,115,234
B	Fire Station 16 Shop Building	3		5,625	20	Fair	$1,818,788	$245,304	$637,433
C	Fire Station 12	19	0.55	7,050	36	Good	$3,198,585	$467,786	$1,287,396
D	Fire Station 13	12	2.04	6,500	43	Fair	$2,949,050	$570,851	$1,913,919
E	Fire Station 14	9	2.96	9,460	25	Good	$2,949,050	$209,920	$2,368,903
F	Fire Station 17	7	1.72	19,397	4	Excellent	$8,800,419	$70,071	$461,939
G	Fire Station 18	10	1.54	7,714	14	Excellent	$3,499,842	$46,347	$1,045,215

Note: Deferred Maintenance and Predicted Renewal costs shown here include costs for site infrastructure.

FIGURE 10. Fire Facilities Statistics Summary



Fire Facilities

The Redmond Fire Department continuously protects and preserves life and property through education, prevention, disaster preparedness, and rapid emergency response.

The Fire Department operates within a 45 square mile service area. The service area includes Fire District 34, a 28-square-mile area of unincorporated King County with 23,000 residents. Fire District 34 owns three fire stations (Fire Stations 13, 14, and 18) which are operated by Redmond through a use agreement.

Redmond has reciprocity agreements with the cities of Bellevue, Woodinville, and Kirkland. The Fire Department is also a regional provider of Advanced Life Support service and operates three Medic One ambulance units serving 200 square miles of northeastern King County.

The department has a total of 172 personnel, with 158 of those uniformed and 14 non-uniformed. Of the total, 99 are firefighters based at the seven fire stations. The fire stations operate with three overlapping multi-day shifts.

The Fire Department operates a total of nine facilities, seven of which are fire stations. There is also a fleet maintenance building at the Fire Station 16 site and a storage building for the Community Emergency Response Team at the Fire Station 11 site. Department staff use a variety of vehicles which are stored indoors and outdoors at the facilities, including engine/pumper trucks, ladder trucks, rescue trucks, ambulances, and passenger vehicles.

With growth in the Overlake area, the department is reviewing whether an increase in call volumes will require additional capacity. The current distribution of fire stations could be further impacted by growth projections for the next 20 years.

FAST FACTS

of Facilities
9

Total Building Area
91,314 SF

Total Site Area
11.89 AC

Number of Employees
99

Oldest Facility
FIRE STATION 13 (1973)

Newest Facility
FIRE STATION 17 (2012)

Average Condition of Facilities
GOOD

Observed Deficiencies
$3.0M

20-year Predicted Renewal Costs
$16.0M

Highest Priority Project
FIRE STATION 11 HVAC

Overview

The following section provides an overview of each of the nine Fire Department facilities.

IMAGE 1. Fire Station 11 Main Entrance

Address	**8450 161 AVE NE**
Year Built	**1981**
Year Last Renovated	**2011**
Building Area	**23,800 SF**
Site Area	**1.46 AC**
Neighborhood	**DOWNTOWN**
Building Condition	**FAIR**
Observed Deficiencies	**$869,376**
20-year Predicted Renewal Costs	**$5,942,832**
# of Firefighters	**24**

Major Deficiencies

LACK OF MEZZANINE SEISMIC BRACING
INADEQUATE SIZE OF APPARATUS BAY
INADEQUATE SIZE OF STORAGE SPACES
CARPET FLOORING
BUILDING SECURITY
HVAC AND THERMAL COMFORT

FIRE STATION 11

This station is the headquarters for the Fire Department and King County Fire District 34. It also houses Medic One Unit 19. The station is located in Downtown Redmond and also serves Education Hill, Sammamish Valley, and Willows. The structure is wood frame with masonry veneer, and the hose tower is masonry.

Major issues include security, lack of storage space, the station's location in a liquefaction zone, lack of seismic bracing for the mezzanines, and inadequate sizing for aerial ladder trucks. The 2016 Occupant Survey also found occupants are highly dissatisfied with this facility. The most significant issues are with thermal comfort, storage size, building amenities, noise within the building, and lack of gym access.

IMAGE 2. Overflowing Storage At Old Medic One

Address	**8450 161 AVE NE**
Year Built	**1985**
Year Last Renovated	**2001**
Building Area	**1,916 SF**
Site Area	**1.46 AC**
Neighborhood	**DOWNTOWN**
Building Condition	**FAIR**
Observed Deficiencies	**$146,146**
20-year Predicted Renewal Costs	**$206,248**
# of Firefighters	**0**

Major Deficiencies

CONDITION OF FINISHES
CONSTRUCTION QUALITY
INADEQUATE SIZE OF STORAGE SPACES
INADEQUATE SIZE OF MEETING SPACES

OLD MEDIC ONE BUILDING

This building is on the Fire Station 11 site and is unstaffed. It is used for storage and training by the Community Emergency Response Team. It is a modular building on a concrete foundation while the apparatus bay is wood frame.

The building is undersized and inadequate for storage and meeting purposes and interior finishes are worn. The 2016 Occupant Survey found occupants (presumably Fire staff who occasionally use the building) are dissatisfied with almost all aspects of this facility.

FIRE STATION 12

This station is just outside City limits. It serves the Overlake, Viewpoint, Grass Lawn, and Rose Hill neighborhoods. The walls are a mix of load-bearing masonry and wood frame and the roof is wood frame. The hose tower is uninsulated masonry.

Major issues include lack of roof insulation and inadequate electrical outlets in the apparatus bay. HVAC and plumbing could also be upgraded to better the needs of this facility. However, the 2016 Occupant Survey found occupants are highly satisfied with this facility. The most significant occupant issue of note is the size and configuration of meeting areas.

Address	**4322 148 AVE NE**
Year Built	**1980**
Year Last Renovated	**1999**
Building Area	**7,050 SF**
Site Area	**0.55 AC**
Neighborhood	**OVERLAKE**
Building Condition	**GOOD**
Observed Deficiencies	**$467,786**
20-year Predicted Renewal Costs	**$1,287,396**
# of Firefighters	**19**

Major Deficiencies

ROOFING INSULATION
ELECTRICAL SYSTEMS IN APPARATUS BAY
SIZE OF WORK AND MEETING SPACES

IMAGE 3. Fire Station 12

FIRE STATION 13

This station is owned by King County Fire District 34 and is located outside city limits. It serves the Union Hill area. The exterior walls are load-bearing masonry except for the north wall, which is wood framed.

Being the oldest fire station, the facility's HVAC, electrical, and plumbing systems are nearing end of life and need to be upgraded to improve efficiency and comfort. There is also insufficient seismic bracing between walls and the roof. However, the 2016 Occupant Survey found occupants are generally satisfied with this facility. Issues of note are thermal comfort, meeting areas, size and configuration of storage spaces, and availability of commute transportation options.

Address	**8701 208 AVE NE**
Year Built	**1973**
Year Last Renovated	**2009**
Building Area	**6,500 SF**
Site Area	**2.04 AC**
Neighborhood	**UNION HILL**
Building Condition	**FAIR**
Observed Deficiencies	**$570,851**
20-year Predicted Renewal Costs	**$1,913,919**
# of Firefighters	**12**

Major Deficiencies

LACK OF SEISMIC BRACING FOR WALLS AND ROOF
MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS AT END OF LIFE
CARPET FLOORING

IMAGE 4. Fire Station 13

IMAGE 5. Fire Station 14

Address	**5021 264 AVE NE**
Year Built	**1991**
Year Last Renovated	**2009**
Building Area	**9,460 SF**
Site Area	**2.96 AC**
Neighborhood	**AMES LAKE**
Building Condition	**GOOD**
Observed Deficiencies	**$209,920**
20-year Predicted Renewal Costs	**$2,368,903**
# of Firefighters	**9**

Major Deficiencies

ENVELOPE INSULATION

HVAC EFFICIENCY

ELECTRICAL SYSTEMS IN APPARATUS BAY

FIRE STATION 14

This station is owned by King County Fire District 34 and is located outside city limits. It serves the Ames Lake, Union Hill, and Fall City areas. The structure is wood frame, except for the lower 48-inches of the apparatus bay which are concrete.

Major issues include inadequate electrical circuits and aging HVAC systems. However, the 2016 Occupant Survey found occupants are generally satisfied with this facility. Issues of note include availability of commute transportation options, telecommunication systems, IT hardware, building security, thermal comfort, and noise.

FIRE STATION 16

This station serves southeast Redmond. It houses the department's rescue truck and aerial ladder truck. The structure is wood frame with a wood truss roof structure. The hose tower is a concrete masonry.

Major issues include a lack of positive attachment between the roof and hose tower, HVAC systems nearing end of life, inadequate electrical circuits and lighting in some spaces. The ladder truck nearly oversized for the apparatus bay and driveway. However, the 2016 Occupant Survey found occupants are generally satisfied with this facility. Issues of note include building noise, thermal comfort, furniture and fixtures, building telecommunications, and availability of commute transportation options.

Address	**6502 185 AVE NE**
Year Built	**1996**
Year Last Renovated	**2006**
Building Area	**9,852 SF**
Site Area	**1.61 AC**
Neighborhood	**SOUTHEAST**
Building Condition	**GOOD**
Observed Deficiencies	**$335,206**
20-year Predicted Renewal Costs	**$1,666,019**
# of Firefighters	**15**

Major Deficiencies

SEISMIC CONNECTION BETWEEN ROOF AND TOWER
CARPET FLOORING
HVAC SYSTEM AT END OF LIFE AND HVAC NOISE
HVAC CODE VIOLATIONS
INADEQUATE ELECTRICAL SYSTEMS

IMAGE 6. Fire Station 16

FIRE STATION 16 SHOP

This facility is the fleet maintenance shop for all Fire Department vehicles and apparatus. The structure is wood frame with a wood truss roof.

Office and storage spaces are undersized and the south driveway has issues with drainage and maneuvering space. The 2016 Occupant Survey found occupants are dissatisfied with the facility. The most significant issues are size and configuration of storage areas, cleanliness of offices and restrooms, interior lighting, size and configuration of work areas, and thermal comfort.

Address	**6502 185 AVE NE**
Year Built	**1996**
Year Last Renovated	**2006**
Building Area	**5,625 SF**
Site Area	**1.61 AC**
Neighborhood	**SOUTHEAST**
Building Condition	**FAIR**
Observed Deficiencies	**$245,304**
20-year Predicted Renewal Costs	**$637,433**
# of Employees	**3**

Major Deficiencies

CODE VIOLATION WITH NO ROOF INSULATION
INADEQUATE ELECTRICAL SYSTEMS IN SHOP BAY

IMAGE 7. Fire Station 16 Shop Front Driveway

IMAGE 8. Fire Station 17 Under Construction

Address	**16917 NE 116 ST**
Year Built	**2012**
Building Area	**19,397 SF**
Site Area	**1.72 AC**
Neighborhood	**EDUCATION HILL**
Building Condition	**EXCELLENT**
Observed Deficiencies	**$70,071**
20-year Predicted Renewal Costs	**$461,939**
# of Firefighters	**7**

Major Deficiencies

ROOF ACCESS IS INADEQUATE OR DANGEROUS
ROOF LEAKAGE
SECURITY

FIRE STATION 17

This station is the newest station in Redmond's inventory. It serves the northern Redmond, Sammamish Valley, Willows, and Education Hill areas and doubles as a training facility and the City's emergency operations center. The first floor walls are concrete masonry units, while the second floor and roof are wood frame. The hose tower is concrete masonry units.

Major issues include security, lack of visitor parking, and roof equipment that is difficult to access for maintenance. Overall, however, the 2016 Occupant Survey found occupants are highly satisfied with this facility. The most significant issues of note are thermal comfort and availability of commute transportation options.

FIRE STATION 18

This station is owned by King County Fire District 34 and is located outside city limits. It serves the Redmond Ridge and Trilogy areas. The structure and hose tower are wood frame.

Major issues include a seismically vulnerable foundation and K-braces, inadequate HVAC in the apparatus bay, and undersized hot water capacity. However, the 2016 Occupant Survey found occupants are highly satisfied with this facility. The most significant occupant issue of note is the size and configuration of storage.

Address	**22710 NE ALDERCREST DR**
Year Built	**2002**
Building Area	**7,714 SF**
Site Area	**1.54 AC**
Neighborhood	**REDMOND RIDGE**
Building Condition	**EXCELLENT**
Observed Deficiencies	**$46,347**
20-year Predicted Renewal Costs	**$1,045,215**
# of Firefighters	**10**

Major Deficiencies

MEZZANINE ACCESS
INADEQUATE HOT WATER SUPPLY
FOUNDATION AND K-BRACE SEISIMIC VULNERABILITY

IMAGE 9. Fire Station 18

FIGURE 11. Example Fire Station Floor Plan (Adapted From FS 17)

Typical Program

The following program elements are common in most Redmond fire stations. FIGURE 11 illustrates an example layout adapted from the first floor of Fire Station 17.

KITCHEN/ DINING/ DAY ROOM Spaces for meal preparation, food storage, and recreation while on shift.

SLEEPING ROOMS AND RESTROOMS Dormitory-style bedrooms and restrooms/showers. Sleeping rooms are typically furnished with assigned lockers and blackout curtains; they should be acoustically isolated from noise as much as possible.

LAUNDRY Laundry facilities for bedding, uniforms, and personal items. A separate laundry facility is ideally provided for decontamination of equipment and uniforms.

FITNESS ROOM A high quality fitness room with strength-training and cardio equipment is needed to allow firefighters to exercise between calls.

PUBLIC LOBBY A public-facing space. If unmanned, the building entrance at this public lobby is locked, but furnished with an intercom through which a resident can contact an on-duty firefighter.

OFFICES & REPORT DESK Private offices for officers for management and coaching activities and shared workstations for firefighters to complete paperwork or computer-based training. Some fire stations have an office which operates as a police substation.

STORAGE Firefighters and EMS have substantial storage requirements for medical supplies, personal protection equipment (PPE), training props, and equipment storage. Additional storage requirements include building maintenance equipment and supplies. A storage shortage was identified as system-wide issue.

HOSE TOWER A hose tower is several stories tall and used for the cleaning and drying of water hoses. It is typically equipped with a metal grated staircase, winches to hang the hoses, and floor drains. In many stations it is also used for training exercises.

APPARATUS BAYS Fire fleet vehicles (apparatus) and EMS vehicles must be stored in an enclosed garage space with exhaust vents, floor drains, and electrical service for EMS vehicles. Ideally, the bays are configured to allow “pull-through” access.

DECON A decontamination area with a shower, boot wash, and a direct entrance from the outside to avoid tracking contaminants into the rest of the station.

BUNKER STORAGE/ DRYING ROOM Heated space for each firefighter to dry and store PPE. Space should be protected from UV light, which degrades equipment.

IMAGE 10. FS 11 Kitchen

IMAGE 11. Sleeping Room With Lockers and Desk at FS 17

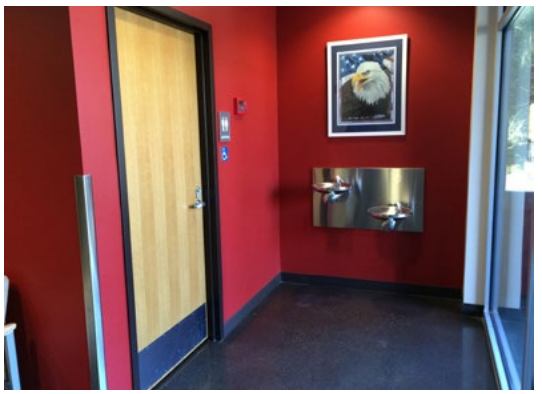


IMAGE 12. Public Lobby at FS 17

IMAGE 13. Overflowing Storage at Old Medic One

IMAGE 14. Training Structures Behind FS 16 Shop

IMAGE 15. Ponding at Testing Area Outside FS 16 Shop

Issues Summary

GROWTH

Redmond's Fire facilities are generally adequate to support present-day functions. While the department anticipates an increase in call volumes concurrent with resident and daytime population growth over the next 20 years, the locations of its facilities and mutual aid agreements with neighboring municipalities leave the department well-positioned to maintain their current response times in the service area. Medical calls currently comprise 70% of total call volume and are increasing in frequency; the addition of an aid car in Overlake or on Microsoft campus is being discussed.

Traffic congestion impacts response time and is likely to worsen over time, particularly for stations located at major intersections. The Fire Department does not currently receive support from Traffic Operations to route responses around congestion.

TRAINING

Population growth is expected to affect training needs, as taller buildings require different response strategies. There are few live-fire training opportunities within Redmond. Regional jurisdictions have discussed the possibility of building a joint training facility. In addition, staff at the outlying King County Fire District 34 stations have reported inadequate telecommunications to enable remote training. This would also allow firefighters to remain in their "first due" area for faster emergency response.

DOWNTOWN HEADQUARTERS

The Fire Department's critical downtown facility and administrative headquarters (Fire Station 11) is undersized and located in a liquefaction zone. The department is in the process of acquiring two ladder trucks. FS 11 is the ideal location for positioning ladder trucks, but its apparatus bays are too small. The retrofit or replacement of this facility in a downtown location is needed in order to resolve these deficiencies.

SECURITY

Station security is a concern at all facilities. Keycards are programmed manually, complicating access control management. Inadequate site and building perimeter control was reported during staff interviews and by occupant survey respondents.

STORAGE

Storage is inadequate at most fire stations; older stations are particularly constrained. The Old Medic One building at Station 11 is currently used primarily for storage by Redmond's Community Emergency Response Team volunteer program, but may be demolished to accommodate a construction crane in agreement with the private developer of a neighboring site.

FLEET

The District has insufficient indoor parking and is close to exceeding overall parking capacity for their fleet, most of which requires indoor parking. Outdoor storage of fleet greatly increases maintenance requirements.

The Fire Station Fleet shop functions well, but is undersized. At the existing location, tanker trunks are filled with a hose for testing; the facility should ideally be equipped with a hydrant for testing. A cistern with an oil/water separator is also needed to contain runoff from truck washing.

The 2011 Fleets study recommended combining Fire and Public Works fleet maintenance into a single operation.

CREW SUPPORT SPACES

Occupant survey responses indicate that many stations have elevated noise levels that negatively impact firefighters' sleep.

ONGOING EFFORTS

Redmond's newest facility, FS 17, has conferencing and training facilities that are well-suited to internal trainings as well as public meetings. However, the parking at this facility is insufficient to support those uses; development of an adjacent lot for surface parking is projected for 2019-2020.

SEISMIC VULNERABILITY

All fire stations were recently assessed under the Immediate Occupancy standard, a performance level that allows the facility to operate immediately after an earthquake. All fire stations, except the newest, FS 17, have potential seismic vulnerabilities that need to be addressed in the short term to ensure critical response capabilities are preserved in a seismic event.

In particular: the mezzanine at FS 11 requires supplementary bracing; FS 13 needs bracing between walls and between the walls and the roof; FS 16 needs positive attachment between the roof and the hose tower; and FS 18 needs a new foundation on the north end and improved bracing to K-braces. Other measures generally needed at most stations are lateral bracing for fall-prone equipment, adding tension straps around windows, and adding hold-down anchors to shear walls.

Additional investigation is needed to confirm liquefaction risk and the presence of structural reinforcement in masonry walls.

IMAGE 16. FS 16 Shop

KEY CHALLENGES

- Seismic vulnerability
- FS 11's lack of capacity
- Insufficient storage
- Insufficient indoor fleet parking
- Undersized and under-equipped fleet maintenance shop
- Station security system-wide
- Need to fund recurring facility maintenance or replacement

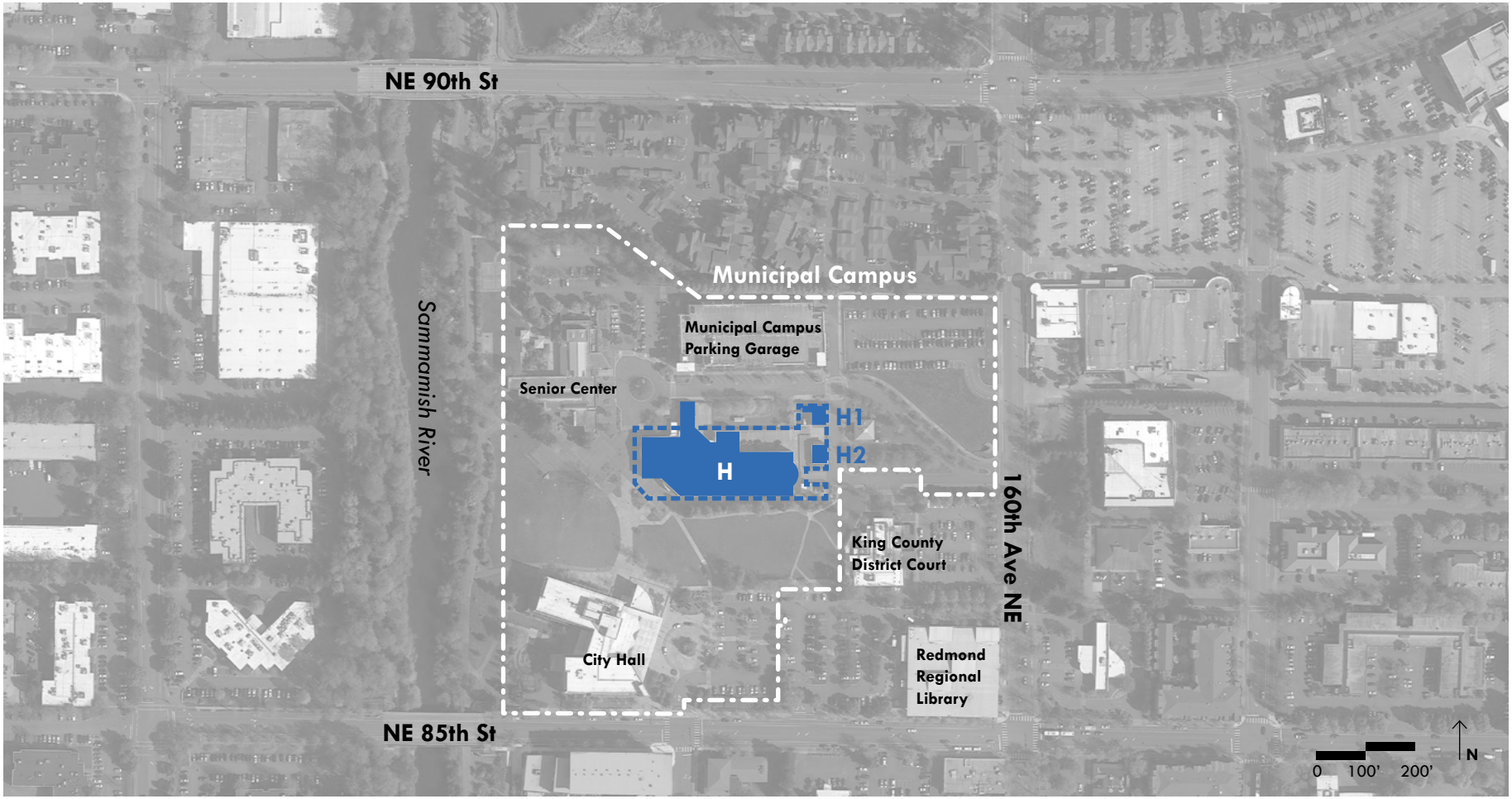


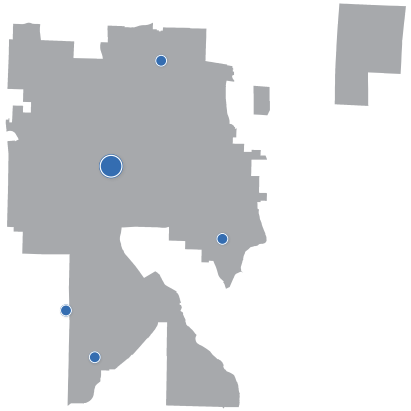
FIGURE 12. Police Facilities Area Plan

POLICE FACILITIES STATISTICS SUMMARY

Map Key	Facility	# of Employees	Bldg Area (GSF)	Age (Years)	General Condition	Facility Replacement Value	Observed Deficiencies	20-Year Predicted Renewal Costs
H	**Public Safety Building**	**130**	**94,975**	**26**	**Good**	**$53,803,000**	**$3,000,791**	**$15,938,228**
H1	**Police Garage North**	**0**	**1,250**	**8**	**Excellent**	**$376,188**	**$9,360**	**$7,776**
H2	**Police Garage South**	**0**	**1,000**	**8**	**Excellent**	**$300,950**	**$4,680**	**$6,220**
	Municipal Campus Site Infrastructure						***$125,511***	***$3,049,083***

Note: The Municipal Campus Site Infrastructure costs shown here are shared by City Hall, the Municipal Parking Garage, the Public Safety Building, and the Senior Center.

FIGURE 13. Police Facilities Statistics Summary



Police Facilities

The Redmond Police Department is responsible for law enforcement, emergency response, and community engagement. In addition to crime prevention, crime investigation, and traffic patrols, the department fosters relationships with private sector security, businesses, schools, and residents. In addition to responding to 911 calls for law enforcement issues, the department's 911 dispatch center dispatches the Fire Department for fire and medical calls. The department responds to 500 calls each week.

The Police Department is based out of the Public Safety Building (PSB) on the Municipal Campus, near City Hall, the Senior Center, and the King County District Court. It is mostly office space but contains a variety of other specialized functions, including the city's 911 dispatch center, the city's data center, suspect holding and interview areas, an armory, evidence storage and processing labs, and locker rooms. The lowest level hosts a firing range, parking for police personnel and fleet vehicles, and vehicle and large evidence storage.

The department also has one workstation on the Microsoft campus and work stations at three fire stations which are not accessible to the public. The Department encourages officers to work with their laptops off-site or in their vehicles.

FAST FACTS

Address
8701 160TH AVE NE

# of Facilities
1 ***(Includes Police Garage additions. Four workstations are hosted at other facilities.)***

Year Built
1990

Total Building Area
97,225

Number of Employees
130

Average Condition of Facilities
GOOD

Total Observed Deficiencies
$3.0M[1]

20-year Predicted Renewal Costs
$16.0M[1]

Major Deficiencies
MECHANICAL, ELECTRICAL, AND PLUMBING REPAIR AND UPGRADES
UNDERSIZED LOCKER AREA
UNDERSIZED PERSONNEL PARKING

1 Excludes Site Infrastructure Costs

IMAGE 17. Public Safety Building (Under Renovation)

IMAGE 18. North Parking Garage Addition, Facing East

IMAGE 19. South Parking Garage Addition, Facing East

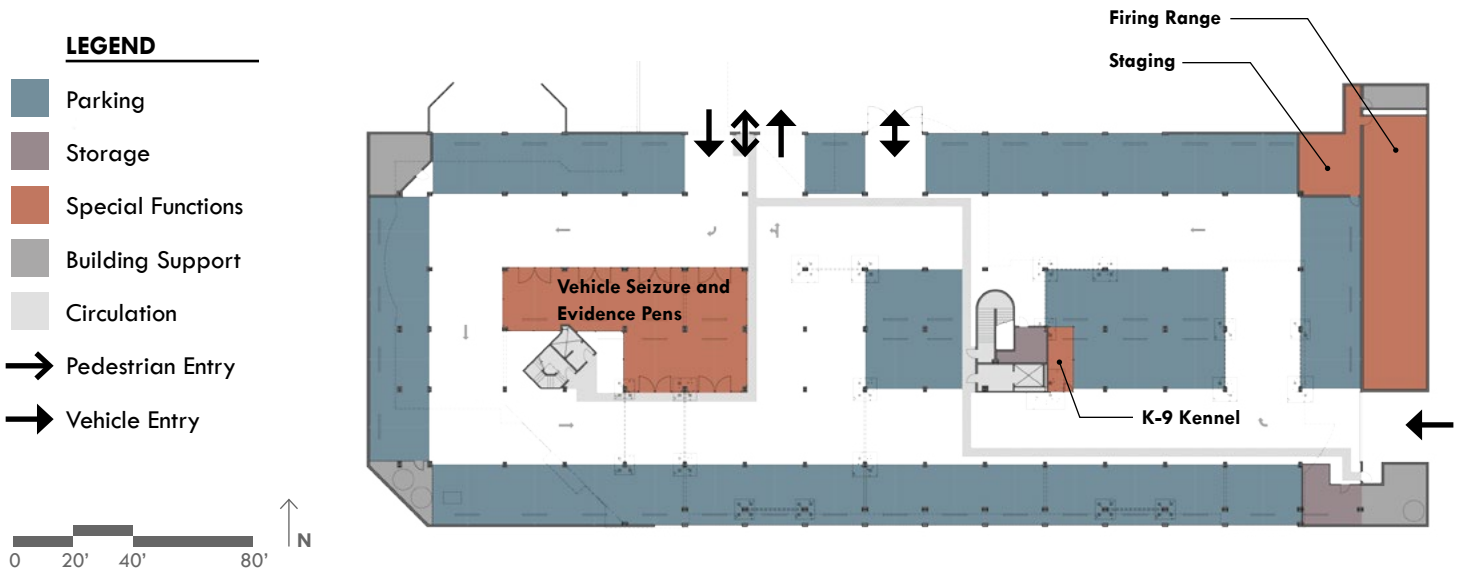


FIGURE 14. Public Safety Building Garage Plan

Facilities Overview & Program

The PSB is located on the Municipal Campus and consists of a two-story, steel-framed building on top of a single-story parking garage and underground firing range (FIGURE 14). There are also several small support structures–including the Police Garage North and Police Garage South additions–associated with the facility. These contain mechanical equipment, backup generators, and specialized vehicle parking. When the PSB was built, it was designed to accommodate some City Hall functions. The building contains some unique spaces as a result, including an auditorium formerly used as Council Chambers.

Major facility condition issues include seismic vulnerability; water intrusion; and poorly functioning mechanical, electrical, and plumbing systems. Other significant issues include insufficient personnel parking and lockers. Occupant survey respondents are dissatisfied with the PSB's janitorial service and the availability of secure employee parking.

A renovation project is currently underway to upgrade the PSB to an Immediate Occupancy seismic performance level, address envelope failures, and improve employee lockers. A subsequent phase of work is planned to address garage flooding and upgrade building systems.

PROGRAM

The PSB consists primarily of office-like spaces, with some distinguishing features which reflect the specialized functional and security needs of police operations. Floors 1 and 2 are diagrammed on pages 36 and 38.

The entry lobby is public and includes a customer service counter associated with a suite of spaces that have some level of public contact, including interview rooms and the records department.

Open-plan workstations and private offices are required by various building users, including the City Prosecutor, traffic officers, public safety officers, off-duty patrol detectives, the Computer Forensics Lab and administrative staff. The police department's volunteer program is housed in a suite of offices and storage spaces that open directly off the entry lobby. The former Council Chambers has A/V equipment and is now used for officer training.

Officer support spaces include lockers, restrooms with showers, and a fitness room.

The City is considering the relocation of 911 Dispatch and the Emergency Coordination Center to Fire Station 17 in order to locate those critical functions outside of the liquefaction zone.

The PSB has a few tenants in addition to the Police Department. The City of Redmond's servers are also at the PSB. These include the Eastside Public Safety Communications Agency (EPSCA), an emergency regional radio access provider, and Bellevue's backup 911 dispatch. Other specialized functions are described more fully at right.

SPECIALIZED FUNCTIONS

EVIDENCE PROCESSING AND STORAGE
Includes small labs for evidence processing, secure evidence storage, and secure seized vehicle and evidence vehicle storage (located in garage).

SALLYPORT
Secure and covered entry for personnel and evidence transfer between vehicles and the building.

BOOKING
Secure holding area for personnel in custody and includes cells equipped with toilets. The sallyport opens up directly into Booking.

INTERVIEW ROOMS
Small meeting rooms located on both the ground and second floor of the PSB. The second floor interview room captures audio and video recording on a 24-hour basis.

REDMOND SERVER ROOM
Central server room for all City of Redmond computer functions.

911 DISPATCH
Call center for staff fielding 911 calls. This space includes anti-static carpet and a raised access floor.

EMERGENCY COORDINATION CENTER
Emergency headquarters for the City of Redmond.

FIGURE 15. Public Safety Building First Floor Plan

LEGEND

- Office Space
- Personnel Support Space
- Storage
- Special Functions
- Building Support
- Circulation
- Pedestrian Entry
- Vehicle Entry

0 10' 20' 40'

N

FIGURE 16. Public Safety Building Second Floor Plan

LEGEND

- Office Space
- Storage
- Special Functions
- Building Support
- Circulation

0 10' 20' 40'

N

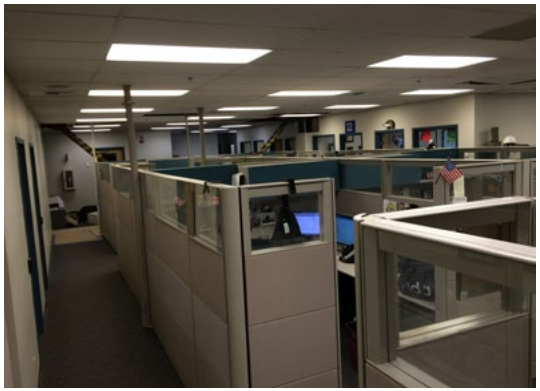


IMAGE 20. Oversized Cubicles

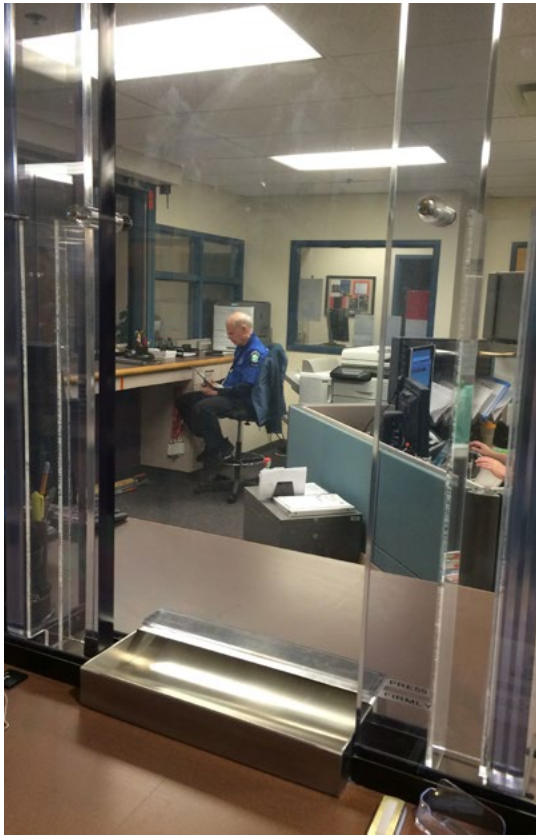


IMAGE 21. Plexiglas Configuration at Customer Service Desk Impedes Communication

Issues Summary

ONGOING EFFORTS

A renovation of the PSB–currently under construction–and a future phase of work have been scoped to address a number of the issues identified in this section.

SEISMIC

The PSB is located in the Downtown liquefaction zone but is not currently designed to maintain operability after a seismic event. The current renovation includes a seismic retrofit which will elevate the building's seismic performance level to Immediate Occupancy.

BUILDING ENVELOPE & DRAINAGE

The PSB's tile cladding, roof flashing, openings, and gutters have deficiencies. Building drainage issues result in significant water intrusion into the garage during heavy rain. The current renovation effort repairs or replaces failing tile, windows and storefront systems, and roof assemblies. Flooding in the garage with be addresses in a future project.

BUILDING SYSTEMS

The Public Safety Building has been incrementally renovated such that the reconfigured spaces are poorly served by the building's HVAC systems. The coordination and documentation of modifications made to mechanical and electrical systems during preceding renovations is incomplete, increasing the risk of maintenance projects interrupting power to critical functions, such as 911 dispatch or the City of Redmond's data center. Occupant survey respondents where highly dissatisfied with the building's thermal comfort. A future phase of renovation to address HVAC and electrical issues is tentatively scheduled for 2021 (to be verified against forthcoming 6-year CIP). New fire suppression equipment is indicated on construction document excerpts provided to consultant; scope/ extent of which to be verified.

PARKING

Officer shifts overlap to ensure continuous coverage, straining parking capacity during shift changes. The PSB cannot accommodate the Mobile Command post, an emergency response vehicle which is currently stored at FS 18. This storage location is roughly six miles from the PSB, an impractical distance given the need for timeliness in emergency response situations. Seized vehicle storage needs are likely to exceed existing capacity in the future.

SIZE & CONFIGURATION

The size and configuration of Redmond's Police facilities are generally adequate to support present-day functions. Interview rooms, prisoner areas, and evidence storage all work well. While some spaces appear to be approaching maximum utilization, some additional capacity could be obtained through furniture reconfiguration.
The current renovation includes some tenant improvements to the Records department, 911 Dispatch, City Prosecutor's office, and lockers and restrooms, as well as some accessibility improvements.

PUBLIC INTERFACE

The area dedicated to customer service could be improved to be more customer-friendly. The public counter at the main lobby impedes customer service due to the thickness and configuration of Plexiglas separating public and private spaces.

NEW FUNCTIONS

Redmond will be joining the regional SWAT team. The Police department anticipates increased collaboration with other municipalities for drug and property crime investigations. Facilities implications of this collaboration, if any, are unknown. Over time, Redmond and adjacent municipalities have discussed the possibility of creating a centralized regional dispatch, potentially located at the PSB.

GROWTH

The Police Department anticipates the need to expand their operations due to population growth and the arrival of SoundTransit light rail in 2023. The Department projects adding thirteen more officers Citywide by 2018 and is considering increasing their presence in Overlake.

KEY CHALLENGES

- Seismic retrofit, building envelope repairs, and tenant improvements currently under construction
- Future phase of renovation scheduled to address HVAC and electrical deficiencies
- Potential future need for a storefront in Overlake
- ECC and 911 dispatch may be relocated to FS 17 in the long term
- Mobile Command Post is not stored in an easily accessed location
- Personnel parking is inadequate

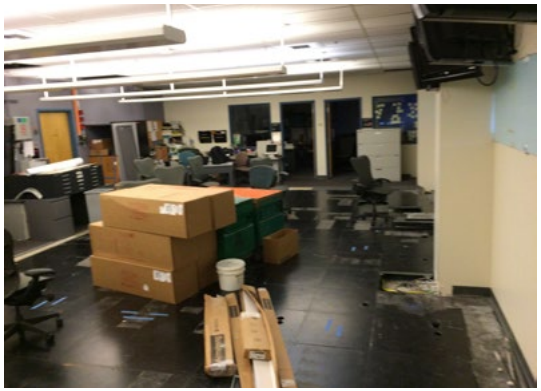


IMAGE 22. 911 Dispatch Space During Ongoing Renovations

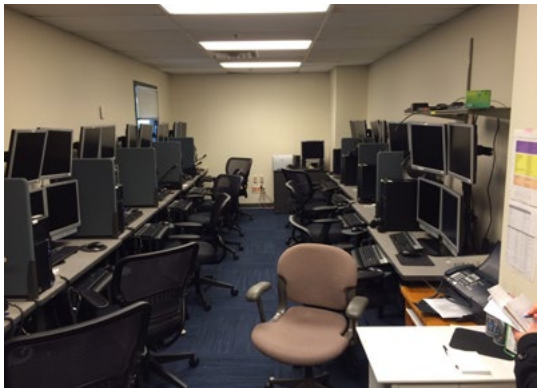


IMAGE 23. NORCOM Bellevue Backup 911 Dispatch

IMAGE 24. Officer Workstations

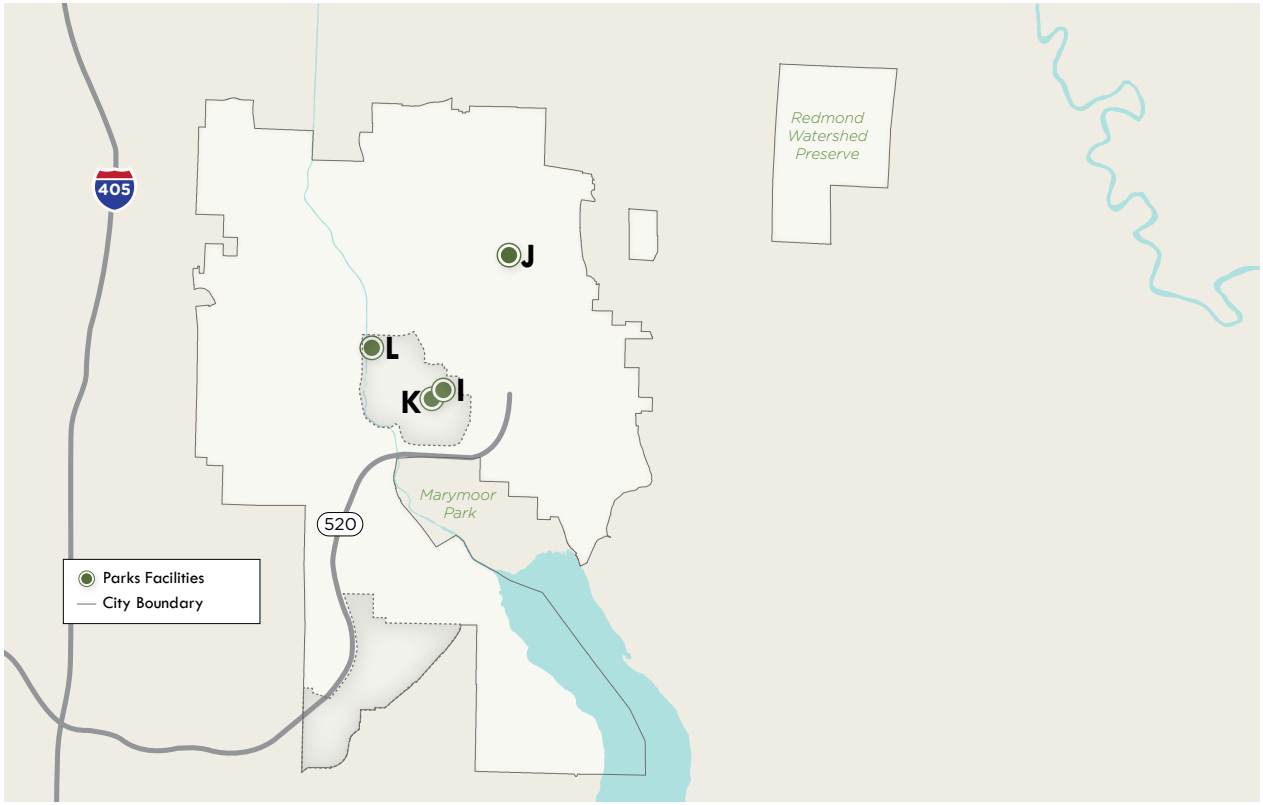


FIGURE 17. Parks Recreation Facilities Map

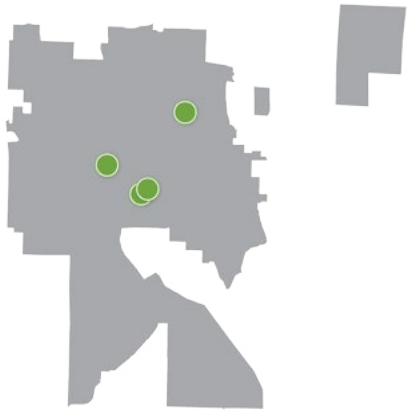
PARKS RECREATION FACILITIES STATISTICS SUMMARY

Map Key	Facility	# of Employees	Site Area (Acres)	Bldg Area (GSF)	Age (Years)	General Condition	Facility Replacement Value	Observed Deficiencies	20-Year Predicted Renewal Costs
I	**Old Redmond Schoolhouse Community Center**	**23**	**2.85**	**41,700**	**94**	**Fair**	**$18,433,000**	**$2,932,352**	**$8,660,476**
J	**Redmond Pool**	**0**	**3.67**	**12,554**	**46**	**Fair**	**$6,805,000**	**$3,146,709**	**$3,648,569**
K	**Old Fire House Teen Center**	**1**	**0.92**	**8,600**	**64**	**Fair**	**$4,144,000**	**$512,802**	**$2,111,796**
L	**Senior Center**	**4**	**—**	**22,000**	**26**	**Fair**	**$9,725,000**	**$1,463,986**	**$3,847,195**
	Municipal Campus Site Infrastructure							***$125,511***	***$3,049,083***

Note: Deferred Maintenance and Predicted Renewal costs shown here include costs for site infrastructure, with the exception of the Senior Center, which shares the Municipal Campus Site Infrastructure costs shown above with City Hall, the Municipal Parking Garage, and the Public Safety Building.

FIGURE 18. Parks Recreation Facilities Statistics Summary

Parks Recreation Facilities



In keeping with the City's goal for making Redmond a place where people want to live, work, and play, the Parks and Recreation Department provides places for residents and employees to learn, explore, and socialize.

Looking forward to 2030, the Comprehensive Plan's chapter on Parks, Arts, Recreation, Culture, and Conservation envisions that "...indoor recreation facilities are vibrant gathering places where recreation and cultural events attract a wide range of ages and cultures." The Plan also recognizes that Redmond's outstanding visual and performing arts programs attract a wide range of people, and that recreation facilities are integral to furthering these efforts. Several citizen advisory committees provide continued guidance on the development and programming of recreation facilities.

The recreation division's mission is to be a leader in providing innovative recreation services to enhance quality of life in Redmond. The division uses four public facilities for operating cultural, athletic, and educational programming. The facilities are used for a variety of scheduled and unscheduled uses.

The **Old Redmond Schoolhouse Community Center (ORSCC)** is located near the core of Downtown Redmond and is leased from the Lake Washington School District. Originally a high school, the building now hosts a wide variety of cultural, artistic, athletic, and educational programming. It also houses the recreation division's administrative offices.

The **Redmond Pool** is at City-owned Hartman Park, located within the Education Hill neighborhood. The pool is used for both recreational and competitive swimming.

The **Teen Center**, a converted fire station, is located Downtown near the ORSCC. The facility focuses on programming for teens, such as concerts, gaming, art, and various computer-based activities.

The **Senior Center** is located on the City's Municipal Campus adjacent to City Hall. The facility is a gathering place for senior citizens and offers a variety of activities for older residents, such as reading, gaming, dancing, and arts and crafts.

FAST FACTS

of Facilities
4

Total Building Area
84,854 SF

Number of Employees
28

Oldest Facility
TEEN CENTER (64 YEARS)

Newest Facility
SENIOR CENTER (26 YEARS)

Average Condition of Facilities
FAIR

Observed Deficiencies
$7.9M[1]

20-year Predicted Renewal Costs
$16.0M[1]

Highest Priority Projects
REDMOND POOL LINER, ROOF, AND MECHANICAL SYSTEMS

1 Excludes Site Infrastructure Costs

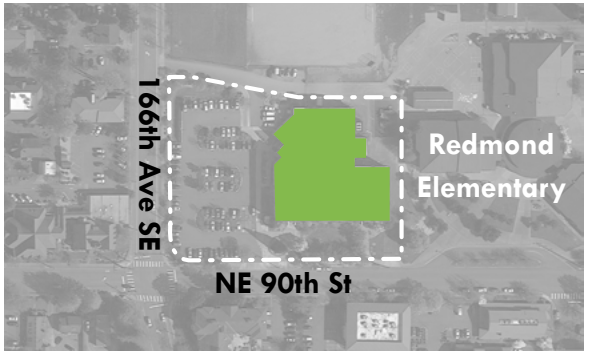


FIGURE 20. Old Redmond Schoolhouse Community Center Context

FIGURE 19. Old Redmond Schoolhouse Community Center Floor Plans

Overview & Program

OLD REDMOND SCHOOLHOUSE COMMUNITY CENTER (ORSCC)

The ORSCC is in Downtown Redmond and leased from the Lake Washington School District. The building was originally a high school and is not purpose-built for its current use. The structure is brick and concrete walls. Most of the roof is wood deck; the gym roof is steel purlins.

In addition, the City is at risk of losing their lease on the facility, which is described more in the issues summary. If the City remains a tenant, major issues include lack of air conditioning for most spaces and outdated mechanical systems. The 2016 Occupant Survey found occupants are dissatisfied with the building. Issues include thermal comfort, access to exercise facilities, access to lockers and showers, and security.

Address	**16600 NE 80 ST**
Year Built	**1922**
Year Last Renovated	**1980**
Building Area	**41,700 SF**
Site Area	**2.85AC**
Neighborhood	**DOWNTOWN**
Building Condition	**FAIR**
Observed Deficiencies	**$2,932,532**
20-year Predicted Renewal Costs	**$7,885,682**
# of Employees	**23**

Major Deficiencies

HVAC SYSTEMS OUTDATED AND INADEQUATE
SPACES NOT CONFIGURED FOR CURRENT USES

IMAGE 25. Old Redmond Schoolhouse Community Center Main Entry

IMAGE 26. Old Redmond Schoolhouse Community Center Ceramics Classroom

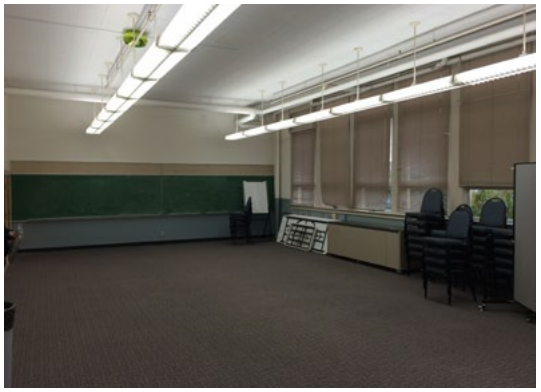


IMAGE 27. Old Redmond Schoolhouse Community Center Classroom

PROGRAM

The facility is used for a variety of cultural, artistic, fitness, and educational programming. Along with the recreation division's administrative offices, it hosts the City's traffic camera data center.

The facility's public entry has service counter for program enrollment services. This area fronts the office space that accommodates recreation division staff. A commercial kitchen and a large assembly space with an elevated stage can be rented by groups for large events. The building also has a heavily-used gymnasium and dance studio that support a variety of activities, including basketball, volleyball, yoga, aerobics, and martial arts classes. The facility also has a ceramics classroom with a kiln.

A number of classrooms are used by short- and long-term subtenants, including a school, childcare, and community groups. Long-term subtenants include the Redmond Historical Society.

The building is adapted from its original use as a high school. Although it houses the recreation division's various programs, at nearly 100 years old it is inefficient to run and maintain and some functions do not fit well in their designated spaces. If the City retains the facility, the major maintenance issue that needs to be addressed is a full renovation of the mechanical systems to provide higher efficiency and comfort.

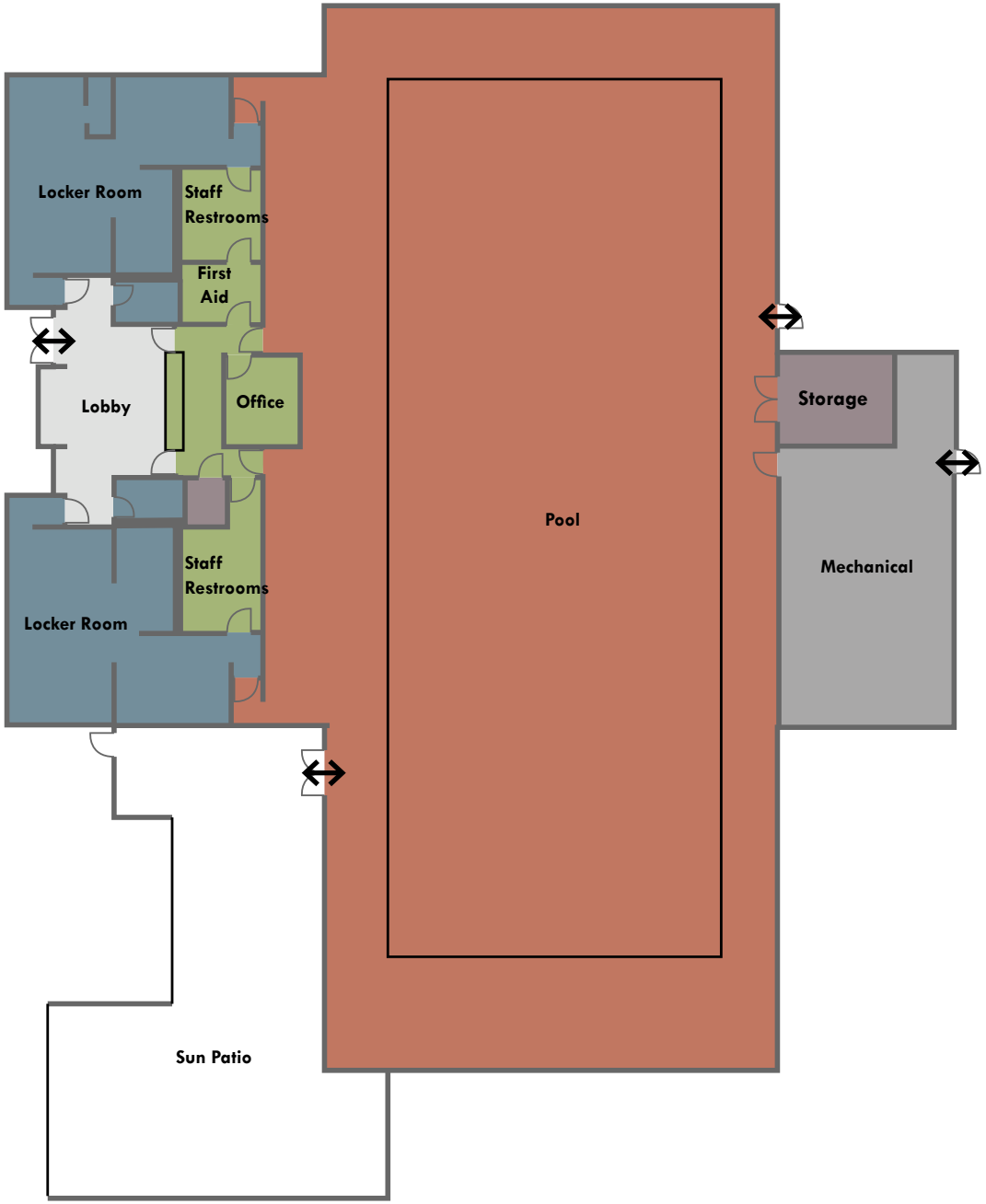


FIGURE 21. Redmond Pool Floor Plan

FIGURE 22. Redmond Pool Site Context

LEGEND

- Special Functions
- Office Space
- Locker Rooms
- Storage
- Building Support
- Circulation
- Pedestrian Entry

REDMOND POOL

The pool is located in the Education Hill neighborhood and is within the city-owned Hartman Park. The facility is operated by a private contractor. The structure is concrete frame and hollow brick infill. The roof is pre-cast concrete.

Major issues include unreliable mechanical systems, a failing pool liner, and inadequate space and pool configuration for current users. The 2016 Occupant Survey had no responses from this location.

PROGRAM

The facility is used for both recreational and competitive swimming. The building has deep and shallow pools, locker rooms, and office space.

Address	**17535 NE 104 ST**
Year Built	**1970**
Year Last Renovated	**1996**
Building Area	**12,554 SF**
Site Area	**3.67 AC**
Neighborhood	**EDUCATION HILL**
Building Condition	**FAIR**
Observed Deficiencies	**$3,146,709**
20-year Predicted Renewal Costs	**$3,648,569**
# of Employees	**0 (PRIVATELY MANAGED)**

Major Deficiencies

FAILING POOL MECHANICAL SYSTEMS AND LINER
POSSIBLE STRUCTURAL SEISMIC RISK
LACK OF FIRE SPRINKLER SYSTEM
POOL CONFIGURATION FOR CURRENT USES

IMAGE 28. Redmond Pool Program Bulletin Board in the Lobby

IMAGE 29. Redmond Pool Forward Thrust Logo Outside the Main Entry

The lobby has a reception desk and doubles as a waiting area for guests and parents. Adjacent to the lobby are a manager's office, with windows that overlook the pool, and a first aid room. Locker rooms with restrooms and showers are accessible through both the lobby and the pool.

The pool itself is divided into deep and shallow ends. There are diving boards and lanes for competitive swimming. Bleachers line the west side of the pool and there is a walkway around the pool perimeter.

A utility room on the east side of the building houses mechanical and chemical equipment and a filter tank. There is also a storage room for pool supplies.

The facility has significant issues and is undersized for current demand. The current pool configuration requires exclusive use by either competitive leagues or for recreation by the general public; a multi-use facility would be preferred so that the pool can accommodate multiple user groups at once.

In addition, the mechanical systems are unreliable and require frequent maintenance and resources for upkeep. The locker rooms are outdated and wood finish is peeling due to the high humidity of pool environments. The lobby area is also undersized for large groups.

Structurally, the pool liner and roofing system are failing. The City has an ongoing effort to repair these systems to allow them to operate for a few more years before ultimately closing the facility. This is discussed more in the issues summary.

FIGURE 23. Old Firehouse Teen Center Floor Plan

FIGURE 24. Old Firehouse Teen Center Site Context

OLD FIREHOUSE TEEN CENTER

The Teen Center is located in Downtown and was originally a combination City Hall, fire station, and police station. It is not purpose-built for its current function. The exterior walls are stucco with rock aggregate on concrete block and cement board siding. The roof is wood deck laid on wood and steel beams supported by steel columns.

Issues include a hose tower that is not seismically reinforced, uninsulated windows, and outdated mechanical, electrical, and plumbing (MEP) systems. However, the 2016 Occupant Survey found occupants are generally satisfied with the building. Occupant issues identified include thermal comfort, cleaning, and interior lighting.

Address	**16510 NE 79 ST**
Year Built	**1952**
Year Last Renovated	**2000**
Building Area	**8,600 SF**
Site Area	**0.92 AC**
Neighborhood	**DOWNTOWN**
Building Condition	**FAIR**
Observed Deficiencies	**$512,802**
20-year Predicted Renewal Costs	**$2,111,796**
# of Employees	**1**

Major Deficiencies

HOSE TOWER SEISMIC RISK
UNINSULATED ENVELOPE
OUTDATED AND PIECEMEAL MEP SYSTEMS
CONFIGURATION FOR PROGRAM AND SECURITY

PROGRAM

The Teen Center is used for educational and cultural programming for teenagers. The building's former apparatus bay has been repurposed as an assembly/performance space that, with a raised stage and sound booth, is well-used for concerts and other gatherings; the building has a capacity of 100-150 people.

A smaller "couch room" is also used for socializing. A game room has activities such as billiards, foosball, and darts. Connected to the game room is a recording studio that is available for live music performance and recording, though it receives little use. Other electronic tools are available for shared used in a computer room with desktop work stations.

The facility has a small office area near the main entry which hosts workstations for Teen Center employees. Throughout the facility are storage rooms for various types of supplies used to support the Teen Center's programming. A small kitchen is used both for cooking classes and food preparation for events. Outdoors there is a outdoor basketball court and outdoor seating screened by a privacy fence.

The facility is adapted from a different use than it was designed for. Though heavily used by teens who enjoy it as a "third place," it is challenging to operate and maintain security due to a lack of circulation space and its multitude of small rooms. The hose tower needs to be seismically reinforced or demolished. MEP systems and glazing are aging and energy inefficient. The building's structure could potentially accommodate a major renovation, but its configuration limits opportunities to create a more open plan.

The builing is located in an urban residential area and may become incompatible with surrounding uses as the neighborhood develops. A 2015 report recommended relocation. While not landmarked, the structure and site have historical significance; a proposal to remove the structure may cause community concern.

IMAGE 30. Old Firehouse Teen Center Event Poster Wall

IMAGE 31. Old Firehouse Teen Center Couch Room

IMAGE 32. Old Firehouse Teen Center Game Room

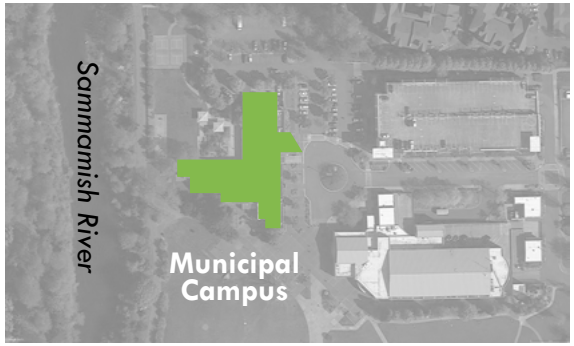


FIGURE 26. Senior Center Site Context

FIGURE 25. Senior Center Floor Plan

SENIOR CENTER

The Senior Center is located in Downtown Redmond on the Municipal Campus and adjacent to City Hall. Its most significant issue is its failing exterior wall systems. The building has dryvit exterior walls and a wood frame roof.

Issues include chronic weather and thermal issues with the building roof and exterior walls. However, the 2016 Occupant Survey found occupants are generally satisfied with this facility. Occupant issues include quality of cleaning, access to exercise facilities and showers, thermal comfort, size and configuration of storage, and the appearance of common areas.

Address	**8701 160 AVE NE**
Year Built	**1990**
Building Area	**22,000 SF**
Site Area	**0.92 AC**
Neighborhood	**DOWNTOWN**
Building Condition	**FAIR**
Observed Deficiencies	**$1,463,986**
20-year Predicted Renewal Costs	**$3,847,195**
# of Employees	**4**

Major Deficiencies

WEATHER AND THERMAL ENVELOPE
MEP SYSTEMS AT END OF LIFE
SOME SPACES ARE UNDERUTILIZED

IMAGE 33. Senior Center Main Entrance

IMAGE 34. Senior Center Public Lobby With Reception Desk

IMAGE 35. Senior Center Classroom

PROGRAM

The Senior Center is day-use facility that provides fitness, educational, and cultural programming for residents over the age of 50. The public lobby has reception functions and connects to an open area with seating and tables. There is a small coffee bar and semi-enclosed gift shop that sells local crafts.

The social hall, available for rent to the public, has a stage and is used for activities like exercise classes, dancing, bridge tournaments, live music, and theatre performances. It is adjacent to a commercial kitchen. The card room and fireplace lounge are available for small events like lectures and video gaming.

Classrooms host a variety of arts classes, including driftwood sculpture and needlework. There is a dedicated wet craft room for sculpture work and a dry crafts room that doubles as a music practice room. A small library has several computer workstations. As user tastes have evolved, some areas have become underutilized, such as the greenhouse, billiards room, and library.

Office and administrative spaces near the lobby house Senior Center staff and the large number of citizen volunteers. Storage spaces are located throughout the facility.

The building is heavily used and enjoyed by visitors, but issues with the roof and wall systems will require significant repair. Mechanical, electrical, and plumbing systems are also approaching end of life. The City may plan an expansion of the facility in conjunction with a renovation. Suggested improvements from a 2015 report include removing the greenhouse, relocating the reception desk to the main entry, building over the patio, and renovating the coffee bar into a larger cafe.

Issues Summary

ORSCC

Parks' lease at the ORSCC is expected to be terminated and use of the ORSCC returned to the Lake Washington School District, pending a bond vote scheduled for April 2016. Should Parks retain their lease of the ORSCC, the building is scheduled to have boilers replaced and asbestos abatement in the boiler room conducted within the next five years. Maintenance needs will persist, and the space is not ideally suited to support its current uses.

REDMOND POOL

The pool has numerous deficiencies which have disproportionately drained City maintenance resources. A significant investment would be required to keep the pool operational in the long term. Council has approved limited funding for urgent repairs to maintain short-term operations and safety, but it is expected that the pool will need to permanently close within the next few years. It is very outdated and not ideally designed for either the competitive or recreational swimming it supports.

TEEN CENTER

The configuration of the Teen Center is not conducive to supervision, but the structure limits the feasibility of reconfiguration into an open plan. The downtown location and character of the facility seem to work well for its users. However, the facility may not be the highest and best use of valuable downtown property. In addition, future residential development near the facility may make the Teen Center uses (specifically night concerts) less compatible with the area.

SENIOR CENTER

The Senior Center is well-used and somewhat undersized. Building envelope and roof renovations and HVAC upgrades are planned for 2017-2019. Additional renovation work, including a small addition, are under consideration.

REDMOND COMMUNITY CENTER

A master plan for Redmond Recreation Buildings was completed in 2014. The master plan anticipates the closure of the Pool and combines ORSCC and Redmond Pool functions into a new community center, which may or may not also include the Teen Center. Additional site and massing studies for this new community center were conducted in 2014-2015. This project is currently on hold pending the work of a stakeholder committee and development of a funding plan.

REDMOND CULTURAL FACILITIES

A feasibility study was completed in January 2016 to evaluate needs and opportunities for the creation of new cultural facilities in Redmond. The study recommended locating "a state of the art multipurpose Cultural Center with flexible performance, exhibition, and arts/education space" in downtown Redmond. The Public Works Capitol Improvement Plan identifies $200,000 for further project development.

KEY CHALLENGES

- Potential loss of ORSCC lease [to be updated pending bond vote]
- ORSCC mechanical systems deficiencies
- Pool's failing liner, mechanical, and roof systems and likely short-term closure
- Teen Center design and building security
- Redevelopment of area around Teen Center and potential incompatibility of land uses
- Senior Center envelope repairs and possible expansion
- Longevity of the Senior Center given its construction quality and age
- A need to fund major capitol investments in recreational facilities

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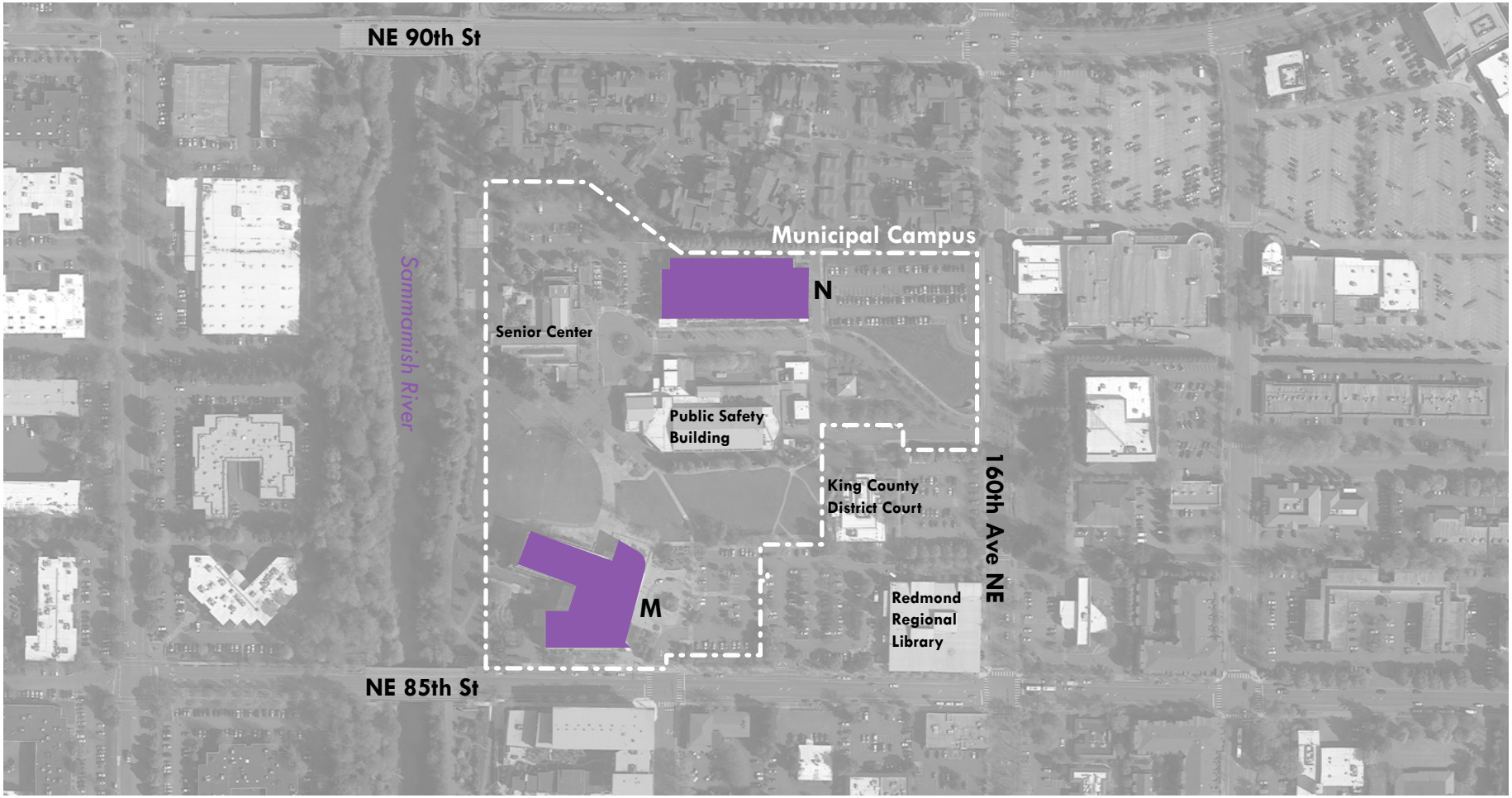


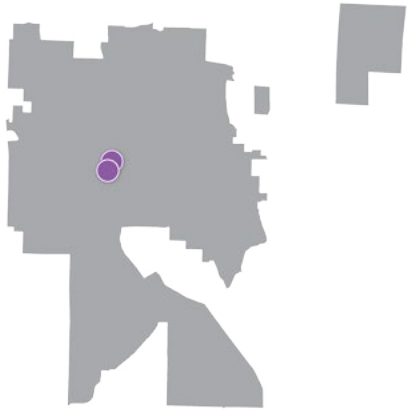
FIGURE 27. Administrative Facilities Context Map

ADMINISTRATIVE FACILITIES STATISTICS SUMMARY

Map Key	Facility	# of Employees	Bldg Area (GSF)	Age (Years)	General Condition	Facility Replacement Value	Observed Deficiencies	20-Year Predicted Renewal Costs
M	**City Hall**	**284**	**107,212**	**11**	**Excellent**	**$60,360,000**	**$145,530**	**$10,496,676**
N	**Municipal Campus Parking Garage**	**0**	**90,000**	**11**	**Good**	**$8,857,000**	**$256,764**	**$1,011,989**
	Municipal Campus Site Infrastructure						***$125,511***	***$3,049,083***

Note: The Municipal Campus Site Infrastructure costs shown here are shared by City Hall, the Municipal Parking Garage, the Public Safety Building, and the Senior Center.

FIGURE 28. Administrative Facilities Statistics Summary



Administrative Facilities

CITY HALL

City Hall is located in Downtown Redmond on the Municipal Campus and houses city government administrative functions, managing the City's daily and long term operations. It is home to four of the City's eight departments and also has some staff from the Fire, Parks, and Public Works Departments.

The Executive Department helps the City Council and Mayor provide leadership through policy, budgets, and programs. This department also contains the Communications Office, the Clerk's office, and the Prosecutor's Office.

The Human Resources Department is responsible for recruiting City employees, managing salaries and benefit programs, providing training, and overseeing labor relations.

The Finance and Information Services Department is responsible for managing the City budget, purchasing, inventory control, general accounting, utility billing, and information technology services.

The Planning and Community Development Department is responsible for development review, building inspection, code enforcement, long range land use and transportation planning, and human services.

MUNICIPAL PARKING GARAGE

This parking facility on the civic campus is used by City Hall, Senior Center, and Public Safety Building staff. The garage is a three-story structure. It is built of concrete columns and beams supporting concrete decks. The facility is unstaffed.

FAST FACTS

of Facilities
2

Total Building Area
197,212 SF

Site Area
11.48 AC

Number of Employees
284

Year Built
2005

Average Condition of Facilities
GOOD

Observed Deficiencies
$0.4M[1]

20-year Predicted Renewal Costs
$11.5M[1]

Highest Priority Project
CITY HALL SECURITY AND CUSTOMER SERVICE

1 Excludes Site Infrastructure Costs

First Floor

FIGURE 29. City Hall First Floor Plan

Overview

CITY HALL

The facility was built to suit and developed by Wright Runstad; ownership was transferred to the City in 2013. Wright Runstad still manages the facility and it is anticipated that the facility will transition to City management within the next few years.

The structure consists of steel frame and composite metal deck. The roof is a PVC system, fully adhered. The exterior walls are a combination of aluminum panels and metal studs with stone veneer. Interior finishings are modern and high quality.

Facility issues include thermal envelope leakage, HVAC efficiency, security, lack of public meeting spaces, and mixed utilization of office areas. The 2016 Occupant Survey found occupants are generally satisfied with this facility. Significant issues identified are building amenities, thermal comfort, size and configuration of storage, and noise.

PROGRAM

City Hall is used mostly for office and administrative functions. Public areas include several first floor meeting rooms, City Council chambers, and the customer service center on the second floor.

The first floor has a large lobby, the Bites Cafe breakroom, City Council chambers, and conference rooms. There is also a fitness room and locker rooms for staff, a loading dock, a mail room, and a reprographics shop. Other special functions include the customer service center on the second floor, used by residents for permitting, business licenses, and bill payment, and an A/V recording studio on the fourth floor for Redmond City Television.

Throughout the building are open-plan workstations with a few private offices; typical office support spaces include breakrooms/pantries, copy areas, file storage, and small meeting spaces. Some departments have additional requirements, such as large-format document storage and review, outreach materials storage, and field work personal protection equipment and tools. Large shared meeting spaces include reconfigurable furnishings and A/V equipment for City and community meeting purposes.

The efficiency of space use throughout the building varies: some spaces are at capacity while others are underutilized. The unstaffed lobby and second floor customer service center make wayfinding challenging for the public. Security incidents have prompted restrictions on public access to meeting rooms and work areas.

Address	**8701 160 AVE NE**
Year Built	**2005**
Building Area	**107,212 SF**
Site Area	**11.48 AC**
Neighborhood	**DOWNTOWN**
Building Condition	**EXCELLENT**
Observed Deficiencies	**$145,530**
20-year Predicted Renewal Costs	**$10,496,676**
# of Employees	**284**

Major Deficiencies

THERMAL ENVELOPE AND HVAC EFFICIENCY
BUILDING SECURITY AND MEETING ROOM ACCESS
CUSTOMER SERVICE
MIXED UTILIZATION OF OFFICE SPACE

CITY HALL USERS

Department	# of Employees
Executive	**16**
Human Resources	**15**
Finance and Information Services	**68**
Planning and Community Development	**76**
Public Works	**67**
Fire	**15**
Parks and Recreation	**23**
Service	**4**
Total	**284**

FIGURE 30. City Hall Users By Department

Second Floor

FIGURE 29. City Hall Second Floor Plan

FIGURE 29. City Hall Third Floor Plan

Fourth Floor

FIGURE 29. City Hall Fourth Floor Plan

Issues Summary

SPACE UTILIZATION

Some spaces in City Hall are at capacity, while others are underutilized or vacant. Department locations within the building do not necessarily reflect ideal adjacencies to support collaborative relationships. The uncertain future status of other City facilities, such as the Sammamish River Business Park and the ORSCC, has led to some requests for staff relocation to City Hall.

MEETING SPACES

There is a need for community meeting spaces; Council Chambers is too formal and not appropriately sized or furnished to host gatherings.

CUSTOMER SERVICE

The current configuration of public areas in City Hall is not providing the level of customer service desired by the City. Service counters for City business are located on the second floor in an undersized space, while the lobby is underutilized.

SECURITY

The City has recorded an increase in security incidents at City Hall. In response to security concerns, access control measures have been implemented in the building. These include restricting 3rd and 4th floor elevator access using key cards and requiring the use of visitor badges.

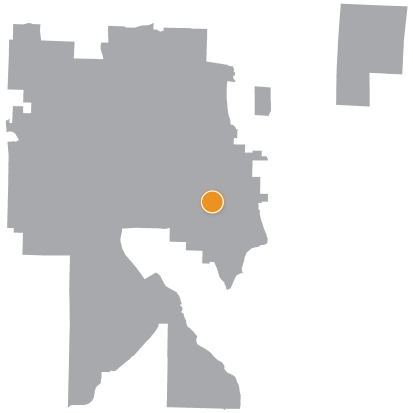
SPACE PLANNING

A 2013 pre-design study conducted by ARC Architects sought to address the space utilization, customer service, and security issues outlined here. ARC is currently identifying less impactful approaches to improving building security and customer service. This effort is focused on improving wayfinding in the lobby and identifying opportunities for additional meeting space on the ground floor.

KEY CHALLENGES

- Space utilization for existing and future users
- Balancing staff safety and security with customer interfaces and access to public meeting spaces
- Undersized and noisy customer service area

FIGURE 31. Maintenance Operations Center Campus - Context Map



Maintenance Facilities

Park Operations and Public Works facilities are located at the Maintenance Operations Center (MOC) and discussed collectively in this chapter.

The Public Works Department builds and maintains City infrastructure, manages City environmental services, and maintains most City vehicles and facilities. Most of the department's operations workgroups are located at the MOC campus, including the Water, Stormwater, Wastewater, Streets, and Fleets workgroups. The Facilities, Water Quality, and Traffic Signals workgroups currently occupy two buildings at the Sammamish River Business Park site. The Public Works Department's engineering and planning staff are located at City Hall.

The Sammamish River Business Park site will be vacated by the end of 2016; as such, it has not been studied for the purposes of this project. The ongoing Sammamish River Business Park Relocation & MOC Trinity Building Upgrade Feasibility Study is evaluating the relocation of that site's current occupants to the MOC campus.

The Park Operations group develops and maintains City parks and Parks facilities. They are based primarily at MOC Building 8; additional small maintenance and operations facilities located on Parks property elsewhere in the City are outside the scope of this project.

The MOC campus is located in the southeast sector of Redmond, near the terminus of SR 520, approximately fifteen minutes' driving time from the Municipal Campus. The site can be accessed at four places along NE 76th St. The eastern-most entrance and its drive aisle are shared with a neighboring property occupied by Genie Industries.

FAST FACTS

Address
18080 NE 76TH STREET

# of Facilities
14

Site Area
8.63 AC

Total Building Area
60,227 SF

Number of Year-Round Employees
PUBLIC WORKS: 63, PARKS: 30

Oldest Facility
PARKS BUILDING 8 (46 YEARS)[1]

Newest Facility
STREETS WORKGROUP MODULAR (18 YEARS)[1]

Average Condition of Facilities
FAIR[1]

Total Observed Deficiencies
$3.1M[1]

20-year Predicted Renewal Costs
$8.2M[1]

1 *Fast Facts facility condition data limited to facilities evaluated in the 2014 FCA. See FIGURE 33 for data by building.*

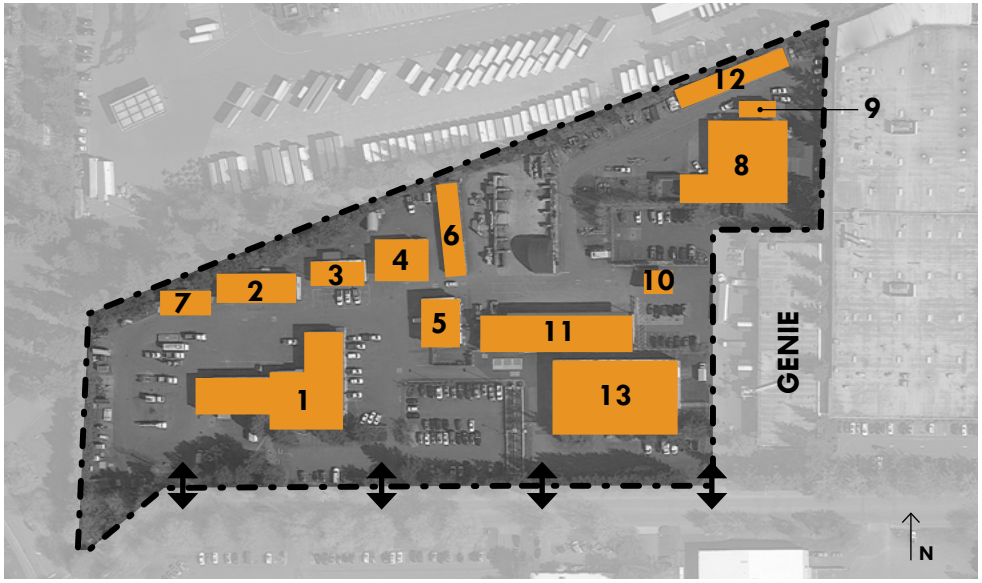


FIGURE 32. MOC Facilities Key Plan

The MOC campus contains over a dozen buildings and structures which support office, shop, and storage functions. All but three of the major buildings on site are occupied by Public Works. Public Works' primary building is Building 1, which includes administrative offices, the Public Works emergency operations center (EOC), crew support spaces, and the City's vehicle maintenance shop. Parks' primary building is Building 8, which includes administrative offices, crew support spaces, a wood shop, and a large, high-bay storage area.

MAINTENANCE FACILITIES STATISTICS SUMMARY

Map Key	Facility	Bldg Area (GSF)	Age (Years)	General Condition	Facility Replacement Value	Observed Deficiencies	20-Year Predicted Renewal Costs
1	Bldg 1 - Public Works MOC	11,700	39	Fair	$3,803,000	$1,123,969	$1,463,733
2	Bldg 2 - Storage	3,000					
3	Bldg 3 - Streets Workgroup Modular	1,850	18	Fair	$804,000	$133,725	$293,918
4	Bldg 4 - Water, Storm Storage	2,000					
5	Bldg 5 - Central Stores Warehouse	4,500	28	Fair	$1,251,000	$129,543	$317,553
6	Bldg 6 - Public Works Storage	2,400					
7	Bldg 7 - Equipment Shed	1,200					
8	Bldg 8 - Parks MOC	8,202	46	Fair	$2,691,000	$503,498	$942,012
9	Bldg 9 - Parks Storage	675					
10	Bldg 10 - Fuel Island and Canopy						
11	Bldg 11 - Decant Facility	3,500	18	Fair	$1,690,000	$85,658	$399,098
12	Bldg 12 - Parks Storage	3,000					
13	Trinity Building	18,200	35	Fair	$6,349,000	$660,180	$2,041,082
14	Salt and Sand Shed	1,200					
	Trinity Building Infrastructure					$166,997	$228,820
	MOC Site Infrastructure					$276,312	$2,481,381

FIGURE 33. Maintenance Facilities Statistics Summary

ZONING ANALYSIS SUMMARY

The Redmond Zoning Code (Redmond Municipal Code Title 21) governs the MOC site. The following regulations are determined to be most applicable to the MOC site for master planning purposes.

SITE INFORMATION

Site Address: 18080 NE 76th Street, Redmond, WA 98052

Total Area: Four parcels totaling 374, 763 SF (8.6 acres) as follows:

- # 2212950100 - 200,800 SF
- # 3469400010 - 83,587 SF
- # 3469400030 - 40,956 SF
- # 3469400040 - 49,420 SF

Zoning: Manufacturing Park (MP)

Land Use: Manufacturing and wholesale trade

HEIGHT AND BULK LIMITS

Base height limit for zone: 4 stories

Base Floor Area Ratio (FAR) limit for land use: 0.5

LANDSCAPING

Minimum landscaping area: 20 percent of site (1.72 acres)

Maximum impervious surface area: 80 percent of site (6.88 acres)

PARKING SPACES

Minimum: 2.0 spaces per 1,000 SF of gross floor area

Maximum: 3.0 spaces per 1,000 SF of gross floor area

SETBACK MINIMUMS

Neighboring properties are also zoned Manufacturing Park, allowing for reduced setback requirements as compared to setbacks required when neighboring properties are zoned residential:

- North: UPS warehouse
- West: Private access drive to UPS and 178th Place NE
- South: NE 76th Street and business park across the street
- East: Genie Industries

Minimum setbacks adjacent to nonresidential zones:

- Front and street: 15 feet
- Rear and side: 5 feet

Fences, landscaping, flagpoles, street furniture, transit shelters, and slope stability structures are permitted in setback areas; no other structures and no accessory structures are permitted in setback areas.

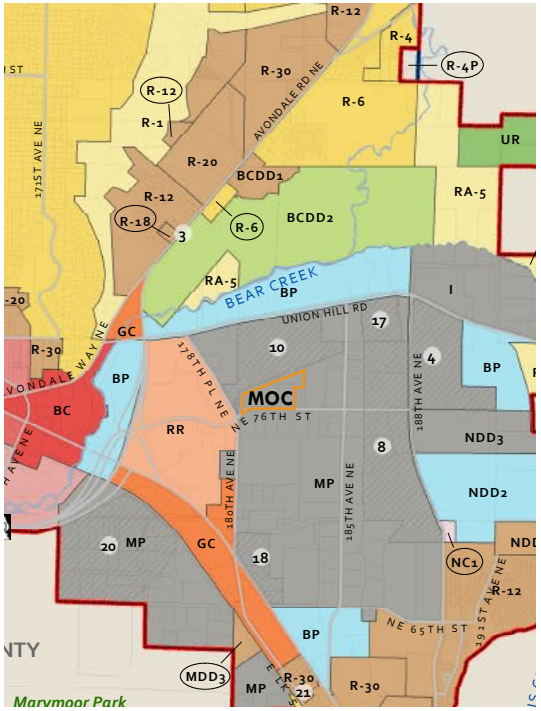


FIGURE 34. Southeast Redmond Zoning Map

Maintenance Workgroups

PUBLIC WORKS AT MOC

WATER
The Water workgroup maintains the infrastructure that generates and distributes drinking water to all buildings in the City. The workgroup has sixteen maintenance technicians and one supervisor. The workgroup's office and storage is based at Building 1, with additional specialized storage in Buildings 2 and 4.

STORMWATER
The Stormwater workgroup maintains the infrastructure that collects and conveys stormwater from private and public properties. The workgroup maintains over 300 miles of pipe and 20,000 catch basins with ten maintenance technicians and one supervisor. Specialized vehicles include vactor trucks and CCTV trucks. The workgroup's office and storage is based at Building 1.

WASTEWATER
The Wastewater workgroup maintains the infrastructure that collects liquid waste from all buildings in the City and distributes it to the King County wastewater treatment system. The workgroup maintains 220 miles of pipe and 8,000 manholes with ten maintenance technicians and one supervisor. Wastewater also manages vegetation around lift stations. Specialized vehicles include a source control truck, vactor truck, CCTV truck, and a utility van. The workgroup's office and storage is based at Building 1, with storage of contaminated gear in Building 2 above the pump shop.

STREETS
The Streets Workgroup maintains the paving, paint, signs, and landscaping of the City's public right-of-way. The workgroup has ten maintenance technicians and one supervisor. Specialized vehicles include snowplows and streetsweepers. The workgroup's office, storage, and sign-making facilities are based primarily at Building 3.

FLEETS
The Fleets workgroup maintains all City of Redmond vehicles, except for the Fire Department's vehicles. The workgroup has five maintenance technicians and one supervisor. The workgroup's office and storage is based at Building 1.

FACILITIES - WAREHOUSING
The Facilities workgroup maintains all of the City's buildings, with the exception of City Hall. The workgroup is based primarily at the Sammamish River Business Park (see page 67), but has one staff member responsible for Warehousing based at the MOC Central Stores Warehouse Building 5.

	# of Year-round Staff	# of Seasonal Staff[1]	# of Fleet	Buildings Used
Water	17	2	21	1, 2, 4
Stormwater	11	4	31	1, 4, 6
Wastewater	11	2	14	1, 2
Streets	11	6	33	3, 4, 7, TRINITY
Fleets	6	0	3	1, 2
Facilities - Warehousing	1	0	1	5

FIGURE 35. Public Works Workgroup Statistics

PARK OPERATIONS AT MOC

WATER MANAGEMENT & PREVENTATIVE MAINTENANCE

This group installs and maintains irrigation systems for Parks properties and conducts safety checks of play structures.

TURF MAINTENANCE & FACILITIES SUPPORT

Turf maintenance mows and maintains lawns at parks and municipal buildings. Facilities Support provides custodial and minor maintenance support to park facilities.

FACILITIES REPAIR

Facilities Repair conducts larger-scale maintenance and repair projects on structures located on Parks properties, including plazas, picnic shelters, restrooms, and bathhouses.

URBAN FORESTRY

This group maintains and protects trees in City parks and in the right-of-way, including the Redmond Watershed preserve. They additionally support and coordinate volunteer work parties on Parks properties.

HORTICULTURE

Horticulture manages landscaped areas in City Parks and right-of-ways.

COMMUNITY PARKS

Community Parks staff are dedicated to Redmond's three large community parks and provide full maintenance support to those facilities.

PUBLIC WORKS AT SAMMAMISH RIVER BUSINESS PARK

FACILITIES

The Facilities workgroup maintains all of the City's staffed buildings, with the exception of City Hall. The workgroup has seven staff members and one supervisor.

The Facilities workgroup has one staff member at the MOC Central Stores Warehouse Building 5, as well as some storage and office space at the MOC Trinity Building (see page 66).

WATER QUALITY

The Water Quality workgroup tests water for the Natural Resources division.

TRAFFIC SIGNALS

The Traffic Signals workgroup is a subset of the Traffic Engineering Safety and Operations division and maintains the City's electronic traffic signals and related network infrastructure.

The Traffic Signals workgroup has some storage at the MOC Trinity Building.

CONSERVATION CORPS

The Conservation Corps is a volunteer maintenance crew that supports Public Works in the removal of invasive plants, stream cleanup, and similar activities.

	# of Year-round Staff	# of Seasonal Staff	# of Fleet	Buildings Used
Turf Maintenance and Facilities Support	5	7	67	8, 9, 12
Urban Forestry	3	3		8, 9, 12
Horticulture	5	3		8, 9, 12
Facilities Repair	3	1		8, 9, 12
Water Management and Preventative Maintenance	4	3		8, 9, 12
Community Parks	4	10		8, 9, 12
Facilities	8	3	12	SAMMAMISH RIVER BUSINESS PARK (CURRENT) THESE GROUPS TO BE RELOCATED TO MOC IN 2016
Water Quality	5	2	1	
Traffic Signals	4	0	9	
Conservation Corps	*UNKNOWN*			

FIGURE 36. Park Operations and Sammamish River Business Park Workgroup Statistics

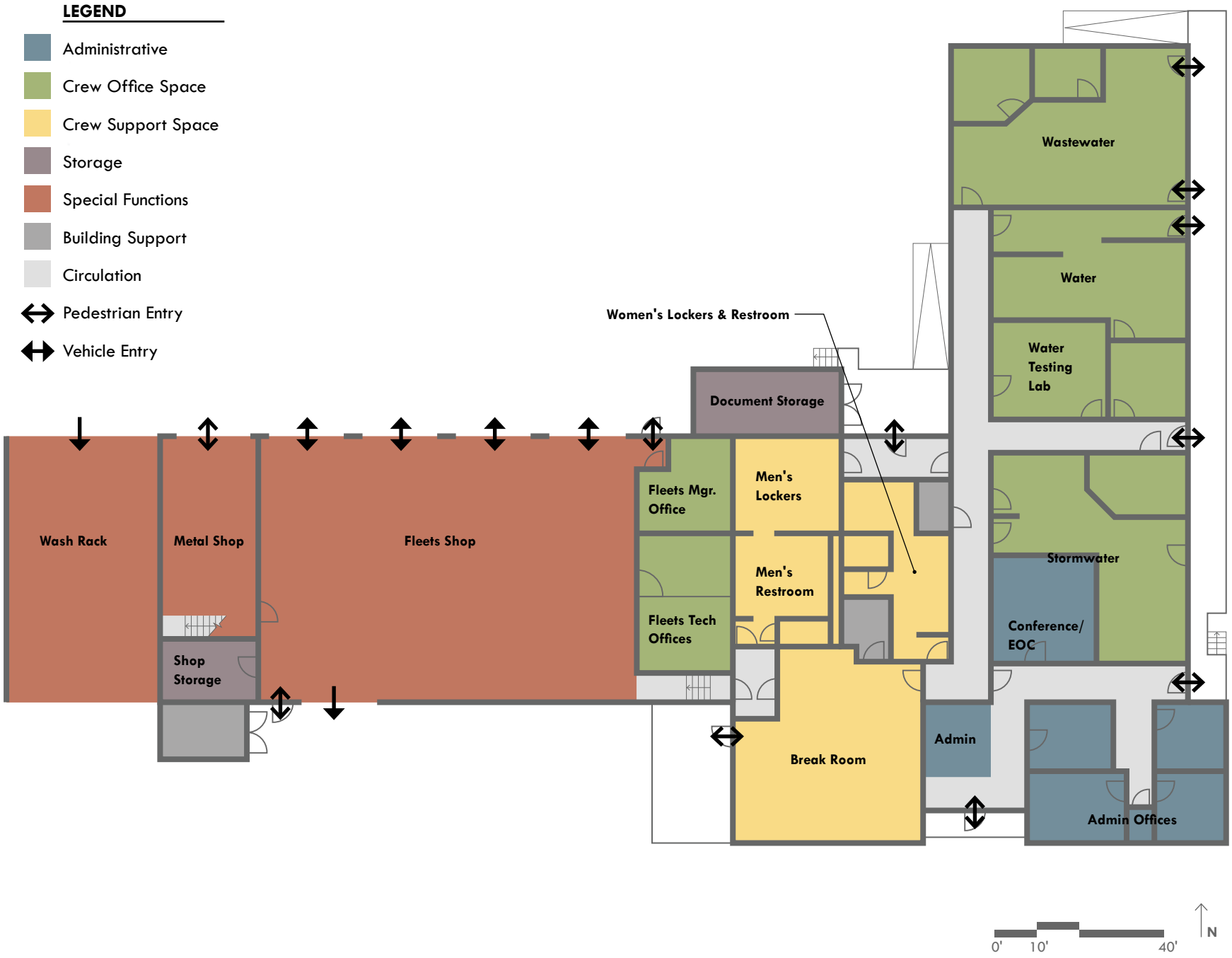


FIGURE 37. MOC Building 1 Floor Plans

Facilities Overview & Program

This section provides an overview of the facilities and site operations at the Maintenance Operations Center.

MAINTENANCE OPERATIONS CENTER BLDG 1

This single-story brick building is the primary Public Works Maintenance facility on the MOC campus. It hosts Maintenance administration, Fleets, Water, Wastewater, and Stormwater. Its backup generator is located at the Streets Building 3.

The building is undersized for its use and lacks adequate offices, dispatch, locker rooms, and meeting areas. The emergency operations center (EOC) is significantly undersized. Many building systems are near the end of their useful life.

PROGRAM

Each crew has a dedicated space with workstations. Showers, restrooms, lockers, and breakroom facilities are shared. Additional program elements include a conference room that is also used as an EOC and a small water quality lab. The Fleets maintenance shop and wash rack are also part of Building 1.

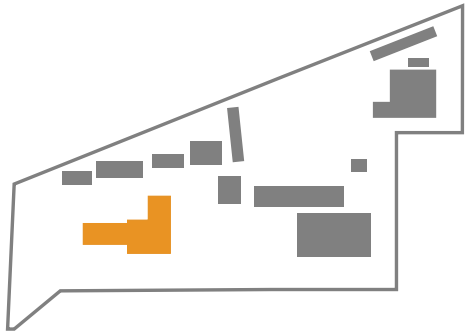
Year Built	**1977**
Last Renovated	**1998**
Building Area	**11,700 SF**
Building Condition	**FAIR**
Observed Deficiencies	**$1.1M**
20-year Predicted Renewal Costs	**$1.5M**
# of Employees	**51**

Major Deficiencies

MECHANICAL, ELECTRICAL, AND PLUMBING
LACK OF SPACE FOR ALL USERS
CONFERENCE & EOC

Users

MAINTENANCE ADMINISTRATION
FLEETS
WATER
WASTEWATER
STORMWATER



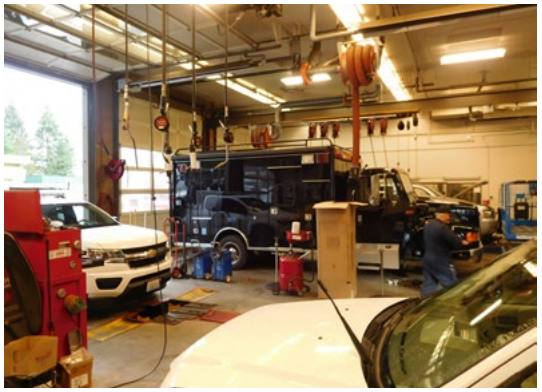


IMAGE 36. Fleets Maintenance Shop

IMAGE 37. Wastewater Crew Workstations

IMAGE 38. Conference Room / EOC

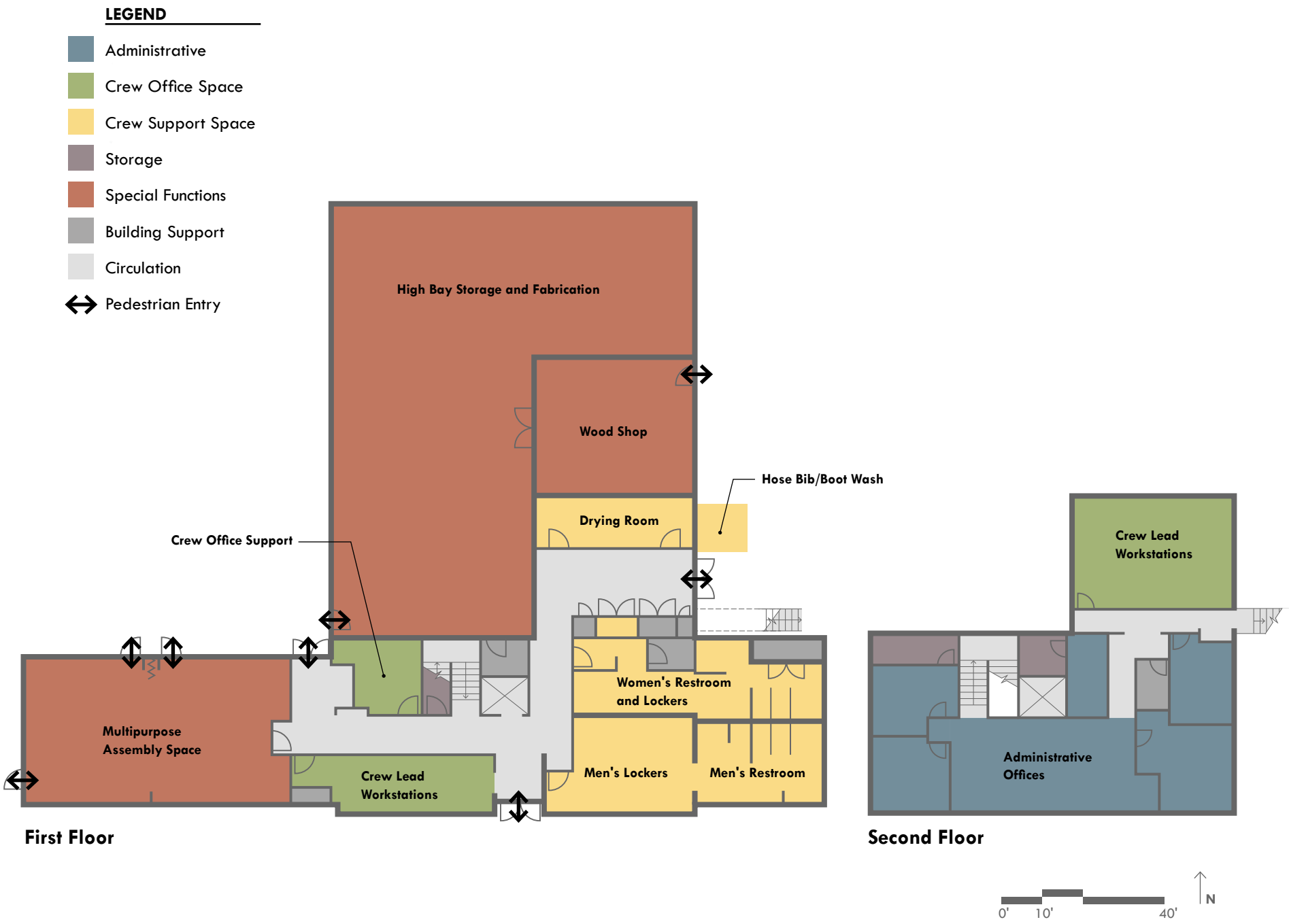


FIGURE 38. Park Operations Building 8 Floor Plans

PARK OPERATIONS BLDG 8

This two-story steel-framed building and nearby storage sheds support the Park Operations department, which manages and maintains Parks properties around the City.

Major issues include mechanical, electrical, and plumbing systems that are approaching end-of-life. Occupants are dissatisfied with their thermal comfort. Crew support facilities are undersized.

Program elements found in this building include administrative offices, crew support spaces, a wood shop, a multi-purpose assembly/break room, and a high-bay storage area. A recent renovation upgraded the locker rooms and administrative spaces.

Year Built	**1970**
Last Renovated	**1998**
Building Area	**8,202 SF**
Building Condition	**FAIR**
Observed Deficiencies	**$503K**
20-year Predicted Renewal Costs	**$942K**
# of Employees	**31**

Major Deficiencies

MECHANICAL, ELECTRICAL, AND PLUMBING
UNDERSIZED CREW SUPPORT SPACES
LACK OF CONFERENCE SPACES

Users

PARK OPERATIONS ADMINISTRATION
TURF MAINTENANCE & FACILITIES SUPPORT
URBAN FORESTRY
HORTICULTURE
FACILITIES REPAIR
WATER MANAGEMENT & PREVENTATIVE MAINTENANCE
COMMUNITY PARKS

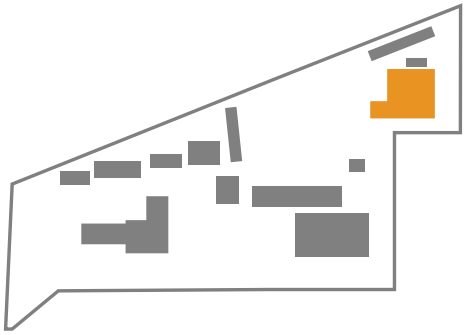


IMAGE 39. Multi-Purpose Assembly Room

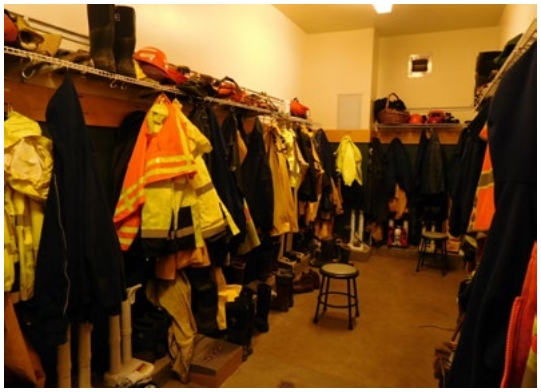


IMAGE 40. Drying Room

IMAGE 41. High-Bay Storage Area

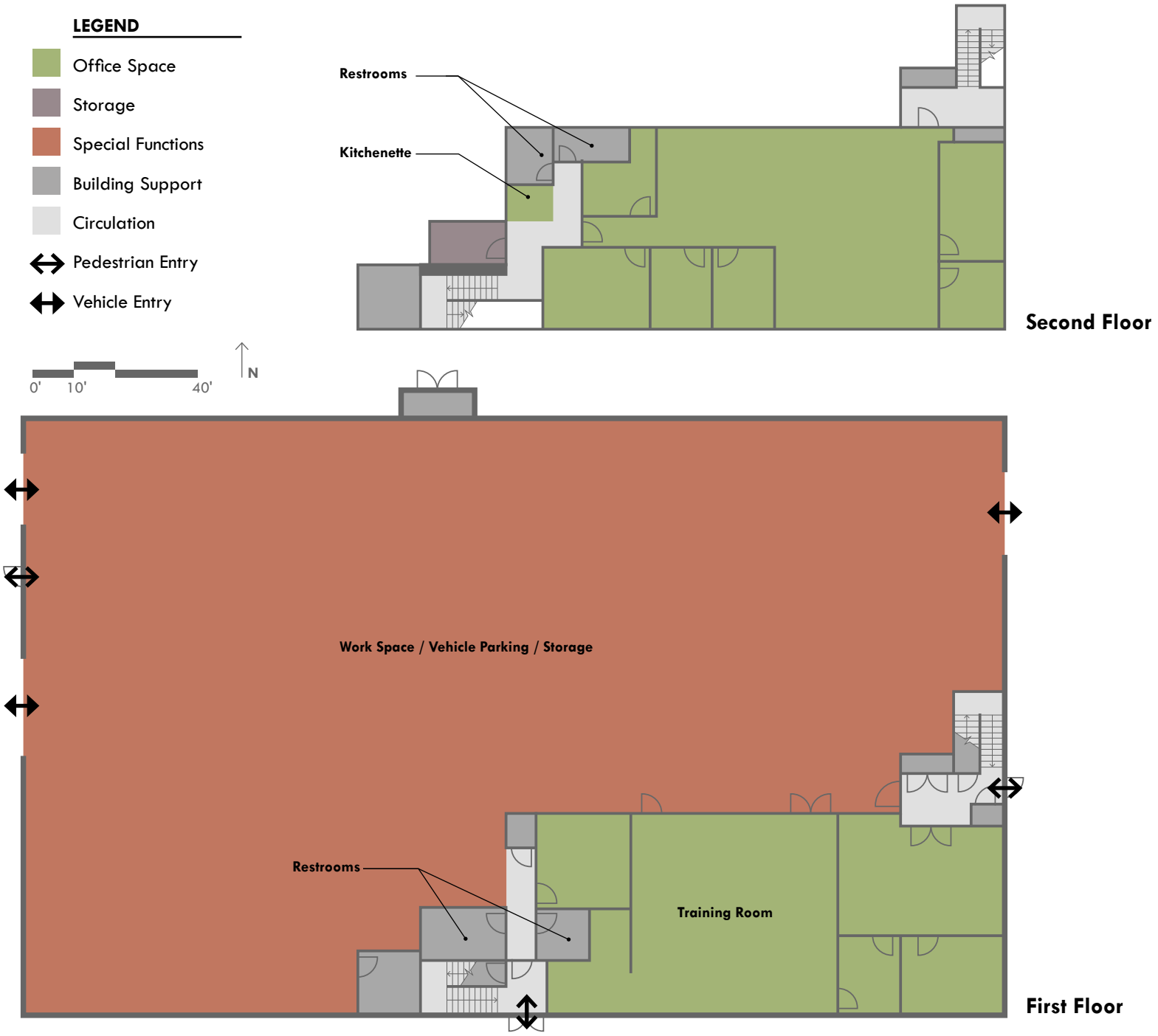


FIGURE 39. Trinity Building Floor Plans

TRINITY BUILDING

The Trinity Building is a tilt-up concrete structure with a wood-framed mezzanine. The majority of this building's area is high-bay space served by three garage doors. A small portion of this space is currently used for storage by Water and generator testing equipment. The remaining portion of the building is two stories containing office space, including several small rooms suited for use as private offices, shared private offices, or meeting space. The ground floor has one large meeting/training space which is used regularly. Most office spaces are currently unoccupied, though the upstairs sees occasional use by Facilities.

The building is currently underutilized; the Sammamish River Business Park Relocation & MOC Trinity Building Upgrade Feasibility Study is underway to evaluate the feasibility of relocating the current users of the Sammamish River Business Park to the Trinity Building and retrofit the building to allow indoor vehicle parking.

Year Built	**1981**
Last Renovated	**1997**
Building Area	**18,200 SF**
Building Condition	**FAIR**
Observed Deficiencies	**$660K**
20-year Predicted Renewal Costs	**$2M**
# of Employees	**0**

Major Deficiencies
OCCUPANCY CODE COMPLIANCE
UNDERSIZED FOR PROPOSED REOCCUPANCY

Current Users
PUBLIC WORKS FACILITIES MAINTENANCE
WATER

Potential Future Users*
PUBLIC WORKS WATER QUALITY LAB
PUBLIC WORKS FACILITIES MAINTENANCE
TRAFFIC SIGNAL OPERATIONS
FLEET PARKING

**Pending conclusion of ongoing Trinity Study*

IMAGE 42. High Bay Space

IMAGE 43. Ground Floor Meeting/Training Room

IMAGE 44. Trinity Building Exterior Elevation

BUILDING 3 PROGRAM
Crew Workstations
  Private Office
Kitchenette
Crew Lockers and Restrooms/Showers
Sign Fabrication Shop

BUILDING 5 PROGRAM
Warehousing Office
Storage - 1st and 2nd Floors

BUILDING 11 PROGRAM
Six Decant Bins for Spoils, Sewer
  Grit, Street Sweepings
De-icing Tanks
Decant Office

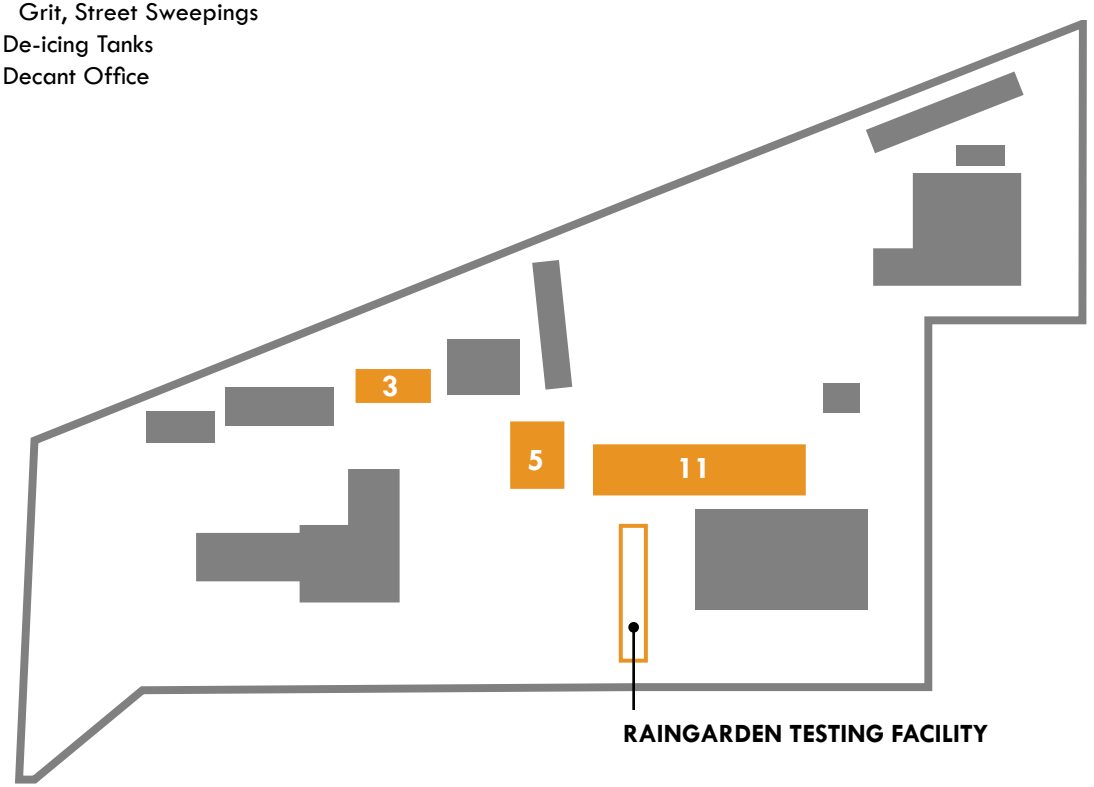


FIGURE 40. MOC Key Plan - Buildings 3, 5, and 11

STREETS DEPARTMENT BLDG 3

This modular building hosts the Streets office space, a meeting/lunch room, crew support spaces, and a sign fabrication shop. This building also hosts a backup generator for Building 1.

Major issues include lack of space to accommodate program; and the general age, construction quality, and condition of building.

Year Built	**1998**
Last Renovated	**2011**
Building Area	**1,850 SF**
Building Condition	**FAIR**
Observed Deficiencies	**$134K**
20-year Predicted Renewal Costs	**$294K**
# of Employees	**11**

Major Deficiencies
OVERALL BUILDING CONDITION
LACK OF SPACE

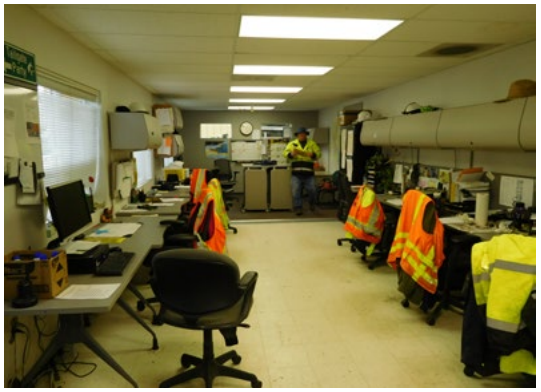


IMAGE 45. Streets Modular Workstations

CENTRAL STORES WAREHOUSE BLDG 5

The Central Stores Warehouse houses parts and supplies for the Public Works workgroups located on the MOC site, as well as custodial and maintenance supplies for City facilities. The building is a pre-engineered metal structure with a mezzanine.

Year Built	**1988**
Building Area	**4,500**
Building Condition	**FAIR**
Observed Deficiencies	**$130K**
20-year Predicted Renewal Costs	**$318K**
# of Employees	**1**

Major Deficiencies
CODE COMPLIANCE
CONSTRUCTION QUALITY

IMAGE 46. Central Stores Warehouse Mezzanine

DECANT BLDG 11

The decant facility is managed by Stormwater and used by the Streets, Water, and Stormwater field crews for the sorting and disposal of material collected from street sweepers, water lines, and storm drains. The facility consists of five covered bays and a single-story, unstaffed office, which contains laundry facilities for Public Works crews. The 2013 renovation included the addition of a raingarden testing facility directly south of the decant structure.

Year Built	**1998**
Last Renovated	**2013**
Building Area	**3,500 SF**
Building Condition	**FAIR**
Observed Deficiencies	**$86K**
20-year Predicted Renewal Costs	**$399K**
# of Employees	**0**

Major Deficiencies
LACK OF SPRINKLERS

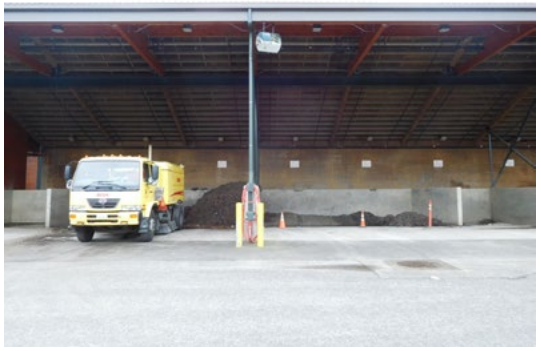


IMAGE 47. Decant Facility

STORAGE FACILITIES

Fleets, Wastewater
BUILDING 2 (TWO STORIES)
Vegetation Control Tools, Small Equipment Repair Shop, Wastewater Pump Shop, Fleet Parking

Stormwater, Streets, Water
BUILDING 4 (TWO STORIES)
Pipes, Meter Parts, Materials, Chemicals

Parks, Wastewater, Stormwater
BUILDING 6
Signs, Vegetation Control Tools

Streets
BUILDING 7
Streets Sand Hopper Bins, Hot Box

Parks
BUILDING 9
Small Fleet, Tools, Equipment

Parks
BUILDING 12
Tools, Equipment

NOTE: SEE FIGURE 41 FOR SEVERAL ADDITIONAL SMALL STORAGE STRUCTURES. ADDITIONAL OUTDOOR STORAGE ON SITE IS ILLUSTRATED IN FIGURE 42.

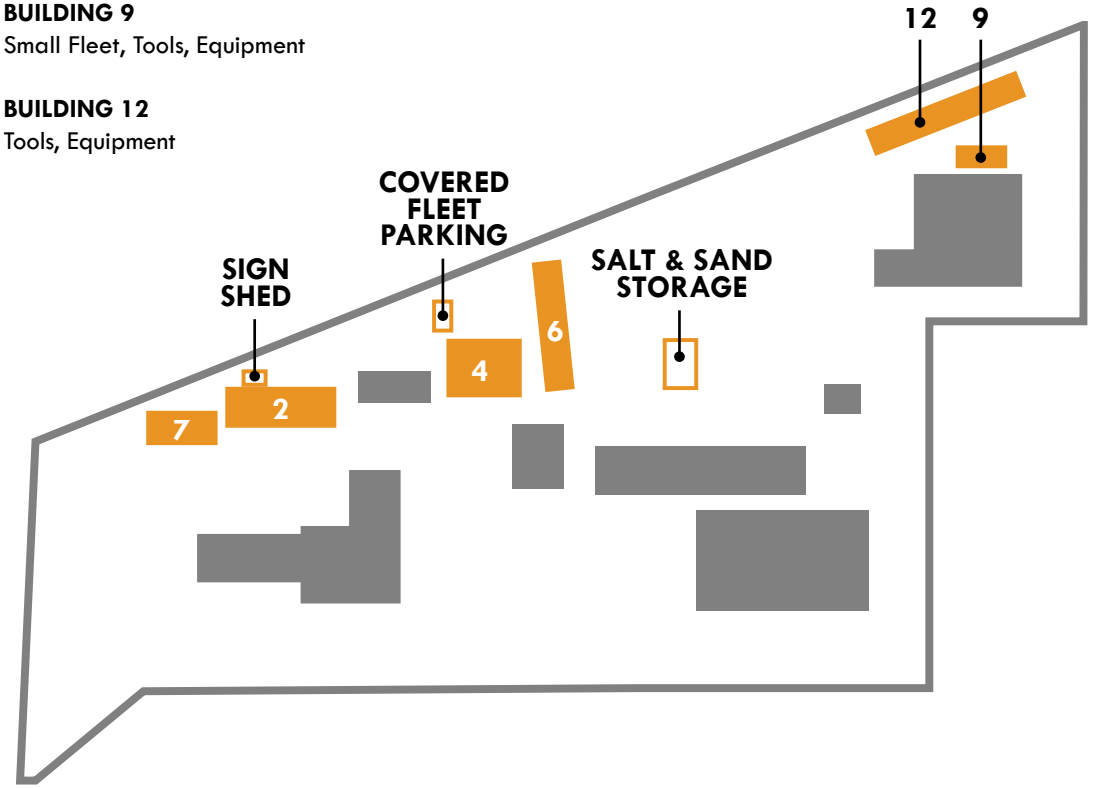


FIGURE 41. MOC Key Plan - Storage Facilities and Structures

STORAGE FACILITIES

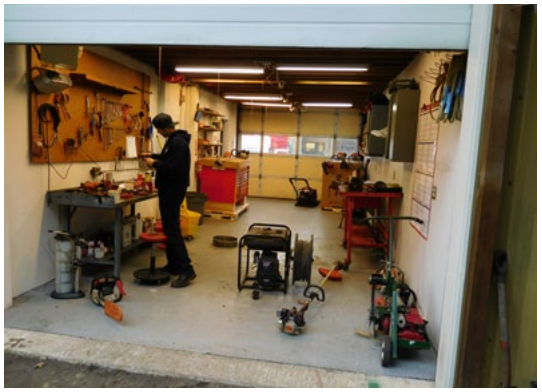


IMAGE 48. Building 2 Small Equipment Repair Shop

IMAGE 51. Crew Lockers

IMAGE 54. Building 2 Small Engine Storage

IMAGE 49. Building 4

IMAGE 52. Building 6

IMAGE 55. Building 7 Covered Storage and Sand Hopper Bins

IMAGE 50. Parks Storage

IMAGE 53. Parks Maintenance Equipment Storage

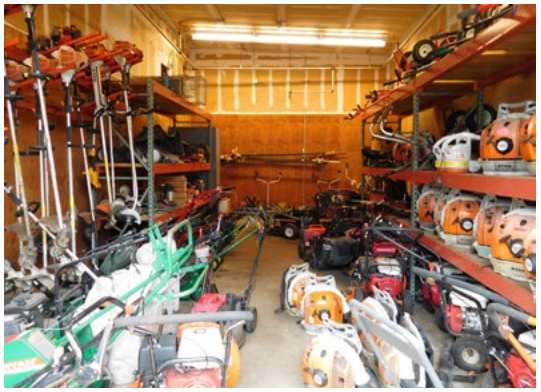


IMAGE 56. Building 9

FIGURE 42. MOC Site Plan

MOC YARD

The MOC Yard is primarily paved with asphalt, with limited pedestrian paving around select buildings. Fleet vehicle and equipment maneuvering, mobilization, and storage areas occupy a significant portion of the campus yard area and are dispersed across campus. Loose materials, such as compost and gravel, are stored in materials bins which are shared between Parks and Public Works. Parks stores plants and trees in an area of the site designated as a nursery. Parks and Public Works each have areas on site containing dumpsters, heavy duty storage racks, miscellaneous storage containers, and unstructured open-air storage of equipment and materials. The site has a fuel station which serves Citywide fleet vehicles.

Site Area	**8.63 AC**
Observed Deficiencies	**$443K**
20-year Predicted Renewal Costs	**$2.7M**

Major Deficiencies

INEFFICIENT CIRCULATION
INSUFFICIENT TOTAL AREA
INSUFFICIENT PARKING

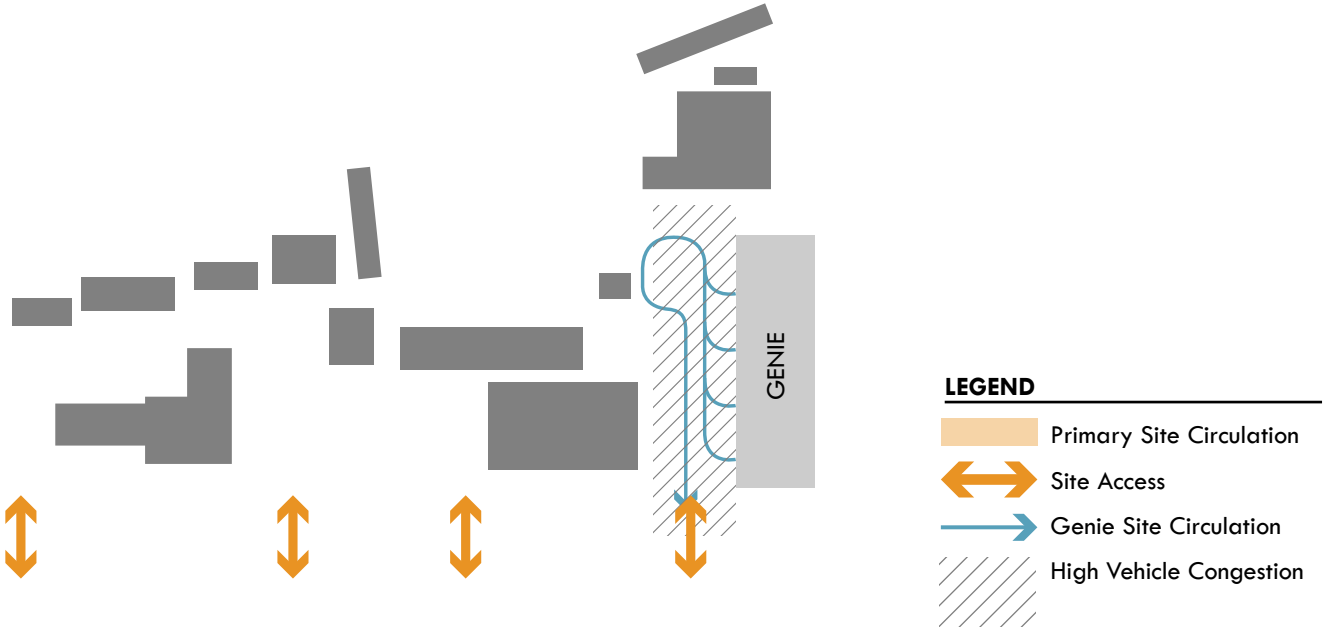


FIGURE 43. MOC Site Circulation Diagram

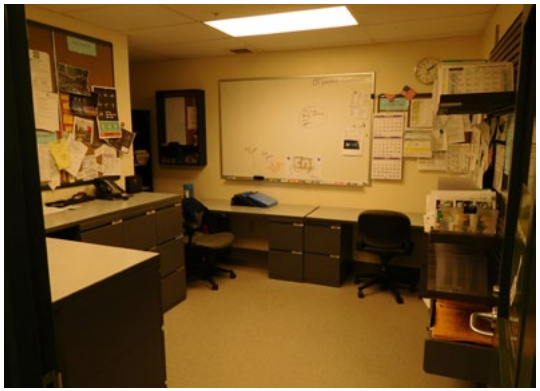


IMAGE 57. Park Operations Shared Crew Resource Room

IMAGE 58. Boot Drying in Crew Office Space

IMAGE 59. Building 1 EOC

Issues Summary

The Maintenance Operations Center site and facilities are generally undersized and unable to accommodate future growth. The issues for this site presented here are grouped by Administration and Crew Spaces, Site & Operations, Ongoing Efforts, *and* Functional Issues.

ADMINISTRATION & CREW SPACES

WORKSPACES

Public Works crews lack adequate reporting, dispatch, and meeting areas. Increased adjacency of supervisors and staff is desired. A central shared computer lab and meeting areas could increase efficiency.

Field staff workstations are currently grouped by crew; retaining some separation between crews is desired in the future.

Parks crew leads each have a dedicated workstation; all other Parks field staff share a single resource room with two workstations.

CONFERENCE/TRAINING/ASSEMBLY

Public Works Building 1 has one small conference room that is also used as an Emergency Operations Center. The room is undersized and poorly equipped for the EOC function with respect to A/V support and pinup or whiteboard space. Due to limited dedicated space, emergency operations encroach on staff workstations. Public Works lacks appropriate training space; an appropriately sized training room could also double as an EOC.

Public Works' breakroom lacks adequate kitchen facilities. This capability is especially important during emergency operations.

Parks uses their multipurpose space for training and as a breakroom. They have no dedicated conferencing space.

LOCKERS, DRYING ROOMS, DECON

Crew locker rooms, restrooms, and gear storage are undersized for all workgroups. Specifically:

- Streets lacks lockers for seasonal employees.
- Parks has a drying room for wet clothing and boots that is at capacity in the off-season and undersized for seasonal needs.
- Public Works does not have a drying room for their staff; drying happens ad-hoc in office spaces.
- Parks and Public Works lack mudrooms and an appropriate area to decontaminate equipment, gear, and clothing.
- There are no decontamination facilities for Wastewater crews; they use the vehicle wash rack instead.
- Improved laundry facilities are globally needed. As an alternative, a contracted laundry service could address the deficiency.

SITE CIRCULATION

Site circulation is loosely defined and highly constrained in some areas. The lack of clearly defined and separated pedestrian routes in conjunction with heavy vehicle traffic poses a potential safety risk. The neighboring business, Genie Industries, shares the eastern-most site access and narrow drive aisle with the City of Redmond, but they also use areas of the City's site to turn vehicles around. Though Park Operations work is concentrated on the east end of the site, their trucks also use the main Public Works access gate due to on-site congestion.

PARKING

Employee parking is undersized and will be further pressured by the planned reuse and occupancy of the Trinity Building and expected departmental growth.

FLEET MAINTENANCE

The Fleet Maintenance Shop is not equipped to serve large fleet vehicles and work bays are generally undersized. Fleets is understaffed relative to their workload, which is elevated due to increased vehicle wear and tear resulting from a lack of covered parking. An improved and expanded Fleets Maintenance facility with work bays and lifts rated for servicing large vehicles would enable the Fleets workgroup to gain efficiency. Having proper equipment would also allow for the consolidation of Fire and Public Works Fleet maintenance; having this capacity was recommended in the 2011 Fleets study. The vehicle wash rack is limited to a single bay, lacks a catwalk, and cannot accommodate large vehicles.

FLEET PARKING

Vehicles parked outdoors incur increased maintenance costs and reduce operational efficiency as crews must winterize vehicles daily. Public Works vactor and CCTV trucks risk expensive freezing damage because they lack heated, covered parking. Water meter readers reduce time spent entering and exiting their vehicles by removing the doors from their vehicles, thereby increasing their efficiency. However, due to a lack of covered parking, they are currently required to reinstall the doors at the end of each day. The City is interested in adding electric vehicles to their fleet, but the MOC does not have the electrical service to support EV charging.

Parks does not have enough trucks for their field crews, and lacks sufficient parking for the fleet vehicles they already have.

WAREHOUSING

Public Works' current methods for procuring and storing equipment and supplies are inefficient and ineffective. Storage on site is generally dispersed and not clearly organized. Tools and materials are checked out directly by staff using a clipboard, limiting inventory management and control. Parts and supplies for small engine maintenance are stored separately from the small engine repair shop. There is also an identified need for consumables storage at the Municipal Campus, including custodial and maintenance supplies for City Hall. These supplies are currently stored at the MOC. The consolidation of storage functions at a centralized facility is a priority issue. Landscaping materials now stored in open bins are also better stored under cover.

IMAGE 60. Constrained Eastern-most Entrance Shared With Genie

IMAGE 61. Central Stores Warehouse at Capacity on 1st Floor

IMAGE 62. Fleet Vehicles Parked Outside Are Exposed to Weather

SITE & OPERATIONS (CONTINUED)

DECANT
The MOC decant facility is shared; there is not a satisfactory method in place for attributing decant costs to each individual workgroup.

SHOPS
Parks' wood shop at Building 8 is slightly undersized. They also have a metal and welding shop located off-site at Jewel Park. It would be advantageous to locate these facilities in one modern, well-equipped shop at the MOC campus for Citywide shared use.

SECURITY
The MOC Campus perimeter is porous, with no access control during operating hours. This creates security concerns for personnel safety, materials, and equipment tracking.

OTHER CONSIDERATIONS
Streets would benefit from using hopper bins instead of loaders to fill trucks.

Water would benefit from a dedicated water filling station. Their trucks are currently filled using a fire hydrant.

Internet service at the MOC is problematic, resulting in delayed email deliveries.

ONGOING EFFORTS

SAMMAMISH RIVER BUSINESS PARK
This City-owned property is scheduled to be vacated by the end of 2016. There is an ongoing effort to study how the Trinity Building can accommodate the current Sammamish River Business Park operations. These users include Traffic Signals, Water Quality Lab, Public Works Facilities, and Conservation Corps volunteers.

It may be advantageous to collocate the Traffic Signals group with Streets in the future.

TRINITY BUILDING
The Trinity building has significant building code deficiencies that need to be addressed prior to its reuse, such as the addition of fire suppression to accommodate indoor vehicle parking. The draft "Sammamish River Business Park Relocation & MOC Trinity Building Upgrade Feasibility Study" indicates that the Trinity Building is approximately four thousand square feet short of the program area required by the current Sammamish River Business Park tenants. The basic improvements required are estimated to cost between two and four hundred thousand dollars.

EXPANDED RESPONSIBILITIES
Public Works Facilities may assume responsibility for maintaining and operating City Hall from Wright Runstad in 2017. There is the possibility of a contract extension of two to three years to facilitate this transition, or for this work to continue to be contracted.

FUNCTIONAL ISSUES

While the following items do not directly impact facilities, they bear consideration in the context of longterm planning for Redmond's maintenance operations.

- Building access keys are managed by Warehousing, but should be managed by Facilities. The City is in the process of transitioning to keycard access at all facilities.
- Facilities does not have licensed tradespeople, with the exception of one certified HVAC technician. It would be beneficial to develop staff certified in multiple trades.
- There is a desire to combine Fleets and Facilities customer service dispatch, as both groups have a shared customer base.
- There are opportunities for some facility sharing and joint training efforts between Parks and Public Works.

KEY CHALLENGES

- There is an ongoing effort to study how the Trinity Building can accommodate fleet parking and the current Sammamish River Business Park operations: Traffic Signals, Water Quality Lab, Public Works Facilities, and Conservation Corps volunteers.
- The MOC campus and facilities are inefficient and undersized for existing requirements and are unable to accommodate future growth.
- Warehousing, procurement, and storage of Public Works materials and equipment is undersized, inefficient, and outdated.
- Conference, training, and EOC spaces are inadequate.
- Decontamination and drying facilities are undersized (Parks) or absent (Public Works).
- Outdoor fleet and staff parking is at, or will soon exceed, capacity.
- Additional covered and heated fleet parking is needed; this may be addressed by the Trinity Building project.
- There is a 2011 Fleets study recommendation to combine Public Works Fleet Maintenance and Fire Fleet Maintenance.

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Appendix C: Information Sources

FACILITY TOURS

FIRE
Fire Station 11
Fire Station 16
Fire Station 16 Shop
Fire Station 17

POLICE
Public Safety Building

PARKS
Old Redmond Schoolhouse Community Center
Pool
Senior Center
Teen Center

PUBLIC WORKS
Maintenance Operations Campus

INTERVIEWS

PUBLIC WORKS
Rebecca Borker
Quinn Kuhnhausen
Sherry Schneider
Charlie Cox
Joe McKinnon
Laurelin Ward
Robin Brown

PARKS
Ken Wong
David Tucheck
Mark Hickik
Carolyn Hope
Eric O'Neal
Justin Miniken
Teresa Kluver

FIRE
Joe McGrath
Todd Short
Scott Ely

POLICE
Ron Gibson
Kristi Wilson

ADMINISTRATIVE
Melody Matthews
Rob Odle
Linda DeBoldt
Katie Anderson
Ron Gibson
Mike Bailey

OTHER STAFF
Kelley Cochran
Jane Christenson
Erica Vandenbrade

TRINITY STUDY TEAM
Lisa Rigg (Redmond)
Lisa Roberts (Buffalo Design)

DOCUMENTS

2008 Trinity and MOC Assessment
2011 Fleet Study
2013 City Hall Space Study
2014 Facility Condition Assessment
2014 Police Department Functional Plan
2014 Recreational Buildings Master Plan
2015 Public Works Strategic Plan
2015 Facilities CIS/CIP 2017-2022 *DRAFT*
2016 Redmond Cultural Facilities Feasibility Study
2016 Sammamish River Business Park Relocation & MOC Trinity Building Upgrade Feasibility Study *DRAFT*

ADDITIONAL SOURCES

Occupant Survey, 1/29/16
Fleet Unit Inventory Report, 2/4/16

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Appendix D: Occupant Survey Questions

1. Which building do you work in primarily?

2. Which department are you in?

- Executive
- Finance & Information Services
- Fire
- Human Resources
- Parks & Recreation
- Planning & Community Development
- Police
- Public Works

3. Which of the following best describes your role/position?

- Executive (including Directors, Deputy Directors, and Chiefs)
- Management (including Managers, Supervisors, Command Staff)
- Frontline Staff (office-based staff that has direct contact with the public)
- Office Staff (all other office-based staff, including administrative, engineers, technicians)
- Shop-based Operations Staff (staff who work primarily in a shop or warehouse)
- Field-based Operations Staff (staff who work primarily in the field, such as an inspector or crew member)
- Firefighter
- Police Officer

4. Would collocation or adjacency with another department or division improve your efficiency and effectiveness? If so, which one(s)?

- [fill in the blank]

5. How well does the building support your work?

- Very well
- Well
- Poorly
- Very poorly

APPENDIX D: OCCUPANT SURVEY (CONTINUED)

6. Please choose (EXTREMELY SATISFIED, SATISFIED, NEUTRAL, UNSATISFIED, EXTREMELY UNSATISFIED) to rate your overall satisfaction with the following 21 items.

- Your facility
- Size and configuration of your work area
- Size and configuration of storage
- Size of other spaces
- The appearance of the lobby and common areas
- Meeting areas within the building
- Building amenities (signage, reception, vendors)
- Access to lockers and showers
- Access to gym/exercise facilities
- The security of the building
- Access and availability of commute transportation options (access to transit, bicycle facilities, parking)
- Location relative to what you need to do your work
- Your thermal comfort (too hot, too cold)
- Noise within the building (air conditioners or other mechanical noise, occupant noise such as voices or foot traffic)
- Maintenance responsiveness and issue resolution time
- The quality of cleaning in the office spaces
- The quality of cleaning in the common areas
- The quality of cleaning in the restrooms
- Building interior lighting
- Building exterior lighting
- Building connectivity (e.g. network, telephone, wireless/WiFi, etc)
- Equipment and/or IT hardware (e.g. computers, copiers)
- Furniture and fixtures

7. Please rank the top five issues that have the most impact on your work.

- [repeat list of issues discussed in question 6 above, omitting "Your facility"]

8. Which of the following should be the top investment priorities for the City of Redmond Facilities and Maintenance? Rank up to three.

- Building system upgrades (example: heating and air conditioning)
- IT/Communications upgrades (example: videoconferencing equipment)
- Addressing deferred building maintenance
- More space for existing operations (you do not have enough room for your current operations)
- Expanding operations (you anticipate needing to expand your operations or you anticipate adding new functions or service areas)

9. Which are the most significant factors that will change your work? Rank up to three.

- Change in land use/density?
- Population growth
- Demographic change (including trends and preferences)
- Lightrail expansion
- Sustainable practices (example: green stormwater, commute method, building systems and construction types)
- Funding and budgets
- Advances in technology
- Other _____
- No opinion

10. What three words best describe the ideal facility to support your work? (example: comfortable, daylit, efficient)

- [fill in the blank]

11. Please provide any specific feedback you'd like to share with the Facility Management Team.

- [fill in the blank]

Appendix E: Fast Facts Table

Site	Site Area (Acres)	Facility	# of City Employees	Building Area (GSF)	Year Built	Age (Years)	Year Last Renovated	General Condition Score	General Condition	Current Replacement Value ($)	Observed Deficiencies ($)	20 Year Predicted Renewal Costs for Facility Systems ($)
Fire Station 11 8450 161 Ave NE	**1.46**	**Fire Station 11**	**24**	**23,800**	**1981**	**35**	**2000**	**3**	**Fair**	**10,798,060**	**800,682**	**5,505,974**
		Old Medic One Building	**0**	**1,916**	**1985**	**31**	**2001**	**3**	**Fair**	**576,620**	**146,146**	**206,248**
		Fire Station 11 Site Infrastructure									***68,694***	***436,858***
Fire Station 12 4211 148 Ave NE	**0.55**	**Fire Station 12**	**19**	**7,050**	**1980**	**36**	**1999**	**3**	**Good**	**3,198,585**	**443,410**	**1,115,970**
		Fire Station 12 Site Infrastructure									***24,376***	***171,426***
Fire Station 13 8701 208 Ave NE	**2.04**	**Fire Station 13**	**12**	**6,500**	**1973**	**43**	**2009**	**3**	**Fair**	**2,949,050**	**546,475**	**1,309,856**
		Fire Station 13 Site Infrastructure									***24,376***	***604,063***
Fire Station 14 5021 264 Ave NE	**2.96**	**Fire Station 14**	**9**	**9,460**	**1991**	**25**	**2009**	**2**	**Good**	**2,949,050**	**209,920**	**1,423,631**
		Fire Station 14 Site Infrastructure										***945,272***
Fire Station 16 6502 185 Ave NE	**1.61**	**Fire Station 16**	**15**	**9,852**	**1996**	**20**	**2006**	**3**	**Good**	**4,469,852**	**335,206**	**1,666,019**
		Fire Station 16 Shop Building	**3**	**5,625**	**1996**	**20**	**2006**	**2**	**Fair**	**1,818,788**	**245,304**	**637,433**
		Fire Station 16 Site Infrastructure										***449,215***
Fire Station 17 16917 NE 116 St	**1.72**	**Fire Station 17**	***7***	**19,397**	**2012**	**4**		**1**	**Excellent**	**8,800,419**	**70,071**	**432,842**
		Fire Station 17 Site Infrastructure										***29,097***
Fire Station 18 22710 NE Aldercrest Dr	**1.54**	**Fire Station 18**	**10**	**7,714**	**2002**	**14**		**2**	**Excellent**	**3,499,842**	**46,347**	**882,322**
		Fire Station 18 Site Infrastructure										***162,893***
Municipal Campus Site 8701 160 Ave NE	**11.48**	**City Hall**	**284**	**107,212**	**2005**	**11**		**2**	**Excellent**	**60,362,500**	**145,530**	**10,496,676**
		Senior Center	**4**	**22,000**	**1990**	**26**		**3**	**Fair**	**6,600,000**	**1,463,986**	**3,847,195**
		Public Safety Building	**130**	**94,975**	**1990**	**26**		**3**	**Good**	**52,241,949**	**3,000,791**	**15,938,228**
		Police Garage North	**0**	**1,250**	**2008**	**8**		**2**	**Excellent**	**376,188**	**9,360**	***7,776***
		Police Garage South	**0**	**1,000**	**2008**	**8**		**2**	**Excellent**	**300,950**	**4,680**	**6,220**
		Municipal Campus Parking Garage	**0**	**90,000**	**2005**	**11**		**3**	**Good**	**8,199,000**	**256,764**	**1,011,989**
		Municipal Campus Site Infrastructure									***125,511***	***3,049,083***
Maintenance Operations Center (MOC) 18080 NE 76 St	**8.63**	**Bldg 1 - Public Works MOC**	**51**	**11,700**	**1977**	**39**	**1998**	**3**	**Fair**	**3,783,078**	**1,123,969**	**1,463,733**
		Bldg 3 - Streets Workgroup Modular	**11**	**1,850**	**1998**	**18**	**2011**	**3**	**Fair**	**819,106**	**133,725**	**293,918**
		Bldg 5 - Central Stores Warehouse	**1**	**4,500**	**1988**	**28**	**—**	**3**	**Fair**	**1,146,510**	**129,543**	**317,553**
		Bldg 8 - Parks MOC	**31**	**8,202**	**1970**	**46**	**1998**	**3**	**Fair**	**2,468,392**	**503,498**	**942,012**
		Bldg 11 - Decant Facility	**0**	**3,500**	**1998**	**18**	**2013**	**3**	**Fair**	**985,720**	**85,658**	**399,098**
		Trinity Building	**0**	**18,200**	**1981**	**35**	**1997**	**3**	**Fair**	**5,884,788**	**660,180**	**2,041,082**
		Trinity Building Infrastructure									***166,997***	***228,820***
		MOC Site Infrastructure									***276,312***	***2,481,381***
Sammamish River Business Park 15503 NE 90 St	**1.72**	**Building 1**	**11**	**17,450**	**1980**	**36**		**4**	**Fair**	**5,251,578**	**1,842,620**	**2,211,770**
		Building 2	**0**	**17,450**	**1980**	**36**		**4**	**Fair**	**5,251,578**	**1,843,342**	**2,307,485**
		Business Park Site Infrastruture									***107,771***	***424,437***
ORSCC 16600 NE 80 St	**2.85**	**Old Redmond Schoolhouse Community Center**	**23**	**41,700**	**1922**	**94**	**1980**	**3**	**Fair**	**19,361,400**	**2,932,352**	**7,885,682**
		ORSCC Site Infrastructure										***774,794***
Hartman Park 17535 NE 104 St	**3.67**	**Redmond Pool**	**0**	**12,554**	**1970**	**46**	**1996**	**3**	**Fair**	**6,004,955**	**3,028,600**	**2,406,942**
		Redmond Pool Site Infrastructure									***118,109***	***1,241,627***
Old Fire House 16510 NE 79 St	**0.92**	**Old Fire House Teen Center**	**1**	**8,600**	**1952**	**64**	**2000**	**3**	**Fair**	**3,367,200**	**501,968**	**1,846,971**
		Old Fire House Teen Center Site Infrastructure									***10,834***	***264,825***

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CITYWIDE VISIONING AND ALTERNATIVES WORKSHOPS SUMMARY

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CITYWIDE STRATEGIC FACILITIES PLAN

VISIONING + ALTERNATIVES WORKSHOPS SUMMARY
TASK 8 TECHNICAL MEMO

Redmond Facilities Strategic Management Plan

Project #20011329
December 2016

City of Redmond WASHINGTON

MAKERS
architecture · planning · urban design

McKinstry
For The Life Of Your Building

SSF

PRODIMS
PROJECT MANAGEMENT SERVICES

WORKSHOP PARTICIPANTS

Visioning Workshop
Jeanne Justice, Public Works
Lisa Rigg, Public Works
Linda De Boldt, Public Works
Teresa Kluver, Parks
Maxine Whattam, Parks
Mark Hickok, Parks
Rebecca Borker, Public Works
Quinn Kuhnhausen, Public Works
Erika Vandenbrande, Mayor's Office
Mike Paul, Public Works
Tess Wilkinson, Public Works
Sandy Yeager, Public Works
Carolyn Hope, Parks
Ryan Spencer, Parks
Melody Matthes, Human Resources

Alternatives Workshop
Jeanne Justice, Public Works
Lisa Rigg, Public Works
Linda De Boldt, Public Works
Teresa Kluver, Parks
Rebecca Borker, Public Works
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Mike Paul, Public Works
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Joe McGrath, Fire
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Scott Bonjukian, MAKERS
Mark Barnard, McKinstry
Ryan Dickerson, McKinstry

Project Brief

The City of Redmond Strategic Facilities Management Plan seeks to provide guidance on how to operate, maintain, and upgrade City facilities in both the short and long term. It is a project with three major components: a long-term Citywide Strategic Facilities Plan (developed primarily by MAKERS architecture and urban design), a tactical operations and maintenance guide to help prioritize the Facilities department's work (developed by McKinstry), and a master plan for the City's Maintenance and Operations Campus (developed by MAKERS), which will produce recommendations for how the MOC can best support the Public Works and Park Operations departments that maintain the City's infrastructure, facilities, and parks. These three efforts are also informed by a concurrent review of existing seismic vulnerabilities (developed by SSF Structural Engineers) and the 2014 Facilities Condition Analysis (developed by Meng Analysis).

The project scope encompasses the facilities maintained by Redmond's Facilities team, including: Fire District 34 fire stations, the Public Safety Building, Parks recreation buildings, and Public Works operations buildings.

GUIDING PRINCIPLES

The following guiding principles provide the framework for the Strategic Facilities Management Plan.

Sustainable and Efficient - Optimize resources through strategic investment decisions in durable and sustainable facilities and efficient building management.

Welcoming, Safe, and Healthy - Provide welcoming and accessible public areas and amenities. Create secure, healthy, comfortable, and inspirational work spaces for all City employees.

Flexible and Designed for the Future - Anticipate growth and change; accommodate increasing flexibility, evolving technology, and changing uses; prepare for emergencies.

Achievable - There is a realistic actionable financial strategy to execute the Plan.

This document presents the results of workshops focused on citywide facilities. The results will inform the next steps of stakeholder outreach and drafting of the Citywide Strategic Facilities Plan.

MEMO ORGANIZATION

Page 1 - Citywide Facilities Executive Summary
Page 3 - Citywide Facilities Visioning Workshop
Page 7 - Citywide Facilities Alternatives Workshop

Citywide Facilities Executive Summary

Introduction

The Citywide Strategic Facilities Plan will help prioritize investments in the City of Redmond's buildings for the next 30 years. The City has a diverse portfolio of facilities represented by several departments, including City Hall, the Public Safety Building, fire stations, recreation centers, and the Maintenance and Operations Center (MOC). With Redmond's population growing steadily and new high-density development expected around light rail stations, this facilities management plan will ensure Redmond's facilities support public operations and services well into the future.

This document summarizes the outcomes of a Visioning Workshop, which sought to identify citywide facilities needs for the next three decades, and an Alternatives Workshop, which discussed the complex interdependencies of Redmond's upcoming facility decisions and presented options for optimizing the use of limited City resources.

Visioning Workshop Major Themes

Workshop participants identified the importance of continuing to concentrate City facilities in Downtown and at the Municipal Campus and confirmed the appropriateness of the MOC's current role and general location.

Common themes from the Visioning Workshop included desires for co-locating City facilities with each other, and potentially with private development; maximizing use of existing City-owned property, and providing satellite services in the Overlake district. Participants also noted the need to improve emergency response capabilities.

Workshop participants developed a number of creative ideas for co-located and mixed-use facilities; these can be found on page 4.

Conceptual sketch of Overlake from the 2007 Overlake Master Plan

Alternatives Workshop Major Themes

The Alternatives Workshop focused on City facility needs and opportunities in Overlake and Downtown. Facility needs which are independent from other facilities and located outside of these growth centers, such as Fire Stations, will be addressed in the final Strategic Facilities Management Plan.

New services and operations in Overlake will likely require a physical presence and improved emergency response capabilities in the future. It may be prudent for the City to acquire land early on while it is still relatively affordable and available. Some proposed facilities are small enough to pursue ground floor tenancy in a future mixed-use development.

Attendees considered neighborhood needs and financial feasibility for a variety of facilities in Overlake. The size and program of the following civic facilities were determined to be appropriate to serve the neighborhood:

- Satellite Customer Service Center
- Police Mini Precinct
- EMT Station
- Small Maintenance Satellite

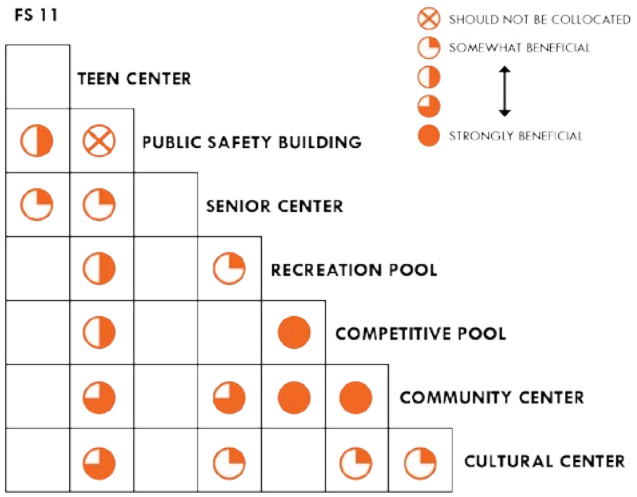
In Downtown, workshop participants supported co-located, appropriately dense development to make efficient use of the City's limited land and financial resources. Locating City facilities in Downtown promotes accessibility for residents thanks to existing and planned pedestrian, bicycle, and transit networks. Co-location of recreation and public safety facilities, respectively, was also found to have potential strong benefits in operations, maintenance, staffing, shared parking, and public programming. Future discussion of Downtown facilities will focus on the following points:

- The combined Fire Station 11 and Skate Park site was seen as a potential location for the Pool and Community Center
- Fire Station 11 could be located on Redmond's Municipal Campus, creating a public safety complex in anticipation of the future recapitalization of the Public Safety Building and the King County Courthouse
- Recapturing the Teen Center site was seen as an advantage
- The Cultural Center's siting and location were deemed most flexible: participants were supportive of either a standalone facility or a facility incorporated into a mixed-use development; either could be located in Downtown or Overlake

Next Steps

The next steps will be to coordinate with an ongoing public outreach effort which is exploring the future of Redmond's recreational facilities. The outcomes of that outreach effort will suggest capital investment priorities and opportunities for City recreational facilities and be considered during the development of the citywide Facilities Plan.

Map pins at the Visioning Workshop



Downtown Facility Co-location Benefits: Composite Scores

Citywide Facilities Visioning Workshop

Workshop held May 5, 2016 10am-3pm

Workshop Agenda

Introductions and Purpose
Long-term Needs
Ideal Locations and Adjacencies
Review Facility O&M Priority Tool
Summary of Themes; Next Steps

Introductions and Purpose

- Overview of: project purpose, scope, schedule, and guiding principles; existing conditions findings; identified near- and long-term facilities needs.
- Workshop goals: help develop a long-term strategic facilities vision to achieve guiding principles and test a tool to prioritize maintenance resources

Long-term Needs

Workshop attendees were presented with a number of best practice examples and participated in a live-polling exercise that explored how the City's goals, growth, and change will affect operations and facility needs.

There was broad support for all nine "Future Facilities" strategies polled:

- Co-location of police and fire facilities
- Co-location of other civic uses
- Integration in mixed use buildings
- Storefront police or other services (community oriented)
- Vertical industrial
- Multi-story facilities (non-industrial)
- Joint use facilities (parking, storage, training, meeting, etc.)
- Public-private partnerships
- Agency partnerships

The most popular responses to the question, "Which facility strategy is the most intriguing to explore in the Plan?" were:

- Joint use facilities (7 votes)
- Multi-story facilities (5 votes)

Best Practice Example: Vertical fire station and fire department headquarters in Norfolk, CT

Best Practice Example: A combined community center, fire station, and public works facility in Vadnais Heights, Minnesota

Best Practice Example: A combined police substation and senior center with retail and low-income housing in Asbury Park, New Jersey

Ideal Locations and Adjacencies

Using a map and game pieces, workshop participants were asked to configure a scheme of facility locations that represents the ideal location and co-location of facilities. Printed game pieces reflected the City's portfolio of existing and planned facilities; participants were invited to create their own pieces to represent their new ideas for facilities.

COMMON STRATEGIES

- Co-located facilities
- Joint use
- Verticality
- Satellite services in Overlake
- Preservation of "great lawn" concept at Civic Campus
- Consolidate fleets at MOC
- Combine FS 11, Teen Center, Skate Park, Metro transit center

AREAS OF DIFFERENCE

- Cultural Center location: either Downtown near Redmond Town Center, or in Overlake near projected growth
- Teen Center location

OTHER CREATIVE IDEAS

- Shared utilities/resources (e.g. at MOC or Municipal Campus):
  - Water reuse system
  - Geothermal
- Fueling agreement with FedEx, Costco, or other private entity
- Move Fire headquarters from downtown to the PSB or FS 17
- Rooftop uses (e.g. Skate Park, gardens, pool)

FS 11 Site

Municipal Campus Site

MOC Site

SELECTED IDEAS

"New Fire House Teen Center"

- New FS 11
- Teen Center
- Boutique Hotel
- Community Meeting Space

FS 11 & Skateboard Park Site

- New FS 11
- Joint Training Facility and Community Meeting Space
- Teen Center with rooftop skate park
- CERT storage

Municipal Campus

- New PSB and King County Courthouse joint facility
- Add Fire HQ from FS 11 to PSB
- Better use of Art Hill (remove surface parking)

Two Pools

- One competitive, joint venture with High School
- One recreational, co-located with Community Center

MOC

- Co-location of Public Works and Fire fleet maintenance
- Emergency response supplies
- Multi-story facilities
- Joint training facility

Overlake

- Cultural Center
- Emergency response/mutual aid supplies
- Community meeting space
- Auxiliary facilities
- Auxiliary MOC

FS 11 Site

Municipal Campus Site

MOC Site

Facility O&M Priority Tool

The workshop included an exercise which reviewed the tool developed by McKinstry to help prioritize facility maintenance as part of Task 6: Level of Service. The four prioritization criteria were: Criticality, Role in City Image, Utilization, and Useful Life.

CRITICALITY & ROLE IN CITY IMAGE

These criteria included some redundancy in the way in which use and perception by the public contributed to their overall Level of Service (LOS) value. Criticality included "high use by general public" as one measure of that criteria; Role in City Image implies that public view or experience of the facility would also increase that facility's LOS value.

UTILIZATION

Users wanted more nuance between "3 - Occupied approximately 40 hours per week" and "4 - Occupied 24 hours per day and 7 days per week" to accurately reflect use patterns of facilities such as the ORSCC or City Hall, which have activities outside of business hours that total greater than 40 hours per week.

USEFUL LIFE

This criteria created confusion when a large discrepancy between the facility's Criticality and Useful Life caused the facility's overall rating to be lowered to a value that does not reflect the facility's Criticality. Users appeared to be unclear about the distinction between a facility that should be replaced or receive substantial reinvestment versus a facility that has a replacement or substantial reinvestment already planned; the latter is intended to be used for the purposes of this tool.

Citywide Facilities Alternatives Workshop

Workshop held June 30, 2016, 9am-12:30pm

Workshop Agenda

- Workshop Purpose and Goals
- Existing Conditions and Project Review
- Visioning Outcomes and Alternative Development Framework
- Overlake: Present, Discuss, and Rank Options for Municipal Facilities
- Downtown: Discuss Co-location of Municipal Facilities
- Downtown: Discuss Sites and Trade-offs
- Summary and Next Steps

Workshop Purpose and Goals

Provide input to help develop draft recommendations, including:

- Services desired in Overlake
- Best sites for City uses and the best use of City-owned sites in Downtown
- Briefly discuss other locations that will be expanded upon in the full Strategic Facilities Management Plan.

Existing Conditions & Project Review

SUMMARY OF NEEDS

- Near term needs
  - Fire Station 11
  - MOC Campus
  - Fire Stations 13, 16, and 18 seismic upgrades
  - New Community Center
  - New Pool
  - New Teen Center
- Medium-to-long term needs based on facility age
  - Senior Center
  - PSB
  - FS 12, 13, 14, and 16
  - FS 16 Shop
- New or anticipated future needs
  - New Cultural Center
  - New facilities serving Overlake

Citywide Visioning Workshop Outcomes

COMMON THEMES

The team began by recapping the common themes from the Visioning Workshop:

- Co-located facilities
- Mixed and Joint use
- Verticality
- Satellite Services in Overlake
- Maximize Use of Existing City Property

Overlake: Present, Discuss, Rank Options for Municipal Facilities

OVERLAKE KEY QUESTIONS

- What services are needed in Overlake?
- Which type of facilities are most desirable?
- What facilities are financially feasible?
- What facilities can be part of a mixed-use development?

OVERLAKE NOTES

Fire

- EMT Station may not be needed if Bellevue can provide adequate service within the mutual aid agreement
- Future call volumes associated with Overlake are unknown, but current analysis predicts increase of only 3-4 calls per day for FS 12
- Congestion on 148th Avenue is the biggest limit to FS 12 response capacity
- Bellevue fire stations are located just to the south of Overlake, including the vacant facility that could be reactivated with Redmond staff in an agreement
- However, the need for a new facility may also be warranted by growth in the adjacent Bellevue Spring District
- Research is required for call volumes, population traits, and coordination with Bellevue's plans

Police

- Police has jurisdictional boundaries, no mutual aid agreements
- Light rail may bring new types of crimes against persons
- The Police functional plan focuses on Downtown and bike and foot patrols
- A precinct-sized footprint should be planned for in Overlake, and could be combined with any other City facilities in the area
- Evidence will be best stored at PSB for security
- Overlake needs a Police public interface, booking facility, and storage
- Being on the ground floor of a private building would be acceptable

Preferred facilities in Overlake

Maintenance

- Replicated workgroup spaces in Overlake is not necessary
- The large satellite option is too big, only need a site big enough for staging, traffic control devices, emergency supplies, material bins, and a garage for a few vehicles
- Garage could be shared with an EMT Station
- Backup departmental operations center is an idea – Downtown earthquake risk may drive need for a larger citywide emergency operations center
- No staffing necessary; having a single staffer (at any Overlake facility) would also not be ideal for workforce camaraderie

Civic

- Civic functions need at least some presence - the Mini City Hall concept is preferred
- Will have informational functions, meeting rooms, utility payment, etc. and should be named "Satellite Customer Service Center"
- Sharing meeting rooms with a Police presence would be ideal
- Parks and Rec could also have a service desk

Parks

- Some Overlake parks or open space areas may be privately managed
- Teen Center in Downtown will be closer to schools, though a second facility may be justified in Overlake
- Bellevue could also serve Overlake's needs, such as with the existing YMCA
- Cultural Center would be preferred Downtown but Overlake is not off the table
- Cultural Center could be next to a park for outdoor event opportunities
- Cultural Center could benefit from corporate sponsorships, e.g. Microsoft, in addition to being close to near-term light rail

OVERLAKE PREFERRED FACILITY DESCRIPTIONS

The following table summarizes the type and scale of facilities selected by workshop participants for inclusion in Overlake.

FACILITY	ESTIMATED SIZE (SF)	FUNCTIONS
Satellite Customer Service Center	2,000	Information, service functions, and community meeting space
Police Mini Precinct	3,000	Public presence, booking facilities, and supply storage
Small Maintenance Satellite	4,000	Supply and vehicle storage, could include backup EOC
EMT Station	2,000	Aid car and staff, could co-locate with Maintenance Satellite

Downtown: Discuss Co-location of Municipal Facilities

DOWNTOWN KEY QUESTIONS

- Which uses benefit from co-location?
- Where would co-location reduce facility or program costs?
- Where might Public Private Partnerships (PPPs) make sense?
- Which sites work best for which uses?

CO-LOCATION BENEFITS

Strong Benefits to Co-location

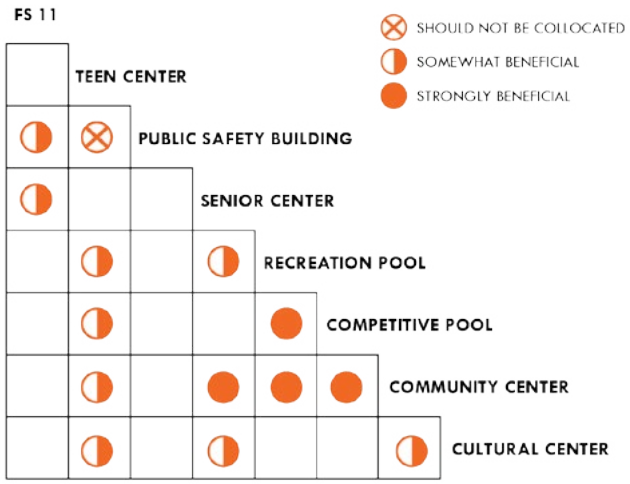
- Pool and Community Center
- Recreation and Competitive Pools make sense to site together; partnership with school district for competitive pool is recommended
- Teen Center, though some users expressed desire for independent space

Some Benefits to Co-location

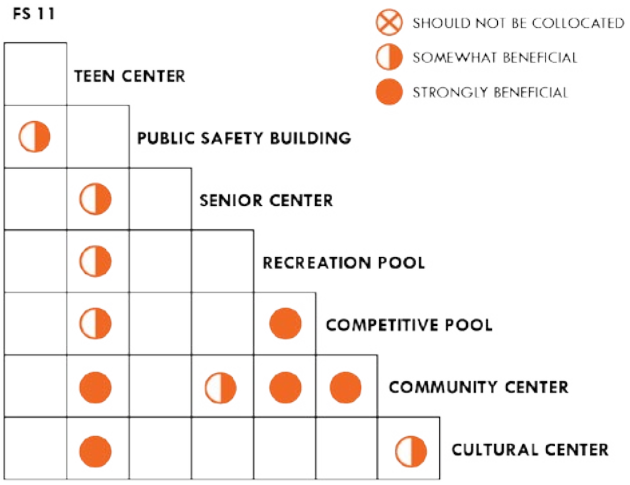
- FS 11 and the PSB, but timing isn't aligned
- Cultural Center with other Parks Recreation uses
- Senior Center with Community Center
- Smaller facilities with supportive uses are the best candidates for PPP

Limited or No Benefits to Co-location

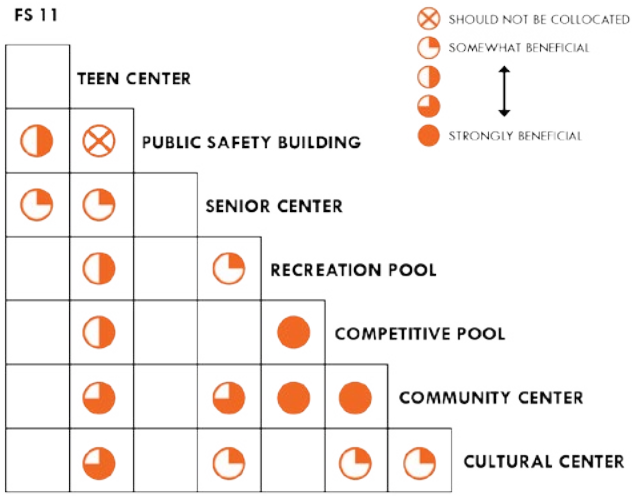
- PSB or FS 11with other facilities



Downtown Facility Co-location Benefits: Program Synergies and User Preferences



Downtown Facility Co-location Benefits: Operations & Maintenance and Staffing Efficiencies



Downtown Facility Co-location Benefits: Composite Scores

Downtown: Discuss Sites and Trade-offs

The following four alternatives for future Downtown municipal facilities were developed for discussion. They explore options for locating facilities on both existing City-owned property and potential new land acquisitions.

ALTERNATIVE 1

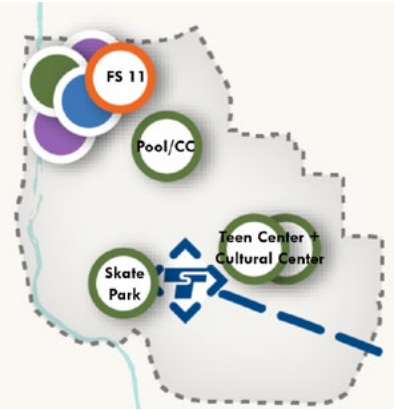
Land acquisition required: ~3 ac

- Rebuild FS 11 on site
- Teen Center to remain as existing or renovated
- Acquire new Pool/Community Center site
- Cultural Center on Sky Paint site
- PSB and Senior Center to be addressed in Municipal Campus master plan

ALTERNATIVE 2

Land acquisition required: ~1.5 ac + ~1 ac

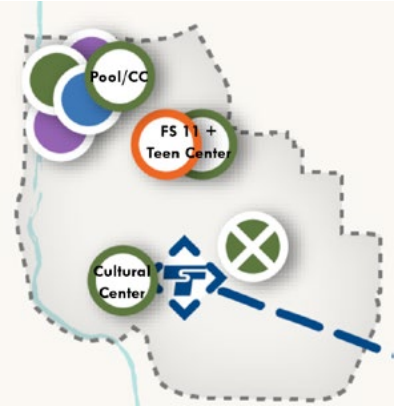
- Build FS 11 on Teen Center site
- Pool/Community Center+Teen Center on FS 11and Skate Park site
- Rebuild Skate Park on new site
- Cultural Center on new site
- Sky Paint available for another use
- PSB and Senior Center to be addressed in Municipal Campus master plan



ALTERNATIVE 3

Land acquisition required: 0

- Build FS 11 on Municipal Campus
- Relocate Senior Center on Municipal Campus
- Pool/Community Center at FS 11 + Skate Park sites
- Rebuild Skate Park at Sky Paint
- Teen Center/Cultural Center at Teen Center Site



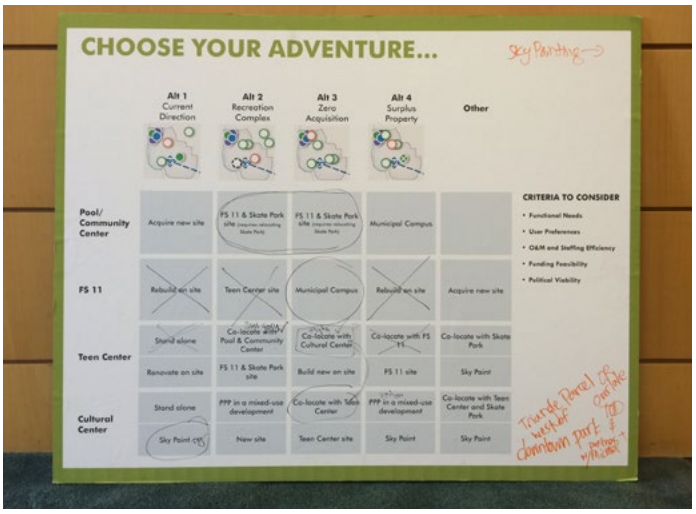
ALTERNATIVE 4

Land surplus: ~1 ac

- Rebuild FS 11 on existing site + Teen Center
- Pool/Community Center on Municipal Campus
- Surplus Teen Center site
- Cultural Center on Sky Paint
- PSB and Senior Center to be addressed in Municipal Campus master plan

DOWNTOWN NOTES

- Coordinate with the King County Courthouse to explore if the facility could be located to a different area of the Redmond Municipal Campus
- The Community Center and Cultural Center are distinct facilities, though they could be co-located to share parking
- Any facilities that are combined or co-located need to have distinct identities, especially the Teen Center and Cultural Center
- Kirkland has a large multi-use cultural center, pool, and community center complex that can be used as a case study
- The skate park could be relocated, potentially out of Downtown
    - Hartman Park pool site would be closer to schools but it has less transit access
    - Could also move to Teen Center site if that is vacated
    - Skate Park and Teen Center have two different markets and wouldn't highly benefit from co-location
    - Overlake may be too far from majority of residential areas for the skate park
- The Sky Painting parking lot is temporary, and its capacity would need to be replaced if redeveloped
- Fire Station 11
    - Replacing it too early could cause a public perception problem
    - Agreement that the site could be a potential location for the Pool and Community Center complex
    - FS 11 could be located anywhere else in Downtown, agreement that municipal campus would be a good location
- Teen Center is best co-located with either the Pool/ Community Center or the Cultural Center
- Cultural Center has an opportunity to spur mixed-use development with artist spaces and low-income housing
- The City owns a triangle-shaped parcel next to the Downtown Park; activation adjacent to the park with a public facility is an idea
- The Sky Painting lot may not be large enough for redevelopment; if it is, coordinate planning with Sound Transit's construction staging for future light rail station



Downtown alternatives matrix

FACILITY	ESTIMATED SIZE (SF)	PLANNING CONSIDERATIONS
Fire Station 11	23,800	Response time drives location; should remain on or near existing site
Pool & Community Center*		Central location with adequate parking
Teen Center	8,600	Some users prefer standalone facility; proximity to transit
Cultural Center	27,500	Proximity to transit and restaurants/nightlife
Senior Center	22,000	Replacement on current Municipal Campus location is preferred
Public Safety Building	100,000	Replacement on current Municipal Campus location is preferred

*The Pool & Community Center program is being refined by the City of Redmond

GENERAL CITYWIDE NOTES

Fire

- Medical call response needs driven by demographics
- Shared coordination needed with Bellevue; they have a vacant fire station at Overlake already
- Fire and Police storage could also be in Overlake, mostly backup vehicles e.g. for Medic One

Police

- Plan for a small precinct in Overlake; storefront if a precinct is not feasible
- Will need a touchdown station, small booking facility, a public facing entry, and storage
- Would like to be co-located with any other civic function to enhance customer service
- Emphasis on walk and bike patrols and transit-related crime

Administrative

- Satellite customer service center is preferred (mini City Hall)
- Need a conference/meeting room
- No development services staff/functions
- Could have a Parks and Recreation service desk
- Joint facility with Police, possibly Fire, and Admin would establish a good civic presence

Maintenance

- Event storage
- Lunch spot for field crews
- Emergency response supplies, e.g. snow and ice
- Backup department operation center (DOC)
- Garage with room for up to three vehicles (street sweeper, snow plow?)
- No permanent staff
- Opportunities for federal funding of resiliency planning and emergency preparedness
- Public Works and EMT Station garage synergy
- Consider how this combination would be managed
- Consider level of staff that really works for a satellite
- Liquefaction zone in Downtown may increase need for remote/backup facilities

Parks and Rec

- A satellite of Teen/Cultural Center in Overlake?
- Downtown is an attractive location for the Teen Center because it has the high school and two middle schools
- Bellevue YMCA is close to Overlake
- Could be a need for youth activities in Overlake, but probably not a primary facility
- The Cultural Center model/program is best for Downtown, but other models are not off the table
- A Cultural Center in Overlake could be co-located with a park to capture outdoor opportunities
- The municipal courts should be explored for co-location to maximize space use on the campus
- Verticality: build on top of FS 11 where beneficial
- Joint parking opportunity with cultural center and community center
- Skate Park could be moved to Hartman park – balance between proximity to schools and proximity to transit
- The Skate Park is undersized as-is
- Sky Painting parking capacity needs to remain, but it should not be a surface lot in the long term
- Replacing FS 11 could create a public perception that replacement is premature, but predicted renewals and seismic situation could avoid that issue
- New idea: recreation and aquatic partnership with school district
- Teen Center with Cultural Center (slight preference) or Community Center
    - Preferred site: Sky Painting or a city-owned site near Downtown Park
    - Sound Transit may want the Sky Painting site for construction staging
- Sound Transit and Microsoft are discussing a partnership at Overlake, why not involve the Cultural Center?
- Municipal Campus water well may not stay, but the site may have restrictions on micro-piles
- Creative idea for skate park: parking garage (protected from weather)

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REDMOND COMMUNITY CENTERS STAKEHOLDER GROUP COLLATERAL

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Summary: Stakeholder Group Meeting 1

Meeting purpose and overview

On Monday, October 24, 2016, EnviroIssues and City of Redmond Staff convened the first meeting of the Stakeholder Group (SG) of community volunteers to discuss the future of Redmond's Community Centers at the Old Fire House Teen Center (16510 NE 79th St). Topics for the meeting included:

- A tour of the Teen Center
- An overview of the project process
- Discussion of the group charter and purpose
- Presentations of background information on the challenges Redmond's current community centers face
- Discussion of how to reach out to the community
- Preparation for community conversations
- Next steps

Materials from the meeting, including the presentations from each speaker, can be found online at http://www.RedmondsCommunityCenters.com/about.html.

Meeting summary

Welcome and introductions

Meeting facilitator Penny Mabie of EnviroIssues welcomed everyone and led introductions. She conducted an overview of the agenda, meeting handouts, and ground rules. Penny emphasized her role as a neutral facilitator and encouraged SG members to contact her with questions. SG members expressed a common interest in improving conditions of their community centers through their various affiliations.

Stakeholder Group: purpose, expectations, charter

Penny reviewed the purpose of the SG and the draft SG charter. Penny stressed the importance of SG members as community representatives and expressed her appreciation for their participation. SG members present had no revisions to the draft charter.

The key goals of the group are to provide recommendations to the City of Redmond about:

- What kinds of indoor activities are desired now and in the future?
- Should those activities be provided to the community in one or more centers?
- Where are the best locations for those activities?
- What are the options for addressing the challenges?
- When and how to achieve these goals?

Redmond's Community Center process overview

Penny introduced the SG group to the Redmond's Community Centers timeline and process and shared the progress that has been made thus far (see presentation).

- **Planning:** August – October 2016: developing a visual identity, convening SG, preparing outreach materials, and developing the project website
    - Penny solicited feedback from SG members on the outreach materials:
        - A SG member commented on the possibility of a combined multi-interest facility that offers various activities
        - A SG member noted the emphasis in NOW of the visual identity and need for an efficient planning process
- **Education & Awareness Program:** October 24 (six weeks): Generate awareness of current recreational facilities' conditions and educate the community about the future of Redmond's Community Centers
    - Penny shared the materials that have been developed to aid the awareness phase including: yard signs, posters, table tents, information cards, the website, and social media
    - Community members will learn about the project through tabling at events and other conversations
    - Penny explained the crucial role of SG members in this phase.
- **Community Conversations:** December 2016 – February 2017: Key outreach phase with emphasis on listening to the community through focus groups, listening sessions, intercept surveys on iPads available in multiple languages, and the SG
- **Putting it all Together:** March – April 2017: Synthesis and interpretation of community and SG feedback; combine into recommendations to Redmond City Council

Questions and comments

- A SG member asked if this effort was in preparation for a bond for Redmond's Community Centers
    - Penny answered there are no presupposed outcomes; the city council will make decisions on next steps and is looking to the community for advice. She

emphasized the importance of continuing these conversations to inform such pivotal community decisions

- A SG member asked if the community centers will consist of four separate recreational facilities, as they are currently, or whether there will be a single center in the future
    - Penny indicated that this is a decision that is up to the community; she emphasized the plural in the project title refers to the existing four centers
- As a follow-up, the SG member asked how using "centers", plural, will be impacted in the visual identity if it does become one facility
    - Penny answered the use of plural centers refers to the current four centers which all have challenges; she noted information on the condition of each facility is available on the website to explore
- A SG member asked if there is a proposed schedule for Awareness and Education tabling events
    - Penny stated that tabling events are still being finalized and urged SG members to make recommendations
- A SG member asked if the city has considered partnerships with other pools to accommodate the growing aquatic community
    - Penny stated that the potential of partnerships will be discussed in these community conversations

Recap Teen Center tour

Before the meeting, Old Fire House Teen Center Director Ken Wong led SG members on a short tour of the building. SG members developed awareness of current conditions and shared perceived needs of the facility. Penny shared that the next SG meeting at the Old Redmond Schoolhouse Community Center (ORSCC) will also have an optional tour at 5:30. She also reminded SG members to participate in the Doodle poll for a Saturday tour of the Redmond pool and neighboring community centers in January or February, 2017.

Questions and comments

Penny facilitated a brief recap discussion of what members learned from the tour and feedback about the Teen Center. Penny and City of Redmond staff provided answers where appropriate.

- A SG member shared that the space is a great historic space with amazing programs for teens, but expressed concern about its aged condition
- A SG member asked if the Teen Center has considered combining with other facilities or if it needs to be a separate entity
    - Carolyn Hope, City of Redmond Parks & Recreation Department, noted that questions like these are great questions to explore with the community
- A SG member asked how many kids visit over the course of the week
    - Ken Wong said visits depend on what program is offered that day, but can range between 30-150 teens; he shared that the range depended on the schedule of other local activities as well
    - Carolyn noted that the project website has statistics of annual visits for each community center
- A SG member followed up asking if increased accessibility of public transportation has impacted the use of the Teen Center
    - Carolyn answered that use of the teen center has increased over the past 5 years
- A SG member asked how long the recording studio has been available in the Teen Center
    - Ken answered it has been available for 14 years
- A SG member commented that the Teen Center is valuable and should not be sold or surplused by the city simply because the property is high value
- A SG member asked if the teen center was old enough to meet the requirements of an historic site
    - Carolyn answered yes, and the decision to pursue historic status should be up to the community. She also noted there are other qualifications and ramifications to being an official historic building
- A SG member shared that teens prefer having a space that is independent from the other community centers
- A SG member commented on remodeling opportunities

Background information

Penny introduced several speakers who each gave brief presentations on the background leading up to the Redmond's Community Centers process and other ongoing city efforts that may present opportunities. The speakers also responded to questions and comments from SG members.

Recreation Building Master Plan – Carolyn Hope

Carolyn Hope, Project Manager from the City of Redmond Parks & Recreation Department, gave a presentation on the Recreation Building Master Planning process (see presentation).

- Carolyn reviewed the planning history from 2009-present, highlighting the Lake Washington School District bond measure implications and the public engagement process; the Parks and Trails Commission recommended a SG to integrate a more robust public engagement process
- Carolyn reviewed the four community centers currently in Redmond as well as their mechanical and systems deficiencies; she also referred to the project website for more in-depth details
    - Old Fire House Teen Center
    - Redmond Pool
    - Senior Center
    - Old Redmond School Community Center (ORSCC)
- Carolyn emphasized the projected increase in population of both residents and employees in Redmond, which will impact community demographics and interests
- Carolyn gave an overview of conceptual project designs, Downtown 2030 and Overlake 2030; she noted the potential for added implications if public transit measures pass and improve accessibility to downtown Redmond
- Carolyn reviewed the design process, showed various charts of community priorities, and continued to review the Master Plan part 2 and its process
- Carolyn reviewed several options for expansion of current facilities as well as the following:
    - Different land areas explored, public/private partnerships, and general floor plans

        - Options of community classroom space in other facilities at Teen Center and Senior Center
        - Review of all options on website
        - Cost associations
    - Carolyn noted that teens gave positive feedback on maintaining an independent facility.

Questions and comments

- A SG member asked why a parking structure was proposed in the original proposed building design
    - Carolyn replied that due to Redmond's high water levels, there is only capacity for one underground level of parking and therefore structured parking is preferred
- A SG member noted there is a growing number of summer camps that are running out of space
- A SG member asked what happens in 2018 with the ORSCC lease
    - Carolyn mentioned that Maxine Whattam, City of Redmond, Parks & Recreation Department, would be answering this through her presentation
- A SG member commented that though the City's demographic is expanding, some cannot vote; they asked how these voices could be heard if they can't vote in a campaign or ballot
    - Carolyn acknowledged that it is a difficult obstacle but assured that the City will incorporate certain avenues to address this issue

Facilities Strategic Plan – Jeanne Justice & Julie Bassuk

Jeanne Justice, City of Redmond Public Works Department and Julie Bassuk, consultant from MAKERS Architecture and Urban Design, presented on the 2013 Facilities Condition Assessment and the ongoing Citywide Facilities Strategic Plan (see presentation).

- Jeanne emphasized the need for integration of public works facilities and parks and recreation centers in a strategic plan to make City-wide facilities cross-departmental, tactical and efficient.

- Julie emphasized the need for maintenance renewals and funding for efficiency and functionality of many facilities that are outdated and need improvements; she shared best practice examples and strategies to consider from her work with past facilities.

Questions and comments

- A SG member noted the Public Safety Building on the list as needing major updating and asked about its current renovation
    - Julie answered that though some maintenance has been conducted, the building's outdated structure from the 1990s will require renewal measures throughout the life of the building.

Cultural Facility Feasibility Study – Jessica Rubenacker

Jessica Rubenacker, City of Redmond Parks & Recreation Department, gave a presentation on the 2015 Cultural Facilities Feasibility Study (see presentation).

- Through a partnership with AMS Planning and Research, the City conducted an arts and culture study to evaluate the feasibility of a cultural facility that will meet the needs of the growing and changing community.
- Jessica reviewed the recommendations from community engagement, a market study, best practices and the report recommendations.

Questions and comments

- A SG member asked if there were best practice comparisons with Meydenbauer Center in Bellevue and the Kirkland Performance Center
    - Jessica answered that though performing arts centers were popular in the 1990s, multipurpose areas are more popular now due to their flexible functionality, moveable furniture and walls

Lake Washington School District/Old Redmond Schoolhouse Community Center transition – Maxine Whattam

Maxine Whattam, Director of the City of Redmond Parks & Recreation Department, gave updates about the status of the City's lease of the Old Redmond Schoolhouse Community Center (ORSCC) with Lake Washington School District (LWSD), an update to the inter-local

agreement between the City and LWSD, and ongoing discussions with neighboring jurisdictions about partnerships.

- LWSD recently passed a bond to fund facilities to manage growth. One of the elements in the bond was for LWSD to use ORSCC for preschool classes, to free up space in Redmond's elementary schools.
- LWSD has informed the City that as of July 2018, LWSD will end Redmond's lease of ORSCC.
- Redmond is in conversations with LWSD about the ORSCC lease. LWSD and the City has a long history of partnership, including an interlocal agreement, which allows for reciprocal use of facilities. The City has begun conversations with LWSD to update the interlocal agreement.
- Maxine discussed the implications of the interlocal agreement with LWSD and the importance of synergized conversations between Redmond community, City and LWSD for scheduling, capital investment, and development.
- Maxine stated the transition is still ongoing and SG members will be updated on the progress and steps in moving forward.

Questions and comments

- A SG member asked about partnerships with other jurisdictions
    - Maxine answered LWSD also serves Kirkland and Sammamish so there are opportunities for collaboration with other cities; she noted King County's facilities, in general, are also aging, which might be an opportunity for Eastside regional development if that is the consensus of the community
    - Tacoma Metro, the oldest metropolitan park district in Washington, has been evaluated by the City as an example of synergized facilities
    - Maxine acknowledged the comparison is apparent with similar populations and opportunity for youth growth and development; she agreed Tacoma has an interlocal partnership approach that Redmond could also consider
- A SG member commented there are many businesses and operations affected by the ORSCC transition and asked for information as soon as possible

- Maxine replied impacted businesses and individuals will be notified as soon as possible

Supporting Education and Outreach and preparing for Community Conversations

Penny returned the group's focus to how the SG members will support the project among their communities, emphasizing the need for continued conversations. She asked SG members to share the groups that they were going to talk to following the meeting. Responses included:

- Redmond WAVE customers
- Mailing list of the Redmond Historical Society
- PTA
- Education Hill Neighborhood Association
- Girl Scouts
- Parents and families of Boys and Girls Club
- Redmond Elementary School
- Aquatics community
- Little League
- OneRedmond (Redmond Chamber of Commerce)

Penny asked the SG for suggestions where the 15 listening sessions should take place in the community. She noted there will also be eight events with intercept surveys to gather additional community input. SG members suggested soliciting surveys and conducting listening sessions at the following events and audiences:

- Redmond Lights
- Fitness class users
- ORSCC users
- Greater aquatics communities (aerobics, swim teams, high school coaches)
- Redmond Town Center
- City social media channels
- Microsoft Commons area
- Redmond Neighborhood Blog

Comments and questions

- A SG member asked when the action will take place since there have been conversations since 2009.
    - Penny answered the City will determine action items once recommendations are given to Council in April
- SG members offered to post on affiliated social media groups when given content
- A SG member suggested going to businesses in the community to distribute information

Next steps and action items

Penny asked the group for suggestions on what they would need to support outreach for the project. Penny reviewed the talking points, informational handouts, and other materials in the folder each SG member received that would be useful to engage the community in conversations. She also reviewed action items in preparation for the second SG Meeting on December 7 at the ORSCC.

Comments and questions

- To help with outreach, SG members requested PDFs of the project materials, social media content they could share with their networks, and copies of the presentations used at the meeting
- A SG member asked how to best approach outreach, whether they should just start the conversation or ask for opinions
    - Penny answered that all types of engagement are encouraged and suggested they refer community members to the website and survey/comment form
- A SG member asked where it was allowable to post Redmond's Community Centers yard signs
    - Carolyn answered anywhere with permission is allowed. She asked that if you put up a side, to also be responsible for removing it. Carolyn noted that many parks in Redmond will have yard signs put up soon

Action items

Penny provided a few closing comments and reiterated action items for the SG before the next meeting, including:

- Reminder to participate in the doodle poll for visiting Redmond Pool and surrounding area community centers
- Sharing materials with people in the community
- Reminder to send Penny list of interested people, groups, and outreach events
- Penny will send all materials and presentations from the first meeting via email

Attendees

SG Members

- Angela Birney
- Stacey Blakney
- Michael & Marilyn Bloodgood
- Melissa Brown
- Matt Harrison Gallagher
- Shaila Khan
- Travy Kvietkus
- Jessica Lambert
- Jennifer Martyn
- Lorrain Masse
- Tom Sanko
- Rachel Smith
- Joe Townsend
- Alec Weintraub
- Belinda Zeitouni

Meeting speakers

- Ken Wong, City of Redmond Teen Center Director
- Carolyn Hope, City of Redmond Parks & Recreation Department
- Jeanne Justice, City of Redmond Public Works Department
- Jessica Rubenaker, City of Redmond Parks & Recreation Department
- Maxine Whattam, City of Redmond Parks & Recreation Department
- Julie Bassuk, MAKERS Architecture and Urban Design

EnviroIssues

- Penny Mabie, facilitator
- Connie Kim, notetaker

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Summary: Stakeholder Group Meeting 2

Meeting purpose and overview

On Wednesday, December 7, 2016, EnviroIssues and City of Redmond Staff convened the second meeting of the Stakeholder Group (SG) of community volunteers to discuss the future of Redmond's Community Centers. The group met in the auditorium at Old Redmond Schoolhouse Community Center (ORSCC), located at 16600 NE 80th St. The meeting agenda included the following topics:

- A tour of ORSCC
- An overview of City budgeting for parks and facilities
- Presentations of funding options for cities and partnership options considered to date
- A discussion of group values and guiding principles
- Preparation for field trips to similar facilities
- Next steps

Materials from the meeting, including the presentations from each speaker, can be found online at http://www.RedmondsCommunityCenters.com/about.html.

Meeting summary

Welcome and introductions

Facilitator Penny Mabie of EnviroIssues welcomed everyone and led introductions. She briefly gave an overview of the agenda and meeting handouts, and reviewed the ground rules established at the first SG meeting in October.

Community conversations review

Penny pointed out posters around the room with spaces to write community groups and connections they have made or plan to make to discuss the future of Redmond's Community Centers. Penny encouraged SG members to fill out the posters throughout the meeting to gather ideas and set up additional conversations in the community. Penny recognized SG efforts in engaging the community to date and urged them to continue their outreach efforts.

Redmond's Community Centers Financial Models overview

Penny introduced several speakers who each gave brief presentations about the financial background for the project, including budgeting, funding, and partnership options. The speakers also responded to questions and comments from SG members.

Capital Investment Program – Kelly Cochran

Kelly Cochran, Financial Officer for the City of Redmond, presented on the City's 2017-2022 Capital Investment Strategy (see presentation).

- ~~Kelly gave an overview of Redmond's Capital Investment Strategy (CIS), which identifies and prioritizes strategic goals and actions related to infrastructure investments~~
    - ~~The CIS summarizes capital facility investments through 2030~~

- Kelly provided an overview of City budgeting for parks and facilities through revenues, typical expenditures, and trends in spending

- Kelly next gave an overview of Capital Investment Programs (CIP) for general government and city utilities with data showing expenditures by functional area and gave a breakdown of general government CIP revenues for 2017-2022
  - Future needs and allocations shift with budget allocations determined by the City
  - Kelly noted that Redmond uses capital bonds on projects, but larger projects like Redmond's Community Centers need to utilize other financial strategies
- Kelly reviewed primary general CIP revenue sources, including business tax, real estate excise tax, and impact fees
  - She explained how the City uses these taxes and fees for certain projects and infrastructure improvements
  - New facilities pose some challenges due to restrictions on budgeting
  - Kelly noted that some project specific investment partnerships have been made with Sound Transit and Microsoft, but these funds cannot be used for other non-project related purposes
- Kelly reviewed 2017-2022 revenue assumptions based on the economy, real estate, and grants from transportation
- Kelly gave more detail about the City's budget by describing a graph showing the Price of Government (POG)
  - Redmond's low 2015 – 2016 POG (at 4.9%) suggests that the City has been able to accommodate costs with adjustments in infrastructure and various programs
- To close, Kelly asked SG members to include funding options and what tax payers would pay for the future of Redmond's Community Centers in their discussions

Questions and comments

- A SG member asked about Redmond's POG compared to other cities
  - Kelly replied that it is difficult to make a direct comparison because every city manages their finances ~~individually~~differently and offers different kinds of services (e.g.; some provide fire and some do not).

Parks and Recreation Capital Finance Options – Tracy Burrows

Tracy Burrows, Executive Director of Municipal Research and Services Center (MRSC), gave a presentation on alternative Capital Finance Options for the City of Redmond Parks & Recreation Department (see presentation).

- Tracy opened by emphasizing the challenge for cities to match expenditures with revenues through property tax; she provided an overview handout highlighting the various taxes and fees that can help local governments budget appropriately
- Next, Tracy shared several funding options and examples from cities that could increase revenue to fund projects like Redmond's Community Centers; Tracy reviewed the pros, cons and complexities of the following funding options:
  - Property tax levies

        - ~~Tracy explained property tax levies require voter approval to "lift" the levy lid by increasing the tax rate permanently or temporarily to some amount equal to or less than their statutory maximum rate~~
        - ~~She shared Kirkland's 2012 Parks and Streets Levies as an example, which generated $5.5 million annually and cost the average home $150/year~~
    - ~~Bonds~~
        - ~~Tracy explained bonds are property tax based~~
        - ~~Bonds can be either council or voter approved and have varying implications depending on the type of bond~~
        - ~~Tracy shared the example of Issaquah's 2013 Park Bond Measure, which was a voter approved $10 million bond measure and cost an average $50/year for the 20-year life of the bond~~
    - ~~Metropolitan Park District (MPD)~~
        - ~~Tracy described MPDs as a special park district with its own taxing authority and flexible boundaries~~
        - ~~MPDs have a higher taxing authority and may be authorized to issue General Obligation Bonds as a new governing structure~~
        - ~~MPDs do not need to be voted on again like bonds, but they are harder to educate voters on~~
        - ~~Tracy discussed an example from the voter approved Olympia MPD which generates $3 million a year through its own taxing authority~~
    - ~~Grants~~
        - ~~Tracy explained grants are a competitive funding source from multiple state and federal sources and require initial investment by local government~~
        - ~~She noted grants are most successful if the project is in its final stretch of gathering funding~~
- ~~Next Tracy reviewed the Parks and Recreation ballot measures that have been passed in Washington since 2011~~
    - ~~14/19 property tax levy lid lifts, 9/20 bond measures, and 3/11 MPD were approved~~
    - ~~Factors for successful ballot measures include: clear writing that addresses identifiable needs, community engagement in developing the priorities, and sponsorship by a trusted agent~~
    - ~~Tracy noted that local government typically has a higher level of trust with its voters due to its proximity to the people~~

Questions and comments

- A SG member asked about the timeline from community conversations to funding of the Redmond's Community Centers project
    - Carolyn answered that SG members are engaged to decide whether council will move forward with ~~this approximately $20 million project~~a project; city council will determine its options based on funding considerations and recommendations gathered from community conversations.
- A SG member asked if public relations firms have historically been involved in promoting ballot measures

    - Tracy explained that cities are not able to allocate internal sources to promote ballot measures but independent interest groups can form funds and promote measures
- A SG member asked if the City of Redmond is considering a MPD
    - Carolyn said the Parks and Trails Commission has ~~considered~~ discussed the option of an MPD in the past. But there has not been a formal proposal to date. ~~due to many programs being in unincorporated surrounding areas, but this consideration has not yet been discussed with the community~~
- A SG member asked if revenue generated from facilities could cover renovation costs
    - Tracy answered facility revenues do not make up for all facility expenditures such as maintenance, operational costs, and new renovations

Partnerships – Carolyn Hope

Carolyn Hope, City of Redmond Parks & Recreation Department, presented on partnership options the City has considered to date (see presentation).

- ~~Carolyn reviewed five types of partnership options: financial, developers, operators, shared use, and shared site~~
    - ~~Financial partnerships – Opportunities for partners who have shared stakeholders or constituents; these partners contribute to the construction of the project~~
        - ~~Examples include partnerships with a school district, business sponsors (such as health organizations), and major employers~~
        - ~~Carolyn described the 63-20 Tax Exempt Bond, which Redmond used in the development of City Hall and other public buildings; this bond is an agreement with the developer to essentially rent to own~~
    - ~~Developer partnerships – Occur when developers purchase commercial space and the City makes a deal to use part of the property for a lower price~~
    - ~~Operator partnerships – Like example between the City of Sammamish and the YMCA, where a city owns the building but shares the space with the operator~~
    - ~~Shared use partnerships – Involves joint funding and shared use of the building with non-profit or other partners such as the Boys & Girls Club, human service organizations, and other non-profit groups (e.g. arts and culture organizations)~~
    - ~~Shared site partnerships – Like Tacoma Metro Parks South End Recreation & Adventure (SERA) and STAR Center example, where parks and community center campus are shared spaces jointly used by multiple organizations~~

Questions and comments

- A SG member emphasized the importance of designated shared spaces for the variety of organizations in Redmond
- Another member expressed the need to maximize space through partnerships within the community, especially schools
- A SG member commented that employing all types of partnerships that Carolyn shared should be considered as an option since there are benefits to establishing these relationships

Group discussion: Funding

Following the presentations, Penny asked the SG members to discuss the question "How can we pay for any community center recommendations?" in groups at their tables. Each table brainstormed ideas as a small group before presenting their ideas to the full group. Common themes included developing partnerships, shared use of facilities, and applying for grants.

Recap ORSCC tour

Before the meeting, Recreation Program Administrator Ryan Spencer led SG members on a short tour of ORSCC. SG members developed awareness of current conditions and shared perceived needs of the facility. Penny reminded everyone that the next SG meeting at the Redmond Senior Center on March 15 will also have an optional tour at 5:30 PM.

Questions and comments

Penny facilitated a brief recap discussion of what members learned from the tour and asked for their feedback about ORSCC.

- A SG member reflected that the impressive variety of classes, programs, and faith communities represented at ORSCC is a representation of Redmond's diversity
- A SG member commented on the value in multipurpose rooms available in the ORSCC that can be adjusted to serve various functions
- A SG member expressed appreciation for the tour for helping them understand the community center's role in the community
- SG members agreed on the value of having many classrooms to provide shared community spaces

Identifying values

~~After a short break,~~ Penny transitioned the discussion to a discussion of group values. Penny reiterated the importance in their role as SG members to be representatives of the community and to reflect the community's values through their recommendations to city council. Penny invited SG members to complete an individual values exercise before leading the group to a discussion to identify shared values.

Individual and shared values

SG members shared the following individual values with the group:

- Space for community gathering
- Opportunity for inclusion, shared space for expression
- Creativity, growth, and idea incubation
- A place to go to get away
- Showcase the diversity in community
- Low-cost entry
- Opportunity for new experiences
- Friendship
- Neutral spaces to create community
- Safe place for expression
- Individuality of facilities, with each center serving different purpose and audiences
- Health and fitness

SG identified the following services and building functions as being important to them:

- Serving community equally
- Inspiring
- Supporting physical and mental health
- Point of pride
- Open doors for anyone in the community
- Accessible for all, physically and financially
- Affordability
- Open year-round, especially during rainy season

Reflecting on the individual values exercise, SG members shared their thoughts on the following questions:

- What's important to you as you think about how to meet the challenges facing Redmond's four community centers?
  - It is important to maintain the individuality that current separate spaces provide
  - It's urgent that we address the future of the community centers, specifically with the termination of the City's lease at ORSCC's in 2018
- What is the most compelling reason for the City to address the challenges facing the four community centers?
  - The necessity of maintaining current services offered at the community centers, especially ORSCC
  - The growing Redmond population and the need for the project as the ORSCC contract ends and the pool continues to need maintenance
  - The importance of a community center to unite the community together as the population grows and demographics change
  - Public shared spaces define the community; without investing in these facilities, Redmond can lose its identity. Redmond Lights promoted a strong sense of community, and we need community centers and more gatherings to welcome all members of the community together
  - We need to create a financial plan now to address the community center challenges

Penny next prompted SG members to discuss financial concerns as a taxpayer, voter, parent, and community center user. They shared the following concerns:

- Concerns about the lengthy and protracted process
- Need for effective messaging to the community in addressing these challenges
- Potential for other opportunities in funding options
- Need to balance finances for Redmond's Community Centers with other community priorities
- Concern about helping the project move forward since its first conversations started eight years ago; change needs to happen now
- Teens' requests to have a separate facility for teens from other facilities to maintain attendance at their center
- Concerns about putting together a bond or levy that is community-friendly and understandable

Guiding principles

Penny reminded members of the presentation about the Redmond Facilities Strategic Planning process Julie Bassuk from MAKERS gave at SG Meeting 1 (see presentation). Julie shared the guiding principles identified for the strategic planning process were to envision a community center that is: sustainable and efficient, flexible, designed for the future, welcoming, safe and healthy, and achievable.

Building on this example, Penny asked SG members to draft some guiding principles to address the community center challenges and inform upcoming community conversation topics. SG members proposed the following guiding principles:

- Community cohesion
- Diverse expressions
- Accessible to all in many ways, including physically and financially
- Quality facilities that can be sustainable over time
- Flexible and designed for the future
- Financially feasible and achievable

Preparing for community conversations

Penny once again stressed the importance of SG member involvement in the upcoming community conversations and expressed her appreciation for their participation. Thinking of the values and guiding principles just discussed, Penny asked SG members what they would like to know from the community to inform their recommendations and what information would be helpful in supporting the conversations.

Comments and questions

- Question for community: The community's sense of urgency
- Question for community: What activities are important priorities to the community
- Suggestion: create a visual representation or infographic regarding usage statistics for each current community center
    - Carolyn answered that the website has information about each center, including usage data
- Suggestion: Share user anecdotes on the website
- Suggestion: Share information in the Redmond Reporter with usage data to stress importance of the community centers
- Suggestion: Need for more information about the timelines for replacing certain facilities in order to call attention to the urgency of facilities with expiring leases and dire repair needs
- Suggestion: Important to creating partnerships for new facilities for the future

Next steps and action items

Penny reviewed preparations for the field trip on January 21 to visit nearby community facilities. Carolyn provided a handout with several regional community centers and noted the tour would include the Redmond Pool at Hartman Park with tentative visits to Sammamish YMCA, 12th Avenue Arts, and South Bellevue Community Center. ~~Carolyn asked for initial reactions of facilities SG members would like to visit. SG members expressed interest in viewing other community centers and seeing their layouts.~~

Penny noted the transition in the project process from Education & Awareness to Community Conversations. She reminded the group that the next scheduled stakeholder meeting is March 15 from

5:30-8:30 PM at the Redmond Senior Center, at the end of the Community Conversations phase. Penny asked the group if they would like to add an additional meeting in the middle of this phase. The SG members group requested an additional meeting in February, either in-person or online. One member suggested a Skype call or a Lunch and Learn at Redmond City Hall.

Action items
Penny provided a few closing comments and reiterated action items for the SG before the next SG meeting on March 15, including:

- Continue sharing materials and helping set up conversations with people in the community
- Participate in the optional field trip on January 21
- Look for Doodle poll and more information regarding additional February SG meeting
- Continue sending Penny notes from their outreach efforts in the community and interested people and groups
- Penny will send all materials and presentations meeting via email

Attendees

SG Members

- Kaitlin Alayo
- Angela Birney
- Siri Bliesner
- Levi Casto
- Cheryl Claux
- Risa Coleman
- Jennifer Martyn
- Tanika Padhye
- Tom Sanko
- Rachel Smith
- Joe Townsend
- Alec Weintraub
- Belinda Zeitouni

Meeting speakers and other attendees

- Kelly Cochran, City of Redmond Financial Officer
- Tracy Burrows, Executive Director of MRSC
- Carolyn Hope, City of Redmond Parks & Recreation Department
- Ryan Spencer, City of Redmond Parks & Recreation
- Julie Bassuk, MAKERS Architecture and Urban Design
- Cecilia Roussel, MAKERS Architecture and Urban Design
- Jessica Rubenaker, City of Redmond Parks & Recreation Department
- Jeanne Justice, City of Redmond Public Works Department
- Barb Eggerud, City of Redmond Parks & Recreation
- Maxine Whattam, City of Redmond Parks & Recreation

EnviroIssues

- Penny Mabie, facilitator
- Connie Kim, notetaker

Stakeholder Group
Meeting Notes
6:30 PM, December 4, 2017
Redmond Senior Center

Tour

Rachel Van Winkle led the group on a tour of the Redmond Community Center at Marymoor Village.

Attendees:

City: Carolyn Hope

Stakeholders: Alec Weintraub, Levi Castro, Joe Townsend, Tom Sanko, Jennifer Martyn, Pat Vache, Shelly Bowman, Deanna Francis, Siri Bliesner, LouAnn Ballew, Arnie Tomac, Seema Chaudhary, Risa Coleman, Lorraine Masse

Presentation

Carolyn Hope provided an overview of the status of the regional aquatics partnership, facilities strategic plan, the budgeting process, architect selection. The regional aquatics partnership may be formed between King County, Bellevue, Kirkland and Redmond. Representatives of the agencies are meeting bi-weekly and are currently drafting a Memorandum of Understanding. The draft Facilities Strategic Plan recommendations were presented to City Council in December and included the following projects in the first 12 years of the capital improvement plan:

- FS11 Replacement
- FS12 Replacement
- FS16 & Shop Seismic & System Replacements
- PSB Phase II Renovation**
- MOC Project Placeholder
- Building Automation System Upgrades
- Senior Center Renovation & Seismic Upgrades**
- Community Center Placeholder
- Redmond Pool Systems – Placeholder
- Citywide Facilities Repair Program**

The City's biennial budget process in beginning. There will be placeholders made for community center projects, as the capital budget will be due before the stakeholder group is finished with preparing recommendations and vetting them with the community. There will likely be fiscal constraints on new and renovation capital community center projects of between $40 and $60M of city funds. We can seek additional outside funds.

The city sent a request for proposals out publicly in December and received seven proposals. Interviews will be conducted later in the month. Four stakeholders are part of the selection committee.

Stakeholder Group
Meeting Notes
6:30 PM, December 4, 2017
Redmond Senior Center

Exercise

The stakeholders broke into groups and reviewed the aquatics priorities developed at the last meeting and verified their priorities.

Lap Lane Pool Only w/Regional Pool @ Marymoor Park	Lap Lane Pool & Leisure Pool w/Regional Pool @ Bellevue Location (e.g.; BCC, SE 8th St)	Lap Lane Pool & Leisure Pool without a Regional Pool
1. Hartman Park & Overlake Village	1. Redmond Pool and Overlake Village 2. Fire Station 11 3. Redmond Community Center at Marymoor Village	1. Fire Station 11 2. Redmond Community Center at Marymoor Village 3. Redmond Pool 4. Overlake Village

The group did not have enough time to fully consider the options for locating the fitness facilities and will revisit that at the next meeting.

Questions, Discussion, Ideas

- Can you please explain the entire Capital Improvement Program in the city's budget for context?
- There were questions about whether it made sense to break apart aquatics facilities, such as put the therapy pool at the Senior Center, but the lap pool elsewhere.
- Staff was asked whether travel time was considered in the past and to bring data regarding that next time.
- Are there opportunities to partner with the school district to build bigger or different types of gymnasium facilities to meet our needs better?
- What partnerships could be developed for meeting/classrooms?
- What criteria should we be considering when we make facility siting recommendations?

Next Meeting – February 12, 2018, 6:30 PM, Redmond Senior Center

Stakeholder Group
Meeting Notes
6:30 PM, November 8, 2017
ORSCC, Room 105

Attendees:

City: Carolyn Hope, Maxine Whattam, Becky Range

Stakeholders: Alec Weintraub, Angela Birney, Arnie Tomac, James Terwilliger, Jennifer Martyn, Keith Rettig, Lorraine Masse, LouAnn Ballew, Pat Vache, Rachel Smith, Shaila Khan, Siri Bliesner

Fees and Charges Study Update

Maxine Whattam shared the status of the Fees and Charges Study, which is intended to provide a financially sustainable framework for the department to operate within.

Reviewed the use of Pyramid Methodology to evaluate whether programs are providing a community or individual benefit. Three workshops were held with stakeholders, including representatives of this group, to help evaluate where each department program fell within the pyramid.

The pyramid will become the basis for a tiered set of cost recovery targets. These targets have not yet been identified, but once they are, it is likely that the city will develop a phased implementation strategy to meet the goals. This plan will also include new financial policies for the department.

The next steps include a couple more touches with the City Council, Parks and Trails Commission, and final edits to the plan prior to adoption in February 2018.

Questions and answers related to this presentation included:

- Do other cities use this process? Yes, this is a common methodology used by many cities across the country including Kent and Tacoma locally.
- What are other cities' cost recovery rates? It varies based on the assumptions used. The cost recovery rate can be based on just direct costs or both direct and indirect costs. In addition, some cities have more indirect costs than others (i.e.; amount of staff and park land, number of recreational facilities, types of overhead costs passed down to the department from other departments, etc..).
- What was our cost recovery policy before? The city does not have an adopted goal.

Regional Partnerships

Maxine Whattam explained that regional partners have been meeting with King County officials to discuss a potential eastside regional aquatics partnership. The partners include King County, Bellevue, Kirkland, Redmond, WAVE Aquatics, and Sno-King Hockey. The group is drafting a Memorandum of Understanding and cost sharing agreement and then will formalize a work plan and timeline for their activities, which will include a siting analysis, alternatives development, and design.

Stakeholder Group
Meeting Notes
6:30 PM, November 8, 2017
ORSCC, Room 105

Questions and answers related to this presentation included:

- Is Sammamish involved? No, as they just partnered with the YMCA to develop an aquatics facility in their city.

Demand for Services

Carolyn Hope shared data from past marketing and research studies and data from our own recreation program database to show the demand for services. This ties to the handout, attached, which listed a series of space needs to fulfill the demand. Then the group was asked to begin brainstorming alternatives for where the city and partners could locate these spaces and how the group would prioritize them.

Exercise on locating new program spaces in existing and new community centers

Discussion:

- Priorities:
  - Pool
  - Meeting space
  - Event space
  - Indoor play
- Location Ideas:
  - Pool could stay on Education Hill, then have another one eventually in Overlake if there is a regional pool in Marymoor. Although the pool doesn't meet all the community's need, the Education Hill pool is conveniently located near the middle and high schools.
  - Cultural Arts space for performances and other events could be located with the new community center in Marymoor Village, which could compliment the outdoor arts events at Marymoor Park.
  - Meeting, gathering, and events spaces need to be dispersed throughout the city for convenience.
  - Could the teen center land be sold and include a teen center at a different city-owned property to better use that prime real estate?

Next steps, each month staff will present more background information on one facility type and the group discussion will be focused developing alternatives for that facility. Eventually, all the alternatives will be brought to the table for each facility type and the group will develop about draft three packages of alternatives to present to the Commissions and City Council.

Redmond's COMMUNITY CENTERS
Let's create the future NOW

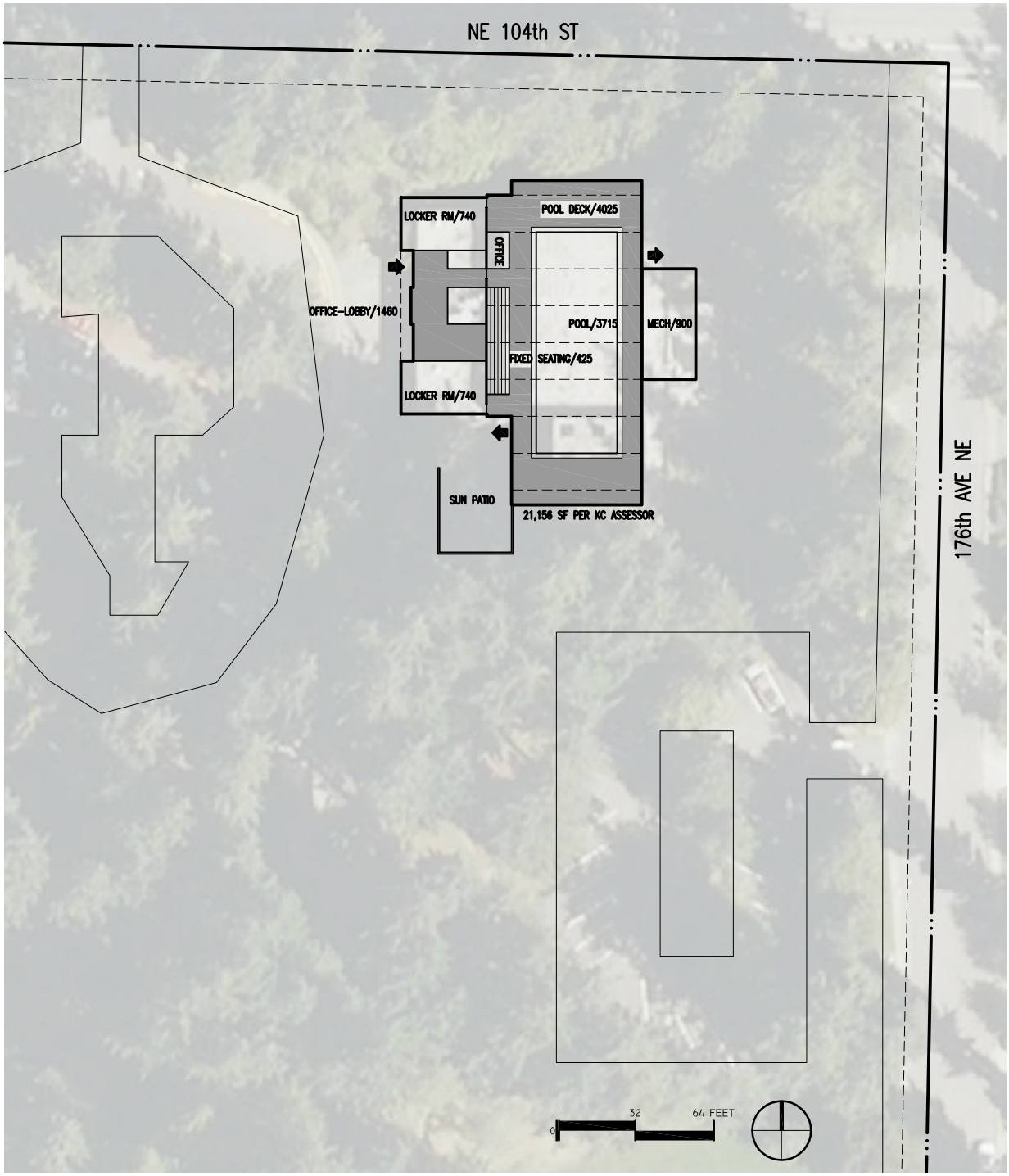
Stakeholder Group
Program Location Exercise
November 8, 2017

Program Type	Priority (1 highest)	Proposed Action (Renovate, Addition, New)	Proposed Location (see list below)	Notes (Size of space, partners)
Lap pool				
Leisure pool				
Therapy pool				
Gymnasium				
Fitness equipment				
Fitness classrooms				
Flexible cultural arts & events space				
Community gathering space				
Classroom or meeting room space				
Indoor Children's Play				
Other				
Other				

Stakeholder Group
Program Location Exercise
November 8, 2017

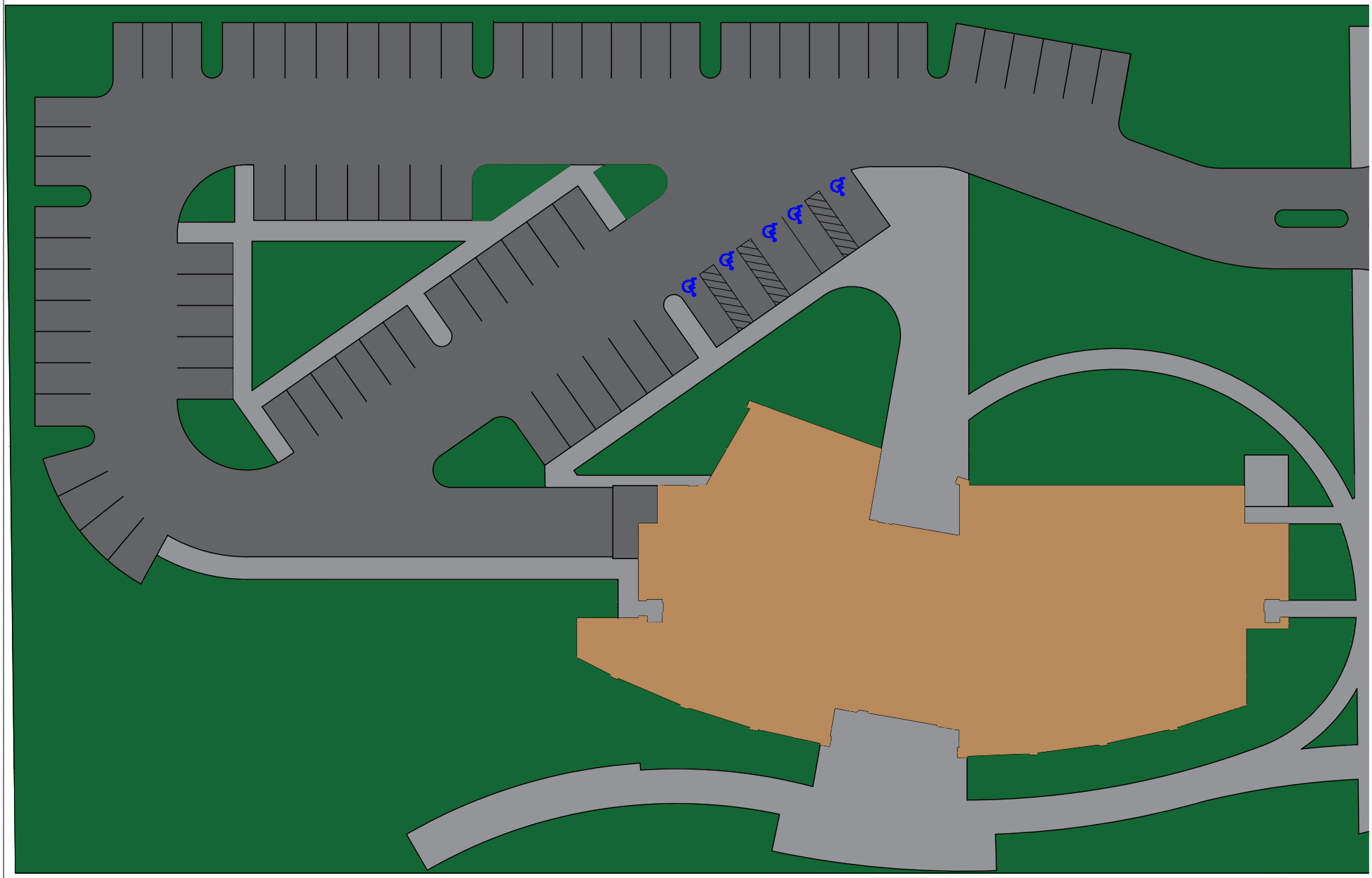
Project Locations:

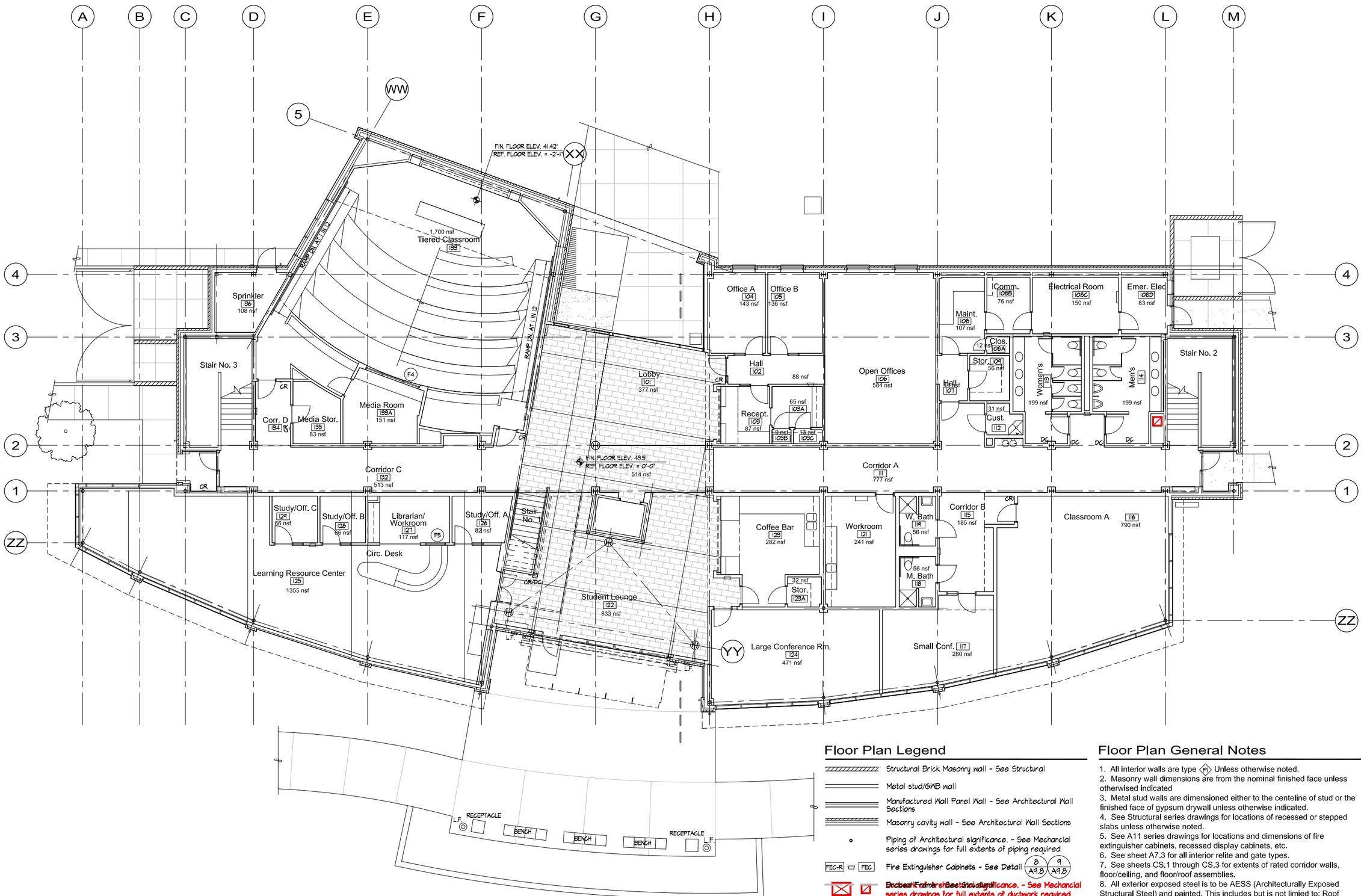
- Senior Center Expansion
- Teen Center Expansion
- Redmond Pool Expansion
- LWIT/ New Community Center Expansion
- New Facility at:
    - Park and Ride at Municipal Campus
    - Sky Painting Lot at RCC
    - Skate Park/ Fire Station 11
    - King County Partnership for Regional Aquatics Facility – Location TBD
    - Sound Transit Surplus Property at Overlake Village Station
    - Sound Transit Surplus Property at Marymoor Village Station
    - Sound Transit Surplus Property at Downtown Station
    - Mixed Use Development in Overlake Village
    - Mixed Use Development in Marymoor Village
    - Mixed Use Development in Downtown
    - Other



THE REDMOND POOL (AT HARTMAN PARK)

Lake Washington Institute of Technology, Redmond Campus
Site Plan





Floor Plan Legend

- Structural Brick Masonry wall - See Structural
- Metal stud/GWB wall
- Manufactured Wall Panel Wall - See Architectural Wall Sections
- Masonry cavity wall - See Architectural Wall Sections
- Piping of Architectural significance. - See Mechancial series drawings for full extents of piping required
- FEC-R / FEC — Fire Extinguisher Cabinets - See Detail 8/A9.8, 9/A9.8
- Ductwork of Architectural significance. - See Mechancial series drawings for full extents of ductwork required
- DC — Door Controls - Mount at 36" AFF.
- CR — Card Reader - Future. Provide J-box at 42" AFF w/ blank coverplate. Provide conduit and pull string to cable tray.

Floor Plan General Notes

1. All interior walls are type P1 Unless otherwise noted.
2. Masonry wall dimensions are from the nominal finished face unless otherwised indicated
3. Metal stud walls are dimensioned either to the centeline of stud or the finished face of gypsum drywall unless otherwise indicated.
4. See Structural series drawings for locations of recessed or stepped slabs unless otherwise noted.
5. See A11 series drawings for locations and dimensions of fire extinguisher cabinets, recessed display cabinets, etc.
6. See sheet A7.3 for all interior relite and gate types.
7. See sheets CS.1 through CS.3 for extents of rated corridor walls, floor/ceiling, and floor/roof assemblies.
8. All exterior exposed steel is to be AESS (Architecturally Exposed Structural Steel) and painted. This includes but is not limied to: Roof beams, sunscreens, canopies, sun shelfs, downspouts, gate posts and gate doors. See structural general notes for requirements and specificaitons for painting.

N

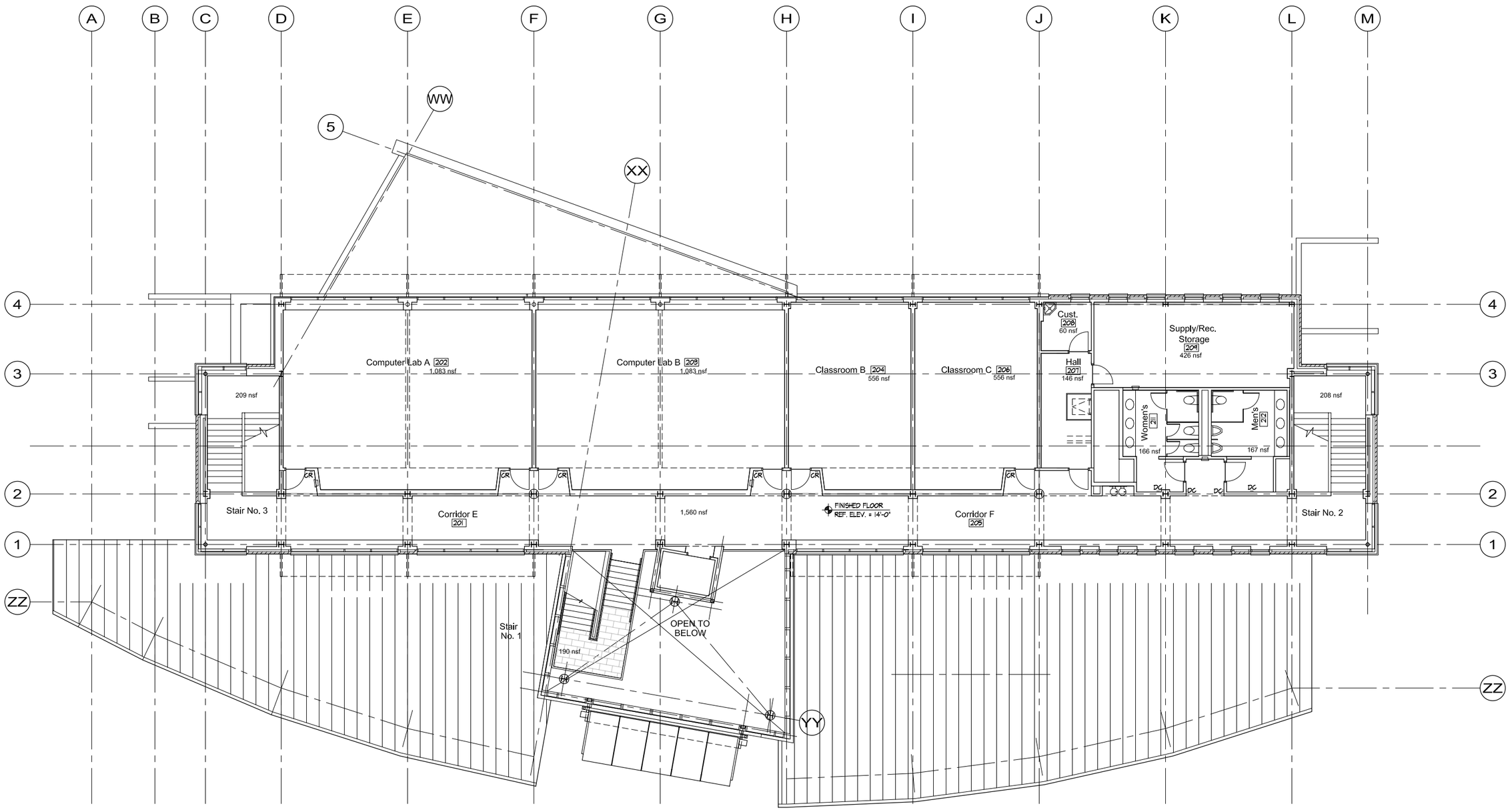
0 4' 8' 16'

1/A3.1

Lake Washington Institute of Technology, Redmond Campus

First Floor Plan

SCALE: 1/8" = 1'-0"



Floor Plan Legend

- Structural Brick Masonry wall - See Structural
- Metal stud/GWB wall
- Manufactured Wall Panel Wall - See Architectural Wall Sections
- Masonry cavity wall - See Architectural Wall Sections
- Piping of Architectural significance. - See Mechancial series drawings for full extents of piping required
- FEC-R / FEC — Fire Extinguisher Cabinets - See Detail 8/A9.8, 9/A9.8
- Braced Frame - See Structural
- DC — Door Controls - Mount at 36" AFF.
- CR — Card Reader - Future. Provide J-box at 42" AFF w/ blank coverplate. Provide conduit and pull string to cable tray.

Floor Plan General Notes

1. All interior walls are type P Unless otherwise noted.
2. Masonry wall dimensions are from the nominal finished face unless otherwised indicated
3. Metal stud walls are dimensioned either to the centeline of stud or the finished face of gypsum drywall unless otherwise indicated.
4. See Structural series drawings for locations of recessed or stepped slabs unless otherwise noted.
5. See A11 series drawings for locations and dimensions of fire extinguisher cabinets, recessed display cabinets, etc.
6. See sheet A7.3 for all interior relite and gate types.
7. See sheets CS.1 through CS.3 for extents of rated corridor walls, floor/ceiling, and floor/roof assemblies.
8. All exterior exposed steel is to be AESS (Architecturally Exposed Structural Steel) and painted. This includes but is not limied to: Roof beams, sunscreens, canopies, sun shelfs, downspouts, gate posts and gate doors. See structural general notes for requirements and specificaitons for painting.

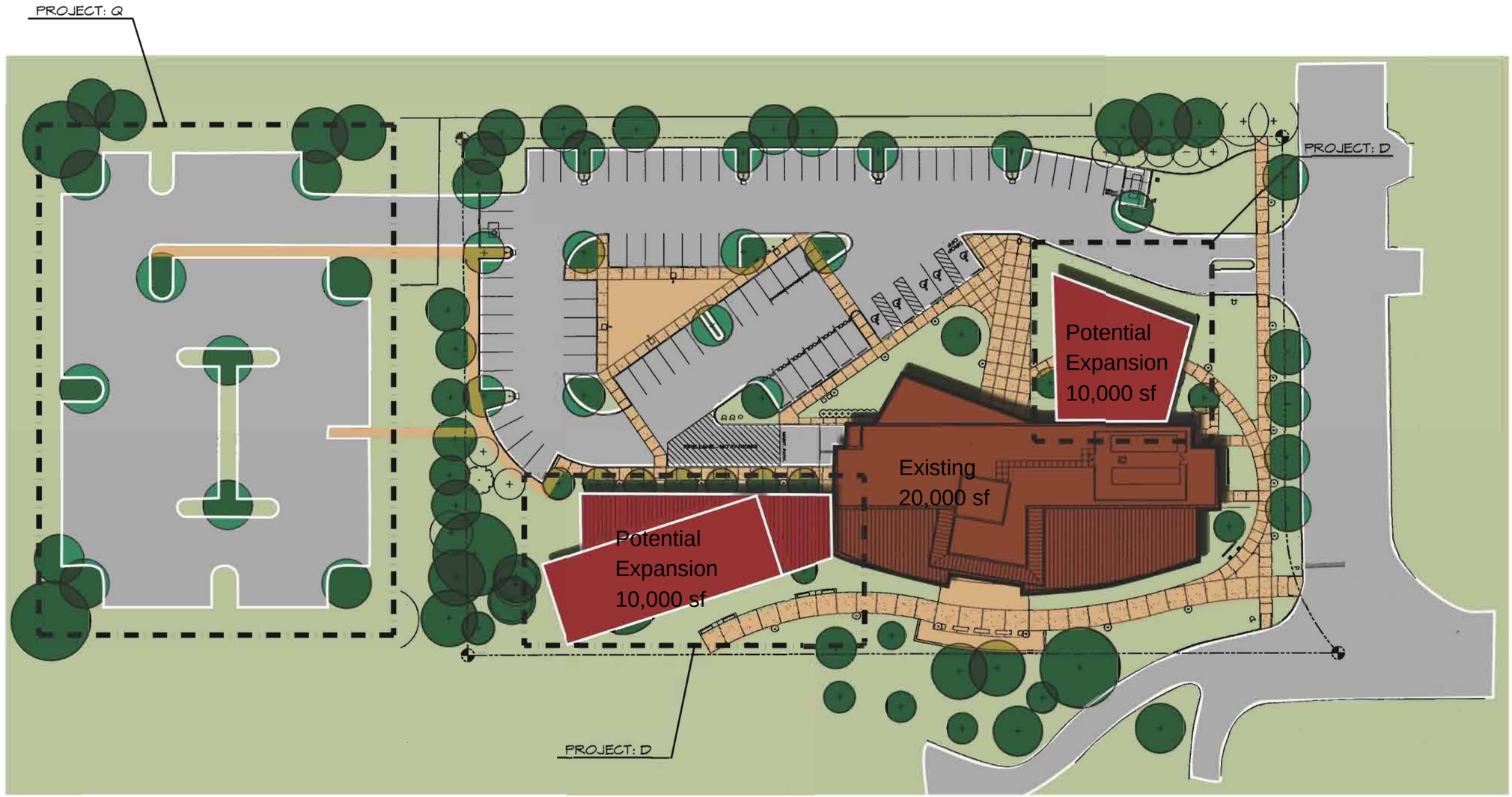
N 0 4' 8' 16'

1/A3.2

Lake Washington Institute of Technology, Redmond Campus

Second Floor Plan

SCALE: 1/8" = 1'-0"



Lake Washington Institute of Technology Redmond Campus
Potential Expansion Plan

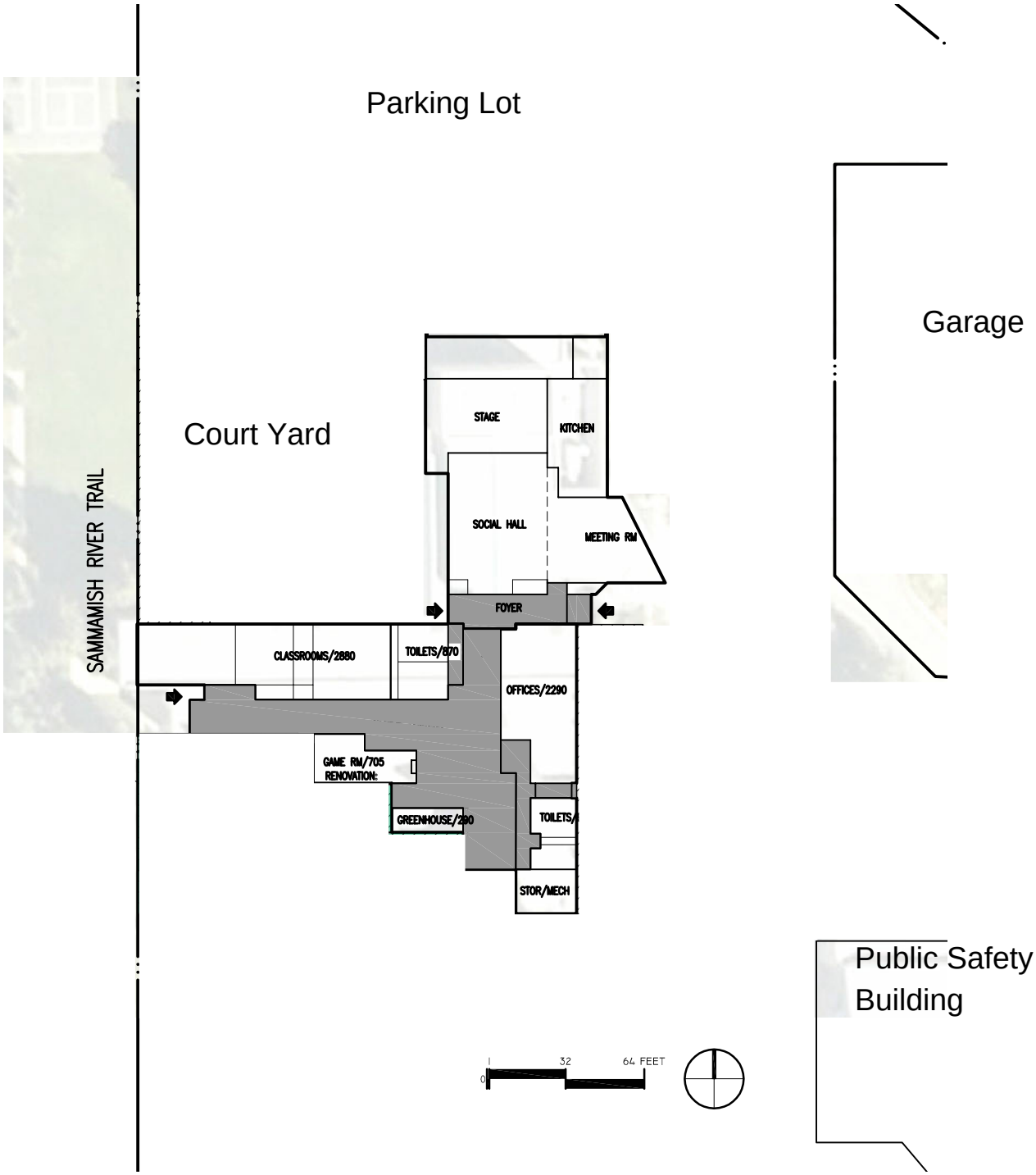
Master Planning : Redmond Campus

Lake Washington Institute of Technology

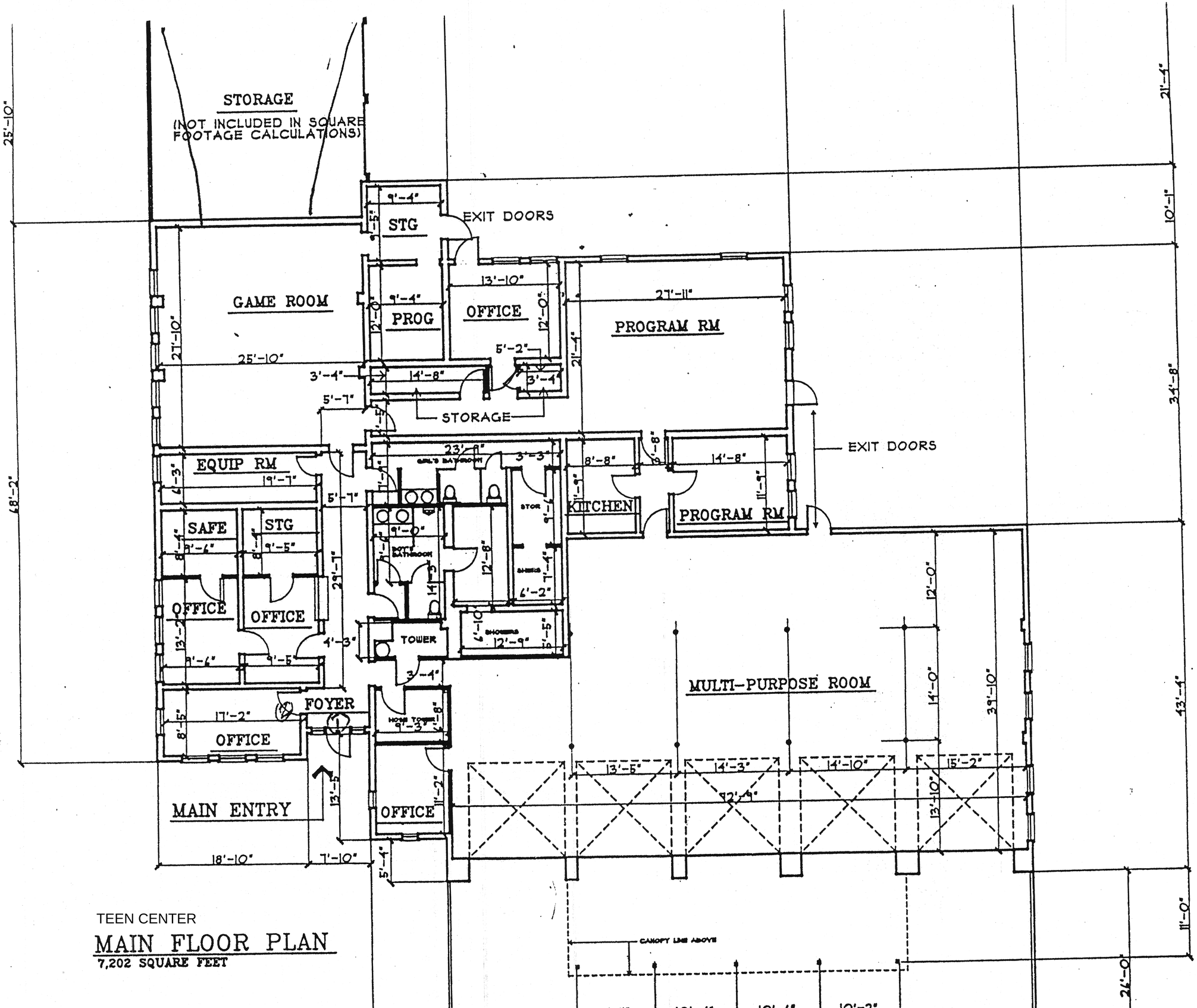
Schreiber Starling & Lane ARCHITECTS

TRUE N

11/04/2013



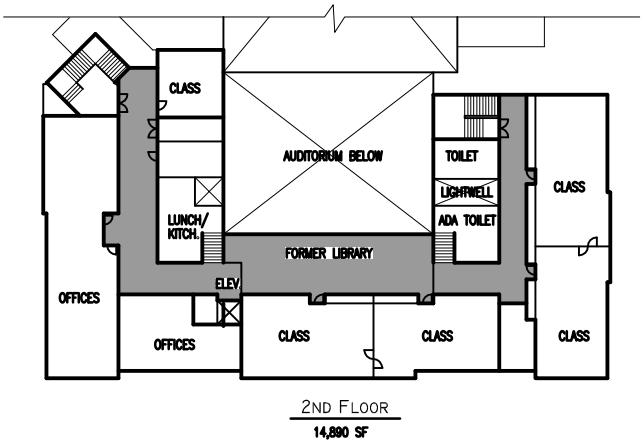
REDMOND SENIOR CENTER

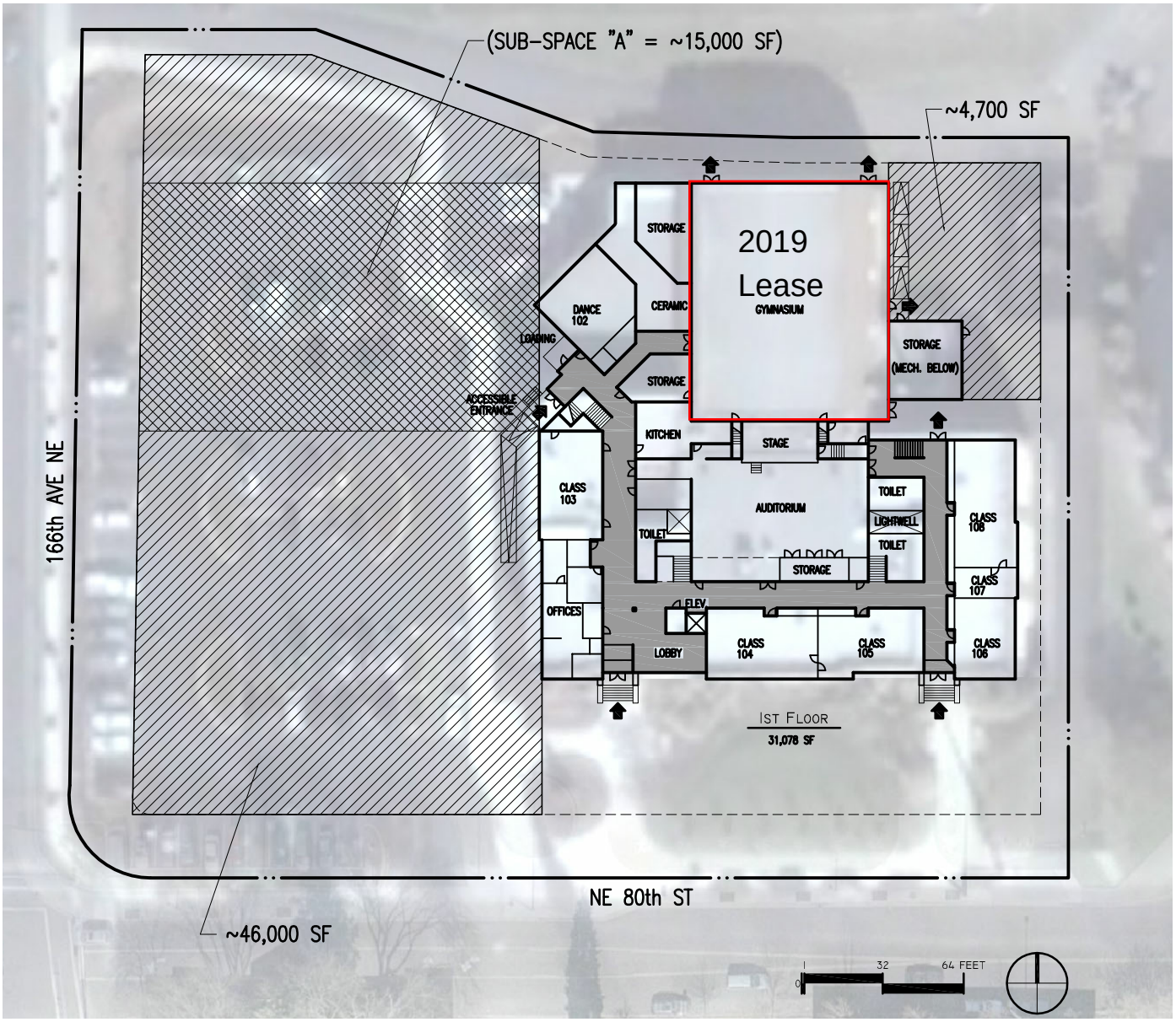


TEEN CENTER

MAIN FLOOR PLAN

7,202 SQUARE FEET





OLD REDMOND SCHOOLHOUSE COMMUNITY CENTER

Table 1

City Services Co-Location with Private/Mixed Use Development

Y - Yes, beneficial to be co-located

N - No

M - Maybe

	Commercial	Hotel	Residential	Transit	School District	Library	Other
Fire	Y	Y	Y	Y	Y	M	Y
Teen Programs	N	N	N	M	Y	Y	Y
Senior Center	N	N	N	M	M	Y	Y
Aquatics	Y	N	M	N	Y	N	Y
Recreation & Fitness	M	M	M	M	Y	M	M
Classroom/Gathering/Meeting	N	M	N	N	Y	Y	Y
Performance Events	Y	N	N	Y	Y	Y	Y
City Admin/Customer Service	N	N	M	N	N	N	Y
City Operations & Maintenance	M	N	N	Y	M	N	Y
Police	Y	Y	Y	Y	Y	M	Y

Table 1

City Services Co-Location

Y - Yes, beneficial to be co-located

N - No

M - Maybe

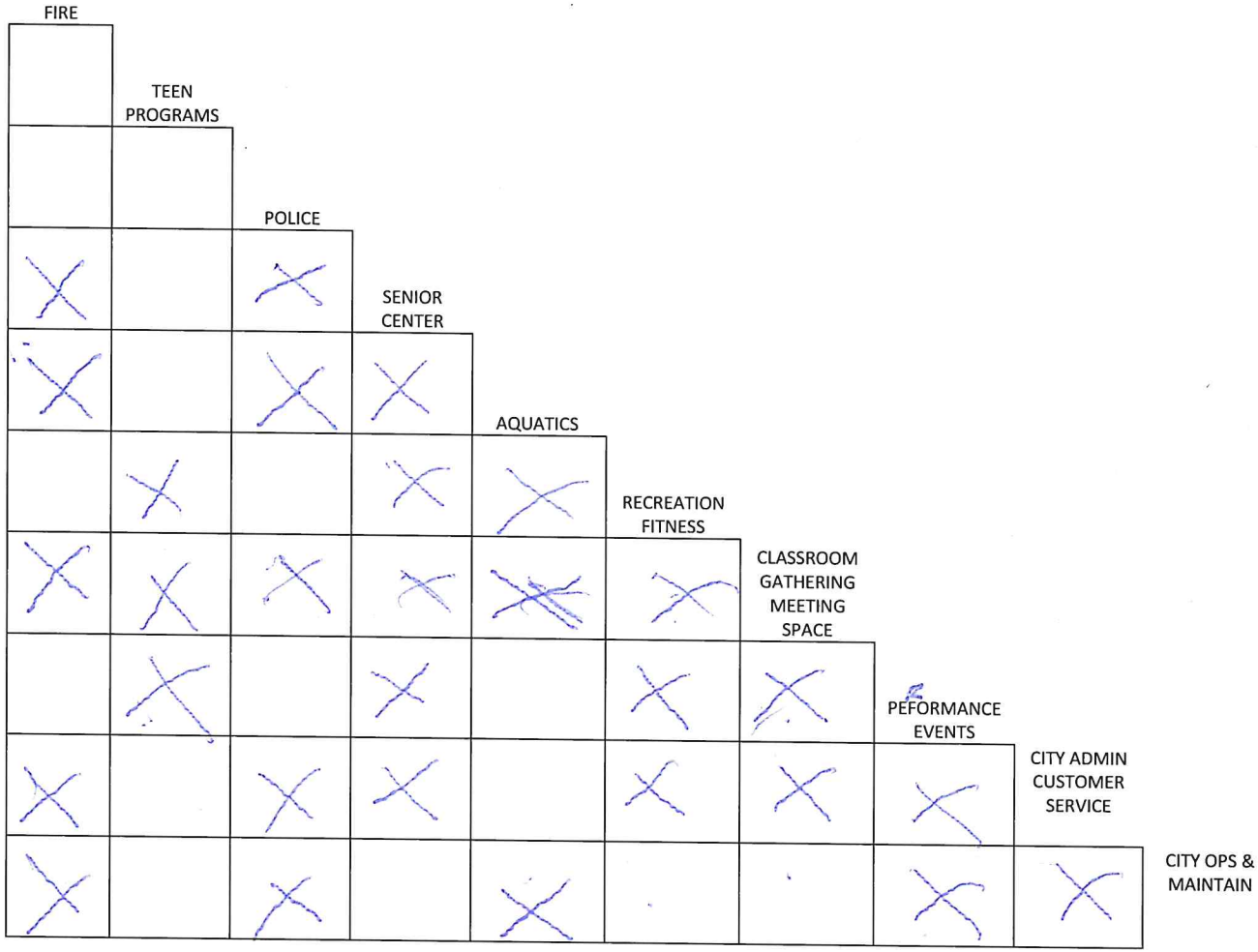


Table 2

City Services Co-Location

Y - Yes, beneficial to be co-located

N - No

M - Maybe

2

- Fire / police
- aquatics / recreation

FIRE	TEEN PROGRAMS	POLICE	SENIOR CENTER	AQUATICS	RECREATION FITNESS	CLASSROOM GATHERING MEETING SPACE	PEFORMANCE EVENTS	CITY ADMIN CUSTOMER SERVICE	CITY OPS & MAINTAIN
M									
Y	N								
M	N	M							
M	M	M	Y						
M	Y	M	Y	Y					
N	Y	N	Y	~~X~~ M	Y				
N	Y	N	Y	M	M	Y			
M	N	Y	M	M	M	M	M		
Y	N	Y	M	N	N	N	M	M	

Table 2

City Services Co-Location with Private/Mixed Use Development

Y - Yes, beneficial to be co-located

N - No

M - Maybe

3

—

	Commercial	Hotel	Residential	Transit	School District	Library	Other
Fire	M	M	M N	M N	N	M	
Teen Programs	M	N	N	Y	Y	Y	
Senior Center	Y	M	Y	Y	Y	Y	
Aquatics	Y	Y	Y	Y	Y	M	
Recreation & Fitness	M	M	M	M	Y	Y	
Classroom/Gathering/Meeting	M	M	M	M	Y	Y	
Performance Events	Y	Y	N	Y	Y	M	
City Admin/Customer Service	Y	Y	Y	Y	N	Y	
City Operations & Maintenance	Y	N	N	M	N	N	

police

Stakeholder Group
Meeting Notes
6:30 PM, February 12, 2018
Redmond Senior Center

Attendees:

City: Carolyn Hope

Stakeholders: Alec Weintraub, Tom Sanko, Angela Birney, Jennifer Martyn, Shelly Bowman, Deanna Francis, Siri Bliesner, LouAnn Ballew, Arnie Tomac, Risa Coleman, Lorraine Masse, Cheri Rudolph, James Terwilliger, Keith Rettig, Belinda Zeitouni

Presentation

Carolyn Hope provided an overview of the architect consultant selection process, a refresher on siting criteria including a more in-depth look at travel times from various sites using multiple modes of transportation, and a recap on the city's budget for these projects and how that relates to the overall city capital budget. In addition, the presentation provided a recap on the types of partnerships we have been thinking about, with a specific emphasis on cultural arts facilities. Then she reviewed the Cultural Facilities Feasibility Study from 2015.

Exercise

The stakeholders broke into groups and were asked to rank the best sites for all of the types of facilities we have been evaluating: cultural arts, fitness, aquatics and meeting rooms with 1 being the most favored location. The following was the outcome of this exercise:

Redmond's COMMUNITY CENTERS
Let's create the future NOW

Stakeholder Group
Meeting Notes
6:30 PM, February 12, 2018
Redmond Senior Center

Location	Cultural Arts & Events	Gymnasium & Fitness	Aquatics	Classroom & Meeting Space
Downtown Location (Partnership)	2, 1			See notes
Marymoor Village Location (Partnership)	2	2, 2	1	
Redmond Community Center @ Marymoor Village		1, 1, 1, 1	3, 1, 1	
Skate Park/ FS 11	2	3		
Sky Painting Parking	3, 1		2, 2	
Municipal Campus Park & Ride	1	2		
Senior Center				
Teen Center				
Hartman Pool			2, 1, 2	
Overlake Village	1, 3			

Discussion on exercise:

This was the first discussion about the location of a cultural arts and events facility. There are three top priorities so far: Overlake Village, Downtown in a mixed use building partnership, or at the Sky Painting Parking Lot.

There was a fairly strong leaning toward Redmond Community Center at Marymoor Village for fitness and gymnasium space (and implied in retaining the existing spaces).

The aquatics discussion is still difficult, as we don't know the status of the regional pool – in particular where it would be located. So there are a couple of preferences rising to the top, one would be to add it to Redmond Community Center at Marymoor Village, assuming the regional pool is not in Marymoor Park or otherwise very close by. The second option was to keep it at

Hartman Park, which tends to be favored because
people perceive a repair to this building as having the least impact on continuity of service for access to a pool. The third favored option was Sky Painting Parking Lot.

Meeting space is desired in all buildings and in multiple locations across the city. The group was open to having meeting spaces in other civic buildings as well, such as City Hall and fire stations or access to schools.

Questions, Discussion, Ideas

The stakeholders requested population maps for comparing the current population distribution to the future by neighborhood.

Question about the travel maps – Was elevation taken into consideration for the walking and biking? The car travel times seems faster than current conditions.

Next Meeting – April TBD, will be with architect. Date to be announced soon.

Stakeholder Group
Meeting Notes
6:30 PM, December 4, 2017
Redmond Senior Center

Attendees:

City: Carolyn Hope, Rachel Van Winkle

Stakeholders: Alec Weintraub, Angela Birney, Arnie Tomac, James Terwilliger, Jennifer Martyn, Keith Rettig, Lorraine Masse, LouAnn Ballew, Pat Vache, Shaila Khan, Aaron Knopf, Nicole Baker, Tracy Kvietkus, Tom Sanko, Emily Matson, Deanna Francis, Seema Chaudhary, Belinda Zeitouni, Matt Harrison Gallagher

Tour

Teri Burke led the group on a tour of the Senior Center, including the new renovations that we completed in order to accommodate programs from the ORSCC that wouldn't fit at the new community center.

Presentation

Carolyn Hope reviewed the values and goals, timeline, budget constraints and aquatics priorities identified by the community during the outreach conducted in the winter of 2016-17. Ms. Hope then shared cost estimates for a series of alternatives for local pools, regional pool, and parking lots and garages to provide context for the stakeholders. Ms. Hope also shared the properties that the city owns within the areas that the community prioritized for any potential new center, namely Downtown and Marymoor Village.

The presentation and discussion also included the idea that the regional pool has not been defined yet (location, program, cost, timing) and the Redmond Pool at Hartman Park is in immediate need of approximately $8.2M of systems renovations and that if the City Council supported that renovation work, they would want to keep that pool for the long term.

Exercise

The stakeholders broke into three groups and were given maps of each existing community center and the other properties that the city owns in Downtown. They were also given to-scale paper cut outs of a local-sized lap pool (8 lanes), leisure and therapy pool (~6,000 sf), and parking garage and surface parking lot. The stakeholders were asked to develop alternatives for:

A. A local pool if no regional pool is developed
B. A local pool if there is a regional pool that has lap lanes and a dive tank, but no leisure pool
C. A local pool if there is a regional pool that has lap lanes and a dive tank, and a leisure pool

The groups were asked to take into account the impacts of these additions to the neighborhood and traffic.

Stakeholder Group
Meeting Notes
6:30 PM, December 4, 2017
Redmond Senior Center

Summary of Exercise (See attachments)

Table 1 (James, Luanne, Deanna, Belinda, Lorraine, Seema)

- No regional pool or if regional pool in Bellevue – Build at the Municipal Campus park and ride lot, as it is most centrally located. Add on to the existing parking garage. Potentially reconfigure the driveways.
- Regional Pool or not – New community center in Marymoor Village or Fire Station 11, preserving the existing skate park.
- Local Pool – Rebuild at Hartman Park with 8-lane lap pool, leisure pool and parking.

Table 2 (Arnie, Pat, Tom, Shaila, Emily)

- Regional Pool or not – New community center in Marymoor Village or Sky Painting Parking Lot or Municipal Campus park and ride lot
- Regional Pool – Renovate Pool at Hartman Park and add leisure pool and parking or rebuild all new facilities at Hartman Park. Other alternative sites included Skate Park (then rebuild skate park on top of parking structure), or Fire Station 11 with lap, leisure and therapy pools.

Table 3 (Keith, Alec, Jennifer, Nicole, Tracy, Matt)

- No regional pool or regional pool in further away than Marymoor – new community center in Marymoor Village or short term fix at Redmond Pool at Hartman Park and rebuild new local pool there later.
- Other options:
    - Senior Center – did not feel the leisure pool would fit the site or use of building, but laps and therapy would
    - Skate Park – could add lap, leisure and therapy there, then move Skate Park to the Sky Painting parking lot.
    - Fire Station 11 - could build lap, leisure and therapy

General Discussion

Most teams did not have a strong top priority yet for alternatives A-C.

Next Steps

In January, the stakeholders will recap on their thoughts about aquatics and try to prioritize one option for each of alternative (A-C) and will also begin discussions about where to add spaces for fitness, gymnasium, and indoor children's play.

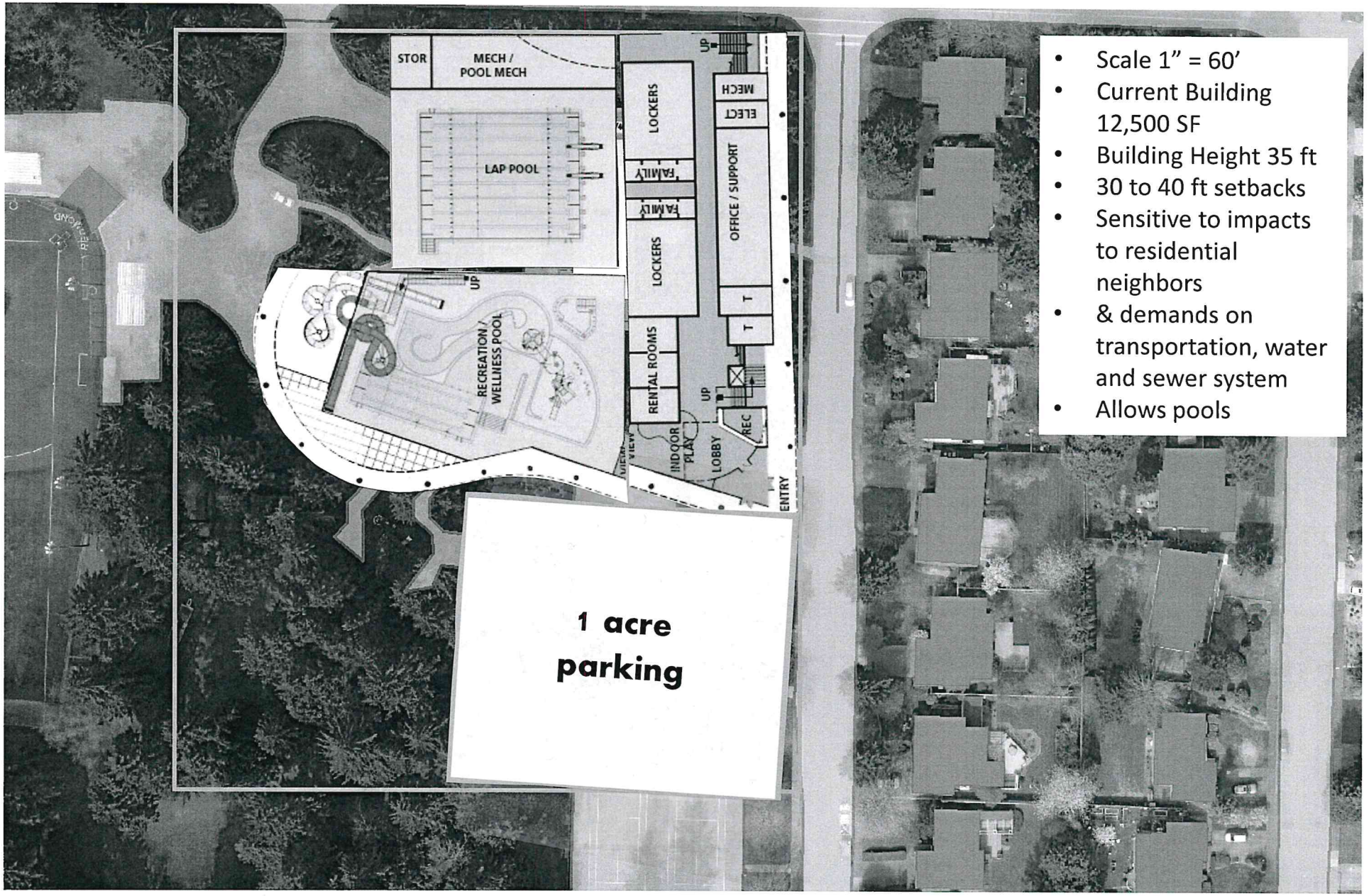
Next Meetings:

January 17, 2018, 6:30 PM at Redmond Community Center at Marymoor Village, 6505 176th Ave NE, Redmond.
February 12, 2018, 6:30 PM at Redmond Senior Center

– If required pool was laps + diving + kids

Table 1

Redmond Pool (1974)



- Scale 1" = 60'
- Current Building 12,500 SF
- Building Height 35 ft
- 30 to 40 ft setbacks
- Sensitive to impacts to residential neighbors
- & demands on transportation, water and sewer system
- Allows pools

18

Table 1

7.b. Skate Park and Fire Station 11

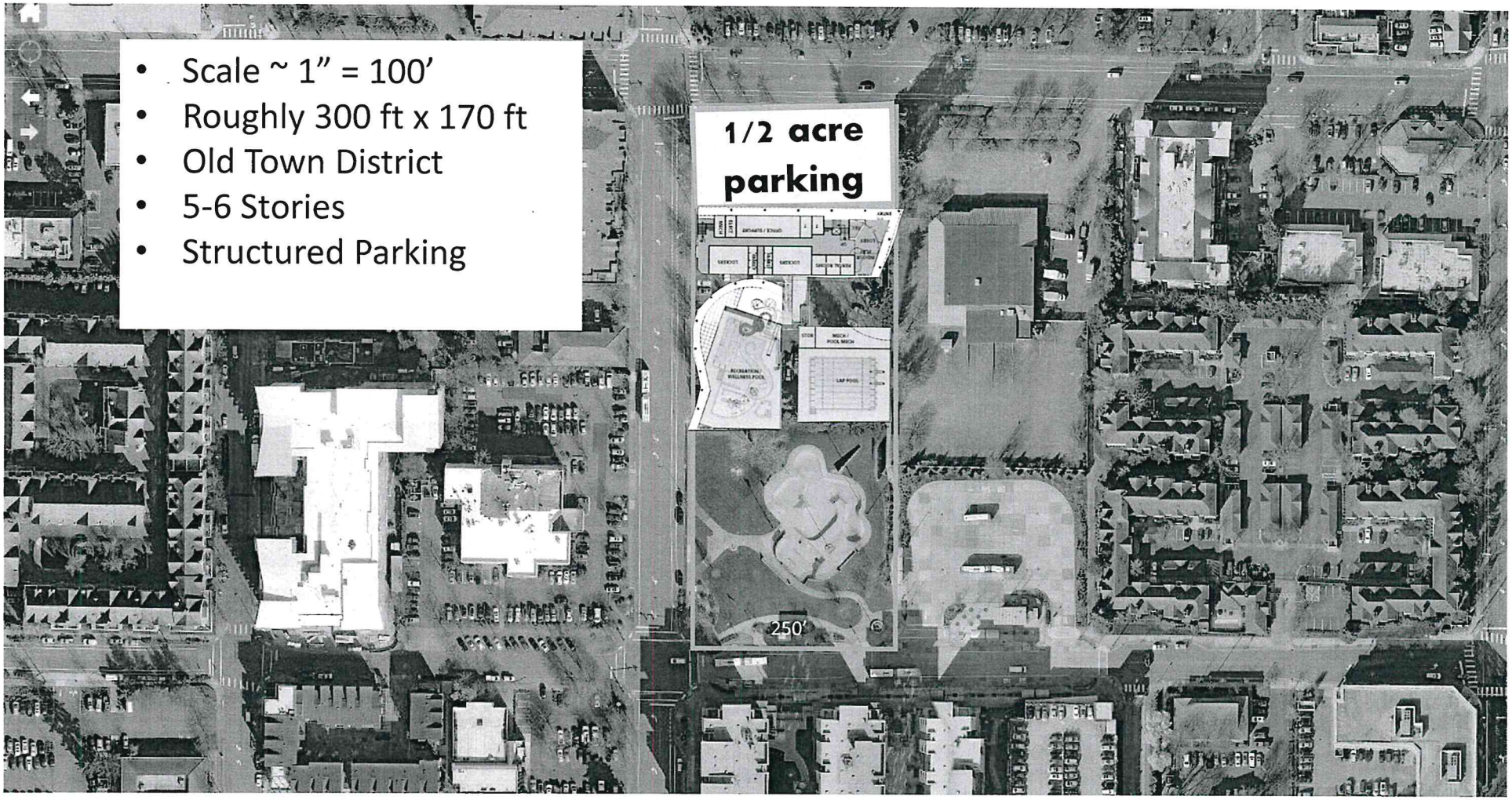
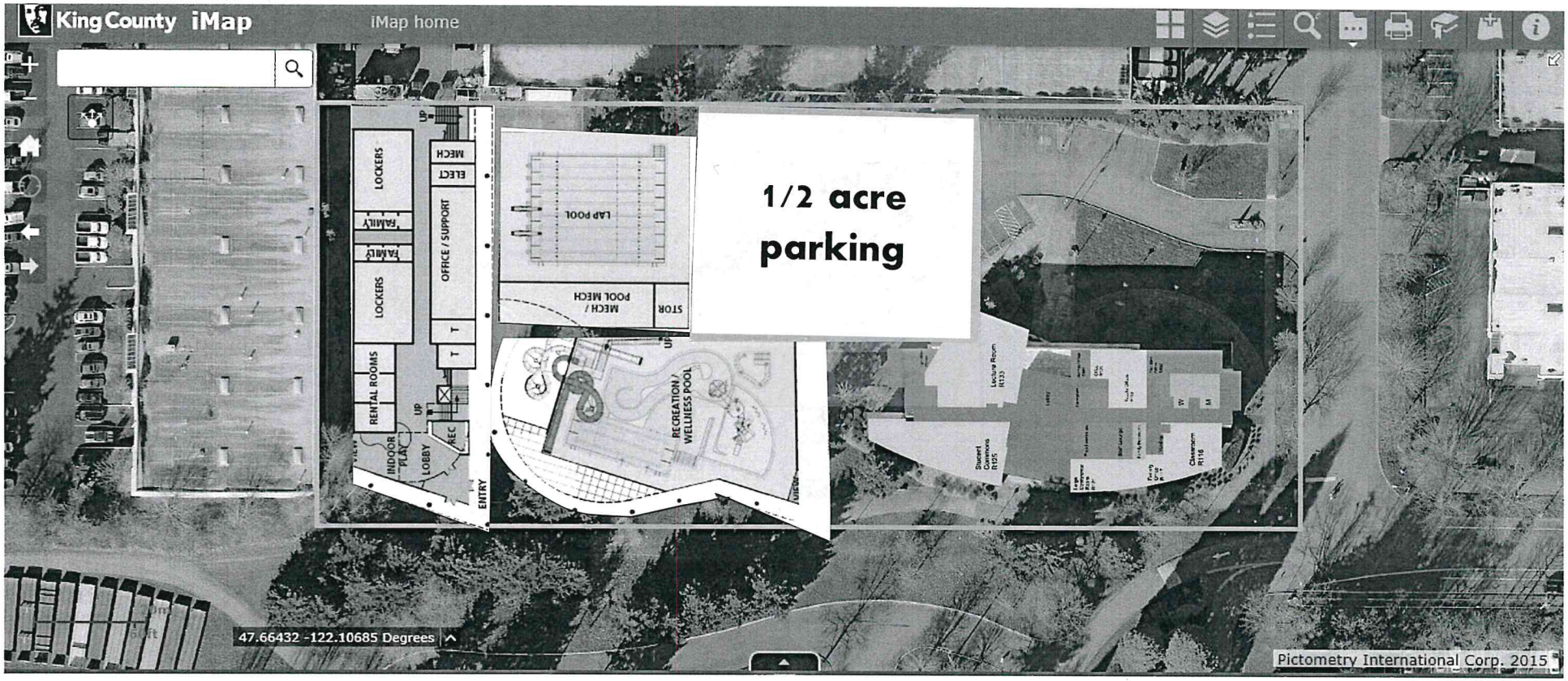


Table 1

4. New Community Center at LWIT (2004)



Scale 1" = 60' Existing Building = 20,000 SF

Code allows development of 65% of property and 3-5 stories (w/bonuses), at grade or above ground park structure. Uses: Employment, mixed-use multifamily development with some ground-floor pedestrian-oriented uses

no regional pool

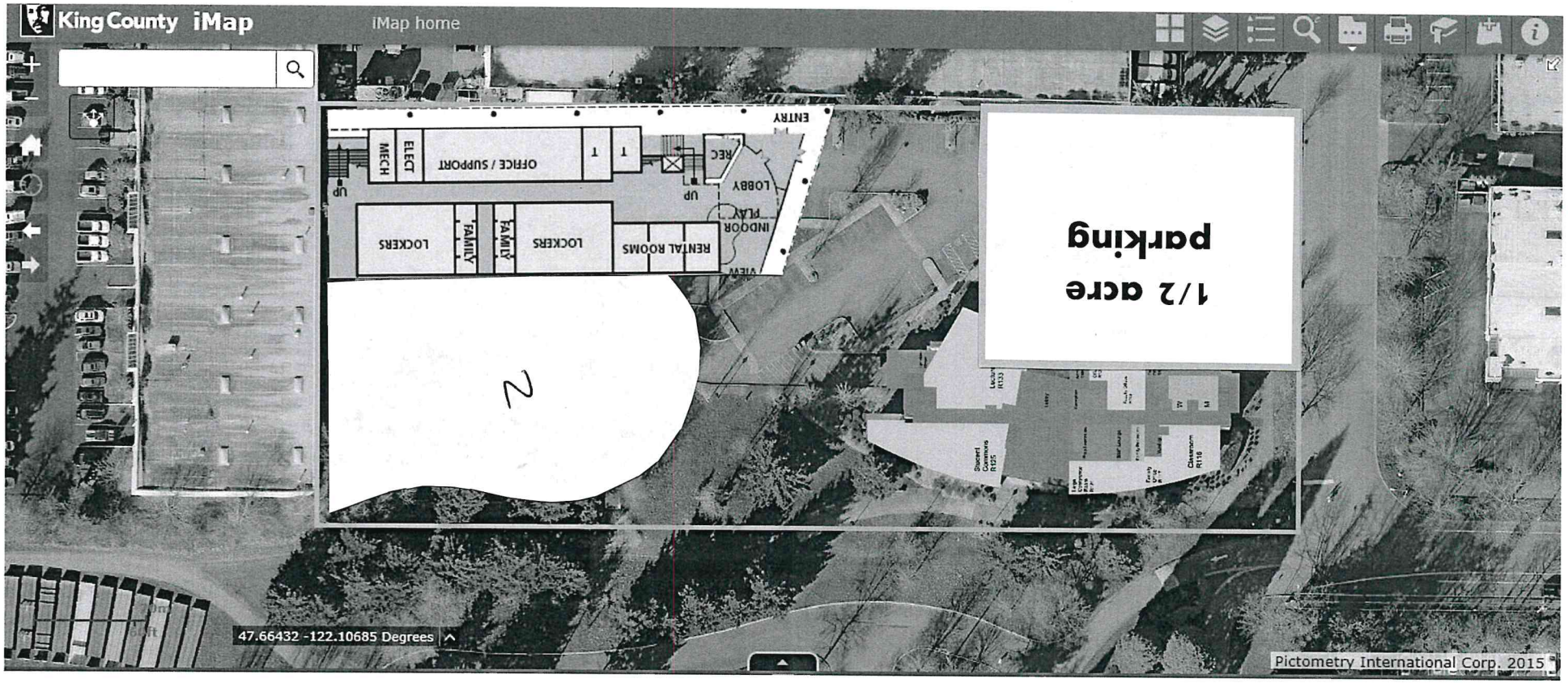
Table 1

5. Metro Park and Ride Lot on Municipal Campus

Regional w/ lap + diving

Table 2

4. New Community Center at LWIT (2004)



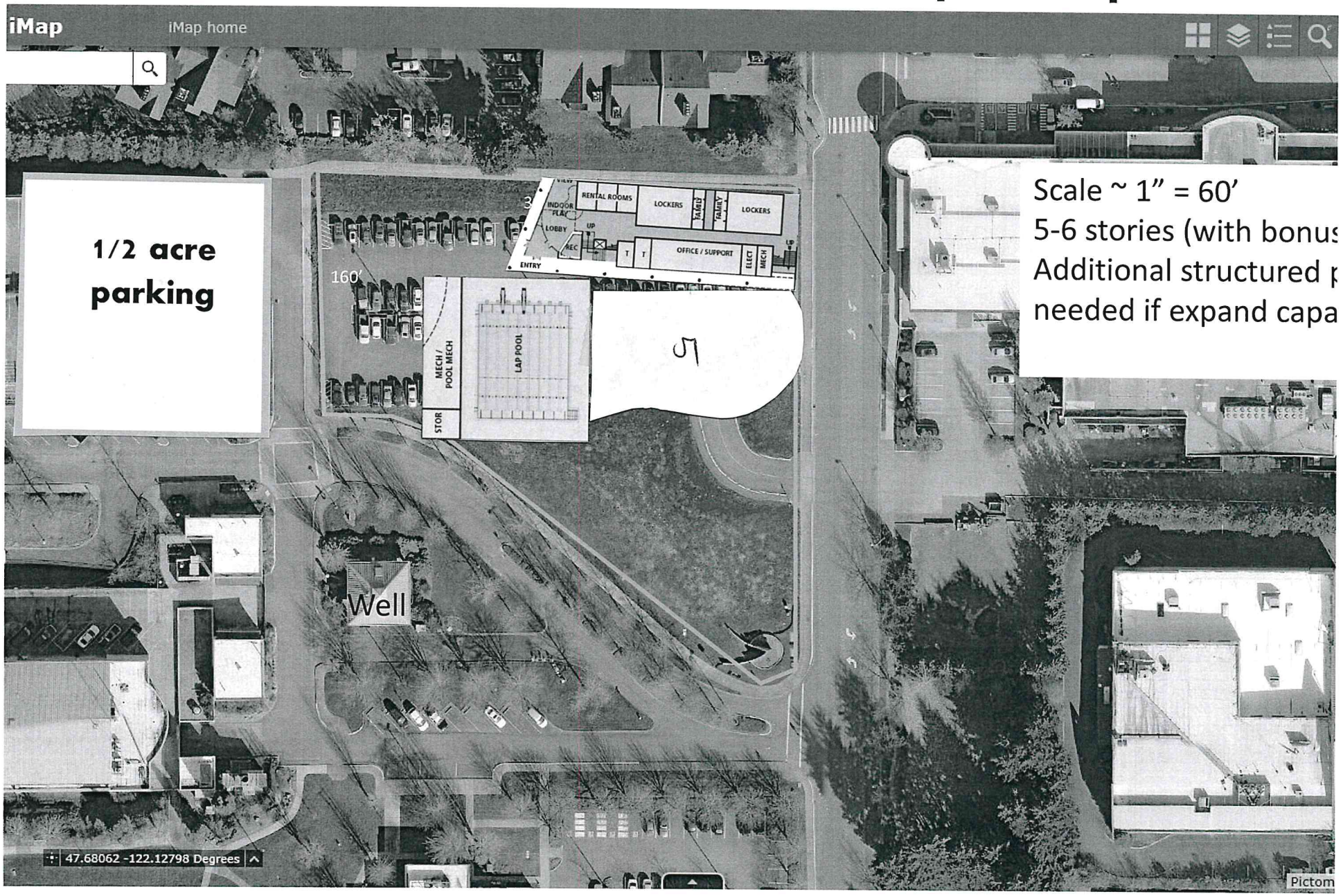
Scale 1" = 60' Existing Building = 20,000 SF

Code allows development of 65% of property and 3-5 stories (w/bonuses), at grade or above ground park structure. Uses: Employment, mixed-use multifamily development with some ground-floor pedestrian-oriented uses

w/o Regional

Table 2

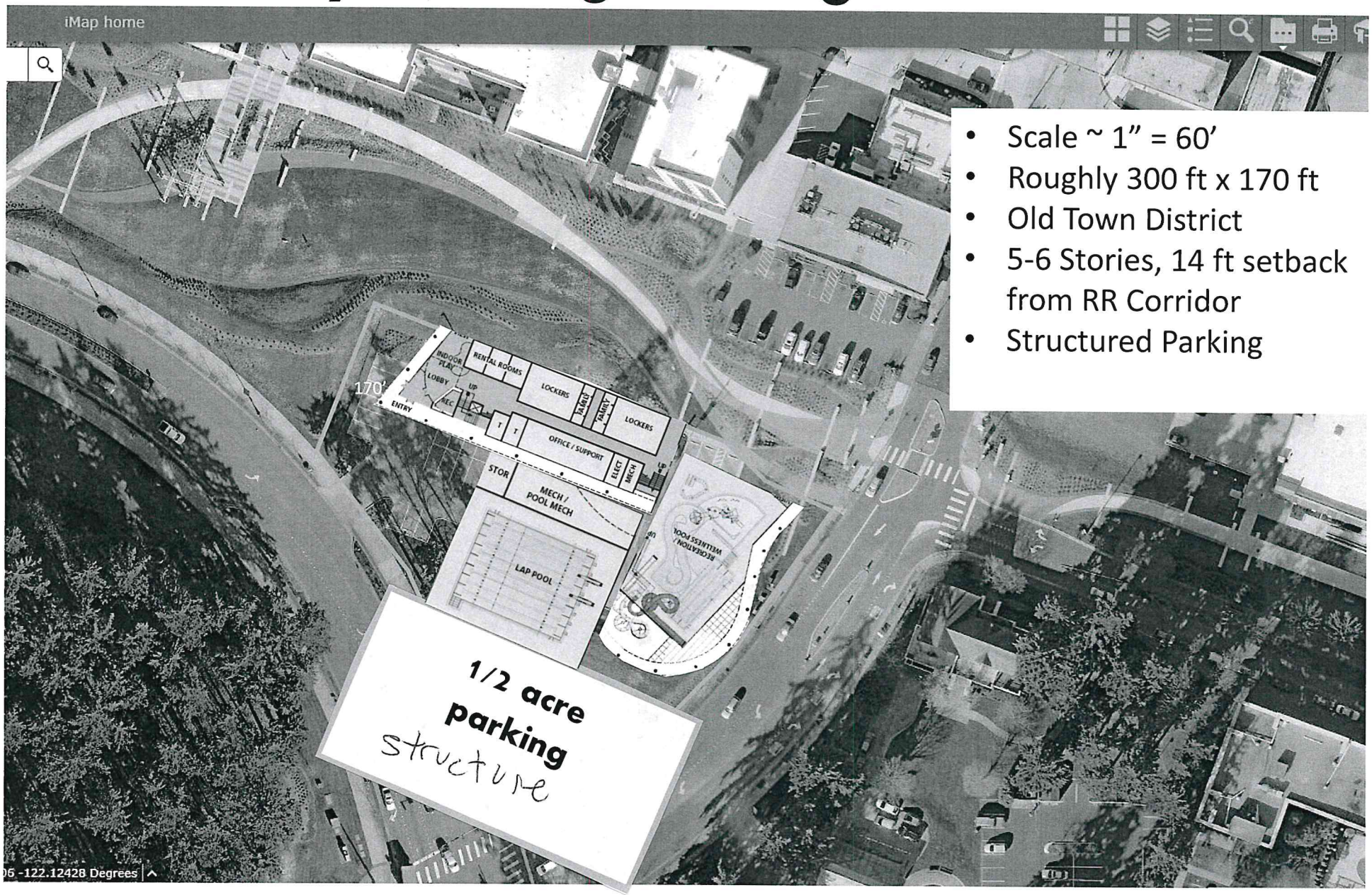
5. Metro Park and Ride Lot on Municipal Campus



W/O Regional

Table 2

6. Sky Painting Parking Lot on RCC

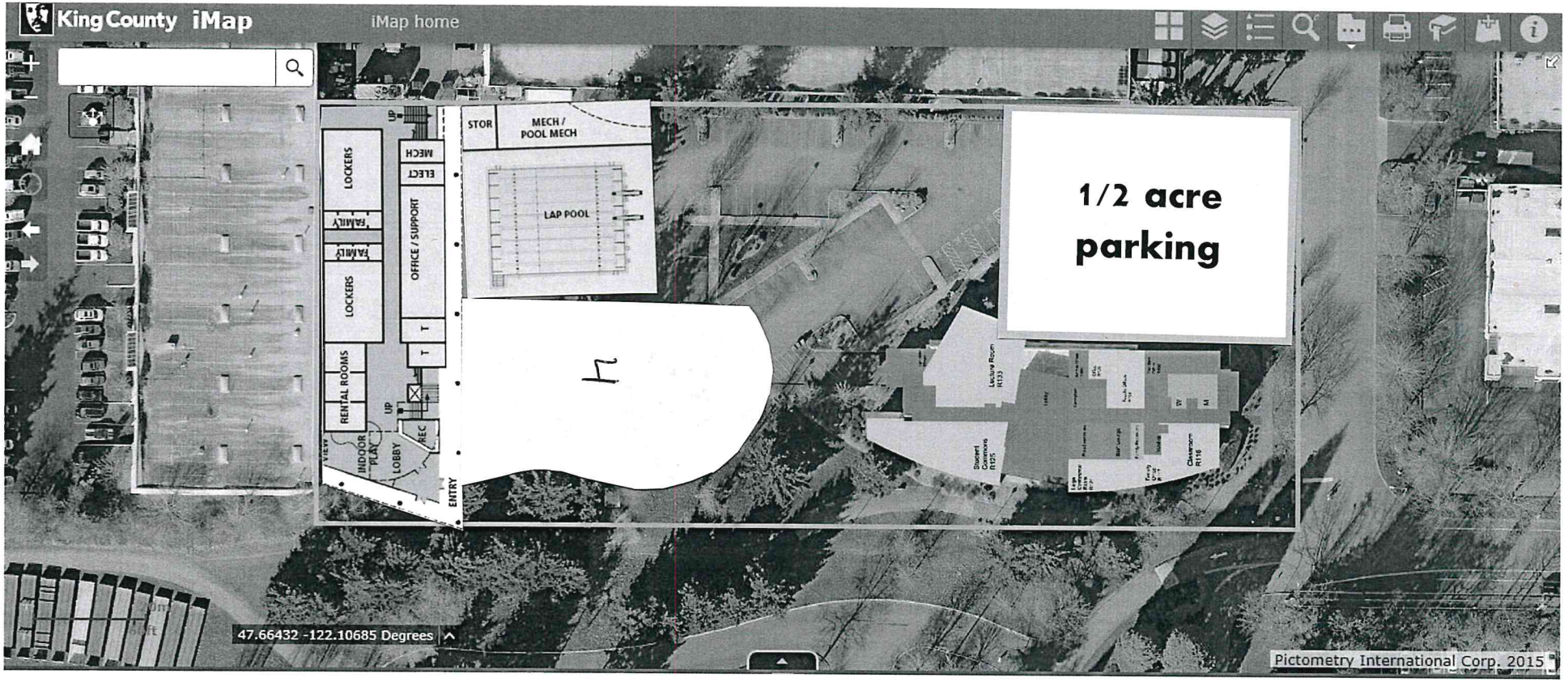


- Scale ~ 1” = 60’
- Roughly 300 ft x 170 ft
- Old Town District
- 5-6 Stories, 14 ft setback from RR Corridor
- Structured Parking

W/o Regional

Table 2

4. New Community Center at LWIT (2004)



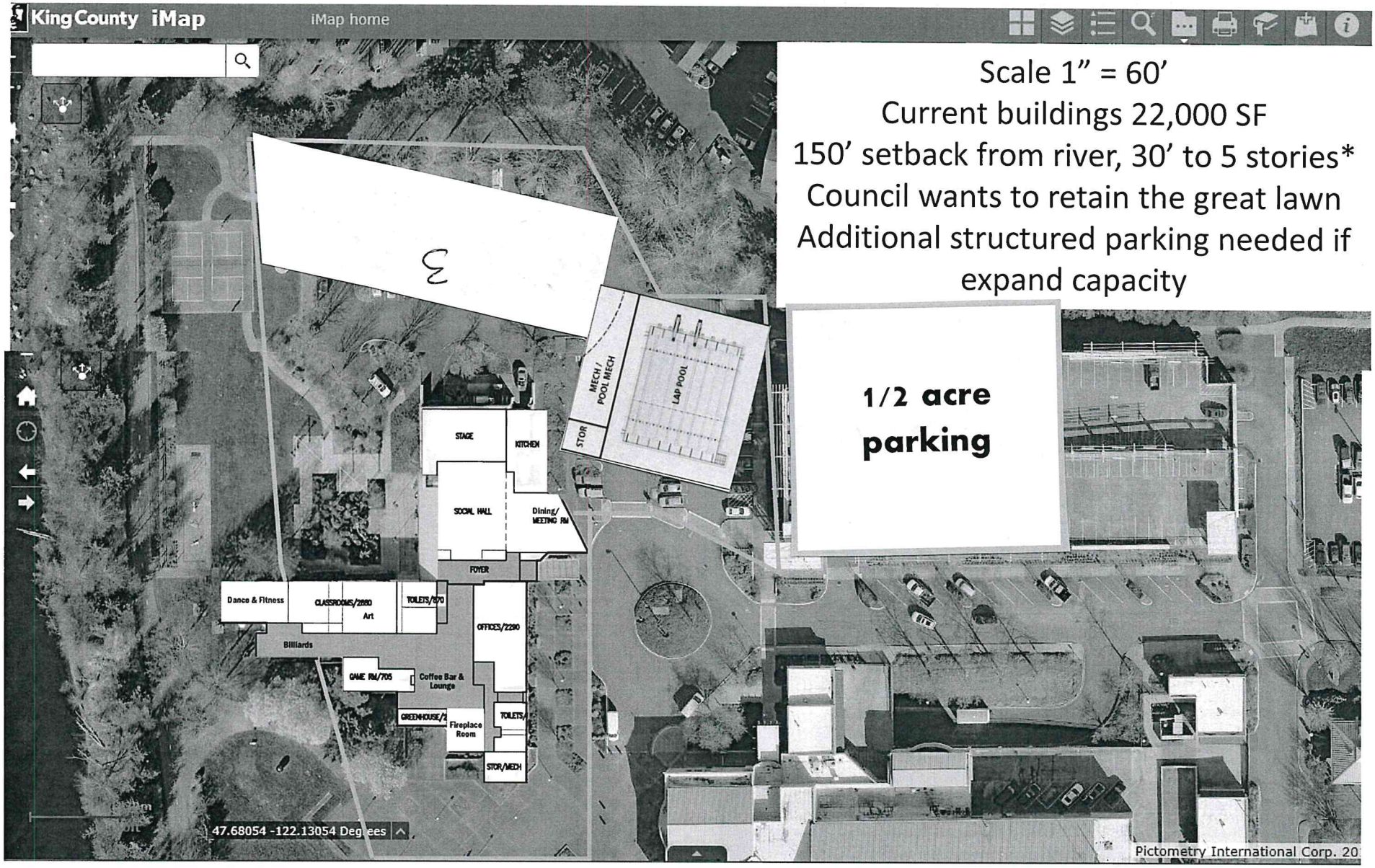
Scale 1" = 60' Existing Building = 20,000 SF

Code allows development of 65% of property and 3-5 stories (w/bonuses), at grade or above ground park structure. Uses: Employment, mixed-use multifamily development with some ground-floor pedestrian-oriented uses

W/ Regional everything

Table 2

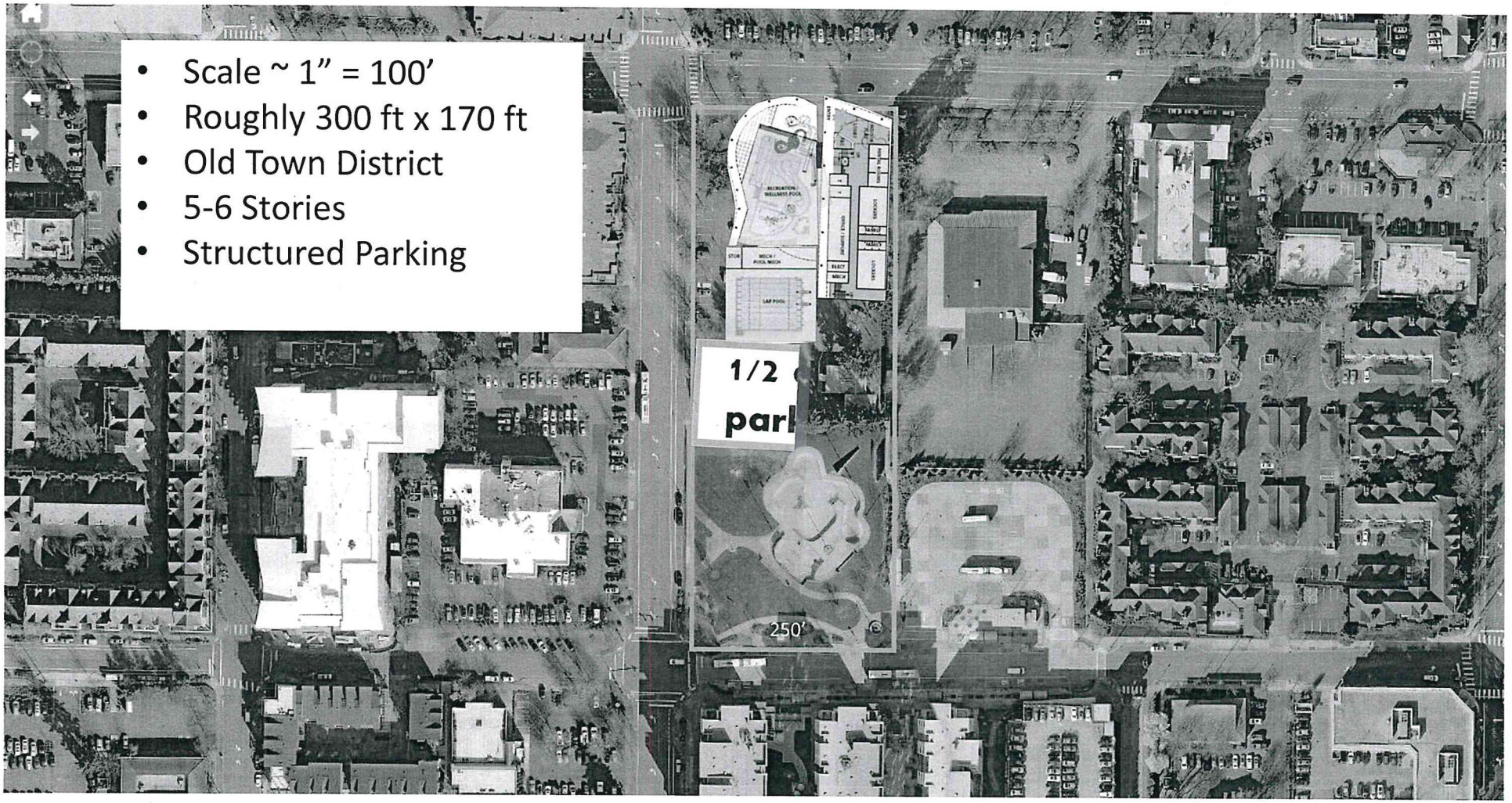
3. Redmond Senior Center (1990)



w/o Regional

Table 2

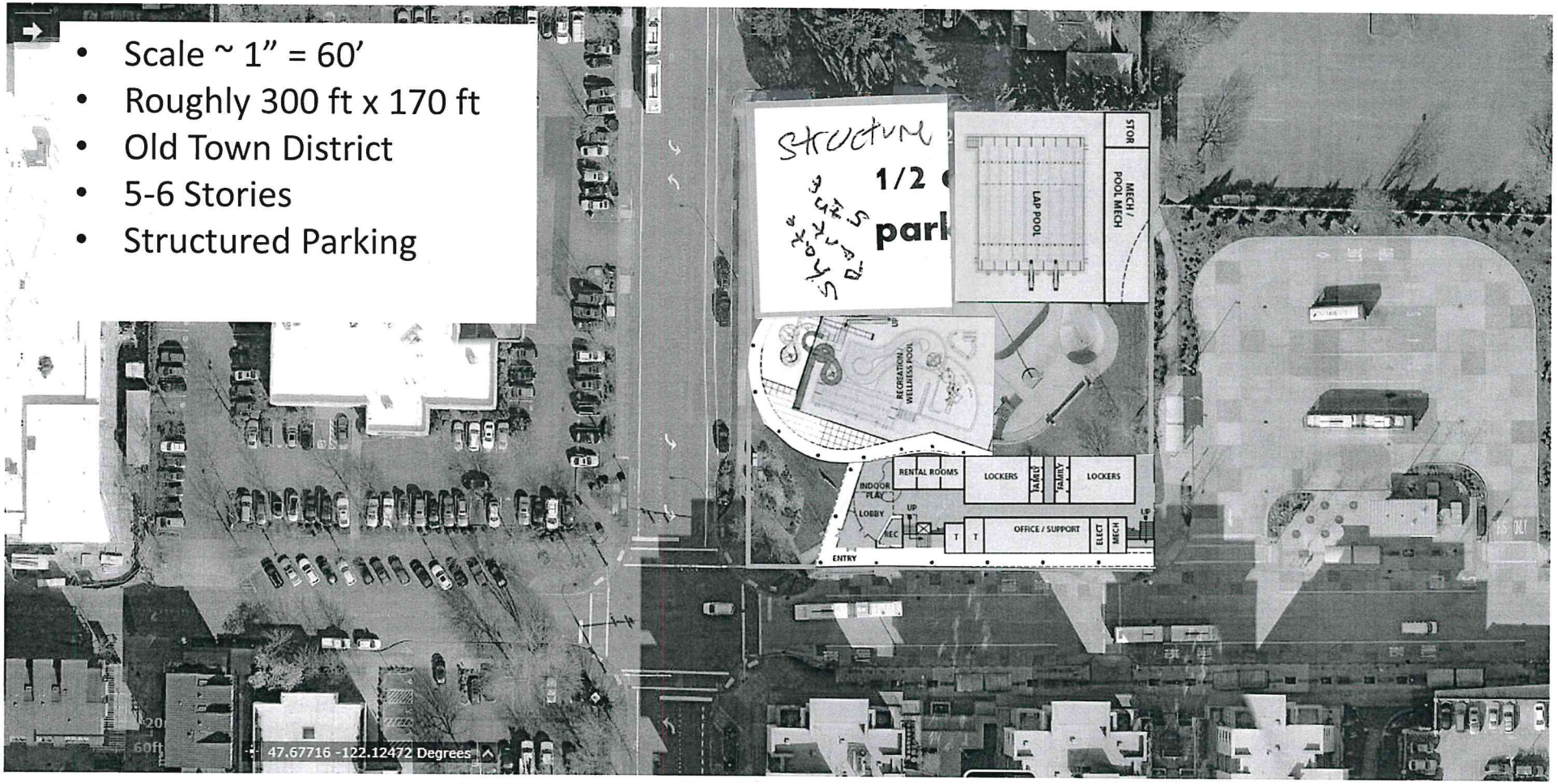
7.b. Skate Park and Fire Station 11



w/o Regional

Table 2

7.a. Skate Park and Fire Station 11



w/d Regional

Fix existing pool / add Table 2

add Recreation wellness pool

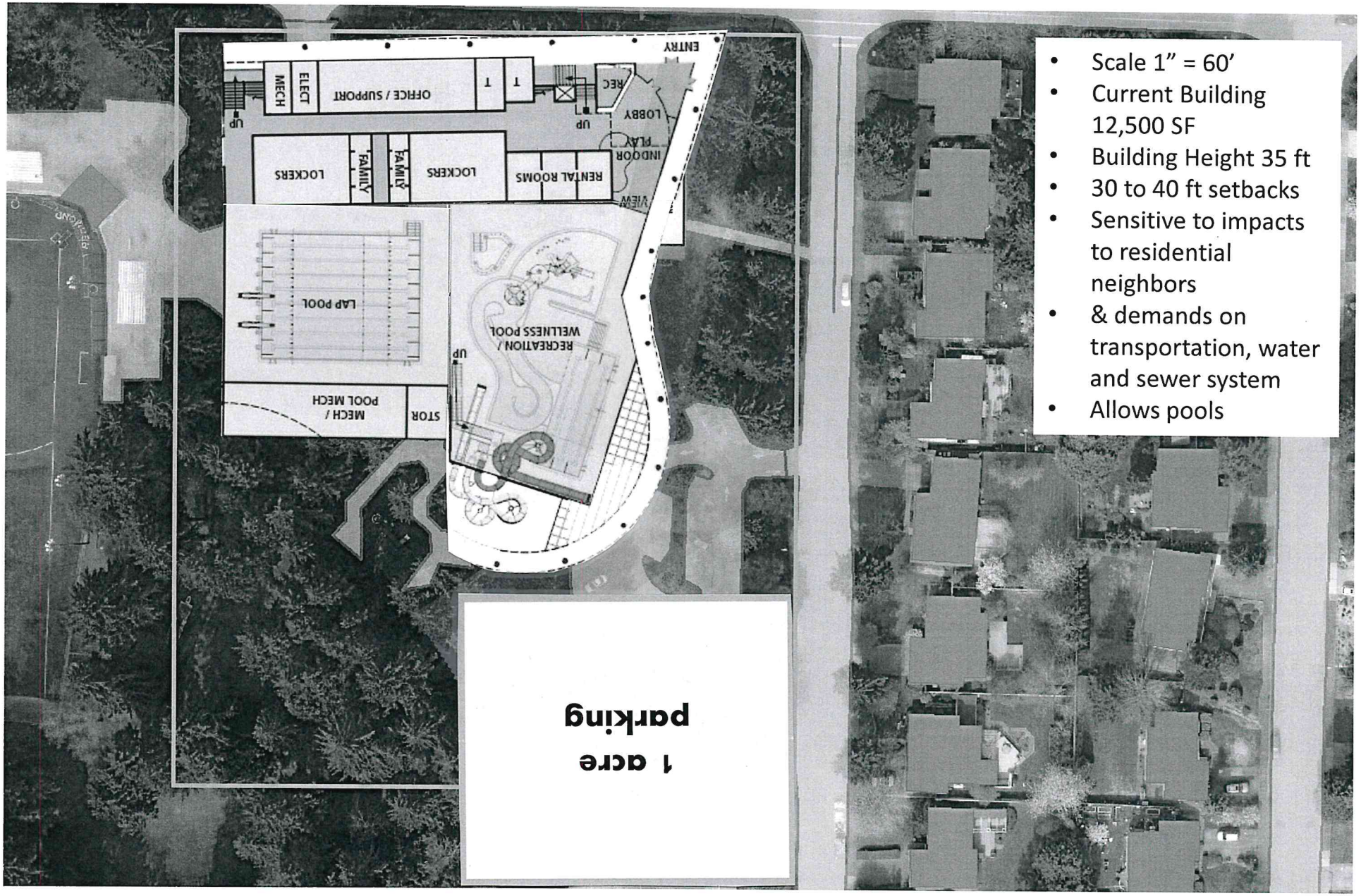
Redmond Pool (1974)

- Scale 1" = 60'
- Current Building 12,500 SF
- Building Height 35 ft
- 30 to 40 ft setbacks
- Sensitive to impacts to residential neighbors
- & demands on transportation, water and sewer system
- Allows pools

w/o Regional ← 104th →

Redmond Pool (1974)

Table 2



- Scale 1" = 60'
- Current Building 12,500 SF
- Building Height 35 ft
- 30 to 40 ft setbacks
- Sensitive to impacts to residential neighbors
- & demands on transportation, water and sewer system
- Allows pools

Table 2

2. Old Firehouse Teen Center (1952)

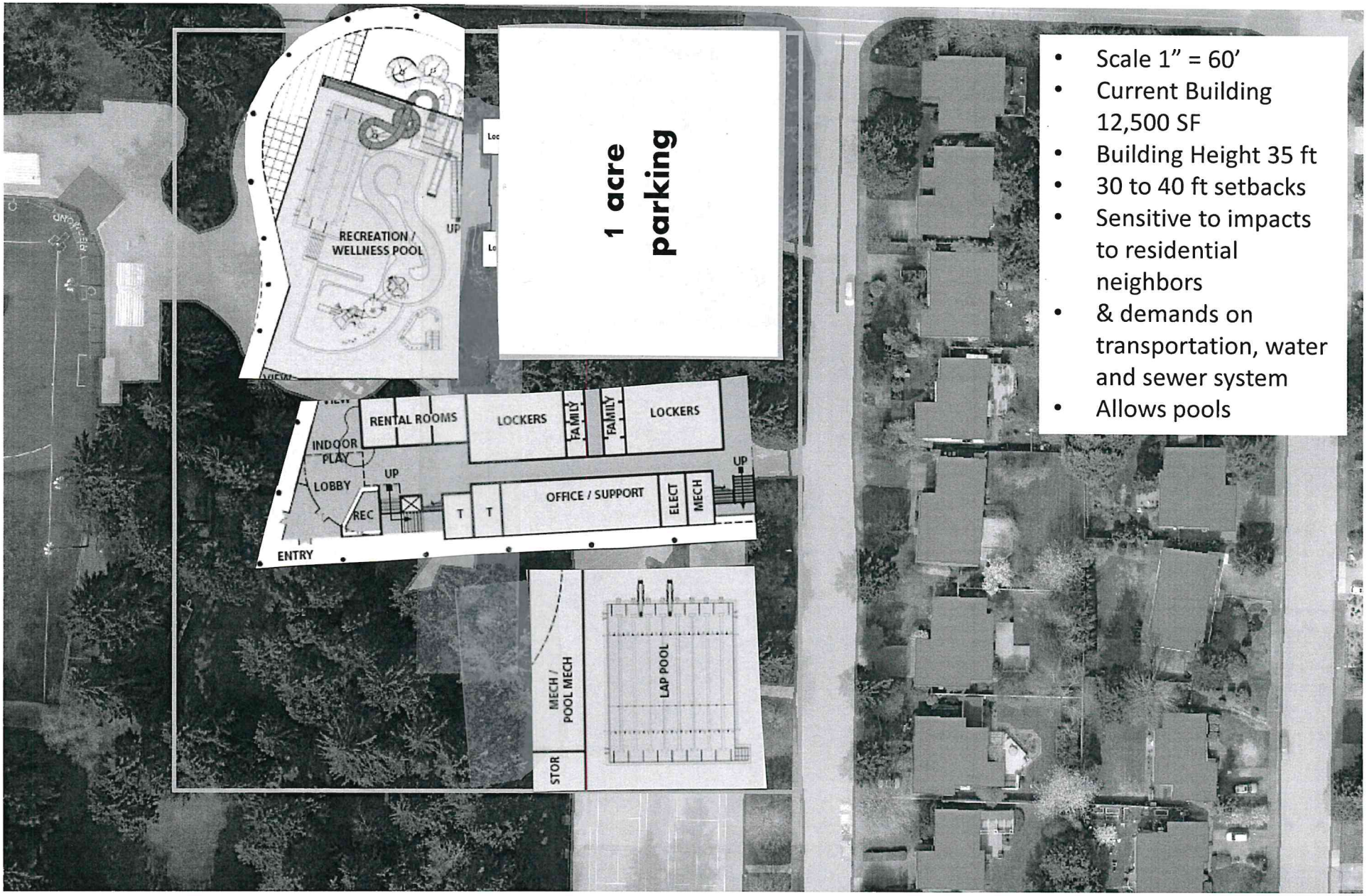
Scale 1" = 60' Current Building = XX SF

Zoning allows 5-6 stories and Zero Lot Coverage, 14 ft Sidewalk, requires Structured Parking

Allows Arts, Entertainment, and Recreation

TABLE 3

Redmond Pool (1974)



- Scale 1" = 60'
- Current Building 12,500 SF
- Building Height 35 ft
- 30 to 40 ft setbacks
- Sensitive to impacts to residential neighbors
- & demands on transportation, water and sewer system
- Allows pools

TABLE 3

7.b. Skate Park and Fire Station 11

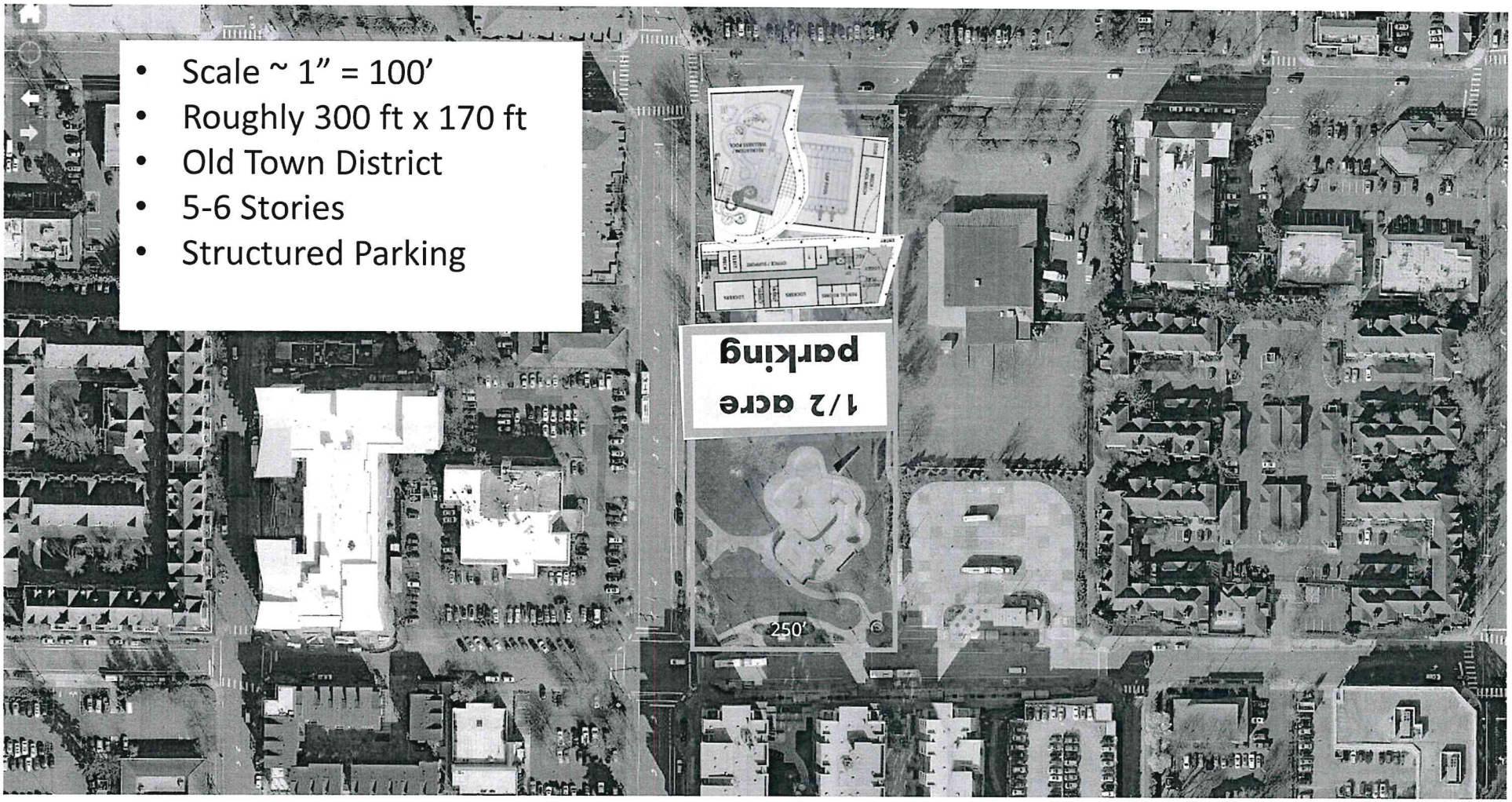


TABLE 3

7.a. Skate Park ~~and Fire Station~~ 11

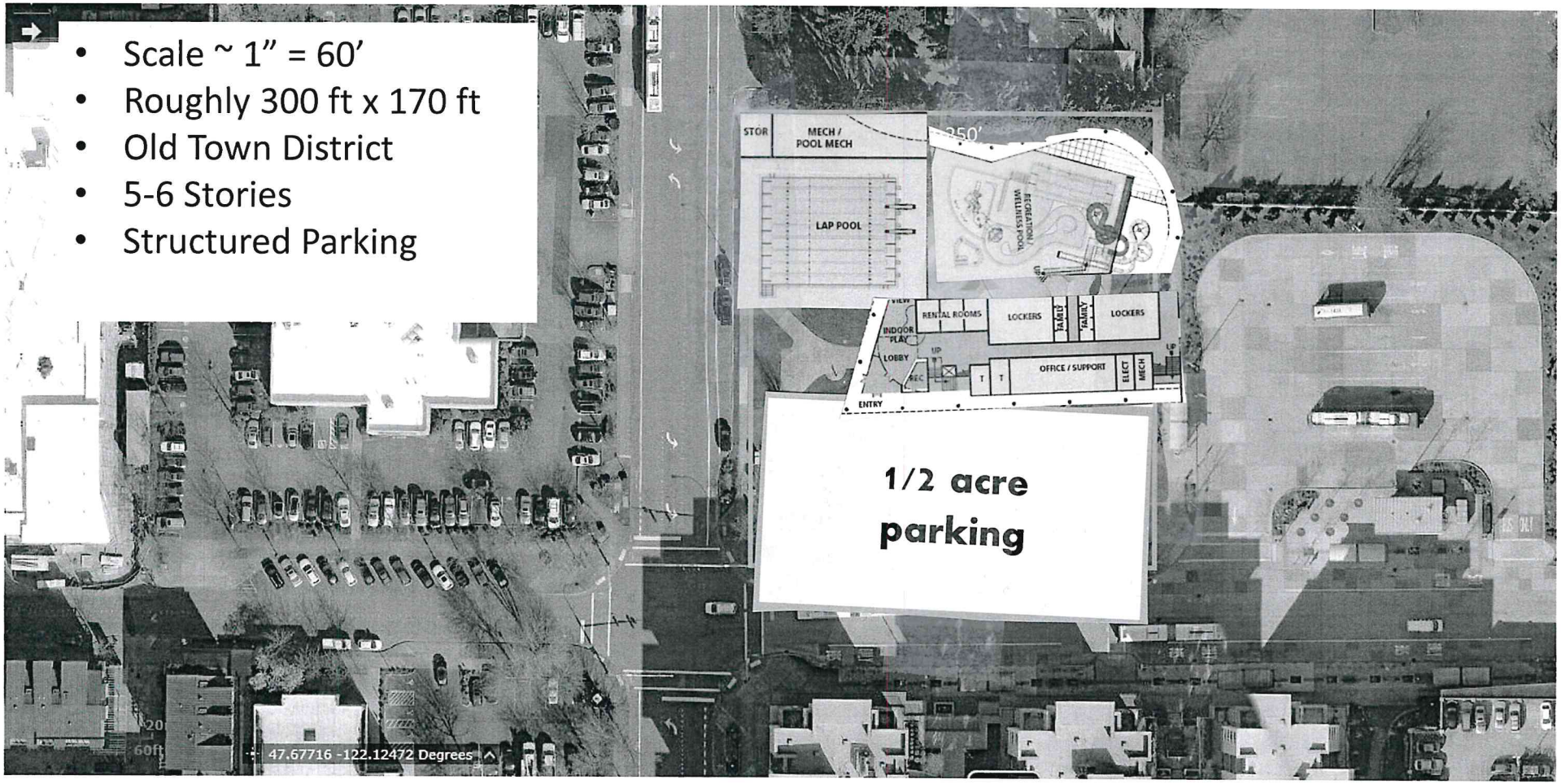
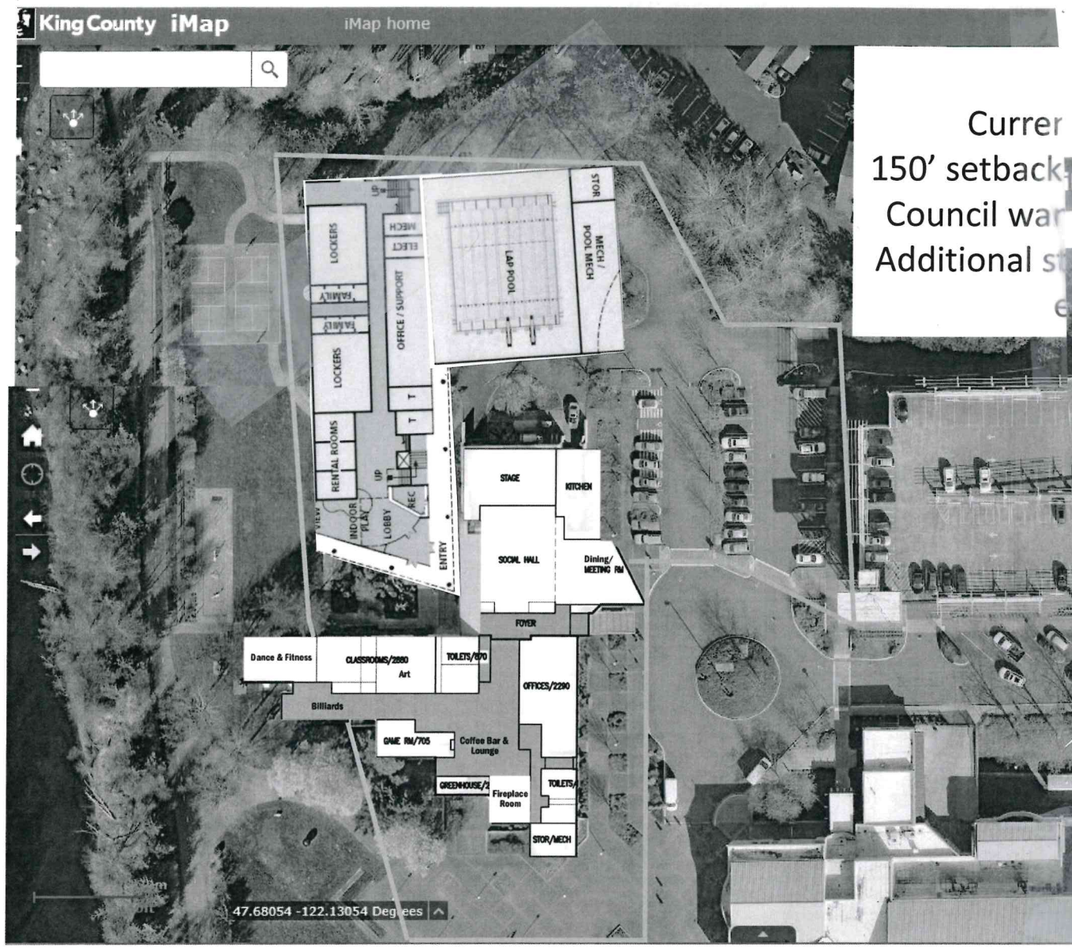


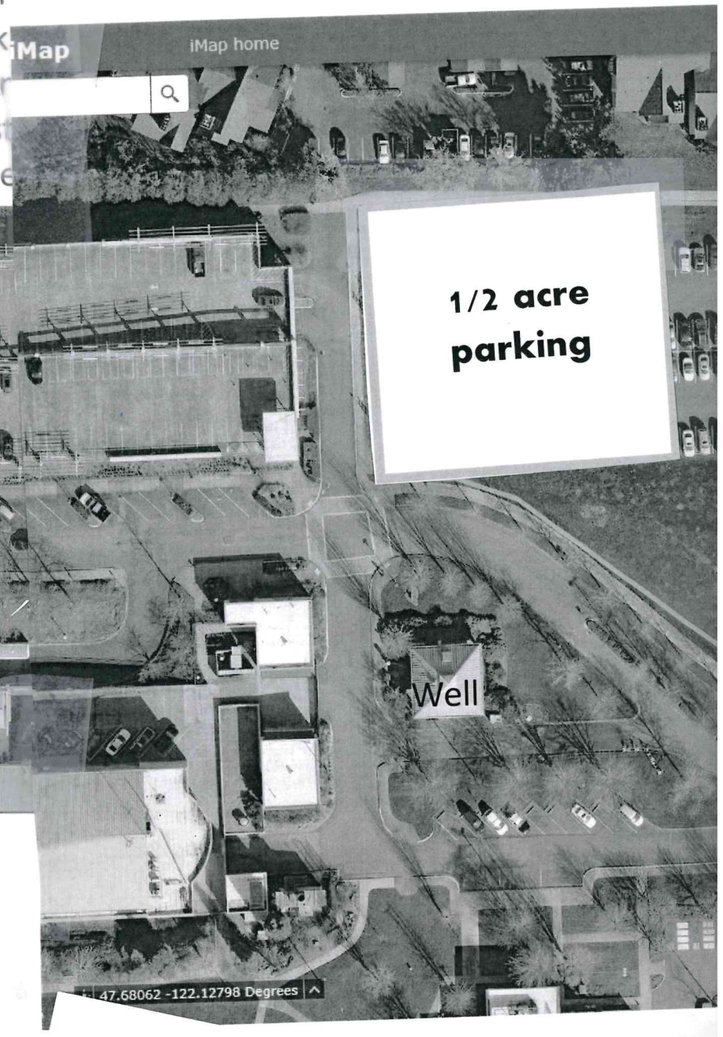
TABLE 3

3. Redmond Senior Center (1000)



Currer
150' setback
Council wa
Additional s

5. Metro Park and Ride



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STRATEGIC MAINTENANCE PLAN

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City of Redmond
Strategic Maintenance Plan

REDMOND, WASHINGTON
MARCH 2017

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1.0 Executive Summary

Executive Summary

Overview

The City of Redmond engaged Makers Architecture and Urban Design and McKinstry in November of 2015 to develop a Strategic Facilities Management Plan. The intent of this plan is to provide guidance on how to best operate, maintain and upgrade the City's facilities for both the short and long term.

McKinstry's responsibilities in the development of this plan focused primarily on the shorter term operational and maintenance aspects but also includes some long term elements. Development and delivery of the various elements of the plan were submitted to the City for review and comment as they were completed over the course of the project and are also included in this report in their final form.

Scope and Delivery

The Strategic Management Plan deliverable initially contained 12 primary Task Items split between Makers Architecture and McKinstry. McKinstry's specific responsibilities include the following elements:

1. Task #6 – Facility Level of Service (LOS)
   a. The LOS establishes a methodology for prioritizing resources for operations and maintenance.
2. Task #7 – Operations Level of Service Strategy
   a. Service Level Agreement (SLA) – Establishes the scope of services of the Facilities Team including roles and responsibilities, performance criteria and Key Performance Indicators.
   b. Policies and Procedures – Provides a plan for the development of a policies and procedures library. Includes a list of suggested policies and procedures to be developed, a methodology as well as estimated hours to complete the work.
   c. Staffing Assessment – Provides a benchmark analysis of the current Facilities Team against peer organizations, recommended staffing levels based on that analysis, a suggested organizational chart and revised job descriptions that align with recommended staffing levels and the recently developed SLA
   d. Vendor contract review – Reviews and comments on the current Facilities vendor contracts.
3. Task #9 - Facility Maintenance Strategy
   a. Establishes standards, schedules and tasking for the maintenance and repair of the City's mechanical, electrical and plumbing related assets. This plan includes a list of equipment developed from field surveys performed in January, a prioritization of those assets based on their criticality and maintenance tasking and intervals for all the equipment inventoried.
   b. The data produced in this task was used to populate the LUCITY CMMS system.
4. Task #11 – Consolidated Budget Models – Maintenance and Repair Capital Renewal Plan (McKinstry Specific)
   a. The Maintenance and Repair plan establishes a 30 year capital renewal plan for the replacement, refurbishment or upgrade of the existing infrastructure under the responsibility of the Facilities Group.
   b. Financial Assessment – Operations Costs

Summary of Findings

The City of Redmond's Facilities Maintenance and Operations group is in a period of transition. The rapid growth of the city and the region in general, is driving change within the organization to keep pace. In order to continue to provide the needed level of service to the City's staff and constituents as well as adequately maintain the facilities and assets, the Facilities team will need additional resources.

To date, the growth of the Facilities Maintenance and Operations Group has been slowed by a lack of metrics

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Executive Summary

on the operation that would substantiate the need for the additional resources to keep pace with the changing environment. The group is under pressure to keep pace with the demands and has been drawn into a mode of operation that is more reactive in lieu of a much preferred, proactive approach. This reactive mode is common in organizations where operational and maintenance demands exceed the available resources needed to meet those demands. It is also typically accompanied by a level of maintenance backlog, which is true for Redmond and evidenced during our January 2016 equipment survey.

A significant portion of the Facilities Maintenance and Operations group's resources are currently being expended on buildings with uncertain futures. With the understanding that the disposition of the facilities in question are currently under review and will hopefully be determined before the next budget cycle. This uncertainty poses an immediate challenge for group from both a maintenance and operations standpoint. Once the disposition of the facilities in question is determined, operational efficiencies can be gained through systematic prioritization of maintenance tasks and renewal projects.

Key Findings

- Building Automation System (BAS) – We consider this a high priority finding that needs a further investigation, scoping and budgeting.
  - The limitations of the existing building automation system significantly limit the Facilities Team to react to facilities related emergences in a timely manner as well as manage daily functions.
  - The current system provides only limited visibility to systems in the PSB and Senior Center and provides no visibility to facilities that are considered to be critical to Redmond operations such as the Fire Stations and the MOC.
  - The City Hall has a viable BAS but it is not externally accessible by Redmond staff. This deficiency needs to be corrected.
  - See Facility Maintenance Strategy p. 12-13 for detailed recommendations.
- Facility Condition – The general condition of six of the 24 facilities studied are below expected standards considering their importance to the City's function
  - In general, a substandard condition leads to decreased operational efficiency, premature asset deterioration and poor customer satisfaction. Although virtually all the facilities studied have some maintenance backlog, six were identified as needing significant additional maintenance and repair resources as well as capital expenditures to improve their overall condition to a level commensurate with their importance. These facilities are the PSB, FS16, FS11, FS12, FS13 and FS14. Note that there were other facilities with similar levels of deficiencies but these were primarily in lower priority facilities with undetermined futures. (See Section 2).
  - It is our understanding that there are projects in process to alleviate some of these deficiencies.
- Staffing – Our operational analysis includes a comparison of current staffing levels against peer organizations. The base data used for comparison came from a report published by the International Facility Managers Association (IFMA), titled "2009 Operations and Maintenance Benchmarking Report". Although this report includes data from over 1400 different institutions, it contains a data subset compiled on 95 City/County Governments from which we benchmarked the City of Redmond. In terms of the total square footage managed, the City of Redmond was close to the median size of the institutions benchmarked which adds validity to the points of comparison.
  - Our comparative analysis indicates that the current facilities team has 3.5 to 4.0 maintenance technicians and management personnel less than peer operations of comparable size (See Staffing Assessment, p.5-8).
  - Being understaffed can lead to lower internal customer satisfaction, lower employee morale and contribute to a maintenance backlog. Example: The Redmond Pool. Because preventive maintenance has not been performed at appropriate levels for an extended period of time, the facility now demands an inordinate amount of time to replace or repair failing components which draws technicians away from planned maintenances in other facilities which perpetuates the deficiencies system wide.

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Executive Summary

  - The recently developed Maintenance Plan defines a need for one FTE dedicated to the planned maintenance of the mechanical and electrical systems. The current staffing model does not provide for this need and as a result preventive maintenance is being deferred or is contracted to vendors to perform at a higher cost (See PM Hours and Schedule workbook).
  - The recent implementation of the after-hours response protocol, which establishes "on call" responsibilities for Facilities technicians, effectively reallocates hours previously available for maintenance to support this function. The quantity of reallocated hours is equivalent to ½ of an FTE.
- Scope - The lack of a defined scope for the Facilities Team contributes to operating inefficiencies and a lack of a clear methodology for prioritizing tasks creates a tendency to delay planned maintenance in favor of immediate needs.
  - Several scope conflicts with other departments as well as gaps in responsibilities were identified in the course of this project and are now defined in the Service Level Agreement (with a few minor exceptions TBD).
- Key Performance Indicators (KPI) - The lack of performance metrics makes it difficult to measure, verify and improve the performance of the Facilities Team.
  - It is our recommendation that the Key Performance Indicators (KPI) suggested in the Service Level Agreement covering all aspects of facility operations be reviewed by the management team and a select list be chosen to be included in future periodic reports to upper management.
  - Any sustainable, long term reporting mechanism needs to provide the key data to substantiate performance and highlight operational needs as well as be relatively efficient to generate on a regular basis. As such, the capabilities of the CMMS system (Lucity) will dictate to some extent the reports that are produced. The capabilities of the Lucity asset management system, currently being implemented, should be utilized as much as practical to streamline the reporting process.
- Work Order System – The lack of a Computerized Maintenance Management System (CMMS) makes assessing the needs of the Facilities group difficult.
  - The implementation of the Lucity application and the reporting capabilities should provide is expected to help in this area.
  - The Lucity Computerized Maintenance Management System currently being deployed and its associated Work Request system as well as its ability to track and report on operational metrics is vitally important.
  - The abnormally long period of time it has taken to implement it is a significant concern and is impeding progress for the team.
  - This will increase the efficiency of the facilities team and provide important operating metrics that can be used to substantiate operational needs and efficient allocation of limited resources.
- Standard Operating Procedures – The currently available library of standard operating procedures could be improved and utilized more effectively.
  - The development of a comprehensive library of Standard Operating Procedures which would include both maintenance and emergency procedures, would improve functional reliability of all mechanical and electrical systems as well as improve safety of personnel.
  - A project plan for the development of an SOP library is provided in Section 3.
- City Hall Operations
  - There is a significant discrepancy between the rentable square footage (RSF) reported by Wright Runstad (WR) and MENG ANALYSIS' assignable square feet (ASF) in their report which makes a reliable benchmark comparison difficult. We recommend a manual calculation from the construction drawings using industry standards to obtain the true RSF value which is more of an industry standard than ASF. Once completed, a revised benchmarking report could be developed that would provide a clearer picture of actual operating costs for City Hall compared to peer facilities.
  - The terms of the original WR contract call for the development of a Facility Maintenance Plan which has never been developed. This plan should define performance criteria and deliverables which

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currently do not exist. We suggest that WR draft a plan as per the terms of the original agreement and that the City review then approve the plan if acceptable. Once this is completed, regular reporting of WR team's performance against the contractual agreement can be measured.

- Although there are periodic financial reviews, there are currently no periodic reports on any repair and maintenance being performed. We suggest that reports be produced on a monthly basis and reviewed with the Facility Supervisor. These reports should include at a minimum, man hours, materials used deficiencies found, etc. Once implemented, the reporting will provide substantiation for the maintenances being performed.

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Executive Summary

Conclusion and Next Steps

This project is intended to provide the data needed to help managers make informed strategic decisions while at the same time, provide a guide to the Facilities group that will increase their operating efficiencies. Benchmarking against peer organizations, clearly defining departmental scope and prioritizing projects and tasks, quantifies and substantiates the resources needed to insure the Facilities, Maintenance and Operations group success.

A key factor to success will be in the organization's ability to leverage available technologies.

TWO YEAR ACTION PLAN

What follows is our recommended course of action for the key operational elements of the Strategic Management Plan. A project chart is attached for reference (see below).

1. **Maintenance Management – Measurement and Verification**
   - 1.1. Drive to complete the full implementation of the CMMS system including the Maintenance Work Order and Work Request modules.
   - 1.2. Use the CMMS system in conjunction with comparative data to develop new operating budgets for the 19/20 cycle.
   - 1.3. Agree on and then begin reporting on a few high level measures of performance.
2. **Maintenance Backlog -**
   - 2.1. Either hire additional technicians or contract with vendors to begin to eliminate the maintenance backlog.
   - 2.2. Focus on the six substandard, high priority facilities first, but work to eliminate all open tasks on the maintenance backlog based on the priorities established in the Level of Service (LOS).
   - 2.3. Prioritize all work using the priorities set in the LOS and Service Level Agreement (SLA)
3. **Upgrade the Building Automation System**
   - 3.1. The overall project needs to be scoped in detail based on our initial recommendations and budgeted for inclusion in the next budget cycle.
   - 3.2. The scope could be prioritized based on the LOS and the SLA.
   - 3.3. This scope needs to be developed in partnership with the IT/IS department
4. **City Hall operations**
   - 4.1. Increase oversight of City Hall Operations
   - 4.2. Integrate the BAS with the rest of the C of R campus.

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Executive Summary

STRATEGIC MAINTENANCE PLAN IMPLEMENTATION

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2.0 Facility Level of Service

Facility Level of Service

Introduction

The Level of Service (LOS) establishes the baseline criteria for the allocation of facilities resources.

Four LOS criteria were established (see section 4 below): role, image, utilization, and longevity. A numerical value was assigned for each that reflects the overall importance for each facility.

The newly-established LOS builds on the base data published in the Facility Condition Assessment (Meng Analysis, 2013) by adding an element of prioritization. The LOS also establishes priorities for the development of associated maintenance and operations management plans, as well as potential facility and operations improvements that are addressed in detail in the Operations Service Level Agreement (see Section 3) and the Facility Maintenance Strategy (see Section 4).

It is important to note that the LOS values shown establish priorities for maintenance and operation resources which may be in conflict with capital expenditure priorities. As a result, some facilities may show an LOS that is lower than expected given the importance of the functions performed there because the facility is expected to undergo major improvements in the near future or is expected to be returned to the owner. Once a facility is updated or its future secured, its LOS should be reevaluated to represent these new priorities. Additionally, all facilities should be reevaluated on a regular basis to validate their current LOS and general condition.

By comparing the LOS of the facilities to their condition, it became apparent that some facilities have not been maintained at a level commensurate with their importance to the city's core mission. Based on this, it is apparent that several facilities would benefit from additional maintenance resources to improve their current condition and bring them in line with their LOS. The facilities with the most obvious discrepancies are the PSB, FS16, FS14, FS11, FS12 and FS13 (see section 5 below).

Although the 2013 Facility Condition Assessment was used as a reference, only a minor effort was made to compare the information in that report against current conditions. An "observed level of service" (see section 5 below) assessment was performed based on a cursory inspection of the facilities that occurred during field surveys conducted in February 2016. The primary purpose for the facility surveys was to gather equipment data. It is worth noting that the general condition of facilities did not appear to have declined significantly since the 2013 report was published. There were instances where facility condition had improved, apparently due to work performed since the earlier assessment.

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Facility Level of Service

Methodology

The methodology for evaluating each facility was derived from several sources, including:

- The City of Redmond's mission, vision and values
- Interviews conducted with management and technical staff
- Observations made during the visioning workshop
- Outputs from staff surveys
- Applicable industry standards and best practices
- McKinstry experience with other facilities with similar functions
- Criteria defined in the scope of work documents

A scoring system was developed that takes these considerations into account and assigns a numerical value to each facility based on its overall importance to the city's mission. This numerical value was then compared to the condition of the facility as defined in the 2013 Facility Conditions Assessment and against observations relating to each facilities general level of maintenance. From this new data, the consultant team was able to identify probable gaps that need to be filled between a facilities current condition, its level of maintenance and its importance to the city's mission.

Facility Condition Assessment (Meng Analysis, 2013) The 2013 Facility Conditions Assessment assigns two ratings for each facility. The Facility Condition Index (FCI) is an industry-standard index calculated as a ratio between the dollar value of outstanding maintenance/repairs and the replacement cost of the facility. In essence, the FCI represents the net worth of a given facility and is useful in making strategic decisions concerning major capital expenditures or comparing facilities against each other.

The other index used in the Facility Condition Assessment is the Weighted Average Condition, which is a numeric representation of the general condition of the facility without regard to its current replacement value. This index is expressed as a value between 1 and 5, with 1 being excellent and 5 being unacceptable. Since this task is primarily about establishing maintenance and repair priorities and not whether a building should be remodeled or replaced, it was most appropriate to use the Weighted Average Condition rather than the FCI throughout this report.

FITNESS FOR PURPOSE

Fitness for purpose was also considered for each facility. Most of the city's facilities are purpose built for the functions they support, including the fire stations, City Hall, Public Safety Building, decant, and warehouses. As such, fitness for purpose was not particularly meaningful for executing this task except when comparing a specific system's intended purpose against its actual capability. An example of this would be the lack of remote monitoring and control of mission-critical devices. A more comprehensive space use assessment that addresses fitness for purpose is addressed in more detail in Task #4 in development by Makers.

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Facility Level of Service

Evaluation Criteria

The following criteria were used to establish the criticality of each facility. In order to add a measure of validity to the data, key individuals were polled including a member of the facilities team, the administrative team, and two individuals on the McKinstry team. They independently evaluated each facility using the criteria below and we then averaged the collected data to establish the criticality (or LOS of each facility). It is worth noting that the responses for the most and least critical facilities aligned closely among respondents which appeared to validate the methodology.

ROLE - HOW IMPORTANT ARE THE SERVICES SUPPORTED BY THIS FACILITY?

PRIORITY 1- CRITICAL TO THE COMMUNITY

Provides services that are critical to the community in terms of fire and life safety. If services in this category were compromised for any length of time, the community could be adversely affected.

PRIORITY 2- PUBLIC AND STAFF, HIGH VOLUME

Supports needed community services but the services are less-than-critical. Any facility that has higher volumes of community usage and access or is a designated refuge in the event of a disaster. If services in this category were compromised for any significant length of time the community would be significantly affected.

PRIORITY 3- STAFF- HIGH VOLUME, PUBLIC- LOW VOLUME

Provides support space for city staff that provide important city services but with little or no public access or interaction. Services to the community would be significantly affected if the usability of this category of facility was compromised for an extended length of time.

PRIORITY 4- PUBLIC AND STAFF - LOW VOLUME

Supports very valuable public services and staff but may not be considered vital. The community would not be adversely affected if services supported by this category of facility were compromised for a short time.

PRIORITY 5- STAFF - LOW VOLUME, PUBLIC- LIMITED OR NO USAGE

Facilities that are lightly used by staff and have little or no access by the public.

IMAGE - HOW IMPORTANT IS THE FACILITY'S ROLE IN MAINTAINING THE CITY'S IMAGE WITH THE PUBLIC?

PRIORITY 1- EXEMPLIFIES

These facilities play a key role in maintaining the image of the City of Redmond. City Hall and the PSB are examples.

PRIORITY 2- HIGH VISIBILITY

These facilities have high public visibility, but to some extent play a lesser role in maintaining the city's image. The Senior Center and Community Center are included in this category.

PRIORITY 3- LOW VISIBILITY

These facilities tend to be more utilitarian. Although they may be visible to the public, their general appearance is secondary to the functions they support. The MOCs and parking garages are included in this category.

PRIORITY 4- NO VISIBILITY

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Facility Level of Service

These facilities are purely utilitarian and play no real role in maintaining the city's image. The Trinity is an example of the facilities included in this category.

UTILIZATION – HOW MUCH OF THE TIME IS THE FACILITY OCCUPIED?

PRIORITY 1 - 24-HOURS-PER-DAY OCCUPANCY

These facilities operate 24 hours per day, 365 days per year

PRIORITY 2 - OFFICE ENVIRONMENT; PUBLIC FACING

These facilities operate at least 40 hours per week and are usually open to the public

PRIORITY 3 – OFFICE ENVIRONMENT OR SHOP ENVIRONMENT; NOT PUBLIC FACING

These facilities operate at least 40 hours per week and are not usually open to the public

PRIORITY 4 – NORMALLY UNOCCUPIED

These facilities are not open to the public and are not normally occupied by staff

LONGEVITY - HOW MUCH LONGER IS THE FACILITY LIKELY TO BE MAINTAINED BEFORE A COMPLETE REMODEL, REPLACEMENT, OR ABANDONMENT?

PRIORITY 1 - 15+ YEARS

Facilities in this category are owned by the city, permanent, relatively new, in a good state of repair, and well suited for their purpose.

PRIORITY 2 - 10-15 YEARS

Facilities in this category are owned by the city, permanent, at least 10 years old, in a fair state of repair, and reasonably well suited for their purpose.

PRIORITY 3 - 5-10 YEARS

Facilities in this category are owned or leased by the city, permanent, at least 10 years old, in need of significant repair or remodel, and may need updates to better align with current usage.

PRIORITY 4 – LESS THAN 5 YEARS

Facilities in this category are owned or leased by the city, however their future role is either uncertain or a major renovation is planned and likely to occur within the next five years.

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Facility Level of Service

Facility Levels of Service

The criteria defined in section 4 were applied to each facility and the results are shown in the chart below.

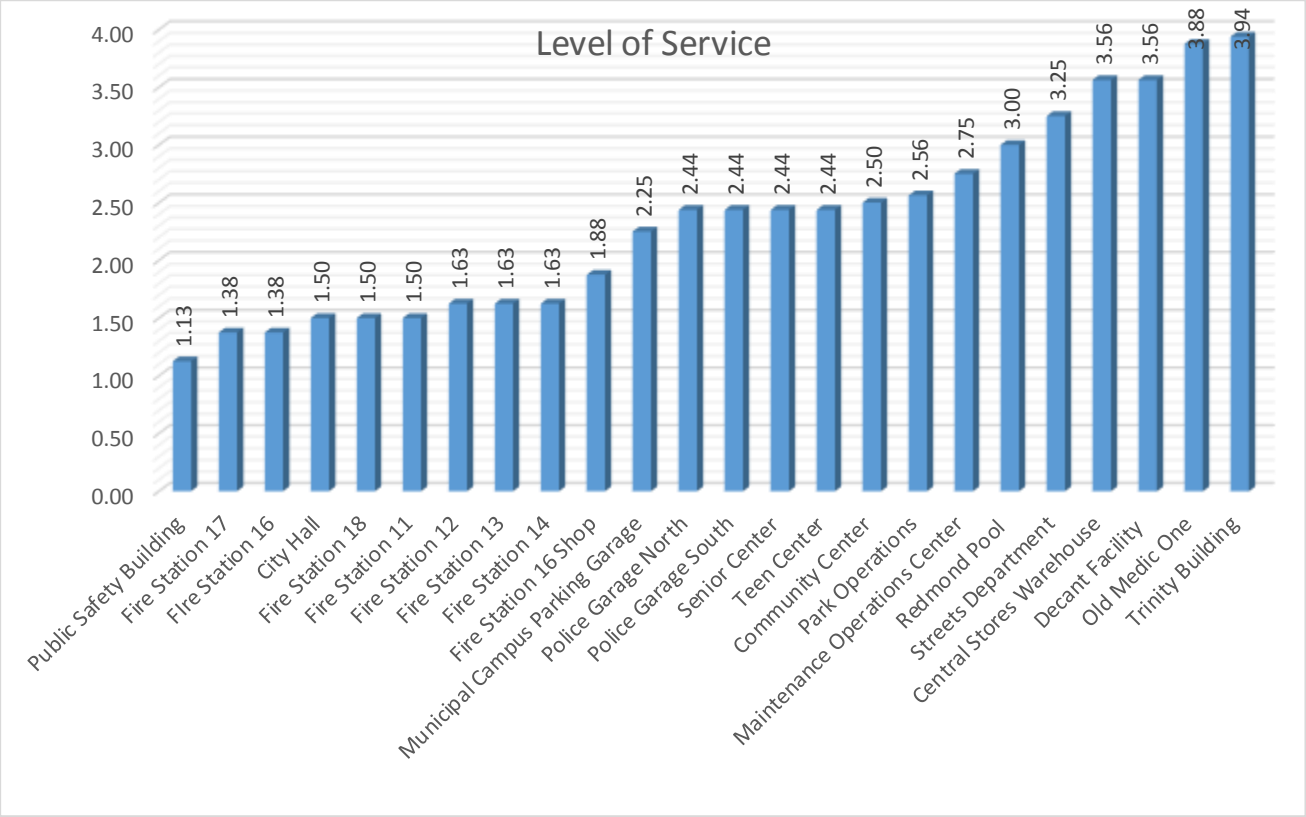

Figure 1

Figure 1 shows the facilities in order of importance (from lowest LOS/most critical to highest LOS/least critical) based on the average scores for the criteria defined in section 3. As expected, the Public Safety Building is ranked as the facility supporting the most critical services and has an LOS value of 1.13. The Trinity and Old Medic One Buildings are least critical, according to their respective LOS scores of 3.94 and 3.88.

Facility Level of Service

Weighted Average Condition

When the Weighted Average Condition from the Facility Conditions Assessment is overlaid with the LOS data, it becomes apparent that for some facilities their average condition is not commensurate with their LOS (see Figure 2). The most significant examples are the PSB and FS 11.

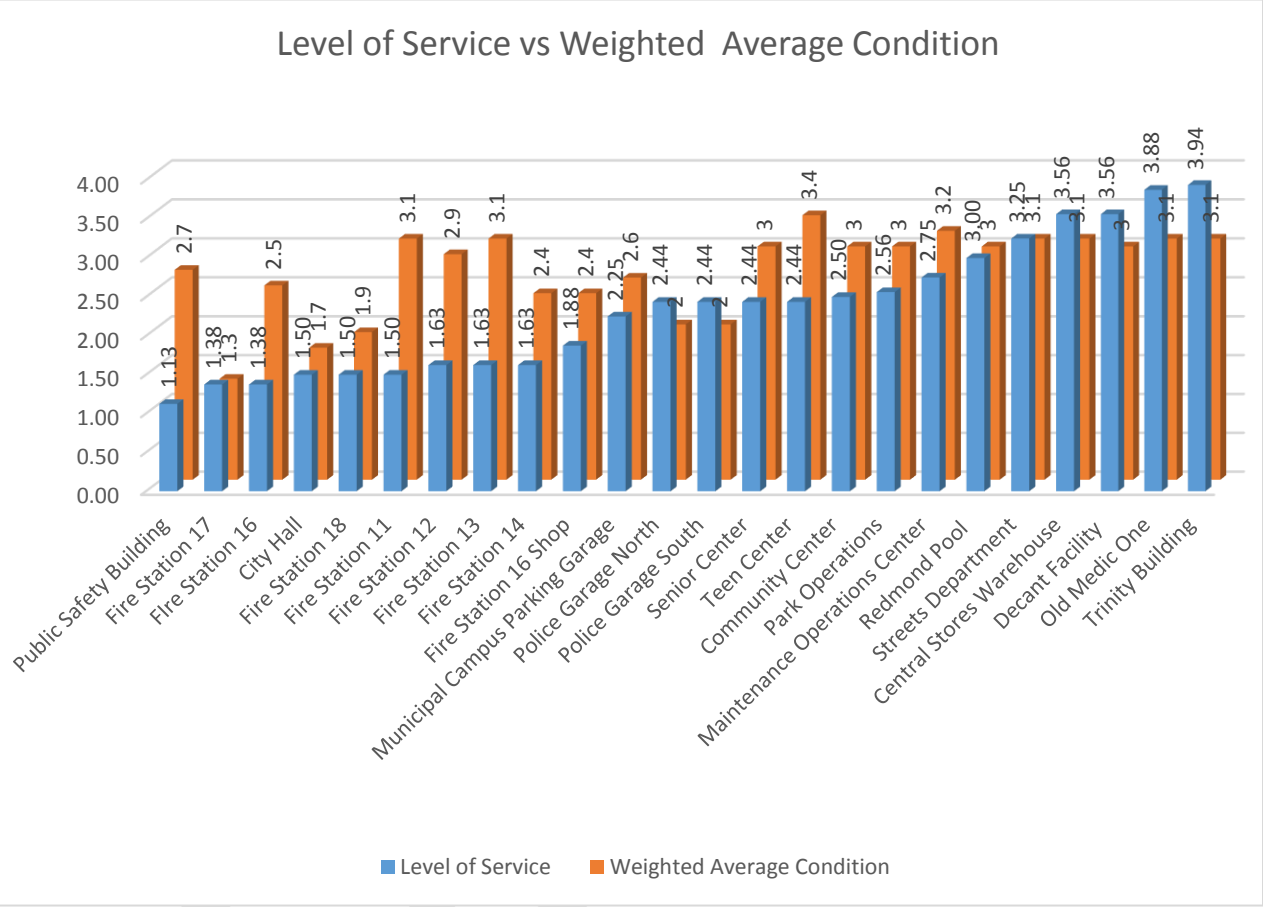

Figure 2

Ideally, the Weighted Average Condition values should be roughly parallel the LOS values. For example, FS17 is a critical facility (indicated by an LOS of 1.38) and it is in great condition, so the bars in the chart above are roughly same height. In contrast, FS11 is a critical facility (LOS 1.5) that is in average condition, which is an indicator that it should be allocated additional maintenance resources to bring its condition in line with its LOS.

Facility Level of Service

Observed Level of Service

An "Observed Level of Service" was also developed based observations made during field surveys; they were applied as a secondary check to the weighted averages. These observations seem to align with the weighted average condition scores, although they are somewhat less conclusive (see figure 3). However, the observed level of service does seem to validate the existing data.

Level 1- Very Good

Level 2- Good

Level 3- Acceptable

Level 4- Needs additional resources

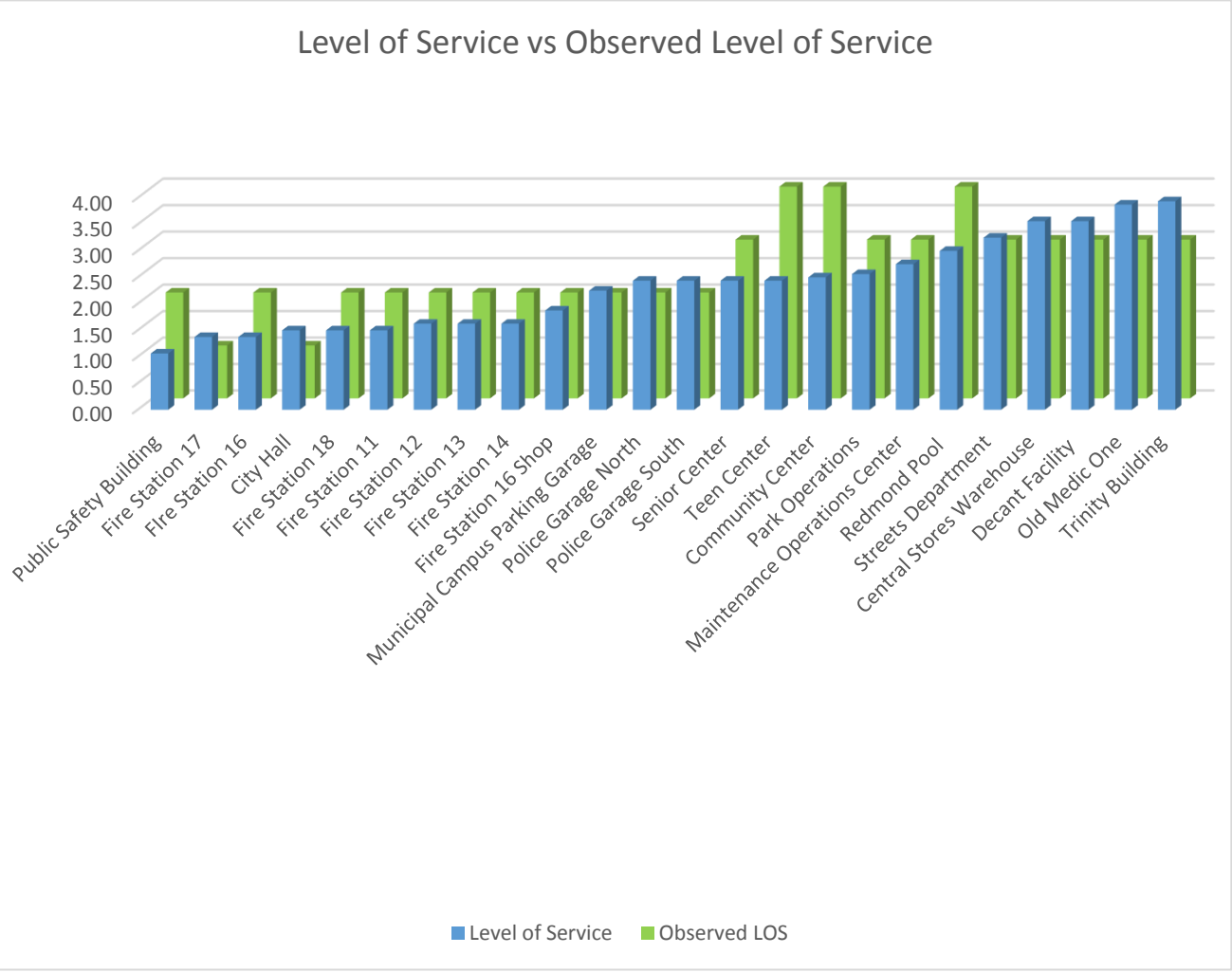

Figure 3- Overlaying the Observed Level of Service values

Facility Level of Service

Facility Level of Service Summaries

MUNICIPAL CAMPUS

CITY HALL

Level of Service	**1.50**
Meng Weighted Condition Average	**1.7**
Observed Level of Service	**1**

City Hall has the highest visibility and likely has the highest volume of public and staff usage of all facilities, and as a result, it most exemplifies the image of the City of Redmond. Accordingly, the maintenance and operation of the facility take on a higher level of importance than all other city buildings, with the exception of those supporting life safety services.

GAPS

City Hall has an LOS index of 1.50 with an importance ranking of fourth. Its weighted condition average is 1.7, which gives it a condition ranking of second, only slightly behind FS17. Like FS17, its condition and LOS are in close alignment, which is an indicator that the amount of allocated maintenance resources approximately matches the needs. Like other highly important facilities, the Building Automation System is not visible to the Facilities Department from outside the building and should be upgraded

PUBLIC SAFETY BUILDING

Level of Service	**1.13**
Meng Weighted Condition Average	**2.7**
Observed Level of Service	**2**

The PSB ranked first in importance due to a number of critical functions it supports. It houses Police Department operations, the city's computer data center, and the Emergency Call Center (ECC). It also serves as a backup ECC for the City of Bellevue and supports other critical functions. The PSB operates 24 hours per day and has high visibility along with a long expected life.

GAPS

The Facility Condition Assessment assigned the facility an overall condition score of 2.7, which ranks it tenth overall in condition. This stands in contrast to its first overall LOS ranking. The condition score of 2.7 roughly aligned with fields observations. Based on this information, it is apparent that there is a gap between the PSB's LOS and the current level of maintenance and general condition.

It appears there are a number of capital improvements in progress that will narrow or close the gaps, but further research into ways of improving the infrastructure is warranted in this mission-critical building. As a result, the consultant team will target the PSB during the next phase of work for additional study, additional facility improvement measures, and suggestions for additional resources to improve its general condition. Results of the additional study are reported in Section 4 and 5.

The BAS in the PSB provides limited remote visibility from Facilities, but much less than we would expect from the important systems within this facility.

SENIOR CENTER

Level of Service	**2.44**
Meng Weighted Condition Average	**3.00**

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Observed Level of Service	**3**

On the day of the field survey, the patron activity level in the Senior Center was very high. Assuming the level of activity was representative of an average day, it appears that the center provides highly valued services to a constituency of the city.

The LOS for this facility is lower than would be expected for a facility of this significance due to its age and need for refurbishment. Once currently planned renovations are performed, its LOS rating will likely increase to a level comparable to City Hall.

GAPS
The Senior Center needs a major renovation. This project is currently in process, so it is recommended that maintenance be performed at current levels until the renovations are complete, at which time the LOS can be adjusted to reflect new priorities.

PARKING GARAGES

Level of Service	**2.25, 2.44, 2.44**
Meng Weighted Condition Average	**2.6, 2.0, 2.0**
Observed Level of Service	**2**

The conditions of the parking garages seem to align with their assigned LOS, indicating that available resources are being properly allocated.

FIRE STATIONS

FIRE STATION 11

Level of Service	**1.50**
Meng Weighted Condition Average	**3.1**
Observed Level of Service	**2**

Fire Station 11 is the headquarters of the Redmond Fire Department and the largest of the fire stations. As a result, it carries a similar importance rating to FS17, but is ranked lower due to the higher criticality function FS17 provides (i.e. the ECC) and also because of the possibility that FS11 may undergo a significant renovation within the next few years to improve functionality and refurbish aging infrastructure.

GAPS
FS11 is equal to City Hall and FS16 for LOS, but its condition average ranks it seventeenth overall, which indicates that additional resources should be allocated to its maintenance and operation.

FIRE STATION 12, 13 AND 14

Level of Service	**1.63**
Meng Weighted Condition Average	**2.9, 3.1, 2.4**
Observed Level of Service	**2**

Fire stations 12, 13 and 14 all have the same LOS, similar weighted condition averages, operate 24 hour per day, and provide similar functions.

GAPS
Based on the difference between their assigned LOS and their general condition, allocation of additional resources to improve the general condition of FS 12, 14, and 15 may be warranted. Again, there is no remote

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visibility to these buildings from the Building Automation System.

FS13 and FS14 are currently owned by King County and would benefit from a plan to address responsibility for capital improvements. This plan is currently being negotiated. There is a list of suggested renewal projects in the recently developed Maintenance and Repair Plan (see Section 5)

FIRE STATION 16 & FIRE STATION 16 SHOP

Level of Service	**1.38, 1.88**
Meng Weighted Condition Average	**2.5, 2.4**
Observed Level of Service	**2, 2**

Like the other fire stations, FS16 operates 24 hours per day and provides the community with critical life safety support. It also has an adjacent maintenance and repair shop that provides important services for fire equipment and vehicles.

GAPS

Although FS16's LOS ranking is third overall, the weighted average from the Facility Condition Assessment sets its rank at eighth which is an indication of a gap between its historical level of maintenance and it's LOS.

As a result, the consultant teams suggests that additional resources be allocated to FS16 to increase its general condition and enhance the reliability of its infrastructure.

FIRE STATION 17

Level of Service	**1.38**
Meng Weighted Condition Average	**1.3**
Observed Level of Service	**1**

With a weighted average of 1.3, FS17 ranks first in its general condition of all City buildings, and with a LOS of 1.38 it ranks second only to the PSB in importance. Its condition and Observed Level of Service are in close alignment with its actual LOS, which is the goal for all the facilities. As with all the fire stations, it is occupied continuously but it has a higher LOS than the other fire stations because it houses the backup ECC.

GAPS

Due to its critical nature, the level of maintenance and diligence in operation should be maintained at a very high level for this facility. There are two current concerns, the first is a lack of remote visibility to the BAS. The second is that because it is currently in such good condition, it may not be getting the level of resources appropriate for its LOS to maintain its current state. Specific improvement measures are defined in Sections 4 and 5 that will help keep this facility's condition aligned with its LOS.

FIRE STATION 18

Level of Service	**1.50**
Meng Weighted Condition Average	**1.9**
Observed Level of Service	**2**

FS18 has an LOS ranking of 1.5, similar to City Hall and FS11. This is due in part to the assumption that this building meets current needs and will continue to do so for at least the next 15 years.

GAPS

FS18's LOS index is 1.50 with an importance ranking of fifth. Its weighted condition average is 1.9, which gives it a condition ranking of third, only slightly behind City Hall. Like FS17 and City Hall, its condition and

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Facility Level of Service

LOS are in close alignment, indicating that the amount of allocated resources approximately matches needs.

This building is currently owned by King County and would benefit from a plan addressing responsibility for capital improvements. This plan is currently being negotiated. There is a list of suggested renewal projects in the recently developed Maintenance and Repair Strategy (see Section 4).

TEEN CENTER

Level of Service	**2.44**
Meng Weighted Condition Average	**3.4**
Observed Level of Service	**4**

Although the facility was unoccupied at the time of the survey, it appears that it does support significant community activity. Until the disposition of this facility is determined, it is recommended that maintenance resources be allocated on an as-needed basis only. Once the plan is developed, the LOS can be reevaluated and priorities reassessed.

THE COMMUNITY CENTER

Level of Service	**2.50**
Meng Weighted Condition Average	**3.00**
Observed Level of Service	**4**

This facility is owned by the Lake Washington School District and slated to be returned to their control in the near future. As such, it is suggested that maintenance resources be allocated on an as-needed basis only.

THE HARTMAN POOL

Level of Service	**3.00**
Meng Weighted Condition Average	**3.00**
Observed Level of Service	**4**

Until the final disposition of the building is established, it is suggested that maintenance resources be allocated on an as-needed basis only.

MAINTENANCE AND OPERATION CENTER

MOC, STREETS, CENTRAL STORES, TRINITY, DECANT, PARK OPERATIONS

Level of Service	**2.75, 3.25, 3.56, 3.94, 3.56, 2.56**
Meng Weighted Condition Average	**3.20, 3.10, 3.1, 3.1, 3.0, 3.2**
Observed Level of Service	**3.0, 3.0, 3.0, 3.0, 3.0, 3.0**

An MOC master use plan is currently under development that will establish how these facilities will be utilized going forward. Until that plan is developed, maintenance resources should only be allocated on an as-needed basis. Once the plan is developed, its LOS should be reevaluated and then re-prioritized.

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3.0 Operations Level of Service

Operations Level of Service

Introduction

December 1, 2016

Section 3 of this report was amended in November (see below)

What follows are the final versions of the draft documents originally submitted on 7/31/2016. All comments received to date from the city have been incorporated.

As already stated in the draft submittal with a few updates to reflect any changes, the deliverables for this scope item are divided into four parts (Bullet numbers listed below reference the Scope of Work document for Task 7).

- Section 1- Covers (bullet 2) and is the primary deliverable for this task item. As stated above, review comments received form stakeholders have been incorporated into this revision. The Service Level Agreement or SLA incorporates additional elements defined in the Task #7 Scope of work but not specifically listed under the SLA (bullet 2) task item. These additional elements (1, 2, 4 & 7) were incorporated into the SLA because it seemed appropriate to do so since they are part of the department's service level commitment. These elements include:
  - Bullet 1- The departmental "Mission Statement" located immediately after the title page
  - Bullet 2- "Prioritized Response Protocol" for internal service requests is located in Section 5- Work Requests
  - Bullet 4- "Document Management Procedures and Process" are addressed under Section 4- "Information Management"
  - Bullet 7- Key Performance Indicators are dispersed throughout the SLA in the section of the document for which they pertain under the "Key Performance Indicators" header.
- Section 2- Covers Policies and Procedures described in bullet 3. A complete list of recommended policies and procedures is provided in an attached list (note the first policy listed is the SLA). Additionally, a plan for the development of the SOP library is also included. This section is submitted with no material changes from the original draft.
- *Section 3- This section was amended in November to include a staffing comparative analysis of the current staff with industry peers. It also includes recommendations for a revised staffing model based on this new analysis.*
- Section 4- A review of existing vendor contracts (bullet 6) has been completed and is now included in this report.

Operations Level of Service

Scope Clarifications

An earlier version of this document included the questions listed below (the two left columns) pertaining to the scope of the FAC work group. The responses to those questions from the city are now included in the right column.

In cases where the comments affected the text of the Service Level Agreement, the language of the SLA was edited to comply with the final decision. In areas where a decision still needs to be made the text of the SLA was not changed.

QUESTIONS	MCKINSTRY RECOMMENDATION	CITY RESPONSE
Are the use of space heaters and extension cords allowed in office spaces? Are personal refrigerators allowed?	If not already a policy, and for safety reasons, the personal use of refrigerators, extension cords, personal fans and space heaters needs to be controlled. It is our recommendation that if the use of these devices is determined to be acceptable by the Fire Marshall or appropriate authority, the responsibility of testing for safety, distribution and management of these devices be performed by the FAC.	City Hall Handbook awaiting approval by Directors Team. This will serve as a template to create handbooks for each building. Creating handbooks will be part of the Facilities work plan.
Currently, the responsibility for Grounds and Landscaping adjacent to city facilities is not clearly defined. The responsibility is currently shared between Parks, FAC and vendors with some apparent overlap.	To increase efficiency and reduce costs, our recommendation is to assign this responsibility to Parks or Park's vendor. If needed, adjust the operating budgets to compensate.	Place in Storage Closet (aka parking lot) for future resolution. Larger landscape maintenance coordination issue involving Parks, Utilities, Facilities, etc.
The Prioritized Response Protocol developed for FAC (see section on Work Requests below) may need review and possible approval by the Directors	It is our opinion that this protocol could be implemented within the authority of FAC but general acceptance would be beneficial.	
Emergency Response Protocol- A protocol must be developed that defines how FAC support will be provided for critical system failures outside of normal business hours.	We understand that this is protocol is currently under development but would like to emphasize the importance of developing and implementing a plan.	Facilities will have standby staff as of Oct 3rd. Work in progress on protocols. Will be part of Facilities work plan.

Operations Level of Service

QUESTIONS	MCKINSTRY RECOMMENDATION	CITY RESPONSE
Maintenance of the Life Safety systems in the facilities is the responsibility of the FAC but it is unclear which department is responsible for periodic inspections of the facilities and any Fire/ Life Safety plans.	The assumption is that the Fire Marshall is responsible but this needs to be clarified.	FAC should coordinate with Fire in selection of vendor contracts. Annual or once/3 year Fire Inspections based on permitted status or permit not required. Maintenance of alarms, sprinklers, batteries, refrigeration, etc by Facilities/vendor. Automated reports will be required starting Jan 1.
Is there a Fire Life Safety Plan for the City? If so is it posted in an easily accessible location?	Our assumption that this is managed by the Fire Department but needs to be clarified as it could fall under the responsibility of the FAC. This plan would define things like materials and chemical storage, clearances from sprinkler heads, evacuation routes, etc.	There is not currently a Life Safety Plan. Several items are covered as part of the periodic Fire Inspections noted above. Some items may be covered in the Building Handbooks to be developed for each building. We recommend McKinstry also review our insurer requirements and if so to assign responsibility.
Card Key Policy	The FAC is responsible for Card Reader maintenance and IS responsible for creating card keys but a policy to define whom they are to be issued and under what circumstances needs to be developed and implemented (see list of Policies/SOP's to be developed). We understand that this policy is currently under development.	Security Committee work plan
Which department is responsible for the sweeping of parking garages and parking lots? This appears to be a gap in service/ responsibility.	It seems logical that this scope would fall under the Streets Dept. but the responsibility for this task needs to be determined and assigned.	In consideration
Regular maintenance of specialized structures and spaces such as maintenance shops, warehouses, etc. does not appear to be defined.	Regular maintenance (Primarily Custodial) of these types of specialty spaces is currently excluded from the responsibility of the FAC by this SLA. Planned and Predictive maintenance of these spaces and the equipment that supports them is the responsibility of FAC and defined in this agreement.	General building maintenance and custodial are responsibility of Facilities. Some specialized equipment is not Facilities responsibility – (i.e., servers, exhaust machines for fleet equipment)
Management of FAC related Capital Projects is currently under the scope of the Construction	1. A policy needs to be written that defines when a project falls within the scope of the FAC or the Construction Department. 2. Any project that affects the FAC	CIP project management system is undergoing improvements. This issue is common to all functional areas. No action needed.

Operations Level of Service

QUESTIONS	MCKINSTRY RECOMMENDATION	CITY RESPONSE
Department.	should be a shared responsibility between Construction and FAC as defined in this SLA (see Project Management)	
It is not clear if the Construction or FAC is responsible for an office Move, Add or change.	Our recommendation that this type of request belong to the FAC but it should be defined in a policy.	Minor shuffling is responsibility of Facilities. Major capital project moves or tenant improvements should be coordinated by the Project Manager.
The responsibility for furniture repairs is currently split between Purchasing and FAC depending on whether the piece is under the Herman Miller contract or if it is not.	We suggest that this responsibility be assigned to the FAC whether the repair is made internally, contracted out or repaired under the current service agreement. Management of the contract itself should remain with Purchasing.	
There is no written policy that establishes the dividing line between IS and FAC maintenance responsibilities.	This document defines that line in the section on Planned and Predictive Maintenance but it needs to be reviewed and approved by IS.	General agreement on proposed language. Follow up conversation needed regarding UPS (uninterrupted power supplies) as there are many that are not on Quinn's list. In general maintenance of the UPS should be in Quinn's group. IS monitors battery life. Server changes, electrical and HVAC requirements should be a joint FAC/IS discussion. Suggestion to develop a change process for holistic view of major building systems – for instance notification of generator testing.
There does not appear to be a cross departmental policy, procedure or standards for the development of Standard Operating Procedures (SOP).	In another section of this report we provide a list of suggested SOP's that should be developed for the FAC, and an SOP on how to write an SOP. We suggest considering adoption of the standard city wide.	SOP template from Kirkland is in process for departmental wide use? Facilities work plan item for future
Utilities Conservation and Management- The scope of this section needs to be assigned.	As written the scope of this section if limited to facilities under the responsibility of FAC and as a result it is our recommendation that the scope belong to the FAC. The logic is that a major part of utilities conservation depends on the active maintenance of the equipment that measures and consumes the energy.	Cathy Beam in Planning is currently leading the effort. Put in storage closet for future.

Operations Level of Service

The intent of this document is to define the scope of services or "Service Level" that the Facilities, Maintenance and Operations (FAC) work section is to provide in support of the City of Redmond facilities and its functions.

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Operations Level of Service

Definitions

CMMS	Computerized Maintenance Management System is the system that manages the work requests, work orders and preventive/predictive maintenance of facilities related devices and systems
SLA	Service Level Agreement
Reactive Maintenance	Unscheduled maintenance that is due to the failure of a system or device or due to a request by an internal user.
Planned Maintenance	Maintenance that is scheduled to be performed based on regular, calendar based intervals
Predictive Maintenance	Maintenance that is scheduled to be performed as a result of the measured performance degradation of a system, device, component or consumable.
Key Performance Indicators	Quantitative recording of data for the purpose of tracking and reporting on performance.
SOP	Standard Operating Procedure
MOP	Maintenance Operating Procedure
EOP	Emergency Operating Procedure
Response Prioritization Protocol	Prioritizes all work requests according to the requests importance and establishes standards for expected response times based on that assigned importance.
FAC	Facilities Maintenance and Operations Work Section
Facilities Team	The group of employees that constitute the whole of the FAC
Life Cycle	The effective useful life of an asset usually measured in years
Life Cycle Cost	The estimated cost of operating and maintaining an asset over the length of its Life Cycle
POC	Point of connection
IS	Information Systems- The department responsible for computers, peripherals and other related technologies.
OPR	Owner's Project Requirements- Comprehensive document that defines in detail the specific requirements for a project. Typically used as guide by the designers to develop the actual plans for a project
BOD	Basis of Design- Documents that specifically define how the project will fulfill the conditions defined in the OPR
Specifications	Construction document that sets minimum acceptable standards for project. The specifications set standards for all materials, equipment and quality of construction. Specifications are typically contractually binding.
CD	Construction Drawings- Drawings used to construct a project. Can be expressed in terms of % complete of the drawings/design, I.E. 50% CD's means the drawings are roughly 50% complete.
Shops or Shop Drawings	Very detailed drawings usually created by a subcontractor specifically pertaining to the subcontractor's scope of work. Used to fabricate any

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	shop built components and then field install them. Typically drawn electronically in 3 dimensions and sometimes combined with 3D drawings from other trades to detect physical conflicts or "clashes" between trades.
As Builts	Drawings that document the finished construction incorporating any changes made in the field that differ from the design drawings.
NFPA	National Fire Protection Association
NFPA 70	Code pertaining to Fire Alarm Systems
NFPA 72	Code pertaining to Fire Alarm Systems
NFPA 10	Standard for portable fire extinguishers
NFPA 25	Standard for the inspection, testing and maintenance of water based fire protection systems
ASME	American Society of Mechanical Engineers
ASME A17.1	Safety code for Elevators and escalators
NFPA 2001	Standard on clean agent fire extinguishing systems
NFPA 101	Life Safety Code

References

Work Request Process	The SOP that defines the work request process
Facility Management and Operations Strategy	The al plan for operations and management

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Operations Level of Service

General Scope and Purpose

This agreement establishes base service and quality performance levels to meet the operational needs of the City of Redmond staff and the facilities that they work in and in doing so establishes standards and sets the scope for the level of service expected to be provided by the Facilities Team.

This standard establishes the following requirements:

- The scope of services provided by the Facilities, Maintenance and Operations (FAC)
- Service delivery and performance requirements for both reactive and predictive/preventative maintenance.
- Key Performance Indicators for ongoing evaluation, oversight and reporting
- Roles and Responsibilities of both the FAC and the departments they support.

The standards established in this plan are to be used in conjunction with the Facility Maintenance and Operations Strategy.

General Roles and Responsibilities

DEPARTMENT HEADS

- Ensuring that the applicable standards are adhered to within their respective departments.
- Coordinating of any abnormal support services that are needed with the Facilities Supervisor
- Providing feedback to the Facility Supervisor for any suggested amendments to these requirements

FACILITY SUPERVISOR

- Ensuring that staff and contracted service providers comply with these requirements
- Overall quality control of work performed by Facilities staff or by service contractors
- Training of Facilities staff pertaining to all elements of the requirements of this standard
- Coordination of any unusual support requests with the department heads

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Operations Level of Service

Information Management

PURPOSE

This section establishes requirements for the management of both hard and soft mediums of data over the life cycle of the physical assets managed by FAC.

The managed data will be used to:

- Enhance the training of the FAC Team
- Improve response times to internal work requests and requests for information
- Improve energy efficiency
- Extend the life cycle of the assets under management
- Minimize maintenance expenses through more efficient maintenance procedures

SPECIFIC ROLES AND RESPONSIBILITIES

CONSTRUCTION MANAGER

- Ensure that the requirements of this section are incorporated into the construction management practices and documents for FAC related projects (see Project Management).
- Ensure that pertinent construction closeout documents are made available to the Facilities Supervisor.

FAC SUPERVISOR

- Ensure that the Facilities Team are trained on the requirements of this section
- Management of all aspects of documents pertinent to FAC.
- Ensure that contracted service providers comply with the requirements of this standard

FAC COORDINATOR

- Ensure that requirements of the section are incorporated into the CMMS process

QUALITY ASSURANCE

- Facilities Team Training will be provided on the following topics
  - Work order process and management
  - CMMS system training
  - Drawing library access and management
  - Equipment and supplies inventory management
- Oversight
  - Periodic review by the department head of the team training
  - Internal customer satisfaction surveys to evaluate FAC team performance

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Operations Level of Service

KEY PERFORMANCE INDICATORS

Key Performance Indicators will include:

- Internal customer satisfaction surveys are performed at regular intervals and the results show improvement over time
- The construction document turnover process to FAC matures and becomes routine
- Documents that are needed to meet regulatory requirements are archived and readily accessible

DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Develop a digital archive of all available FAC related as-built/ construction drawings	Library is online, current and a process is in place for the archiving of future drawings	Facility Supervisor in coordination with IS.	Annual review of archive for accuracy is performed and deficiencies are corrected
Develop an online process for management of spares inventory	A SOP is developed and the FAC team is trained on the procedure	Facility Lead	Annual review of spares inventory for accuracy is completed with a favorable result
Actively use CMMS system to account for all FAC related activities.	Equipment inventory, maintenance tasking and work order process is substantially complete	Facility Lead	Key Performance Indicators are being generated by the CMMS.
Develop standard language for incorporation into construction specifications defining FAC specific requirements for closeout documentation	A policy is drafted, reviewed and approved by stakeholders.	Facility Supervisor and Construction Manager	Requirements established in the approved policy are incorporated into all FAC related construction projects
Develop an online SOP library	A library is created	Facility Supervisor	The SOP library is online and functioning
Develop a plan to develop FAC related Standard Operating Procedures (SOP)	SOP's are drafted reviewed and implemented by FAC team.	Facility Supervisor	Standard Operating procedures library is completed
Develop standard naming conventions and formatting for equipment and system identification	The standard is created and implemented	Facility Lead	

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Work Requests

PURPOSE

This section establishes requirements for the management of internal work requests including the use of the CMMS system for management of the requests as well as reporting Key Performance Indicators relating to those requests.

These requirements will be used to;

- Define the scope of support services provided by FAC
- Enhance the efficiency of managing work requests
- Improve internal communications
- Improve response times to internal work requests
- Improve operating efficiency
- Increase the utilization of available resources
- Minimize related expenses through more effective procedures

SPECIFIC ROLES AND RESPONSIBILITIES

DEPARTMENT HEADS

- Training of staff in the proper use of the work order process including the understanding of the Response Prioritization protocol (see below)
- Ensuring that their staff adheres to the Work Request Process SOP

INTERNAL USERS

- Adherence to the Work Request Process SOP
- Proper prioritization of any work request

FAC SUPERVISOR

- Ensuring that facilities staff comply with these requirements
- Ensuring that facilities staff respond to work requests according to the Response Protocol defined below
- Ensuring that all work requests are entered, documented and appropriately closed out in the CMMS system

SCOPE OF SERVICES

The following types of support services may be requested through the FAC work request process:

- Space temperature and ventilation issues
- Plumbing related issues
- Electrical and lighting related issues
- Painting, whiteboards, artwork, interior surface issues, etc.
- Lock and key, card readers
- Door and window issues
- Custodial Services
- Event setup and takedown support (on a limited basis)
- Furniture repairs

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- Furniture Moves (on a limited basis)
- Fire Alarm Holds or Bypass requests
- Fire Sprinkler related issues
- Grounds or Landscaping issues
- Issues related to walkways, parking lots, etc.

The following types of services are not supported by FAC:

- Waste Management
- Information Technology related issues
- Telephony related issue
- Any issue related to office equipment, copiers, fax machines, etc. Contact IS service desk.
- Significant office moves, adds or changes
- Card Keys (Contact IS Service Desk)

PRIORITIZED RESPONSE PROTOCOL

PRIORITY 1 - LIFE SAFETY

- Examples: Medical emergencies, fire or smoke, major water line break, gas leak, noxious odor, earthquakes, etc.

Response - Immediate.

- Stop current task and respond immediately to the issue.
- Expected response is less than 20 minutes

PRIORITY 2 - HIGHLY IMPORTANT

- Examples: No heat in very cold weather, no cooling in very hot weather, no hot or cold water, no power, no lights, no ventilation, anything that causes a work or customer service stoppage.

Response – As soon as possible

- If work currently in process can be stopped, do so and proceed to correct the issue
- If the work cannot be stopped. Inform dispatch so alternate resources can be dispatched.
- Expected response to issue is less than one hour

PRIORITY 3 - SIGNIFICANT

- Examples: Partial lighting outage, uncomfortable environment in mild weather, no hot water but cold is still available.

Response - When practical

- Complete any task in progress then proceed to resolve issue.
- Expected response to issue is within the same day

PRIORITY 4 – NORMAL

- Examples: painting, lighting upgrades, white board installation, minor repairs

Response- To be scheduled with the customer

- Expected response is to schedule the completion of the task with the customer

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Operations Level of Service

KEY PERFORMANCE INDICATORS

Key Performance Indicators will include:

- Work orders generated versus closed during period
- Backlog of work requests
- Average time to close grouped by response prioritization
- Safety record- Number of reportable incidents or equivalent
- Overtime worked to complete requests
- Work request spending
- Number of work requests by department and building
- Work orders completed by staff versus vendors

REPORTING AND DOCUMENTATION

The Facility Supervisor or Coordinator by delegation, is responsible for the following reporting and documentation:

- Recording of all major and minor work requests and maintenances in the CMMS system
- Generating periodic Key Performance Indicators for upper management from the CMMS system and other sources substantiating FAC performance to be used to improve overall efficiency
- Management and archiving of all paper format documentation

DELIVERY

Task	Quality Assurance	Responsibility	Performance Measurement
Ensure compliance of all vendor/contractor work with contract scope, work request requirements and field documentation	All contractor provided services are completed on time and properly documented	Facility Supervisor Facility Coordinator	Periodic performance reporting to upper management
Training of vendors and staff	All staff and vendors are trained on the proper protocols for work requests	Facility Supervisor	Work requests are created and accurately completed in a timely fashion
Create a Standard Operating Procedure detailing the Work Request Process	A SOP is created mapping the process	Facility Coordinator	The work order process is efficiently implemented
Develop an inventory /procurement process that improves the completion of Work requests	The amount of time required to purchase parts and consumables is minimized.	Facility Coordinator	Manpower utilization metrics show improved efficiency.

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Operations Level of Service

Planned and Predictive Maintenance

PURPOSE

This section establishes the base requirements for Planned and Predictive maintenance. The requirements of this section apply to all facilities under the responsibility of the FAC team.

- Establishes which systems are under the responsibility of the FAC
- Methods of performance evaluation, oversight and performance
- Record keeping and document management

SPECIFIC ROLES AND RESPONSIBILITIES

The division manager and directors are responsible for:

- Ensuring the implementation and ongoing compliance with these requirements

The Maintenance Supervisors are responsible for:

- Ensuring staff are trained and comply with the requirements of this standard
- Ensuring vendors comply with the requirements of this standard
- Documenting delivery of services by either city staff or vendors
- Management and periodic review of any vendor service agreements that may be used to comply with this standard

QUALITY ASSURANCE

- Training will be provided on the following;
  - To the department pertaining to the scope and requirements of this standard
  - Contracted service providers as to the compliance requirements of this section
  - Training of FAC personnel for compliance with applicable industry standards, manufacturer's specifications pertaining to the proper use and safety requirements for all products and equipment.
- Oversight-Periodic inspections by the work section supervisor covering:
  - Compliance with the requirements of this section
  - Safe use of products and equipment
  - Overall quality of the services being provided
  - Completeness and accuracy of service records

KEY PERFORMANCE INDICATORS

Key Performance Indicators will include:

- Perform a baseline assessment before and after a change in contracted service providers to set the expected level of quality performance and related metrics
- Safety record (number of loss-of-time incidents or total number of reportable incidents)
- Overtime worked
- Maintenance Spending
- Reactive or Emergency Maintenance versus Total Maintenance
- Environmental record. Reporting on management of hazardous materials such as VOC's and refrigerant, etc.

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- Purchases (costs associated with equipment, products and materials, etc.)
- Percentage of work orders completed on time based on equipment priority

REPORTING AND DOCUMENTATION

The Facility Supervisor or Lead by delegation, is responsible for the following reporting and documentation:

- Scheduling and recording of all Planned and Predictive Maintenances, major and minor work requests and maintenances in the CMMS system
- Generating periodic Key Performance Indicators for upper management from the CMMS system and other sources substantiating work section performance to be used to improve overall efficiency
- Management and archiving of all paper format documentation

SYSTEMS AND EQUIPMENT TYPES

- The list below pertains only to systems directly supporting facilities under the direct responsibility of the FAC Team and accordingly, excludes similar equipment that may be found in outbuildings or other locations under the responsibility of other city departments.
- Power Systems- The division of responsibility between FAC and IS equipment occurs at the point of connection (POC) of the power strips (typically a twist lock) supplying computer servers and associated network gear. All electrical equipment upstream of the POC is the responsibility of FAC. All equipment downstream of the POC belongs to IS (including power strips).

The following is a list of systems and equipment types that are within the responsibility of the FAC.

- Building envelope
  - Roofing systems
  - Window and door systems
  - Curtain Walls
  - Window and door sensors and locks (see security)
- Building Automation (Control) Systems (BAS) including;
  - The BAS software and hardware itself (software updates and hardware)
  - Sensors, actuators, etc.
  - BAS network communications wiring
- Exclusion- Computerized maintenance management system (CMMS)
  - The CMMS software and hardware is maintained and controlled by others.
- Electrical Systems
  - Service entrance
  - Automatic Transfer Switches (ATS)
  - Emergency generators
  - Switchboards
  - Distribution Panels
  - Wet and dry transformers
  - Circuit breakers
  - Maintenance disconnects
  - Uninterruptable power supplies (excluding point of use/desktop UPS')
  - Solar systems
  - Lighting including lighting control systems
  - Power strips and extension cords

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- Fire Alarm Systems
- Fire Suppression systems
  - Hand held fire extinguishers
  - Dry and wet fire sprinkler systems
  - Clean agent systems
  - Fire pumps
  - Fire smoke dampers
  - Associated air compressors
  - Kitchen hood fire suppression systems
- Heating, Ventilating and Cooling (HVAC) Systems
  - Air compressors
  - Air conditioning units
  - Air handling units
  - Boilers (both heating and for domestic hot water)
  - Chillers
  - Computer Room Cooling Units (CRCU)
  - Cooling Towers
  - Condensing units
  - Fans, supply, return and exhaust
  - Fan coil units
  - Fuel oil tanks and systems
  - Heat exchangers
  - Heat pumps
  - Heaters and ventilators
  - Portable space heaters
  - All ventilation hoods including kitchen hoods
  - Humidifiers
  - Storage tanks
  - Induction/ radiant heaters
  - Make up air heaters
  - Pumps
  - Terminal units
  - Unit heaters
  - Variable Frequency drives (VFD)
- Plumbing systems
  - Domestic water heaters
  - Backflow preventers
  - Boiler domestic
  - Storage tanks
  - Domestic water pumps
  - Storm water systems
  - Water feature pumps
  - Water feature filters
  - Water treatment systems
  - Water purification systems
- Security Systems (see section on Security)
  - Card key access

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- Hard key locks and door hardware
- Surveillance systems

DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Ensure that all vendors comply with the requirements of this section in the execution of any work they perform	All contractor provided services are completed on time and properly documented	FAC Lead	Periodic performance reporting to upper management
Create a comprehensive Predictive/Planned maintenance plan that includes all systems and devices under this section	A plan is implemented that ensures the maintenance of all important devices and systems	FAC Lead	Periodic reports demonstrating timely completion of work orders are produced
Ensure that all equipment and associated spares within the scope of this section are inventoried in the CMMS system	The equipment and spares inventory is managed	FAC Lead	The equipment and spares inventory is accurately represented in the CMMS system
Provide training to the FAC team to ensure work orders are properly opened and closed including the archiving of associated documentation	The FAC team is trained and the work order process functions efficiently	FAC Lead	Metrics generated with data from the CMMS system depict the accurate and timely completion of work orders
Ensure that all safety protocols are followed in the execution of the work performed in this section	Work is performed safely without incident	FAC Supervisor	Work is performed without any safety related issues
Review completed work orders for errors, omissions and any required follow up work	Work orders are effectively executed and completed. Follow up work is completed	FAC Lead	Metrics generated with data from the CMMS system depict the accurate and timely completion of work orders
Ensure that Life Safety, mission critical and devices that contain hazardous energies are adequately monitored	All CMMS priority 1 & 2 devices are remotely monitored and trended	FAC Supervisor	Trend reports can be produced that show the continuous operation of critical devices and systems

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and trended. (see CMMS Priority 1 &2 devices)			
Ensure that the skillset of technicians providing services align with the criticality of the work being performed	The proper technician is assigned to appropriate work	FAC Lead	Work is accurately and efficiently completed with minimal rework
Ensure that building envelopes are kept well maintained and weather tight including, windows, doors, roofing, curtain walls, etc.	Buildings are kept in a good general state of repair	FAC Supervisor	The buildings are routinely inspected and deficiencies recorded, reported and corrected. Reports are submitted to management.

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Operations Level of Service

Life Safety Systems

PURPOSE

This section establishes the base requirements for management of Life Safety Systems.

This section does not include requirements for any Fire Safety plans or inspections which are managed by the Fire Department.

SPECIFIC ROLES AND RESPONSIBILITIES

The Division Manager and Directors are responsible for:

- Ensuring the implementation and ongoing compliance with these requirements

The Fire Marshal is responsible for:

- Fire Safety Inspections
- Fire Safety Plans pertaining to FAC

The Facility Supervisor is responsible for:

- Ensuring FAC staff is trained and comply with the requirements of this standard
- Periodic facility inspections to review compliance with these standards.
- Vendor contract management

The Facility Lead is responsible for:

- Coordination with vendor(s) providing services for this function.
- Documentation of work performed
- Ensuring vendors comply with the requirements of this standard

QUALITY ASSURANCE

- Training will be provided on the following;
  - Contracted service providers as to the pertinent requirements of this section
  - Training of FAC personnel for compliance with this standard
- Oversight of projects by the Facility Supervisor covering:
  - Compliance with the requirements of this section
  - Documentation of all work performed regarding this section

KEY PERFORMANCE INDICATORS

Key Performance Indicators will include:

- Periodic reports demonstrating compliance with maintenances and testing of Life Safety systems
- Work orders opened and closed covering this section
- Documentation showing compliance is kept readily available

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DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Fire extinguishers shall be inspected and maintained according to the requirements of NFPA 10	A maintenance plan is in place and functioning in compliance with the code	Facility Lead	Inspections are current and documented
All fire alarm systems are tested according to the requirements defined in NFPA 70 and NFPA 72	A testing plan is in place and functioning in compliance with the code	Facility Lead	Tests are current and documented
All fire sprinkler systems shall be maintained and tested according to the requirements defined in NFPA 25	A maintenance and testing plan is in place and functioning in compliance with the code	Facility Lead	Inspections and maintenances are current and documented
Elevators shall be periodically tested according to the requirements defined in ASME A17.1	A testing plan is in place and functioning in compliance with the code	Facility Lead	Tests are current and documented
Any temporary impairment of a Fire Alarm system shall be accordance with the requirements defined in NFPA 25	A defined process is in created and functioning	Facility Lead	Record of impairments is complete and adequately documented
A standard operating procedure exists and is in force for any temporary impairment of a fire alarm system	A defined standard operating procedure is created and functioning	Facility Lead	Record of impairments is complete and adequately documented
Maintenance and operational records pertaining to any fire system shall be in accordance with NFPA25	A process is in place that is in compliance with the code	Facility Lead	Records are accurate and current
Clean agent fire suppression systems will be installed per NFPA 2001 and appropriately maintained	A maintenance and testing plan is in place and functioning in compliance with the code	Facility Lead	Inspections and maintenances are current and documented
As built drawings of all	A drawing archive is	Facility Lead	Drawings are current

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fire alarm and fire extinguishing systems shall be kept up to date and readily accessible in FAC	set up and maintained		and accurate.
Emergency Egress lighting shall be properly maintained and tested according to the requirements defined in NFPA 101-7.9.3	A maintenance and testing plan is in place and functioning in compliance with the code	Facility Lead	Tests are current and documented

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Operations Level of Service

Security Systems/Lock and Key

PURPOSE

This section establishes the base requirements for management of door security systems including management and maintenance of card readers used throughout the organization as well as the various levels of hard keys.

Exclusions: This section does not include requirements for the issuing of card keys or in determining which individuals are entitled to possess a card key or at which level of access. These functions are managed by IS for the issuing of cards and by the department heads for granting actual permissions.

This section provides base requirements for the following:

- Requirements for the management and control of hard keys
- Requirements for the maintenance and management of card reader type lock
- Requirements for the maintenance of security alarm systems
- Record keeping and document management

SPECIFIC ROLES AND RESPONSIBILITIES

The Division Manager and Directors are responsible for:

- Ensuring the implementation and ongoing compliance with these requirements
- Setting and enforcement of the criteria for the issuing of electronic card keys and hard keys

The Facility Supervisor is responsible for:

- Setting and Managing the security access levels to the various spaces
- Ensuring staff is trained and comply with the requirements of this standard

The Facility Lead is responsible for:

- Coordination with vendor(s) providing this function.
- Documentation of work performed
- Ensuring vendors comply with the requirements of this standard

QUALITY ASSURANCE

- Training will be provided on the following;
  - Contracted service providers as to the pertinent requirements of this section
  - Training of FAC personnel for compliance with this standard
- Oversight of projects by the Facility Supervisor covering:
  - Compliance with the requirements of this section
  - Documentation of all work performed regarding this section

KEY PERFORMANCE INDICATORS

Key Performance Indicators will include:

- Periodic reports covering the inventory of hard keys

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- Work orders opened and closed covering this section

DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Security access for various facilities and the types of spaces based on usage are controlled	Security access levels are established and managed	Facility Supervisor	
A process for managing hard keys is developed and actively managed	Hard keys are controlled, secured and inventoried	Facility Supervisor	The process plan is submitted to stakeholders for review and approval
Card key access doors are periodically tested for appropriate access levels.	A regularly scheduled work order is produced and completed to test all doors.	Facility Lead	A report is produced that documents the testing of doors.
Security Alarm systems function properly	Security alarm systems are tested for proper function on regular basis	Facility Lead	Results of alarm system tests are reported to management.
Security of entry/exit doors based on time of day are controlled	Schedule of timed door locks is managed	Facility Lead	
A policy exists and is utilized for issuing of electronic card keys		Department Heads	A policy is implemented and managed

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Operations Level of Service

Custodial Services

PURPOSE

This section establishes standards for Custodial Services for all office, administrative and public facing spaces in facilities under the responsibility of the FAC.

Exclusions: Maintenance requirements for specialized structures under the responsibility of other departments such as shop areas, equipment sheds, vehicle storage bays, food preparation kitchens, service areas and staff desktop's.

This section provides base requirements for the following:

- Delivery requirements, standards and Key Performance Indicators for measuring and reporting compliance with the standards in this section.
- Methods of performance evaluation, oversight and performance
- Record keeping and document management

SPECIFIC ROLES AND RESPONSIBILITIES

The Division Manager and Directors are responsible for:

- Understanding the scope extents and limits of this section
- Providing ongoing compliance

The Facility Supervisor is responsible for:

- Ensuring FAC staff is trained and comply with the requirements of this standard
- Periodic facility inspections to review compliance with these standards.
- Vendor contract management

The Facility Lead is responsible for:

- Coordination with vendor(s) providing this function.
- Documentation of work performed
- Management of MSDS sheets for chemicals used in this requirement
- Ensuring vendors comply with the requirements of this standard

QUALITY ASSURANCE

- Training will be provided on the following;
  - Contracted service providers as to the pertinent requirements of this section
  - Training of FAC personnel for compliance with this standard
- Oversight of work performed by the Facility Lead covering:
  - Compliance with the requirements of this section
  - Documentation of all work performed regarding this section
  - Review of vendor contract scope compliance

KEY PERFORMANCE INDICATORS

- Total cost of chemicals, supplies and materials

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- Results of an annual audit of each facility conducted by the Facility Supervisor and vendor
- Occupant feedback from data collected in the CMMS system as well as an annual survey of customers

DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Materials and cleaning agents selected will minimize reactions for people with chemical sensitivities and minimal packaging waste	Very few if any complaints are received	Facility Lead	Periodic inspections
Use the least toxic & environmentally friendly cleaning agents	The facilities are cleaned by using environmentally friendly products	Facility Lead	Periodic inspections
Install and maintain walk off matts and runners • Vacuum • Replace as needed	Walk off matts are kept clean and in good condition and located appropriately to mi	Facility Lead	Periodic inspections
Hard Surface Floors • Buff and wax • Strip and refinish when needed	Hard surface floors are kept clean, slip resistant	Facility Lead	Periodic inspections
Maintain Carpets	Carpets are kept clean and kept free from trip hazards	Facility Lead	Periodic inspections
Restock restrooms • Paper Towels • Toilet paper • Refill soap dispensers	Restrooms are kept well stocked	Facility Lead	Periodic inspections
Clean Restrooms • General cleaning • Dusting • Sanitizing Surfaces	Restrooms are kept clean	Facility Lead	Periodic inspections
Clean Elevators and stairways • Clean and disinfect handrails and call panels	Elevators are kept clean	Facility Lead	Periodic inspections

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• Clean hard surfaces • Clean floors			
Clean windows and window treatments	Windows are kept clean and free of water damage	Facility Lead	Periodic inspections
Clean and maintain surfaces • Partitions • Walls • Columns • Diffusers and vents • White boards • Horizontal surfaces with the exception of desktops	Surfaces are kept clean	Facility Lead	Periodic inspections
Waste removal • Empty waste receptacles • Replace liners • Remove and sort recyclables • Provide Bio-Hazard pick up	Waste is removed to designated locations in each facility. (see section on Waste Management)	Facility Lead	Periodic inspections

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Operations Level of Service

Pest Management

PURPOSE

This section establishes standards for Pest Management for all interior office, administrative and public facing spaces in facilities under the responsibility of the FAC.

SPECIFIC ROLES AND RESPONSIBILITIES

The Facility Supervisor is responsible for:

- Ensuring FAC staff is trained and comply with the requirements of this standard
- Periodic facility inspections to review compliance with these standards.
- Vendor contract management

The Facility Lead is responsible for:

- Coordination with vendor(s) providing this function.
- Documentation of work performed
- Management of MSDS sheets for any chemicals used in this requirement
- Ensuring vendors comply with the requirements of this standard

QUALITY ASSURANCE

- Training will be provided on the following;
  - Contracted service providers as to the pertinent requirements of this section
  - Training of FAC personnel for compliance with this standard
- Oversight of work performed by the Facility Lead covering:
  - Compliance with the requirements of this section
  - Documentation of all work performed regarding this section
  - Review of vendor contract scope compliance

KEY PERFORMANCE INDICATORS

- Total cost of chemicals, supplies and materials
- Results of an annual audit of each facility conducted by the Facility Supervisor and vendor
- Occupant feedback from data collected in the CMMS system as well as an annual survey of customers

DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Materials and chemical agents selected will minimize reactions for people with chemical sensitivities and environmental toxicity.	Very few if any complaints are received	Facility Lead	Periodic inspections are performed and documented
A base assessment of pest infestations is	The assessment is reviewed and any	Facility Lead	Periodic inspections are performed and

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performed by appropriate vendor	issues are corrected		documented
A pest mitigation plan is developed and implemented	The plan is reviewed and action items implemented	Facility Lead	Periodic inspections are performed and documented
Storage areas are kept clean of excess or waste food and water sources	Periodic inspections are performed. Issues are corrected.	Facility Lead	Periodic inspections are performed and documented
Pest traps are deployed and actively maintained	Periodic inspections are performed. Issues are corrected.	Facility Lead	Periodic inspections are performed and documented
Pesticides will only be applied as a last resort after other options have been proven ineffective	Periodic inspections are performed. Issues are corrected.	Facility Lead	Periodic inspections are performed and documented
Any trapped pests are disposed of by appropriate methods	Periodic inspections are performed. Issues are corrected.	Facility Lead	Periodic inspections are performed and documented

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Operations Level of Service

Grounds and Landscape

PURPOSE

This section establishes the standards and requirements for the maintenance of Grounds and Landscape surrounding the facilities currently managed by the FAC.

Exclusion: This section does not include requirements for the maintenance of grounds and landscape under management of the Parks Department or grounds not directly associated with a city managed building which may have different requirements.

These requirements establish:

- Landscaping and maintenance standards surrounding city facilities
- Performance measurement, evaluation, oversight and reporting

SPECIFIC ROLES AND RESPONSIBILITIES

The division manager and directors are responsible for:

- Ensuring the implementation and ongoing compliance with these requirements

The Maintenance Supervisors are responsible for:

- Ensuring staff are trained and comply with the requirements of this standard
- Ensuring vendors comply with the requirements of this standard
- Documenting delivery of services by either city staff or vendors
- Management and periodic review of any vendor service agreements that may be used to comply with this standard

QUALITY ASSURANCE

- Training will be provided on the following;
  - To the department pertaining to the scope and requirements of this standard
  - Contracted service providers as to the compliance requirements of this section
  - Training of grounds and landscape personnel for compliance with applicable industry standards, manufacturer's specifications pertaining to the proper use and safety requirements for all products and equipment.
- Oversight-Periodic inspections by the Work Section Supervisor covering:
  - Compliance with the requirements of this section
  - Safe use of products and equipment
  - Overall quality of the services being provided
  - Completeness and accuracy of service records

KEY PERFORMANCE INDICATORS

Key Performance Indicators will include:

- Costs for chemicals, products and materials are maintained for each facility
- Labor costs are maintained for each facility
- Total costs per square foot are calculated and compared against industry metrics

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- Occupant surveys are performed on an annual basis and reported to the Director
- Annual inspections are performed for each facility and the results reported to the Director
- All maintenance and repair records are maintained

DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Compliance of all vendor/contractor work with contract scope	All contractor provided services are completed on time and properly documented	Supervisor	Periodic performance reporting to upper management
Training of vendors and staff	Training programs are provided and documented.	Supervisor	Training of staff and vendors is documented
Tools, means, methods and consumable products used are to be consistent with those utilized by the Parks Department		Supervisor	Periodic Inspections are performed. All service calls are documented
Use environmentally friendly products if available and least toxic chemicals	Landscape is maintained using environmentally friendly products	Supervisor	Periodic inspections
HARD SURFACES			
Clean, clear and inspect pedestrian walking surfaces	Surfaces are clear of debris, and are in good condition with no trip hazards on pedestrian surfaces	Supervisor	Periodic Inspections are performed. All service calls are documented
Parking lots are to be kept clear of accumulations of debris.	Parking lots are kept clean	Supervisor	Periodic Inspections are performed. All service calls are documented
Snow and ice is to be kept clear from accessible parking areas and pedestrian pathway.	Snow and ice removal from accessible parking and pedestrian pathways is managed in a timely manner	Supervisor	Periodic Inspections are performed. All service calls are documented
Maintain all Accessible routes at all times ensuring clear, slip resistance surfaces	All Accessible routes are kept clear and slip resistant	Supervisor	Periodic Inspections are performed. All service calls are documented
Monitor accessibility of all	All egress routes are	Supervisor	Periodic Inspections

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exterior building egress routes for obstructions	kept clear		are performed. All service calls are documented
Collect trash and debris	No debris is left outside trash containers. Containers are never more than 75% full.	Supervisor	Periodic Inspections are performed. All service calls are documented
Inspect and clean catch basins and other storm water collection devices to insure free flow of storm water		Supervisor	Periodic Inspections are performed. All service calls are documented
LANDSCAPE			
Clearances around electrical, plumbing and HVAC equipment must be kept clear for maintenance	All equipment is accessible for maintenance	Supervisor	Periodic Inspections are performed. All service calls are documented
Clearances around HVAC and electrical equipment are maintained for needed air circulation	Air circulation is provided around equipment that requires it.	Supervisor	Periodic Inspections are performed. All service calls are documented
Lawns are maintained	Lawns are consistently maintained at 3-5” in height	Supervisor	Periodic Inspections are performed. All service calls are documented
Lawns are kept edged	Borders are consistent and well defined	Supervisor	Periodic Inspections are performed. All service calls are documented
Field areas are maintained	Field area are maintained at 5-10” in height as needed	Supervisor	Periodic Inspections are performed. All service calls are documented
Grounds are regularly inspected for undesirable insect infestations	Grounds and landscape are kept clear of undesirable insect infestations	Supervisor	Periodic Inspections are performed. All service calls are documented
Trim vegetation to maintain clear spaces between vegetative growth	A neat and clean appearance is maintained	Supervisor	Periodic Inspections are performed. All service calls are documented
Keep vegetation trimmed to keep accessible routes clear	Accessible routes are kept clear	Supervisor	Periodic Inspections are performed. All service calls are documented

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Trim and prune trees	Trees remain healthy and have a clean appearance	Supervisor	Periodic Inspections are performed. All service calls are documented
Remove all vegetative debris	Grounds are maintained to a neat and clean appearance.	Supervisor	Periodic Inspections are performed. All service calls are documented

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Operations Level of Service

Utilities Conservation and Management

PURPOSE

This section establishes the base requirements for management of energy and water consumption. The requirements of this section apply to the facilities that are the responsibility of the FAC team. This section provides base requirements for the following:

- Delivery requirements, standards and Key Performance Indicators for measuring and reporting compliance with the standards in this section.
- Methods of performance evaluation, oversight and performance
- Record keeping and document management

SPECIFIC ROLES AND RESPONSIBILITIES

The Division Manager and Directors are responsible for:

- Ensuring the implementation and ongoing compliance with these requirements

The Facility Supervisor is responsible for:

- Ensuring FAC staff is trained and comply with the requirements of this standard
- Where applicable, ensuring vendors comply with the requirements of this standard
- Periodic review of facility performance regarding these standards.

QUALITY ASSURANCE

- Training will be provided on the following;
  - Contracted service providers as to the compliance requirements of this section
  - Training of FAC personnel for compliance with applicable industry standards, manufacturer's specifications pertaining to the proper use and safety requirements for all products and equipment.
- Oversight-Periodic inspections by the Facility Supervisor covering:
  - Compliance with the requirements of this section
  - Document periodic inspections of equipment and systems that use, measure or regulate energy or water resources for obvious deficiencies
  - Monthly energy and water consumption reviews against established baseline. Any anomalies are identified, documented and either corrected or justified.

KEY PERFORMANCE INDICATORS

Key Performance Indicators will include:

- Baseline energy and water use and ongoing tracking of consumption
- Comparisons of baseline data against industry norms for similar facilities
- Enrollment of city in any applicable utility based incentive programs

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Operations Level of Service

DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Energy and water consumption is actively managed	Establish an energy and water conservation program for the City's 10 facilities that use the most energy and water	Facility Supervisor	Document energy and water consumption and report to upper management
Cost effective incentives available in utility programs are fully utilized	Manage any active Energy Contracts	Facility Supervisor	Document savings from incentives and report to upper management
Energy and water consumption is actively monitored	Track and report on energy and water consumption	Facility Supervisor and Energy Manager	Document energy and water consumption and report to upper management
Ensure staff are aware of energy and water consumption and have tools to participate in conservation	Develop and implement a program for City staff to save energy and water resources	Facility Supervisor	Report to upper management on participation, success or failure of conservation measures

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Operations Level of Service

Project Management

PURPOSE

This section establishes the base requirements for management of Facilities related construction projects including any capital tenant improvements pertaining to office space moves, additions or office changes. This section also includes requirements for any FAC related projects that are classified as a capital improvements as determined by current policy.

Exclusions: Project management requirements for projects that do not directly pertain to the City of Redmond facilities such as street improvements, park improvements, etc.

This section provides base requirements for the following:

- Delivery requirements, standards and Key Performance Indicators for measuring and reporting compliance with the standards in this section.
- Methods of performance evaluation, oversight and performance
- Record keeping and document management

SPECIFIC ROLES AND RESPONSIBILITIES

The Construction Manager is responsible for:

- Ensuring the implementation and ongoing compliance with these requirements
- Ensuring that any project is executed in the best interest of the department for which it was developed.
- Where applicable, ensuring vendors comply with the requirements of this standard
- Management of the financial, design, construction and closeout aspects of FAC projects

The Facility Supervisor is responsible for:

- Ensuring FAC staff is trained and comply with the requirements of this standard
- Construction document and design review for compliance with OPR
- Construction support
- Construction observations including a role in QA/QC of FAC projects
- Closeout documentation management

QUALITY ASSURANCE

- Training will be provided on the following;
  - Contracted service providers as to the pertinent requirements of this section
- Oversight of projects by the Construction Manager covering:
  - Documentation of all work performed regarding this section
  - Compliance of any work performed with the construction documents including the Owners Project Requirements (OPR), Basis of Design (BOD) Project Plan, Specifications, and Drawings.

KEY PERFORMANCE INDICATORS

Key Performance Indicators will include:

- Timely completion of projects on schedule and on budget
- Conformance of projects with the design OPR document

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Operations Level of Service

- Proper archival of all pertinent construction documents
- Positive results from post construction team review

DELIVERY

REQUIREMENT	QUALITY ASSURANCE	RESPONSIBILITY	PERFORMANCE MEASUREMENT
Project goals and needs are clearly defined and documented	An OPR design document is created for, then reviewed and approved by stakeholders for every project	Facility Supervisor	OPR's are created for every project
Project plans are created for construction, maintenance, repairs or renovations	Project plans will include; • Budget • Schedule • Cost estimates • Project team makeup	Construction Manager	Plans are submitted to stakeholders for review and approval
Projects are completed on time and on budget	Budgets and schedules are actively managed	Construction Manager	Budgets and schedules are tracked and reported
Completed projects meet the conditions of the original design intent	The conditions in the OPR are regularly compared against the active project	Construction Manager	Post construction closeout report is sent to council.
Projects are accurately closed out and documented	All documents, manuals, etc are received, inventoried and archived	Facility Supervisor	The document archive is complete
Construction projects are reviewed post construction with stakeholders	A "lessons learned" post construction meeting is held with stakeholders to review the project.	Construction Manager	Any needed changes are implemented. Lessons learned are implemented in new projects

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Operations Level of Service

Waste Management

PURPOSE

This section establishes responsibility for management of waste produced within the City's Facilities.

Exclusions: Waste generated by city structures or areas outside of the responsibility of the FAC.

SPECIFIC ROLES AND RESPONSIBILITIES

The Natural Resources, Solid Waste Manager is responsible for:

- Ensuring the implementation and ongoing compliance with this requirement
- Ensuring any vendors comply with the requirements of this standard

The Facility Lead is responsible for:

- Ensuring FAC staff is trained and comply with the requirements of this standard
- Ensuring any vendors comply with the requirements of this standard

QUALITY ASSURANCE

- Training will be provided on the following;
  - Contracted service providers as to the pertinent requirements of this section
  - Training of FAC personnel for compliance with this standard
- Oversight of work performed by the Facility Lead covering:
  - Compliance with the requirements of this section
  - Documentation of all work performed regarding this section
  - Review of vendor contract scope compliance

DELIVERY

- The task of waste disposal is a shared responsibility between the FAC and Solid Waste Management:
  - FAC requirements are defined in the Custodial requirements section of this document
  - The Solid Waste Management Department provides receptacles and assumes responsibility for the waste removal and disposal at the point it is deposited into the receptacles they provide at designated central collection points in each facility.

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Policies and Procedures

Introduction

A review of the existing departmental policies and procedures was made and as an outcome of that review we generated a list of policies and procedures (see appendix) that we recommend be developed that would enhance overall Facilities Maintenance and Operations. The primary document is the attached spreadsheet lists the policies and procedures that we suggest be developed, a priority for each as well as an estimate of the number of hours to draft them. The spreadsheet also incorporates a project tracking matrix that could be used to manage the development of an SOP library.

Although not specifically called out in the project scope, a project plan for the development of a policy and procedure library is included below for use by the FAC.

*The content is taken from work developed for other McKinstry projects and edited for this project.

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Policies and Procedures

Methodology- The Standard Operating Procedure

There have been numerous books written on how to write standard operating procedures and most of them are valid for our application. However, as a product of our own experience, we have developed our own methodology that we find works best for the types of facilities that our clients operate. Our methodology is based on many years of field application and thousands of hours of actual production. As previously stated, it is of our own creation but has elements that are similar to those used by the U.S. Department of Energy, the U.S. Navy and the Federal Aviation Administration.

There are three primary types of SOP formats that will be used:

1. Standard Operating Procedure (SOP) – Used for operational changes of state. Examples; turn equipment on and off, change lead/lag status, administrative type functions, etc.
2. Maintenance Operating Procedures (MOP) - Used to perform work on equipment by in house personnel. MOP's are not normally written for work to be performed by vendors and tend to be as much of a checklist as they as a procedure
3. Emergency Operating procedures (EOP) – Usually in the form of a flowchart with accompanying text to clarify the steps to be taken in the event of an emergency. An emergency or incident is usually related to a life safety event or the failure of a key piece of equipment. Flowcharts are used because the remediation path of the incident is not usually linear. To clarify, the resolution of a problem associated with an incident may require different approaches depending on what is observed during the incident.

For discussion purposes, unless specifically stated otherwise, use of the term SOP will imply SOP, MOP or EOP interchangeably.

MAKE NO ASSUMPTIONS

The goal is to make the SOP as clear and concise as possible. This requires a level of attention to detail that requires each step to be visually verified in front of the equipment or workstation, language that is very explicit, yet simple and direct, with a minimal use of acronyms, abbreviations and without slang. It needs to be written as if the person that is executing the SOP has very little working knowledge of the system (hopefully this not actually the case).

Attention to detail requires not only a working knowledge of the devices included in the SOP but also their program settings that were input in commissioning or at the factory. It is not enough to trust the commissioning or factory start up documents to write an SOP. The settings must be verified at the unit control panel to insure that the behavior of the device in specific circumstances can be predicted. This level of diligence needs to be applied in all systems where thousands, or even millions of dollars, could be lost if an error is made. It is worth the effort to verify these kinds of details.

PRIORITIZATION

What are the operational priorities of the facility? Which systems absolutely have to stay on line? Which systems are important but not as critical? Establishing operational priorities will add clarity to our mission by enabling us to accomplish several goals;

1. In an incident where multiple systems are impacted, establish the order in which system failures are addressed.
2. Establish the risk level associated with the execution of each SOP.
3. Determine in what order SOP's need to be developed.
4. Determine where we need to focus on training.
5. Establish priorities for limited SOP development dollars.
6. Establish the priorities for limited maintenance dollars.

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Policies and Procedures

SAFETY

Each SOP will outline any special safety considerations that need to be made in the execution of the SOP outside of standard practice.

SCHEDULING/PERMISSIONS

Each SOP will detail when it can be executed, who gets notified before and after its execution and whose approval is required to before it can be performed.

WARNINGS AND CAUTIONS

- Warnings are used within the body of the SOP to bring special attention to specific steps that pose an unusual potential safety hazard to personnel.
- Cautions are used within the body of the SOP to bring special attention to specific steps that require more than normal care and diligence to prevent a key system or device failure.

PROCEDURE

- The procedure is broken down into major categories, major steps, minor steps and detailed explanations if required (see example). Breaking the procedure down this way provides clarity for each step that needs it and makes the procedure easier to follow.
- The procedure is written in checklist form which will aid in executing the steps in order as well as providing a placeholder in the event that the execution of the procedure is interrupted for any reason.
- For procedures that are classified as "high risk" as determined in the prioritization process, the execution of the procedure will be performed by two people, one to read and verify the steps, one to physically actually perform them.

VERIFICATION/APPROVAL

- Each procedure is checked and verified by someone other than the author. This will insure that the language used is clear and that are very few, if any, assumptions made in the steps. The best candidates to verify SOP's are usually persons that have a cursory knowledge of the systems but are not experts.
- Rough drafts should be marked up as they are verified with the original author having the authority to either incorporate or reject the recommended changes.
- A formal approval process is established with the facility managers or directors having the authority to approve or disapprove.

REVISION CONTROL

A strict procedure must be developed and adhered to for successful management of the SOP revision process. The current school of thought suggests that no hard copies of any SOP's are to be maintained. SOP's needing to be executed should be printed from an online document database and archived immediately after one use (after any suggested changes are reviewed). This is considered the best method of insuring that an SOP being used incorporates the most recent updates. A possible exception to this rule would be for EOP's that need to be kept in a specific location for quick reference.

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Policies and Procedures

Development

Below is a flowchart outlining the steps in actual developmental process.

1. The first step is to establish operational priorities. It is suggested that a meeting be held to discuss the operational priorities to clarify how the facilities team is to react in an incident and with which systems the SOP development plan and associated training will start and end.
2. Gather the data necessary to formulate the project plan. At the very minimum these documents would include:
    a. Accurate As-Built drawings
    b. Electrical one line drawings
    c. A complete set of Operations and Maintenance manuals
    d. Commissioning documents
    e. BAS sequences of operation
3. Based on the accumulated data, a proposed index of SOP's is created based on the priorities already set in step 1, the facility equipment list previous experience at other facilities
4. Based on the newly created, proposed SOP index, develop a man-hour budget using past experience at developing other SOP's as a guide.
5. Meet with client to review and deliver the proposed index and budget.
6. Prioritize the final index and develop a timeline for delivery of the project. The normal flow would have the rough drafts being delivered for review as they are completed.
7. Establish a reporting process/mechanism to mark progress against the established budget and timeline.
8. Begin SOP, MOP and EOP production.

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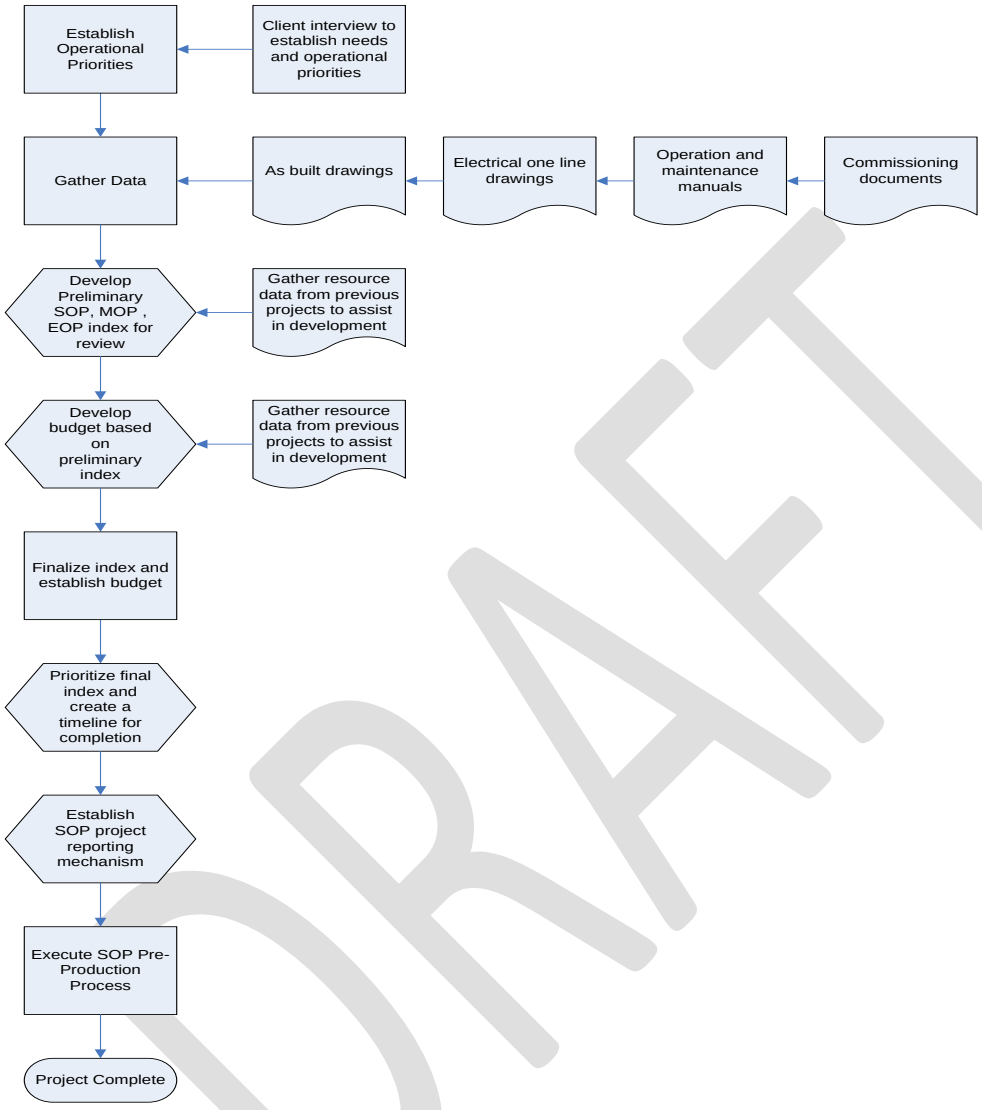
Policies and Procedures

Standard Operating Procedure Development Process



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Policies and Procedures

Implementation

Implementation encompasses two major facets;

REVIEW AND APPROVAL

The SOP rough drafts are either submitted to management for review and approval or if requested, can be audited by an associate of the author. Either method is equally effective and is just a matter of preference of the client.

Once reviewed and edits incorporated the SOP is submitted to the owner/facility manager for final approval. Again any edits are incorporated and the resubmitted to management for approval. Once approved the SOP is marked as such and posted on the SOP database for implementation and training.

TRAINING

The training facet is the least defined of the production process due to the variations in corporate culture, staffing models and size, expertise of the staff, etc. Based on our past experience and the need, a plan can be developed for an effective training plan with measurable goals and progress tracking metrics to fit the project.

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Policies and Procedures

Appendices

I. Standard Operating Procedure List and Tracking Matrix
II. Standard Operating Procedure Instruction
III. Standard Operating Procedure Template

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City of Redmond- Policy and Standard Operating Procedures Tracking Matrix

number	category/ title	assigned to	Priority	est. hours	act. Hours	(over)/under	% complete
				603.0	227.0	342.0	2%
1.0.0.	**General Operations**						
1.1	**Policies**						
1.1.0	Service Level Agreement	Barnard	high	220.0	223.0	(3.0)	100%
1.1.1	Code of conduct		medium	8.0	0.0	8.0	0%
1.1.2	Post Incident Reporting Policy		low	4.0	0.0	4.0	0%
1.1.3	Standard Operating Procedures (defined)	Barnard	high	2.0	2.0	0.0	100%
1.1.4	SOP template	Barnard	high	2.0	2.0	0.0	100%
1.1.5	Vendor Rules (for vendors to review)		medium	8.0	0.0	8.0	0%
1.1.6	Vendor Management		medium	7.0	0.0	0.0	0%
1.1.7	Employee/departmental contact list		low	7.0	0.0	0.0	0%
1.1.8	Equipment Naming Conventions		medium	4.0	0.0	0.0	0%
1.1.9	Room Naming Conventions		low	4.0	0.0	0.0	0%
1.1.10	Use of Personal Appliances		low	4.0	0.0	0.0	0%
1.2	**Safety**						
1.2.2	Lock out/ tag out procedure		high	4.0	0.0	4.0	0%
1.2.2.1	Lock out/ tag out logsheet		high	4.0	0.0	4.0	0%
1.2.3	Control of Hazardous Energies		high	4.0	0.0	4.0	0%
1.2.6	Contractor Safety		high	4.0	0.0	4.0	0%
1.2.8	Burning, Welding, Hot Work		high	4.0	0.0	4.0	0%
1.4	**Work Management (Lucity)**						
1.4.1	Creating a work request (for internal customers)		medium	4.0	0.0	4.0	0%
1.4.2	Executing a work request		medium	4.0	0.0	4.0	0%
1.4.3	Work Request Process Flow Diagram		medium	4.0	0.0	4.0	0%
1.4.4	Planned or Predictive Maintenance Work Orders		medium	4.0	0.0	4.0	0%
1.5	**Operating Procedures**						
1.5.1	Facilities Incident Escalation Protocol		medium	8.0	0.0	8.0	0%
1.5.2	Incident Reporting		medium	4.0	0.0	4.0	0%
1.5.3	Daily Rounds Procedure		low	4.0	0.0	4.0	0%

1.5.4	Daily Logbook procedure	low	4.0	0.0	4.0	0%
1.5.5	Rounds Checklist	low	8.0	0.0	8.0	0%
1.5.6	General Work Procedures	medium	4.0	0.0	0.0	0%

2.0.0 Security

2.1.0 General

2.1.0	Card Key Management	high	4.0	0.0	4.0	0%
2.1.1	Hard Key Management	high	4.0	0.0	4.0	0%

2.2.0 Emergency Procedures

2.2.1	Clean agent discharge	high	4.0	0.0	4.0	0%
2.2.2	Emergency Medical Response	high	2.0	0.0	2.0	0%
2.2.3	Fire Alarm Response	high	2.0	0.0	2.0	0%
2.2.4	Refrigerant Leak	Low	2.0	0.0	2.0	0%
2.2.5	Loss of city water	Low	2.0	0.0	2.0	0%
2.2.6	Loss of power utility	High	2.0	0.0	2.0	0%

3.0.0 Building Services

3.1.0

4.0.0 Building Monitoring Systems

4.1.0 Building automation Systems (BAS)

4.1.1	System Login	low	1.0	0.0	1.0	0%
4.1.2	Responding to a system alarm	low	1.0	0.0	1.0	0%
4.1.3	Changing a room temperature setpoint	low	1.0	0.0	1.0	0%

4.3.0 Fire Detection/Suppression Systems

4.3.1	Fire alarm control panel impairment	medium	4.0	0.0	4.0	0%
4.3.2	FACP annual confidence testing	low	2.0	0.0	2.0	0%
4.3.3	FM200 system override	low	2.0	0.0	2.0	0%
4.3.4	Dry Fire sprinkler system accidental charge	low	4.0	0.0	4.0	0%
4.3.5	Wet Fire sprinkler system accidental discharge	low	4.0	0.0	4.0	0%

4.4.0 Security System

4.4.1	Manually arming/disarming a building security system	low	2.0	0.0	0.0	0%

5.0.0 Electrical Systems

5.1.0 Generator/ ATS operation

Normal Operations

5.1.1	Abnormal or unstable utility	low	2.0	0.0	2.0	0%
5.1.2	Momentary Power Fluctuation	low	2.0	0.0	2.0	0%
5.1.3	Diesel Fuel Testing	low	2.0	0.0	2.0	0%
5.1.4	Loss of Utility	low	4.0	0.0	4.0	0%
5.1.5	Transfer building load to generator	medium	4.0	0.0	4.0	0%
5.1.6	ATS Test	medium	4.0	0.0	4.0	0%
5.1.7	Transfer bldg to utility power	medium	2.0	0.0	2.0	0%
5.1.8	Generator Post Work Assurance Test	low	2.0	0.0	2.0	0%
5.1.9	Automatic Generator No Load Test	medium	4.0	0.0	4.0	0%
5.1.10	Generator Lock out procedure	medim	2.0	0.0	2.0	0%
5.1.11	Load Testing Generators	low	4.0	0.0	4.0	0%
5.1.12	Generator Battery Equalization	low	2.0	0.0	2.0	0%
5.1.13	Generator Pre Run Checks	low	2.0	0.0	2.0	0%

EOP

5.1.14	Generator fails to start	high	4.0	0.0	4.0	0%
5.1.15	Generator Fails During Operation	high	4.0	0.0	4.0	0%
5.1.16	Generator started but no transfer occurred	high	4.0	0.0	4.0	0%
5.1.17	Generator Battery Charger Failure	low	4.0	0.0	4.0	0%
5.1.18	Generator VFD Bypass	low	2.0	0.0	2.0	0%
5.1.19	Generator low coolant Temp. alarm	low	2.0	0.0	2.0	0%
5.1.20	Generator PLC Reset	low	2.0	0.0	2.0	0%
5.1.21	Voltage/Frequency Failure Alarm	low	2.0	0.0	2.0	0%

5.2.0 Electrical Distribution

5.2.4	Installation and removal of twist lock plugs	medium	2.0	0.0	2.0	0%
5.2.6	Transfer non-critical loads to a temporary generator	medium	4.0	0.0	4.0	0%
5.2.7	ATS preferred source selection	medium	2.0	0.0	2.0	0%
5.2.8	ATS operation and retransfer procedure	medium	2.0	0.0	2.0	0%
5.2.9	Resetting Trip Branch Circuit Breaker	medium	4.0	0.0	4.0	0%
5.2.10	ATS Operations	medium	4.0	0.0	4.0	0%

5.3.0	**Uninterruptible Power Supply (UPS)**						
	Normal						
	5.3.1	UPS Module Online/offline	medium	2.0	0.0	2.0	0%
	5.3.2	UPS Internal Bypass	medium	2.0	0.0	2.0	0%
	5.3.3	Forced Source Transfer of UPS Module	medium	2.0	0.0	2.0	0%
	5.3.4	Replacement of Single VRLA Battery	medium	4.0	0.0	4.0	0%
	EOP						
	5.3.8	UPS Failure to Bypass	medium	4.0	0.0	4.0	0%
	5.3.9	UPS Output Alarm	medium	2.0	0.0	2.0	0%
5.4.0	**Power Distribution-**						
	Normal Operations						
	EOP						
	5.4.6	Loss of power to a server rack	medium	4.0	0.0	4.0	0%
	5.4.7	UPS Alarms	low	2.0	0.0	2.0	0%
	5.4.8	Main Breaker Trip	low	4.0	0.0	4.0	0%
	5.4.9	Tripped Sub Panel Main Breaker	low	4.0	0.0	4.0	0%
	5.4.10	Tripped Branch Breaker	medium	2.0	0.0	2.0	0%
5.5.0	**Electrical - General**						
	5.5.1	Hot Panel Work	high	2.0	0.0	2.0	0%
	5.5.2	Opening Electrical Panels	high	2.0	0.0	2.0	0%
	5.5.3	Verify circuits in a panel during PM of equipment	low	2.0	0.0	2.0	0%
	5.5.4	Replace Equipment Indicator Lamps	low	2.0	0.0	2.0	0%
	5.5.5	Insulation Resistive Testing (Megger)	low	2.0	0.0	2.0	0%
5.6.0	**Generator PM**						
	5.6.1	Generator semi annual PM	medium	2.0	0.0	2.0	0%
	5.6.2	Generator annual PM	medium	2.0	0.0	2.0	0%
	5.6.3	Generator Removal From Service	medium	2.0	0.0	2.0	0%
	5.6.4	Generator Start Battery PM	medium	2.0	0.0	2.0	0%
	5.6.5	Generator Battery Rotation	low	2.0	0.0	2.0	0%
	5.6.6	Generator Battery Replacement	low	2.0	0.0	2.0	0%
	5.6.7	Battery charger PM	low	2.0	0.0	2.0	0%

	5.6.8	Generator Battery Equalization	low	2.0	0.0	2.0	0%
	5.6.9	Generator Start Battery Terminal Clean and Grease	low	2.0	0.0	2.0	0%
5.7.0	**Electrical Distribution PM**						
	5.7.1	Thermography annual preventive maintenance	low	2.0	0.0	2.0	0%
5.8.0	**Uninterrupted Power Supply (UPS) PM**						
	5.8.1	UPS Semi Annual PM	medium	2.0	0.0	2.0	0%
	5.8.2	UPS System Annual PM	medium	2.0	0.0	2.0	0%
	5.8.3	Battery quarterly PM	medium	2.0	0.0	2.0	0%
	5.8.4	Battery semi annual and annual PM	medium	2.0	0.0	2.0	0%
6.0.0	**Mechanical Systems**						
6.1.0	**AHU**						
	6.1.1	AHU Maintenance Shutdown and Restart	low	2.0	0.0	2.0	0%
	6.1.2	VFD manual operation	low	2.0	0.0	2.0	0%
	6.1.3	Full Economizer Operation	low	2.0	0.0	2.0	0%
	6.1.4	Partial Economizer Operation	low	2.0	0.0	2.0	0%
	6.1.5	Initiate Economizer Operation	low	2.0	0.0	2.0	0%
	6.1.6	Fan System Failure	low	2.0	0.0	2.0	0%
6.2.0	**CRAC**	**Computer Room Cooling Unit (DX)**					
	6.5.1	CRAC unit shutdown and restart	medium	2.0	0.0	2.0	0%
	6.5.2	CRAC Unit Normal Configuration	medium	2.0	0.0	2.0	0%
	EOP						
	6.5.3	CRAC unit failure	high	2.0	0.0	0.0	0%
6.7.0	**Boiler**						
	6.7.1	Start the Water Boiler	low	2.0	0.0	2.0	0%
	6.7.2	Emergency Shutdown	low	2.0	0.0	2.0	0%
	6.7.3	Blowdown Procedure	low	2.0	0.0	2.0	0%
	6.7.4	Annual Maintenance	low	2.0	0.0	2.0	0%
6.8.0	**Chiller**						

	6.8.1	Manual Chiller Start from Chiller keypad	low	2.0	0.0	2.0	0%
	EOP						
	6.8.6	Chiller Failure	low	2.0	0.0	2.0	0%
	6.8.7	Chiller Failure while on Generator	low	2.0	0.0	2.0	0%
	6.8.8	Chiller Restart after a latching diagnostic	low	2.0	0.0	2.0	0%
6.11.0	**Cooling Towers**						
	6.11.1	Tower alarm reset	low	2.0	0.0	2.0	0%
	6.11.2	Manual operation of towers	low	2.0	0.0	2.0	0%
	6.11.3	Isolate and disable a cooling tower	low	2.0	0.0	2.0	0%
6.12.0	**Condenser Loop Pumps**						
	6.12.1	Start CW pump from local switch	low	2.0	0.0	2.0	0%
	6.12.2	Switching pump lead/lag position	low	2.0	0.0	2.0	0%
	6.12.3	Coolant Pump Failure	low	2.0	0.0	2.0	0%
6.13.0	**Fluid Cooler**						
	6.13.1	Tower alarm reset	low	2.0	0.0	2.0	0%
	6.13.2	Emergency Operation of Fluid Coolers and CRAC Units	low	2.0	0.0	2.0	0%
	6.13.3	Shutdown and Restart	low	2.0	0.0	2.0	0%
6.14.0	**Hot Water Supply Systems**						
	6.14.1	Hot Water Heating boiler start up and shutdown	low	2.0	0.0	2.0	0%
	6.14.2	Annual Maintenance	low	2.0	0.0	2.0	0%
6.15.0	**Chemical Treatment**						
	6.15.1	Start up and shut down of systems	low	2.0	0.0	2.0	0%
	6.15.2	Annual Maintenance	low	2.0	0.0	2.0	0%
6.16.0	**Water Supply Systems**						
	6.16.1	PRV Bypass	low	2.0	0.0	2.0	0%
	6.16.2	RPBP Annual testing	low	2.0	0.0	2.0	0%
6.17.0	**Fire Suppression Systems**						

6.17.1	FM 200 system operation	high	4.0	0.0	4.0	0%
6.17.2	FM 200 System bypass	high	2.0	0.0	2.0	0%
6.17.3	FM 200 annual confidence testing	high	2.0	0.0	2.0	0%
6.17.4	Fire Suppression annual confidence testing	high	2.0	0.0	2.0	0%

Standard Operating Procedures

Standard Operating Procedure		**SOP Number:**	**Enter the SOP#**
Written By:	Enter your name here	Date:	Enter today's date here
Validated By:	Once validated, enter name	Date:	Enter the date validated
Approved By:	Once approved, enter name	Date:	Enter date approved
Revision #:	Enter revision number	Date:	Enter last date revised

1.0 DESCRIPTION: Provide a brief overview of the SOP stating its purpose, scope and limitations. The description should be brief but should provide enough information to accurately describe what the SOP is for, what is includes and if necessary for clarity, what is excludes.

2.0 REFERENCES:

2.1 SOP#: Enter all SOPs that are referenced within this SOP including the name from the index.

2.2 SOP#:

2.3 SOP#:

3.0 RISK LEVEL: (1-5) List the level of risk associated with the execution of this SOP as assigned in the index. If, after gathering additional data to write the SOP, it is determined that the Risk level should be re-evaluated and changed, do so now. Be sure to update the index also.

4.0 RESOURCES: List the job titles of all personnel that are required to be onsite to execute this SOP. The SOP may require two or more people to actually perform it. For SOPs that are classified as high risk, some company policies may require that a manager or supervisor be present to oversee the operation. If so, include their job titles in this list. Because personnel change, no names should he listed here, only job titles.

4.1 Resource #1

4.2 Resource #2

5.0 APPROVALS: List the job titles of personnel from which approvals must be obtained before this SOP can be executed. Depending on the risk level of the SOP this list may contain no titles or it may contain titles up to, and including, executives. This information should have been gathered already in the Mission Criticality assessment meeting. Again, job titles and departments only, no names.

5.1 Approval #1

5.2 Approval #2

6.0 RESPONSIBILITIES: The following is standard language that is included in all SOP's. It can be modified to fit any special needs. Any special instructions for managing the flow of the paperwork are included here.

6.1 It is the responsibility of all authorized persons (Facilities personnel, contractors, and vendors) to comply with this policy.

6.2 It is the responsibility of the Facilities Manager to ensure that all authorized personnel are aware, understand, and have been trained on lockout/tag out procedures, processes, and requirements.

6.3 Forward this completed procedure to the Facility Manager.

7.0 SCHEDULING: List any scheduling limitations such as, time of day, day of the week, specific lead time, no restrictions, etc. This information should have been gathered in the Mission Criticality assessment. List any special considerations that must be taken into account as to when the SOP can be executed. Typically, for critical devices, this would be specific days and/or times of day that would allow for the least amount of disruption in the operations.

8.0 SAFETY: List any general safety considerations such as, “ear protection must be worn”, etc.

WARNING! Insert a warning before any step in the procedure that poses a threat to personal safety. Make it bold and place a box around it.

Warnings are to be inserted just before any step in the procedure that poses an unusual threat to health or safety. Typically, this would be any point where hot work is encountered, unusual noise considerations exist such as a generator enclosure, anywhere where a spill of a hazardous material might occur or a fall hazard might exist.

9.0 PROCEDURE: The major action item is listed at this level of the outline. Examples would be: “Start up” or “Shut down”

9.1 ☐ **The first step of any procedure is usually to confirm that all the conditions listed above have been met and that the technician has permission to proceed.**

9.2 ☐ **Enter the minor steps at this level.** Such as, rotate the lead chiller to the lag position.

9.3 ☐ **Enter a simple description of the procedural step in bold.** Then enter a detailed description or explanation of the step in regular text.

9.4 ☐ **Locate the point of execution for the step or steps.** For example if the first series of steps is to be performed at the BAS computer. Then write, “At the BAS terminal” then provide the action, “switch the chiller to backup”. You don’t need to list the point of execution again until it changes.

9.5 ☐ **Place a check box at the beginning of each step.** The purpose of the check box is to insure completion of each step and acts as a placeholder if the continuity of the procedure is interrupted due to mitigating circumstances.

9.6 ☐ **Make notes on any recommendations to improve the SOP.** Require that any suggested changes in wording or the procedure be documented on the procedure as it is being executed. Forward the recommendations to the FM for review and possible revision to the SOP.

CAUTION! Insert a caution before any step in the procedure that requires extra diligence in order to prevent the accidental trip or failure of a major system or component. Make it bold and place a box around it.

10.0 FLOWCHART:

Insert a flow chart here for any procedure in which the steps can be redirected based upon information that is gathered during its execution. Emergency procedures almost always require a flowchart, very few operational procedures do.

11.0 STANDARD OPERATING PROCEDURE EXECUTED BY:

____**Write the name of the person who executed the SOP** _____

SOP TITLE

Standard Operating Procedure **SOP Number:**

Written By:	Date:
Validated By:	Date:
Approved By:	Date:
Revision #:	Date:

1.0 DESCRIPTION:

2.0 REFERENCES:

2.1 SOP#:

2.2 SOP#:

2.3 SOP#:

3.0 RISK LEVEL: (1-5)

4.0 RESOURCES:

4.1 Resource #1

4.2 Resource #2

5.0 APPROVALS:

5.1 Approval #1

5.2 Approval #2

6.0 RESPONSIBILITIES:

6.1 It is the responsibility of all authorized persons (Facilities personnel, contractors, and vendors) to comply with this policy.

6.2 It is the responsibility of the Facilities Manager to ensure that all authorized personnel are aware, understand, and have been trained on lockout/tag out procedures, processes, and requirements.

6.3 Forward this completed procedure to the Facility Manager.

7.0 SCHEDULING:

8.0 SAFETY:

9.0 PROCEDURE:

10.0 FLOWCHART:

11.0 STANDARD OPERATING PROCEDURE EXECUTED BY:

____**Write the name of the person who executed the SOP** _____

Staffing Assessment

Introduction

This section of the Strategic Management Plan provides:

- A benchmark analysis of the current staffing model against peer organizations
- Recommendations for staffing levels using the benchmark data, general observations and the recently developed Maintenance Plan.
- A suggested organizational structure based on the staffing recommendations
- Job descriptions for:
  - Current positions
  - Multiple experience levels
  - That directly tie staff responsibilities to the recently developed SLA

Current Staff

The current staffing level consists of (0.1) Facility Manager, (1) Supervisor, (1) Lead/coordinator, (0.2) Part-time Administrative Assistant, (1) Lead HVAC Technician and (4) Full time Maintenance Technicians and (2) seasonal Techs.

The Facility Management Strategy which was completed in August of 2016 (see Section 4) established the need for an additional HVAC Technician for the sole purpose of performing scheduled maintenance. This report has been updated to reflect that recommendation and provides additional recommendations based on a benchmarking study that is included in the following section.

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Staffing Assessment

Staffing Benchmarks

PREFACE

A significant factor in developing an assessment of any established operation is to compare that operation against peer operations to establish points of comparison. When we develop an assessment we always look at multiple sources of information such as the International Facility Managers Association (IFMA) or the Building, Owners and Managers Association (BOMA). Sometimes we draw from research studies such as those developed by companies like Whitestone Research.

The available base data we choose to use is based on several factors and at times we may combine data from different sources in an effort to provide the best points of comparison. Key factors include, specificity of facility types, regional significance, industry specific operation, energy related components, etc.

We have a relatively high confidence level in the data set we used as a comparison for Redmond for two primary reasons. Not only was the sampling large, (95 peer institutions nationwide), but the physical size of Redmond, in terms of square footage places it close to the median size in the peer group. Both factors should make the comparisons more applicable.

It is important to note that benchmarking any operation only provides a point of comparison between your operation and peer organizations and as such does not by itself validate or invalidate a your facilities operational model. For example, a facility team that is composed of technicians of a higher level of technical proficiency than a peer operation may be able to accomplish the same tasks with fewer personnel so their FTE count may be lower. Benchmarking studies also make no attempt to determine if the operations that are being benchmarked are actually operating at their optimal efficiency. As a result, any benchmarking effort has to make some assumptions about the data being used in the points of comparison. However, benchmarking is very useful in pointing out significant differences between your operation and your peers which can provide a good starting point for more in depth investigations.

METHODOLOGY

The following charts and tables compare the current staffing levels of the FAC with data extrapolated from the *2009 IFMA Operations and Maintenance Benchmarking Report. Although we looked at a couple of different potential data sources for points of comparison we found the data produced in this report to be the most pertinent to your operation and as such use it as the primary source of data.

The Peer Group FTE averages used in this report were calculated by dividing IFMA FTE per SQ/FT values for each trade into the total maintained SQ/FT of the COR facilities. These peer group average FTE values were then adjusted downward to meet a base average of approximately 49,000 SQ/Ft per FTE per the IFMA report. This adjustment was needed to compensate for differences in the way the peer organizations staff their respective operations. For example; it would be unusual for one organization to have all three of these job classifications, HVAC, Stationary Engineers and Generalists as they could provide a similar functions depending on the organization. Adding the full FTE averages for all three job classifications in any model would skew the FTE count well above the base average of 49,000 SQ/FT per FTE.

The basis for the FTE calculations is 408,279 ASF which is taken from the 2013 Meng Analysis. The Sammamish River Business Park buildings were excluded from this calculation.

MAINTENANCE TECHNICIANS

A review of the current staffing model of the FAC seems to indicate that the FAC team is understaffed by at least 1.5 Maintenance Technicians when compared to the peer groups surveyed. The average City/County Government institution employs approximately one Maintenance Technician per 49,000 rentable square feet (RSF) of floor space. Applying the same metric to the current operating model indicates that the FAC currently

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Staffing Assessment

has one Maintenance Technician for every 58,000 RSF which is significantly above the peer average. Adding an additional 1.5 technicians would bring this variance down to a more comparable 48,000 RSF per Technician (see Figure 2).

*The recently completed Maintenance Strategy (see Section 4) concluded that one dedicated FTE was needed to perform the planned maintenance tasks identified in the plan (1.1 FTE based on a target utilization factor of 70%).

Additionally, with the recently established requirement for an on call technician for evening and weekend coverage emergency coverage, there is a need for an additional one half of one FTE to compensate for the maintenance hours lost to support this function.

Based on this new data it is our recommendation that 1.5 or 2 additional FTEs be hired to supplement the current crew. These additional FTE's would provide the needed resources to complete the planned maintenance tasks in a timely manner, mitigate against the current pressure to defer planned maintenance, compensate for time lost to on call coverage and assist in completing the maintenance backlog.

The following chart compares the makeup of the peer average maintenance crew against the FAC's current makeup (see Figure 1). Our recommendation for the additional FTE is reflected in the HVAC/Plant Operators category.

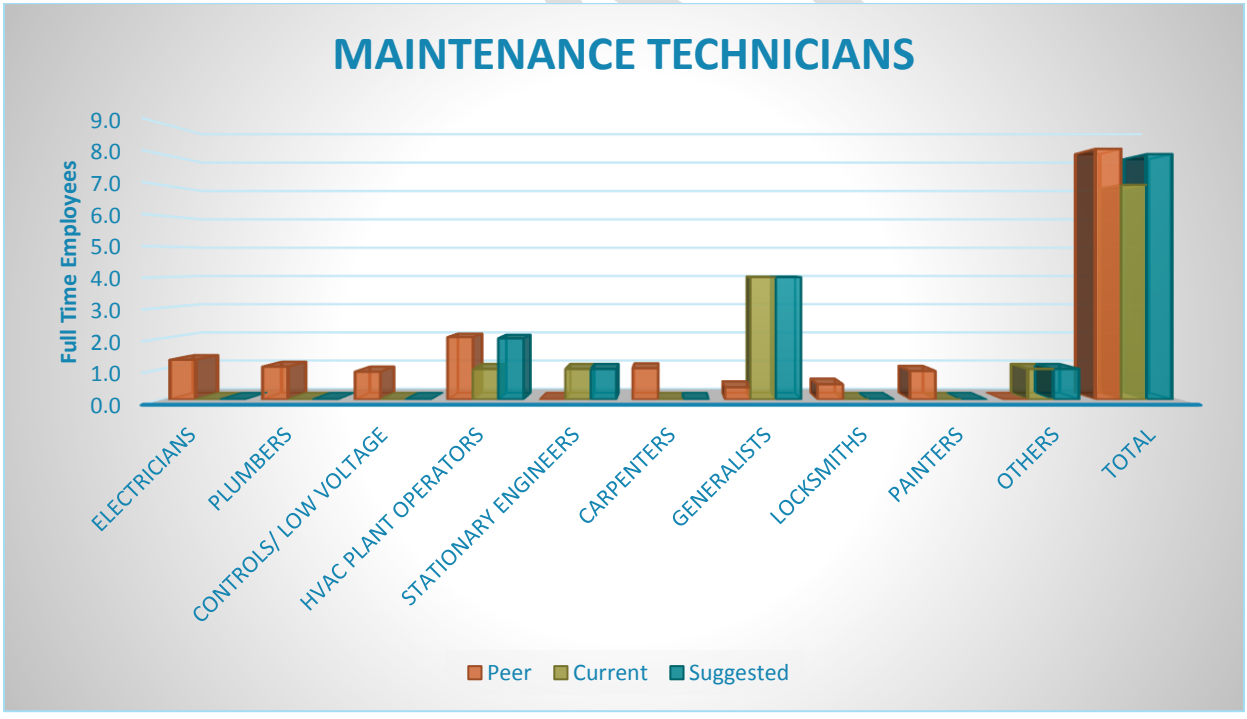

Figure 1 - Peer to FAC staffing comparison

Staffing Assessment

Maintenance Technicians	FTE		FTE	
Peer Group Job Title	**Average**	**FAC Job Title**	**Current**	**Suggested**
Electrician	1.3	Electrician	0	0
Plumber	1.1	Plumber	0	0
Controls	0.9	Controls	0	0
HVAC/Plant Operator	2.0	HVAC/Plant Operator	1	2
Stationary Engineer	0.0	Stationary Engineer	*1	*1
Carpenters	1.0	Carpenters	0	0
Generalists	0.4	Generalists	4	4
Locksmiths	0.5	Locksmith	0	0
Painters	0.9	Painters	0	0
Others	0.0	Seasonal	2@0.5	2@0.5
		Adjustment for On call	0	0.5
Total	**8.3**	**Total**	**7**	**8.5**

*This FTE is currently provided by a contractor dedicated to City Hall maintenance.

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Staffing Assessment

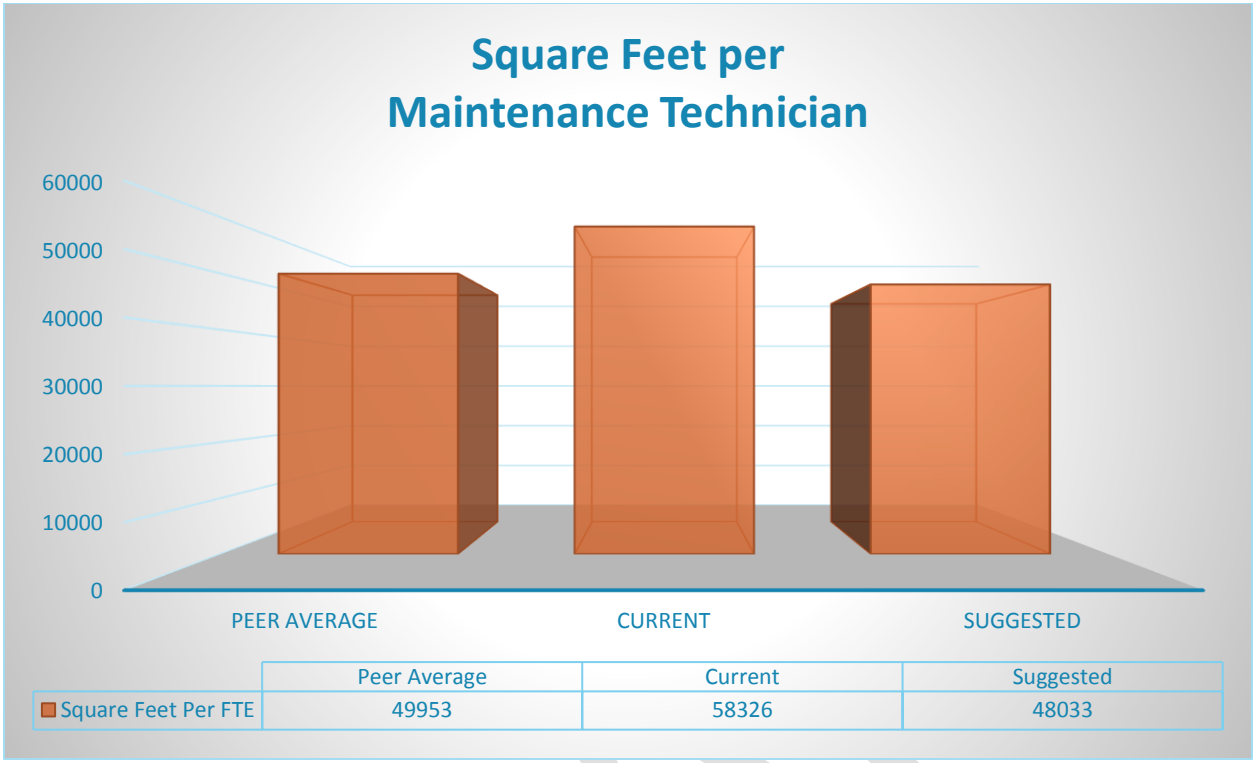

Figure 2 - Chart shows Peer average square footage per FTE compared to the current FAC operating model and with suggested staffing changes

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Staffing Assessment

MANAGEMENT AND ADMINISTRATION

When compared to the staffing levels of the peer group, the FAC management team appears to be significantly understaffed. The current management team is calculated at 2.3 FTE's (see table below) which assumes the current Facility Managers time commitment to the FAC at 10% and the Administrative Assistant at 20%. Based on this data and our own observations we recommend that consideration be given to adding resources to the management team as follows:

- Increase the role of the Facility Manager to a full time position from its current fractional status. Based on comparisons with peer institutions and our own observations of the current responsibilities and workload it appears that the operational demands would warrant this change. This would allow for a division of responsibilities between the revised Facility Manager position and the current Facility Supervisor
- Splitting the operational responsibilities would allow the Facility Manager to focus more on facilities related construction projects, long term planning as well as enhancing the presence of the FAC in city wide initiatives. The Facilities Supervisor's role could then be changed to focus more on the demands of daily operations and maintenance.
- Increase the Administrative Assistant position to full time which would enhance overall departmental operations as well as provide the additional resources that will be needed once the Help Desk functions associated with the new CMMS system are implemented.

The addition of these resources (see figure 3) would bring the management team complement up to a total of four FTE's which is still almost a full FTE (0.8) below the peer average for an operation of this size.

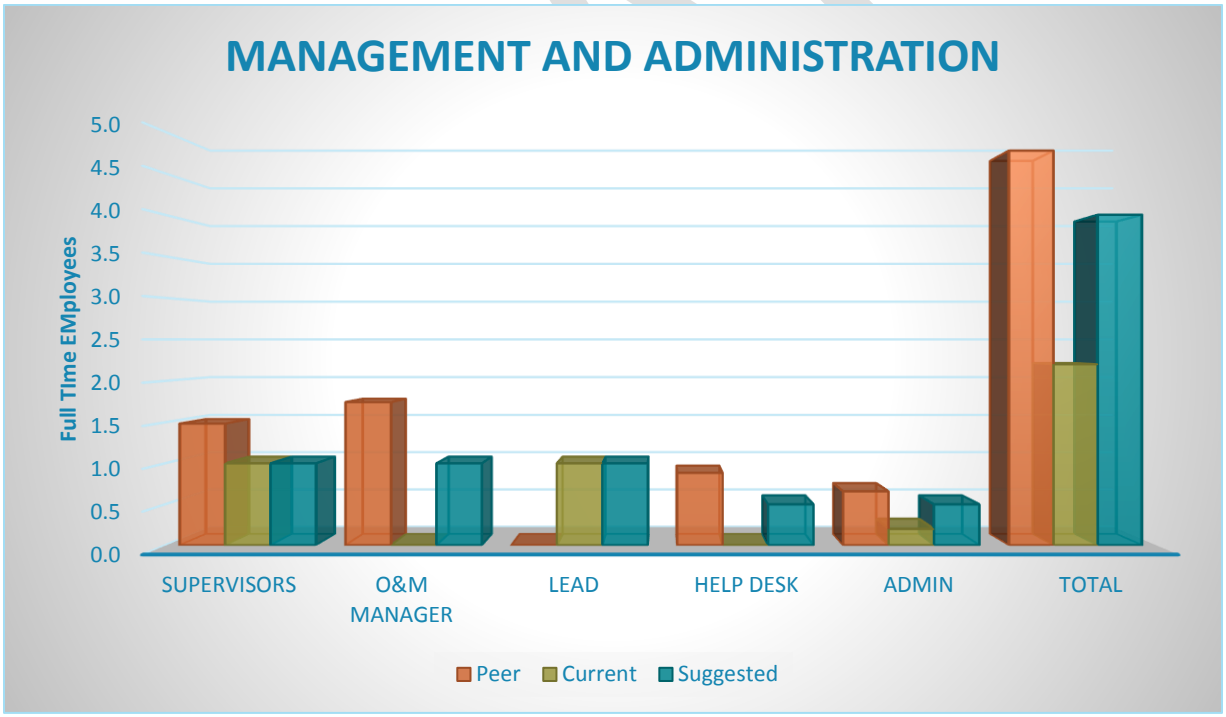

Figure 3 - Management Comparison

Staffing Assessment

Management/Administration			Current	Suggested
Peer Group Job Title	**FTE**	**FAC Job Title**	**FTE**	**FTE**
Group Supervisor	1.5	Facilities Supervisor	1.0	1
Operations Manager	1.7	Facilities Manager	0.1	1
No peer equivalent	0.0	Lead	1.0	1
Help Desk	0.9	Help Desk	0.0	.5
Administrative Assistant	0.7	Administrative Assistant	0.2	.5
Total	**4.8**	**Total**	**2.3**	**4.0**

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Staffing Assessment

Facilities, Maintenance and Operations- Organization

ORGANIZATIONAL STRUCTURE

The accompanying chart (see Figure 4) provides a suggested organizational structure for the FAC with the recommended additions.

The suggested organizational structure splits the Maintenance/HVAC technicians into two teams. In our experience the most efficient operational models have a team dedicated to general maintenance and repair with the other dedicated to Planned/Predictive maintenance. This split structure allows for a level of specialization, a more efficient use of available skillsets and increases the chances that the Planned/ Predictive tasks will be completed in a timely fashion. The tendency to defer planned maintenance is something that the current team struggles with and dedicating individuals to completing those tasks would serve to minimize this tendency.

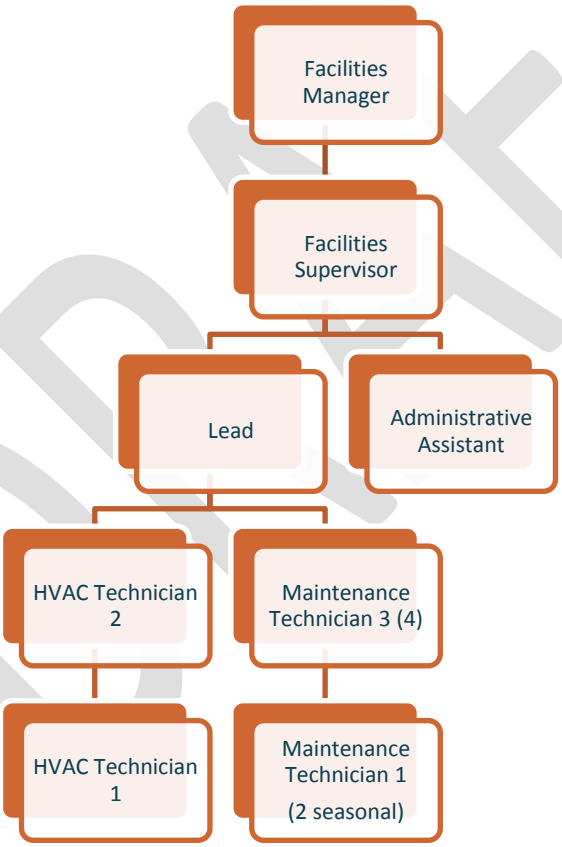

Figure 4 - Suggested Organizational Structure

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Staffing Assessment

JOB DESCRIPTION OVERVIEW

Facilities Manager: Provides leadership, vision, direction, structure, & accountability, develops reports. Focus on city wide initiatives.

Facilities Supervisor: Provides leadership, vision, direction, structure, & accountability, develops reports. Focus on daily operations and maintenance as well as management of the maintenance team.

Administrative Assistant: Provides daily operations and help desk support.

Facilities Lead: Drives CMMS WO & WR's program, manages Work Requests and HVAC control system, develops reports.

HVAC Technician: Provides maintenance and repair on mechanical systems

Maintenance Technician: Handles Work Requests and general maintenance and repair

Some of comments made during the staff interviews we conducted in January of 2016 (see Interview notes in appendix) indicated that the current job descriptions could provide better clarity which would help them better perform their duties. In our opinion some this issue is due to a lack of clear scope for the FAC Department itself which was clarified in the new SLA. The draft job descriptions (see appendix) incorporate language that tie an individual's job responsibilities directly to the newly created Service Level Agreement (SLA) that once approved, should provide a clearer scope for the FAC team than currently exists.

The job titles shown on the draft organizational chart above do not align exactly with the current positions but they do correlate with the proposed draft job descriptions that are included in the appendix of this document. The new job descriptions provide for multiple technician levels based on experience, education and tenure. These job draft descriptions need to be reviewed and approved by management.

MANPOWER UTILIZATION

One of the task items for this report was to benchmark the manpower utilization. Unfortunately, not enough data currently exists to provide any meaningful analysis. We anticipate that once the CMMS system (Lucity) properly set up and functioning these metrics can be developed and compared against industry benchmarks.

DRAFT

Staffing Assessment

Appendices

Job Descriptions

1. Administrative Assistant
2. Facilities Lead
3. Facilities Supervisor
4. HVAC Technician 1
5. HVAC Technician 2
6. Maintenance Technician 1
7. Maintenance Technician 2
8. Maintenance Technician 3

Staff Interviews

1. Facilities Staff Interview Summary

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City of Redmond

JOB DESCRIPTION

Job Title: Facilities Administrative Assistant
Department: Facilities, Maintenance and Operations
Reports To: Facility Lead

JOB SUMMARY:

Perform a wide range of administrative and office support functions under direction of the Facility Lead to facilitate the efficient operation of the organization. The Administrative Assistant may provide backup administrative support to the Director when requested by the Facility Supervisor.

JOB DUTIES:

Facilitate the administration of Work Requests if needed.

Maintain office calendar to coordinate work flow and meetings.

Maintain confidentiality in all aspects of client, staff and agency information.

Interact with clients, vendors and visitors.

Open, sort and distribute incoming correspondence, including faxes and email.

Perform general clerical duties to include, but not limited to, bookkeeping, copying, faxing, mailing and filing.

File and retrieve organizational documents, records and reports.

Coordinate and direct office services, such as records, budget preparation, personnel and housekeeping.

Create and modify documents such as invoices, reports, memos, letters and financial statements using word processing, spreadsheet, database and/or other presentation software or other programs.

May conduct research, compile data and prepare papers for consideration and presentation to the Director.

Set up and coordinate meetings and conferences.

If requested, attend meetings in order to record minutes.

Other duties as assigned

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JOB SPECIFICATIONS:

Education – An associate's degree in general studies or related field is preferred. The ability to read, write and verbally communicate in the English language is required.

Experience – At least one year of experience in general office responsibilities and procedures and must be computer literate and experienced in the basic principles and practices of basic office management and organization.

Licensure/Certification – None

Level of Authority and Responsibility:

This position has no direct supervisory responsibility but may require some training or oversight of new employees if requested by their supervisor.

Working Conditions and Physical Hazards:

This position requires work to be performed in an office environment for a majority of the time but may occasionally require visits into construction or work areas where potentially hazardous conditions may be encountered. These hazards may include uneven or loose surfaces and other trip hazards, higher than normal noise levels, and moving construction equipment where proper personal protection devices will need to be worn in compliance with established safety guidelines and rules.

Physical Demands:

The person in this position will have frequent wrist, finger and elbow movement as would normally be encountered when working at a computer workstation for long periods of time. Individual must have good eye-hand coordination and manual dexterity and essential sensory requirements that include the use of vision and hearing, which will be involved in carrying out assigned work. May be required to occasionally lift objects weighing up to 50 pounds.

Equipment/Instruments/Programs Required:

Computer literacy

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City of Redmond

JOB DESCRIPTION

Job Title: Facilities Lead
Department: Facilities, Maintenance and Operations
Reports to: Facilities Supervisor

JOB SUMMARY:

The Facilities Lead coordinates and manages the team that performs general maintenance and repairs in response to work requests generated by the CMMS system or other sources. This position directly assures compliance of operations with the OSHA, NFPA, etc. for all utility systems. The Facilities Lead assesses, predicts, and prioritizes work according to the City of Redmond's Service Level Agreement (SLA), the Facilities Maintenance Plan (FMP) and for sustainable operations and evaluates system operating characteristics to optimize utility consumption and effectiveness.

JOB DUTIES:

Organizes, coordinates and controls the building maintenance and personnel activities of direct reports in Facilities, Maintenance and Operations Department under their supervision. Reviews and prioritizes workload to accomplish maximum efficiency, effectiveness and use of resources.

Works with the Facility Supervisor of the department to develop annual operating budgets, capital project budgets, FTE requirements, fixed equipment budgets and various maintenance funds controlled by the Department.

Develop effective monitoring systems to assure that standards of performance are met, policies and procedures are followed, operating objectives are achieved, and that compliance with laws, regulations are maintained. Implement programs to assess, support and improve customer satisfaction and develop department quality improvement goals. Develop, maintain and report on key performance indicators and facility benchmarking as defined in the departmental SLA.

Manage outside contract vendor, contractors, and suppliers in support of the department activities. Reviews scope of work for service vendors. Reviews specifications for bidding on maintenance and operations related contracts and purchases as well as coordination of vendor work and supplier deliveries.

Work closely with the Director of Maintenance and Operations and the Facility Supervisor in reviewing incident reports and helping evaluate and make recommendations for changes within the facility for improved safety. Work with the Facility Supervisor to coordinate engineering activities during response to any emergencies. Assure adherence to safety rules and precautions by assigned personnel.

JOB SPECIFICATION:
Associate degree or equivalent experience with increasing responsibilities in a technical facilities role. Preference in building maintenance and engineering background and education.

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Minimum of five years in a supervisory position in a facility campus maintenance setting. Experience managing an organization responsible for maintenance, operations, utilities, repairs, construction and alterations of buildings.

Additional Requirements:

- Provide reporting data to the Facility Supervisor to validate accuracy and timely reporting of projects and daily activities. Work with the Facility Supervisor to coordinate with all departments as to impacts and disruption of services during maintenance related activities.
- Understands, reads, writes, and clearly communicates in English fluently.
- Works with and coordinates with building modification based construction projects to maintain building consistency and standards.
- Working knowledge and ability to determine risk and liability of operating systems, equipment, and components to assure operational stability.
- Management experience should include building systems, personnel supervision, fiscal management, technical report writing and inventory control.
- Ability to read and interpret blueprints.
- Working knowledge of NFPA and OSHA requirements
- Working knowledge of direct digital control technologies in a HVAC critical environment.
- Other duties as assigned

Level of Authority:

Supervises, evaluates, and mentors staff within their service group. Coordinates work flow and prioritization within their work group. Reports to the Director, Facilities Supervisor.

Working Conditions:

The working environment is typical of an industrial plant operations setting.
Physical hazards are those which could be encountered in machinery/boiler room situation; high heat, load noise, vibration, and rotating and operating equipment.

Physical Demands: (% of time)

25% 50 lbs. max.

The person in this position will need full use of upper and lower extremities, good eye-hand coordination and manual dexterity.

STATISTICS:

Computer, calculator, copier, fax, van, truck, electric cart, hand tools and pallet jack.

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City of Redmond

JOB DESCRIPTION

Job Title: Facilities Supervisor
Department: Facilities, Maintenance and Operations
Reports to: Director, Maintenance and Operations

JOB SUMMARY:

The Facilities Supervisor, coordinates and manages the teams that maintain and operate the systems defined in the departmental Service Level Agreement (SLA). The Facilities Supervisor works closely with the Director, Facilities Lead, and when necessary, other supervisors and administrators within the city to prioritize work and expedite service. The Facilities Supervisor assesses, predicts and prioritizes work according to the requirements established in the Service Level Agreement (SLA) and the Facilities Maintenance Plan (FMP).

JOB DUTIES:

Organizes, coordinates and controls the operation and personnel activities of direct reports in the Facilities, Maintenance and Operations Department under their supervision. Reviews and prioritizes workload to accomplish maximum efficiency, effectiveness and use of resources.

Works with the Director and Facilities Lead within the department to develop annual operating budgets, capital project budgets, FTE requirements, fixed equipment budgets and various maintenance funds controlled by the Department.

Develop effective monitoring systems to assure that standards of performance are met, policies and procedures are followed, operating objectives are achieved, and that compliance with laws, regulations, are maintained. Implement programs to assess, support and improve customer satisfaction and develop departmental quality improvement goals. Develop, maintain and report on key performance indicators and facility benchmarking as defined in the SLA.

Manage outside contract vendor, contractors, and suppliers in support of the department activities. Reviews scope of work for service vendors. Reviews specifications for bidding on Engineering Operational related contracts and purchases.

Work closely with the Director, Facility Lead in reviewing incident reports and helping evaluate and make recommendations for changes within the facility for improved safety. Work with the Director to coordinate engineering activities during response to emergencies. Assure adherence to safety rules and precautions by assigned personnel.

JOB SPECIFICATION:
4 year degree or equivalent experience with increasing responsibilities in a technical facilities role. Preference in Mechanical or Electrical Engineering background and education.

Minimum of five years in a supervisory position in a facility campus plant operations setting. Experience managing an organization responsible for maintenance, operations, utilities, repairs, construction and alterations of buildings.

DRAFT

Additional Requirements:

- Provide reporting data to the Director to measure departmental performance against the established KPI's.
- Work with the Facility Lead to coordinate with all departments as to impacts and disruption of services during maintenance related activities.
- Communicate the mission, ethics and goals of the City, as well as the requirements of the departmental Service Level Agreement (SLA).
- Working knowledge and ability to determine risk and liability of operating systems, equipment, and components to assure sustainability.
- Management experience should include operations of major electro-mechanical systems, personnel supervision, fiscal management, technical report writing and inventory control.
- Ability to read and interpret blueprints.
- Working knowledge of NFPA and OSHA requirements
- Working knowledge of direct digital control technologies in a HVAC environment.
- Other duties as assigned

Level of Authority:

Supervises, evaluates, and mentors staff within their service group. Coordinates work flow and prioritization within their work group. Reports to the Director of Maintenance and Operations.

Working Conditions:

The working environment is typical of an industrial plant operations setting.
Physical hazards are those which could be encountered in machinery/boiler room situation; high heat, load noise, vibration, and rotating and operating equipment.

Physical Demands: (% of time)

25% 50 lbs. max.

The person in this position will need full use of upper and lower extremities, good eye-hand coordination and manual dexterity.

STATISTICS:

Computer, calculator, copier, fax, van, truck, electric cart, hand tools, electronic test equipment, and pallet jack.

DRAFT

City of Redmond

JOB DESCRIPTION

Job Title: HVAC Technician 1
Department: Facilities, Maintenance and Operations
Reports To: Facility Lead

JOB SUMMARY:

The HVAC Technician 1's responsibility is to operate, service, control, and maintain the HVAC and peripheral equipment as well as the refrigeration equipment in an appropriate manner and in compliance with established policies and procedures. The work is performed in accordance with NFPA, OSHA and other regulatory requirements.

JOB DUTIES:

Maintaining and regulating the temperatures within the facility by ensuring proper operation of the heating, cooling and ventilation equipment and the calibration of the controls.

Repair and maintenance of heating, ventilation and air-conditioning equipment.

Replaces fan belts, lubricates bearing, changes filters, cleans coils, cleans motors, and maintains other operating equipment as directed by Lead.

Regular inspection of the equipment to ensure optimal performance and efficiency.

Completion of assigned work orders within the time allotted.

Maintenance of tools and supplies necessary to perform duties.

Ensure the compliance of all policies procedures and the Occupational Safety and health administration rules (OSHA) while conducting work functions.

Maintaining a record of service cycles and other maintenance activities conducted.

Efficiently managing time and completing all tasks assigned by the Facilities Lead.

Reporting damage, defects and other issues pertaining to equipment.

Working knowledge of control sequences, set points, and reset schedules.

Ability to read and understand blue prints and specifications.

Defines problems and presents solutions and options to be considered for resolution or mitigation.

Ability to read, writes, communicates, and comprehends the English language.

Performs other duties as assigned.

DRAFT

JOB SPECIFICATIONS:

Education – Accredited trade school with a certificate in HVAC maintenance or related field is preferred. The ability to read, write and verbalize in English is required.

Experience – A minimum of two years of experience in operating and maintaining HVAC equipment in a commercial/industrial facility is required.

Licensure/Certification – Refrigeration license is required

Level of Authority and Responsibility:

This position has no direct supervisory responsibility but may require some training or oversight of new employees if requested by their Lead.

Working Conditions and Physical Hazards:

This position requires work to be performed in mechanical rooms and as such proper personal protection devices will need to be worn in compliance with established safety guidelines and rules. May encounter louder than normal noises as well as exposure to potentially slippery surfaces and some chemicals such as oil and solvents.

Physical Demands:

The person in this position will have frequent wrist movement up/down, and side-to-side while standing as well as the need to climb ladders. Individual must have good eye-hand coordination and manual dexterity for using hand tools both in front of and in overhead positions. Essential sensory requirements include use of vision and hearing, which will be involved in carrying out assigned work. May be required to occasionally lift objects weighing up to 50 pounds.

Equipment/Instruments/Programs Required:

Temperature, humidity, and pressure digital meters for air and water systems

Electrical handheld meters for reading amps, watts, Kw, voltage, power factors, and Hz

Static velocity, total velocity, and CFM meters

GPM and flow meters

Basic hand tools

DRAFT

City of Redmond

JOB DESCRIPTION

Job Title: HVAC Technician 2
Department: Facilities, Maintenance and Operations
Reports To: Facility Lead

JOB SUMMARY:

The HVAC Technician 2's responsibility is to operate, service, control, and maintain the HVAC and peripheral equipment as well as the refrigeration equipment in an appropriate manner and in compliance with established policies and procedures. The work is performed in accordance with NFPA, OSHA and other regulatory requirements.

JOB DUTIES:

Maintaining and regulating the temperatures within the facility by ensuring proper operation of the heating, cooling and ventilation equipment and the calibration of the controls.

Repair and maintenance of heating, ventilation and air-conditioning equipment.

Replaces fan belts, lubricates bearing, changes filters, cleans coils, cleans motors, and maintains other operating equipment as directed by Lead.

Regular inspection of the equipment to ensure optimal performance and efficiency.

Completion of assigned work orders within the time allotted.

Maintenance of tools and supplies necessary to perform duties.

Ensure the compliance of all policies procedures and the Occupational Safety and health administration rules (OSHA) while conducting work functions.

Maintaining a record of service cycles and other maintenance activities conducted.

Efficiently managing time and completing all tasks assigned by the Facilities Lead.

Reporting damage, defects and other issues pertaining to equipment.

Working knowledge of control sequences, set points, and reset schedules.

Ability to read and understand blue prints and specifications.

Defines problems and presents solutions and options to be considered for resolution or mitigation.

Ability to read, writes, communicates, and comprehends the English language.

Performs other duties as assigned.

DRAFT

JOB SPECIFICATIONS:

Education – An associate's degree in engineering or related field or graduation from an accredited trade school with a certificate in HVAC maintenance or related field is preferred. The ability to read, write and verbally communicate in the English language is required.

Experience – A minimum of five years of experience in operating and maintaining HVAC equipment in a commercial/industrial facility is required

Licensure/Certification – Refrigeration license is required

Level of Authority and Responsibility:

This position has no direct supervisory responsibility but may require some training or oversight of new employees if requested by their Lead.

Working Conditions and Physical Hazards:

This position requires work to be performed in mechanical rooms and as such proper personal protection devices will need to be worn in compliance with established safety guidelines and rules. May encounter louder than normal noises as well as exposure to potentially slippery surfaces and some chemicals such as oil and solvents.

Physical Demands:

The person in this position will have frequent wrist movement up/down, and side-to-side while standing as well as the need to climb ladders. Individual must have good eye-hand coordination and manual dexterity for using hand tools both in front of and in overhead positions. Essential sensory requirements include use of vision and hearing, which will be involved in carrying out assigned work. May be required to occasionally lift objects weighing up to 50 pounds.

Equipment/Instruments/Programs Required:

Temperature, humidity, and pressure digital meters for air and water systems

Electrical handheld meters for reading amps, watts, Kw, voltage, power factors, and Hz

Static velocity, total velocity, and CFM meters

GPM and flow meters

Basic hand tools

Psychometric charts

DRAFT

City of Redmond

JOB DESCRIPTION

Job Title: Maintenance Technician 1
Department: Facilities, Maintenance and Operations
Reports To: Facility Lead

JOB SUMMARY:

The Maintenance Technician 1's responsibility is to perform a wide variety of building and maintenance repairs. All work is to be performed in an appropriate manner and in compliance with established policies and procedures. The work is performed in accordance with NFPA, OSHA and other regulatory requirements.

JOB DUTIES:

Perform a wide variety of general building maintenance labor, repairs and services as defined by the departmental Service Level Agreement.

Install light bulbs, doors, cabinets, paneling, counter tops, carpet, stopped up toilets, replace ceiling tile, and bulletin boards. General labor resource.

Set-up and install furniture and partitions as needed.

Responsible for the completion of all Work Requests as assigned.

Completion of assigned work orders within the time allotted.

Maintenance of tools and supplies necessary to perform duties.

Ensure the compliance of all policies procedures and the Occupational Safety and Health Administration rules (OSHA) while conducting work functions.

Maintaining a record of service cycles and other maintenance activities conducted.

Efficiently managing time and completing all tasks assigned by the Facilities Lead or Facilities Supervisor.

Reporting damage, defects and other issues pertaining to equipment.

Ability to read, write, communicate and comprehend the English language.

Performs other duties as assigned.

JOB SPECIFICATIONS:

Education – High School degree, diploma or a GED equivalent qualification from an accredited institution. The ability to read, write and verbally communicate in the English language is required.

DRAFT

Experience – A minimum of one year of experience in a similar field in a commercial field is required.

Licensure/Certification – None

Level of Authority and Responsibility:

This position has no direct supervisory responsibility.

Working Conditions and Physical Hazards:

This position requires work to be performed in shop type environments and as such proper personal protection devices will need to be worn in compliance with established safety guidelines and rules. May encounter louder than normal noise levels as well as exposure to uneven or potentially slippery surfaces and some chemicals such as oil and solvents.

Physical Demands:

The person in this position will have frequent wrist movement up/down, and side-to-side while standing as well as the need to climb ladders. Individual must have good eye-hand coordination and manual dexterity for using hand tools both in front of and in overhead positions. Essential sensory requirements include use of vision and hearing, which will be involved in carrying out assigned work. May be required to occasionally lift objects weighing up to 50 pounds.

Equipment/Instruments/Programs Required:

Various hand tools, ladders, etc.

DRAFT

City of Redmond

JOB DESCRIPTION

Job Title: Maintenance Technician 2
Department: Facilities, Maintenance and Operations
Reports To: Facility Lead

JOB SUMMARY:

The Maintenance Technician 2's responsibility is to perform a wide variety of building and maintenance repairs. All work is to be performed in an appropriate manner and in compliance with established policies and procedures. The work is performed in accordance with NFPA, OSHA and other regulatory requirements.

JOB DUTIES:

Perform a wide variety of general building maintenance labor, repairs and services as defined by the departmental Service Level Agreement.

Install light bulbs, doors, cabinets, paneling, counter tops, carpet, stopped up toilets, replace ceiling tile, and bulletin boards. General labor resource.

Set-up and install furniture and partitions as needed.

Responsible for the completion of all Work Requests as assigned.

Completion of assigned work orders within the time allotted.

Maintenance of tools and supplies necessary to perform duties.

Ensure the compliance of all policies procedures and the Occupational Safety and Health Administration rules (OSHA) while conducting work functions.

Maintaining a record of service cycles and other maintenance activities conducted.

Efficiently managing time and completing all tasks assigned by the Facilities Lead or Facilities Supervisor.

Reporting damage, defects and other issues pertaining to equipment.

Ability to read, write, communicate and comprehend the English language.

Performs other duties as assigned.

JOB SPECIFICATIONS:

Education – High School degree, diploma or a GED equivalent qualification from an accredited institution. The ability to read, write and verbally communicate in the English language is required.

DRAFT

Experience – A minimum of three years of experience in a similar field in a commercial field is required.

Licensure/Certification – None

Level of Authority and Responsibility:

This position has no direct supervisory responsibility.

Working Conditions and Physical Hazards:

This position requires work to be performed in shop type environments and as such proper personal protection devices will need to be worn in compliance with established safety guidelines and rules. May encounter louder than normal noise levels as well as exposure to uneven or potentially slippery surfaces and some chemicals such as oil and solvents.

Physical Demands:

The person in this position will have frequent wrist movement up/down, and side-to-side while standing as well as the need to climb ladders. Individual must have good eye-hand coordination and manual dexterity for using hand tools both in front of and in overhead positions. Essential sensory requirements include use of vision and hearing, which will be involved in carrying out assigned work. May be required to occasionally lift objects weighing up to 50 pounds.

Equipment/Instruments/Programs Required:

Various hand tools, ladders, etc.

DRAFT

City of Redmond

JOB DESCRIPTION

Job Title: Maintenance Technician 3
Department: Facilities, Maintenance and Operations
Reports To: Facility Lead

JOB SUMMARY:

The Maintenance Technician 3's responsibility is to perform a wide variety of building and maintenance repairs. All work is to be performed in an appropriate manner and in compliance with established policies and procedures. The work is performed in accordance with NFPA, OSHA and other regulatory requirements.

JOB DUTIES:

Perform a wide variety of general building maintenance labor, repairs and services as defined by the departmental Service Level Agreement.

Install light bulbs, doors, cabinets, paneling, counter tops, carpet, stopped up toilets, replace ceiling tile, and bulletin boards.

Coordinate special projects as directed by the Operations Manager.

Set-up and install furniture and partitions as needed.

Responsible for the completion of all Work Requests as assigned.

Completion of assigned work orders within the time allotted.

Maintenance of tools and supplies necessary to perform duties.

Ensure the compliance of all policies procedures and the Occupational Safety and Health Administration rules (OSHA) while conducting work functions.

Maintaining a record of service cycles and other maintenance activities conducted.

Efficiently managing time and completing all tasks assigned by the Facilities Lead or Facilities Supervisor.

Reporting damage, defects and other issues pertaining to equipment.

Ability to read, write, communicate and comprehend the English language.

Performs other duties as assigned.

JOB SPECIFICATIONS:

DRAFT

Education – An associate's degree in engineering or related field or graduation from an accredited trade school with a certificate in a related field is preferred. The ability to read, write and verbally communicate in the English language is required.

Experience – A minimum of five years of experience in a similar field in a commercial field is required.

Licensure/Certification – None

Level of Authority and Responsibility:

This position has no direct supervisory responsibility but may require some training or oversight of new employees or lower level technicians if requested by their supervisor.

Working Conditions and Physical Hazards:

This position requires work to be performed in shop type environments and as such proper personal protection devices will need to be worn in compliance with established safety guidelines and rules. May encounter louder than normal noise levels as well as exposure to uneven or potentially slippery surfaces and some chemicals such as oil and solvents.

Physical Demands:

The person in this position will have frequent wrist movement up/down, and side-to-side while standing as well as the need to climb ladders. Individual must have good eye-hand coordination and manual dexterity for using hand tools both in front of and in overhead positions. Essential sensory requirements include use of vision and hearing, which will be involved in carrying out assigned work. May be required to occasionally lift objects weighing up to 50 pounds.

Equipment/Instruments/Programs Required:

Various hand tools, ladders, etc.

DRAFT

Maintenance Interview Summary

Ken Houghton

HVAC TECHNICIAN

Top Priorities:

1. Public Safety Building / Senior Center - Control Sequencing / Hardware is wasting energy / No controllability / No remote (Inform Andrew, Grant, and Geremy)
2. Pool – Chemical Treatment / Dampers / many more (Inform Andrew, Grant, and Geremy)
3. Community Center – Handshake lease with LWSD / needs upgrades, but LWSD can take at any moment. Most likely in two years. (We need to get to the bottom of this. Perhaps we can come up with a model that if upgrades, capital expenses, and/or major maintenance upgrades occur, LWSD provides a discount)

What is the most important thing you do? – He fights fires, purely reactive, 100% reactive with apparently very little time for planned or predictive maintenance.

Department Strengths – The people, there is a wide variety if skills within the department.

Department Weakness – Their use of space and not enough manpower.

Communication – They have a morning meeting where Bob assigns WO's for the day. He doesn't think that tech to tech communication is as good as it could be. He thinks that radios would help with communication.

Work Prioritization – Who is suffering the most (Comfort and Safety), then saving the equipment from further damage.

Overtime – The culture is no OT. If you're off at 4, then you go home at 4 unless it's a safety issue. Estimates that they would need at least 25% OT to complete a PM program.

Customer Expectations – He said that they don't have any expectations, but they are pleasantly surprised when they show up quickly. They (customers) are not used to a fast reaction.

Vendors – Needs based, open PO's. Can he perform the work while other more pressing issues are managed.

Facility Planning – Not much coordination w/ Ken.

Budgets and Finance – Ken gets some input and it seems to be getting better. Recently brought into budget meetings.

Vision – Fully implement preventive maintenance program w/ manpower to support it while still having enough time to reactive.

Have a common controls platform

He wants a licensed electrician, plumber, and HVAC tech.

Along those lines he wants more specific job descriptions

Other Notes – There seems to be some politics between IS and Maintenance. Hard to get VPN and mobile support.

He realizes he wouldn't be able to do what he does and PMs at the same time. Feels he needs at least 1 journeyman and 1 apprentice.

Maintenance Interview Summary

Some buildings have a designated person that is supposed to be the WO submitter.

Sometimes issues aren't communicated until they see someone on-site.

Supposed to be 70% HVAC and 30% Other, but said he is happy only doing HVAC and it seems that the others only ask him for HVAC related issues.

Larry Andrew and Roscoe Burks

FACILITY MAINTENANCE TECHS

Top Priorities:

1. Park Ops Center – Copper fittings failing, leaks, re-plumb the building.
2. Senior Center – Roof
3. Lighting upgrades – City Wide – Roscoe has been upgrading offices to LED as they fail.

Most Important Thing – Support for the rest of the city so that those workers can perform their tasks.

Strengths – Wide variety of services, great teamwork, they like that they seem to almost be looked at as subcontractors. The city in general has a good culture.

Weaknesses – Age gap / generation gap, work ethic is different, paperwork, too much of a paper trail, administrative time cuts into work time.

Priority – Safety, Comfort, Preventive. Bob doles out the WO's in the morning.

Technology – Use to have radios, but they like the cell phones. Vans would be nice for plumbing, but their inventory isn't very big. Home Depot is their warehouse.

Customer Expectations – People seem surprised when it's a quick response, but in general, don't have any expectation of service.

Facility Planning – Not much visibility, but got a look at the City Hall. Might help to get involved a little earlier.

Budgets and Finance – Limited interest in getting involved, but Quinn asks for concerns and priorities.

Vision – Organized shop, would like to see some standardization (paint, carpet, lamps, bathroom equipment/fixtures)

Other Notes – They perform work up to code, however they aren't licensed electricians or plumbers. They try not to get in over their skis.

It seems like no one has looked at the FCA

Aging Staff w/ wide skill set, but tribal knowledge could be lost with retirements (key codes, etc.)

They are reactive first, but the work sometimes goes through ups and downs. Sometimes they have time for PMs.

They do some furniture moves (Nothing is defined)

Roscoe has a map of all the lights in the city, working on exit signs

They'd like bids to offer a list of approved products / standards.

Maintenance Interview Summary

Bob McAndrews

MAINTENANCE LEAD

Priorities:

1. Getting PM's up
2. Getting WO system running
3. Don't move from centrally located site (shop)
4. Take over maintenance of the City Hall

Most Important Thing – Making sure the team has work to do, relaying schedules, keeping people motivated and positive, and keeping the team efficient.

Strengths – Cooperation, everyone gets along, wide variety of skill sets, opportunity for cross training.

Weaknesses – Limited skill set in some areas, don't have licensed trade techs. Competitive bidding is a constraint.

Communication – Face to face, morning meetings, daily schedules, daily check-ins. Emails crew WO's, text messages, tries to coordinate while people are on-site. He doesn't think it's practical to have them check-in before they leave a site. Bob just doesn't have the time to support (might be a good opportunity for a planner/scheduler).

Prioritization – Life/safety, risk to building, PMs, Honey-do's.

Breakout of work – 15% scheduling, 70% vendor management, 15% admin

Expectations – Fairly realistic in his opinion. 1 week response time is ok. (We don't have any real data on how long the average WO does take.)

CMMS Ranking:

1. Requests – response, feedback, closure
2. PM
3. Tracking, monitoring, recording, and documentation
4. Asset Inventory and Tracking
5. Accountability – SLA's, Performance, Aging
6. Cost Tracking

Facility Planning – Pleasantly surprised about how early they are invited to the table (seems that they involve management in the planning process)

Budgets and Finance – He will be involved.

Vision – Take City Hall maintenance from Wright Runstad. Get rid of the pool, community center should go away. Build a new facility that contains both pool and community center. Be less reactive, more PMs, add HVAC tech.

Other Notes – If a WO isn't dispatched, he writes it on a list and saves for another day.

Has not read the Meng Study.

They jacks of all trades, masters of none. He'd like better job descriptions.

Maintenance Interview Summary

There's a grey area in department responsibilities. We need to define those.

PM's are currently scheduled via Excel sheet.

Quinn Kuhnhausen

FACILITIES SUPERVISOR

Priorities:

1. Develop the Strategic Maintenance Plan – Educate customers what services they provide, know the health of the facilities, define maintenance tasks, educate maintenance staff that they're here to serve the customer, define roles, provide structure.
2. Asset Management / WO System
3. Pool and Community Center Resolution

Most important thing – He is the liaison w/ upper management. He can speak both languages.

Mission – Doesn't have one yet, but public works does.

Strengths – Working knowledge (depth)

Weaknesses – Trust (with city employees, other departments, and each other), maybe not willing to perform.

Communication – Prefers face to face, daily meetings. Majority of communication is via phone, last is email.

Daily Breakout – 65% meetings, 35% supervisor (lately it's been more like 80% meetings).

Technology – CMMS/Mobile Devices, Control Systems are very inadequate

Customer Expectations – Doesn't think they have any, but will be interested in survey results.

Business Outcomes:

1. Significantly increase customer satisfaction.
2. Provide proactive identification and resolution of facility issues.
3. Provide more visibility to facility issues and issue resolution.
4. Develop data and management reports for proactive decision making.
5. Integrate communication across facility departments.
6. Improve personnel skills related to delivery of facility services.

Comparable – Would like to operate like private facility management companies. Wright-Runstad does a good job at the City Hall.

Vision – Short term (see priorities). Long term – Clear path of where city is going and what that means to the facility group. Make sure they have the right staff to support the city's vision.

What to accomplish – there is no data or plan, fill the data vacuum, create a healthy environment for the group, create pride in a job well done.

Other Notes – Quinn prefers the jack of all trades approach. Wide skill set for all techs, not interested in an electrician or plumber (this probably requires writing job descriptions for Facility Engineers, not specific trade people).

Maintenance Interview Summary

No clear line between construction group and maintenance. There is some cost delineation, but more definition is required.

25-40 service request per week.

Vendor Contract Review

Janitorial Services

Contractor- Buena Vista Services

Contract date- 2/26/2016

Contract Term- 2 years with a possible 2 year extension

CONTRACT TERMS AND CONDITIONS

- Page 5- The contract refers to two personnel for the City. One is the Project Administrator and the other is Project Coordinator. Our assumption is the Project Coordinator is the FAC Lead but the project manager is not specified. Our recommendation would be for the Facility Supervisor to be the designated Project Manager with contract administration falling under the responsibility of Purchasing.

EXHIBIT A- SCOPE OF WORK

- Page 1 - City Hall - A day porter is specified to be provided for City Hall. Is this position currently filled?
- Page 2 - PSB - The jail area exclusion. We understand this exclusion requires the FAC to perform janitorial services in this area. We assume this is due to security and potential liability concerns but it would improve FAC Team utilization if the vendor could provide this service. Perhaps a single designated individual with additional screening? Back up coverage could be provided by FAC.
- PSB - The 911 call center is specified to be cleaned with special access requirements which is logical but there is no exclusion in the scope for the data centers, electrical rooms, mechanical rooms which is assumed but would be good to include in the scope language. Note: If the Janitorial Services vendor is currently cleaning inside the three data centers we suggest that this scope be removed from their daily tasks and left to IS to perform. This is for safety, security and operational reliability reasons.
- Page 2 - FS11- The scope mentions the "Emergency Support Portable Building" behind FS11. We assume this the Old Medic One building.
- Page 2- Hartman Park Pool- the defined scope is duplicated in the Pool Operations agreement with Wave (see below)
- Page 2- FS12, FS17, FS13, FS18, FS14, FS Shop as well as the elevators in the parking garages are not included in the scope. We understand that these spaces are being maintained by the firefighters.
- Page 4- The contract calls for an onsite Supervisor to be present every day but based on comments from staff interviews it is unclear if this scope requirement is currently being provided. If an onsite supervisor is no longer being provided and determined to be unnecessary should an amendment be made to the contract?
- Page 4 – Inspections and Reporting – Monthly inspections are required at the request of the City's coordinator with follow up reports by the vendor within 10 days. Are these being inspections being performed, reports being produced and any issues corrected?
- Page 5 - Remove all Trash – "The City will provide liners and paper products for restrooms."
    - The scope specifies that these products will be provided but does not specify how they will be delivered or distributed which has created an ongoing logistical problem for FAC to resolve. In the interest of improving FAC utilization and efficiency, the language should clarify how these products will be made available to the vendor. It is our recommendation that the primary responsibility lie on vendor to pick up the necessary city provided supplies from a central location and remove the distribution responsibility from FAC.
    - For accountability reasons, we also recommend that a log sheet be kept of all product disbursements that includes the name of the custodian w/signature, the building for which the supplies are designated and the quantity of each item. This log should be copied to the Project Manager on a monthly basis for review for irregularities.

- The scope calls for the emptying of the trash every day without any consideration as to whether the removal is actually needed. Consider adding language that sets criteria for trash removal. An example would be; "Empty trash if receptacles are more than 50% full or if food waste is present."

HVAC, Electrical and Plumbing

It is our understanding that the vendors providing these types of services are contracted under basic Purchase Agreements with no specific scope and as such no reviews are provided. *Annuity type service contracts may be recommended for some types of services for these systems in the future as an output of Maintenance Strategy (see Section 4).

City Hall Support Services

Contractor- Wright Runstad

Contract Date- not shown

Contract Term- 12/12/2013- 12/31/2016 w/year by year extension options

SCOPE OF WORK

- Custodial Services defined in this scope were transferred to the Janitorial Services contract this year (2016). Consider if there should be some monetary compensation for the reduction in scope.
- The contract refers to the development and implementation of a Maintenance and Operations plan which is to be approved along with the contract documents. It was determined that this contractually defined document was never produced. In lieu of this document we reviewed the maintenance schedule and tasking reports created in WR's CMMS system. Our review of the submitted reports, that currently constitute the Maintenance Plan, indicate a lack of needed performance criteria (an SLA) which is also not included in the actual contract. We suggest that a Maintenance Plan be developed as per the terms of the contract with performance criteria added to the agreement that a very minimum would include;
  - Monthly performance reports demonstrating compliance with the terms of the contract
  - Manpower reports
  - Work Requests, opened and closed reports
  - Preventive Maintenances performed including material and labor reports
  - Supplies and Material costs reports
  - Energy and Utilities consumption reports
- Review of the work history report submitted for the period 1/1/2015- 8/1/2016 showed that most work orders were opened and closed with (0) actual hours recorded. Some work orders had hours recorded but most did not which raises questions as to the validity of the entire report.
- There does not appear to be a clause that addresses budget overruns and who is accountable.

Fire and Life Safety

Contractor- Guardian Security

Contract Date- 6/1/2015 – 5/31/2016

Contract Term- For term listed above with the option for (4) One year renewals

This contract does not seem to cover all C of R facilities. A confirmation is needed.

Contractor- Patriot Fire Protection

Vendor Contract Review

Not reviewed

Contractor- Fire Protection Inc. (FPI)

Contract Date- 4/30/2015 – 5/1/2016

Contract Term- For term listed above with the option for (4) One year renewals

This contract covers monitoring only. No issues were found with this agreement.

Generator Maintenance

Contractor- Generator Services Northwest

Contract Date- Unknown

Contract Term- Four one year extensions are available.

The scope includes three quarterly and one annual inspection and testing per year. Only the scope attachment was reviewed since the actual contract was not provided.

The only comment is that some of the facilities are absent from the scope list such as the PSB and City Hall. It is unknown if this is the intent.

Redmond Pool Operations and Maintenance

Contractor- Wave Aquatics

Not reviewed

4.0 Facility Maintenance Strategy

The Facility Maintenance Strategy

Introduction

The intent of this document is to establish standards and a maintenance plan for the City of Redmond's Plant and Equipment which includes all the mechanical, electrical and plumbing (MEP) devices and systems that support city functions in the buildings surveyed. This plan is the culmination of data collected from field surveys, staff interviews, system reviews and analysis.

This plan uses a prioritized, performance based approach to equipment and system maintenance that is based on its overall importance to the City's mission. This plan is designed to enhance the overall system reliability while simultaneously minimizing operational costs and optimizing the utilization of limited resources.

The primary deliverable for this plan is two Microsoft Excel workbooks which will ultimately be delivered in soft form on flash drive or CD. The expectation is that the data can then be exported into a form that could be imported into the Lucity software currently being populated.

The Facility Maintenance Strategy

Computerized Maintenance Management System

- This section establishes naming conventions for space locations and equipment.
- Establishes definitions for the prioritization of equipment
- Establishes a standard for when a piece of equipment will be tracked and inventoried.

SPACE LOCATION NAMING STANDARDS

This standard establishes rules for the naming of spaces for use in forms, the computerized maintenance management system (CMMS) and for use in internal city forms if needed. It is intend is to establish a standard that can be applied not only to new construction, but for existing facilities if a need is established. This standard is based on generally accepted conventions for commercial facilities and is an extension of current practice as is already established in the City Hall and the Public Safety building.

METHODOLOGY

All space numbering will have a building abbreviation, followed by a dash (-), followed by a single digit floor number or letter (see Floor Designations), then a two digit room number.

Example; **PS01-212**

Where the location is; the Public Safety Building, second floor, room 12

- There is a dash (-) between the facility and the floor and room number designation. There are no spaces on either side of the dash
- All letters are to be capitalized

BUILDING ABBREVATIONS

Facility	Abbreviation
City Hall	CH01
City Hall Garage	CHG01
Evergreen Medical	EVGM1
Fire Station 11	FS11
Fire Station 11 Medic	F11M1
Fire Station 12	FS12
Fire Station 13	FS13
Fire Station 14	FS14
Fire Station 16	FS16
Fire Station 16 Shop	FS16S
Fire Station 17	FS17
Fire Station 18	FS18
Maintenance Operations Center- Public Works Operations- BLDG 1	MOC01
Maintenance Operations Center- Storage - Building 2	MOC02
Maintenance Operations Center- Streets - Building 3	MOC03

Maintenance Operations Center- Storage - Building 4	MOC04
Maintenance Operations Center- Warehouse- Building 5	MOC05
Maintenance Operations Center- Storage - Building 6	MOC06
Maintenance Operations Center- Parking - Building 7	MOC07
Maintenance Operations Center- Park Operations –Building 8	MOC08
Maintenance Operations Center- Storage - Building 9	MOC09
Maintenance Operations Center- Fuel Island - Building 10	MOC10
Maintenance Operations Center- Decant - Building 11	MOC11
Maintenance Operations Center- Storage - Building 12	MOC12
Maintenance Operations Center- Trinity - Building 13	MOC13
Municipal Campus Garage	MCG
Community Center - Old Redmond School House	CC01
Public Safety Building	PS01
Redmond Pool	AQ01
Senior Center	SC01
Teen Center – Old Fire House	TC01
Sammamish River Business Park 1	SBP01
Sammamish River Business Park 2	SBP02

FLOOR DESGINATIONS

Floor	Designation
BASEMENT	B
GARAGE	G
ROOF	R
Penthouse	P
1ST FLOOR	1
2ND FLOOR	2
3RD FLOOR	3
4TH FLOOR	4
Use the floor number for any additional floors	

ROOM NUMBERS

Room numbers are to be assigned as designated on available design drawings or as currently assigned.

EQUIPMENT NAMING STANDARDS

This standard establishes rules for the naming of mechanical and electrical equipment for use in forms and the computerized maintenance management system (CMMS). It is also intended to establish a standard that can be incorporated into new construction design documents which will provide consistency in naming equipment for future construction projects which will aid in the transition from new construction to operations. This standard is based on generally accepted standards for commercial facilities.

Part of this delivery includes a comprehensive list of equipment for import into the CMMS system. This naming standard was applied to the equipment on the list but in some cases an existing equipment designation was used instead which was taken from an existing label which is contrary to this standard. This original designation was maintained to avoid future confusion in the field. If a project is undertaken in the future to re-label all of the equipment, we suggest that any existing equipment names that do not meet this standard be changed to conform. Any equipment inventoried that apparently did not have a label was given a name according to the rules listed below. It is also suggested that any new equipment installed use this standard and that construction documents for new projects be amended to include these rules.

Note that there are a number of pieces of equipment on the equipment list that are assigned the same name (for example AHU-01) but no two pieces of equipment carry the same name within the same facility which is standard. Some CMMS systems require a unique name for each piece of equipment (Lucity included) in which case a building designator (prefix) will need to be added to the equipment name to make it unique.

METHODOLOGY

All equipment naming will have the equipment type (see table below), followed by a dash (-), followed by a two digit number. Note that the numbers 1-9 are represented as 01, 02, 03, etc.

Example; **AHU-01**

Where the equipment type is an Air Handling Unit and the unit number is 1

- There is a dash (-) between the type and the number designation. There are no spaces on either side of the dash
- All letters are to be capitalized

EQUIPMENT TYPES

The following table includes all equipment types that are currently installed in Redmond facilities that fall under the responsibility of the Facilities Department.

EQUIPMENT TYPE	ABBREVIATION
Air Compressor	AIR
Air Conditioning Unit	ACU
Air Handling Unit	AHU
Air Monitoring	HGM
Automatic Transfer Switch	ATS
Backflow Preventer	RPBP
Boiler, Heating	BO
Building Automation System	BAS

Chiller	CH
Computer Room Cooling Unit	CRU OR AC
Condensing Unit	CU
Distribution Panel	DP
Domestic Water Storage Tank	DWST
Electric unit heater	UH
Emergency Generator	GEN
Expansion/Compression Tank	ET
Fan (supply, exhaust or transfer)	SF, EF, TF
Fan Coil Unit	FCU
Fire Alarm System (Fire Alarm Control Panel)	FACP
Fire Sprinkler System	FSS
Furnace	FU
Heat Pump	HP
Heater/Ventilator	HE
Induction/Radiant	RH
Lighting System	LCP
Make Up Air Unit	MAU or AHU
Other (Air Dryer)	AD
Other (Chemical Feed Station)	CF
Other (Dust Collector)	DU
Other (Elevator Motor)	EM
Other (refrigeration unit)	REF
Other (Pressure Washer)	PW
Pump, chilled water	CHWP
Pump, condenser water	CWP
Pump, circulating	CP
Pump, heating water	HWP
Pump, domestic water	DWP
Switchboard	SWB
Transformer	TR
Unit Heater	UH
Uninterruptible Power Supply	UPS
Variable Frequency Drive	VFD

Water Heater (automatic)	AWH
Water Purification (Filter)	WF

EQUIPMENT PRIORITIZATION

All equipment is classified according to its importance to the overall mission of the City as defined below. The classification or prioritization of equipment provides a means for the FAC to efficiently allocate limited resources to maintain and manage operational risk for the systems and equipment that the FAC manages.

DEFINITIONS

Priority level 1 (PL1) - Life safety
Equipment or systems in this category provide a level of Life Safety protection to human inhabitants. Any issue that compromises the operational integrity of these devices will also compromise the safety of the buildings inhabitants and as result must be corrected immediately.

Examples: Fire Alarm, Fire Sprinklers, Security systems.

1. This equipment must be maintained in perfect working order at all times. If these devices are not capable of providing their designed function, then other actions must be taken to maintain life safety protections.
2. Any issue that compromises their core function must be corrected as soon as possible.
3. Scheduled maintenance of these devices cannot be deferred.
4. Complete records must be kept on all maintenances

Priority level 2 (pl2) – mission critical
Equipment or systems in this category provide a mission critical function to the City. Any issue that compromises the operational integrity of these devices may compromise the City's ability to provide critical services to its constituents.

Examples: Emergency generators, Automatic Transfer Switches, Computer Room Cooling Units.

1. This equipment must be maintained in perfect working order at all times. If these devices are not capable of providing their designed function, then other actions must be taken to maintain mission critical functions.
2. Any issue that compromises their core function must be corrected as soon as possible.
3. Scheduled maintenance of these devices cannot be deferred.

priority level 3 (pl3) - important
Equipment or systems in this category provides a highly important but do not serve a critical function to the City. Any issue that compromises the operational integrity of these devices may temporarily compromise the City's ability to provide core services to its constituents or may cause a temporary work stoppage to employees until the system or device can be repaired. Equipment in this category generally provides support for areas that support public functions.

Examples: Heating units in winter, cooling units in summer and some ventilation systems.

1. The core function of this equipment must be maintained at all times although secondary functions may temporarily be compromised until resources can be allocated to correct any issues. If these devices are not capable of providing their designed function, then other actions must be taken to maintain function.

2. Any issue that compromises their core function must be corrected as soon as possible.
3. Scheduled maintenance of these devices can be deferred on the approval of the Facilities Supervisor.

priority level 4 (pl4) – normal

Equipment or systems in this category support lower risk functions to the City. Any issue that compromises the operational integrity of these devices will not likely compromise the City's ability to provide core services to its constituents or cause a work stoppage to employees. Devices in this category generally don't support public facing functions.

Examples: HVAC equipment supporting lightly occupied spaces, space heaters in shop spaces, etc.

1. The core function of this equipment should be maintained at all times although secondary functions may temporarily be compromised until resources can be allocated to correct any issues. If these devices are not capable of providing their designed function, then other actions may be need to be taken depending on the circumstances.
2. Any issue that compromises their core function should be corrected when resources are available.
3. Scheduled maintenance of these devices can be deferred on the approval of the Facilities Supervisor.

The Facility Maintenance Strategy

EQUIPMENT TRACKING AND INVENTORY

This section defines the criteria for when equipment, systems or devices that are to be tracked, inventoried and maintained by the Facilities Department.

DEFINITION

The tasking and scheduling of maintenance for all equipment is managed by the Computerized Maintenance Management System or CMMS. In general, any autonomous piece of mechanical, electrical or plumbing (MEP) device that needs periodic maintenance, has finite lifespan and managed by the Facilities Department should be included in the equipment inventory.

- Any equipment that is listed on the equipment schedule of the design drawings for a facility should be named, inventoried and maintained. This would include all the devices that are listed in the equipment types table in the previous section (see above) with some exceptions.
- If a device is a component of a larger parent device and will be concurrently maintained with the parent piece of equipment should not be inventoried separately. For example; a circulating pump that is used to circulate water inside an air handling unit would not be inventoried separately.
- If a device is a component of a larger parent device but would not normally maintained on the same interval as the parent device or has an unusually high value, should be inventoried separately. For example, a variable frequency drive (VFD) is a high value device which is normally maintained on different schedule, possibly by a different vendor than the primary device so it would make sense to name and inventory the VFD separately.
- The limitations of what is individually inventoried is usually the largest and smallest devices shown on the equipment schedule of the design drawings.
- The following are recommendations for the smallest devices that are normally considered for individually tracking. It is worth noting that the FAC may still be responsible for the maintenance of the "Not Inventoried" devices which can be managed through the CMMS work order process.

Inventoried	Not inventoried
Fire Smoke Dampers (if a list is available)	Fire Extinguishers
Backflow Preventers	Personal appliances
Expansion Tanks	Light fixtures
Point of use water heaters	Storage tanks open to atmosphere
Gas and electric unit heaters	Portable equipment
	Control sensors
	Meters

BAR CODING

Excluded from scope.

The Facility Maintenance Strategy

Facility And Equipment Maintenance Strategy

The Maintenance Plan is the primary deliverable for this section and is submitted as two accompanying Excel workbooks. What follows is an explanation for the data in those workbooks.

PM HOURS AND SCHEDULE

The attached workbooks incorporate the scope elements defined in the second bullet item of Task 9.

- The maintenance schedule is located on the PM Schedule tab. The corresponding tasking for each of the PM's on the schedule are shown in the month they are to be performed.
- The VENDOR designation denotes that a vendor is recommended to perform the PM.
- The estimated hours for each PM are shown on the PM Hours tab which includes estimated hours for vendor work as well.
- The "Totals" tab summarizes the total hours by month and year. There also a summary on this tab that projects the number of FTE's required to perform the work on the schedule based on the available hours in a year and an estimated utilization rate.
- The workbook has the capability of quantifying a change in tasking from the current assignment to an apprentice or plumber if needed.

MAINTENANCE TASKING

The attached workbook contains the tasking for all equipment types represented in the equipment list. The maintenance task names on each tab correspond to task names in the PM Schedule tab in the PM Hours and Schedule Workbook.

*Both workbooks are being submitted in soft form with the expectation that the key elements can be exported into a form that can be imported into the Lucity CMMS system which is currently being populated.

OPERATING MODEL GAPS

The current operating model was reviewed for staffing levels, available skillset and vendor contract scopes.

STAFFING LEVELS

- Staffing levels appear to be adequate to manage the workload associated with internal work requests, general repairs and reactive maintenance for plant and equipment.
- The development of the Maintenance Plan has identified a need for an additional FTE to adequately support Planned Maintenance (see "Totals" tab in the Maintenance Plan).
- A Staffing Assessment has been completed and the full report is now included in Section 3.

AVAILABLE SKILLSET

In the development of the Maintenance Plan we took the skillsets of the FAC team into consideration which is reflected in our recommendations for either self-performing a maintenance task or assigning a task to a vendor. It is expected that as the FAC operating model matures and skillsets of the team change, a reevaluation of task assignments will be made and adjusted.

VENDOR CONTRACT GAPS

Vendor contracts were reviewed and comments from that review are documented under the Vendor Contracts report delivered in Task 7.

The Facility Maintenance Strategy

Building Automation System (BAS)

Most of the facilities under the management of the FAC do not have central Building Automation Systems like those that are installed in the PSB or City Hall and as such not are not specifically addressed in this report other than to say that we recommend that the life safety and mission critical devices (priority 1 and 2) be considered for external monitoring and alarming due to their criticality to the overall mission of the city.

THE PUBLIC SAFETY BUILDING & SENIOR CENTER

There was a significant upgrade of the BAS for the PSB and Senior Center that occurred in 2006 that included new controllers for all the water source heat pumps in the facility as well as AHU-01 and the cooling tower. In 2009 an additional controller was added to accommodate two newly installed Liebert Computer room cooling units. This addition included a new annunciator panel that was added in the 911 call center. Although the hardware is not of the latest generation, we are encouraged to see that the system installed is BACNET compatible which should allow considerable latitude in any future upgrades and integration with other systems.

Observation	Recommendation
The graphical user interface (GUI) is currently limited to a web based interface which significantly limits usability.	Suggest obtaining the actual program software and install it on a dedicated laptop. This will allow access to set up features not currently available from the web access version alone. This will also allow local connection to the system from any controller port.
The system is limited in its capability to monitor mission critical devices.	Suggest extending monitoring and alarming capability to all devices that are classified as Priority 1 or 2 on the recently submitted equipment list.
The system is either not capable or not set up to send alarm notifications by text message to any external device.	With the new after-hours response protocol currently in development, it is suggested that alarms from the BAS be annunciated via text to a designated device or devices.
Currently no critical power systems are being monitored which is a vulnerability to the operational integrity of mission critical systems.	Suggest adding priority 1 and 2 electrical devices to the systems monitoring and alarming capability. This would include devices at all C of R facilities even those currently without a BAS.
The system is either not set up or is not capable of being accessed from an external location. Staff are currently required to login to an internal PC to access the system which makes efficient response to issues or emergencies impossible.	The ability to access the BAS by FAC personnel from outside the network needs to be made available.
The system that was extended into the Senior Center currently only monitors the water source heat pumps and no other devices	Suggest upgrading the BAS in the SC to include all Priority 1 and 2 equipment.
There is currently no capability of monitoring the systems in City Hall even though the BAS in that facility are relatively new.	Suggest performing some research on the City Hall BAS and explore the possibility of integrating it with the central BAS currently serving the PSB and SC.

The Facility Maintenance Strategy

FIRE STATION 17

Fire Station is a newer facility that provides mission critical backup functions for the City of Redmond including a 911 call center, back up communications network as well as some IS functions

Observation	Recommendation
Currently there is no external monitoring of mission critical systems within the facility which creates a significant vulnerability. This includes both mechanical and electrical systems.	Add external monitoring, alarming and remote access to mission critical systems.

CITY HALL

Although the functions performed within City Hall may not be classified as mission critical as the PSB, FS17 or the other critical services facilities, the level of importance is nonetheless is very high.

Observation	Recommendation
Currently there is no external monitoring of mission critical systems within the facility which creates a significant vulnerability. This includes both mechanical and electrical systems.	Add external monitoring, alarming and remote access to mission critical systems.

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment and lock out
- Document work done during inspection

Operational Overview

- Note current outside air temp and weather conditions
- Verify overall operation
- Check/Record supply air temperature
- Check/Record return air temperature
- Check/record system static pressure
- Note any abnormal vibration or noise

Indoor Coils

- Note cleanliness of coil
- Record deltaP across coil
- Record deltaT across coils
- Check for refrigerant leaks
- Check condensate pan and drain
- Check for water leaks

Controls

- Check all terminations in control panel
- Exercise controls
- Check VFD/IGV
- Check safeties and trip points
- Check ambient controls

Economizer Section

- Check for dirt accumulation
- Check for damper actuator and linkage operation
- Check and adjust minimum position
- Check operation of pressure relief dampers

Return Fan Section

- Inspect bearings for excessive wear and end play
- Adjust pulleys and belts
- Number and size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Supply Fan Section

- Inspect bearings for excessive wear and end play
- Adjust pulleys and belts
- Number and size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Exhaust Fan Section

- Inspect bearings for excessive wear and end play
- Adjust pulleys and belts
- Number and size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Filter Section

- Note filter condition
- Change filters per schedule
- Note condition of outside air filters/screens

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview

- Note current outside air temp and weather conditions
- Verify overall operation
- Note any abnormal vibration or noise

Indoor Coils

- Note cleanliness of coil
- Check for refrigerant leaks
- Check condensate pan and drain
- Check for water leaks

Controls

- Check all terminations in control panel

Economizer Section

- Check for dirt accumulation

Return Fan Section

- Inspect bearings for excessive wear and end play
- Number and size of belts
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Supply Fan Section

- Inspect bearings for excessive wear and end play
- Number and size of belts
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Exhaust Fan Section

- Inspect bearings for excessive wear and end play
- Number and size of belts
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Filter Section

- Note filter condition
- Change filters per schedule
- Note condition of outside air filters/screens

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Performance

- Check operating voltage
- Check and record motor amps
- Megger motor and record results
- Check system pressures
- Record 1st stage pressure
- Record 2nd stage pressure

Condition Monitoring

- Note abnormal vibration or noises

Safeties

- Check for loose or burned wiring
- Check safety trip points
- Calibrate safety devices
- Operate safety relief valves

Electrical

- Check electrical contacts for wear and pitting
- Check starter contactors
- Check and tighten electrical connections

Drive Motors

- Check for dirt and debris around end bell
- Check motor fan
- Check all hold down bolts
- Check mounting brackets

Drive Components

- Check coupling guard for security
- Check alignment
- Check coupling wear

Compressor

- Check hold down bolts
- Check unloader operation
- Check for leaks
- Check oil differential pressure
- Record discharge temperature

Air System

- Remove and replace intake air filter
- Inspect intake and discharge valves
- Drain and remove moisture from air system
- Inspect aftercooler
- Inspect intercooler
- Inspect moisture trap and drain

Lubrication

- Lubricate motor bearings
- Lubricate solid coupling
- Remove and replace oil filter

General Maintenance

- Check gate valve packing
- Check gate valves for leaks
- Check for corrosion

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Performance

- Check system pressures
- Record 1st stage pressure
- Record 2nd stage pressure

Condition Monitoring

- Note abnormal vibration or noises

Safeties

- Check for loose or burnt wiring
- Check safety trip points
- Operate safety relief valves

Electrical

- Check electrical contacts for wear and pitting
- Check starter contactors
- Check and tighten electrical connections

Drive Motors

- Check for dirt and debris around end bell
- Check motor fan
- Check all hold down bolts
- Check mounting brackets

Drive Components

- Check coupling guard security
- Check alignment
- Check coupling wear

Compressor

- Check hold down bolts
- Check unloader operation
- Check for leaks
- Check oil differential pressure

Air System

- Change intake air filter
- Drain and remove moisture from air system
- Check safety relief valve
- Inspect aftercooler
- Inspect intercooler
- Inspect moisture trap and drain

Lubrication

- Lubricate motor bearings
- Lubricate solid coupling

General Maintenance

- Check gate valve packing
- Check gate valves for leaks
- Check for corrosion

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview

- Verify overall boiler operation
- Verify operation of water level devices
- Record gas supply pressure
- Record boiler pressure
- Record boiler temperature
- Record Supply Water Temperature
- Record Return Water Temperature
- Inspect combustion air intakes
- Inspect boiler stack/s
- Visually inspect PRV for leakage
- Inspect sacrificial anode
- Perform blowdown
- Perform combustion analysis

Electrical

- Record combustion blower operating voltage
- Record combustion blower operating amperage
- Inspect contactors
- Inspect fuses and fuse blocks
- Inspect wiring
- Tighten connections

Plumbing

- Visually inspect for water leaks
- Visually inspect valves
- Flush condensate drain line and trap
- Confirm condensate neutralizer is active

Safties/Controls

Verify boiler operating control operation
Verify low water cut off operation
Verify high gas pressure safety opertaion
Verify low gas pressure safety opertion
Verify high temperature safety operation
Verify high pressure safety operation
Verify water flow switch operation
Verify pressure relief operation

Burner Assembly/Heat Exchanger

Clean burner assembly
Clean ignitor/flame sensor assembly
Record flame signal
Replace combustion air filter
Inspect heat exchanger for corroision and soot
Inspect refractory

Gas

- Check for gas leaks
- Verify flame quality and orifices
- Verify ignition operation
- Confirm fuel shutoff operation
- Verify gas regulator operation
- Record blower static pressure

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview

- Verify overall boiler operation
- Verify operation of water level devices
- Record boiler temperature
- Record Supply Water Temperature
- Record Return Water Temperature
- Inspect combustion air intakes
- Inspect boiler stack/s
- Visually inspect PRV for leakage
- Perform blowdown

Electrical

- Inspect fuses and fuse blocks
- Inspect wiring
- Tighten connections

Plumbing

- Visually inspect for water leaks
- Visually inspect valves
- Flush condensate drain line and trap

Burner Assembly/Heat Exchanger

Clean burner assembly

Clean ignitor/flame sensor assembly

Gas

- Check for gas leaks
- Verify ignition operation

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Performance

- Record starts
- Record run hours

General

- Leak check unit
- Pull oil sample during last seasaonal operation
- Inspect condenser tubes
- Change oil filter as per contract
- Change refrigerant filter dryer as per contract
- Inspect refrigerant float system
- Check relief valves and piping
- Check for excessive vibration
- Check drive compnents (external drives)
- Check all hold down bolts
- Review customer log

Electrical

- Continuity and megger test oil pump motor
- Continuity and megger test oil compressor motor
- Inspect motor terminal connections
- Inspect starter connections
- Inspect starter contacts
- Check all electrical terminations
- Inspect wiring for burns or discoloration
- Inspect starter cabinet for debris

Controls

- Check control panel diagnostics and reset
- Check water flow switch
- Check vane linkage, joints, shafts, chains
- Lube vane linkage, joints, shafts, chains
- Check refrig. temp sensors
- Check water temp sensors
- Check and verify all pressure, temp and control safeties

Optional Tasks

- Eddy current cond tubes
- Eddy current evap tubes
- Change oil
- Replace liquid line dryer
- Calibrate system gauges or sensors
- Open and inspect evaporator tubes
- Check internal interlocks
- Open, inspect, and gap motor gears
- Check refrig. temp sensors
- Check water temp sensors
- Check and verify all pressure, temp and control safeties
- Brush cond. tubes
- Start chiller and check operations
- Document chiller performance
- Make repairs to machine isolation
- Paint mechanical room floor
- Touch up paint to chiller
- Refrigerant monitor test
- Refrigerant monitor calibration

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Inspection

- Verify operation
- Document performance & deficiencies

Performance

- Record run time and start counts
- Check and record evaporator pressure
- Check and record evaporator water temps.
- Check and record chilled water temps.
- Check refrigerant charge
- Check and record superheat/subcooling
- Check and record condenser pressure
- Check and record condenser temperatures
- Check dry eye and record color

Condition Monitoring

- Check for improper vibration

Safeties

- Check pressure switches for leaks
- Check pressure relief valves

Electrical

- Check for loose or burnt wiring
- Check all contacts for wear or pitting
- Check starter contacts
- Check all electrical connections
- Check amperages and voltages

Controls

- Check all terminations in control panels
- Exercise controls where possible
- Check cabinets for debris

Drive Components

- Check sheaves for wear and alignment
- Check long coupling alignment
- Lube coupling as needed
- Check coupling for looseness or wear
- Check drive belt for wear

Condenser and Fans

- Check for vibration
- Check fan blades for cracks
- Check fan clearance
- Check mounting bolts
- Check coils for dirt build up
- Inspect coils for leaks
- Lubricate fan motor as required
- Check for proper fan rotation
- Check bearing, collar, sheave, and pulley
- Check coil flow
- Check for cleanliness
- Record pressures/temperatures

Evaporator

- Check for leaks
- Check expansion valve
- Record pressures/temperatures

Compressor

- Check and record oil pressure
- Check and record oil level
- Check for leaks
- Check starter/contactor for wear and pitting
- Check amperage for wear and pitting
- Check crankcase heater operation
- Inspect siteglass for leaks

Lubrication

- Lube motor bearings as required
- Lube solid coupling

Drive Motors

- Check all hold down bolts
- Check end bells for dirt or debris
- Check motor fan
- Exercise controls
- Check cabinets for debris

Housekeeping

- Wipe off excess lubricants
- Clean up work area

Optional Tasks

- Calibrate system pressure gauges
- Calibrate system electrical gauges
- Clean coils
- Open and inspect evap. tubes
- Eddy current tubes
- Check internal interlocks

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Inspection

- Verify operation
- Document performance & deficiencies

Performance

- Record runtime and start counts
- Check and record oil temperature
- Check and record oil pressure
- Check and record evaporator pressure
- Check and record evaporator water temps.
- Check and record condenser pressures
- Check and record condenser temperatures
- Check dry eye and record color
- Check and record chilled water temps.
- Check refrigerant charge
- Check and record superheat/subcooling

Condition Monitoring

- Check for impropert vibration

Safeties

- Check and test all safety controls
- Check pressure switches for leaks
- Check pressure relief valves

Electrical

- Check for loose or burnt wiring
- Check all contacts for wear or pitting
- Check starter contacts
- Check and torque all electrical connections
- Check and calibrate over loads
- Record overload trip amps and trip times
- Check amperages

Controls

Drive Components

- Check sheaves for wear and alignment
- Lube coupling as needed
- Check long coupling alignment
- Check coupling for looseness or wear
- Check drive belts for wear

Condenser and Fans

- Check for vibration
- Check fan blades for cracks
- Check fan clearance
- Check mounting bolts
- Check coils for dirt build up
- Inspect coils for leaks
- Lubricate fan motor as required
- Check for proper fan rotation
- Check bearing, collar, sheave, and pulley
- Check air coil flow and cleanliness
- Check and record each fan motor volts and amps
- Record pressure/temperatures

Evaporator

- Check liquid line filter/dryer
- Check for leaks
- Check expansion valve
- Check cleanliness
- Record pressure/temperatures

Compressor

- Check and record oil pressure
- Check and record oil level
- Change oil filter
- Inspect oil filter
- Clean oil return line strainer
- Check for leaks
- Check starter/contactor for wear or pitting
- Check and record volts/amps
- Check crankcase heater operation
- Inspect siteglass for leaks
- Megger compressor motor and record

- Check all termination in control panels
- Exercise all controls
- Check cabinets for debris

Drive Motors

- Check all hold down bolts
- Check end bells for dirt or debris
- Check motor cooling fan

Lubrication

- Take oil sample for analysis
- Lube motor bearings
- Check and record oil pump volts/amps
- Megger oil pumps and record

Housekeeping

- Wipe off excess lubricants
- Clean up work area

Optional Tasks

- Calibrate system pressure gauges
- Calibrate system electrical gauges
- Clean coils
- Check internal interlocks
- Open and inspect evaporator tubes
- Change oil based on analysis
- Open and inspect condenser tubes
- Brush condenser tubes

Site Visit Baseline

- Check-in with site contact person
- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection
- Check out with contact person

Operational Inspection

- Verify operation

Performance

- Check and record water level psid
- Check and log all water temps in/out
- Check and log refrigerant temps
- Check and log all pressure hi/low
- Check and log amperages
- Check and log voltages
- Check and log refrigerant levels
- Check and log oil levels
- Check purge sight glass level
- Check unit performance
- Record starts
- Record run hours
- Complete performance ticket
- Check oil sump heater operation
- Log oil sump temperature
- Check oil cooling system
- Check refrigerant charge by approach temps

General

- Pull oil sample during last seasonal operation
- Check for excessive vibration
- Check lubrication system
- Review customer log

Controls

- Check oil pump start delay
- Check sequence of start up
- Check vane linkage, joints, shafts, chains
- Check vane loperation
- Verify control operation
- Check oil pump starter operation
- Check chiller starter operation

Electrical

- Measure and record line voltage
- Measure and record oil pump voltage
- Measure and record compressor voltage
- Measure and record oil pump amperage
- Measure and record compressor amperage
- Inspect motor terminal connections visually
- Inspect starter connections visually
- Inspect wiring for burns or discoloration
- Inspect starter cabinet for debris

Cooling Tower Open Loop Evaporative
Annual Inspection
Preventive Maintenance Task List ©

Site Visit Baseline

- Check-in with site contact person
- Check for safe equipment access
- Isolate equipment and lock-out
- Document work done during inspection
- Check out with contact person

Operational Overview

- Note current outside air temp and weather conditions
- Verify overall operation
- Note any abnormal vibration or noise

Controls

- Test and cycle controls through normal operation
- Check temperature controller's sensor calibration
- Check starter coil and connections
- Check each fan's operating voltage and amps
- Check electrical contacts

Main Fan Section

- Check belts and belt alignment
- Check fan shaft end play
- Check bearing temperature
- Check drive system and lubricate if necessary
- Inspect fan blade for cracks, imbalance and rotation
- Verify proper operation of fans
- Check fan discharge damper and controls
- Check tower outlet discharge damper and controls

Upper Fan Outlet Section

- Check eliminators
- Check spray bar and nozzles for proper operation

Lower Sump Section

- Check fill/media
- Check float valve operation
- Check make-up water valve & control operation
- Check sump heater operation
- Check spray pump for proper operation
- Drain sump and strainers, clean and refill

Motors

- Check motor mounting fasteners
- Check bearings for wear and end play
- Check motor mounting bracket

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment and lock out
- Document work done during inspection

Operational Inspection

- Verify operation of unit
- Note any abnormal vibration or noise

Performance

- Check and record motor amps
- Check fan speed

Safeties

- Check for loose or burnt wiring
- Check all trip points

Electrical

- Check electrical contacts for wear and pitting
- Check and tighten electrical connections
- Check and calibrate overloads

Controls

- Check all terminations in control panels
- Exercise controls

Drive Motor

- Check for dirt and debris around end bell
- Check motor cooling fan
- Check motor mounting fasteners
- Check bearings for wear and end play

Lubrication

- Lubricate motor and fan bearings (if applicable)

General Maintenance

- Check for corrosion

Fan

- Check for correct fan rotation during wind down
- Check fan for obstructions or debris
- Check fan blades for cracks
- Check fan blades for dirt build-up
- Check fan to housing clearances
- Check and tighten bearing collar set screws
- Check rain guard

Housekeeping

- Wipe off any excess lubricants
- Cleanup work area

Drive Components

- Check sheaves for wear
- Check sheave set screws
- Check drive belts for wear and cracking, if applicable
- Check sheave alignment
- Check belt guard alignment
- Check bearings for wear and end play

Expansion Tank
Operating Inspection
Preventive Maintenance Task List ©

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview

- Check and record precharge pressure
- Check and record system pressure prior to expansion tank
- Check and record system pressure after expansion tank
- Record fluid temperature

Air Separator

- Check air separator for leakage
- Check separator drain valve
- Check air eliminator for proper operation

Mechanical

- Check isolation valve for leaks
- Check isolation valve for proper operation
- Check strainer for debris

Optional Tasks

- Release air, drain expansion tank, remove flange and dip tube and check for interior corrosion
- Recharge tank pressure

*** Note:** Do not remove drain plug unless air pressure in tank has been bled to 0 psig
Do not remove blind flange or system connection until tank has been bled to 0 psig

Site Visit Baseline

- Check-in with site contact person
- Check for safe equipment access
- Isolate equipment and lock out
- Document work done during inspection
- Check out with site contact

Operational Overview

- Note current outside air temp and weather conditions
- Verify overall operation
- Check heating operation
- Note any abnormal vibration or noise

Controls

- Check all terminations in control panel

Supply Fan Section

- Inspect bearings for excessive wear and end play
- Number and size of belts
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Heating Section (Electric)

- Inspect controls and sequencer operations

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview

- Verify overall operation
- Check heating/cooling operation
- Note any abnormal vibration or noise

Fan Section

- Inspect bearings for excessive wear & end play
- Adjust pulleys & belts
- Number & size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade
- Check for proper fan rotation
- Verify proper operation of fans
- Lubricate fan and motor
- Check electrical contacts
- Check starter/contactor
- Tighten electrical connections
- Check condensate pan and drain

Indoor Coils

- Note cleanliness of coil
- Record deltaP across coil
- Record deltaT across coils
- Check for refrigerant leaks
- Check condensate pan and drain

Filter Section

- Note filter condition
- Change filters per schedule

Safeties

- Check for loose or burnt wiring
- Check trip all trip points

Housekeeping

- Wipe off any excess lubricates
- Cleanup work area

Controls

- Check all terminations in control panels
- Exercise controls

General Maintenance

- Check for corrosion

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview

- Verify overall operation
- Check heating/cooling operation
- Note any abnormal vibration or noise

Fan Section

- Verify proper operation of fans
- Lubricate fan and motor
- Check condensate pan and drain

Indoor Coils

- Note cleanliness of coil
- Check for refrigerant leaks
- Check condensate pan and drain

Filter Section

- Note filter condition
- Change filters per schedule

Safeties

- Check for loose or burnt wiring
- Check trip all trip points

Housekeeping

- Wipe off any excess lubricates
- Cleanup work area

General Maintenance

- Check for corrosion

Site Visit Baseline

- Check-in with site contact person
- Check for safe equipment access
- Isolate equipment and lock out
- Document work done during inspection
- Check out with site contact

Operational Overview

- Note current outside air temp and weather conditions
- Verify overall operation
- Check heating operation
- Note any abnormal vibration or noise
- Check for debris

Controls

- Check all terminations in control panel

Supply Fan Section

- Inspect bearings for excessive wear and end play
- Number and size of belts
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Safeties

- Check for loose or burnt wiring
- Check all trip points

Heating Section (Gas)

- Inspect heat exchanger
- Inspect burner section
- Record gas pressures
- Check pilot and flame quality
- Verify combustion blower operation
- Record combustion blower motor amps
- Check power ventor motor
- Check Delta T across heat exchanger
- Check ignition system
- Check flame quality
- Check O2 and CO2 flue gas

General Maintenance

- Check for corrosion

Housekeeping

- Wipe off any excess lubricates
- Cleanup work area

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview

- Verify overall operation
- Check heating/cooling operation
- Check/Record supply air temperature
- Check/Record return air temperature
- Note any abnormal vibration or noise

Compressors

- Record suction pressure
- Record suction temperature
- Record discharge pressure
- Record discharge temperature
- Record operating voltage
- Record operating amps
- Check crankcase heater
- Check unloaders
- Check crankcase oil level

Refrigeration System

- Record superheat
- Record sub cooling
- Verify reversing valve operation
- Verify metering device operation
- Check for refrigerant/oil leaks
- Check sightglass

Controls

- Check all terminations in control panel
- Exercise controls
- Check safeties and trip points
- Inspect defrost controls

Economizer Section

- Check for dirt accumulation
- Check damper actuator and linkage operation
- Check and adjust minimum position
- Check operation of pressure relief dampers

Supply Fan Section

- Inspect bearings for excessive wear & end play, tighten set screws
- Adjust pulleys & belts
- Number & size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade and tighten set screws
- Verify proper operation of fans
- Lubricate fan and motor

Condenser Fan Section

- Inspect bearings for excessive wear & end play tighten set screws
- Record operating volts
- Record operating amps
- Inspect fan blade and tighten set screws
- Verify proper operation of fans
- Lubricate fan and motor

Outdoor Coils

- Note cleanliness of coil
- Record deltaP across coil
- Record deltaT across coil
- Check coil pan and drain (if applicable)

Indoor Coils

- Note cleanliness of coil
- Record deltaP across coil
- Record deltaT across coils
- Check condensate pan and drain

Filter Section

- Note filter condition
- Change filters per schedule
- Note condition of outside air filters/screens

Heating Section (Electric)

- Inspect controls and sequencer operations
- Record voltage
- Record amperage
- Check overload and safeties

Site Visit Baseline
- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview
- Verify overall operation
- Check heating/cooling operation
- Check/Record supply air temperature
- Check/Record return air temperature
- Note any abnormal vibration or noise

Compressors
- Note cleanliness/condition
- Check for refrigerant/oil leaks
- Check crankcase oil level
- Confirm compressor operation

Refrigeration System
- Check for refrigerant/oil leaks
- Check sightglass

Controls
- Confirm main controller operation
- Inspect wiring cabinet for wiring defects

Economizer Section
- Check for dirt accumulation
- Check operation of pressure relief dampers

Indoor Fan Section
- Inspect Bearings for excessive wear & end play
- Inspect fan blade
- Verify proper operation of fans

Outdoor Fan Section
- Inspect bearings for excessive wear & end play
- Inspect fan blade
- Verify proper operation of fans

Outdoor Coils
- Note cleanliness of coil
- Check for refrigerant leaks
- Check coil pan and drain (if applicable)

Indoor Coils
- Note cleanliness of coil
- Check for refrigerant leaks
- Check condensate pan and drain

Filter Section
- Note filter condition
- Change filters per schedule
- Note condition of outside air filters/screens

Heating Section (Electric)
- Visually inspect controls, sequencers & wiring

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Inspection

- Verify operation
- Note any abnormal vibration or noise

Performance

- Record pump discharge pressure
- Record pump suction pressure

Safeties

- Check for loose or burned wiring
- Check all trip points

Electrical

- Check electrical contacts for wear & pitting
- Check starter contactors
- Check and tighten electrical connections

Controls

- Check all terminations in control panels
- Exercise controls

Lubrication

- Lubricate motor bearings
- Lubricate solid coupling
- Check pump oil level

General Maintenance

- Check isolation valve packing
- Check isolation valves for leaks

Drive Motors

- Check for dirt & debris around end bell
- Check motor fan
- Check all hold down bolts
- Megger, motor and record results
- Record motor amperages
- Record motor voltages

Drive Components

- Check coupling guard security
- Check coupling alignment

Pump

- Check packing or mechanical seals for leaks
- Repack if required
- Inspect gaskets for leaks & deterioration
- Check all hold down bolts
- Check impeller clearance

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Inspection

- Verify operation
- Note any abnormal vibration or noise

Performance

- Record pump discharge pressure
- Record pump suction pressure

Safeties

- Check for loose or burned wiring
- Check trip all trip points

Controls

- Check all terminations in control panels
- Exercise controls

Lubrication

- Lubricate motor bearings
- Lubricate solid coupling
- Check pump oil level

General Maintenance

- Check isolation valve packing
- Check isolation valves for leaks

Drive Components

- Check coupling guard security
- Check coupling alignment

Pump

- Check packing or mechanical seals for leaks
- Repack if required
- Inspect gaskets for leaks & deterioration
- Check all hold down bolts
- Check impeller clearance

Site Visit Baseline

- Check-in with site contact person
- Check for safe equipment access
- Isolate equipment and lock out
- Document work done during inspection
- Check out with site contact

Operational Overview

- Note current outside air temp and weather conditions
- Verify overall operation
- Check heating operation
- Note any abnormal vibration or noise

Controls

- Check all terminations in control panel
- Exercise controls
- Check safeties and trip points

Supply Fan Section

- Inspect bearings for excessive wear and end play
- Record operating volts
- Record operating amps
- Lubricate fan and motor

Heating Section (Gas)

- Check for gas leaks
- Check pressure
- Check ignition system
- Check blower
- Check heat exchanger
- Check air intake screen

Safeties

- Check for loose or burnt wiring
- Check all trip points

General Maintenance

- Check for corrosion

Housekeeping

- Wipe off any excess lubricates
- Cleanup work area

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview

- Note current outside air temp and weather conditions
- Verify overall operation
- Check heating/cooling operation
- Check/Record supply air temperature
- Check/Record return air temperature
- Check/Record system static pressure
- Note any abnormal vibration or noise

Compressors

- Note cleanliness/condition
- Record suction pressure
- Record suction temperature
- Record discharge pressure
- Record discharge temperature
- Record operating voltage
- Record operating amps
- Check crankcase heater
- Check unloaders
- Check for refrigerant/oil leaks
- Check crankcase oil level
- Meg ohm readings compressor windings
- Check crankcase heater volts and amps

Refrigeration System

- Record superheat
- Record sub cooling
- Verify reversing valve operation
- Verify metering device operation
- Check cap tube condition
- Check for refrigerant/oil leaks
- Verify hot gas bypass operation
- Check sightglass

Return Fan Section

Condenser Fan Section

- Inspect bearings for excessive wear & end play, tighten set screws
- Adjust pulleys & belts
- Number & size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade and tighten set screws
- Verify proper operation of fans
- Lubricate fan and motor
- Inspect mounting brackets

Exhaust Fan Section

- Inspect bearings for excessive wear & end play, tighten set screws
- Adjust pulleys & belts
- Number & size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Outdoor Coils

- Note cleanliness of coil
- Record deltaP across coil
- Record deltaT across coil
- Check for refrigerant leaks
- Check coil pan and drain (if applicable)

Indoor Coils

- Note cleanliness of coil
- Record deltaP across coil
- Record deltaT across coils
- Check for refrigerant leaks
- Check condensate pan and drain

Filter Section

- Note filter condition
- Change filters per schedule
- Note condition of outside air filters/screens

- Inspect bearings for excessive wear & end play, tighten set screws
- Adjust pulleys & belts
- Number & size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade and tighten set screws
- Verify proper operation of fans
- Lubricate fan and motor

Controls

- Check and tighten all terminations in control panel
- Exercise controls
- Check VFD
- Check safeties and trip points
- Check ambient controls

Economizer Section

- Check for dirt accumulation
- Check damper actuator and linkage operation
- Check and adjust minimum position
- Check operation of pressure relief dampers
- Confirm enthalpy switch operation

Supply Fan Section

- Inspect bearings for excessive wear & end play, tighten set screws
- Adjust pulleys & belts
- Number & size of belts
- Record operating volts
- Record operating amps
- Inspect fan blade
- Verify proper operation of fans
- Lubricate fan and motor

Heating Section (Gas)

- Inspect heat exchanger
- Inspect burner section
- Record gas pressures
- Check pilot and flame quality
- Verify combustion blower operation
- Record combustion blower motor amps
- Check Delta T across heat exchanger

Humidification

- Check canister
- Record amperage
- Check drain and fill valve
- Check condition of hoses
- Check heating element (electrical)
- Check electric probe (electrical)

RTU-MI
Minor Inspection
Preventive Maintenance Task List ©

Site Visit Baseline
- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Overview
- Note current outside air temp and weather conditions
- Verify overall operation
- Check heating/cooling operation
- Check/Record supply air temperature
- Check/Record return air temperature
- Note any abnormal vibration or noise

Compressors
- Note cleanliness/condition
- Check for refrigerant/oil leaks
- Check crankcase oil level
- Confirm compressor operation

Refrigeration System
- Check for refrigerant/oil leaks
- Check sightglass

Return Fan Section
- Inspect bearings for excessive wear & end play
- Inspect fan blade
- Verify proper operation of fans

Economizer Section
- Check for dirt accumulation
- Check operation of pressure relief dampers

Supply Fan Section
- Inspect bearings for excessive wear & end play
- Inspect fan blade
- Verify proper operation of fans

Condenser Fan Section
- Inspect bearings for excessive wear & end play
- Inspect fan blade
- Verify proper operation of fans

Exhaust Fan Section
- Inspect bearings for excessive wear & end play
- Inspect fan blade
- Verify proper operation of fans

Outdoor Coils
- Note cleanliness of coil
- Check for refrigerant leaks
- Check condensate pan and drain

Indoor Coils
- Note cleanliness of coil
- Check for refrigerant leaks
- Check condensate pan and drain

Filter Section
- Note filter condition
- Change filters per schedule
- Note condition of outside air filters/screens

Heating Section (Gas)
- Inspect burner section
- Check pilot and flame quality
- Verify combustion blower operation

Humidification
- Check canister
- Check drain and fill valve
- Check condition of hoses

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Inspection

- Verify operation of unit

Performance

- Drain several gallons from tank to remove sediment
- Check water temperature

Safeties

- Check for loose or burnt wiring
- Check safety trip points

Electrical

- Check electrical contacts for wear & pitting
- Check and tighten electrical connections
- Check upper & lower heating elements amperage draw

Thermostat

- Check operation with amp meter
- Verify correct temperature cycling

Pressure Relief Valve

- Check valve operation
- Check for leaks
- Check for corrosion

General Maintenance

- Check for water leaks
- Check for corrosion

Optional Tasks

- Check sacrificial anode
- Check pressure relief valve
- Check heating elements

Site Visit Baseline

- Check for safe equipment access
- Isolate equipment & lock out
- Document work done during inspection

Operational Inspection

- Verify operation of unit

Performance

- Drain several gallons from tank to remove sediment
- Check water temperature

Safeties

- Check for loose or burnt wiring
- Check safety trip points

Electrical

- Check electrical contacts for wear & pitting
- Check and tighten electrical connections
- Check upper & lower heating elements amperage draw

Thermostat

- Check operation with amp meter
- Verify correct temperature cycling

Pressure Relief Valve

- Check for leaks
- Check for corrosion

General Maintenance

- Check for water leaks
- Check for corrosion
- Check sacrificial anode
- Check pressure relief valve
- Check heating elements

Questions

Category	Question
Electrical Maintenance	Is there currently a maintenance schdule for dist panels and switchboards?
Back Up generators	What is the schedule for the maintenance of the backup generators?
Fire Alarm testing	How is FA testing scheduled?
Lighting system testing	Is there any regular schedule for lighting system testing?
Boilers	How are vendors used for boiler maitainence?
Back flow preventers	Who does backflow testing?

City of Redmond- Facility Management Strategy

Plant and Equipment Maintenance Plan- Estimated Maintenance Hours

					JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				
					JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	Total Hours
Facility	Tag Number	Description	Type	outsource	107.3	0.0	0.0	38.0	153.5	0.0	0.0	80.0	127.0	0.0	0.0	63.5	156.0	0.0	0.0	106.0	136.0	0.0	0.0	102.5	134.0	0.0	0.0	89.0	102.3	0.0	0.0	32.0	118.5	0.0	0.0	51.0	114.0	0.0	0.0	22.0	178.5	0.0	0.0	87.0	101.5	0.0	0.0	12.0	134.5	0.0	0.0	27.5	2273.5
City Hall	ACU-101	Air Conditioning Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	AHU-01	Air Handling Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	AHU-02	Air Handling Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	AHU-201	Air Handling Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	ATS-01	Automatic Transfer Switch	Elec	Yes									1.0																																						1.0
City Hall	ATS-02	Automatic Transfer Switch	Elec	Yes									1.0																																						1.0
City Hall	ATS-03	Automatic Transfer Switch	Elec	Yes									1.0																																						1.0
City Hall	AWH-01	Water Heater	Mech	No					0.5												0.5												0.5										0.5								2.0
City Hall	AWH-1A	Water Heater	Mech	No					0.5												0.5												0.5										0.5								2.0
City Hall	AWH-1B	Water Heater	Mech	No					0.5												0.5												0.5										0.5								2.0
City Hall	BO-01	Boiler, Heating	Mech	No					4.0												2.0												2.0										2.0								10.0
City Hall	BO-02	Boiler, Heating	Mech	No					4.0												2.0												2.0										2.0								10.0
City Hall	CF-01	Other	Mech	No					1.0												1.0												1.0										1.0								4.0
City Hall	CH-R01	Chiller	Mech	Yes					8.0												2.0												2.0										2.0								14.0
City Hall	CHWP-01	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	CHWP-02	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	CP-01	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	CP-01	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	CP-02	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	CP-03	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	CP-04	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	CT-01	Cooling Tower	Mech	No					8.0												2.0												2.0										2.0								14.0
City Hall	CU-101	Condensing Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	CU-102	Condensing Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	CU-103	Condensing Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	CU-201	Condensing Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	CU-202	Condensing Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	CU-301	Condensing Unit	Mech	No					2.0												1.0												1.0										1.0								5.0
City Hall	CWP-01	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	CWP-02	Pump	Mech	No					1.0												0.5												0.5										0.5								2.5
City Hall	DP-01	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-02	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-21DN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-21DS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-21PN (SEC1)	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-21PS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-21PS-SITE	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-21SN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-21X	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-22PN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-22PS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-22SN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-23PN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-23PS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-23SN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-24PN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-24PS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-2RE	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-41DN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-41E	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-41PN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-41PS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-41SN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-41X	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-42PN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-42PS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-43PN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-43PS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-44PN	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-44PS	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-4RE	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-Elevator P	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DP-SDSBR	Distribution Panel	Elec	Yes									0.5																																						0.5
City Hall	DWST-01	Domestic Water Storage Tank	Mech	No					0.5																								0.5																		1.0
City Hall	EF-01	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	EF-1	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	EF-FP	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	EF-R01	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	EF-R02	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	EF-R03	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	EF-R05	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	EF-R06	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	EM-01	Other	Mech	Yes									2.0																																						2.0
City Hall	EM-02	Other	Mech	Yes									2.0																																						2.0
City Hall	ET-01	Expansion/Compression Tank	Mech	No					0.5																								0.5																		1.0
City Hall	GEN-01	Emergency Generator	Elec	Yes									4.0											4.0												4.0														4.0	16.0
City Hall	HGM-01	Air Monitoring	Mech	No					0.5																																											0.5
City Hall	HP-301	Heat Pump	Mech	No					1.0												1.0												1.0								1.0								4.0
City Hall	HWP-01	Pump	Mech	No					1.0												0.5												0.5								0.5								2.5
City Hall	HWP-01	Pump	Mech	No					1.0												0.5												0.5								0.5								2.5
City Hall	HWP-02	Pump	Mech	No					1.0												0.5												0.5								0.5								2.5
City Hall	HWP-02	Pump	Mech	No					1.0												0.5												0.5								0.5								2.5
City Hall	LCP-01	Lighting System	Elec	Yes									1.0																																						1.0
City Hall	LCP-02	Lighting System	Elec	Yes									1.0																																						1.0
City Hall	LCP-03	Lighting System	Elec	Yes									1.0																																						1.0
City Hall	LCP-04	Lighting System	Elec	Yes									1.0																																						1.0
City Hall	LCP-05	Lighting System	Elec	Yes									1.0																																						1.0
City Hall	LCP-06	Lighting System	Elec	Yes									1.0																																						1.0
City Hall	LCP-07	Lighting System	Elec	Yes									1.0																																						1.0
City Hall	LCP-08	Lighting System	Elec	Yes									1.0																																						1.0
City Hall	PV-01	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	PV-02	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	RPBP-01	Backflow Preventer	Mech	No									1.0																																						1.0
City Hall	SF-01	Fan	Mech	No					1.0																								1.0																		2.0
City Hall	SWB-01	Switchboard	Elec	Yes									1.0																																						1.0
City Hall	SWB-DSBR	Switchboard	Elec	Yes									1.0																																						1.0
City Hall	SWB-MAIN	Switchboard	Elec	Yes									1.0																																						1.0
City Hall	TH-1	Other	Elec	Yes									1.0																																						1.0
City Hall	TR-01	Transformer	Elec	Yes									0.5																																						0.5
City Hall	TR-01	Transformer	Elec	Yes									0.5																																						0.5
City Hall	TR-2TC1	Transformer	Elec	Yes									0.5																																						0.5
City Hall	TR-T1N	Transformer	Elec	Yes									0.5																																						0.5
City Hall	UH-101	Unit Heater	Mech	No					0.5																								0.5																		1.0
City Hall	VFD-AHU-01-1	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-AHU-01-2	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-AHU-01-3	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-AHU-01-4	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-AHU-02-1	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-AHU-02-2	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-AHU-02-3	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-AHU-02-4	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-CHWP-01	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-CHWP-02	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-CWP-01	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-CWP-02	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-HWP-01	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	VFD-HWP-02	Variable Frequency Drive	Elec	Yes									0.5																							0.5														1.0
City Hall	WF-01	Other	Mech	No					1.5												1.5												1.5										2.0								6.5
City Hall	WF-01	Water PUrification	Mech	Yes									2.0											2.0												2.0														2.0	8.0
Decant	ATS-01	Automatic Transfer Switch	Elec	Yes									1.0																																						1.0
Decant	AWH-01	gas water heater	Mech	No					1.0												1.0												1.0										1.0								4.0
Decant	DP-DB	Distribution Panel	Elec	Yes									0.5																																						0.5
Decant	DP-DDP	Distribution Panel	Elec	Yes									0.5																																						0.5

					JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				
Facility	Tag Number	Description	Type	outsource	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	Total Hours
					107.3	0.0	0.0	38.0	153.5	0.0	0.0	80.0	127.0	0.0	0.0	63.5	156.0	0.0	0.0	106.0	136.0	0.0	0.0	102.5	134.0	0.0	0.0	89.0	102.3	0.0	0.0	32.0	118.5	0.0	0.0	51.0	114.0	0.0	0.0	22.0	178.5	0.0	0.0	87.0	101.5	0.0	0.0	12.0	134.5	0.0	0.0	27.5	2273.5
Decant	DP-DE	Distribution Panel	Elec	Yes								0.5																																							0.5
Decant	FSS-01	Fire Sprinkler System	mech	Yes																																													1.0				1.0
Decant	RPBP-01	backflow preventer	Mech	No								1.0																																								1.0
Decant	SH-01	Electric unit heater	Mech	No					0.5																								0.5																			1.0
Decant	SH-02	Electric unit heater	Mech	No					0.5																								0.5																			1.0
FS11	ATS-01	Automatic Transfer Switch	Elec	Yes													1.0																																			1.0
FS11	AWH-01	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
FS11	AWH-02	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
FS11	BAS-01	Building Automation System	Mech	Yes													2.0												2.0												2.0										2.0	8.0
FS11	CP-01	Pump	Mech	No									1.0												0.5												0.5												0.5				2.5
FS11	CP-02	Pump	Mech	No									1.0												0.5												0.5												0.5				2.5
FS11	DP-A1	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-A-1	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-A2	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-A-2	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-A3	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-A-3	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-B-1	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-B2	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-B-2	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-B-S1	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-M1	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-M-1	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-M2	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	DP-M-2	Distribution Panel	Elec	Yes													0.5																																			0.5
FS11	EF-01	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-010	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-011	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-012	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-013	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-02	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-03	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-04	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-05	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-06	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-07	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-08	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-09	Fan	Mech	No									1.0																								1.0															2.0
FS11	EF-1	Fan	Mech	No									1.0																								1.0															2.0
FS11	ET-01	Expansion/Compression Tank	Mech	No									0.5																								0.5															1.0
FS11	ET-02	Expansion/Compression Tank	Mech	No									0.5																								0.5															1.0
FS11	FACP-01	Fire Alarm System	mech	Yes													2.0																																			2.0
FS11	FACP-02	Fire Alarm System	mech	Yes													2.0																																			2.0
FS11	FACP-03	Fire Alarm System	mech	Yes													2.0																																			2.0
FS11	FEF-01	Fan	Mech	No									1.0																								1.0															2.0
FS11	FSS-01	Fire Sprinkler System	mech	Yes													8.0																																			8.0
FS11	GEN-01	Emergency Generator	Elec	Yes													4.0												4.0												4.0										4.0	16.0
FS11	RH-01	Induction/Radiant	Mech	No									1.5												1.0												1.0												1.0				4.5
FS11	RH-02	Induction/Radiant	Mech	No									1.5												1.0												1.0												1.0				4.5
FS11	RH-03	Induction/Radiant	Mech	No									1.5												1.0												1.0												1.0				4.5
FS11	RH-04	Induction/Radiant	Mech	No									1.5												1.0												1.0												1.0				4.5
FS11	RTU-01	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	RTU-02	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	RTU-03	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	RTU-04	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	RTU-05	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	RTU-06	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	RTU-07	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	RTU-08	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	RTU-09	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS11	SWB-01	Switchboard	Elec	Yes													1.0																																			1.0
FS11	WH-01	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
FS12	ATS-01	Automatic Transfer Switch	Elec	Yes													1.0																																			1.0
FS12	AWH-01	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
FS12	DP-A1	Distribution Panel	Elec	Yes													0.5																																			0.5
FS12	DP-A2	Distribution Panel	Elec	Yes													0.5																																			0.5
FS12	DP-EFCP	Distribution Panel	Elec	Yes													0.5																																			0.5
FS12	EF-01	Fan	Mech	No									1.0																								1.0															2.0
FS12	EF-02	Fan	Mech	No									1.0																								1.0															2.0
FS12	EF-03	Fan	Mech	No									1.0																								1.0															2.0
FS12	ET-01	Expansion/Compression Tank	Mech	No									0.5																								0.5															1.0
FS12	FACP-01	Fire Alarm System	mech	Yes													8.0																																			8.0
FS12	FEF-01	Fan	Mech	No									1.0																								1.0															2.0
FS12	FEF-02	Fan	Mech	No									1.0																								1.0															2.0
FS12	FEF-03	Fan	Mech	No									1.0																								1.0															2.0
FS12	FSS-01	Fire Sprinkler System	mech	Yes													8.0																																			8.0
FS12	FU-01	Furnace	Mech	No									1.0												1.0												1.0												1.0				4.0
FS12	GEN-01	Emergency Generator	Elec	Yes													4.0												4.0												4.0										4.0	16.0
FS12	RTU-UNIT-A	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS12	RTU-UNIT-B	Air Conditioning Unit	Mech	No									2.0												1.0												1.0												1.0				5.0
FS13	ACU-03	Air Conditioning Unit	Mech	No	1.0												2.0												1.0												1.0											5.0
FS13	ATS-01	Automatic Transfer Switch	Elec	Yes																1.0																																1.0
FS13	AWH-01	Water Heater	Mech	No	0.5												0.5												0.5												0.5											2.0
FS13	AWH-02	Water Heater	Mech	No	0.5												0.5												0.5												0.5											2.0
FS13	CU-01	Condensing Unit	Mech	No	1.0												2.0												1.0												1.0											5.0
FS13	CU-01	Condensing Unit	Mech	No	1.0												2.0												1.0												1.0											5.0
FS13	EF-01	Fan	Mech	No	0.5												0.5												0.5												0.5											2.5
FS13	EF-02	Fan	Mech	No	0.5												0.5												0.5												0.5											2.0
FS13	EF-03	Fan	Mech	No	0.5												0.5												0.5												0.5											2.0
FS13	EF-04	Fan	Mech	No	0.5												0.5												0.5												0.5											2.0
FS13	FACP-01	Fire Alarm System	mech	Yes																8.0																																8.0
FS13	FSS-01	Fire Sprinkler System	mech	Yes																8.0																																8.0
FS13	FU-01	Furnace	Mech	No	1.0												1.0												1.0												1.0											4.0
FS13	GEN-01	Emergency Generator	Elec	Yes				4.0												4.0											4.0											4.0										16.0
FS13	RTU-01	Air Conditioning Unit	Mech	No	1.0												2.0												1.0												1.0											5.0
FS13	RTU-02	Air Conditioning Unit	Mech	No	1.0												2.0												1.0												1.0											5.0
FS13	UH-01	Unit Heater	Mech	No													0.5																								0.5											1.0
FS13	UH-02	Unit Heater	Mech	No													0.5																								0.5											1.0
FS14	AIR-01	Air Compressor	Mech	No					1.0							2.0											1.0											1.0													5.0
FS14	ATS-01	Automatic Transfer Switch	Elec	Yes											1.0																																				1.0
FS14	AWH-01	Water Heater	Mech	No					0.5						0.5												0.5												0.5													2.0
FS14	DP-A	Distribution Panel	Elec	Yes											0.5																																				0.5
FS14	DP-B	Distribution Panel	Elec	Yes											0.5																																				0.5
FS14	DP-C	Distribution Panel	Elec	Yes											0.5																																				0.5
FS14	DP-E	Distribution Panel	Elec	Yes											0.5																																				0.5
FS14	DP-MAIN	Distribution Panel	Elec	Yes											0.5																																				0.5
FS14	EF-01	Fan	Mech	No												1.0																																			2.0
FS14	FACP-01	Fire Alarm System	mech	Yes											8.0																																				8.0
FS14	FEF-01	Fan	Mech	No												1.0																																			2.0
FS14	FSS-01	Fire Sprinkler System	mech	Yes											8.0																																				8.0
FS14	FU-01	Furnace	Mech	No					1.0							1.0											1.0											1.0													4.0
FS14	FU-02	Furnace	Mech	No					1.0							1.0											1.0											1.0													4.0
FS14	FU-03	Furnace	Mech	No					1.0							1.0											1.0											1.0													4.0
FS14	GEN-01	Emergency Generator	Elec	Yes				4.0												4.0											4.0											4.0										16.0
FS14	RH-01	Induction/Radiant	Mech	No					1.0							1.0											1.0											1.5													4.5
FS14	RH-02	Induction/Radiant	Mech	No					1.0							1.0											1.0											1.5													4.5
FS14	RH-03	Induction/Radiant	Mech	No					1.0							1.0											1.0											1.5													4.5
FS14	RTU-01	Air Conditioning Unit	Mech	No					1.0							2.0											1.0											1.0													5.0
FS14	RTU-02	Air Conditioning Unit	Mech	No					1.0							2.0											1.0											1.0													5.0
FS14	RTU-03	Air Conditioning Unit	Mech	No					1.0							2.0											1.0											1.0													5.0
FS14	RTU-04	Air Conditioning Unit	Mech	No					1.0							2.0											1.0											1.0													5.0
FS14	RTU-05	Air Conditioning Unit	Mech	No					1.0							2.0											1.0											1.0													5.0
FS14	UH-01	Unit Heater	Mech	No												0.5																								0.5											1.0
FS14	UH-01	Unit Heater	Mech	No												0.5																								0.5											1.0
FS16	ACU-01	Air Conditioning Unit	Mech	No									1.0												2.0												1.0													5.0
FS16	ACU-02	Air Conditioning Unit	Mech	No									1.0												2.0												1.0													5.0

					JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				
					JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	
Facility	Tag Number	Description	Type	outsource	107.3	0.0	0.0	38.0	153.5	0.0	0.0	80.0	127.0	0.0	0.0	63.5	156.0	0.0	0.0	106.0	136.0	0.0	0.0	102.5	134.0	0.0	0.0	89.0	102.3	0.0	0.0	32.0	118.5	0.0	0.0	51.0	114.0	0.0	0.0	22.0	178.5	0.0	0.0	87.0	101.5	0.0	0.0	12.0	134.5	0.0	0.0	27.5	Total Hours
FS16	ACU-03	Air Conditioning Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS16	ACU-04	Air Conditioning Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS16	AIR-01	Air Compressor	Mech	No									1.0												2.0												1.0												1.0				5.0
FS16	ATS-01	Automatic Transfer Switch	Elec	Yes																									1.0																								1.0
FS16	AWH-01	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
FS16	DP-A	Distribution Panel	Elec	Yes																									0.5																								0.5
FS16	DP-B	Distribution Panel	Elec	Yes																									0.5																								0.5
FS16	DP-C	Distribution Panel	Elec	Yes																									0.5																								0.5
FS16	EF-01	Fan	Mech	No																					1.0																								1.0				2.0
FS16	EF-02	Fan	Mech	No																					1.0																								1.0				2.0
FS16	EF-03	Fan	Mech	No																					1.0																								1.0				2.0
FS16	EF-04	Fan	Mech	No																					1.0																								1.0				2.0
FS16	EF-05	Fan	Mech	No																					1.0																								1.0				2.0
FS16	EF-06	Fan	Mech	No																					1.0																								1.0				2.0
FS16	EF-08	Fan	Mech	No																					1.0																								1.0				2.0
FS16	FACP-01	Fire Alarm System	mech	Yes																									8.0																								8.0
FS16	FSS-01	Fire Sprinkler System	mech	Yes																									8.0																								8.0
FS16	GEN-01	Emergency Generator	Elec	Yes												4.0													4.0										4.0												4.0	16.0
FS16	RH-01	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS16	RH-02	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS16	RH-03	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS16	UH-01	Unit Heater	Mech	No																					0.5																								0.5				1.0
FS16	UH-02	Unit Heater	Mech	No																					0.5																								0.5				1.0
FS16 Shop	AIR-02	Air Compressor	Mech	No									1.0												2.0												1.0												1.0				5.0
FS16 Shop	ATS-01	Automatic Transfer Switch	Elec	Yes																					-				1.0																								1.0
FS16 Shop	AWH-01	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
FS16 Shop	CP-01	Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS16 Shop	DP-M1	Distribution Panel	Elec	Yes																									0.5																								0.5
FS16 Shop	DP-M2	Distribution Panel	Elec	Yes																									0.5																								0.5
FS16 Shop	DP-M3	Distribution Panel	Elec	Yes																									0.5																								0.5
FS16 Shop	EF-07	Fan	Mech	No																					1.0																								1.0				2.0
FS16 Shop	EF-08	Fan	Mech	No																					1.0																								1.0				2.0
FS16 Shop	EF-09	Fan	Mech	No																					1.0																								1.0				2.0
FS16 Shop	EF-10	Fan	Mech	No																					1.0																								1.0				2.0
FS16 Shop	EF-11	Fan	Mech	No																					1.0																								1.0				2.0
FS16 Shop	ET-01	Expansion/Compression Tank	Mech	No																					0.5												0.5																1.0
FS16 Shop	FACP-01	Fire Alarm System	mech	Yes																									4.0																								4.0
FS16 Shop	FCU-01	Fan Coil Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS16 Shop	FSS-01	Fire Sprinkler System	mech	Yes																									4.0																								4.0
FS16 Shop	HP-01	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS16 Shop	RH-01	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS16 Shop	RH-02	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS16 Shop	RH-03	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS16 Shop	RH-04	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS16 Shop	RH-05	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS16 Shop	RH-06	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS17	ACU-01	Air Conditioning Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	ACU-02	Air Conditioning Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	ATS-01	Automatic Transfer Switch	Elec	Yes																									1.0																								1.0
FS17	AWH-01	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
FS17	AWH-02	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
FS17	CU-01	Condensing Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	CU-02	Condensing Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	CU-03	Condensing Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	DP-MDP	Distribution Panel	Elec	Yes																									0.5																								0.5
FS17	DP-PNL1	Distribution Panel	Elec	Yes																									0.5																								0.5
FS17	DP-PNL1A	Distribution Panel	Elec	Yes																									0.5																								0.5
FS17	DP-PNL2	Distribution Panel	Elec	Yes																									0.5																								0.5
FS17	DP-PNL3	Distribution Panel	Elec	Yes																									0.5																								0.5
FS17	DP-PNL4	Distribution Panel	Elec	Yes																									0.5																								0.5
FS17	DP-PNLD	Distribution Panel	Elec	Yes																									0.5																								0.5
FS17	DP-PNLN	Distribution Panel	Elec	Yes																									0.5																								0.5
FS17	EE-01	Fan	Mech	No									1.0																								1.0																2.0
FS17	EE-02	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-01	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-010	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-011	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-02	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-03	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-04	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-05	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-06	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-07	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-08	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-09	Fan	Mech	No									1.0																								1.0																2.0
FS17	EF-12	Fan	Mech	No									1.0																								1.0																2.0
FS17	EHC-01	Terminal Unit	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	FACP-01	Fire Alarm System	mech	Yes																									4.0																								4.0
FS17	FACP-02	Fire Alarm System	mech	Yes																									4.0																								4.0
FS17	FSS-01	Fire Sprinkler System	mech	Yes																									4.0																								4.0
FS17	FSS-02	Fire Sprinkler System	mech	Yes																									4.0																								4.0
FS17	HP-01	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-013	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-016	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-02	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-04	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-05	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-06	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-07	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-08	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-09	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-10	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-11	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-12	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-14	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HP-15	Heat Pump	Mech	No									0.5												1.0												0.5												0.5				2.5
FS17	HRU-01	Heat Exchanger	Mech	No																					1.0																												1.0
FS17	HV-01	Air Handling Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	LCP-01	Lighting System	Elec	Yes																									4.0																								4.0
FS17	MAU-01	Make Up Air Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	MAU-02	Make Up Air Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	MAU-03	Make Up Air Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
FS17	RH-01	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS17	RH-02	Induction/Radiant	Mech	No									1.0												1.5												1.0												1.0				4.5
FS17	RPBP-01	Backflow Preventer	Mech	No																									1.0																								1.0
FS17	RPBP-02	Backflow Preventer	Mech	No																									1.0																								1.0
FS17	SF-01	Fan	Mech	No									1.0																								1.0																2.0
FS17	UH-01	Unit Heater	Mech	No									0.5																								0.5																1.5
FS17	UH-01	Unit Heater	Mech	No									0.5																								0.5																1.5
FS17	WP-01	Pump	Mech	No									0.5												0.5												1.0																2.5
FS18	AC-01	Heat Pump	Mech	No				2.0							1.0												1.0										1.0												1.0				5.0
FS18	AC-02	Heat Pump	Mech	No				2.0							1.0												1.0										1.0												1.0				5.0
FS18	AIR-01	Air Compressor	Mech	No				2.0							1.0												1.0										1.0												1.0				5.0
FS18	ATS-01	Automatic Transfer Switch	Elec	Yes							1.0																																										1.0
FS18	AWH-01	Water Heater	Mech	No				0.5							0.5												0.5										0.5												0.5				2.0
FS18	CP-01	Pump	Mech	No				1.0							0.5												0.5										0.5												0.5				2.5
FS18	CU-01	Condensing Unit	Mech	No				2.0							1.0												1.0										1.0												1.0				5.0
FS18	CU-02	Condensing Unit	Mech	No				2.0							1.0												1.0										1.0												1.0				5.0
FS18	DP-LM	Distribution Panel	Elec	Yes							0.5																																										0.5
FS18	DP-R1	Distribution Panel	Elec	Yes							0.5																																										0.5
FS18	DP-R2	Distribution Panel	Elec	Yes							0.5																																										0.5
FS18	EF-01	Fan	Mech	No				1.0																																											2.0
FS18	EF-02	Fan	Mech	No				1.0																																											2.0
FS18	EF-03	Fan	Mech	No				1.0																																											2.0
FS18	FACP-01	Fire Alarm System	mech	Yes							8.0																																									8.0
FS18	FSS-01	Fire Sprinkler System	mech	Yes							4.0																																									4.0

					JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				
					JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	Total Hours
Facility	Tag Number	Description	Type	outsource	107.3	0.0	0.0	38.0	153.5	0.0	0.0	80.0	127.0	0.0	0.0	63.5	156.0	0.0	0.0	106.0	136.0	0.0	0.0	102.5	134.0	0.0	0.0	89.0	102.3	0.0	0.0	32.0	118.5	0.0	0.0	51.0	114.0	0.0	0.0	22.0	178.5	0.0	0.0	87.0	101.5	0.0	0.0	12.0	134.5	0.0	0.0	27.5	2273.5
FS18	GEN-01	Emergency Generator	Elec	Yes								4.0												4.0												4.0												4.0				16.0
FS18	UH-01	Unit Heater	Mech	No					0.5																								0.5																			1.0
FS18	UH-01	Unit Heater	Mech	No					0.5																								0.5																			1.0
FS18	UH-02	Unit Heater	Mech	No					0.5																								0.5																			1.0
MOC-PK	ACU-01	Air Conditioning Unit	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	ACU-01	Air Conditioning Unit	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	ACU-03	Air Conditioning Unit	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	AD-01	Other	Mech	Yes																																															4.0	4.0
MOC-PK	AIR-01	Air Compressor	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	AWH-01	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
MOC-PK	CU-01	Condensing Unit	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	CU-02	Condensing Unit	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	CU-03	Condensing Unit	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	CU-04	Condensing Unit	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	CU-05	Condensing Unit	Mech	No									1.0												1.0												1.0												2.0				5.0
MOC-PK	DP-C	Distribution Panel	Elec	Yes																																															0.5	0.5
MOC-PK	DP-E	Distribution Panel	Elec	Yes																																																0.5	0.5
MOC-PK	DP-F	Distribution Panel	Elec	Yes																																																0.5	0.5
MOC-PK	DU-1	Other	Mech	No									1.0												1.0												1.0												1.5				4.5
MOC-PK	DWP-01	Pump	Mech	No									0.5												0.5												0.5												1.0				2.5
MOC-PK	EF-01	Fan	Mech	No																					1.0																								1.0				2.0
MOC-PK	EF-01	Fan	Mech	No																					1.0																								1.0				2.0
MOC-PK	EF-02	Fan	Mech	No																					1.0																								1.0				2.0
MOC-PK	EF-03	Fan	Mech	No																					1.0																								1.0				2.0
MOC-PK	EF-04	Fan	Mech	No																					1.0																								1.0				2.0
MOC-PK	EF-04	Fan	Mech	No																					1.0																								1.0				2.0
MOC-PK	FACP-01	Fire Alarm System	mech	Yes																																															4.0	4.0
MOC-PK	FACP-02	Fire Alarm System	mech	Yes																																															4.0	4.0
MOC-PK	FU-02	Furnace	Mech	No									1.0												1.0												1.0												1.0				4.0
MOC-PK	FU-04	Furnace	Mech	No									1.0												1.0												1.0												1.0				4.0
MOC-PK	GEN-01	Emergency Generator	Elec	Yes													4.0													4.0												4.0								4.0				16.0
MOC-PK	GEN-02	Emergency Generator	Elec	Yes													4.0													4.0												4.0								4.0				16.0
MOC-PK	UH-01	Unit Heater	Mech	No																					0.5																												0.5				1.0
MOC-PW-B1	ACU-01	Air Conditioning Unit	Mech	No					1.0												2.0												1.0												1.0								5.0
MOC-PW-B1	AD-01	Other	Mech	Yes																					4.0																												4.0
MOC-PW-B1	AHU-01	Make Up Air Unit	Mech	No					1.0												2.0												1.0												1.0								5.0
MOC-PW-B1	AIR-01	Air Compressor	Mech	No					1.0												2.0												1.0												1.0								5.0
MOC-PW-B1	ATS-01	Automatic Transfer Switch	Elec	Yes																					1.0																												1.0
MOC-PW-B1	ATS-02	Automatic Transfer Switch	Elec	Yes																					1.0																												1.0
MOC-PW-B1	AWH-01	Water Heater	Mech	No					0.5												0.5												0.5																				2.0
MOC-PW-B1	BB-01	Induction/Radiant	Mech	No					1.0												1.5												1.0												1.0								4.5
MOC-PW-B1	BB-02	Induction/Radiant	Mech	No					1.0												1.5												1.0												1.0								4.5
MOC-PW-B1	DP-H-01	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	DP-H-02	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	DP-H-03	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	DP-L	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	DP-M	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	DP-M01A	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	DP-P02	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	DP-P-1	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	DP-P-2	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B1	EF-01	Fan	Mech	No																	1.0																														1.0				2.0
MOC-PW-B1	EF-02	Fan	Mech	No																	1.0																														1.0				2.0
MOC-PW-B1	EF-02	Fan	Mech	No																	1.0																														1.0				2.0
MOC-PW-B1	EF-03	Fan	Mech	No																	1.0																														1.0				2.0
MOC-PW-B1	EF-04	Fan	Mech	No																	1.0																														1.0				2.0
MOC-PW-B1	FACP-01	Fire Alarm System	mech	Yes																					8.0																												8.0
MOC-PW-B1	GEN-01	Emergency Generator	Elec	Yes								4.0													4.0												4.0																4.0	16.0
MOC-PW-B1	PW-01	Lighting System	Elec	Yes																					4.0																												4.0
MOC-PW-B1	RH-01	Induction/Radiant	Mech	No					1.0												1.5												1.0												1.0								4.5
MOC-PW-B1	RH-02	Induction/Radiant	Mech	No					1.0												1.5												1.0												1.0								4.5
MOC-PW-B1	RH-04	Induction/Radiant	Mech	No					1.0												1.5												1.0												1.0								4.5
MOC-PW-B1	RPBP-01	Backflow Preventer	Mech	No																					1.0																												1.0
MOC-PW-B1	RTU-01	Air Conditioning Unit	Mech	No					1.0												2.0												1.0												1.0								5.0
MOC-PW-B1	RTU-02	Air Conditioning Unit	Mech	No					1.0												2.0												1.0												1.0								5.0
MOC-PW-B1	RTU-03	Air Conditioning Unit	Mech	No					1.0												2.0												1.0												1.0								5.0
MOC-PW-B1	RTU-04	Air Conditioning Unit	Mech	No					1.0												2.0												1.0												1.0								5.0
MOC-PW-B1	SWB-01	Switchboard	Elec	Yes																					1.0																												1.0
MOC-PW-B1	WP-01	Pump	Mech	No					0.5												1.0												0.5												0.5								2.5
MOC-PW-B2	DP-01	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B2	DP-02	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B2	UH-01	Unit Heater	Mech	No																	0.5																														0.5				1.0
MOC-PW-B2	UH-02	Unit Heater	Mech	No																	0.5																														0.5				1.0
MOC-PW-B2	UH-03	Unit Heater	Mech	No																	0.5																														0.5				1.0
MOC-PW-B2	UH-04	Unit Heater	Mech	No																	0.5																														0.5				1.0
MOC-PW-B3	AWH-01	Water Heater	Mech	No									0.5												0.5												0.5												0.5				2.0
MOC-PW-B3	EF-01	Fan	Mech	No																					1.0																								1.0				2.0
MOC-PW-B3	EF-02	Fan	Mech	No																					1.0																								1.0				2.0
MOC-PW-B3	RTU-01	Air Conditioning Unit	Mech	No									1.0												2.0												1.0												1.0				5.0
MOC-PW-B3	SWB-01	switchboard	Elec	Yes																					1.0																												1.0
MOC-PW-B4	DP-A	Distribution Panel	Elec	Yes																					0.5																												0.5
MOC-PW-B4	UH-01	Unit heater	Mech	No																	0.5																														0.5				1.0
MOC-PW-B4	UH-02	Unit heater	Mech	No																	0.5																														0.5				1.0
MOC-PW-B4	UH-03	Unit heater	Mech	No																	0.5																														0.5				1.0
MOC-PW-B4	UH-04	Unit heater	Mech	No																	0.5																														0.5				1.0
Muni Campus Garage	AIR-01	Air Compressor	Mech	No					1.0												2.0												1.0												1.0								5.0
Muni Campus Garage	DP-2GP1	Distribution Panel	Elec	Yes																					0.5																												0.5
Muni Campus Garage	DP-4GP1	Distribution Panel	Elec	Yes																					0.5																												0.5
Muni Campus Garage	EF-01	Fan	Mech	No																	1.0																														1.0				2.0
Muni Campus Garage	EF-02	Fan	Mech	No																	1.0																														1.0				2.0
Muni Campus Garage	FACP-01	Fire Alarm System	mech	Yes																					4.0																												4.0
Muni Campus Garage	FSS-01	Fire Sprinkler System	mech	Yes																					4.0																												4.0
Muni Campus Garage	HE-01	Heater/Ventilator	Mech	No					1.0												2.0												1.0												1.0								5.0
Muni Campus Garage	LCP-01	Lighting System	Elec	Yes																					4.0																												4.0
Muni Campus Garage	UH-WMH-G102	Unit Heater	Mech	No																	0.5																														0.5				1.0
Muni Campus Garage	UH-WMH-G103	Unit Heater	Mech	No																	0.5																														0.5				1.0
Muni Campus Garage	UH-WMH-G104	Unit Heater	Mech	No																	0.5																														0.5				1.0
Old Medic One	DP-01	Distribution Panel	Elec	Yes																					0.5																												0.5
Old Medic One	EF-01	Fan	Mech	No																	1.0																														1.0				2.0
Old Medic One	UH-01	Unit heater	Mech	No																	0.5																														0.5				1.0
ORSCC	AD-01	Other	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	AH-01	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	AH-02	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	AH-03	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	AH-04	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	AH-05	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	AH-06	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	AH-07	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	AHU-01	Air Handling Unit	Mech	No	1.0								2.0																1.0								1.0																5.0
ORSCC	AIR-01	Air Compressor	Mech	No	2.0								1.0																1.0								1.0																5.0
ORSCC	AIR-02	Air Compressor	Mech	No	2.0								1.0																1.0								1.0																5.0
ORSCC	AWH-01	Water Heater	Mech	No	0.5								0.5																0.5								0.5																2.0
ORSCC	AWH-02	Water Heater	Mech	No	0.5								1.0																0.5								0.5																2.5
ORSCC	BO-01	Boiler, Heating	Mech	Yes	1.0															8.0									1.0								1.0																11.0
ORSCC	BO-02	Boiler, Heating	Mech	Yes	1.0															8.0									1.0								1.0																11.0
ORSCC	CH-01	Chiller	Mech	YES	2.0												8.0												2.0								2.0																14.0
ORSCC	CU-01	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	CU-02	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	CU-03	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	CU-04	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	CU-05	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	CU-06	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	CU-07	Heat Pump	Mech	No	1.0								1.5																1.0								1.0																4.5
ORSCC	CU-08	Condensing Unit	Mech	No	0.8								1.5																0.8																								2.0	5.0
ORSCC	CWP-01	Pump	Mech	No	0.5								1.0																0.5								0.5																2.5
ORSCC	CWP-02	Pump	Mech	No	0.5								1.0																0.5								0.5																2.5

					JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				
Facility	Tag Number	Description	Type	outsource	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	Total Hours
					107.3	0.0	0.0	38.0	153.5	0.0	0.0	80.0	127.0	0.0	0.0	63.5	156.0	0.0	0.0	106.0	136.0	0.0	0.0	102.5	134.0	0.0	0.0	89.0	102.3	0.0	0.0	32.0	118.5	0.0	0.0	51.0	114.0	0.0	0.0	22.0	178.5	0.0	0.0	87.0	101.5	0.0	0.0	12.0	134.5	0.0	0.0	27.5	2273.5
ORSCC	DP-A	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-C	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-CP2	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-D	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-E	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-EM	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-F	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-G	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-H	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-K	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-M	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DP-P1	Distribution Panel	Elec	Yes																0.5																																0.5
ORSCC	DWS-01	Domestic Water Storage Tank	Mech	No													0.5																								0.5										1.0
ORSCC	EF-01	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-03	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-04	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-A	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-B	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-C	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-D	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-D	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-H	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-J	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-K	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-L	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-M	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-N	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	EF-O	Fan	Mech	No													1.0																								1.0										2.0
ORSCC	ET-01	Expansion/Compression Tank	Mech	No													0.5																								0.5										1.0
ORSCC	FACP-01	Fire Alarm System	mech	Yes																16.0																																16.0
ORSCC	FSS-01	Fire Sprinkler System	mech	Yes																4.0																																4.0
ORSCC	FSS-02	Fire Sprinkler System	mech	Yes																4.0																																4.0
ORSCC	FSS-03	Fire Sprinkler System	mech	Yes																4.0																																4.0
ORSCC	FSS-04	Fire Sprinkler System	mech	Yes																4.0																																4.0
ORSCC	HV-01	Air Handling Unit	Mech	No		1.0											2.0												1.0												1.0										5.0
ORSCC	HWP-01	Pump	Mech	No		0.5											1.0												0.5												0.5										2.5
ORSCC	HWP-02	Pump	Mech	No		0.5											1.0												0.5												0.5										2.5
ORSCC	MAU-01	Make Up Air Unit	Mech	No		1.0											2.0												1.0												1.0										5.0
ORSCC	RPBP-01	Backflow Preventer	Mech	No																1.0																																1.0
ORSCC	SP-01	Unit Heater	Mech	No													0.5																								0.5										1.0
ORSCC	SWB-01	Switchboard	Elec	Yes																1.0																																1.0
ORSCC	UH-01	Unit Heater	Mech	No													0.5																								0.5										1.0
ORSCC	UH-02	Unit heater	Mech	No													0.5																								0.5										1.0
ORSCC	UV-01	Unit Heater	Mech	No													0.5																								0.5										1.0
ORSCC	UV-02	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-03	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-04	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-07	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-08	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-09	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-10	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-11	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-12	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-13	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-14	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-15	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-16	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	UV-17	Induction/Radiant	Mech	No		1.0											1.5												1.0												1.0										4.5
ORSCC	VFD-CWP-01	Variable Frequency Drive	Elec	Yes																0.5																																1.0
ORSCC	VFD-CWP-02	Variable Frequency Drive	Elec	Yes																0.5																																1.0
PSB	AC-01	Computer Room Cooling Unit	Mech	No					2.0											2.0												2.0												2.0										8.0
PSB	AC-02	Computer Room Cooling Unit	Mech	No					2.0											2.0												2.0												2.0										8.0
PSB	AC-05	Air Handling Unit	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	AC-06	Air Handling Unit	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	AC-07	Computer Room Cooling Unit	Mech	No					2.0											2.0												2.0												2.0										8.0
PSB	ACU-01	Air Conditioning Unit	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	ACU-01	Air Conditioning Unit	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	ACU-02	Air Conditioning Unit	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	ACU-02	Air Conditioning Unit	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	ATS-01	Automatic Transfer Switch	Elec	Yes																																				1.0										1.0
PSB	ATS-01	Automatic Transfer Switch	Elec	Yes																																				1.0										1.0
PSB	BA-01	UPS	Elec	Yes					2.0											2.0												2.0												2.0										8.0
PSB	BA-02	UPS	Elec	Yes					2.0											2.0												2.0												2.0										8.0
PSB	BAS-01	Building Automation System	Mech	No					2.0											2.0												2.0												2.0										8.0
PSB	BO-01	Boiler, Heating	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	BO-01	Boiler, Heating	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	BO-02	Boiler, Heating	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	BO-02	Boiler, Heating	Mech	No		1.0											1.0												1.0												2.0										5.0
PSB	CHWP-01	Pump	Mech	No		0.5											0.5												0.5												1.0										2.5
PSB	CHWP-02	Pump	Mech	No		0.5											0.5												0.5												1.0										2.5
PSB	CT-01	Cooling Tower	Mech	No		2.0											2.0												2.0												8.0										14.0
PSB	CU-01	Computer Room Cooling Unit	Mech	No					2.0											2.0												2.0												2.0										8.0
PSB	CU-02	Computer Room Cooling Unit	Mech	No					2.0											2.0												2.0												2.0										8.0
PSB	CWP-01	Pump	Mech	No		0.5											0.5												0.5												1.0										2.5
PSB	DP-01	Distribution Panel	Elec	Yes																																														0.5
PSB	DP-01	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-01	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-02	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1A4	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1B2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1D2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1E4	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1F2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1G2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1XA4	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1XB2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-1XC4	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-2E4	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-2F2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-2G2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-2H4	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-2I2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-AC-2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-B2A	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-NUPS1	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-NUPS2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-SS4B	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-UPS-01	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-UPS-02	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-UPS1	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-UPS2	Distribution Panel	Elec	Yes																																													0.5
PSB	DP-UPS2	Distribution Panel	Elec	Yes																																													0.5
PSB	DWP-09	Pump	Mech	No		0.5											0.5												0.5												1.0										2.5
PSB	DWST-01	Domestic Water Storage Tank	Mech	No													0.5																								0.5										1.0
PSB	EF-01	Fan	Mech	No													1.0																								1.0										2.0
PSB	EF-01	Fan	Mech	No													1.0																								1.0										2.0
PSB	EF-01	Fan	Mech	No													1.0																								1.0										2.0
PSB	EF-02	Fan	Mech	No													1.0																								1.0										2.0
PSB	EF-1	Fan	Mech	No													1.0																								1.0										2.0
PSB	ET-01	Expansion/Compression Tank	Mech	No													0.5																								0.5										1.0
PSB	ET-02	Expansion/Compression Tank	Mech	No													0.5																								0.5										1.0
PSB	FACP-01	Fire Alarm System	mech	Yes																																														16.0	16.0
PSB	FSS-01	Fire Sprinkler System	mech	Yes																																														4.0	4.0
PSB	FSS-02	Fire Sprinkler System	mech	Yes																																														4.0	4.0
PSB	GEN-01	Emergency Generator	Elec	Yes					4.0											4.0												4.0												4.0										16.0

					JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				
					JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	Total Hours
Facility	Tag Number	Description	Type	outsource	107.3	0.0	0.0	38.0	153.5	0.0	0.0	80.0	127.0	0.0	0.0	63.5	156.0	0.0	0.0	106.0	136.0	0.0	0.0	102.5	134.0	0.0	0.0	89.0	102.3	0.0	0.0	32.0	118.5	0.0	0.0	51.0	114.0	0.0	0.0	22.0	178.5	0.0	0.0	87.0	101.5	0.0	0.0	12.0	134.5	0.0	0.0	27.5	2273.5
PSB	GEN-01	Emergency Generator	Elec	Yes				4.0													4.0												4.0												4.0								16.0
PSB	HP-04A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-05A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-05B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-06A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-07A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-07B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-08A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-08B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-09A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-09B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-10A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-11A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-11B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-12A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-12B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-13A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-13B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-14A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-14B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-17B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-18A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-19A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-19A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-19B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-20A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-20B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-20B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-21A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-21A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-21B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-22A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-22B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-23A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-24A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-24B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-25A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-25B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-26A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-26B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-27A	Heat pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-28A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-28B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-29A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-29B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-30A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-30B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-31A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-31B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-32A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-32B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-33A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-35A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-35B	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-A173	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-B195	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-D179	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-F205	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-G172	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-H249	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-J124	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-J178	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-J205	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HP-J251A	Heat Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HWP-03	Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HWP-10	Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	HWP-11	Pump	Mech	No	0.5												0.5												0.5												1.0												2.5
PSB	LD-01	Lighting System	Elec	Yes																																															8.0				8.0
PSB	SWB-01	Switchboard	Elec	Yes																																														1.0				1.0
PSB	SWB-02	Switchboard	Elec	Yes																																														1.0				1.0
PSB	SWB-03	Switchboard	Elec	Yes																																														1.0				1.0
PSB	SWB-04	Switchboard	Elec	Yes																																														1.0				1.0
PSB	TR-01	Transformer	Elec	Yes																																														0.5				0.5
PSB	TR-02	Transformer	Elec	Yes																																														0.5				0.5
PSB	TR-03	Transformer	Elec	Yes																																														0.5				0.5
PSB	TR-04	Transformer	Elec	Yes																																														0.5				0.5
PSB	TR-05	Transformer	Elec	Yes																																														0.5				0.5
PSB	TR-06	Transformer	Elec	Yes																																														0.5				0.5
PSB	WT-1	Water Purification	Mech	Yes					2.0												2.0												2.0												2.0								8.0
PSB Parking Garage	AIR-01	Air Compressor	Mech	No					1.0												1.0												2.0												1.0								5.0
PSB Parking Garage	EF-07	Fan	Mech	No					1.0																								1.0																				2.0
PSB Parking Garage	FSS-01	Fire Sprinkler System	mech	Yes																															4.0																4.0
PSB Parking Garage	SP-5A	Pump	Mech	No					0.5												0.5												1.0								0.5												2.5
PSB Parking Garage	SP-5B	Pump	Mech	No					0.5												0.5												1.0								0.5												2.5
PSB Parking Garage	SP-7A	Pump	Mech	No					0.5												0.5												1.0								0.5												2.5
PSB Parking Garage	SP-7B	Pump	Mech	No					0.5												0.5												1.0								0.5												2.5
PSB Parking Garage	UH-02	Unit Heater	Mech	No					0.5																								0.5																				1.0
PSB Parking Garage	UH-03	Unit heater	Mech	No					0.5																								0.5																				1.0
PSB Parking Garage	UH-04	Unit heater	Mech	No					0.5																								0.5																				1.0
PSB Parking Garage	VFD-EF-07	Variable Frequency Drive	Elec	Yes								0.5																							0.5																			1.0
Redmond Pool	AHU-01	Air Handling Unit	Mech	No					1.0												1.0												2.0												1.0								5.0
Redmond Pool	BAS-01	Building Automation System	Mech	Yes								2.0								2.0												2.0												2.0								8.0
Redmond Pool	BO-01	Boiler, Heating	Mech	No					2.0												2.0												8.0												2.0								14.0
Redmond Pool	BO-02	Boiler, Heating	Mech	No					2.0												2.0												8.0												2.0								14.0
Redmond Pool	CWP-01	pump	Mech	No					0.5												0.5												1.0												0.5								2.5
Redmond Pool	DP-A	Distribution Panel	Elec	Yes																															0.5																				0.5
Redmond Pool	DP-B	Distribution Panel	Elec	Yes																															0.5																				0.5
Redmond Pool	DP-M1	Distribution Panel	Elec	Yes																															0.5																				0.5
Redmond Pool	EF-01	fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	EF-02	fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	EF-03	fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	EF-04	fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	EF-05	fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	EF-06	fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	EF-07	fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	EF-08	fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	ET-01	Expansion/Compression Tank	Mech	No					0.5																								0.5																				1.0
Redmond Pool	HWP-01	pump	Mech	No					0.5												0.5												1.0								0.5												2.5
Redmond Pool	HWP-02	pump	Mech	No					0.5												0.5												1.0								0.5												2.5
Redmond Pool	HWP-03	pump	Mech	No					0.5												0.5												1.0								0.5												2.5
Redmond Pool	MAU-01	Make Up Air Unit	Mech	No					1.0												1.0												2.0								1.0												5.0
Redmond Pool	RF-VU3	Fan	Mech	No					1.0																								1.0																				2.0
Redmond Pool	RPBP-01	Backflow Preventer	Mech	No																															1.0																				1.0
Redmond Pool	SWB-01	Switchboard	Elec	Yes																															1.0																				1.0
Senior Center	AHU-1	Make Up Air Unit	Mech	No					1.0												2.0												1.0								1.0												5.0
Senior Center	AWH-01	Water Heater	Mech	No					0.5												0.5												0.5								0.5												2.0
Senior Center	AWH-02	Water Heater	Mech	No					0.5												0.5												0.5								0.5												2.0
Senior Center	BO-01	Boiler, Heating	Mech	No					2.0												4.0												2.0								2.0												10.0
Senior Center	CP-02	Pump	Mech	No					0.5												0.5												1.0								0.5												2.5
Senior Center	CT-01	Cooling tower	Mech	No					2.0												8.0												2.0								2.0												14.0
Senior Center	CU-01	Condensing Unit	Mech	No					1.0												2.0												1.0								1.0												5.0
Senior Center	CWP-01	Pump	Mech	No					0.5												1.0												0.5								0.5												2.5
Senior Center	DP-A	Distribution Panel	Elec	Yes																0.5																																0.5
Senior Center	DP-B	Distribution Panel	Elec	Yes																0.5																																0.5
Senior Center	DP-D	Distribution Panel	Elec	Yes																0.5																																0.5
Senior Center	DP-E	Distribution Panel	Elec	Yes																0.5																																0.5

					JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				
					JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	JM	AP	PLB	Out	
Facility	Tag Number	Description	Type	outsource	107.3	0.0	0.0	38.0	153.5	0.0	0.0	80.0	127.0	0.0	0.0	63.5	156.0	0.0	0.0	106.0	136.0	0.0	0.0	102.5	134.0	0.0	0.0	89.0	102.3	0.0	0.0	32.0	118.5	0.0	0.0	51.0	114.0	0.0	0.0	22.0	178.5	0.0	0.0	87.0	101.5	0.0	0.0	12.0	134.5	0.0	0.0	27.5	Total Hours
Senior Center	DP-F	Distribution Panel	Elec	Yes																				0.5																												0.5
Senior Center	DP-K-01	Distribution Panel	Elec	Yes																				0.5																												0.5
Senior Center	DP-K-02	Distribution Panel	Elec	Yes																				0.5																												0.5
Senior Center	EF-02	Fan	Mech	No																	1.0																								1.0								2.0
Senior Center	EF-03	Fan	Mech	No																	1.0																								1.0								2.0
Senior Center	EF-1	Fan	Mech	No																	1.0																								1.0								2.0
Senior Center	ET-01	Expansion/Compression Tank	Mech	No																	0.5																								0.5								1.0
Senior Center	FACP-01	Fire Alarm System	mech	Yes																				4.0																												4.0
Senior Center	FACP-02	Fire Alarm System	mech	Yes																				4.0																												4.0
Senior Center	HWP-1	Pump	Mech	No					0.5												1.0												0.5												0.5								2.5
Senior Center	HWP-P-01	Pump	Mech	No					0.5												1.0												0.5												0.5								2.5
Senior Center	HWP-P-02	Pump	Mech	No					0.5												1.0												0.5												0.5								2.5
Senior Center	HWP-P-03	Pump	Mech	No					0.5												1.0												0.5												0.5								2.5
Senior Center	LCP-01	Lighting System	Elec	Yes																				2.0																												2.0
Senior Center	LCP-02	Lighting System	Elec	Yes																				2.0																												2.0
Senior Center	LCP-03	Lighting System	Elec	Yes																				2.0																												2.0
Senior Center	REF-01	Other	Mech	No																				4.0																												4.0
Senior Center	RPBP-01	Backflow Preventer	Mech	No																				1.0																												1.0
Senior Center	SWB-MAIN	Switchboard	Elec	Yes																				1.0																												1.0
Teen Center	AWH-01	Water Heater	Mech	No									0.5													0.5																												2.0
Teen Center	DP-01	Distribution Panel	Elec	Yes																								0.5								0.5																0.5
Teen Center	DP-A	Distribution Panel	Elec	Yes																								0.5																								0.5
Teen Center	DP-B	Distribution Panel	Elec	Yes																								0.5																								0.5
Teen Center	DP-MDP	Distribution Panel	Elec	Yes																								0.5																								0.5
Teen Center	EF-01	Fan	Mech	No																						1.0																												2.0
Teen Center	EF-02	Fan	Mech	No																						1.0																												2.0
Teen Center	FACP-01	Fire Alarm System	mech	Yes																								4.0																										4.0
Teen Center	FSS-01	Fire Sprinkler System	mech	Yes																								4.0																										4.0
Teen Center	RTU-01	Air Conditioning Unit	Mech	No									1.0													2.0												1.0																5.0
Teen Center	UH-01	Unit Heater	Mech	No																						0.5																												1.0
Teen Center	UH-01	Unit Heater	Mech	No																						0.5																												1.0
Teen Center	UH-02	Unit Heater	Mech	No																						0.5																												1.0
Teen Center	UH-03	Unit Heater	Mech	No																						0.5																												1.0
Trinity	DP-H-1	Distribution Panel	Elec	Yes					0.5																																												0.5
Trinity	DP-H-3	Distribution Panel	Elec	Yes					0.5																																												0.5
Trinity	DP-L-1	Distribution Panel	Elec	Yes					0.5																																												0.5
Trinity	DP-L-3	Distribution Panel	Elec	Yes					0.5																																												0.5
Trinity	RTU-01	Air Conditioning Unit	Mech	No		2.0												1.0												1.0												1.0										5.0
Trinity	RTU-02	Air Conditioning Unit	Mech	No		2.0												1.0												1.0												1.0										5.0
Trinity	RTU-03	Air Conditioning Unit	Mech	No		2.0												1.0												1.0												1.0										5.0
Trinity	UH-01	Unit Heater	Mech	No		0.5																								0.5																						1.0
Trinity	UH-02	Unit Heater	Mech	No		0.5																								0.5																						1.0
Trinity	UH-03	Unit Heater	Mech	No		0.5																								0.5																						1.0

5.0 Budget Models

Capital Renewal Plan

Introduction

The intent of this plan is to establish 30 year capital renewal plan which establishes rough order of magnitude (ROM) budgets for the replacement, refurbishment or upgrade of existing infrastructure systems associated with the facilities under the responsibility of the City of Redmond, Facilities and Maintenance Group. The scope of this plan includes all mechanical, electrical, plumbing systems, controls, fire protection and fire suppression systems as well as building envelope and supporting utilities.

CAPEX NPV Worksheet

The primary deliverable for this scope item is the accompanying work book which includes;

- A summary sheet that includes year by year M&R budgets starting in the year 2019 through 2048
- This summary sheet also includes a Capital Renewal Net Present Value (NPV) total which represents the total value of the proposed renewals in 2019 dollars.
- All ROM values are adjusted for annual inflation rate of 3% (cell C8) which is adjustable by changing the value to any desired inflation rate which will recalculate the entire sheet based on the new factor.
- A discount rate variable is also provided (cell C9) which can be adjusted to reflect the City's actual discount rate which will recalculate the entire sheet to reflect the adjusted Discount Rate
- M&R renewals for FS13, FS14 and FS18 are now included which were not assigned dates in the earlier version of this plan.
- M&R renewals for the ORSCC are now included which were not assigned in the previous version of this plan.
- New in this version of the budget are allowances for building envelope and interiors which were not included in the previous plan.

Line Item, Seismic, FCA and PSB Worksheets

The Line Item Worksheet integrates four elements;

1. The Line Item worksheet itself contains the projected renewals for the equipment and systems included in the Facility Maintenance Strategy as well totals linked to the Seismic, FCA and PSB FIM worksheets. The methodology for prioritization of the renewals is described in detail further on in the report under the section titled Prioritization Methodology.
2. Seismic Evaluations and Recommendations are incorporated including the latest updates provided by Makers on 11/7/2016. As per discussion with representatives of the City, the costs for the recommended improvements are spread over the first five years of the M&R plan with the following exceptions. There are costs shown on the Line Item worksheet for seismic improvements for FS13, FS14, FS18 and the ORSCC which may not be within the financial responsibility of the City. Costs for these line items are now included on the CAPEX NPV worksheet which were not included in the previous version of this plan.
3. The FCA worksheet integrates line items from the Deficiency Repair Costs lists in the Meng study. The values shown in columns D through H on the worksheet were taken directly from the Meng report which include anticipated cost factors for contingency, contractor OH/profit and project soft costs. Columns I & Q were added by McKinstry. Column "I" reflects our recommendation for that specific line item based on our review (see below). Column Q is the cost shown in column "I" corrected for anticipated inflation (3% annually) by 2019 which is the intended starting year of the plan.

Each line item was individually reviewed and evaluated and was either, included, revised or omitted based on

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the following criteria;

a. If the line item described is not within the scope of the FAC, a cost value of $0 was input
b. To avoid duplications, if the line item is covered elsewhere in the plan, a cost value of $0 was input.
c. If in our judgement a line item either seemed unnecessary, was a very low priority or over scoped, we either input $0 or a lesser dollar amount than was originally shown. Example; the replacement of an emergency generator based simply on its age without regard to actual condition or run time, or items like adding permanent ladders in areas where access is neither frequent nor critical.
d. *If the line item described is actually a simple maintenance item, normally within the scope of the FAC general operations and maintenance and not a capital expenditure, a cost value of $0 was input.
e. If in our judgement the line item described seemed reasonable and appropriate based on the age of the asset, it was included in the renewal budget, usually without modification other than to adjust for inflation. The Meng study also includes line items that they characterize as "opportunities" for improvement. Although we reviewed these items, we did not include them in the budget. A discussion on these items with the FAC supervisor would be prudent and may lead to adding some of them to the M&R budget.
f. There are some line items, (as noted in the comments column on the worksheet) that need further review to fully determine their validity and scope. Cost amounts for these line items were carried in full pending further review. Several of these items call for the addition of fire sprinklers which may not be necessary. A review by the Fire Marshall for applicability is warranted.

*Maintenance vs Capital – There were several criteria used to determine if a particular line item was classified as a maintenance (OPEX) or capital renewal (CAPEX) expenditure:

1. If a line item is within the skillset of the Facilities team or vendors as defined by the recently developed SLA then that line item was deferred to the OPEX budget.
2. If a line item was for the repair of an existing system or device to bring it back to its original condition and it appeared to meet the intent of the City's definition as a capital expenditure it was added to this Maintenance Plan. We understand the definition of a capital expenditure may currently be under review and may change.
3. If a line was for the complete replacement, complete rebuild or significant upgrade of an existing system or device and it appeared to meet the intent of the financial criteria of the City, it was added to this Capital Renewal Plan.
4. The Public Safety Building, Facility Improvement Measures (FIM) List includes line items that were scoped and budgeted based on a recent study completed by McKinstry's Energy Group. The ROM budget costs shown on the FIM list include both minimum and maximum values. For budgeting purposes the minimum values were used.

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Capital Renewal Plan

Prioritization Methodology

The methodology used for prioritizing the budget line items in this Renewal plan is an extension of the methodology previously developed that established a prioritization strategy for the facilities and Task 9 which did the same for the infrastructure and related equipment within the facilities.

In the development of this plan we looked at each budget line item for each facility, starting with the PSB, which is the facility that was determined in Section 2 (see chart below) to be the most critical in support of the City of Redmond's mission, and then looked at the systems and devices within that facility, again starting with the most critical systems (PL1) which were previously prioritized in the Facility Maintenance Strategy. Then considering the age of the equipment and general condition as determined by field inspection, made informed decisions as to when the systems should be replaced or upgraded. For example, using this methodology, Priority Level 1 (PL1) systems or devices, located in the PSB (the facility with the highest level of service per Task 6) that are in poor condition or end of life were given the earliest position on the replacement schedule.

The chart below (see Figure 1) is taken from the Level of Service Strategy report and was used as a reference in the development the M&R plan. Although the M&R plan includes all the City's facilities, additional consideration was given to the facilities that have a condition rating that is not commensurate with its Level of Service Ranking (see Figure 1). The intent is to improve the average condition of those facilities.

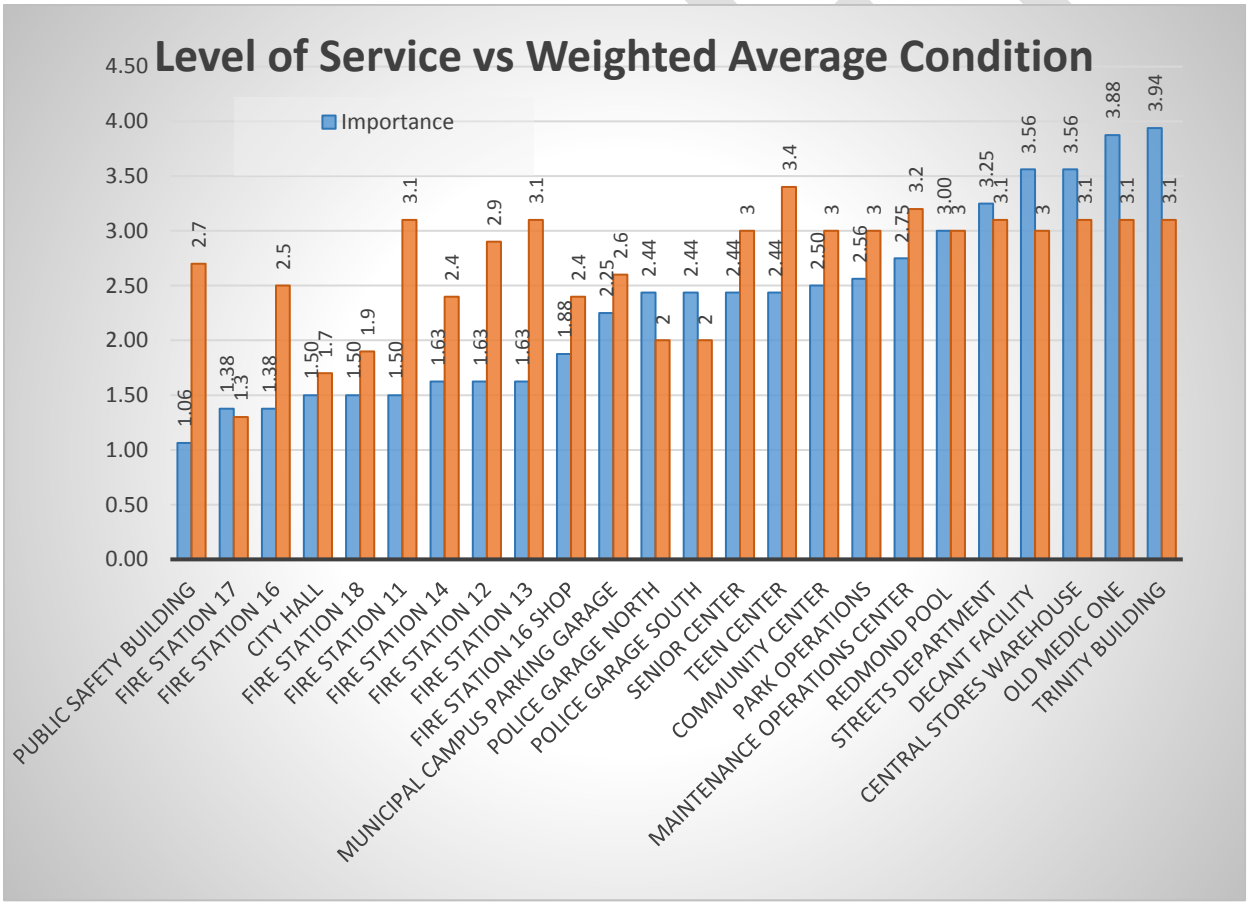

Figure 1- Level of Service vs Condition

Capital Renewal Plan

We made a concerted effort to avoid making renewal recommendations based solely on a devices age, which is a common practice of many consultants, and instead looked at the specific equipment and made judgements as to a devices expected lifespan based on our own experience, the general build quality of the device and its current condition. Using this criteria we adjusted the expected lifespan of many devices beyond generally accepted norms. We know from experience that there are some devices that last much longer in actual operation than typically predicted. Example: Base mounted, centrifugal pumps. Most mechanical equipment is expected to have a lifespan of 20 years but this type of pump will, with proper maintenance, operate 40+ years.

This methodology accomplishes two goals. First it extends the useful life of a device which ultimately saves capital dollars. Second, it provides for some added flexibility in the development of the M&R replacement schedule itself by providing a wider window of opportunity which is helpful in trying to level year to year expenditures.

NOTES

- The pool is due now for some significant renewals but we purposely deferred the renewals until 2023 with the expectation that the final disposition of this facility will be determined by then. Since the M&R plan extends well beyond the expected life of this facility, a second round of major renewals that would normally appear at the end of the schedule were manually removed. Any new facility that would be built to replace the pool will need to have M&R budgets added.
- All the seismic upgrade recommendations are incorporated into the first five years of the plan.

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Capex NPV

Financial Data

Inflation Rate (Annual) 3.00%
Discount Rate 3.00%

Building Name	NPV	2019 1	2020 2	2021 3	2022 4	2023 5	2024 6	2025 7	2026 8	2027 9	2028 10	2029 11	2030 12	2031 13	2032 14	2033 15
City Hall	$7,581,053	$25,775	$81,541	$0	$303,122	$0	$0	$0	$0	$2,894,353	$0	$0	$0	$0	$2,931,509	$0
Decant	$55,740	$1,500	$10,115	$0	$0	$0	$0	$24,000	$0	$0	$0	$0	$17,995	$0	$0	$0
FS11	$2,870,312	$522,750	$85,799	$0	$917,878	$68,093	$0	$0	$0	$339,477	$0	$0	$0	$0	$164,476	$0
FS12	$803,518	$0	$86,700	$124,830	$151,301	$0	$0	$0	$155,476	$0	$1,957	$0	$0	$75,565	$0	$0
FS13	$1,152,566	$181,820	$252,920	$135,434	$0	$0	$0	$50,747	$0	$0	$0	$0	$0	$0	$0	$0
FS14	$1,182,548	$271,849	$192,177	$0	$0	$253,116	$0	$0	$25,089	$0	$0	$0	$0	$0	$0	$0
FS16	$1,738,461	$352,641	$35,516	$0	$0	$790,228	$0	$0	$0	$0	$69,153	$0	$0	$0	$0	$0
FS16 Shop	$805,235	$212,140	$0	$0	$0	$208,475	$0	$0	$0	$0	$13,700	$0	$0	$0	$0	$0
FS17	$1,145,550	$0	$69,927	$0	$0	$0	$0	$0	$0	$50,671	$0	$56,324	$0	$0	$0	$0
FS18	$1,196,880	$40,599	$0	$0	$0	$0	$309,020	$0	$0	$0	$0	$113,098	$0	$0	$0	$0
MOC-PK	$1,136,849	$21,250	$283,793	$0	$185,764	$0	$252,100	$122,784	$0	$0	$0	$0	$73,364	$0	$0	$0
MOC-PW-B1	$1,718,121	$5,000	$299,007	$0	$485,717	$0	$0	$524,267	$0	$0	$0	$0	$144,500	$0	$0	$0
MOC-PW-B2	$18,200	$0	$0	$0	$0	$0	$0	$13,373	$0	$0	$0	$0	$9,690	$0	$0	$0
MOC-PW-B3	$204,392	$1,500	$71,414	$0	$0	$0	$0	$74,896	$0	$0	$0	$0	$0	$0	$0	$0
MOC-PW-B5	$404,504	$0	$91,031	$0	$92,882	$0	$0	$166,264	$0	$0	$0	$0	$4,845	$0	$0	$0
Muni Campus Garage	$476,340	$6,333	$8,609	$0	$161,175	$0	$0	$0	$0	$0	$0	$0	$0	$0	$212,879	$0
Old Medic One	$125,710	$0	$0	$0	$44,179	$0	$0	$0	$0	$52,380	$0	$0	$0	$0	$5,140	$0
ORSCC	$8,649,887	$1,750,200	$1,038,693	$613,688	$0	$3,480,712	$0	$0	$413,484	$0	$0	$335,979	$0	$86,073	$0	$0
PSB	$11,758,522	$808,932	$2,321,205	$558,898	$2,870,144	$0	$0	$0	$104,539	$719,054	$182,668	$14,783	$0	$0	$16,888	$0
PSB Parking Garage	$90,613	$0	$0	$0	$0	$0	$0	$38,807	$0	$0	$0	$0	$0	$0	$0	$0
Redmond Pool	$5,972,282	$0	$0	$0	$0	$4,036,719	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Senior Center	$3,955,116	$670,180	$479,032	$0	$1,626,924	$0	$0	$0	$26,135	$4,092	$0	$0	$0	$213,864	$0	$0
Teen Center	$1,354,607	$13,583	$28,840	$0	$403,166	$344,406	$0	$5,887	$0	$258,007	$0	$0	$0	$0	$20,559	$0
Trinity	$1,045,956	$151,250	$368,171	$0	$0	$16,072	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Yearly Total		**$5,037,303**	**$5,804,492**	**$1,432,850**	**$7,242,253**	**$9,197,820**	**$561,120**	**$1,021,027**	**$724,723**	**$4,318,033**	**$267,479**	**$520,184**	**$250,394**	**$375,503**	**$3,351,452**	**$0**

Capital Renewal NPV **$55,442,964**

Building Name	2034 16	2035 17	2036 18	2037 19	2038 20	2039 21	2040 22	2041 23	2042 24	2043 25	2044 26	2045 27	2046 28	2047 29	2048 30
City Hall	$0	$0	$0	$828,915	$0	$0	$0	$0	$80,917	$0	$53,967	$170,728	$0	$5,227,523	$0
Decant	$2,337	$0	$0	$0	$0	$0	$18,268	$0	$0	$0	$0	$0	$0	$0	$0
FS11	$0	$133,672	$0	$0	$0	$0	$0	$0	$1,657,789	$122,984	$0	$0	$0	$0	$0
FS12	$0	$39,596	$0	$0	$2,630	$0	$0	$225,456	$273,267	$0	$0	$0	$0	$0	$0
FS13	$45,571	$0	$0	$0	$0	$203,314	$59,529	$244,610	$0	$0	$83,751	$460,547	$0	$0	$0
FS14	$51,802	$0	$0	$0	$0	$292,388	$347,094	$39,089	$0	$0	$160,615	$0	$0	$0	$0
FS16	$15,580	$55,333	$0	$0	$0	$618,848	$0	$0	$0	$0	$0	$0	$0	$0	$492,775
FS16 Shop	$31,159	$0	$0	$0	$0	$347,026	$0	$0	$0	$0	$0	$0	$0	$0	$436,501
FS17	$1,169,956	$108,944	$0	$0	$0	$82,359	$0	$0	$0	$0	$274,934	$0	$0	$0	$0
FS18	$839,743	$0	$0	$0	$0	$0	$0	$0	$0	$0	$558,124	$0	$0	$0	$0
MOC-PK	$33,107	$0	$0	$0	$0	$0	$512,562	$0	$0	$0	$0	$0	$0	$0	$0
MOC-PW-B1	$7,790	$140,299	$0	$4,256	$0	$0	$540,040	$13,681	$0	$86,394	$0	$0	$0	$0	$0
MOC-PW-B2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOC-PW-B3	$2,337	$0	$0	$0	$0	$0	$128,982	$0	$0	$0	$0	$0	$0	$0	$0
MOC-PW-B5	$0	$0	$0	$0	$0	$0	$164,413	$0	$0	$0	$0	$0	$0	$0	$0
Muni Campus Garage	$0	$0	$0	$263,023	$0	$0	$0	$0	$0	$0	$13,260	$18,026	$0	$0	$0
Old Medic One	$0	$0	$0	$0	$0	$0	$0	$0	$79,793	$0	$0	$0	$0	$0	$0
ORSCC	$122,690	$0	$0	$0	$4,910	$18,422	$1,680,665	$1,108,389	$0	$0	$0	$0	$0	$0	$0
PSB	$38,949	$229,473	$0	$0	$0	$196,383	$3,926,333	$1,172,300	$1,706,396	$0	$1,567,612	$0	$0	$0	$271,005
PSB Parking Garage	$0	$41,102	$0	$0	$0	$0	$60,460	$0	$0	$0	$0	$0	$0	$0	$0
Redmond Pool	$0	$0	$0	$0	$0	$0	$0	$0	$0	$702,246	$0	$0	$0	$0	$4,807,985
Senior Center	$33,107	$52,955	$0	$0	$0	$107,464	$803,796	$40,717	$0	$0	$1,234,136	$0	$0	$0	$0
Teen Center	$3,895	$44,932	$0	$0	$0	$0	$0	$0	$728,163	$0	$23,206	$10,632	$0	$0	$0
Trinity	$0	$0	$0	$0	$0	$273,174	$664,959	$0	$0	$0	$0	$0	$0	$0	$33,652
Yearly Total	$2,398,022	$846,307	$0	$1,096,194	$7,540	$2,139,378	$8,907,099	$2,844,242	$4,526,324	$911,624	$3,969,604	$659,933	$0	$5,227,523	$6,041,917
Capital Renewal NPV	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Yearly Total	**$2,398,022**	**$846,307**	**$0**	**$1,096,194**	**$7,540**	**$2,139,378**	**$8,907,099**	**$2,844,242**	**$4,526,324**	**$911,624**	**$3,969,604**	**$659,933**	**$0**	**$5,227,523**	**$6,041,917**

Facilities Financial Assessment

Summary

The financial assessment of the City of Redmond facilities produced predictable observations in the benchmarking and analysis of comparable facility operations. The budget and anticipated cost of operations of City Hall was above both BOMA and IFMA benchmark comparisons. This was expected due to the function of City Hall, operational needs and hours, public facing image and management contract. The City of Redmond facilities personnel felt that City Hall would be a good standard to utilize as a comparison to the state of operations of the remaining City facilities as contained in this contract.

Purpose and Process

This financial assessment is an analytical approach to investigate and report the current City of Redmond 2016 Facilities budget in relation to industry benchmarks. With this knowledge, the budget can be informed and prioritized to the city's needs and outcomes.

Facilities benchmarking is an analysis technique, used primarily to provide a comparison of the operational costs of similar services at representative facilities in a specific market or region. Benchmarking can best be applied utilizing various benchmarking entities which match the specific size and function of the studied facilities. In the case of the City of Redmond, the scope of the facilities assessed were of such unique size and function that benchmarking as a group was more advantageous, than as a unique facility. The exception was City Hall, due to its size, function and separate contracted management. City Hall was benchmarked uniquely and then used as the standard for evaluation of the "campus" and individual facilities.

The consistency of historical budget and cost information provided since 2011 (with the exception of 2014), dictated that benchmarking would yield the most significant findings if related to the current 2016 budget. Historical cost information tracked consistently with budgets, so utilizing the current budget was most beneficial. This budget benchmarking could provide pertinent "opportunities" for improving current operations as well as inform future budget preparation. More significantly, these "opportunities", along with a robust CMMS system, could better proportion the Facilities attention to the most critical facility needs and inform the City of future capital improvements.

These benchmark observations and findings are organized in no particular order and addressed in more detail through specific analysis and recommendations included later in the Gap Analysis section of the report. The data below is taken from BOMA EER 2014 and IFMA Report #32 adjusted to 2016 dollars for the comparison.

The Gap Analysis provides a more detailed look at some of the major budget expenses and the Recommendations section provides specific actions that could be taken to approximate and maximize the savings potential for sustainable operations.

As is the case in many facility operations assessments, the analysis continues to focus on manpower utilization and resources as the driver of facility operating expense and the ultimate maintainability of the city's assets for their intended use.

Recommendations focus on both the specific cost categories addressed via the benchmark differentials noted for City Hall, and the more general operational and administrative needs that can supplement specific and overall budget compliance and sustainability, while insuring the facility mission and tenant satisfaction goals are achieved.

The true challenge of these recommendations is providing ongoing sustainability in conjunction with meeting the facility mission. For this success, facility leadership must provide the rigor and flexibility to meet future challenges and changes. This success starts with a talented staff, visionary leadership, good policy and procedure adherence, transparent communication and collaboration on the overall mission and vision of the city.

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Facilities Financial Assessment

Methodology

BUDGET/EXPENSE VS REVENUE

The foremost task of this report was in reviewing and analyzing the facility operating budgets and expenses. Revenue is important in looking at the total bottom line of operations, however only budgets and expenses were reviewed and analyzed here. There are opportunities in the management of facilities to create revenue or "offset" expenses, however these are most often, and best handled via accounting practices, and not facility management.

DOCUMENTATION

In order to provide accurate findings and recommendations, McKinstry reviewed and utilized many documents provided by the FAC supervisor in the preparation of this assessment. Among the documents provided and reviewed, the following documents were significant in the preparation and recommendations contained in the report.

City Hall 2016 Executive Summary
City Hall Property Management Agreement- Wright Runstad
City Hall General Services Agreement- Buenavista Services, Custodial
Facilities Budget History- 2011-2016
Facilities Budget Report- January-December 2015

PROCESS

In general, the process of this assessment involved the following general activities:

- Information gathering
- Document review
- Interviews
- Organization of documents and accounts
- Comparison of accounts to benchmarks
- Identification of major discrepancies
- Analysis of all accounts and major discrepancies
- Recommendations on sustainable practices that can provide efficiency and lower operating expense without sacrificing tenant expectations.

Definitions-

Key Acronyms & Definitions: *Brief descriptions of some common terms and acronyms used throughout the report. Note that these definitions are not standardized at this time and some of these definitions are subjective and excerpted from multiple standards. The intent is not to provide a dictionary term, but to provide a general term and guiding definition for analysis and interpretation.*

COR- City of Redmond

The City of Redmond is the owner and user of most of the facilities assessed, with the Schoolhouse being the major exception.

WR- Wright Runstad Associates

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Facilities Financial Assessment

Wright Runstad Associates was the developer of City Hall back in the mid 2000's and continues to manage and operate the facility as part of a Property Management Agreement with the City of Redmond, currently set to expire at the end of 2016.

Meng- Meng Analysis

Meng Analysis is the company that was contracted to perform the Facility Condition Assessment in 2013, and some of the information contained in their 2013 report is included in this report.

Facility Benchmarking

Benchmarking is the process of comparing one's facility to known standards of practice and performance, developed by similar companies for similar facilities. A more formal definition of facility benchmarking would be:

Benchmarking is the ongoing review of operational performance to determine if a facility is improving or worsening in comparison to itself, other similar facilities, and/or industry peers.

Gap Analysis

This is the process of analyzing facility operations and identifying areas of operations where process and procedure can be applied to create sustainable savings and operational improvement.

OPEX- Operating Expense

The OPEX or Operating Expense are the costs of running the day to day operations of a business, generally involving sales and administration.

BOMA- Building Owners and Managers Association

The Building Owners and Managers Association (BOMA) is an international association of Business Owners whose mission is to "advance a vibrant commercial real estate industry through advocacy, influence and knowledge."

BOMA EER Report

The BOMA EER reports are the data base queries of facility management metrics used in benchmarking similar "function" facilities, mostly as related to size.

IFMA- International Facility Management Association

International Facility Management Association (IFMA) is an association of facility management professionals that conducts research and provides training and education in facilities. This is an additional resource for benchmarking of facilities, generally more related to groupings by function and then by facility size.

GSF- Gross Square Footage

Gross Square Feet (GSF) is a unit of measure representing the total enclosed or constructed square footage of a facility.

RSF- Rentable Square Footage or useable as the case may be.

Rentable Square Feet (RSF) is a unit of measurement representing the total enclosed area (GSF) less any vertical penetrations such as stairs, elevators and shafts as well as janitor closets, mechanical and electrical spaces.

ASF- Assignable Square Footage

Assignable Square Footage (ASF) is a unit of measure included in the Meng FCA Report 2013, which

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approximates the rentable SF.

CMMS- Computerized Maintenance Management System

CMMS systems are facility management software platforms developed to support preventive and corrective maintenance activities, which generally include issue management capabilities to allow customer and staff facility requests to be facilitated with better transparency, accountability, communication, follow-up and reporting.

M&R- Maintenance and Repair

Many operational benchmarks and operating budgets combine preventive maintenance and ongoing repairs into a single category referred to as Maintenance and Repair (M&R). This is essentially a combination of the following two budget categories.

PM-Preventive Maintenance

Preventive maintenance activities (PM's) are the regularly scheduled tasks required to support the operation of the facility systems and equipment to prevent premature failure and maximize continued performance in their intended role. Additional maintenance strategies such as Predictive (PdM) and Proactive Maintenance are also common when reliability and facility function are critical to the delivery of business services.

CM- Corrective Maintenance:

Corrective maintenance activities (CM's) are the unplanned tasks and repairs necessitated by system or equipment failures. CM is also referred to as reactive maintenance.

DM- Deferred Maintenance:

Deferred maintenance is the sum of the corrective repairs, and preventive maintenance tasks, which are not performed, thereby deferred until a future time. Deferred maintenance can also refer to the replacement of equipment and systems that have reached the end of their useful life or can no longer provide reasonable beneficial service. Deferred maintenance decisions are usually based on a lack of available funds to either correct or maintain the systems and equipment as intended. Thus Deferred Maintenance is usually expressed as a cost for facility organizations to manage in future budget cycles.

WO's- Work Orders

These are service or work requests that are generated by staff and faculty, and are assigned to the facilities group to resolve issues or complaints arising from facility operations. These would also include PM's if that functionality was available.

EMP- Engineered Maintenance Plan

The Engineered Maintenance Plan is the handbook for the overall Maintenance program, and also for any additional system and equipment needs, to fulfill the intended long term reliability, mission and operation of the facility. The EMP contains the systems and equipment checklist, the schedules for when regular preventive maintenance is intended, the checklists and procedures for the specific maintenance tasking, and the recommendations on timing (shutdowns, service interruptions, etc), technician hours and material requirements.

FTE- Full Time Equivalent

Full Time Equivalents (FTE's) is a unit of measure referring to the amount of labor required to support various maintenance activities on the campus.

In general, 1 FTE = approximately 2080 base hours annually

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Facilities Financial Assessment

F&LS- Fire & Life Safety

Fire & Life Safety refers to the Fire Alarm, Detection, Protection, and Suppression systems in the facility. These systems are integrated to provide proactive annunciation and response in the event of a fire or smoke event.

MEP- Mechanical, Electrical, Plumbing

The Mechanical, Electrical and Plumbing systems are frequently lumped together as MEP, and are integrated to provide efficiency, reliability and functionality.

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Facilities Financial Assessment

Benchmarking

Using industry benchmarking standards (BOMA/IFMA), McKinstry analyzed the budget accounts for City Hall, and the additional city facilities for the fiscal year 2016.

The BOMA and IFMA benchmarks were chosen as most representative for the following reasons:

A. **Best functional match**-

City Hall. BOMA relies on data from mostly property and tenant management companies and facilities. City Hall best represents the facility size and function most connected to BOMA data.

B. **Best functional match**-

All facilities, including City Hall. IFMA includes a database of more than 70 facilities related to City/County Government. Although the facilities are not identified by function, this data represents a significant benchmarking tool for comparisons of facility costs.

C. **Accounts correlation**-

City Hall. BOMA data is organized around similar definitions of financial accounts, which correlates with the accounting used in the City Hall Executive Summary. This allows for more accurate comparisons and in depth analysis of individual accounts and scope.

D. **Location database**-

City Hall. BOMA data is more indicative of the local real estate market, with actual data from local properties. Although the data set is small, localized information allows more precise analysis, specifically around staffing labor and vendor performance.

E. **Staffing**-

All facilities, including City Hall. IFMA provides good staffing benchmarks, whether outsourced or in-house. The IFMA benchmarks also include good definitions of responsibilities and scope of services per budget categories.

The current budget accounts for fiscal year 2016 were analyzed for scope, clarity, and expense using the budget information provided in the 2016 City Hall Executive Summary and the Facility Budget History 2011-2016 documents.

The most significant challenge was in the identification of actual gross and useable square footage numbers for each facility. These values provide a significant impact on the unit pricing of operations as compared to industry facilities. This was another reason to group the facilities into a larger "campus" and apply benchmarks accordingly. For this report, the Meng Analysis Facility Condition Assessment 2013 "Facility List" was consulted and the "Assignable SF" utilized as the value in the benchmark analysis. The only exception to the grouping was City Hall, which was benchmarked as a standalone facility, using the Meng "Assignable SF". However the Municipal Campus Parking Garage SF was excluded, since the minor budget items did not warrant inclusion of the total 90,000 sf garage.

Additionally, the facilities were benchmarked using operating expenses (OPEX) only. This focuses on the cost of operations only and excludes additional expenses of insurance and taxes.

The BOMA benchmarks were derived from the 2014 EER reports (latest at the time of analysis) and then escalated by 3% (CPI) to correlate to the COR 2016 operating budget.

The IFMA benchmarks were quantified from the IFMA Research Report #32, Operation and Maintenance Benchmarks, 2009 and included an approximate 11% (CPI) escalation to correlate to the 2016 COR operating budget.

EXHIBIT #1- City Hall Benchmarking 2016 Budget (see attached

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Facilities Financial Assessment

worksheet)

WHAT THIS MEANS?

The COR City Hall Benchmarking 2016 Budget sheet is a representation of City Hall in BOMA budget/cost categories, with BOMA benchmarks associated. The benchmarks are representative of the small building category (50,000-99,000 SF).

Individual categories are compared and significant differences are noted for further analysis or comment.

The totals of the budget and benchmarks are compared at the bottom, with differences noted for further analysis and comment. The IFMA benchmark is included at the bottom as another full facility comparison benchmark, without the itemized categories.

ASSUMPTIONS

- The facilities are compared on a "Assignable SF" value from the 2013 Meng "Facility List" so as to maintain continuity with benchmark standards. The WR Executive Summary utilized a much higher "rentable SF" (113,068 rsf) versus the Meng value of 85,770 "Assignable SF". For the purpose of this report, Rentable SF is equal to "Assignable SF" for facility square footage. Although the use of "Assignable SF" drives the budget/SF higher, it appears to be more accurate than the "rentable SF" used in the WR report. It is suggested that an additional study be performed to determine the actual RSF as defined by BOMA or IFMA.
- The Cleaning category includes the budget from the WR Executive Summary ($77,015), and the additional March to Dec 2016 monthly cleaning contract (10 months at $9365, or $93,650), for a total budget of $170,665. This includes the day porter service also.
- The Other Utilities category includes $16,480 for water/wastewater charges included in the FAC 2016 Facility Support budget.
- The General Building category contains the budgets for some of non-specific categories of comparison including grounds, landscaping, interiors, safety and security.
- The Administrative category includes the administrative labor and miscellaneous supplies associated with managing the facility.
- The Management fee is the stated amount per contract, paid to WR annually.
- The other BOMA categories are self- explanatory for the labor, materials, contracts and supplies utilized in facility operations.
- There is no differentiation for utilization of direct labor versus contract or vendor labor, in the maintenance and repair categories. This will be discussed later as to recommendations for sustainable operations in the future.

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Facilities Financial Assessment

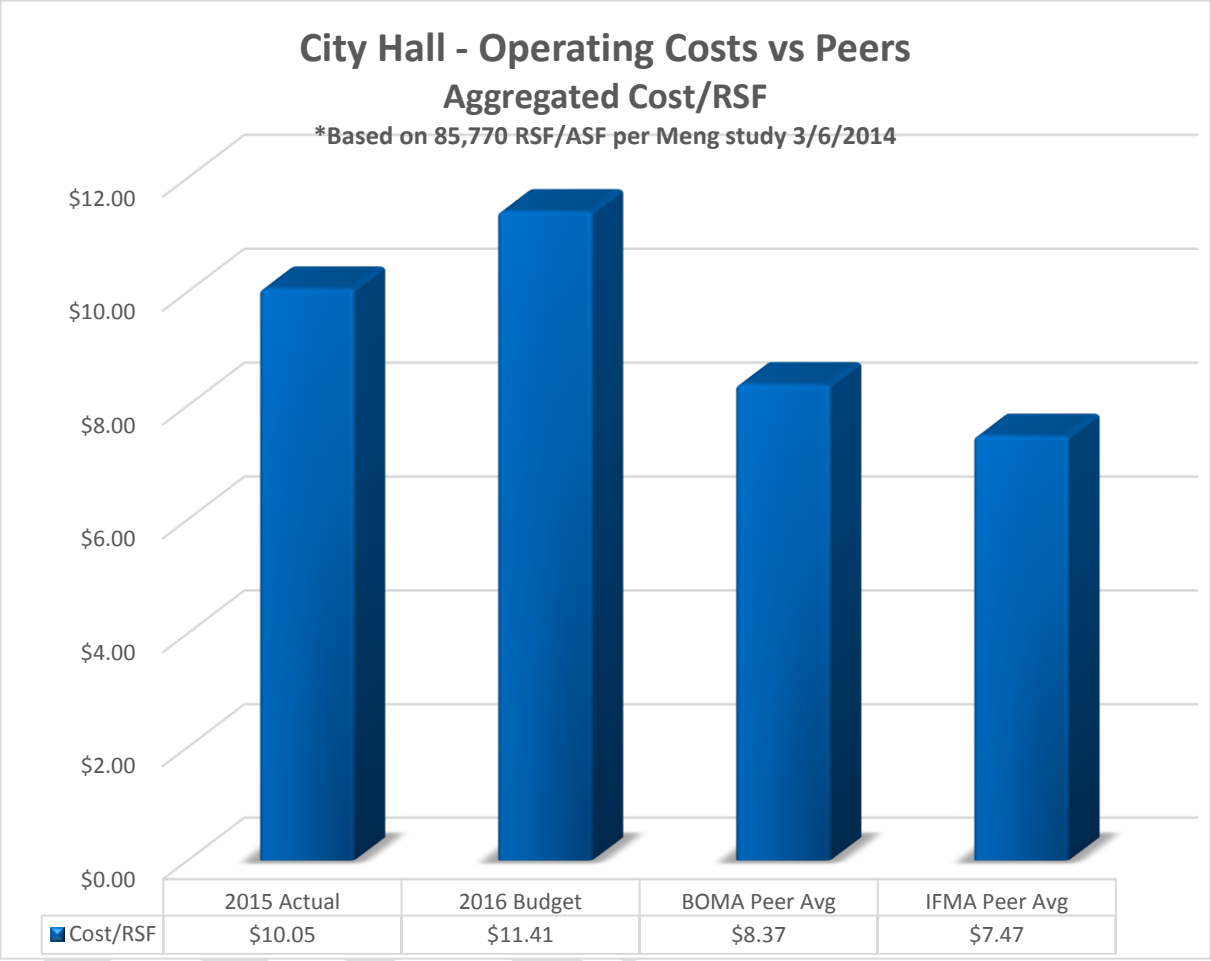

Figure 1- Aggregated Operating Costs

OBSERVATIONS: FIGURE 1

- The City Hall budget ranks significantly higher than either the BOMA or IFMA. Based on the level of management of City Hall, operating hours, and Class A standards, it would be expected that the City Hall budget would be above the benchmarks. However, the $3.04/ASF above the BOMA benchmark suggests that additional analysis is warranted.
- The same is true in relation to the IFMA benchmark, which is closer to $4/ASF.
- No review was made of any CMMS work orders or work history.

Facilities Financial Assessment

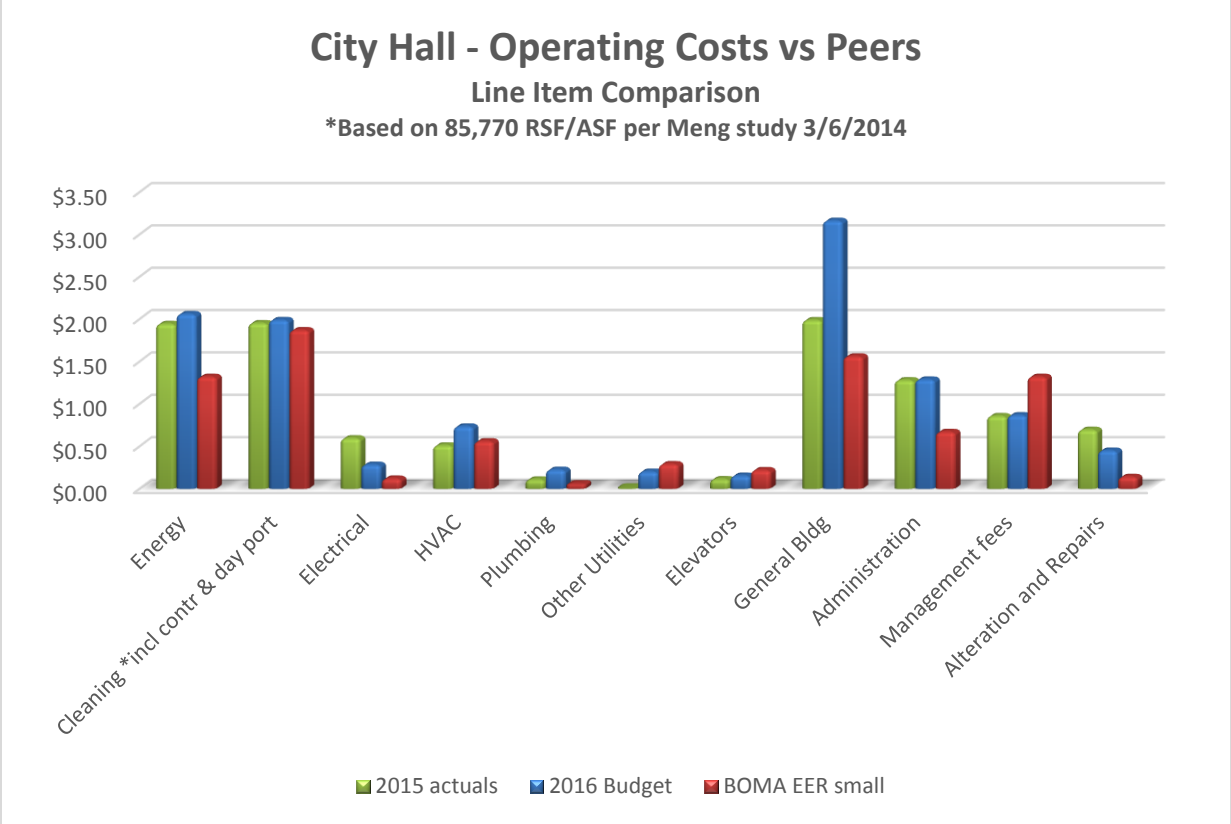

Figure 2 - Line Item comparison

OBSERVATIONS: FIGURE 2

- The General Building budget has the greatest gap in the benchmark, of $1.60/ASF. This category includes the engineering and contracts for managing City Hall, as well as a support budget for the COR Facilities group to supplement WR in facility management. The support budget is approximately $1.08/ASF of the differential.
- The Energy Budget is also more than 50% above the BOMA benchmark. 2016 YTD actuals (not shown) indicate that the budget is higher than needed, although there has been no explanation for this year's lower expenses.
- The Administration category is higher than the BOMA benchmark by $0.62/ASF. All of this differential comes from the WR contract Property Administration reimbursement.

Facilities Financial Assessment

EXHIBIT #2- COR Facility Assessment 2016 (see attached)

WHAT THIS MEANS?

The COR Facility Assessment 2016 sheet is a facility comparative representation of the COR 2016 budget for all facilities (excepting City Hall), including the Cleaning Contract and the spread of the Administrative budget category by square footage (Assignable SF). This exhibit categorizes the SF cost of each facility. City Hall is included at the bottom of the totals to show a relative comparison to the other COR facilities.

The intent of this report is to compare facility to facility budgets, based on $/ASF, and then assess the budgets against the other priorities and needs of the City.

Some assumptions and observations include:

ASSUMPTIONS

- The facilities are compared on an "Assignable SF" basis, from the Meng report, due to the significant variations in size and function, which creates problematic comparisons in applying values to a rental able or useable SF.
- The Cleaning Contract does not include all facilities, but does include the annualized cost of cleaning even though the contract started in March 2016.
- The Administrative budget category is spread by facility "Assignable SF" accordingly.
- The Administrative budget category is reduced by $20,000 and this is applied to City Hall as Facility support during the 2016 fiscal year, along with the $71,961 in materials and supplies included in the Facilities Budget listed for City Hall.
- The City Hall reference in the bottom line of the Facility Budget Assessment 2016, is taken from Exhibit #1.
- The expected range note is a common generalization of facility operational cost. Budgets below or above this this range can indicate both good and bad operational performance, due to multiple factors and variables including unexpected occurrences, poor budget forecasting, lack of operational issues, vendor issues, low usage, missed expenses, etc.

OBSERVATIONS

- Certain facilities were stated as high maintenance facilities by the Facilities group. These facilities included:

  Public Safety Building
  Senior Center
  Redmond Pool
  Community Center

  Understanding why these facilities require a higher degree of support is critical to future planning and budget establishment.

- The overall facilities budget/ASF (excluding City Hall), equates to $8.99/ASF, which is generally in the range of the expected performance of these facilities. The following facilities with the highest budget/ASF included:

  Operations Center

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Public Safety Building
Senior Center
Redmond Pool (after adding in an estimated Utilities expense)
Community Center
Teen Center
Park Ops Center

The one item all of these facilities have in common is age, some nearing 20 years age, while others are approaching 40 years age. The Teen Center and Redmond Pool are the youngest, and the Senior Center, Community Center and Public Safety Building are the oldest.

- Because this is a budget analysis only, it is limited to forecasting, based on prior history and knowledge. Actual expenses along with a robust CMMS system provide a better tool for anticipating and projecting future operational performance. A formal CMMS system is needed to better judge the prioritization of maintenance manpower and vendor resources to maintain the City assets to their life expectancy.
- The budget variances do provide relevant information when sorting out the highs and lows, which allows more in depth study to the detail.
- When analyzed as a "campus", with all of the facilities, excluding City Hall, taken as a group, the overall BOMA budget per SF would generally fall at about $8.50/ASF, however this difficult to estimate due to the many types of buildings and related function of each facility. With this reasoning, it is better to look at a range, and the $8-$10/ASF range is generally adequate for facility to facility comparisons.
- The IFMA benchmark for operations is approximately $8.12, adjusted to 2016 dollars.

Recommendations

The Recommendations section has the primary goal of providing suggestions for a Facilities Budget and Plan, to sustain and enhance the operational performance of the City's facility assets.

GUIDING PRINCIPLES FOR A FACILITY OPERATIONS BUDGET

- Financial: Make the budget sustainable on a long term plan (20 years)
- Operations: Manage with data. Utilize a CMMS system to track all preventive and corrective maintenance, by facility. Utilize the data to plan and adjust budgets and spending to optimize asset value, usage and efficiency.
- Operations: Reinforce the value of preventive maintenance, both financially and operationally
- Function: Create safe and secure facilities to support staff and the community.
- Operations: Provide the Facility Maintenance team with the skills and tools to perform their work successfully and sustainably.

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Facilities Financial Assessment

BUDGET RECOMMENDATIONS

- Categorize individual facility accounts to better track and benchmark budget and expense. Not every facility needs the accounts shown for City Hall, but utilizing standard accounts, even while combining line items, can improve tracking and forecasting.
- Separate major maintenance accounts into corrective and preventive maintenance.
- Track staff labor by facility and account categories.

FINANCIAL RECOMMENDATIONS

- Increase the overall facility budget to include preventive maintenance, whether performed by staff or vendors. Recommended amount annually $150,000. Prioritized tasks, schedules and reporting. (see Staffing Assessment for details on suggested staffing changes)
- Track preventive maintenance to offset unplanned service needs.

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EXHIBIT #1 Meng RSF, BOMA Small building benchmark City of Redmond- City Hall Benchmarking- 2016 Budget

Small building- 50,000-99,999 sf **DRAFT 11-08-16**

	City Hall- 85,770 RSF Operating Expense budget	2016	85770 cost/SF	BOMA EER small cost/SF	comments
	Accounts:				
	Energy	$ 176,658	$ 2.06	$ 1.32	
	Cleaning*incl contr & day port	$ 170,665	$ 1.99	$ 1.87	
	Electrical	$ 24,320	$ 0.28	$ 0.12	
	HVAC	$ 62,990	$ 0.73	$ 0.56	
	Plumbing	$ 19,245	$ 0.22	$ 0.06	
	Other Utilities	$ 17,294	$ 0.20	$ 0.29	
	Elevators	$ 13,204	$ 0.15	$ 0.22	
	General Bldg	$ 271,160	$ 3.16	$ 1.56	COR significantly higher than benchmark
*	Administration	$ 110,429	$ 1.29	$ 0.67	
	Management fees	$ 74,302	$ 0.87	$ 1.32	
	Alteration and Repairs	$ 38,575	$ 0.45	$ 0.14	
	City Hall Budget TOTALS	$ 978,842	$ 11.41		incl rev cleaning, Quinn $72K and $20K labor from GA.
	BOMA Category- small office size			$ 8.37	Class A office standards by category
	City Hall comparison- BOMA			**$ 3.04**	**higher than Boma small building benchmark**
	IFMA City Gov Category comp			$ 7.47	
	City Hall comparison- IFMA			**$ 3.94**	**higher than IFMA Cost of Ops benchmark**

NOTE: Addit areas which may increase the benchmark delta.

* Some labor incl in Admin for grounds. Does Park Ops provide other support?

Facilities Budget 2016	**Campus w/o City Hall**					Admin / ASF	
	ASF per Meng	**301,665**				$ 3.69	
Account Description	**ASF per Meng 2013**	**2016 Budget**	**Cleaning Contract**	**Budget Total**	**Budget per SF**	**Total with Admin incl**	**Comments**
SAMM RIVER BUS PARK	33,156	$ 45,507	$ 5,983	$ 51,490	$ 1.48	$ 5.16	Low utility budget
TRINITY BUILDING	16,380	$ 36,967	$ 1,612	$ 38,579	$ 2.12	$ 5.81	Low usage
OPERATION CENTER	15,885	$ 128,148	$ 8,304	$ 136,452	$ 7.56	$ 11.25	higher utility budget
DECANT BUILDING	2,650	$ 12,604		$ 12,604	$ 3.60	$ 7.29	
ADMIN		$ 1,112,532		$ 1,112,532	$ 3.69		
POLICE BUILDING incl N&S Gar	82,867	$ 393,777	$ 69,504	$ 463,281	$ 4.77	$ 8.45	
SENIOR CENTER	17,600	$ 144,328	$ 27,600	$ 171,928	$ 7.81	$ 11.50	longer operating hours
OLD SCHOOLHOUSE	34,500	$ 185,921	$ 43,200	$ 229,121	$ 4.98	$ 8.67	
TEEN CENTER	6,800	$ 41,607	$ 8,424	$ 50,031	$ 6.25	$ 9.94	
FIRE STATION 11	20,764	$ 83,440	$ 6,936	$ 90,376	$ 3.51	$ 7.20	
FIRE STATION 12	5,640	$ 34,310		$ 34,310	$ 4.87	$ 8.55	
FIRE SATION 13	5,200	$ 24,083		$ 24,083	$ 3.71	$ 7.39	
FIRE STATION 14	7,600	$ 36,891		$ 36,891	$ 3.88	$ 7.57	
FIRE STATION 16	12,663	$ 66,203	$ 2,880	$ 69,083	$ 4.46	$ 8.15	
FIRE STATION 17	15,518	$ 42,313		$ 42,313	$ 2.18	$ 5.87	
FIRE STATION 18	6,171	$ 27,518		$ 27,518	$ 3.57	$ 7.26	
PARKS OPS CENTER	6,972	$ 62,479	$ 9,600	$ 72,079	$ 8.79	$ 12.48	
REDMOND POOL	11,299	$ 46,138	$ 2,016	$ 48,154	$ 3.84	$ 7.52	does not include energy or utility budgets
Total Facilities budget w/o CH		**$ 2,524,766**	**$ 186,059**	**$ 2,710,825**	**$ 8.99**		Expected range, $8- $10 / ASF
CITY HALL	**85,770**	**$ 978,842**			**$ 11.41**		

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SEISMIC EVALUATION REPORT

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Redmond City Facilities

Redmond, WA

Building Seismic Evaluations

November 1st, 2016

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Purpose and Scope

This report summarizes our investigation, findings and recommendations regarding the probable seismic performance of Redmond city facilities located in Redmond, Washington. Our scope of work was limited as follows:

1. Using the current national standard, ASCE 41-13 "Seismic Evaluation and Retrofit of Existing Buildings", perform full Tier I, and where appropriate, Tier II and Tier III evaluation of Fire Stations 11, 12, 13, 14, 16, and due to the age of construction, only the K-Braced frame for Fire Station 18. This level of evaluation outlines seismic deficiencies for each building and provides recommendations for retrofit to determine rough order of magnitude (ROM) costs.
2. Perform evaluations based on a review of existing drawings in conjunction with common deficiencies found in structures of similar age and construction for the Old Medic One Building, FS16 Shop Building, Hartman Park Swimming Pool, Central Stores Warehouse Building 5, MOC Building 1, Parks Operations Center Building 8, Senior Center Building, Old Fire House Teen Center, Old Redmond School House, and Trinity Building. This level of review provides a summary of anticipated deficiencies without the breadth and depth of calculations associated with an ASCE 41-13 analysis. Experience, engineering judgement, and FEMA document 547 was used for this portion of the evaluation. No calculations were performed for this level of evaluation.
3. Prepare a report that outlines the results of the assessment along with recommendations for possible seismic improvements or mitigation measures.

None of the evaluations performed are required as part of a substantial alteration or change of use as outlined by the 2012 or 2015 International Existing Building Code and are therefore considered voluntary in nature.

Available Documents

The following documents were used in the seismic evaluations for the City of Redmond's portfolio of buildings:

Fire Station 11, McAdoo Malcolm & Youel Architects, 10.04.00
Fire Station 12, Lawhead Architects, 12.21.98
Fire Station 13, Douglas Bertsch Architects, 9.28.93
Fire Station 14, Mithun, 5.15.90
Fire Station 16, Lawhead Architects / Douglas Bertsch Architects, 4.12.94
Fire Station 18, Lawhead Architects, 2.15.05
Hartman Park Swimming Pool, Cummings Associates, 3.19.70
Central Stores Warehouse Building 5
Maintenance Operations Center Building 1, Robert Wagner Architecture, 3.10.97
Parks Operations Center Building 8, Robert Wagner Architecture, 2.10.97
Senior Center Building, ARA/Jackson Architects, 1.05.89
Old Fire House Teen Center Building, ARC Architects, 9.09.02
Old Redmond School House, ARC Architects, 4.09.08

Seismic Hazard

Western Washington is one of the more seismically active regions in the nation. Research indicates that there are three sources of strong ground motion in the Puget Sound region. The first is an inter-plate event off the coast of Washington where the Juan de Fuca plate drives under (subducts) the North American plate. Earthquakes up to a Magnitude 9.0 and strong ground motion lasting several minutes are predicted from this source at intervals of approximately 500 years. The 1964 Alaska earthquake was caused by a similar mechanism. The second source is an intraplate event deep in the Juan de Fuca plate directly beneath Puget Sound. This event is thought to be capable of producing a Magnitude 7.5 earthquake with strong ground motion lasting 20 seconds and occurring approximately once every 500 years. Recent earthquakes, such as the 2001 Nisqually Earthquake (Magnitude 6.8), the 1965 SeaTac Earthquake (Magnitude 6.5), and the 1949 Olympia Earthquake (Magnitude 7.1), are examples of this type of event. The third source is a crustal event, which may occur along known or unknown fault lines. Figure 1, courtesy of the USGS "Seismic Hazards Investigation in Puget Sound" research program (http://earthquake.usgs.gov/regional/pacnw/ships/), illustrates major known crustal fault lines around Seattle. Those within a 60 mile radius, indicated by the circle, are considered capable of causing damage within the City, such as the Seattle Fault (SF) and South Whidbey Island Fault (SWF). The 1996 Duvall earthquake (Magnitude 5.7) on the South Whidbey Island Fault is an example of this type of event. Since these shallow earthquakes are much closer to the surface, ground motions are expected to be very intense, producing a Magnitude 7+ event with 20 seconds of strong ground motion. Many of the Redmond facilities experienced the 2001 Nisqually earthquake with minimal visible damage. However, this is no guarantee of future performance; the ground shaking in Redmond was relatively light with likely accelerations less than 1/5th of design-level ground motions. It should be noted therefore, that past performance is not an accurate predictor of future performance under design-level events.

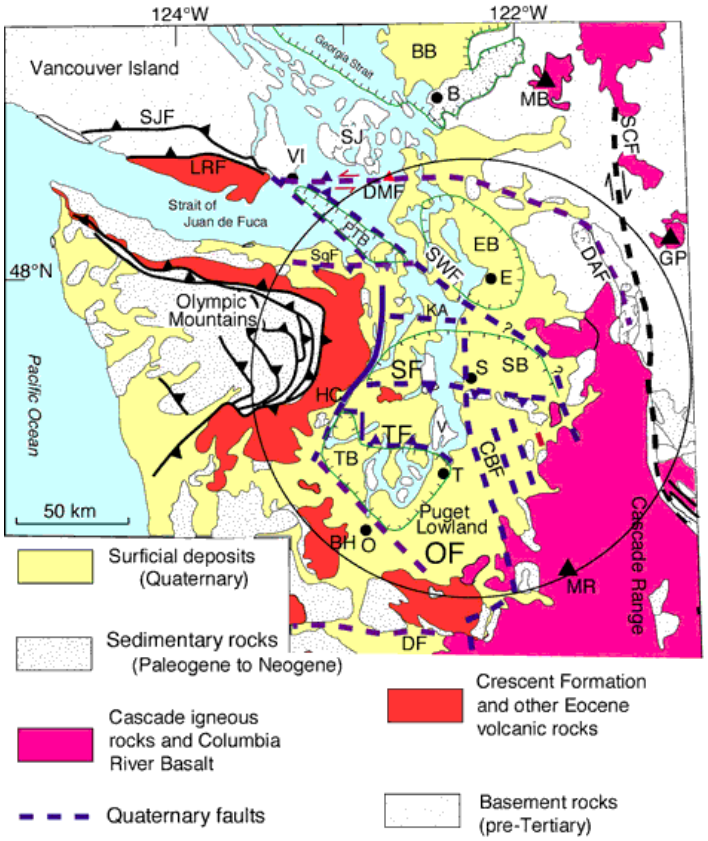


Figure 1: Earthquake Faults around Seattle

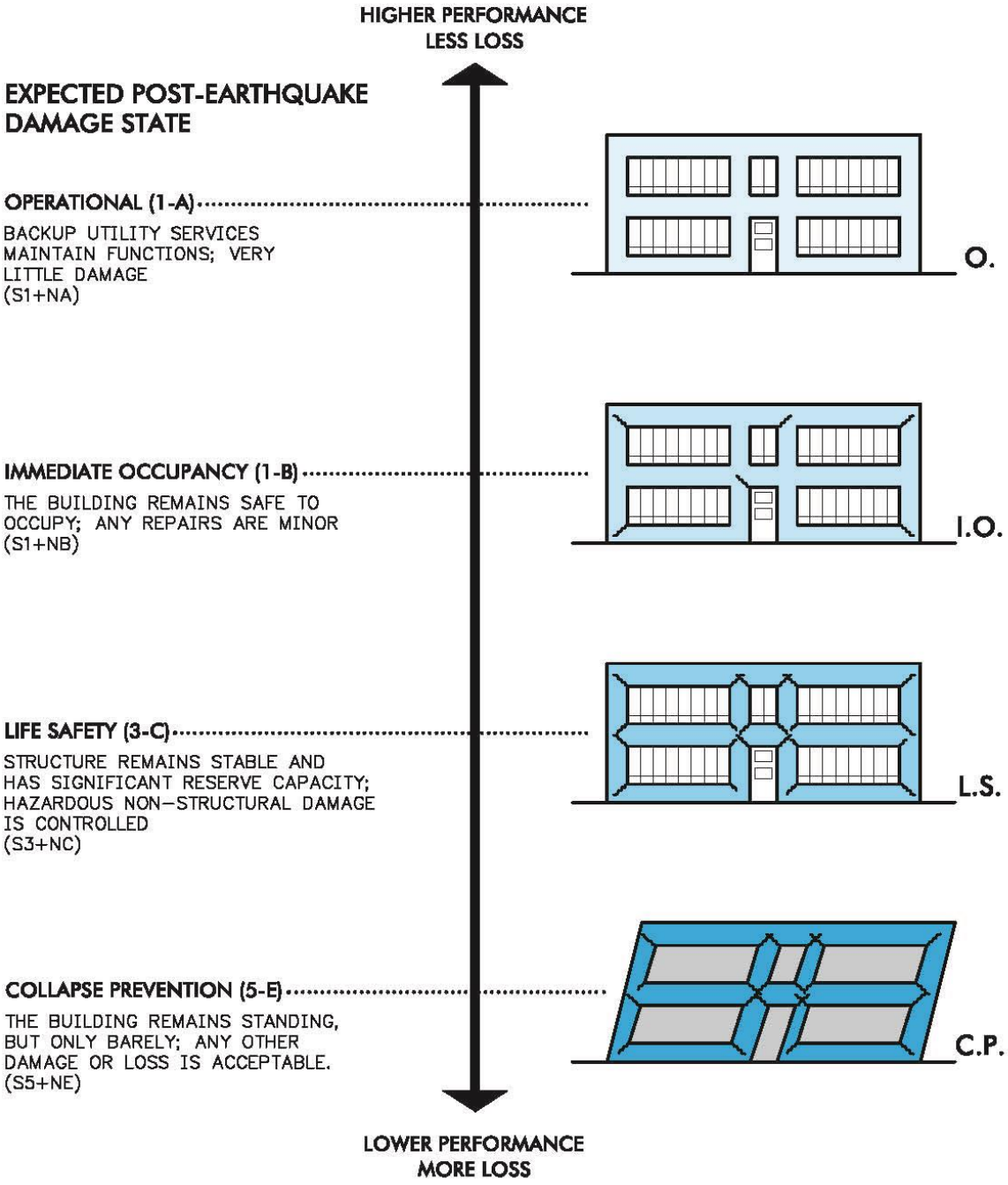
Performance Objective

The most current national standard for existing building evaluation is ASCE 41-13 "*Seismic Evaluation and Retrofit of Existing Buildings*". Although not currently adopted by Washington State at the time of this writing, it is expected to be adopted in July of 2016 with the 2015 International Existing Building Code. ASCE 41-13 provides a methodology for a deficiency based structural retrofit and utilizes a three-tier evaluation process with checklists specific to building type and level of seismicity. A Tier-1 screening consists of a visual screening with basic and supplemental checklists to quickly identify potential structural deficiencies and potential behavior during an earthquake. Items found to be nonconforming based on the results of the Tier-1 evaluation are identified for remediation and Tier-2 or Tier-3 evaluations may be required. Where new structural elements are recommended, they would be designed to meet strength and detailing requirements in accordance with current building code requirements (2012 International Existing Building Code at the time of this report).

The initial step in the seismic evaluation of the buildings was to define the seismic performance objective. The performance objective is described in terms of a post- earthquake damage control state for a particular earthquake. The damage control states range from collapse prevention to fully operational. Collapse prevention is typically reserved for historical and limited use structures that have mitigating circumstances which prevent more comprehensive damage control measures. This post-earthquake damage state is such that the building is on the verge of partial or total collapse with extensive damage to non-structural components. Fully operational is typically reserved for the design of *new* critical facilities that must remain functional after an earthquake, including emergency response centers, hospital emergency rooms and fire and police stations. A fully operational damage control state requires that structural components have no permanent drift and substantially retains its original strength and stiffness. This damage control state is equivalent to the immediate occupancy performance level for all structural components. The difference in seismic performance levels occurs at the non-structural level where, for operational building performance, negligible damage occurs to non-structural components and power and other utilities are available. Existing buildings are typically evaluated to a lower standard than new buildings due to their shorter design life.

The standard for the evaluation and retrofit of critical facilities is the Immediate Occupancy Level per the 2012 International Existing Building Code (IEBC) which is the current building code in the State of Washington. This performance level remains unchanged in the 2015 International Existing Building Code. Basic Safety Earthquake 1E as referenced by ASCE 41-13 was used for the fire station evaluations. This level of performance is based on a seismic event with a 20% probability of exceedance in 50 years, corresponding to a 225-year return period for the event.

All fire stations included in this report were evaluated using the immediate occupancy performance level and position retention nonstructural performance level as outlined in Table 2-1 of ASCE 41-13 for. Recommendations for all other buildings are based on experience, engineering judgement, and FEMA document 547, “Techniques for the Seismic Rehabilitation of Existing Buildings,” which describes common seismic deficiencies for different building types and provides common retrofit techniques to mitigate those deficiencies.



TARGET BUILDING PERFORMANCE LEVELS AND RANGES

(ADAPTED FROM FIG. C1-2 IN FEMA 356, 2000)

Seismic Evaluation Methodology

ASCE 41-13 (Seismic Evaluation and Retrofit of Existing Buildings) was used for the evaluation of the fire stations. ASCE 41-13 provides an option for a deficiency-based retrofit evaluation. Under ASCE 41-13, buildings are evaluated to either the Life Safety or Immediate Occupancy Performance Level using a three tier evaluation process. As mentioned above, the fire stations have been evaluated using the Immediate Occupancy Performance Level. A Tier-1 and Tier-2, or screening phase, evaluation consists of checklists to quickly identify potential building structural deficiencies. Based on the results of the Tier-1 and Tier-2 evaluation, Tier-3 (Evaluation Phase) evaluations may be required. The checklists are based on the building type. For the fire stations, W2 (Wood Frames, Commercial and Industrial) and RM (Reinforced Masonry) Tier-1 evaluation checklists were utilized. Based on the high level of seismicity for the site, ASCE 41-13 also requires the immediate occupancy basic configuration checklist and the supplemental life safety structural checklist, as well as checks for nonstructural components. These checklists provide a means to identify potential deficiencies in a structure and potential behavior during an earthquake. When evaluating capacities of individual portions of the structure, it will often be expressed as a demand to capacity ratio (DCR). DCR is determined by comparing seismic demand, based on the Immediate Occupancy design earthquake, to the calculated capacity of the element being analyzed. Elements with a DCR less than 1.0 are considered to meet the specified performance objective while elements with a DCR greater than 1.0 are considered deficient. To account for the inherent ductility of an individual element, capacities are increased by “m-factors”. “M-factors” are component demand modification factors to account for expected ductility associated with this action at the selected structural performance level.

For all additional buildings, existing drawings (when available), engineering experience and judgement, and FEMA 547 were used to provide recommendations. At the request of the City of Redmond, these buildings were not evaluated using the ASCE 41-13 deficiency-based procedure outlined above.

Liquefaction

A number of the building sites are underlain by liquefiable soils according to the State of Washington Liquefaction Susceptibility map as shown in Appendix A, sheet 5. Liquefaction has the potential to severely damage the buildings that it supports due to the chance of large differential settlements. As indicated in the following sections of this report, site specific geotechnical engineering evaluations should be provided for each site to determine site specific liquefaction risks and recommendations for mitigation. Typical retrofit options to mitigate liquefaction risk take the form of deep foundation elements. Examples of this would be small diameter pin piles, helical anchors, or 6”-7” diameter micro-piles.

Prioritization

Prioritization of retrofit work should align with the corresponding risk factor associated with the building. For the Redmond facilities portfolio of buildings, it is recommended to prioritize work for the fire stations over the rest of the portfolio, as the fire stations have the greatest impact on public health and safety because they need to continuously operate after a seismic event in the region. Other considerations include the building occupancy category. Those buildings with housing and public occupancy considered a higher priority than those with more limited occupancies such as warehouses and storage facilities. The Redmond portfolio of buildings has been divided into three levels of prioritization. Level 1 is considered to be the most immediate retrofit need and consists of all fire stations. Level 2

consists of those buildings that have moderate risk based on the occupancy of the building. And Level 3 contains those buildings with the lowest risk and have more limited occupancies.

To assist in coordinating the work and available resources, for each fire station, we have listed our recommendations in an order of priority. Order is based on the magnitude of overstress, cost verses benefit of the recommendation, construction sequence, life-safety and exiting concerns, and our professional judgment. Although a recommendation may have a low priority, it does not imply that the recommendation is not important. When all of our recommendations are implemented, the seismic performance will meet the performance objective outlined previously in this report. In our professional opinion, a goal of implementing all of our recommendations should be set.

Prioritization Matrix			Prioritization Level		
	Building Use	Performance Level	1	2	3
Fire Station 11	Fire Station	Immediate Occupancy	•		
Fire Station 12	Fire Station	Immediate Occupancy	•		
Fire Station 13	Fire Station	Immediate Occupancy	•		
Fire Station 14	Fire Station	Immediate Occupancy	•		
Fire Station 16	Fire Station	Immediate Occupancy	•		
Fire Station 18	Fire Station	Immediate Occupancy	•		
Hartman Park Pool	Recreational Facility	Life Safety		•	
Central Stores Warehouse Building 5	Storage Warehouse	Life Safety			•
Maintenance Operations Center Building 1	Office	Life Safety		•	
Parks Operation Center Building 8	Storage Structure	Life Safety			•
Senior Center Building	Public Center	Life Safety		•	
Old Fire House Teen Center	Public Center	Life Safety		•	
Old Redmond School House Community Center	Public Center	Life Safety		•	
Trinity Building	Storage Warehouse	Life Safety			•

Fire Station 11

Building Description

Fire Station 11 is a single-story reinforced masonry building constructed in 1981 with an addition constructed in 1998. The building consists of a long rectangular office area and a roughly square, taller, apparatus bay. The main level is 16790 sq. ft. with an additional 2800 sq. ft. of mezzanine in the apparatus bay.

The structural system consists of brick masonry unit (BMU) shear walls with wood diaphragms. Structural plans are not available for the original portion of the building. The roof over the apparatus bay is timber framing with plywood sheathing and dimensional joists over solid sawn purlins and glulam girders. The office area roof is typical plywood sheathing over 2x framing in both the original building and the addition.

Construction plans from the 1998 addition to the fire station were available for review. No drawings were located for the original 1983 construction. Assumptions about the construction are based on visual inspection during a site visit and engineering judgement.

A follow up site visit was performed on September 7th, 2016 with staff from Otto Rosenau & Associates to determine if reinforcing is present in the existing walls utilizing hand operated radar. Reinforcing was confirmed to be present in the existing BMU walls. The size of reinforcing was unable to be verified, however spacing was roughly 4'-0" on center for vertical reinforcing and roughly 2'-0" on center for horizontal reinforcing.

Findings and Recommendations

Based on the ASCE 41-13 Tier-1 evaluation and subsequent Tier-2 and Tier-3 evaluations of the building, we have determined Redmond Fire Station 11 has elements that are noncompliant and prevent the building from meeting the minimum performance objective level as defined in ASCE 41-13. Some of these elements were determined to be acceptable based on the Tier-2 evaluation; however, deficiencies were still present. A copy of the checklists used to determine the non-compliant items have been included in Appendix B. The noncompliant (NC) items and resulting deficiencies, if they occur, are outlined below.

1. **Mezzanines** – The west mezzanine is neither independently braced nor anchored to the seismic-force-resisting elements of the main structure.

   Recommendation:

   Due to its positioning in the apparatus bay, a supplementary seismic-force-resisting system for the mezzanine should be added. An interior elevation schematic of a braced frame system is shown on detail sheet 6 in Appendix A.

2. **Non-structural components** – Non-structural components include mechanical, electrical and plumbing (MEP) components as well as architectural features, such as canopies and signage, that are not a part of the main building system. These components are vulnerable to becoming separated from the building during a seismic event and may pose a safety risk to the buildings occupants as well as impede operations of personnel.

   Recommendation:

   Provide lateral bracing for any fall prone equipment and verify presence of bracing for all duct work, piping, electrical supply and emergency equipment.

3. **Wood ledgers –** The diaphragm connection to the wood ledgers is properly detailed to prevent cross grain bending in the ledger in the addition. It is unknown if the existing structure is also properly detailed

   Recommendation:

   The ledger connections in the original building should be investigated to verify their compliance.

4. **Transfer to shear walls –** The ledger bolts to the shear wall is the primary transfer of lateral force and are required to be capable of transferring the full strength of the shear wall. The full strength of the shear wall exceeds the capacity of the ledger bolts by a factor of 1.4. Anchorage at the original building should be verified.

   Recommendation:

   The quantity of ledger bolts should be increased. The ledger bolts in question are shown on detail sheet 7 in Appendix A.

5. **Hose Tower –** The construction of the hose tower is not represented on the available building documents. By assuming the minimum reinforcing schedule, the hose tower was found to be not able to resist overturning forces during a seismic event.

   Recommendation:

   With information from the follow up site visit to radar the existing walls, a Tier 2 analysis was completed and indicated that the hose tower has sufficient reinforcing to resist flexural overturning forces. No further action is required.

6. **Continuous cross ties –** No purlin-to-purlin connection is present to develop a tension force across the diaphragm.

   Recommendation:

   Simpson holdown hardware is recommend to create a complete load path across the diaphragm. Detail sheet 9 in Appendix A shows a typical purlin crosstie connection.

7. **Plan irregularities –** The office area of Fire Station 11 has multiple re-entrant corners distributed around the floorplan. There is no information provided that indicates if they are properly detailed to transfer forces into the diaphragm chords.

   Recommendation:

   Additional onsite investigation and pictures indicated the presence of wood ledgers attached to the existing BMU walls with bolts spaced at roughly 48" on center. Other locations indicated a continuous rim above the BMU walls with blocking between joists. While observation of all similar existing conditions was not achievable, it is the opinion of SSF that this construction is typical throughout FS11 and as such resolved the diaphragm chord forces at re-entrant corners.

8. **Wall shear stress –** Shear stresses in the shared BMU wall between the office and apparatus bay has a demand to capacity ratio (DCR) of 1.4 for the Tier 1 check.

   Recommendation:

   With information from the follow up site visit to radar the existing walls, a Tier 2 analysis was completed and indicated that the existing BMU walls between the office and apparatus bay have sufficient capacity to resist the seismic demands.

9. **Liquefaction** – According to the State of Washington Liquefaction Susceptibility map, Fire Station 11 lies on the border of a "Low to Moderate" liquefaction zone. Detail sheet 5 in Appendix A shows the liquefaction susceptibility of the area surrounding Fire Station 11.

   Recommendation:

   A full geotechnical study should be performed to evaluate the liquefaction susceptibility of the soils underlying the fire station.

Redmond Fire Station 12

General Description and Condition

Redmond Fire Station 12 is a one-story, rectangular building, constructed in 1980 and retrofitted in 1999. This building was retrofitted to meet the standards of the 1997 Uniform Building Code (UBC). Roof construction consists of plywood sheathing over 2x joists supported by glulam beams which frame into masonry bearing walls. The foundation appears to consist of conventional strip footings and slab on grade. Fire Station 12 does not fall within Redmond's liquefiable zone, therefore further study of the foundation is not required. The lateral force resisting system is masonry shear walls. Available building plans do not specify whether the masonry walls are reinforced, however, given the time of construction was likely designed under the 1976 Uniform Building Code and therefore would require reinforcing. The 1998 retrofit added out-of-plane anchorage and tension ties to allow out-of-plane wall forces to develop into the diaphragm.

A follow up site visit was performed on September 7th, 2016 with staff from Otto Rosenau & Associates to determine if reinforcing is present in the existing walls utilizing hand operated radar. Reinforcing was confirmed to be present in the existing BMU walls. The size of reinforcing was unable to be verified, however spacing was roughly 4'-0" on center for vertical reinforcing and roughly 2'-0" on center for horizontal reinforcing.

Findings and Recommendations

Based on the ASCE 41-13 Tier-1 evaluation and subsequent Tier-2 and Tier-3 evaluations of the building, Fire Station 12 has elements that are noncompliant and prevent the building from meeting the minimum performance objective level identified earlier in this report. Some of these elements were determined to be acceptable based on the Tier-2 evaluation; however, deficiencies were still present. A copy of the checklists used to determine the non-compliant items is included in Appendix B. The noncompliant (NC) items and resulting deficiencies, if they occur, are outlined below.

1. **Non-Structural – Ceilings, Mechanical and Electric Equipment**
   The walkthrough of the fire station found fall-prone equipment unbraced for lateral forces. Additionally, further items that were not visible during the walkthrough of the fire station may be unbraced as well.

   Recommendation:
   Provide lateral bracing for any fall-prone equipment and verify presence of bracing for all ducts, piping, electrical equipment, and emergency power.

2. **Diaphragms – Plan Irregularities**
   Detailing at the reentrant corner on the west side of the building does not provide sufficient tensile capacity to develop the strength of the diaphragm. The 1998 retrofit added CMST14 and MTT 28B steel straps, however a Tier-3 evaluated Demand Capacity Ratio (DCR) of the connection determined the straps do not carry adequate capacity to meet the intended performance objective.

   Reentrant corner connection: DCR – 1.91

   Recommendation:
   Add HD7B and HDU5 straps to existing connection per Appendix A, Detail 1 to increase capacity to meet design requirements.

Fire Station 13

Building Description

Fire Station 13 is a single-story reinforced masonry building originally constructed in 1974 with an addition constructed in 1993 under the 1988 Uniform Building Code. A partial renovation was completed in 2009 that did not include any seismic retrofit work. The building is rectangular in plan with a re-entrant corner in the north-west quadrant of the building where the addition is located. The main level is 7350 sq. ft. with an additional 1120 sq. ft. of mezzanine in the apparatus bay.

The structural system consists of brick masonry unit (BMU) shear walls with wood diaphragms. Structural plans are not available for the original portion of the building, but it is assumed that a reinforcing schedule typical of the brick type would have been used. The roof over the apparatus bay is heavy timber framing with tongue and groove decking over glulam girders and solid sawn purlins. The office area roof is typical plywood sheathing over 2x framing in both the original building and the addition. The north wall of the addition relies on plywood shear walls for lateral force resistance.

Construction plans from the 1993 addition to the fire station were available for review. No drawings were located for the original 1974 construction. Assumptions about the construction are based on visual inspection during a site visit and best engineering judgement.

A follow up site visit was performed on September 7th, 2016 with staff from Otto Rosenau & Associates to determine if reinforcing is present in the existing walls utilizing hand operated radar. Reinforcing was confirmed to be present in the existing BMU walls. The size of reinforcing was unable to be verified, however spacing was roughly 4'-0" on center for vertical reinforcing and roughly 2'-0" on center for horizontal reinforcing.

Findings and Recommendations

Based on the ASCE 41-13 Tier-1 and Tier-2 evaluations of Fire Station 13 and Maintenance Building, the following items were identified as non-compliant towards meeting the Immediate Occupancy performance objective. A copy of the checklists used to determine the non-compliant items have been included in appendix B. The non-compliant checklist items and cause of the deficiency are listed below:

1. **Non-structural components** – Non-structural components include mechanical, electrical and plumbing (MEP) components as well as architectural features, such as canopies and signage that are not a part of the main building system.

   Recommendation:

   Provide lateral bracing for any fall prone equipment and verify presence of bracing for all duct work, piping, electrical supply, emergency equipment, and apparatus bay doors.

2. **Wood ledgers –** The diaphragm connection to the wood ledgers is not properly detailed to prevent cross grain bending in the ledger.

   Recommendation:

   Holdown hardware should be installed in line with the roof joists to create a positive out-of-plane attachment between the roof diaphragm and the BMU walls. Detail sheets 10 and 11 in Appendix A shows typical out-of-plane anchorage methods.

3. **Transfer to shear walls –** The lateral force transfer between the diaphragm and shear walls occurs through a pony wall between the BMU wall and the roof structure. Plywood sheathing prevented verification of the anchor bolt spacing. Assuming anchor bolts at 4'-0" on center, the DCR is 3.3..

   Recommendation:

   The anchor type and spacing of the pony walls should be verified, and additional anchors installed in the concrete bond beam. Increased panel edge nailing is required as shown on detail sheet 12 in Appendix A.

4. **Continuous cross ties –** No purlin-to-purlin connection is present to develop a tension force across the diaphragm.

Recommendation:

Simpson holdown hardware is recommend to create a complete load path across the diaphragm. Detail sheet 9 in Appendix A shows a typical purlin crosstie connection.

5. **Plan irregularities –** The reentrant corner at the north-west quadrant of the building does not appear to be detailed to develop tension forces into the diaphragm.

   Recommendation:

   Additional blocking and strapping should be added at the connection between the addition and the original structure as shown on detail sheet 13 in Appendix A.

6. **Wall shear stress –** Shear stresses in the east and west BMU walls had a demand to capacity ratio of 1.4.

   Recommendation:

   With information from the follow up site visit to radar the existing walls, a Tier 2 analysis was completed and indicated that the existing BMU walls are sufficiently reinforced to resist in plane shear stresses.

Redmond Fire Station 14

General Description and Condition

Redmond Fire Station 14 is a one-story building constructed in 1991 under the 1988 Uniform Building Code (UBC). Roof and siding issues were addressed in a 2009 renovation, however it is unknown if seismic retrofit measures were taken at that time. Roof construction consists of 1/2" plywood sheathing over premanufactured wood trusses supported by wood bearing walls. The lateral system consists of wood shear walls sheathed with either or both ½" plywood and ⅝" gypsum board. Bearing and shear walls are supported by conventional foundations. Fire Station 14 is not located in Redmond's liquefaction zone therefore further foundation analysis is not required.

Findings and Recommendations

Based on the ASCE 41-13 Tier-1 evaluation and subsequent Tier-2 and Tier-3 analysis of the building, Redmond Fire Station 14 has elements that are noncompliant and prevent the building from meeting the minimum performance objective level defined in ASCE 41-13. Some of these elements were determined to be acceptable based on the Tier-2 evaluation; however, deficiencies were still present. A copy of the checklists used to determine the non-compliant items has been included in Appendix B. The noncompliant (NC) items and resulting deficiencies, if they occur, are outlined below.

1. **Non-Structural – Ceilings, Mechanical and Electric Equipment**
   A walkthrough of the fire station found fall-prone equipment unbraced for lateral forces. Additionally, further items that were not visible during the walkthrough of the fire station, such as water heaters, may be unbraced as well.

Recommendation:

Provide lateral bracing for any fall-prone equipment and verify presence of bracing for all ducts, piping, electrical equipment, and emergency power.

2. **Seismic-Force-Resisting System – Hold-Down Anchors**

   Not all shear walls used to resist seismic forces have hold-down anchors. Wall line 7 as shown on page 23 of the structural calculations, is used to resist a large portion of the seismic forces and has no hold-down anchors to support the correspondingly large uplift forces.

   Recommendation:

   Add missing hold-down anchors to shear walls.

3. **Seismic-Force-Resisting System – Shear Stress Check**

   The capacity of the shear walls does not meet the Immediate Occupancy seismic objective of ASCE 41-13. Demand Capacity Ratios (DCR) of each wall line were determined by comparing seismic demand to the calculated capacity.

   Wall Line 7 per page 23 of structural calculations: DCR – 1.51

   Recommendation:

   Replace gypsum board sheathing with ½" plywood sheathing and nail panel edges with 8d nails at 2" on center to deficient shear walls to increase capacity.

4. **Seismic-Force-Resisting System – Narrow Wood Shear Walls**

   Several shear walls with aspect (height-to-width) ratios greater than 1.5-to-1 are used to resist seismic forces.

   Recommendation:

   A Tier-2 and Tier-3 analysis of the walls verified that shear walls with the maximum height-to-width ratio of 1.5 have sufficient capacity.

Fire Station 16 and Maintenance Building

Building Description

Fire Station 16 is a single-story building constructed in 1994 under the direction of Lawhead Architecture with engineering services provided by Heung K. Kim, P.E.. It is L-shaped in plan and consists of a rectangular office wing to the south and an attached apparatus bay to the north. The main level is 8,811 square feet with an additional 928 square feet split between two mezzanines.

The structural system consists of light framed wood construction with exterior plywood shear walls. The wood structural panel flat roof diaphragms vary in height from ten to 23 feet. A 30-foot tall reinforced CMU hose tower is located on the northeast corner of the garage. The building is clad in corrugated metal siding and standing seam metal roofing.

During the site visit one of the firefighters mentioned the building has a history of water leaks, though there are no visible signs of water damage. Renovation work in 2004 addressed these issues. Leaks may lead to hidden structural damage caused by decay. If wood decay is found, it is recommended that it be evaluated by a structural engineer.

Also on the site of Fire Station 16 is a 5,325 square-foot building for the maintenance of fire district apparatus. The maintenance building was built at the same time as the fire station and is of similar construction. The maintenance building was not evaluated per the ASCE 41-13. As a maintenance facility, the building would be evaluated per the life safety performance standards of ASCE 41-13. Considering the similar construction between the fire station and maintenance facility, the deficiencies found for the fire station building can be assumed to be present, albeit to a lesser extent, for the maintenance building as well.

Original 1994 architectural and structural permit documents were available for review. There are no indications that there have been significant remodels to the structure since its construction.

Findings and Recommendations

Based on the ASCE 41-13 Tier-1 and Tier-2 evaluations of Fire Station 16 and Maintenance Building, the following items were identified as non-compliant towards meeting the Immediate Occupancy performance objective. A copy of the checklists used to determine the non-compliant items is included in appendix B. The non-compliant checklist items and cause of the deficiency are listed below:

1. **Non-structural components** – Non-structural components include mechanical, electrical and plumbing (MEP) components, as well as architectural features, such as canopies and signage, that are not a part of the main building system.

   Recommendation:

   Provide lateral bracing for any fall-prone equipment and verify presence of bracing for all duct work, piping, electrical supply, and emergency equipment.

2. **Walls connected through floors –** Although the fire station is a single story structure, there are two areas with mezzanines set between platform framed walls. The floor framing causes a discontinuity in the wall framing. Without proper detailing the shear wall may not properly transfer overturning and shear forces between the two levels.

   Recommendation:

   To ensure transfer of seismic forces between shear wall levels at the mezzanine areas, hardware may be added connecting the upper shear wall to the base. Shear transfer between levels may be improved by installing Simpson LTP plates to connect the top and bottom wall plates to the TJI rim board. The existing plywood panel edge nailing at the rim board should be verified prior to installing lateral transfer plates. Overturning forces may be resolved by adding Simpson CS16 straps at wall ends, connecting the upper wall segment to the lower holdowns per detail 17 in appendix A.

3. **Hose tower attachment –** The hose tower adjacent to the fire station relies on its attachment to the roof diaphragm for stability. The attachment is made by nailing the diaphragm to a ledger board which is bolted to the wall. This construction detail induces cross grain bending in the ledger that can result in abrupt splitting of the ledger and failure of the attachment.

   Recommendation:

   Holdown hardware should be installed in line with the roof joist to create a positive out-of-plane attachment between the roof diaphragm and the hose tower. Detail sheets 10 and 11 in Appendix A show typical out-of-plane anchorage methods.

4. **Narrow wood shear walls –** Narrow shear walls are prone to severe deformations and high overturning forces that can cause damage to the sill plate, holdown anchors and end studs. To reduce the risks associated with highly stressed narrow shear walls, the aspect ratio of wood panel shear walls is limited to 2:1 in Tier 1 checklists. Approximately half of the shear walls in the firehouse exceed this limit with a maximum aspect ratio of 3.25.

   Recommendation:

   Narrow wood shear walls primarily occur in wall lines with multiple window openings in a row. The aspect ratio of these shear walls can be reduced by connecting the wall piers to the next pier with a tension strap. A typical strapping detail involves providing Simpson CS16 straps above and below the window opening. Strapping the openings also reduces the holdown and compression chord forces by increasing the shearwalls effective length.

5. **Roof chord continuity –** Discontinuity in the diaphragm chords can lead to excess flexibility and cause more damage during a seismic event than a diaphragm with properly detailed, continuous diaphragm chords. A common cause of chord discontinuity are vertical offsets in the roof diaphragm. Fire Station 16 has multiple roof steps in the diaphragm that do not appear properly detailed to transfer diaphragm chord forces.

   Recommendation:

   Where a vertical offset exists in the diaphragm, the wall segment connecting the diaphragm levels should be strengthened to transfer the lateral forces. Typical strengthening procedures involve installing full height posts

and tension straps adequate to transfer diaphragm forces. Detail sheet 15 in Appendix A shows a strapping method to create chord continuity.

6. **Shear wall stresses –** The lateral force resisting system of the firehouse was originally detailed to utilize shear walls sheathed with either plywood or gypsum wall board (GWB). The shear stress check exceeds the acceptance criteria for structural panel sheathing with a DCR of 2.3.

   Recommendation:

   To resolve the overstress of the existing wood structural panel shear walls, we recommend increasing the total length of shear wall in the building. The total wall length may be increased by either replacing existing interior GWB walls with plywood, adding plywood sheathing to the interior side of existing plywood walls, or a combination of the two methods. By upgrading existing GWB shearwalls to plywood, it may be possible to re-use the existing holdowns instead of installing new holdowns. Detail sheet 14 in Appendix A highlights existing shearwalls and proposed shearwall upgrades.

6. **Plan Irregularities –** Plan irregularities present in the Fire Station 16 diaphragm include the L-shaped building configuration, re-entrant corners, and plan insets. These irregularities may cause large tensile and compressive forces to generate in the diaphragm resulting in local damage. These forces may be resolved by supporting the irregularity with shear wall, or by properly detailing chord reinforcing to develop the forces into the diaphragm.

   Recommendation:

   Re-entrant corners in the diaphragm that are not adequately supported by a shear wall segment require reinforcement to transfer chord forces into the diaphragm. The diaphragm should be blocked and strapped in-line with the unsupported diaphragm chord to develop the forces into the diaphragm as shown on detail sheet 13 in Appendix A.

8. **Liquefaction** – According to the State of Washington Liquefaction Susceptibility map, Fire Station 16 lies on the border of a "Low to Moderate" liquefaction zone. Detail sheet 5 in Appendix A shows the liquefaction susceptibility of the area surrounding Fire Station 11.

   Recommendation:

   A full geotechnical study should be performed to evaluate the liquefaction susceptibility of the soils underlying the fire station.

Redmond Fire Station 18

General Description and Condition

Redmond Fire Station 18 is a one-story, rectangular building, constructed in 2002 and designed to meet the standards of the 1997 Uniform Building Code (UBC). Construction consists of 15/32" plywood sheathing over premanufactured wood roof trusses supported by wood shear walls. At the time of its construction, Fire Station 18 met the seismic requirements for critical facilities of its type. However, engineering and seismic hazard knowledge is continually evolving and portions of Fire Station 18 do not meet ductility and stability requirements found in current code. Specifically, the lateral force resisting system of the apparatus bay in the East-West direction consists of seven steel "K-braces" that do not meet

current seismic standards. The scope for evaluating Fire Station 18 was limited to the K-brace frames that make up the seismic-force-resisting system of the apparatus bay. Due to the relatively recent construction (2005), the focus was on the elements specifically affected by recent code changes.

Findings and Recommendations

Based on the ASCE 41-13 Tier 1 and subsequent Tier 2 and Tier-3 evaluation of the K-braced frames, it was determined Redmond Fire Station 18 has elements that are noncompliant and prevent the building from meeting the minimum performance objective level defined in ASCE 41-13. Some of the elements of the K-frames were determined to be acceptable based on the Tier-2 evaluation; however, deficiencies were still present. A copy of the checklists used to determine the non-compliant items is included in Appendix B. The noncompliant (NC) items and resulting deficiencies, if they occur, are outlined below.

1. **Non-Structural – Ceilings, Mechanical and Electric Equipment**
   The walkthrough found fall-prone equipment unbraced for lateral forces. Additionally, further items that were not visible during the walkthrough may be unbraced as well.

   Recommendation:
   Provide lateral bracing for any fall-prone equipment and verify presence of bracing for all ducts, piping, electrical equipment, and emergency power.

2. **Connections – Transfer to Steel Frames**
   The capacity of the connection transferring lateral forces into the K-brace frames is insufficient. Existing details show building seismic forces are transferred through glulam beams into steel angles connected by lag screws. Forces are then transferred to the WT beam at the top of the K-braces through a welded connection of the angle to WT. The steel and glulam members, as well as the welded connection, meet design requirements. However, the lag screws do not provide sufficient capacity.

   Lag Screw Connection: DCR – 1.69

   Recommendation:
   Add (4) ⅝" diameter lag screws connecting the K-brace frames to existing glulam beams per Appendix A, Detail 3.

3. **Seismic-Force-Resisting System – Out-of-Plane Bracing**
   The apparatus bay K-brace frames do not have out-of-plane bracing, thus are prone to out-of-plane buckling.

   Recommendation:
   Add out-of-plane anchorage in the form of full building height HSS tubes attached to the K-brace columns and tied into the roof framing per Appendix A, Detail 2 to transfer out-of-plane forces into the roof diaphragm.

4. Fire Station 18 also contains a mezzanine level that does not have a permanent stair. It is recommended that a

stair meeting current code standards be constructed to allow for safe egress in the event of a seismic event.

5. **Connections – Steel Frame Anchorage to Foundation**

   Anchorage of the K-brace frames to the concrete grade beams below is insufficient for design uplift forces. The recommendations are based on a Tier-3 evaluated Demand Capacity Ratio (DCR) of existing anchorage. DCR is determined by comparing seismic demand, based on the Immediate Occupancy design earthquake, to the calculated capacity. Elements with a DCR less than 1.0 are considered to meet the specified performance objective while elements with a DCR greater than 1.0 are considered deficient.

   The North K-brace frame anchorage was found deficient:

   North K-Brace Anchorage: DCR – 1.30

   Recommendation:

   Pour new foundation to supplement existing grade beam beneath the North K-braces and upgrade anchorage to sufficient capacity.

6. **Seismic-Force-Resisting System – K-Bracing**

   The apparatus bay seismic-force-resisting system consists of seven K-braces in the east-west direction. The intended performance of K-brace frames is for energy to dissipate through the buckling of compression braces and yielding of tension braces. However, when a compression brace buckles, large mid-height horizontal forces can lead to column instability and collapse. As a result, K-bracing is no longer allowed in new construction. A performance-based analysis was performed according to ASCE 41-13.

   Recommendation:

   The column and brace capacities meet or exceed the seismic demands. No additional retrofit of these members is required. However, as mentioned in the preceding paragraph, this type of lateral system is no longer allowed in current building codes. We would recommend retrofitting or replacing the existing frame with a more ductile system.

Additional Redmond Facilities

The following buildings were not evaluated using ASCE 41-13 as outlined in the performance objective section of this report. Existing drawings when available, engineering experience and judgement, and FEMA document 547 were used to provide the following recommendations. For the most accurate and specific determination of seismic deficiencies, we recommend utilizing the ASCE 41-13 as done in this report for the fire stations. Utilizing the ASCE 41 methodology provides a consistent evaluation procedure for the entire portfolio of buildings and allows for “apples-to-apples” comparisons.

Hartman Park Swimming Pool Building:

The Hartman Park Swimming Pool is a rectangular building built in 1970. Roof construction over the swimming pool consists of pre-cast concrete t-beams over pre-cast concrete piers. Areas between columns are infilled with brick masonry unit shear walls. The area of the building used for the lobby and locker rooms consists of brick masonry unit shear walls with a likely roof construction of plywood sheathing over wood joists. The building foundation appears to consist of conventional strip footings and slab on grade. Based on documents provided, it appeared the slab on grade had significant cracking in areas due to settlement issues and was renovated in 2010 to mitigate these issues. At the time of the site visit, the building appeared to be in good condition with no visible deficiencies.

Common Deficiencies of Similar Type Buildings per FEMA 547:

1. Load Path – inadequate force transfer, diaphragm to shear wall, shear wall to foundation, inadequate connection of beam or girders to supporting elements
   Rehabilitation Measures: Enhance anchorage between elements. This can be achieved with the addition of steel angles and adhesive anchors as required to carry design seismic forces.

2. Diaphragms – inadequate strength and/or stiffness
   Rehabilitation Measures: Add steel braced-frames or concrete/masonry shear walls to reduce diaphragm span and seismic force demand. Adequate strength can also be achieved through an increase in shear force capacity of the diaphragm.

3. Diaphragms – excessive stresses at openings and irregularities
   Rehabilitation Measures: Enhance diaphragm detailing around openings. This is commonly achieved with the addition of structural steel sections or reinforcing bars at the diaphragm boundary locations. Shear is transferred into the new section through adhesive anchors or reinforcing dowels.

Central Stores Warehouse Building 5

Building 5 is a rectangular shaped premanufactured metal building with mezzanine built in 1988. This building is located on liquefaction susceptible soil per Redmond's liquefaction map. The building and foundation were observed to be in good condition during a walkthrough of the building.

Common Deficiencies of Similar Type Buildings:

1. Load Path – inadequate shear, flexural, and uplift anchorage to foundation
   Rehabilitation Measures: Anchorage to the foundation can be achieved by either adding anchor rods or welding shear lugs to the base plate into the foundation, or embedding the moment frame columns into a concrete pedestal bonded to other existing foundation elements.

2. Component Detailing – inadequate capacity of beams, columns, and/or connections
   Rehabilitation Measures: Wide flange members with inadequate capacity can be strengthened by adding side plates to create box sections. Beam-column connections can be improved with use of a reduced beam section

(RBS), welded haunch, or bolted bracket method. Each of these methods either reduce inelastic rotational demands or increase the beam plastic moment capacity.

3. Diaphragms – inadequate in-plane strength and/or stiffness
   Rehabilitation Measures: Diaphragm forces can be reduced by adding collectors or moment frames, braced frames, or concrete/masonry shear walls to distribute diaphragm forces. Another common rehabilitation measure involves increasing the diaphragm strength by overlaying the existing diaphragm with concrete topping or wood structural panels.

4. Diaphragms – inadequate shear transfer to frames
   Rehabilitation Measures: Shear transfer capacity can be enhanced by providing additional shear studs, anchors, or welds connecting diaphragm to frames.

Maintenance Operations Center Building 1

Maintenance Operations Center Building 1 was constructed in 1977 and renovated in 1998. It is located on liquefaction susceptible soil per Redmond's liquefaction map. Building construction consists of 8-inch brick masonry unit shear and load bearing walls which based on the age of construction are likely reinforced. Roof construction consists of a plywood diaphragm over wood framing. The building and foundations appeared to be in good condition during the walkthrough.

Common Deficiencies of Similar Type Buildings:

1. Configuration – Torsionally irregular plans
   Rehabilitation Measures: Add steel braced frame or concrete/masonry shear wall or increase existing wall stiffness with concrete wall overlay or infill openings in order to decrease the eccentricity between center of mass and center of rigidity.

2. Load Path – inadequate anchorage for out-of-plane load and in-plane forces
   Rehabilitation Measures: Add new or improve existing tension anchors, shear anchors, cross-ties and subdiaphragms, and supplemental vertical supports to ensure a complete load path.

3. Diaphragms – inadequate in-plane strength and/or stiffness
   Rehabilitation Measures: Add steel braced frame or concrete/masonry shear wall to decrease force demand on diaphragm or increase the capacity of existing diaphragm.

4. Diaphragms – re-entrant corners
   Rehabilitation Measures: Add steel braced frames, concrete/masonry shear wall, or collector to support re-entrant corner forces. Otherwise enhance existing collector or increase existing wall with concrete overlay. Enhance diaphragm detailing to increase capacity.

Parks Operations Center Building 8

Parks Operations Center Building 8 is a steel framed building constructed in 1970 and renovated in 1998. It is located on liquefaction susceptible soil per Redmond's liquefaction map. An approximately 20 ft. tall stand-alone canopy at the back of the building, that may have been added in the 1998 remodel, consists of steel columns and knee braces embedded in concrete sonotubes. The foundation appeared to be in good condition.

Common Deficiencies of Similar Type Buildings:

1. Load Path – inadequate shear, flexural, and uplift anchorage to foundation
   Rehabilitation Measures: Anchorage to the foundation can be achieved through adding additional anchor rods or welding shear lugs to the base plate into the foundation, or embedding the moment frame columns into a concrete pedestal bonded to other existing foundation elements.

2. Component Detailing – inadequate capacity of beams, columns, and/or connections
   Rehabilitation Measures: Wide flange members with inadequate capacity can be strengthened by adding side plates to create box sections. Beam-column connections can be improved with the use of a reduced beam section (RBS), welded haunch, or bolted bracket method. Each of these methods either reduce inelastic rotational demands or increase the beam plastic moment capacity.

3. Component Detailing – inadequate capacity of horizontal steel bracing
   Rehabilitation Measures: Provide additional secondary bracing. Strengthen bracing elements and/or reduce unbraced lengths. Strengthen connections.

4. Diaphragms – inadequate in-plane strength and/or stiffness
   Rehabilitation Measures: Add steel braced frame or concrete/masonry shear wall to decrease force demand on diaphragm or increase the capacity of existing diaphragm by overlaying existing diaphragm with concrete topping or wood structural panels.

5. Diaphragms – inadequate shear transfer to frames
   Rehabilitation Measures: Shear transfer capacity can be enhanced by providing additional shear studs, anchors, or welds connecting diaphragm to frames.

Senior Center Building

The Senior Center Building is a one-story wood framed building with stucco cladding constructed in 1990. Roof levels change elevation in several areas of the building. A walk around of the building revealed no cracking in the stucco finishes and foundations appeared to be in good condition. This building is located on liquefaction susceptible soil per Redmond's liquefaction map.

Common Deficiencies of Similar Type Buildings:

1. Load Path – inadequate shear anchorage to foundation
   Rehabilitation Measures: Improve existing or add new anchorage to the foundation to prevent the building from sliding off the foundation during an earthquake. Expansion bolts are the preferred method of anchorage to foundations, though anchorage can also be achieved with hardware such as the Simpson UFP or FAP foundation plates.

2. Load Path – inadequate overturning anchorage
   Rehabilitation Measures: Improve or add uplift anchors and compression posts. This can be achieved with adhesive anchors, however new footings or footing reinforcement may also be required if existing footings lack sufficient shear and flexural capacity to handle the uplift and compressive forces.

3. Load Path – inadequate shear transfer in wood framing
   Rehabilitation Measures: Enhance diaphragm to shear wall connection to allow design shear force to transfer from the roof diaphragm into the top of the wall. This is commonly achieved with the addition of angle clips or edge nailing.

4. Diaphragms – inadequate in-plane strength and/or stiffness
   Rehabilitation Measures: Enhance existing diaphragm with additional wood structural panel sheathing and/or additional nailing and blocking to existing sheathing.

5. Diaphragms – re-entrant corners
   Rehabilitation Measures: Enhance diaphragm detailing to handle re-entrant corner forces. This can usually be achieved by adding a collector to distribute re-entrant corner forces into the diaphragm.

Old Fire House Teen Center

The Old Fire House is a one story steel and masonry framed building constructed in 1952 and renovated in 2000. Roof construction consists of wood diaphragm over wood and steel beams and steel columns. The 2000 renovation included a seismic retrofit of the main building. The retrofit included the addition of a new braced frame for global lateral support and out-of-plane anchorage of the existing exterior shear walls. Based on the documents provided and the site visit, it is unclear whether the hose tower was also retrofitted in 2000. Cracking was observed on the East elevation of the hose tower. This building is located on liquefaction susceptible soil per Redmond's liquefaction map.

Common Deficiencies of Similar Type Buildings:

1. Global Strength – insufficient wall strength
   Rehabilitation Measures: Add steel braced-frame or concrete/masonry shear wall. Increase existing wall capacity with concrete wall overlay or by infilling openings.

2. Load Path – inadequate shear, flexural, and uplift anchorage to foundation
   Rehabilitation Measures: Embed column into a pedestal bonded to other existing foundation elements or provide steel shear lugs or anchor bolts from base plate to foundation.

3. Load Path – inadequate out-of-plane anchorage at walls connected to diaphragm
   Rehabilitation Measures: Add tension anchors attaching walls to diaphragm.

4. Diaphragms – inadequate in-plane strength and/or stiffness
   Rehabilitation Measures: Add collectors to distribute forces or add moment frames, braced frames, or concrete/masonry shear walls to reduce diaphragm forces. Otherwise, increase capacity of existing diaphragm with wood structural panel overlay and/or additional nailing.

5. Load Path – inadequate anchorage to diaphragms for in-plane forces
   Rehabilitation Measures: Add wall-to-diaphragm shear anchors.

Old Redmond School House Community Center

The Old Redmond School House is a two story, unreinforced masonry building built in 1922 and renovated in 1980 and 2007. Roof and floor construction consists of wood decking over 2x10 joists supported by built up beams. The 2007 renovation does not appear to have included any seismic retrofit measures. Any seismic upgrades in the building's history likely occurred prior to modern seismic design guidelines developed as a result of the 1994 Northridge earthquake. Building elevations have a high percentage of openings which may indicate insufficient global lateral support. Additionally, the school house is located on liquefaction susceptible soil per Redmond's liquefaction map. A full evaluation based on ASCE 41 is recommended to clarify any deficiencies present in the building.

Common Deficiencies of Similar Type Buildings:

1. Global Strength – insufficient in-plane wall strength
   Rehabilitation Measures: Add either a new wood structural panel shear wall, concrete/masonry shear wall, steel braced frame, or steel moment frame. Global strength can also be improved by enhancing existing elements through concrete wall overlay or by infilling wall openings.

2. Load Path – inadequate or missing wall-to-diaphragm tie
   Rehabilitation Measures: Add new or improve existing tension anchors, shear anchors, cross-ties and subdiaphragms, and supplemental vertical supports to ensure a complete load path.

3. Non-Structural – unbraced parapet or chimney
   Rehabilitation Measures: Brace parapet and chimney to withstand design level earthquake forces. Parapets and chimneys can also be shortened to meet allowable height-to-width ratios, however this method is not always an option particularly with historic buildings.

4. Diaphragms – inadequate in-plane strength and/or stiffness
   Rehabilitation Measures: Add collectors to distribute forces or add moment frames, braced frames, or concrete/masonry shear walls to reduce diaphragm forces. Otherwise, increase capacity of existing diaphragm with wood structural panel overlay and/or additional nailing.

Trinity Building

The Trinity Building is a rectangular, concrete tilt-up building constructed in 1981 and renovated in 1997. The 6" concrete walls are reinforced with #4's at 12 inches on center each way. Additional out-of-plane wall reinforcement was observed during a walkthrough of the building. A roof that was rebuilt after a snow-induced roof collapse in the 1990's consists of (assumed) plywood sheathing over 2x joists supported by glulam purlins and girders on steel columns. The mezzanine area of the building used for meeting and office spaces consists of conventional wood framing. The Trinity Building is located on liquefaction susceptible soil per Redmond's liquefaction map. No significant cracking of the walls or slab-on-grade was observed during the walkthrough.

Common Deficiencies of Similar Type Buildings:

1. Global Strength – insufficient in-plane strength of shear walls or frames
   Rehabilitation Measures: Add a new steel braced frame or concrete/masonry shear wall. Enhance existing shear walls with concrete overlay.

2. Configuration – incidental bracing
   Rehabilitation Measures: Isolate mezzanine from the lateral force resisting system of the main building to prevent mezzanine from restraining seismic deflections and consequently creating an unintended load path in the main structure.

3. Load Path – inadequate connection at base of tilt-up panel
   Rehabilitation Measures: Improve wall-to-foundation connections by adding steel angles and adhesive anchors between the wall panel and adjacent slab-on-grade. It may be necessary to remove and recast a thicker pour strip if the slab-on-grade was not thickened next to the tilt-up panel.

Medic One Modular Building

The Medic One modular building is what appears to be an "L" shaped, one story, pre-manufactured modular building. We were unable to verify existing construction due to existing finishes and were unable to verify the existing foundation system due to limited visibility.

Common Deficiencies of Similar Buildings:

1. Sufficient Foundation – insufficient foundation system unable to resolve all lateral forces into soils.
   Rehabilitation Measures: pour in place new reinforced concrete stemwall and footing.

2. Anchorage to Foundation – insufficient attachment from sill plates to foundation to transfer lateral forces. Rehabilitation Measures: provide post installed anchors to sufficiently resist lateral forces at the wall to foundation interface.

Summary of Findings and Recommendations

The assessments of the Redmond Fire Stations find that structural deficiencies cause some of the buildings to fall below the minimum immediate-occupancy performance level outlined in ASCE 41-13. The report outlines these deficiencies and provides recommended mitigation measures. This information is intended to provide a scope of likely repairs required to mitigate the identified deficiencies. It is our professional opinion that the improvements outlined can be made to the buildings' lateral load resisting system to bring the buildings' performance during a seismic event into general conformance with current standards for building seismic rehabilitation. The improvements outlined above will help to limit building damage during an event and will increase the likelihood that the building will remain operational afterward. Should the City of Redmond decide to proceed with these repairs, Swenson Say Faget would be happy to help with providing construction documents to achieve a building permit.

Limitations

This study and report represent Swenson Say Faget's opinions based solely on our site observations made during brief site visits, as well as review of existing drawings. No exploratory demolition or in-situ testing of the existing building materials has been performed.

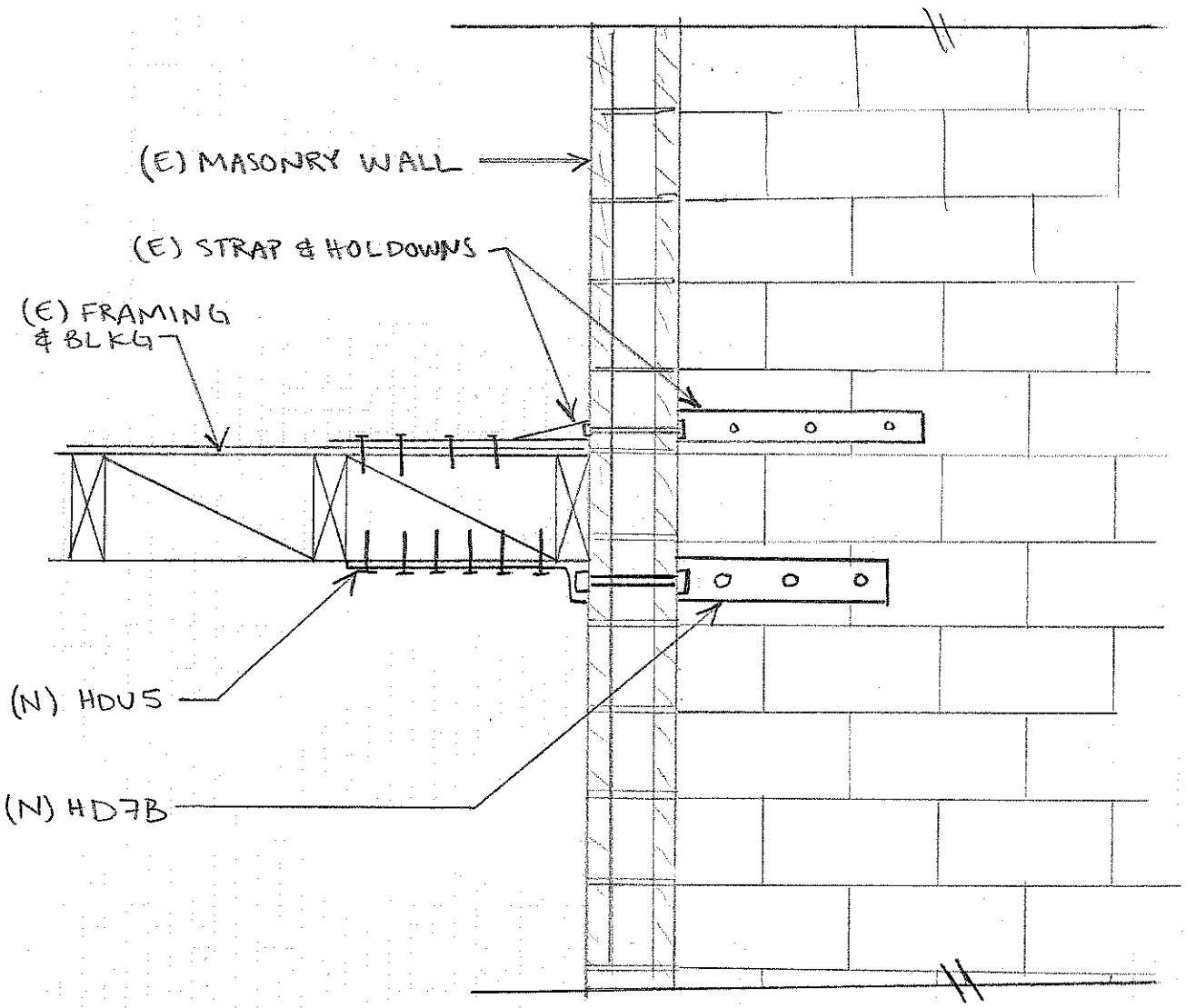
The scope of work was limited to a seismic evaluation of the primary lateral force resisting systems of the buildings. No assessment of the vertical (gravity) load carrying capability of the structure were made.

It is important to note that the fire stations were evaluated based on the 3-Tier Evaluation method of ASCE 41-13. This method is based on the Immediate Occupancy objective, as defined by the Seismic Evaluation and Retrofit of Existing Buildings (ASCE 41-13) and is discussed in detail in the section on Seismic Evaluation Methodology. Additional buildings in the City of Redmond's portfolio were evaluated using engineering experience and judgement as well as FEMA document 547.

This report is intended for the sole use of the City of Redmond and its consultants. The scope of work performed for this evaluation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document and the findings and recommendations presented herein is at the sole risk of said user. Furthermore, this evaluation does not represent a warranty or guarantee by Swenson Say Faget that other problems do not exist. Swenson Say Fagét's professional services are performed using the degree of care and skill ordinarily exercised under similar circumstances by reputable structural engineers practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional opinions included in this report.

Appendix A

Schematic Structural Details



DETAIL (1)

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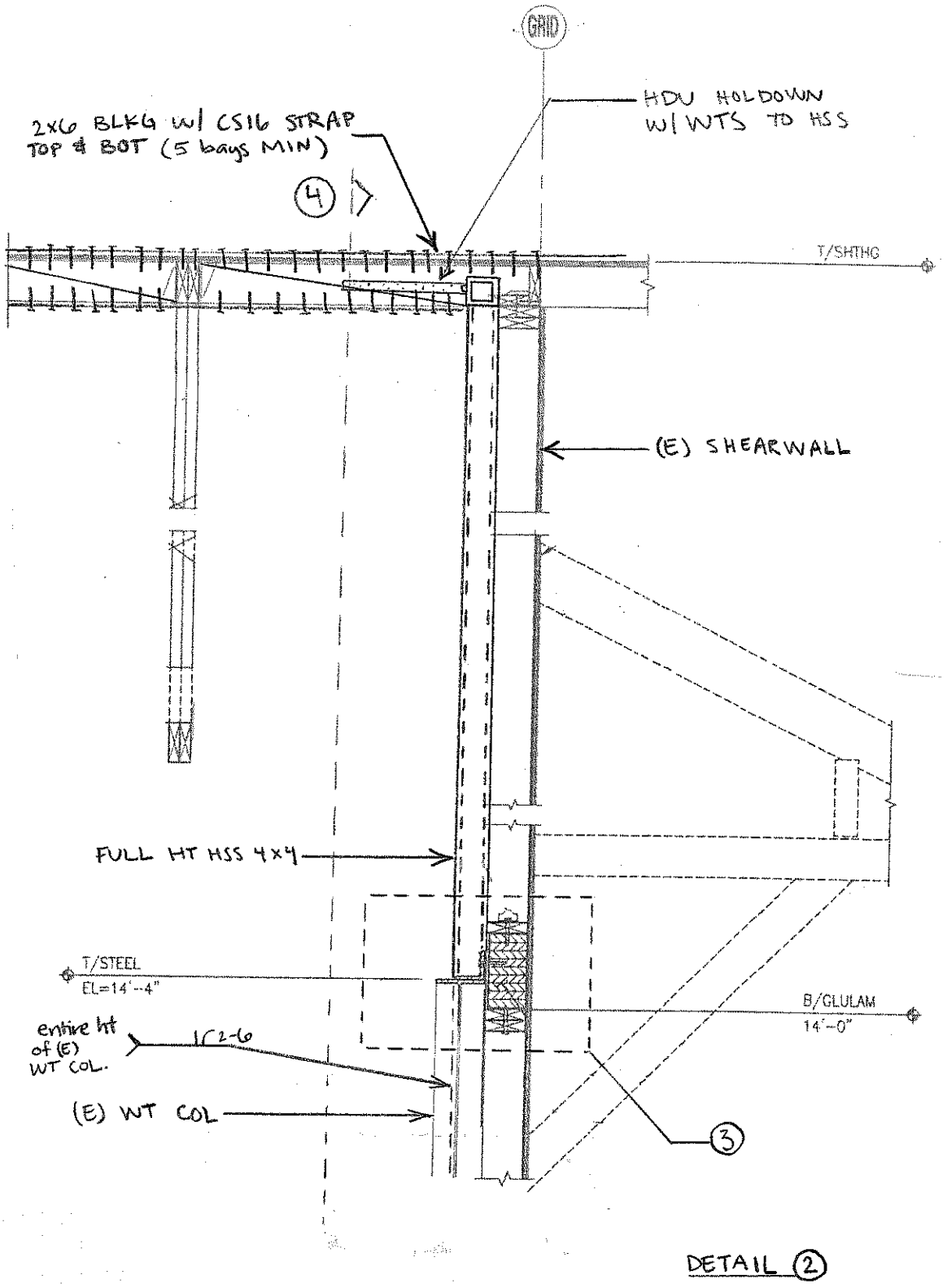
Redmond FS 12
PROJECT

4/1/2016
DATE

PROJ. #

DESIGN

SHEET



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4/1/2016
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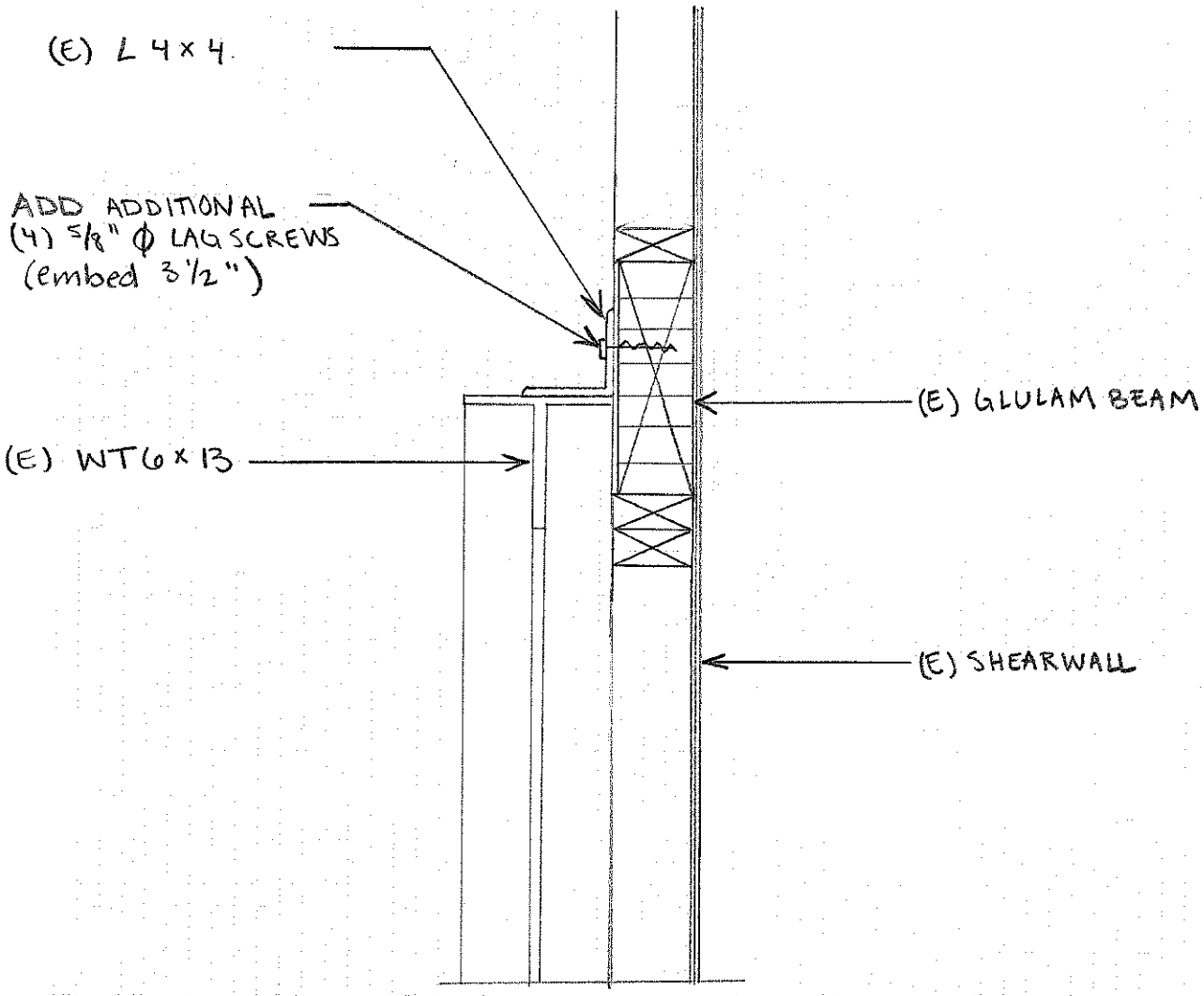

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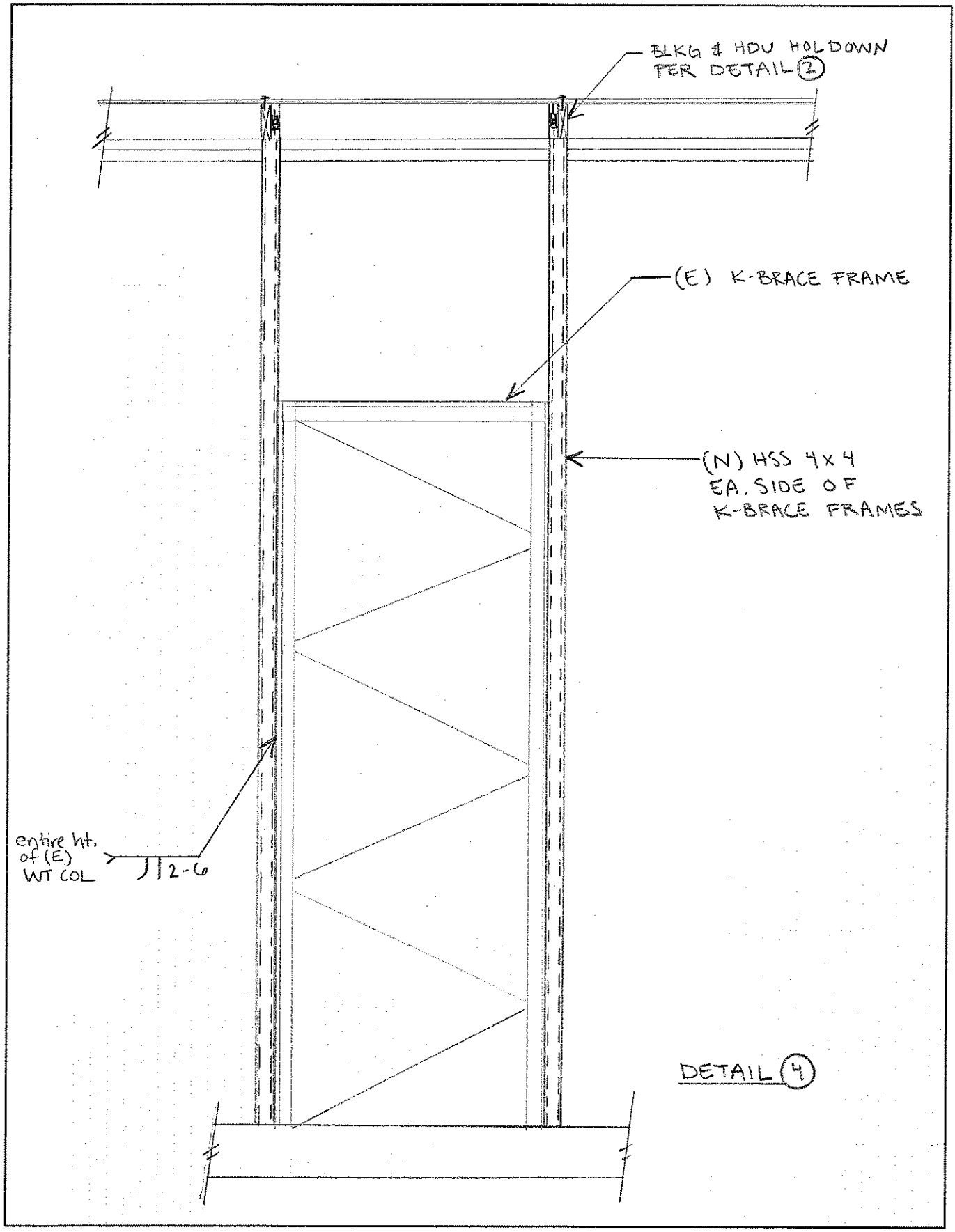

DETAIL 4

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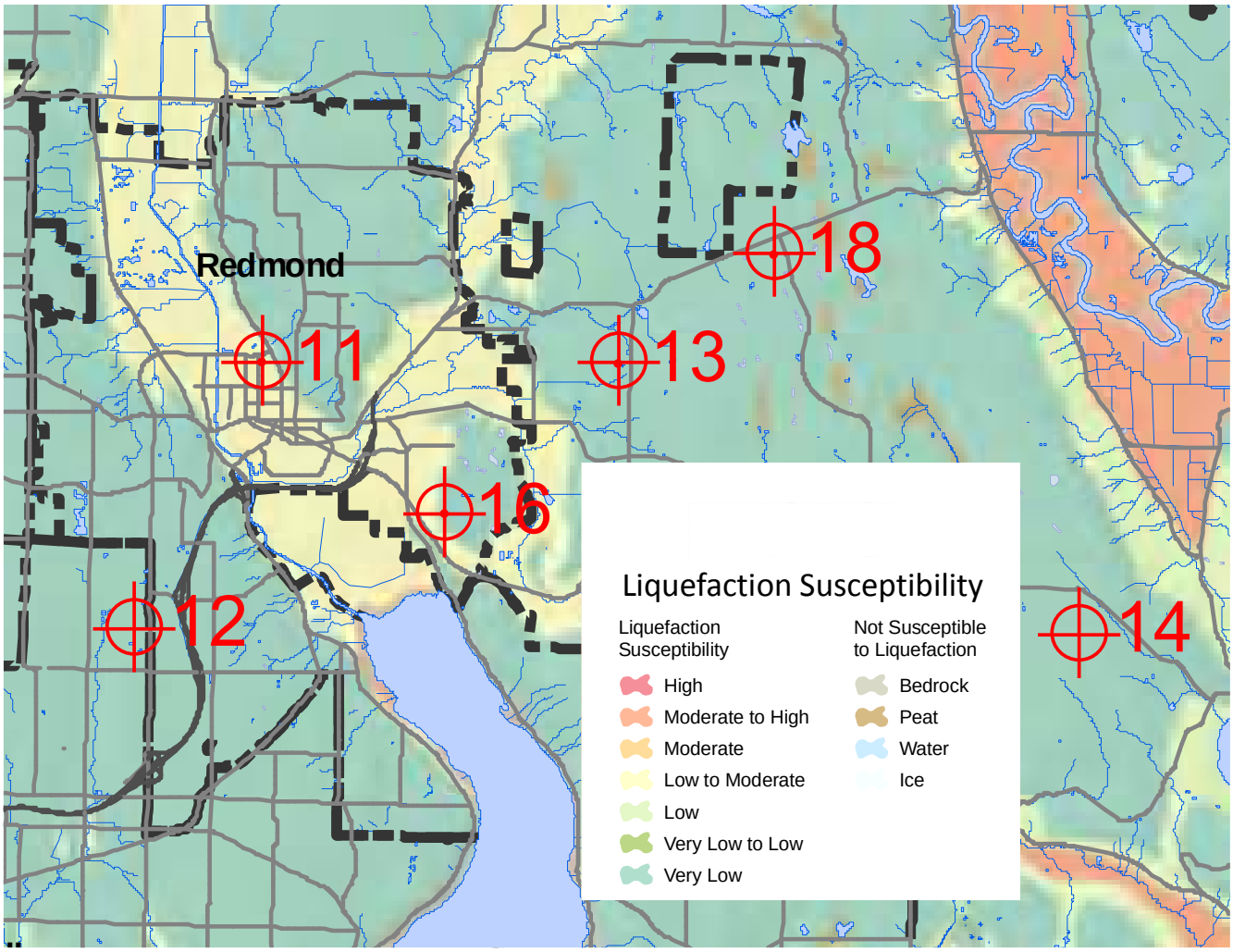

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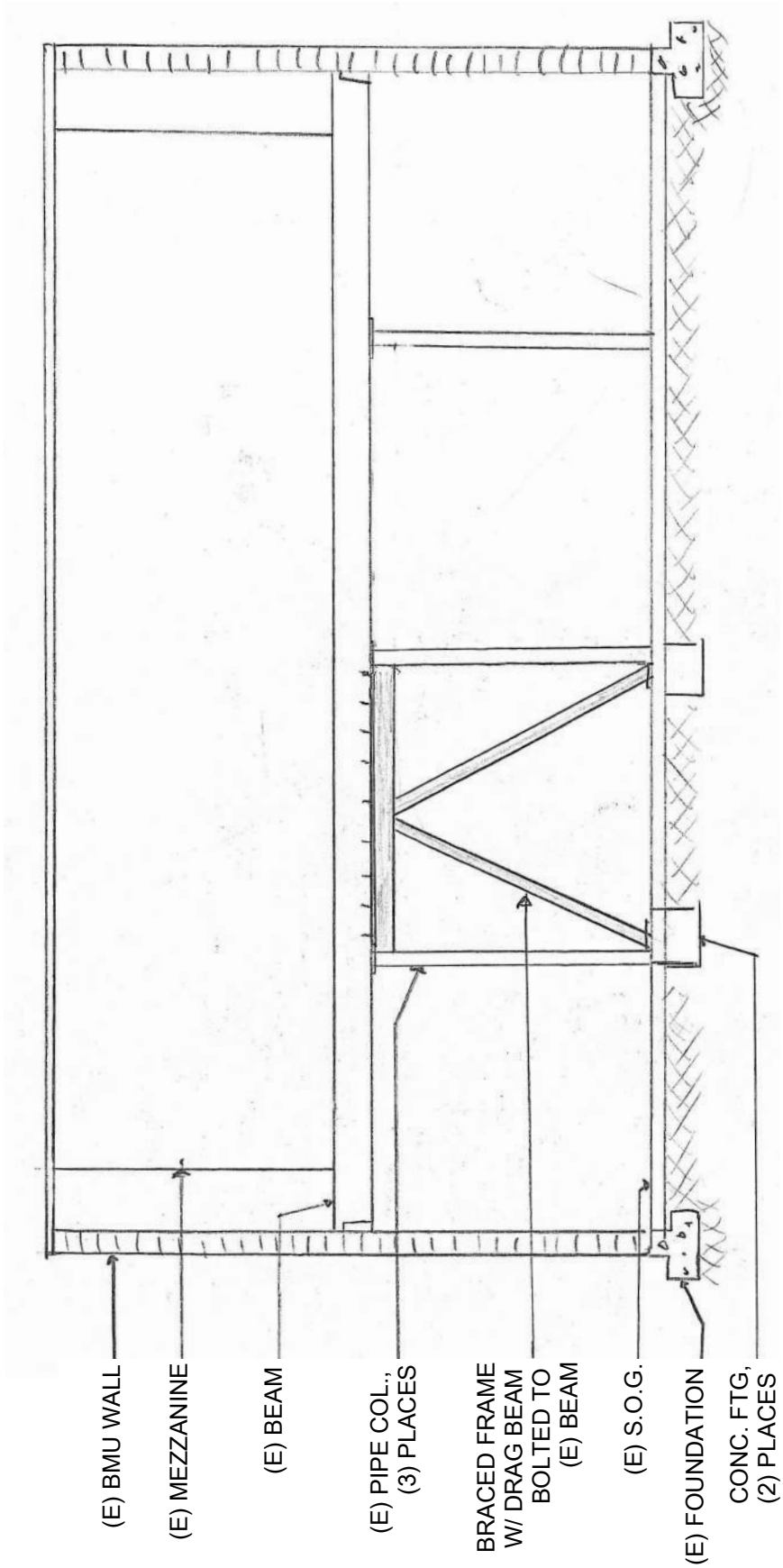
STRUCTURAL ENGINEERING

LIQUEFACTION SUSCEPTIBILITY

REDMOND FACILITIES MANAGEMENT

FIRE STATION 11/12/13/14/16/18

DATE	04/04/2016
PROJ. #	00665-2015-01
DESIGN	RDO
SHEET	5



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STRUCTURAL ENGINEERING

BRACED FRAME UNDER MEZZ. IN APPARATUS BAY

REDMOND FACILITIES MANAGEMENT

FIRE STATION 11/13/16

DATE	04/04/2016
PROJ. #	00665-2015-01
DESIGN	RDO
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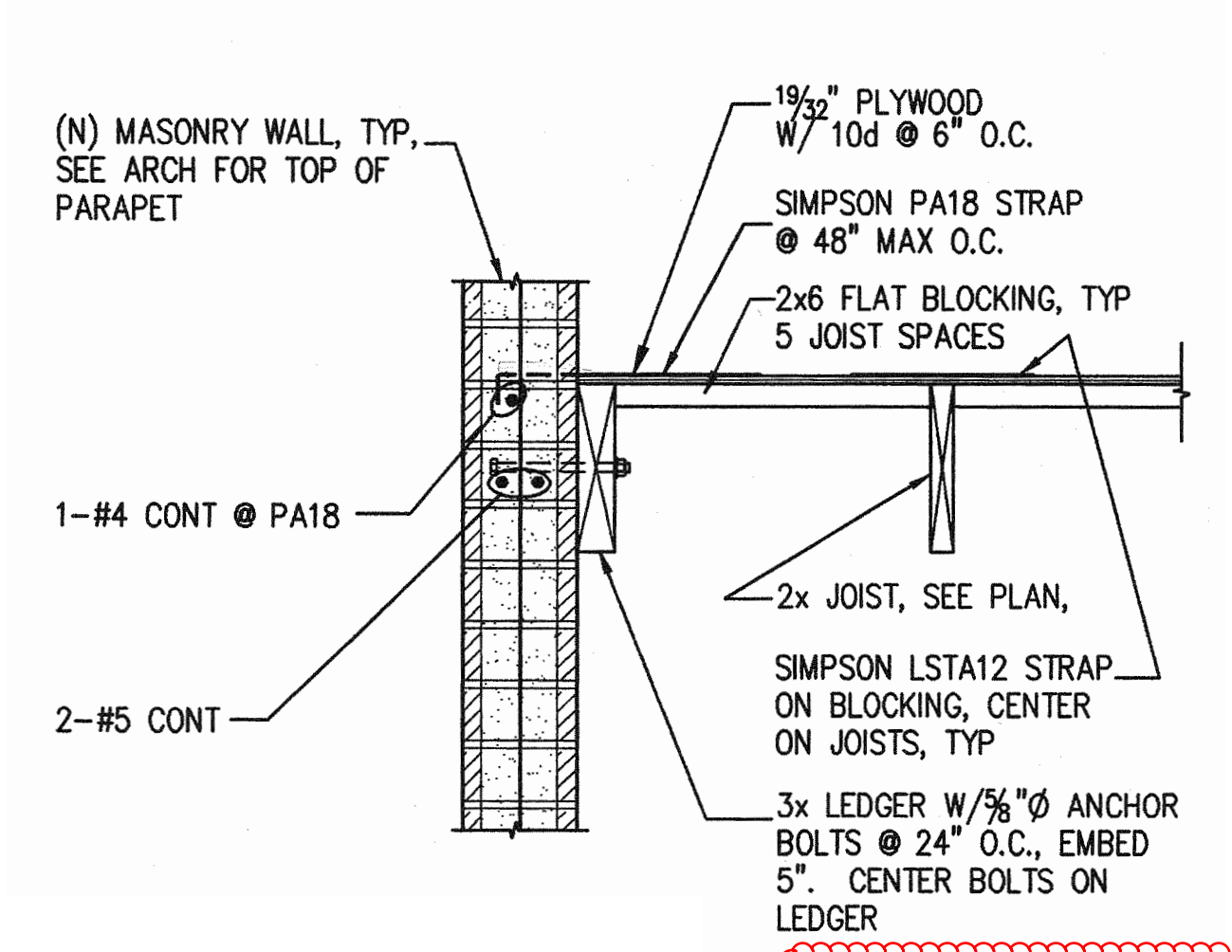

*ALL CONDITIONS EXISTING

INCREASE QUANTITY OF (E) ANCHOR BOLTS.

VERIFY ANCHOR BOLTS AT ORIGINAL BUILDING SECTION

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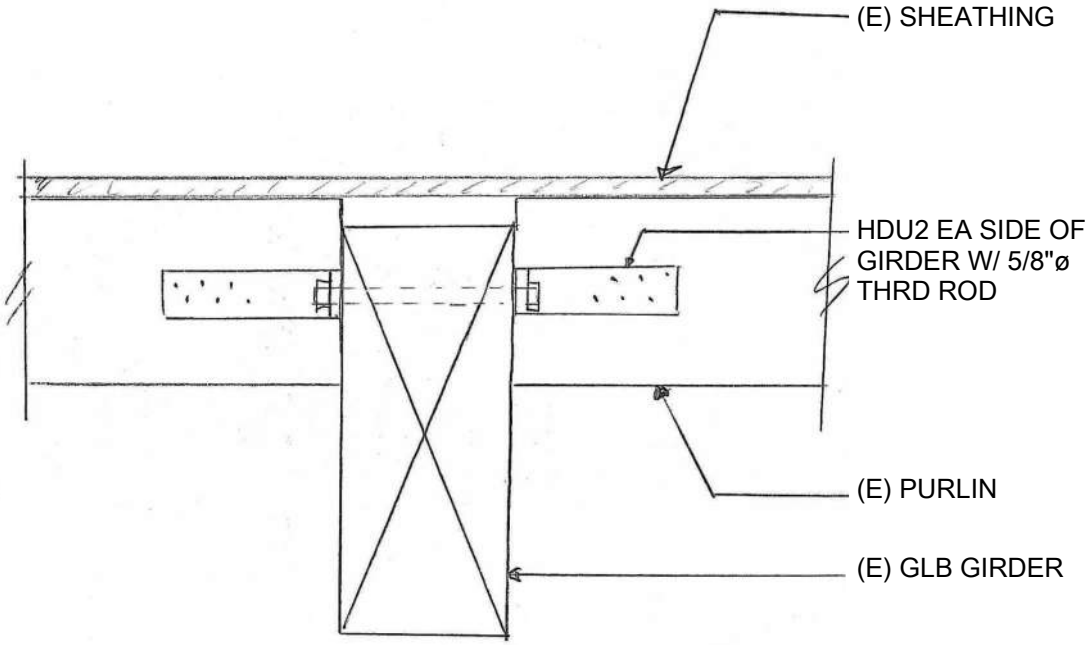
STRUCTURAL ENGINEERING

LEDGER ATTACHMENT TO BMU WALL

REDMOND FACILITIES MANAGEMENT

FIRE STATION 11

04/04/2016
DATE
00665-2015-01
PROJ. #
RDO
DESIGN
7
SHEET



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STRUCTURAL ENGINEERING

PURLIN CROSS TIE CONNECTION

REDMOND FACILITIES MANAGEMENT

FIRE STATION 11/13/16

DATE	04/04/2016
PROJ. #	00665-2015-01
DESIGN	RDO
SHEET	9

STRUCTURAL ENGINEERING

TYPICAL WALL ANCHOR W/ JOISTS PARALLEL

REDMOND FACILITIES MANAGEMENT

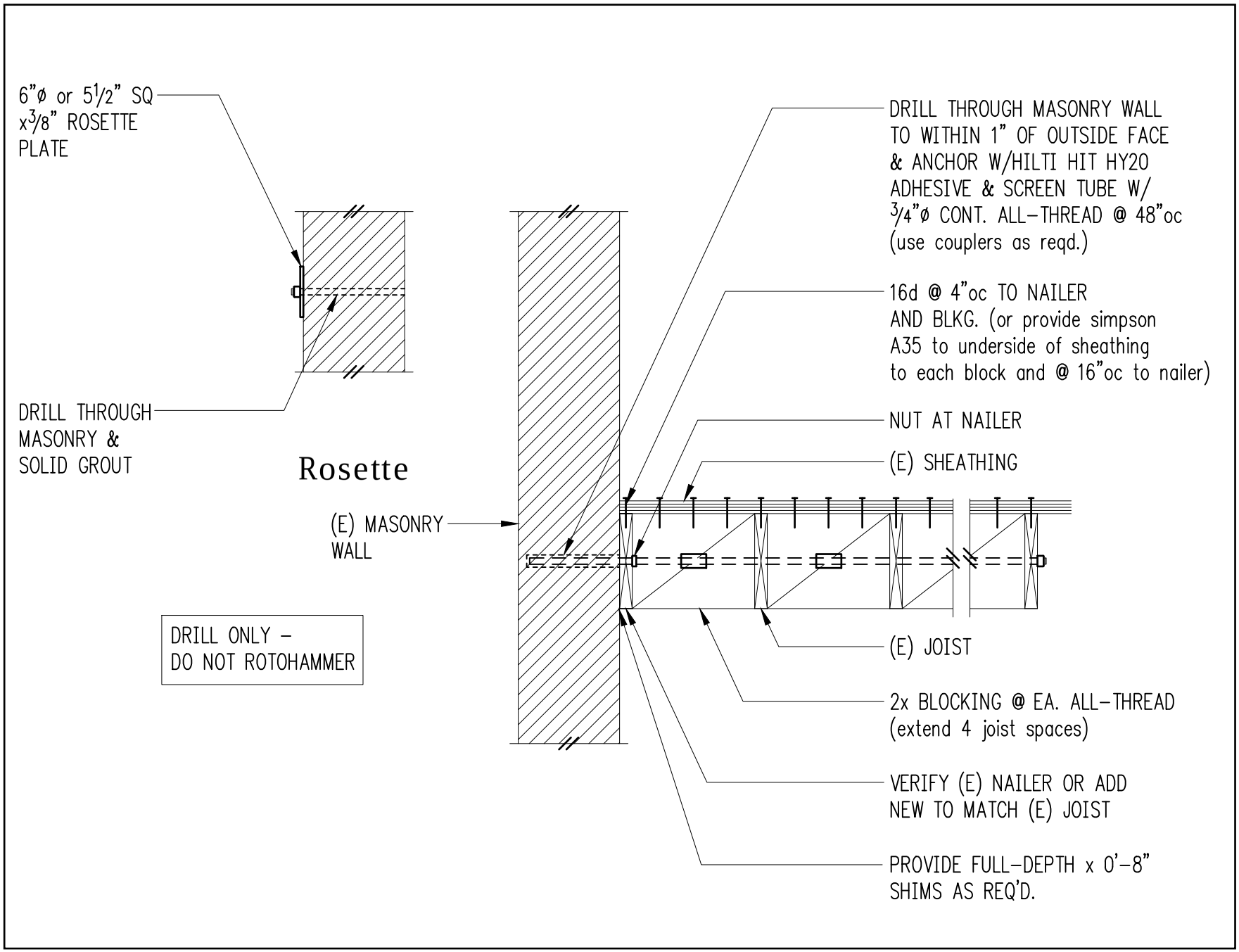
FIRE STATION 11/13/16

DATE 04/04/2016

PROJ. # 00665-2015-01

DESIGN RDO

SHEET 10



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STRUCTURAL ENGINEERING

TYPICAL WALL ANCHOR AT JOIST PERPENDICULAR

REDMOND FACILITIES MANAGEMENT

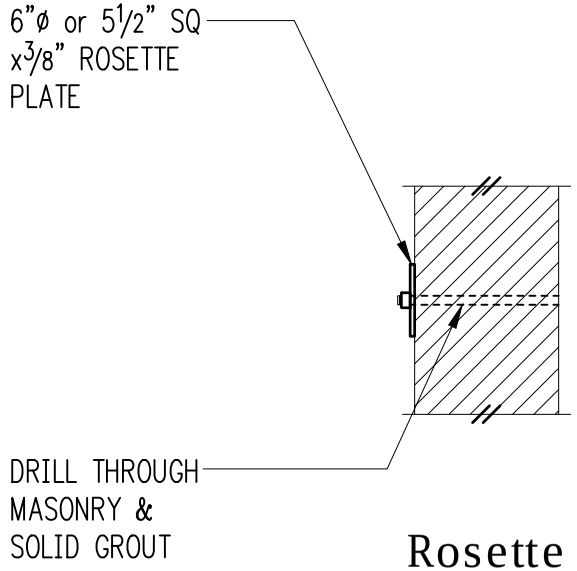
FIRE STATION 11/13/16

DATE 04/04/2016

PROJ. # 00665-2015-01

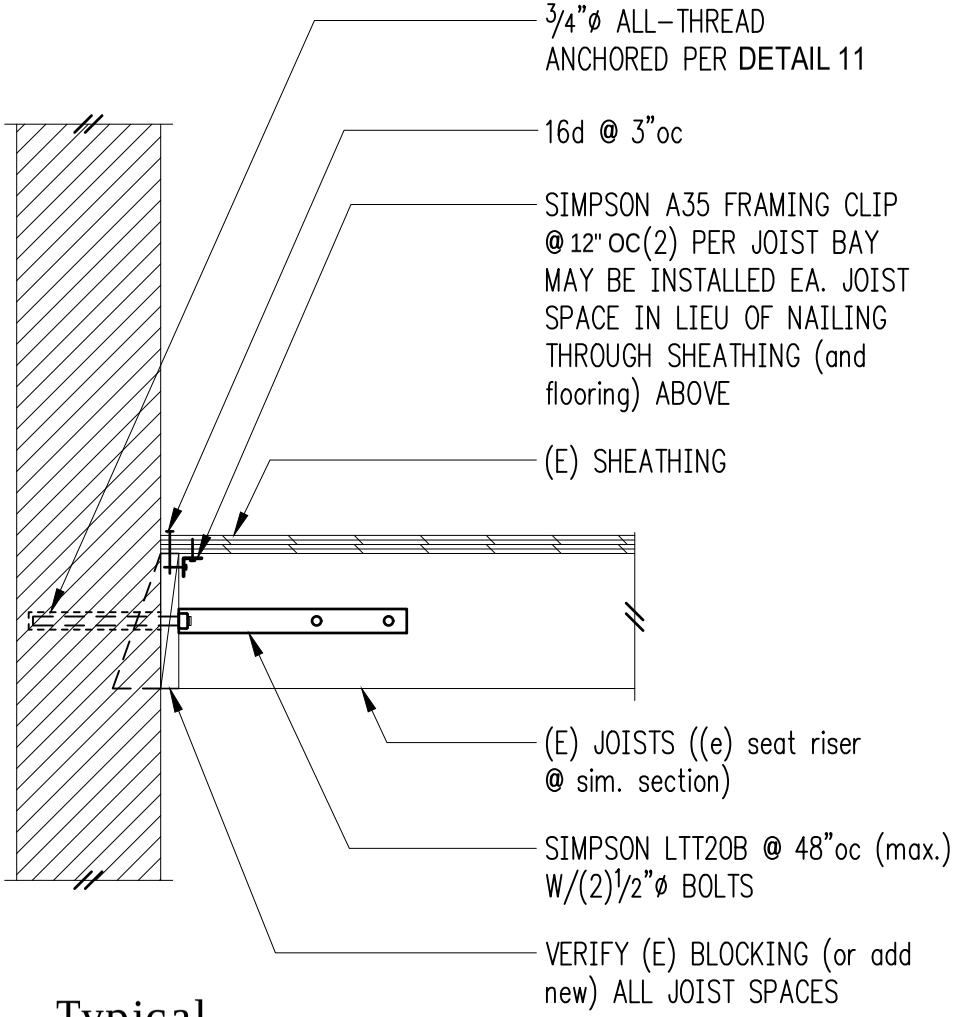
DESIGN RDO

SHEET 11



Rosette

DRILL ONLY –
DO NOT ROTOHAMMER



Typical

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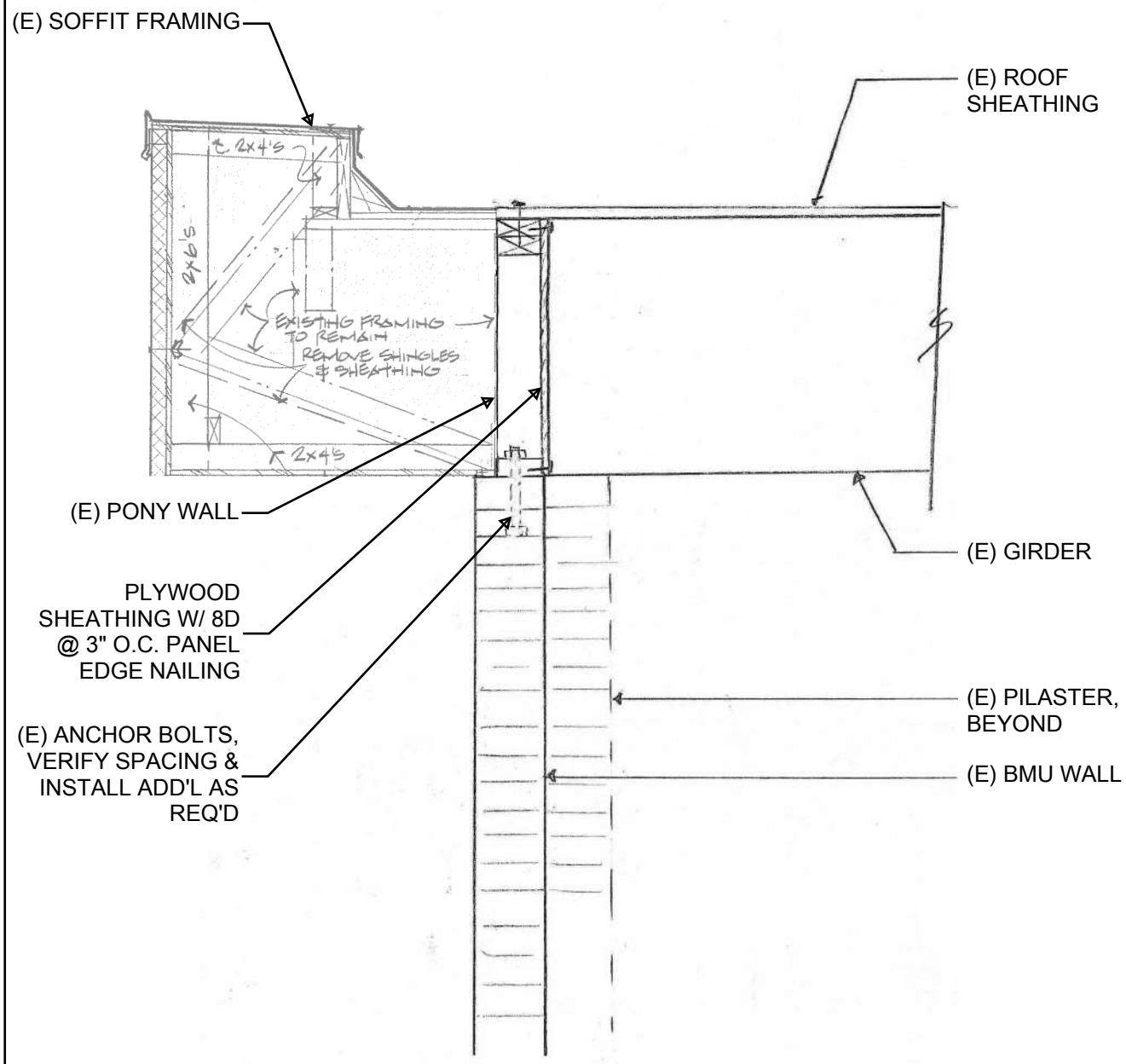

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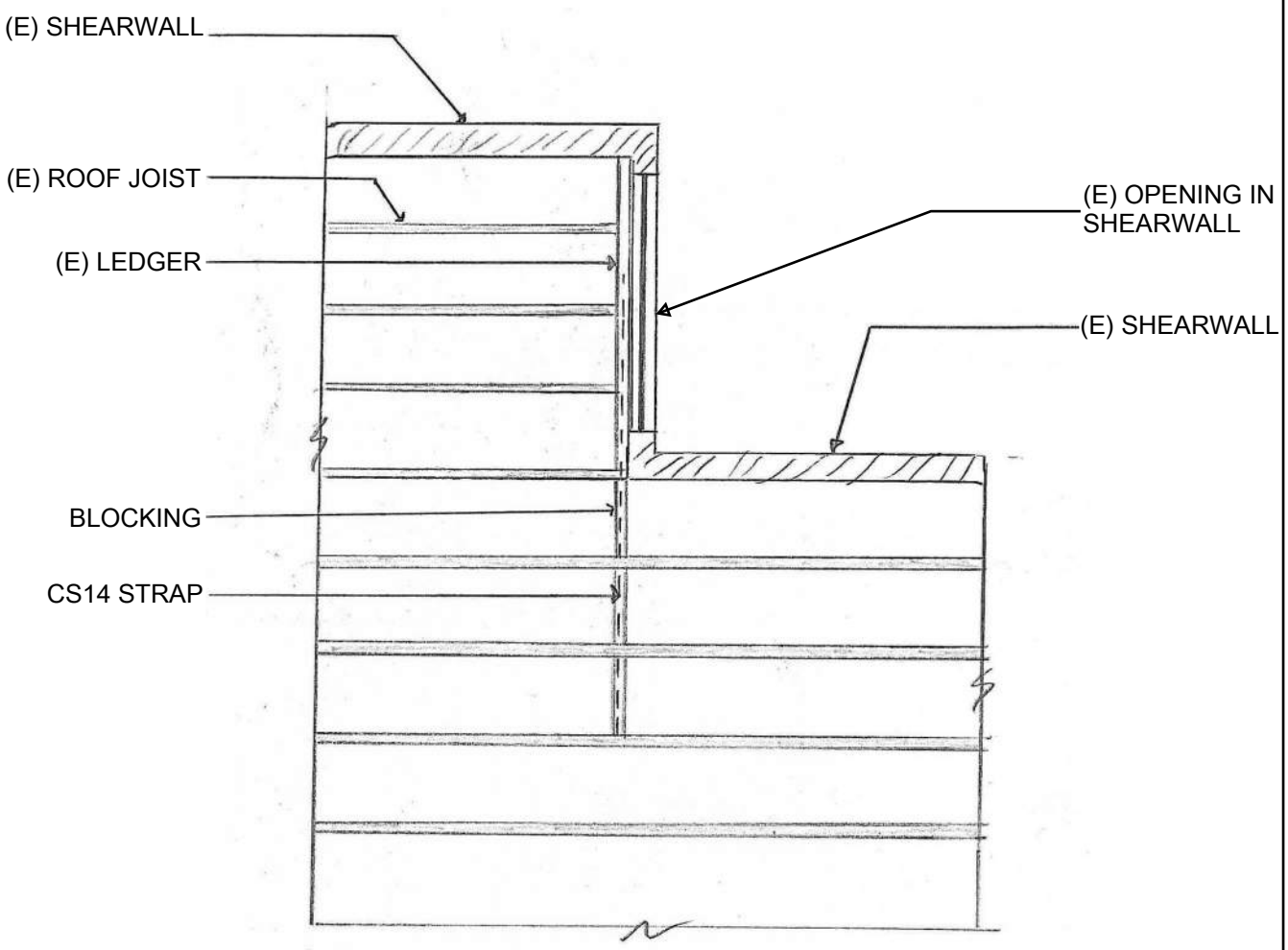
STRUCTURAL ENGINEERING

PONY WALL OVER (E) BMU

REDMOND FACILITIES MANAGEMENT

FIRE STATION 13

DATE	04/04/2016
PROJ. #	00665-2015-01
DESIGN	RDO
SHEET	12



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STRUCTURAL ENGINEERING

STRAPPING DETAIL @ REENTRANT CORNER

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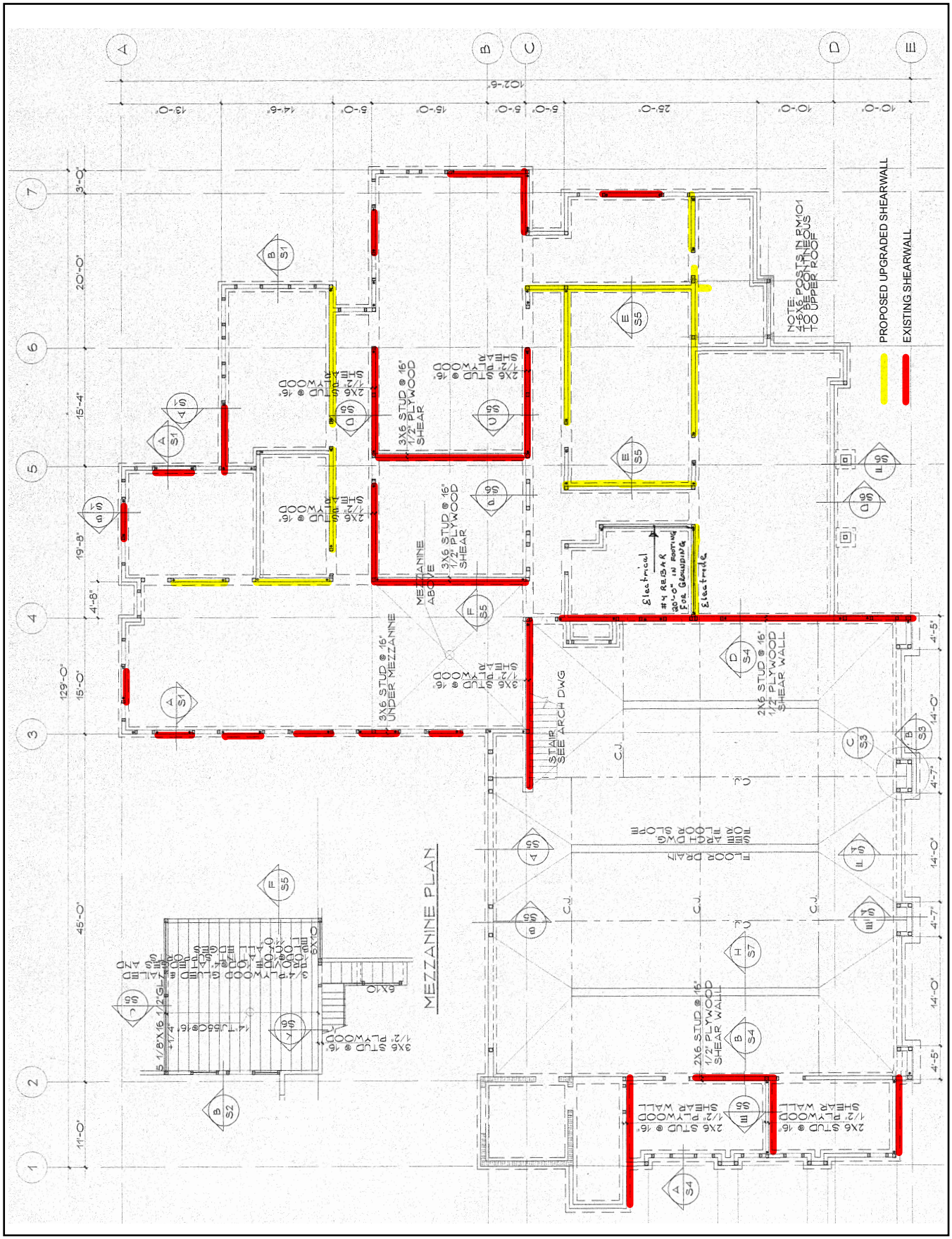
FIRE STATION 11/13/16

DATE	04/04/2016
PROJ. #	00665-2015-01
DESIGN	RDO
SHEET	13



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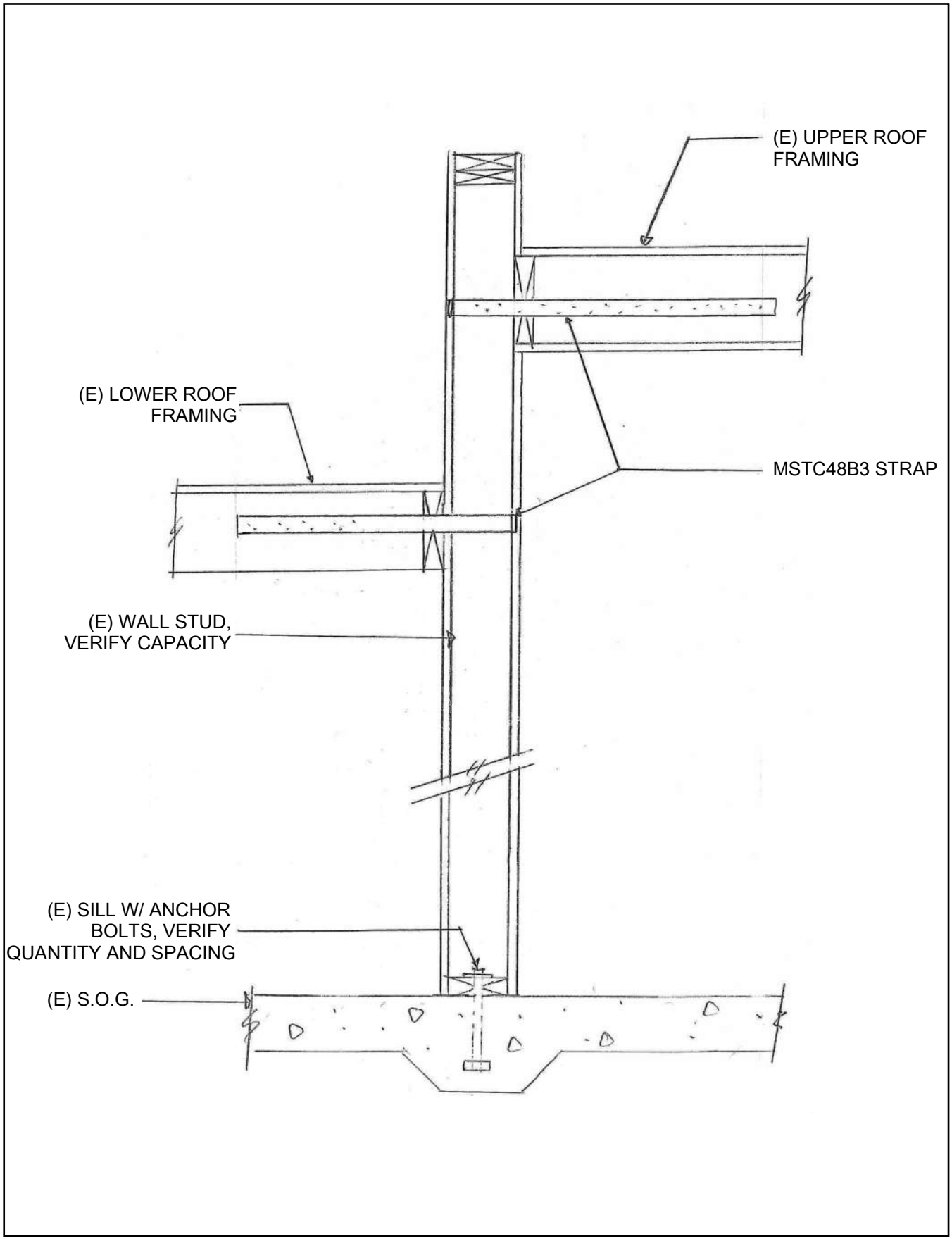
FIRE STATION 16 SHEAR WALL PLAN

REDMOND FACILITIES MANAGEMENT

DATE	04/04/2016
PROJ. #	00665-2015-01
DESIGN	RDO
SHEET	14



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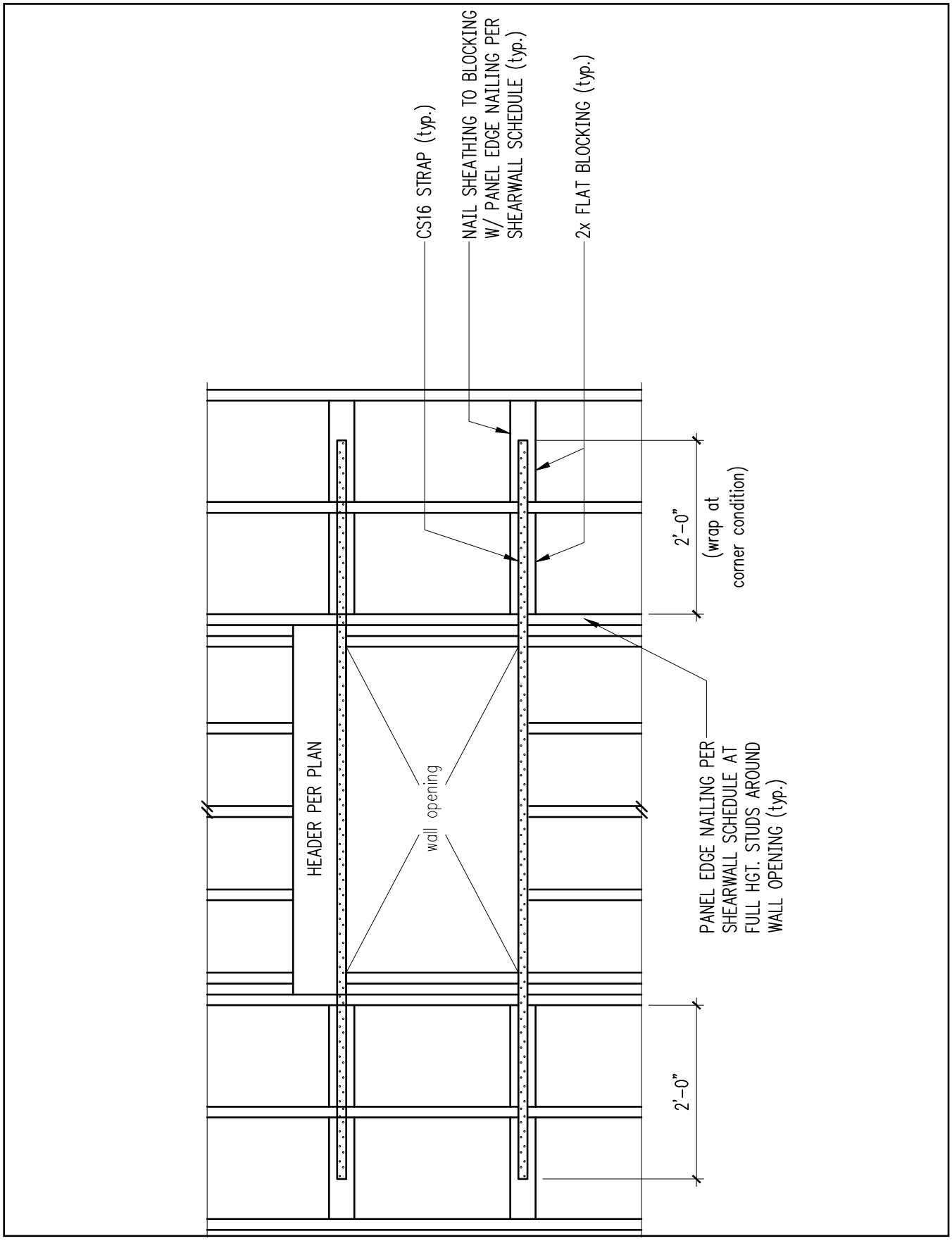
STRUCTURAL ENGINEERING

FORCE TRANSFER @ STEP IN DIAPHRAGM

REDMOND FACILITIES MANAGEMENT

FIRE STATION 16

04/04/2016
DATE
00665-2015-01
PROJ. #
RDO
DESIGN
15
SHEET



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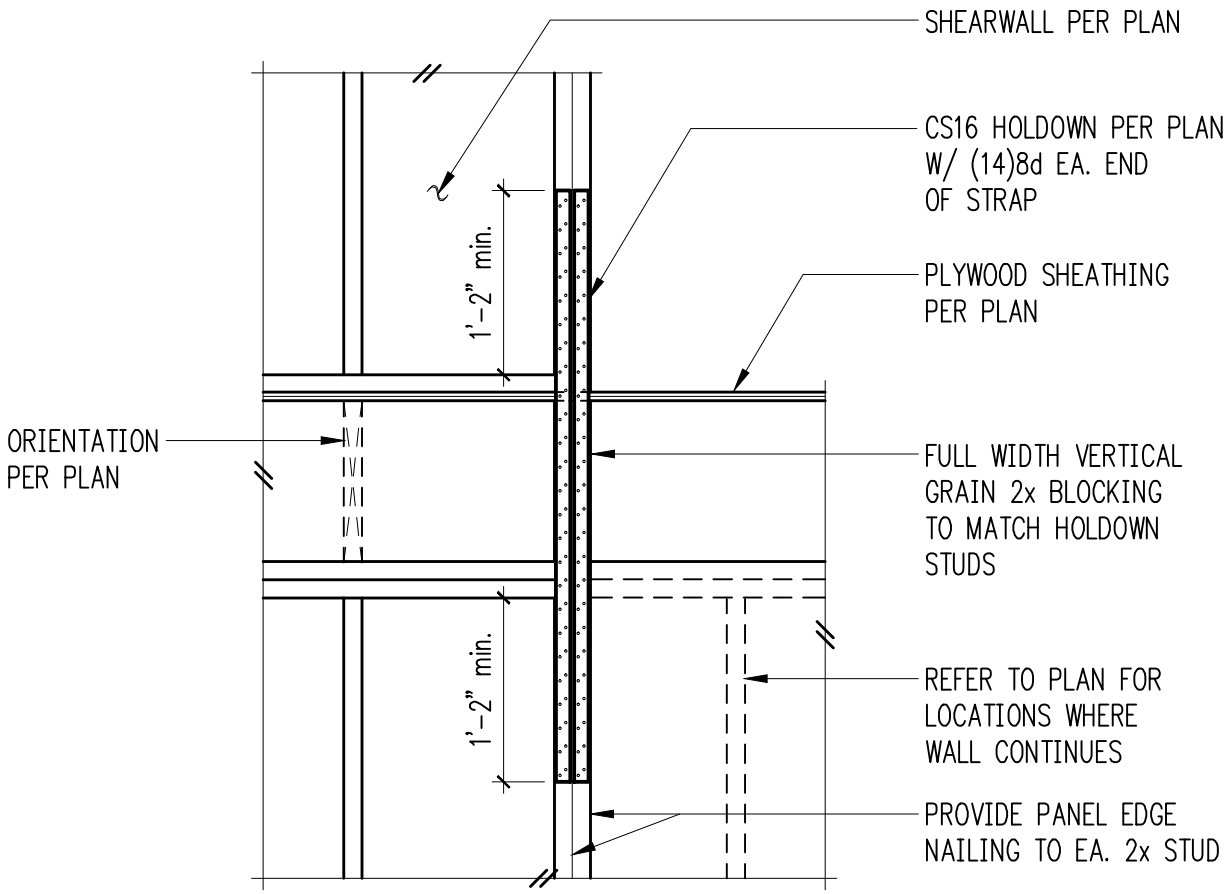
STRUCTURAL ENGINEERING

TYPICAL STRAPPING AROUND OPENINGS

REDMOND FACILITIES MANAGEMENT

FIRE STATION 16

DATE	04/04/2016
PROJ. #	00665-2015-01
DESIGN	RDO
SHEET	16



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STRUCTURAL ENGINEERING

TYPICAL HOLDOWN BETWEEN FLOORS

REDMOND FACILITIES MANAGEMENT

FIRE STATION 16

DATE	04/04/2016
PROJ. #	00665-2015-01
DESIGN	RDO
SHEET	17

Appendix B

ASCE 41-13

Tier-1 Checklist

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APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Redmond FS 11 Date: 1/6/2017

Building Address: 8450 161st Avenue NE

Latitude: 47.678036 Longitude: -122.124825 By: RDO

Year Built: 1981 Year(s) Remodeled: 1998 Original Design Code: UBC 1979

Area (sf): Length (ft): Width (ft):

No. of Stories: Story Height: Total Height:

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other:

CONSTRUCTION DATA

Gravity Load Structural System:

Exterior Transverse Walls: Openings?

Exterior Longitudinal Walls: Openings?

Roof Materials/Framing:

Intermediate Floors/Framing:

Ground Floor:

Columns: Foundation:

General Condition of Structure:

Levels Below Grade?

Special Features and Comments:

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:		
Vertical Elements:		
Diaphragms:		
Connections:		

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = S_{D1} =

Soil Factors: Class = F_a = F_v =

BSE-1E Spectral Response Accelerations: S_{XS} = 0.66 S_{X1} = 0.36

Level of Seismicity: Performance Level: Immediate Occupancy

Building Period: T =

Spectral Acceleration: S_a =

Modification Factor: $C_mC_1C_2$ = Building Weight: W =

Pseudo Lateral Force: V=

$C_mC_1C_2S_aW$= 457 kip

BUILDING CLASSIFICATION:

REQUIRED TIER 1 CHECKLISTS	Yes	No
Basic Configuration Checklist	☐	☐
Building Type _____ Structural Checklist	☐	☐
Nonstructural Component Checklist	☐	☐

FURTHER EVALUATION REQUIREMENT:

Project: Redmond Facilities: Fire Station 11 Location: Redmond, WA

Completed by: RDO Date: 3/9/16

16.15IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPES RM1: REINFORCED MASONRY BEARING WALLS AND RM1A: REINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.^{2}. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1) DCR= 1.4 at Wall line B (shared wall between apparatus bay and office)

(C) NC N/A U REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3) Wall scanning recommended at original building section.

Connections

(C) NC N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)

(C) NC N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)

(C) NC N/A U FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)

(C) NC N/A U GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

C (NC) N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1) Anchorage from remodel is adequate, however anchorage at original construction is unknown and should be verified.

Stiff Diaphragms

C NC (N/A) U TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)

C NC (N/A) U TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3)

C NC (N/A) U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

(C) NC N/A U REINFORCING AT WALL OPENINGS: All wall openings that interrupt rebar have trim reinforcing on all sides. (Commentary: Sec. A.3.2.4.3. Tier 2: Sec. 5.5.3.1.5)

C (NC) N/A U PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than 30. (Commentary: Sec. A.3.2.4.4. Tier 2: Sec. 5.5.3.1.2) H:T ratio is exceeded by 5 for the horizontal span between pilasters.

Diaphragms (Stiff or Flexible)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

(C) NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

C NC N/A (U) PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

Strapping details are unknown for the original structure. assumed not present.

C NC (N/A) U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

Flexible Diaphragms

C (NC) N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

Purlins are not connected between girder bays.

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C (NC) N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft and have aspect ratios less than 4-to-1. (Commentary: Sec. A.4.3.1. Tier 2: Sec. 5.6.3)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

C (NC) N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

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APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Redmond FS 12 Date: 2/25/2016

Building Address: 4211 148th Ave NE

Latitude: 47.648486 Longitude: -122.143625 By: FR

Year Built: 1991 Year(s) Remodeled: 1998 Original Design Code: UBC 1997

Area (sf): Length (ft): Width (ft):

No. of Stories: Story Height: Total Height:

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other:

CONSTRUCTION DATA

Gravity Load Structural System:

Exterior Transverse Walls: Openings?

Exterior Longitudinal Walls: Openings?

Roof Materials/Framing:

Intermediate Floors/Framing:

Ground Floor:

Columns: Foundation:

General Condition of Structure:

Levels Below Grade?

Special Features and Comments:

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:		
Vertical Elements:		
Diaphragms:		
Connections:		

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = S_{D1} =

Soil Factors: Class = F_a = F_v =

BSE-1E Spectral Response Accelerations: S_{XS} = 1.03 S_{X1} = 0.60

Level of Seismicity: Performance Level: Immediate Occupancy

Building Period: T =

Spectral Acceleration: S_a =

Modification Factor: $C_mC_1C_2$ = Building Weight: W =

Pseudo Lateral Force: V=

$C_mC_1C_2S_aW$= 701 kip

BUILDING CLASSIFICATION:

REQUIRED TIER 1 CHECKLISTS	Yes	No
Basic Configuration Checklist	☐	☐
Building Type _____ Structural Checklist	☐	☐
Nonstructural Component Checklist	☐	☐

FURTHER EVALUATION REQUIREMENT:

Project: Redmond FS 12 Location: _____

Completed by: _____ Date: _____

TIER 1 CHECKLISTS

16.1 BASIC CHECKLIST

Very Low Seismicity

Structural Components

C NC N/A U LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

C NC N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)

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Project: Redmond FS 12 Location: _____

Completed by: _____ Date: _____

16.1.2IO IMMEDIATE OCCUPANCY BASIC CONFIGURATION CHECKLIST

Very Low Seismicity

Building System

General

(C) NC N/A U LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

(C) NC N/A U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)

(C) NC N/A U MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)

Building Configuration

(C) NC N/A U WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction shall not be less than 80% of the strength in the adjacent story above. (Commentary: Sec. A.2.2.2. Tier 2: Sec. 5.4.2.1)

(C) NC N/A U SOFT STORY: The stiffness of the seismic-force-resisting system in any story shall not be less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffnessof the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)

(C) NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)

(C) NC N/A U GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)

(C) NC N/A U MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)

(C) NC N/A U TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)

Low Seismicity: Complete the Following Items in Additionto the Items for Very Low Seismicity.

Geologic Site Hazards

(C) NC N/A U LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)

(C) NC N/A U SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)

C NC N/A (U) SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)

Moderate and High Seismicity: Complete the Following Items in Addition to the Items for Low Seismicity.

Foundation Configuration

(C) NC N/A U OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

(C) NC N/A U TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)

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Project: Redmond FS 12 Location: _____

Completed by: _____ Date: _____

16.15IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPES RM1: REINFORCED MASONRY BEARING WALLS AND RM1A: REINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.^{2}. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)

C NC N/A (U) REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3)

Connections

(C) NC N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)

(C) NC N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)

C NC N/A (U) FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)

(C) NC N/A U GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

(C) NC N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)

SIMPSON STRAPS VISIBLE. UNABLE TO VERIFY CAPACITY OF A.B.

Stiff Diaphragms

C NC (N/A) U TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)

C NC (N/A) U TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3)

(C) NC N/A U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

C NC N/A (U) REINFORCING AT WALL OPENINGS: All wall openings that interrupt rebar have trim reinforcing on all sides. (Commentary: Sec. A.3.2.4.3. Tier 2: Sec. 5.5.3.1.5)

(C) NC N/A U PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than 30. (Commentary: Sec. A.3.2.4.4. Tier 2: Sec. 5.5.3.1.2)

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Diaphragms (Stiff or Flexible)

C NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

C NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

C NC N/A U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

C NC N/A U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

Flexible Diaphragms

C NC N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

C NC N/A U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

C NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC N/A U NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft and have aspect ratios less than 4-to-1. (Commentary: Sec. A.4.3.1. Tier 2: Sec. 5.6.3)

C NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

C NC N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

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Project: Redmond FS 12 Location: _____

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16.16IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPES URM: UNREINFORCED MASONRY BEARING WALLS WITH FLEXIBLE DIAPHRAGMS AND URMA: UNREINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 30 lb/in.^{2} for clay units and 70 lb/in.^{2} for concrete units. (Commentary: Sec. A.3.2.5.1. Tier 2: Sec. 5.5.3.1.1)

Connections

(C) NC N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)

SIMPSON STRAPS VISIBLE. UNABLE TO VERIFY CAPACITY OF A.B.

(C) NC N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)

(C) NC N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)

(C) NC N/A U GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3.)

(C) NC N/A U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

C (NC) N/A U PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than the following (Commentary: Sec. A.3.2.5.2. Tier 2: Sec. 5.5.3.1.2):

Top story of multi-story building	9
First story of multi-story building	15
All other conditions	13

COMPLIANT IF WALL REINFORCEMENT PRESENT

(C) NC N/A U MASONRY LAYUP: Filled collar joints of multi-wythe masonry walls have negligible voids. (Commentary: Sec. A.3.2.5.3. Tier 2: Sec. 5.5.3.4.1)

Diaphragms (Stiff or Flexible)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

(C) NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are be greater than 4 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

C (NC) N/A U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

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C NC (N/A) U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

Flexible Diaphragms

(C) NC N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C (NC) N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

C NC (N/A) U NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete shall consist of horizontal spans of less than 40 ft and have aspect ratios less than 4-to-1. (Commentary: Sec. A.4.3.1. and Tier 2: Sec. 5.6.3)

C NC (N/A) U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

C NC N/A (U) STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

(C) NC N/A U BEAM, GIRDER, AND TRUSS SUPPORTS: Beams, girders, and trusses supported by unreinforced masonry walls or pilasters have independent secondary columns for support of vertical loads. (Commentary: Sec. A.5.4.5. Tier 2: Sec. 5.7.4.4)

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Project: Redmond FS 12 Location: _____

Completed by: _____ Date: _____

16.17 NONSTRUCTURAL CHECKLIST

Life Safety Systems

C NC N/A U LS-LMH; PR-LMH. FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13. (Commentary: Sec. A.7.13.1. Tier 2: Sec. 13.7.4)

C NC N/A U LS-LMH; PR-LMH. FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13. (Commentary: Sec. A.7.13.2. Tier 2: Sec. 13.7.4)

C NC N/A U LS-LMH; PR-LMH. EMERGENCY POWER: Equipment used to power or control life safety systems is anchored or braced. (Commentary: Sec. A.7.12.1. Tier 2: Sec. 13.7.7)

C NC N/A U LS-LMH; PR-LMH. STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints. (Commentary: Sec. A.7.14.1. Tier 2: Sec. 13.7.6)

C NC N/A U LS-MH; PR-MH. SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13. (Commentary: Sec. A.7.13.3. Tier 2: Sec. 13.7.4)

C NC N/A U LS-not required; PR-LMH. EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced. (Commentary: Sec. A.7.3.1. Tier 2: Sec. 13.7.9)

Hazardous Materials

C NC N/A U LS-LMH; PR-LMH. HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers. (Commentary: Sec. A.7.12.2. Tier 2: 13.7.1)

C NC N/A U LS-LMH; PR-LMH. HAZARDOUS MATERIAL STORAGE: Breakable containers that hold hazardous material, including gas cylinders, are restrained by latched doors, shelf lips, wires, or other methods. (Commentary: Sec. A.7.15.1. Tier 2: Sec. 13.8.4)

C NC N/A U LS-MH; PR-MH. HAZARDOUS MATERIAL DISTRIBUTION: Piping or ductwork conveying hazardous materials is braced or otherwise protected from damage that would allow hazardous material release. (Commentary: Sec. A.7.13.4. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A U LS-MH; PR-MH. SHUT-OFF VALVES: Piping containing hazardous material, including natural gas, has shut-off valves or other devices to limit spills or leaks. (Commentary: Sec. A.7.13.3. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A U LS-LMH; PR-LMH. FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, has flexible couplings. (Commentary: Sec. A.7.15.4, Tier 2: Sec.13.7.3 and 13.7.5)

C NC N/A U LS-MH; PR-MH. PIPING OR DUCTS CROSSING SEISMIC JOINTS: Piping or ductwork carrying hazardous material that either crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A.7.13.6. Tier 2: Sec.13.7.3, 13.7.5, and 13.7.6)

Partitions

C NC N/A U LS-LMH; PR-LMH. UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft in Low or Moderate Seismicity, or at most 6 ft in High Seismicity. (Commentary: Sec. A.7.1.1. Tier 2: Sec. 13.6.2)

C NC N/A U LS-LMH; PR-LMH. HEAVY PARTITIONS SUPPORTED BY CEILINGS: The tops of masonry or hollow-clay tile partitions are not laterally supported by an integrated ceiling system. (Commentary: Sec. A.7.2.1. Tier 2: Sec. 13.6.2)

C NC N/A U LS-MH; PR-MH. DRIFT: Rigid cementitious partitions are detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005. (Commentary A.7.1.2 Tier 2: Sec. 13.6.2)

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C NC N/A U LS-not required; PR-MH. LIGHT PARTITIONS SUPPORTED BY CEILINGS: The tops of gypsum board partitions are not laterally supported by an integrated ceiling system. (Commentary: Sec. A.7.2.1. Tier 2: Sec. 13.6.2)

C NC N/A U LS-not required; PR-MH. STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints. (Commentary: Sec. A.7.1.3. Tier 2. Sec. 13.6.2)

C NC N/A U LS-not required; PR-MH. TOPS: The tops of ceiling-high framed or panelized partitions have lateral bracing to the structure at a spacing equal to or less than 6 ft. (Commentary: Sec. A.7.1.4. Tier 2. Sec. 13.6.2)

Ceilings

C NC N/A U LS-MH; PR-LMH. SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft^2 of area. (Commentary: Sec. A.7.2.3. Tier 2: Sec. 13.6.4)

C NC N/A U LS-MH; PR-LMH. SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft^2 of area. (Commentary: Sec. A.7.2.3. Tier 2: Sec. 13.6.4)

C NC N/A U LS-not required; PR-MH. INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft^2, and ceilings of smaller areas that are not surrounded by restraining partitions, are laterally restrained at a spacing no greater than 12 ft with members attached to the structure above. Each restraint location has a minimum of four diagonal wires and compression struts, or diagonal members capable of resisting compression. (Commentary: Sec. A.7.2.2. Tier 2: Sec. 13.6.4)

C NC N/A U LS-not required; PR-MH. EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in.; in High Seismicity, 3/4 in. (Commentary: Sec. A.7.2.4. Tier 2: Sec. 13.6.4)

C NC N/A U LS-not required; PR-MH. CONTINUITY ACROSS STRUCTURE JOINTS: The ceiling system does not cross any seismic joint and is not attached to multiple independent structures. (Commentary: Sec. A.7.2.5. Tier 2: Sec. 13.6.4)

C NC N/A U LS-not required; PR-H. EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 are supported by closure angles or channels not less than 2 in. wide. (Commentary: Sec. A.7.2.6. Tier 2: Sec. 13.6.4)

C NC N/A U LS-not required; PR-H. SEISMIC JOINTS: Acoustical tile or lay-in panel ceilings have seismic separation joints such that each continuous portion of the ceiling is no more than 2500 ft^2 and has a ratio of long-to-short dimension no more than 4-to-1. (Commentary: Sec. A.7.2.7. Tier 2: 13.6.4)

Light Fixtures

C NC N/A U LS-MH; PR-MH. INDEPENDENT SUPPORT: Light fixtures that weigh more per square foot than the ceiling they penetrate are supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture. (Commentary: Sec. A.7.3.2. Tier 2: Sec. 13.6.4 and 13.7.9)

C NC N/A U LS-not required; PR-H. PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft and, if rigidly supported, are free to move with the structure to which they are attached without damaging adjoining components. (Commentary: A.7.3.3. Tier 2: Sec. 13.7.9)

C NC N/A U LS-not required; PR-H. LENS COVERS: Lens covers on light fixtures are attached with safety devices. (Commentary: Sec. A.7.3.4. Tier 2: Sec. 13.7.9)

Cladding and Glazing

C NC N/A U LS-MH; PR-MH. CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft^2 are mechanically anchored to the structure at a spacing equal to or less than the following: for Life Safety in Moderate Seismicity, 6 ft; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft. (Commentary: Sec. A.7.4.1. Tier 2: Sec. 13.6.1)

C NC N/A U LS-MH; PR-MH. CLADDING ISOLATION: For steel or concrete moment frame buildings, panel connections are detailed to accommodate a story drift ratio of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02. (Commentary: Sec. A.7.4.3. Tier 2: Section 13.6.1)

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C NC N/A U LS-MH; PR-MH. MULTI-STORY PANELS: For multi-story panels attached at more than one floor level, panel connections are detailed to accommodate a story drift ratio of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicty, 0.02. (Commentary: Sec. A.7.4.4. Tier 2: Sec. 13.6.1)

C NC N/A U LS-MH; PR-MH. PANEL CONNECTIONS: Cladding panels are anchored out-of-plane with a minimum number of connections for each wall panel, as follows: for Life Safety in Moderate Seismicity, 2 connections; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 connections. (Commentary: Sec. A.7.4.5. Tier 2: Sec. 13.6.1.4)

C NC N/A U LS-MH; PR-MH. BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel. (Commentary: Sec. A.7.4.6. Tier 2: Sec. 13.6.1.4)

C NC N/A U LS-MH; PR-MH. INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel. (Commentary: Sec. A.7.4.7. Tier 2: Sec. 13.6.1.4)

C NC N/A U LS-MH; PR-MH. OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes over 16 ft^2 in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked. (Commentary: Sec. A.7.4.8: Tier 2: Sec. 13.6.1.5)

Masonry Veneer

C NC N/A U LS-LMH; PR-LMH. TIES: Masonry veneer is connected to the backup with corrosion-resistant ties. There is a minimum of one tie for every 2-2/3 ft^2, and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in.; for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (Commentary: Sec. A.7.5.1. Tier 2: Sec. 13.6.1.2)

C NC N/A U LS-LMH; PR-LMH. SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor. (Commentary: Sec. A.7.5.2. Tier 2: Sec. 13.6.1.2)

C NC N/A U LS-LMH; PR-LMH. WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing. (Commentary: Sec. A.7.5.3. Tier 2: Sec. 13.6.1.2)

C NC N/A U LS-LMH; PR-LMH. UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup. (Commentary: Sec. A.7.7.2. Tier 2: Section 13.6.1.1 and 13.6.1.2)

C NC N/A U LS-MH; PR-MH. STUD TRACKS: For veneer with metal stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. on center. (Commentary: Sec. A.7.6.1. Tier 2: Section 13.6.1.1 and 13.6.1.2)

C NC N/A U LS-MH; PR-MH. ANCHORAGE: For veneer with concrete block or masonry backup, the backup is positively anchored to the structure at a horizontal spacing equal to or less than 4 ft along the floors and roof. (Commentary: Sec. A.7.7.1. Tier 2: Section 13.6.1.1 and 13.6.1.2)

C NC N/A U LS-not required; PR-MH. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing. (Commentary: Sec. A.7.5.6. Tier 2: Section 13.6.1.2)

C NC N/A U LS-not required; PR-MH. OPENINGS: For veneer with metal stud backup, steel studs frame window and door openings. (Commentary: Sec. A.7.6.2. Tier 2: Sec. 13.6.1.1 and 13.6.1.2)

Parapets, Cornices, Ornamentation, and Appendages

C NC N/A U LS-LMH; PR-LMH. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or cornices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5. (Commentary: Sec. A.7.8.1. Tier 2: Sec. 13.6.5)

C NC N/A U LS-LMH; PR-LMH. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft; for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft. (Commentary: Sec. A.7.8.2. Tier 2: Sec. 13.6.6)

C NC N/A U LS-MH; PR-LMH. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement. (Commentary: Sec. A.7.8.3. Tier 2: Sec. 13.6.5)

C NC N/A U LS-MH; PR-LMH. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft. This checklist item does not apply to parapets or cornices covered by other checklist items. (Commentary: Sec. A.7.8.4. Tier 2: Sec. 13.6.6)

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Masonry Chimneys

C NC N/A U LS-LMH; PR-LMH. URM CHIMNEYS: Unreinforced masonry chimneys extend above the roof surface no more than the following: for Life Safety in Low or Moderate Seismicity, 3 times the least dimension of the chimney; for Life Safety in High Seismicity and for Position Retention in any seismicity, 2 times the least dimension of the chimney. (Commentary: Sec. A.7.9.1. Tier 2: 13.6.7)

C NC N/A U LS-LMH; PR-LMH. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof. (Commentary: Sec. A.7.9.2. Tier 2: 13.6.7)

Stairs

C NC N/A U LS-LMH; PR-LMH. STAIR ENCLOSURES: Hollow-clay tile or unreinforced masonry walls around stair enclosures are restrained out-of-plane and have height-to-thickness ratios not greater than the following: for Life Safety in Low or Moderate Seismicity, 15-to-1; for Life Safety in High Seismicity and for Position Retention in any seismicity, 12-to-1. (Commentary: Sec. A.7.10.1. Tier 2: Sec. 13.6.2 and 13.6.8)

C NC N/A U LS-LMH; PR-LMH. STAIR DETAILS: In moment frame structures, the connection between the stairs and the structure does not rely on shallow anchors in concrete. Alternatively, the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.5.3.1 without including any lateral stiffness contribution from the stairs. (Commentary: Sec. A.7.10.2. Tier 2: 13.6.8)

Contents and Furnishings

C NC N/A U LS-MH; PR-MH. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/MH 16.1 as modified by ASCE 7 Chapter 15. (Commentary: Sec. A.7.11.1. Tier 2: Sec. 13.8.1)

C NC N/A U LS-H; PR-MH. TALL NARROW CONTENTS: Contents more than 6 ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 are anchored to the structure or to each other. (Commentary: Sec. A.7.11.2. Tier 2: Sec. 13.8.2)

C NC N/A U LS-H; PR-H. FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb whose center of mass is more than 4 ft above the adjacent floor level are braced or otherwise restrained. (Commentary: Sec. A.7.11.3. Tier 2: Sec. 13.8.2)

C NC N/A U LS-not required; PR-MH. ACCESS FLOORS: Access floors more than 9 in. high are braced. (Commentary: Sec. A.7.11.4. Tier 2: Sec. 13.8.3)

C NC N/A U LS-not required; PR-MH. EQUIPMENT ON ACCESS FLOORS: Equipment and other contents supported by access floor systems are anchored or braced to the structure independent of the access floor. (Commentary: Sec. A.7.11.5. Tier 2: Sec. 13.7.7 and 13.8.3)

C NC N/A U LS-not required; PR-H. SUSPENDED CONTENTS: Items suspended without lateral bracing are free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components. (Commentary. A.7.11.6. Tier 2: Sec. 13.8.2)

Mechanical and Electrical Equipment

C NC N/A U LS-H; PR-H. FALL-PRONE EQUIPMENT: Equipment weighing more than 20 lb whose center of mass is more than 4 ft above the adjacent floor level, and which is not in-line equipment, is braced. (Commentary: A.7.12.4. Tier 2: 13.7.1 and 13.7.7)

C NC N/A U LS-H; PR-H. IN-LINE EQUIPMENT: Equipment installed in-line with a duct or piping system, with an operating weight more than 75 lb, is supported and laterally braced independent of the duct or piping system. (Commentary: Sec. A.7.12.5. Tier 2: Sec. 13.7.1)

C NC N/A U LS-H; PR-MH. TALL NARROW EQUIPMENT: Equipment more than 6 ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 is anchored to the floor slab or adjacent structural walls. (Commentary: Sec. A.7.12.6. Tier 2: Sec. 13.7.1 and 13.7.7)

C NC N/A U LS-not required; PR-MH. MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01. (Commentary: Sec. A.7.12.7. Tier 2: Sec. 13.6.9)

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C NC N/A U LS-not required; PR-H. SUSPENDED EQUIPMENT: Equipment suspended without lateral bracing is free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components. (Commentary: Sec. A.7.12.8. Tier 2: Sec. 13.7.1 and 13.7.7)

C NC N/A U LS-not required; PR-H. VIBRATION ISOLATORS: Equipment mounted on vibration isolators is equipped with horizontal restraints or snubbers and with vertical restraints to resist overturning. (Commentary: Sec. A.7.12.9. Tier 2: Sec. 13.7.1)

C NC N/A U LS-not required; PR-H. HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb is anchored to the structure. (Commentary: Sec. A.7.12.10. Tier 2: 13.7.1 and 13.7.7)

C NC N/A U LS-not required; PR-H. ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure. (Commentary: Sec. A.7.12.11. Tier 2: 13.7.7)

C NC N/A U LS-not required; PR-H. CONDUIT COUPLINGS: Conduit greater than 2.5 in. trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections. (Commentary: Sec. A.7.12.12. Tier 2: 13.7.8)

Piping

C NC N/A U LS-not required; PR-H. FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings. (Commentary: Sec. A.7.13.2. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A U LS-not required; PR-H. FLUID AND GAS PIPING: Fluid and gas piping is anchored and braced to the structure to limit spills or leaks. (Commentary: Sec. A.7.13.4. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A U LS-not required; PR-H. C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. in diameter are restrained. (Commentary: Sec. A.7.13.5. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A U LS-not required; PR-H. PIPING CROSSING SEISMIC JOINTS: Piping that crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A7.13.6. Tier 2: Sec.13.7.3 and Sec. 13.7.5)

Ducts

C NC N/A U LS-not required; PR-H. DUCT BRACING: Rectangular ductwork larger than 6 ft^2 in cross-sectional area and round ducts larger than 28 in. in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft. The maximum spacing of longitudinal bracing does not exceed 60 ft. (Commentary: Sec. A.7.14.2. Tier 2: Sec. 13.7.6)

C NC N/A U LS-not required; PR-H. DUCT SUPPORT: Ducts are not supported by piping or electrical conduit. (Commentary: Sec. A.7.14.3. Tier 2: Sec. 13.7.6)

C NC N/A U LS-not required; PR-H. DUCTS CROSSING SEISMIC JOINTS: Ducts that cross seismic joints or isolation planes or are connected to independent structures have couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A.7.14.5. Tier 2: Sec. 13.7.6)

Elevators

C NC N/A U LS-H; PR-H. RETAINER GUARDS: Sheaves and drums have cable retainer guards. (Commentary: Sec. A.7.16.1. Tier 2: 13.8.6)

C NC N/A U LS-H; PR-H. RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight. (Commentary: Sec. A.7.16.2. Tier 2: 13.8.6)

C NC N/A U LS-not required; PR-H. ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored. (Commentary: Sec. A.7.16.3. Tier 2: 13.8.6)

C NC N/A U LS-not required; PR-H. SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/min or faster are equipped with seismic switches that meet the requirements of ASME A17.1 or have trigger levels set to 20% of the acceleration of gravity at the base of the structure and 50% of the acceleration of gravity in other locations. (Commentary: Sec. A.7.16.4. Tier 2: 13.8.6)

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C NC N/A U LS-not required; PR-H. SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking. (Commentary: Sec. A.7.16.5. Tier 2: 13.8.6)

C NC N/A U LS-not required; PR-H. COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1. (Commentary: Sec. A.7.16.6. Tier 2: 13.8.6)

C NC N/A U LS-not required; PR-H. BRACKETS: The brackets that tie the car rails and the counterweight rail to the structure are sized in accordance with ASME A17.1. (Commentary: Sec. A.7.16.7. Tier 2: 13.8.6)

C NC N/A U LS-not required; PR-H. SPREADER BRACKET: Spreader brackets are not used to resist seismic forces. (Commentary: Sec. A.7.16.8. Tier 2: 13.8.6)

C NC N/A U LS-not required; PR-H. GO-SLOW ELEVATORS: The building has a go-slow elevator system. (Commentary: Sec. A.7.16.9. Tier 2: 13.8.6)

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APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Redmond FS 13 Date: 1/6/2017

Building Address: 8791 208th Ave NE

Latitude: 47.680373 Longitude: -122.062677 By: RDO

Year Built: 1974 Year(s) Remodeled: 1993 Original Design Code: UBC 1988

Area (sf): _____ Length (ft): _____ Width (ft): _____

No. of Stories: _____ Story Height: _____ Total Height: _____

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other: _____

CONSTRUCTION DATA

Gravity Load Structural System: _____

Exterior Transverse Walls: _____ Openings? _____

Exterior Longitudinal Walls: _____ Openings? _____

Roof Materials/Framing: _____

Intermediate Floors/Framing: _____

Ground Floor: _____

Columns: _____ Foundation: _____

General Condition of Structure: _____

Levels Below Grade? _____

Special Features and Comments: _____

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:		
Vertical Elements:		
Diaphragms:		
Connections:		

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = _____ S_{D1} = _____

Soil Factors: Class = _____ F_a = _____ F_v = _____

BSE-1E Spectral Response Accelerations: S_{XS} = 0.66 S_{X1} = 0.36

Level of Seismicity: _____ Performance Level: Immediate Occupancy

Building Period: T = _____

Spectral Acceleration: S_a = _____

Modification Factor: $C_mC_1C_2$ = _____ Building Weight: W = _____

Pseudo Lateral Force: V=

$C_mC_1C_2S_aW$= 127 kip

BUILDING CLASSIFICATION: _____

REQUIRED TIER 1 CHECKLISTS	**Yes**	**No**
Basic Configuration Checklist	☐	☐
Building Type _____ Structural Checklist	☐	☐
Nonstructural Component Checklist	☐	☐

FURTHER EVALUATION REQUIREMENT: _____

Project: Redmond Facilities: Fire Station 13 Location: Redmond, WA

Completed by: RDO Date: 3/9/16

16.15IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPES RM1: REINFORCED MASONRY BEARING WALLS AND RM1A: REINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.^{2}. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1) Conforms in E/W direction. DCR=1.42 in N/S direction.

C (NC) N/A U REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3) No horizontal reinforcement is shown on plan. Wall scanning recommended.

Connections

C (NC) N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3) Diaphragm sheathing nails directly to top of ledger. Recommend horizontal connection of joists to walls.

C (NC) N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2) Type and spacing of anchorage needs to be verified. Assumed spacing inadequate.

(C) NC N/A U FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)

(C) NC N/A U GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

C (NC) N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1) Girder connections to South wall conforms. No anchorage is detailed at N/S walls.

Stiff Diaphragms

C NC (N/A) U TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)

C NC (N/A) U TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3)

(C) NC N/A U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

C NC N/A (U) REINFORCING AT WALL OPENINGS: All wall openings that interrupt rebar have trim reinforcing on all sides. (Commentary: Sec. A.3.2.4.3. Tier 2: Sec. 5.5.3.1.5)

C (NC) N/A U PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than 30. (Commentary: Sec. A.3.2.4.4. Tier 2: Sec. 5.5.3.1.2) H:T ratio is exceeded by 5 for the horizontal span between pilasters.

Diaphragms (Stiff or Flexible)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

(C) NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

C (NC) N/A U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)
No tensile capacity is detailed at the NW reentrant corner.

C NC (N/A) U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

Flexible Diaphragms

C (NC) N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)
Purlins are not connected between girder bays.

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

(C) NC N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft and have aspect ratios less than 4-to-1. (Commentary: Sec. A.4.3.1. Tier 2: Sec. 5.6.3)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

(C) NC N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

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APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Redmond FS 14 Date: 2/25/2016

Building Address: 5021 264th Ave NE

Latitude: 47.651964 Longitude: -121.987798 By: FR

Year Built: 1991 Year(s) Remodeled: _____ Original Design Code: UBC 1988

Area (sf): _____ Length (ft): _____ Width (ft): _____

No. of Stories: _____ Story Height: _____ Total Height: _____

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other: _____

CONSTRUCTION DATA

Gravity Load Structural System: _____

Exterior Transverse Walls: _____ Openings? _____

Exterior Longitudinal Walls: _____ Openings? _____

Roof Materials/Framing: _____

Intermediate Floors/Framing: _____

Ground Floor: _____

Columns: _____ Foundation: _____

General Condition of Structure: _____

Levels Below Grade? _____

Special Features and Comments: _____

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:		
Vertical Elements:		
Diaphragms:		
Connections:		

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = _____ S_{D1} = _____

Soil Factors: Class = _____ F_a = _____ F_v = _____

BSE-1E Spectral Response Accelerations: S_{XS} = 0.999 S_{X1} = 0.577

Level of Seismicity: _____ Performance Level: Immediate Occupancy

Building Period: T = _____

Spectral Acceleration: S_a = _____

Modification Factor: $C_mC_1C_2$ = _____ Building Weight: W = _____

Pseudo Lateral Force: V=

$C_mC_1C_2S_aW$= 185 kip

BUILDING CLASSIFICATION: _____

REQUIRED TIER 1 CHECKLISTS	**Yes**	**No**
Basic Configuration Checklist	☐	☐
Building Type _____ Structural Checklist	☐	☐
Nonstructural Component Checklist	☐	☐

FURTHER EVALUATION REQUIREMENT: _____

Project: Redmond FS 14 Location: _____

Completed by: _____ Date: _____

TIER 1 CHECKLISTS

16.1 BASIC CHECKLIST

Very Low Seismicity

Structural Components

C NC N/A U LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

C NC N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)

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Project: Redmond FS 14 Location: _____

Completed by: _____ Date: _____

16.1.2IO IMMEDIATE OCCUPANCY BASIC CONFIGURATION CHECKLIST

Very Low Seismicity

Building System

General

(C) NC N/A U LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

(C) NC N/A U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)

(C) NC N/A U MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)

Building Configuration

C NC (N/A) U WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction shall not be less than 80% of the strength in the adjacent story above. (Commentary: Sec. A.2.2.2. Tier 2: Sec. 5.4.2.1)

C NC (N/A) U SOFT STORY: The stiffness of the seismic-force-resisting system in any story shall not be less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffnessof the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)

(C) NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)

(C) NC N/A U GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)

(C) NC N/A U MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)

(C) NC N/A U TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)

Low Seismicity: Complete the Following Items in Additionto the Items for Very Low Seismicity.

Geologic Site Hazards

(C) NC N/A U LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)

(C) NC N/A U SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)

C NC N/A (U) SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)

Moderate and High Seismicity: Complete the Following Items in Addition to the Items for Low Seismicity.

Foundation Configuration

(C) NC N/A U OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

(C) NC N/A U TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)

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Project: Redmond FS 14 Location: _____

Completed by: _____ Date: _____

16.2IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPES W1: WOOD LIGHT FRAMES AND W1A: MULTI-STORY, MULTI-UNIT RESIDENTIAL WOOD FRAME

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than the following values (Commentary: Sec. A.3.2.7.1. Tier 2: Sec. 5.5.3.1.1):

Structural panel sheathing	1,000 lb/ft
Diagonal sheathing	700 lb/ft
Straight sheathing	100 lb/ft
All other conditions	100 lb/ft

C NC (N/A) U STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system. (Commentary: Sec. A.3.2.7.2. Tier 2: Sec. 5.5.3.6.1)

C NC (N/A) U GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard are not used as shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building. (Commentary: Sec. A.3.2.7.3. Tier 2: Sec. 5.5.3.6.1)

C (NC) N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

(C) NC N/A U WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor. (Commentary: Sec. A.3.2.7.5. Tier 2: Sec.5.5.3.6.2)

C NC (N/A) U HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1 to 2. (Commentary: Sec. A.3.2.7.6. Tier 2: Sec.5.5.3.6.3)

C NC (N/A) U CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels. (Commentary: Sec. A.3.2.7.7. Tier 2: Sec. 5.5.3.6.4)

C NC (N/A) U OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces. (Commentary: Sec. A.3.2.7.8. Tier 2: Sec. 5.5.3.6.5)

FRONT OPENINGS = 65% < 80%

Connections

(C) NC N/A U WOOD POSTS: There is a positive connection of wood posts to the foundation. (Commentary: Sec. A.5.3.3. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U WOOD SILLS: All wood sills are bolted to the foundation. (Commentary: Sec. A.5.3.4. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U GIRDER/COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3.)

C NC (N/A) U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

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Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

C (NC) N/A U HOLD-DOWN ANCHORS: All shear walls have hold-down anchors, constructed per acceptable construction practices, attached to the end studs. (Commentary: Sec. A.3.2.7.9. Tier 2: Sec. 5.5.3.6.6)

C (NC) N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 1.5-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

Diaphragms

(C) NC N/A U DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1)

(C) NC N/A U ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation. (Commentary: Sec. A.4.1.3. Tier 2: Sec. 5.6.1.1)

C (NC) N/A U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

C NC (N/A) U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C (NC) N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1 ft. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

(C) NC N/A U WOOD SILL BOLTS: Sill bolts are spaced at 4 ft or less, with proper edge and end distance provided for wood and concrete. (Commentary: Sec. A.5.3.7. Tier 2: Sec. 5.7.3.3)

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Project: Redmond FS 14 Location: _____

Completed by: _____ Date: _____

16.3IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPE W2: WOOD FRAMES, COMMERCIAL AND INDUSTRIAL

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than the following values (Commentary: Sec. A.3.2.7.1. Tier 2: Sec. 5.5.3.1.1):

Structural panel sheathing	1,000 lb/ft
Diagonal sheathing	700 lb/ft
Straight sheathing	100 lb/ft
All other conditions	100 lb/ft

C NC (N/A) U STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system. (Commentary: Sec. A.3.2.7.2. Tier 2: Sec. 5.5.3.6.1)

C NC (N/A) U GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used as shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building. (Commentary: Sec. A.3.2.7.3. Tier 2: Sec. 5.5.3.6.1)

C (NC) N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

(C) NC N/A U WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor. (Commentary: Sec. A.3.2.7.5. Tier 2: Sec. 5.5.3.6.2)

C NC (N/A) U HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-2. (Commentary: Sec. A.3.2.7.6. Tier 2: Sec. 5.5.3.6.3)

C NC (N/A) U CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels. (Commentary: Sec. A.3.2.7.7. Tier 2: Sec. 5.5.3.6.4)

C NC (N/A) U OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces. (Commentary: Sec. A.3.2.7.8. Tier 2: Sec. 5.5.3.6.5)

C (NC) N/A U HOLD-DOWN ANCHORS: All shear walls have hold-down anchors, constructed per acceptable construction practices, attached to the end studs. (Commentary: Sec. A.3.2.7.9. Tier 2: Sec. 5.5.3.6.6)

Connections

(C) NC N/A U WOOD POSTS: There is a positive connection of wood posts to the foundation. (Commentary: Sec. A.5.3.3. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U WOOD SILLS: All wood sills are bolted to the foundation. (Commentary: Sec. A.5.3.4. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U GIRDER/COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3.)

C NC (N/A) U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

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Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

C (NC) N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 1.5-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

Diaphragms

(C) NC N/A U DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1)

(C) NC N/A U ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation. (Commentary: Sec. A.4.1.3. Tier 2: Sec. 5.6.1.1)

C (NC) N/A U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

C NC (N/A) U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. Wood commercial and industrial buildings may have rod-braced systems. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C (NC) N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

(C) NC N/A U WOOD SILL BOLTS: Sill bolts are spaced at 4 ft or less, with proper edge and end distance provided for wood and concrete. (Commentary: Sec. A.5.3.7. Tier 2: Sec. 5.7.3.3)

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APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Redmond FS 16 Date: 1/6/2017

Building Address: 8791 208th Ave NE

Latitude: 47.680373 Longitude: -122.062677 By: RDO

Year Built: 1994 Year(s) Remodeled: _____ Original Design Code: UBC 1991

Area (sf): _____ Length (ft): _____ Width (ft): _____

No. of Stories: _____ Story Height: _____ Total Height: _____

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other: _____

CONSTRUCTION DATA

Gravity Load Structural System: _____

Exterior Transverse Walls: _____ Openings? _____

Exterior Longitudinal Walls: _____ Openings? _____

Roof Materials/Framing: _____

Intermediate Floors/Framing: _____

Ground Floor: _____

Columns: _____ Foundation: _____

General Condition of Structure: _____

Levels Below Grade? _____

Special Features and Comments: _____

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:		
Vertical Elements:		
Diaphragms:		
Connections:		

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = _____ S_{D1} = _____

Soil Factors: Class = _____ F_a = _____ F_v = _____

BSE-1E Spectral Response Accelerations: S_{XS} = 0.66 S_{X1} = 0.36

Level of Seismicity: _____ Performance Level: Immediate Occupancy

Building Period: T = _____

Spectral Acceleration: S_a = _____

Modification Factor: $C_mC_1C_2$ = _____ Building Weight: W = _____

Pseudo Lateral Force: V=

$C_mC_1C_2S_aW$= 269 kip

BUILDING CLASSIFICATION: _____

REQUIRED TIER 1 CHECKLISTS	**Yes**	**No**
Basic Configuration Checklist	☐	☐
Building Type _____ Structural Checklist	☐	☐
Nonstructural Component Checklist	☐	☐

FURTHER EVALUATION REQUIREMENT: _____

Project: Redmond Fire Station 16 Location: Redmond, WA

Completed by: RDO Date: 2/26/16

16.3IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPE W2: WOOD FRAMES, COMMERCIAL AND INDUSTRIAL

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than the following values (Commentary: Sec. A.3.2.7.1. Tier 2: Sec. 5.5.3.1.1):

Structural panel sheathing	1,000 lb/ft	v=1100 lb/ft
Diagonal sheathing	700 lb/ft	
Straight sheathing	100 lb/ft	
All other conditions	100 lb/ft	v=572 lb/ft at GWB shearwalls (if considered)

C NC (N/A) U STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system. (Commentary: Sec. A.3.2.7.2. Tier 2: Sec. 5.5.3.6.1)

C NC (N/A) U GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used as shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building. (Commentary: Sec. A.3.2.7.3. Tier 2: Sec. 5.5.3.6.1)

C (NC) N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

highest ratio is 3.25 @ N elevation of office

C (NC) N/A U WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor. (Commentary: Sec. A.3.2.7.5. Tier 2: Sec. 5.5.3.6.2)

no strapping provided where wall is platform framed over mezzanine

C NC (N/A) U HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-2. (Commentary: Sec. A.3.2.7.6. Tier 2: Sec. 5.5.3.6.3)

C NC (N/A) U CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels. (Commentary: Sec. A.3.2.7.7. Tier 2: Sec. 5.5.3.6.4)

(C) NC N/A U OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces. (Commentary: Sec. A.3.2.7.8. Tier 2: Sec. 5.5.3.6.5)

(C) NC N/A U HOLD-DOWN ANCHORS: All shear walls have hold-down anchors, constructed per acceptable construction practices, attached to the end studs. (Commentary: Sec. A.3.2.7.9. Tier 2: Sec. 5.5.3.6.6)

Connections

(C) NC N/A U WOOD POSTS: There is a positive connection of wood posts to the foundation. (Commentary: Sec. A.5.3.3. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U WOOD SILLS: All wood sills are bolted to the foundation. (Commentary: Sec. A.5.3.4. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U GIRDER/COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3.)

(C) NC N/A U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

C (NC) N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 1.5-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)
highest ratio is 3.25 @ N elevation of office

Diaphragms

C (NC) N/A U DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1) diaphragm steps at multiple locations of building

C (NC) N/A U ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation. (Commentary: Sec. A.4.1.3. Tier 2: Sec. 5.6.1.1)

C (NC) N/A U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)
no strapping detailed at reentrant corners

C NC (N/A) U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. Wood commercial and industrial buildings may have rod-braced systems. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

(C) NC N/A U WOOD SILL BOLTS: Sill bolts are spaced at 4 ft or less, with proper edge and end distance provided for wood and concrete. (Commentary: Sec. A.5.3.7. Tier 2: Sec. 5.7.3.3)

Fire Station 18 was a limited scope evaluation. No Tier 1 checklist was performed.

APPENDIX C
SUMMARY DATA SHEET

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BUILDING DATA

Building Name: Redmond FS 18 Date: 1/6/2017

Building Address: 22710 NE Alder Crest Dr

Latitude: 47.692240 Longitude: -122.037183 By: FR

Year Built: 2002 Year(s) Remodeled: _____ Original Design Code: UBC 1997

Area (sf): _____ Length (ft): _____ Width (ft): _____

No. of Stories: _____ Story Height: _____ Total Height: _____

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other: _____

CONSTRUCTION DATA

Gravity Load Structural System: _____

Exterior Transverse Walls: _____ Openings? _____

Exterior Longitudinal Walls: _____ Openings? _____

Roof Materials/Framing: _____

Intermediate Floors/Framing: _____

Ground Floor: _____

Columns: _____ Foundation: _____

General Condition of Structure: _____

Levels Below Grade? _____

Special Features and Comments: _____

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:		
Vertical Elements:		
Diaphragms:		
Connections:		

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{DS} = _____ S_{D1} = _____

Soil Factors: Class = _____ F_a = _____ F_v = _____

BSE-1E Spectral Response Accelerations: S_{XS} = 0.64 S_{X1} = 0.34

Level of Seismicity: _____ Performance Level: Immediate Occupancy

Building Period: T = _____

Spectral Acceleration: S_a = _____

Modification Factor: $C_mC_1C_2$ = _____ Building Weight: W = _____

Pseudo Lateral Force: V=

$C_mC_1C_2S_aW$= 118 kip

BUILDING CLASSIFICATION: _____

REQUIRED TIER 1 CHECKLISTS	Yes	No
Basic Configuration Checklist	☐	☐
Building Type _____ Structural Checklist	☐	☐
Nonstructural Component Checklist	☐	☐

FURTHER EVALUATION REQUIREMENT: _____

Appendix C

Structural Calculations

USGS Design Maps Summary Report

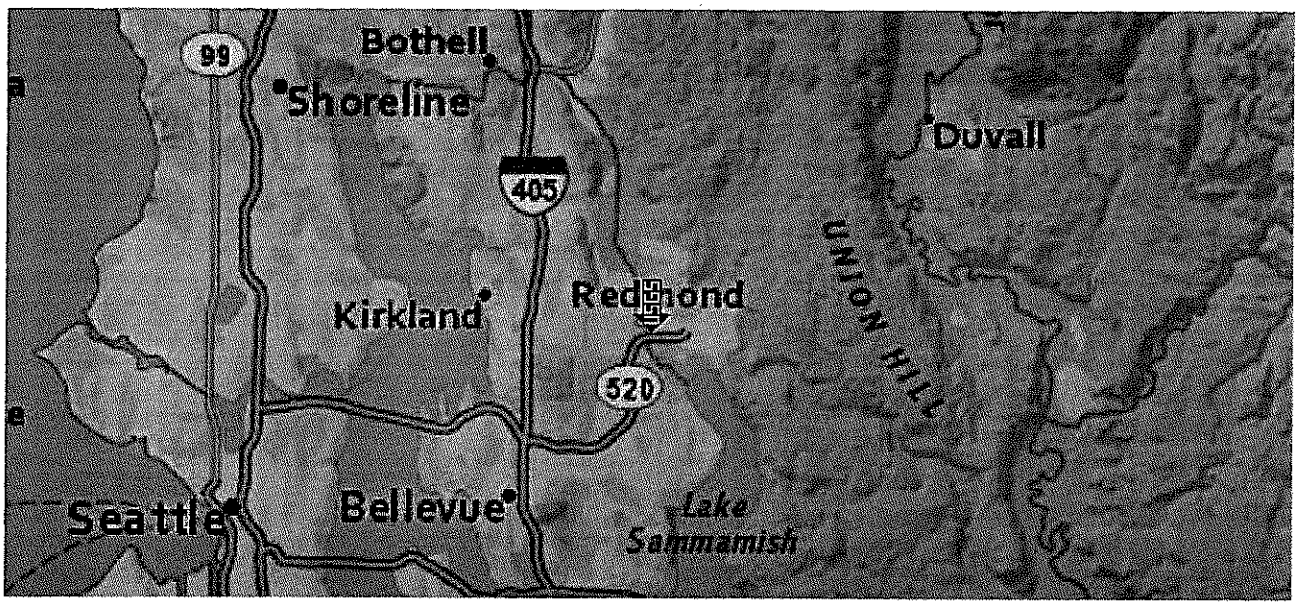
User-Specified Input

Report Title Fire Station #11
Thu January 14, 2016 23:02:21 UTC

Building Code Reference Document ASCE 41-13 Retrofit Standard, BSE-1E
(which utilizes USGS hazard data available in 2008)

Site Coordinates 47.67807°N, 122.12548°W

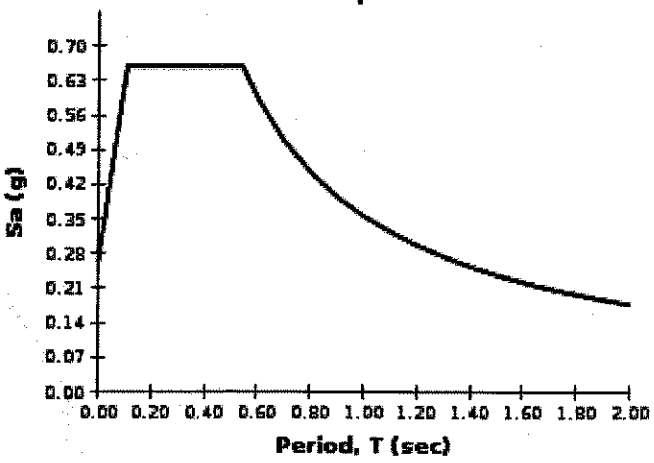
Site Soil Classification Site Class D – "Stiff Soil"



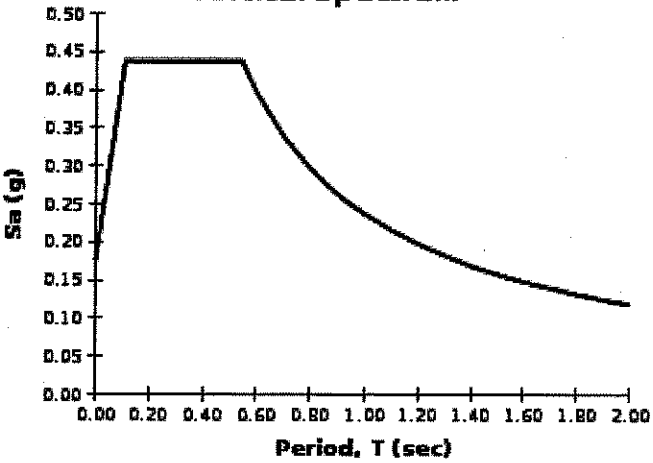
USGS-Provided Output

$S_{S,20/50}$	0.459 g	$S_{XS,BSE-1E}$	0.658 g
$S_{1,20/50}$	0.167 g	$S_{X1,BSE-1E}$	0.356 g

Horizontal Spectrum



Vertical Spectrum



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ASCE 41-13 Pseudo Lateral Seismic Analysis

Project: Redmond Facilities - FS 11
47.67807 -122.1255

STRUCTURAL ENGINEERING

Performance Objective	Immediate Occupancy
Site Class	D

S_S	0.459		20% in 50-year ground motions, USGS Hazard Tool
S_1	0.167		20% in 50-year values per Section C2.2
$S_{XS,BSE-1E}$	0.658		USGS Hazard Tool
$S_{X1,BSE-1E}$	0.356		USGS Hazard Tool
h_n	21	ft	
Ct	0.02		Section 4.5.2.4 All other systems
β	0.75		Section 4.5.2.4 All other systems
T	0.20	(sec)	Eq. 4-5
k	0.85		Section 4.5.2.2, interpolated
C	1.0		Table 4-8 1 Story RM1
$S_a=S_{X1}/T$	0.66		Eq. 4-4
Ms	1		Table 4-9 URM
Bldg. Weight	695	k	
$V = CS_aW$	457.1	k	Eq. 4-1, Pseudo lateral force

$T_a = C_t h_n^{\beta}$ Eq. 4-5

Level	hx (ft)	Wx (k)	hx^k (ft)	$Wxhx^k$	Cvx	Story Force Fx (k)	Story Shear V (k)	Wall Shear Stress N v_j (psi)	S v_j (psi)	E v_j (psi)	W v_j (psi)
Apparatus	21	261				172					
Office	13	434				286					
	Σ	695									

$$F_x = \frac{w_x h_x^{\,k}}{\sum_{i=1}^{n} w_i h_i^{\,k}} \quad \text{Eq. 4-3a}$$

$$v_j^{avg} = \frac{1}{M_s}\left(\frac{V_j}{A_w}\right) \quad \text{Eq. 4-9}$$

Flexible Diaphragm Connection Forces

$$T_c = \psi S_{xs} w_p A_p \qquad (4\text{-}13)$$

ψ*Sxs 1.18

Level	Tc (plf) N	S	E	W
Apparatus	467	473	576	622
Office	349	349	321	302

Wall Proportion Quick Check

Floor	H	t	H/t
Apparatus	21	6	42
Office	13	6	26

1.4

Diaphragm Forces

N/S	m=	3			E/W	m=	3		
End Walls k	Diap	Fx k	Qud plf	Q_{ud}/m	End Walls k	Diap	Fx k	Qud plf	Q_{ud}/m
69	114	120	690	230	78	114	76	495	165
30	312	225	2461	820	92	312	160	598	199

Roof - Apparatus		
Roofing Membrane	2 psf	
8" Rigid Insulation	1.6 psf	
19/32 plywood	1.8 psf	
2x6 @ 24" o.c.	2.1 psf	
4x16 DF Purlins @ 8' oc	1.6 psf	
6.75x18 Girder @ 19' oc	1.6 psf	
5/8" GWB	3.1 psf	
MEP/Misc	3 psf	
Total	17 psf	
Roof - Office		
Roofing Membrane	2 psf	
8" Rigid Insulation	1.6 psf	
19/32 plywood	1.8 psf	
2x12 @ 24" o.c.	2.1 psf	
5/8" GWB	3.1 psf	
MEP/Misc	3 psf	
Partition	15 psf	
Total	29 psf	
East Mezzanine Floor		
1.5" Conc. Topping	18 psf	
23/32" Plywoo	2.2 psf	
16" TJL @ 16" oc	3 psf	
5/8" GWB	3.1 psf	
MEP/Misc	3 psf	
Total	30 psf	48 k
West Mezzanine		
23/32" Plywoo	2.2 psf	
16" TJL @ 24" oc	2 psf	
5/8" GWB	3.1 psf	
MEP/Misc	3 psf	
Total	11 psf	15.6 k
Exterior walls		
6" BMU Grouted @ 48"	48 psf	
2X6 @ 24" oc	1 psf	
Insulation	1 psf	
Total	50 psf	
Glazing	10 psf	

Apparatus

	N	S	E	W		h=	21	ft
Total Area	1839	1861	1749	557	ft^2	A_{roof}	6696	ft^2
Solid Wall	1253	1290	1579	557	ft^2	w_{roof}	113.8	kip
% Open	0.32	0.31	0.1	0				
Length	87.33	87.33	76.67	76.67	ft			
Weight	34.4	34.8	37.3	40.3	kip		**260.7**	

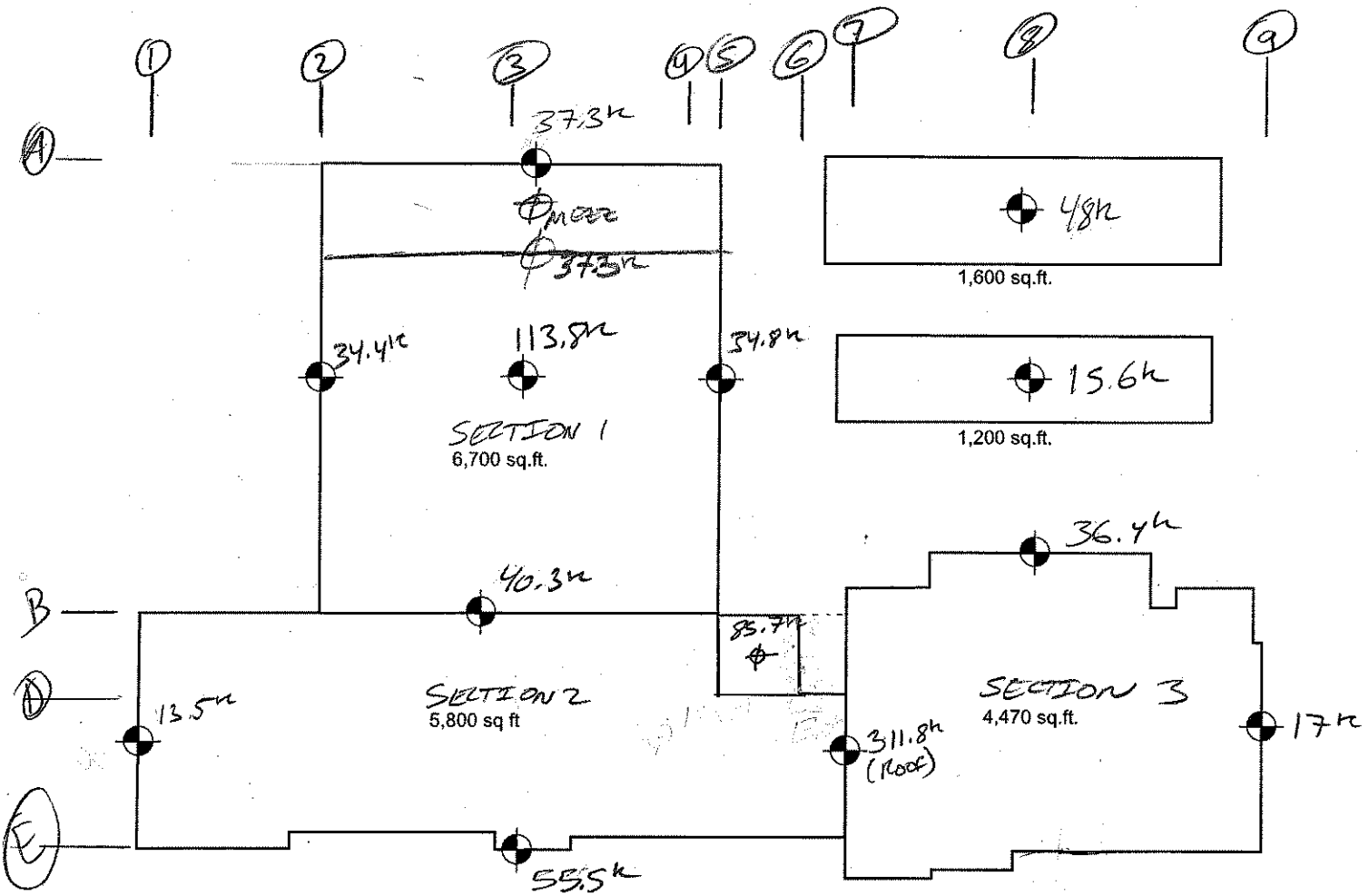
Office

	N	S	E	W		h=	13	ft
Total Area	587	773	1607	2940	ft^2	A_{roof}	10750	ft^2
Solid Wall	421	619	1263	2201	ft^2	w_{roof}	311.8	kip
% Open	0.28	0.2	0.21	0.25				
Length	45.75	57.50	134.00	217.75	ft			
Weight	13.5	17	36.4	55.5	kip		**434.1**	

Hose Tower

	N	S	E	W		h=	41	ft
Total Area	444	448	620	571	ft^2	A_{roof}	340	ft^2
Solid Wall	444	448	573	571	ft^2	w_{roof}	9.9	kip
% Open	0	0	0.08	0				
Length	21.25	21.25	16.00	16.00	ft			
Weight	21.8	21.8	15.9	16.4	kip		**85.7**	

Weight total	69.7	73.6	89.6	112	435.4	844	



$W_{TOT} = 881\ k$

TIER 1 PSEUDO SEISMIC FORCE

$V = C S_a W = 1.4(0.66) W = 0.924 W = \boxed{814\ k}$ TOTAL

SECTION 1: $W = 360.9k$, $V = 333.5k$

SECTION 2/3: $W = 434.1k$, $V = 480.2k$
$+ HT = 519.8k$

TOTAL AREA: $A = 19{,}770\ ft^2$

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p: 206.443.6212 ssfengineers.com
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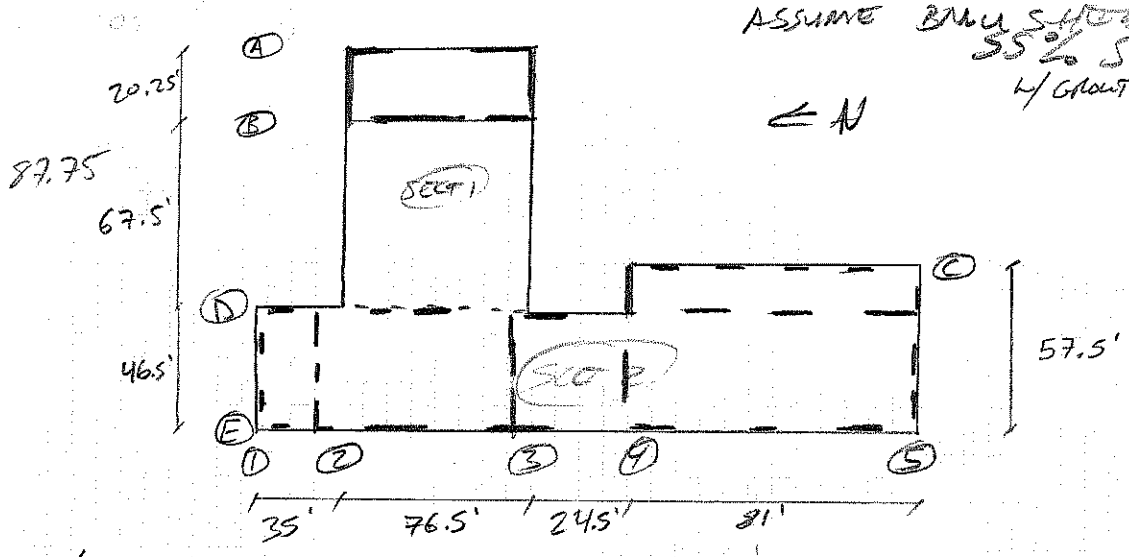
Project Title: REDMOND	Date 10/29/2015	SSF project no.
FIRE STATION 11	Design RDO	
Sheet Title:	Drawn RDO	Sheet

TIER 1 SHEAR STRESS CHECK

ASSUME BRACED SHEARWALLS 55% SOLID W/ GROUT @ 48" o.c.



N/S

WALL LINE A: l_{WALL} = 56.64 %V = 11.5% of SECT 1 = 38.3k

f_v = 17 psi

WALL LINE B: l_{WALL} = 66 ft %V = 50% = 167k

f_v = 63 psi

WALL D: l_{WALL} = 57' %V = 38.5% = 128.7k

f_v = 56 psi + 40 psi = 96 psi > 70 psi NO GOOD

AVG SHEAR STRESS FOR SECTION 2:

$l_{N/S}$ = 300' V = 480.2k

f_v = 40 psi

E/W: SECTION 1, LINE 3 l_w = 15.25' %V = 50% =

f_v = 25 psi

SECTION 2 AVG: l_w = 209' V = 480k

f_v = 57 psi

TOWER: V = 0.924(85k) = 78.5k

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PROJECT FS 11

DATE 3/11/16

PROJ. # RDD

DESIGN

SHEET

REINFORCING STEEL (6" BMU GROUTED @ 48" = ~55% SOLID)

VERT: #5 @ 48" o.c. $\rho = \frac{0.31}{48" \times 6" \times .85} = 0.0022$ OK
+HORIZ

TRANSFER TO SHEAR WALLS:

TYP LEDGER ANCHOR: 3x LEDGER w/ 5/8" A.B. @ 24" o.c.

$\phi Z_{11} = (1.0)(1180\#)(3.32) = 3918\#/2 = 1959$ plf

WOOD DIAPHRAGM: 1000 plf

WALL SHEAR STRENGTH: 0.55 (55% SOLID) $(12" \times 6")(70_{psi}) = 2772$ plf

DCR = 1.4

WALL ANCHORAGE

APPARATUS BAY - N/S: $T_c = 473 \text{ plf} \times \frac{80"}{12} = 3153\#$

½" ⌀ BOLT IN SIMPSON CLB $\phi Z_{11} = 1650\#(3.32) = 5478\#$

DEMAND PER TIER 1 FORCES

ANCHORS ASSUMED SPACED @ 4' o.c. - VERIFY SPACING

OOP: $T = 349\#/\text{ft}(4') = 1396\#$ < ϕZ DCR = 0.51 OK

IP: $V = \frac{480\text{ h}}{46.5 \times 3 + 57.5 \times 2} = 1886 \text{ plf} \times 4' = 7544\# > \phi Z_{11}$

DCR = 2.6

CHECK I.P. VS MAX STRENGTH OF DIAPHRAGM

½" PLY w/ 8d @ 6" o.c., BLOCKED

EXPECTED STRENGTH = $1.5(510 \text{ plf}) = 765$ plf

ANCHOR DEMAND = $4' \times 765 \text{ plf} = 3060$ plf < CONTROLS

DCR = 1.07 ACCEPTABLE @ TIER 1

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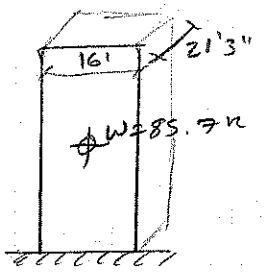
FS 11 HOSE TOWER

H = 41'



$V = 0.66(1.0)(85.7k) = 56.6k$ (28.3k/WALL (ZONE)

$M_{OT} = 56.6k\left(\frac{41'}{2}\right) = 1160k\text{-}ft$ (580 k-ft/WALL)

SHEAR STRESS: $v = \frac{56.6k}{16' \times 2 \times 12\frac{1}{4}" \times 6"(0.55)} =$ 45 psi < 70 ok

FLEXURE: $T = \frac{M}{g} = \frac{580k\text{-}ft}{16'} = 36.3k$

ASSUME #5 END BAR $f_y = 117$ ksi

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SSF STRUCTURAL ENGINEERING

FS 11 — PROJECT

3/28/16 — DATE

RDO — DESIGN

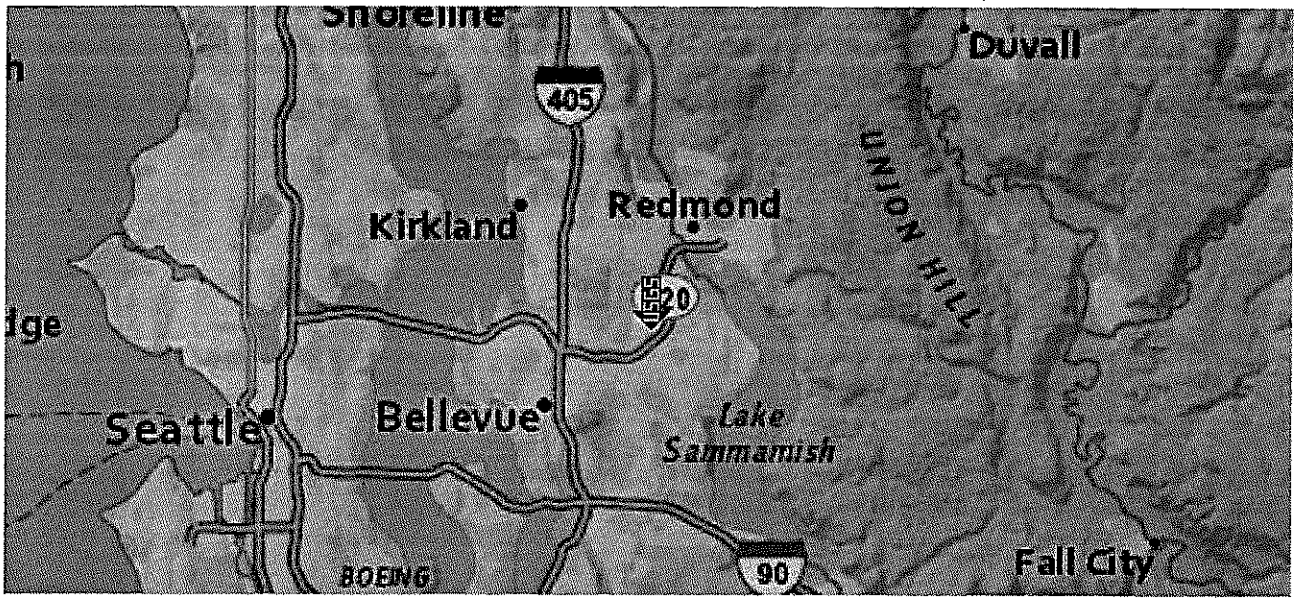
USGS Design Maps Summary Report

User-Specified Input

Building Code Reference Document ASCE 41-13 Retrofit Standard, BSE-1E
(which utilizes USGS hazard data available in 2008)

Site Coordinates 47.64849°N, 122.14363°W

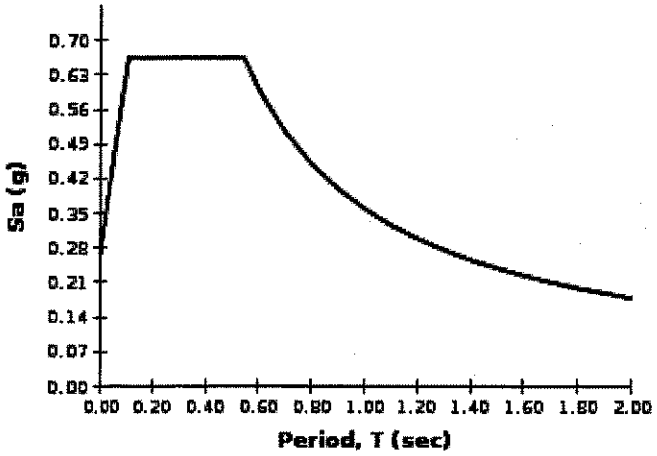
Site Soil Classification Site Class D – "Stiff Soil"



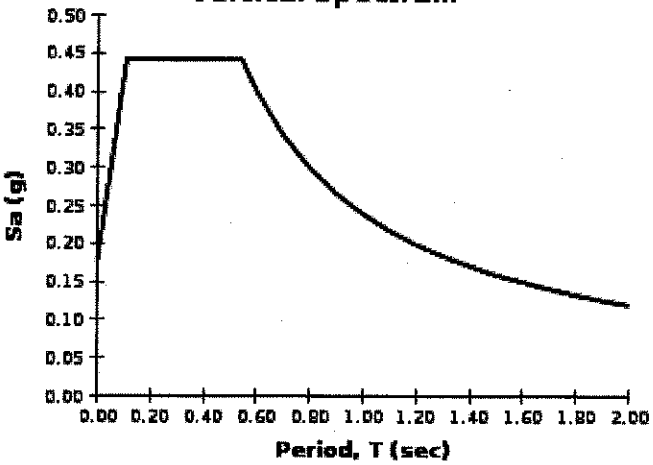
USGS-Provided Output

$S_{S,20/50}$	0.465 g	$S_{XS,BSE-1E}$	0.664 g
$S_{1,20/50}$	0.169 g	$S_{X1,BSE-1E}$	0.359 g

Horizontal Spectrum



Vertical Spectrum



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Seismic Design

Evaluation Method: ASCE 41-13 Tier 3

Analysis Procedure: Linear Static Procedure (LSP)

Performance Objective

Seismic Hazard Level	BSE-1E	BSE-1E, 2E, 1N, 2N per ASCE 41-13 Table 2-1.
Occupancy Category	IV	I, II, or III, or IV per ASCE 7-10 Table1-1
BOPE	IO	Immediate Occupancy Performance (1-B)

Soil

Site Class	D	per soils report (D assumed, without soils report)

Period Determination

T_1		sec	Method-1 (Eigenvalue)
h_n	17.67	ft	
Ct	0.02		
β	0.75		
T_2	0.17	sec	Method -2 (Eq. 7-18)
T_3		sec	Method-3 (Approx. Rayleigh's)
T	0.17	sec	Period Used

General Response Parameters

S_S	0.465		20% in 50-year USGS Latitude & Longitude lookup
S_1	0.169		20% in 50-year USGS Latitude & Longitude lookup
S_{XS}	0.66		(Eq. 2-1)
S_{X1}	0.36		(Eq. 2-2)
Fa	1.43		(Eq. 2-3)
Fv	2.12		(Eq. 2-4)
β	0.05		Effective Damping
β_1	1.00		(Eq. 2-11)
T_S	0.54	sec	(Eq. 2-9)
T_L		sec	Long Period Transition 0.861189237
Sa	0.66		(Eq. 2-5)

Pseudo Seismic Force for LSP

C1	1.24	(Eq. 7-22)
C2	1.01	(Eq. 7-23)
Cm	1	(Table 7-4)
DCRmax	2.38 ← highest m factor	
$\mu_{strength}$	1.59	(Eq. C7-3)
Bldg. Weight	359.6 k	
$V=C_1C_2C_mS_aW$	301 k	(Eq. 7-21)

$$C_1 = 1 + \frac{\mu_{strength} - 1}{aT^2}$$

$$C_2 = 1 + \frac{1}{800}\left(\frac{\mu_{strength} - 1}{T}\right)^2$$

Vertical Distribution

k	1.00			Story Force for LSP			Diaphragm Force for LSP		
Level	hx ft	wx kips	h_x^k ft	$W_x h_x^k$ ft-kips	Cvx (%) %	Fx (k) kips	ΣFx kips	Σwi kips	Fpx kips
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
Roof	18	360	18	6,354	1.00	300.7	301	360	301
	Σ	360		6,354		301			

(Eq. 7-24) $F_x = C_{vx} V$

(Eq. 7-25) $$C_{vx} = \frac{w_x h_x^k}{\sum_{i}^{n} w_i h_i^k}$$

Redmond FS 12 3/9/2016

Date

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Proj. No. FR

Design Sheet

seismic Weight:

Roof$_1$: Area = 3596 ft^2
W = 53.94 K

Roof$_2$: Area = 2960 ft^2
W = 44.39 K

Walls:

Ⓓ: ℓ = 71'-11"
ht = 17'-8"
W = 80 psf$(\ell)(\frac{ht}{2})$ = 50.8 K

Ⓑ: ℓ = 68'-10"
ht = 17'-8"
W = 48.6 K

Ⓐ: ℓ = 39'-9"
ht = 13'
W = 20.7 K

①: ℓ = 19'
ht = 17'-8"
W = 13.4 K

②: ℓ = 39'-4"
ht = 13'
W = 20.5 K

③: ℓ = 38'-8"
ht = 13'
W = 20.1 K

Miscellaneous Walls: W = 87.2 K

W_{total} = 359.6 K

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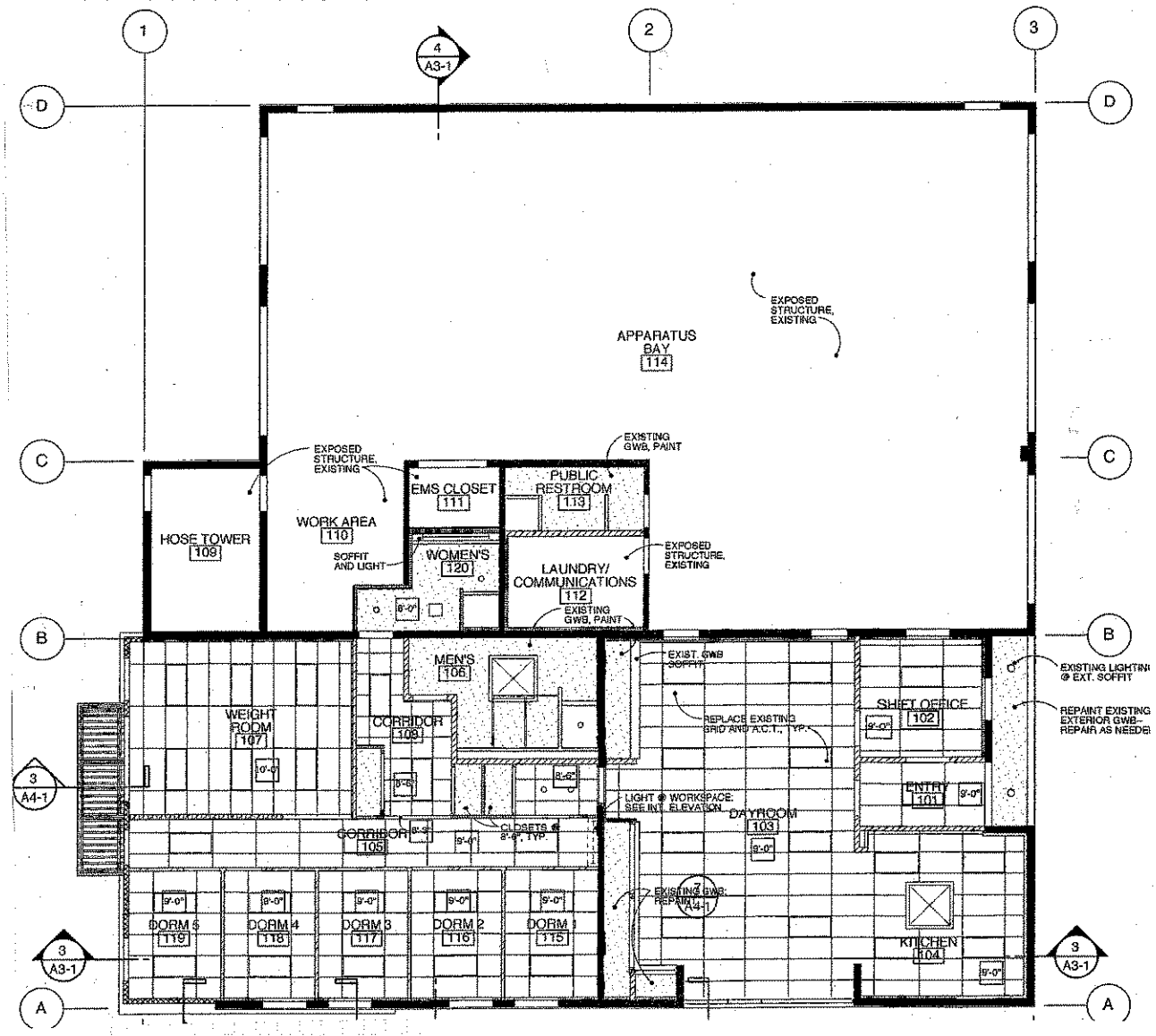

$V = C_1 C_2 C_m S_a W = 0.83W$ (Tier 2+3) $V = C S_a W = 0.924W$ (Tier 1)

Tributary Weights & Seismic Shear:

(D) $W_{trib} = 50.8^k + \frac{53.9}{2} + (2)\left(\frac{13.4}{2}\right) = 91.2^k$

$V_D = 84.3^k$

$w = 1.17^{k/l}$

(B) $W_{trib} = 48.6^k + \frac{53.9}{2} + \frac{44.4}{2} + \frac{13.4}{2} + \frac{20.5}{2} + \frac{20.1}{2} = 124.8^k$

$V_B = 115.3^k$

$w = 1.08^{k/l}$

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Ⓐ $W_{trib} = 20.7^{K} + \frac{44.4}{2} + \frac{20.5}{2} + \frac{20.1}{2} = 63.2^{K}$

$V_A = 58.4^{K}$

$\omega = 1.47^{K/l}$

① $W_{trib} = 13.4^{K} + \frac{53.9}{4} + \frac{44.4}{4} + \frac{50.8}{4} + \frac{48.6}{4} + \frac{20.7}{4} = 68^{K}$

$V_1 = 62.8^{K}$

$\omega = 3.30^{K/l}$ ← worst case $V = \frac{3300}{8 \times 12} = 34 psi < 70 psi$ OK

② $W_{trib} = 20.5^{K} + \frac{53.9}{2} + \frac{44.4}{2} + \frac{50.8}{2} + \frac{48.6}{2} + \frac{20.7}{2} = 129.7^{K}$

$V_2 = 119.8^{K}$

$\omega = 3.05^{K/l}$

③ $W_{trib} = 20.1^{K} + \frac{53.9}{4} + \frac{44.4}{4} + \frac{50.8}{4} + \frac{48.6}{4} + \frac{20.7}{4} = 74.7^{K}$

$V_3 = 69.0^{K}$

$\omega = 1.79^{K/l}$

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Reentrant corner: (Tier 1 check)

$m = 2.1$

Trib $= \frac{45'}{2} \times 35' = 788\ ft^2$

$W = 11.8^{K}$

$T = \frac{C S_a W}{m} = \frac{0.924 W}{m} = 5198^{\#}$

current connection:

CMST 14 x 12'-0" ϕ $T_a = 6490^{\#}$ $DCR = 0.80$

MTT 28B w/(4) ½" ϕ thru bolts $T_a = 2725^{\#}$ $DCR = 1.91$

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FS 13 | SEISMIC WT

APPARATUS ROOF

VINYL ROOFING	2psf
1" FIBER BOARD	2psf
½" PLY	1.5psf
2x T+G	4.2psf
4x14 @ 7' o.c.	1.6psf
GLB 6¾ x 31½ @ 17'8" o.c.	3.0psf
MISC / M.E.P.	3.0psf
	17.3psf → 18psf

OFFICE ROOF

MEMBRANE ROOF	2psf
½" PLY SHEATHING	1.5psf
2"x12" @ 16" o.c.	3.1psf
INSULATION	5psf
SUSP. CEILING	2.0psf
MISC/MEP	3psf
	16.6psf → 17psf
	+ 5psf PARTITIONS
	22psf

EXT WALLS

TYPE 1
6" BMU (GROUT @ 32" o.c.) — 46psf ← APPARATUS

TYPE 2
2x6 @ 16" o.c. — 1.4psf
INSUL — 2.5psf
GWB — 2.5psf
6.4psf @ OFFICE ONLY
52.4psf → 53psf

TYPE 3

EIFS	1.5psf
½" PLY	1.5psf
2x4 @ 16" o.c.	0.7psf
INSUL	1.75psf
5/8" GWB	2.5psf
	8.2psf → 10psf

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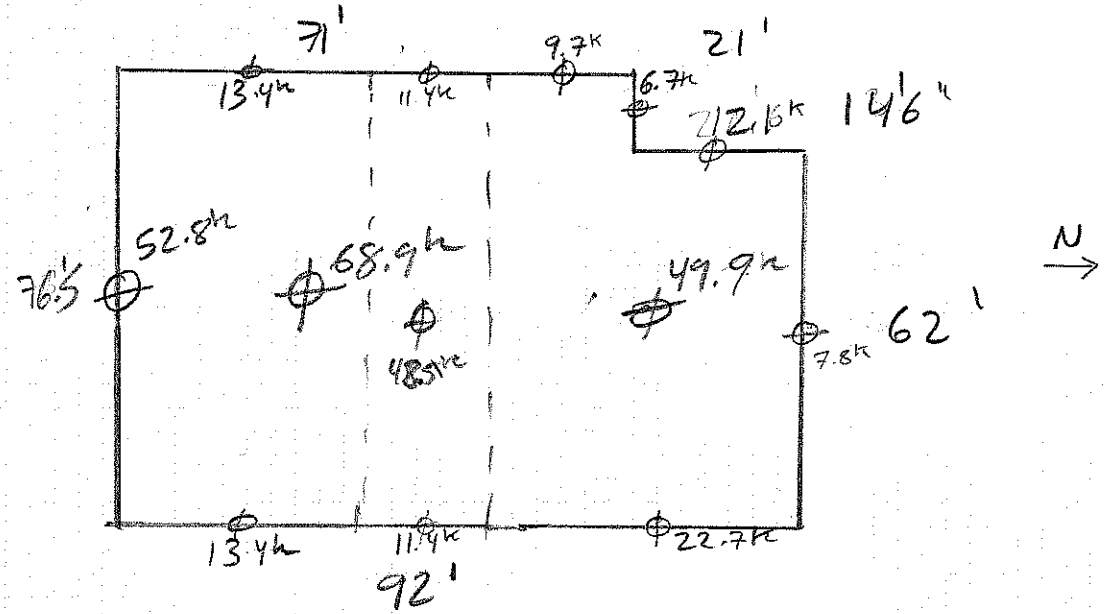
SEISMIC WT MAP



WEIGHTS

ROOF : $W = 167.3^k$

NORTH : $W = 14.5^k$

SOUTH : $W = 52.8^k$

EAST : $W = 47.5^k$

WEST : $W = 46.6^k$

$W_{TOT} = 323.7^k$

TIER 1 PSEUDO SEISMIC FORCE

$V = C_s W = 1.4(0.66)W = 0.924W$

$V = 303.7^k$

TIER 2 PSEUDO SEISMIC FORCE

$V = C_1 C_2 C_m S_a W = 1.4(1.0)(0.66)W = 0.924W$

$V = 303.7^k$

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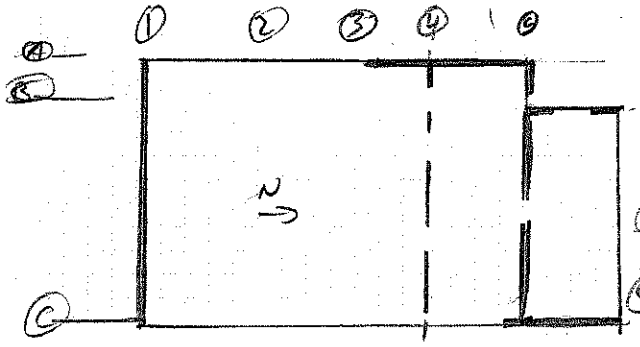
TIER 1 QUICK CHECKS

WALL SHEAR STRESS

6" BMU: 52% SOLID
+21% @ 32" o.c. GROUT
160% SOLID



(A) $l = 16.33'$
(B) $l = 10'$ } 36.33' $V = 152^{k}$ $v = 96$ psi
(C) $l = 35'$ $V = 152^{k}$ $v = 100$ psi

(1)	$l_1 = 71.5'$	T.W. $= 25'/92 = 27\%$	$V = 82^{k}$	$v = 26$ psi	< 70psi
(4)	$l_4 = 47'$	T.W. $= 35.5/92 = 38\%$	$V = 115.4^{k}$	$v = 57$ psi	< 70psi
(5)	$l_5 = 49.5'$	T.W. $= 21'/92 = 22\%$	$V = 66.8^{k}$	$v = 31$ psi	< 70psi

REINF STEEL

ASSUMED #5 @ 32" o.c. - TYPICAL FOR ADDITION

$$\rho = \frac{0.31 in^2}{6"(32")(0.60)} = 0.0027 \quad \text{VERT}$$

NO HORIZ REINF SHOWN ON PLAN

SHEAR WALL TRANSFER

$V_{WALL} = 2455$ plf $\times 4 = 9820$ #/BOLT

ASSUME 5/8" ø BOLTS @ 48" o.c. TO GROUTED BOND BEAM
CAPACITY = 930# (BEARING ON 2x SILL PLATE)
$\phi = 1.0$, EXPECTED STRENGTH $K_f = 3.52$
$= 3057$ # $\times 3.2 = DCR$ < 9820 # NG

WALL ANCHORS: CHECK BOTTOM ANCHORAGE @ S WALL

$T = \gamma S_{DS} W_p A_D = 1.8(0.66)(\frac{4}{5} psf)(\frac{15' \times 19.66'}{4}) = 4,029$ #

ASSUME 3/4" ø BOLT $\phi_{2,11} = 3340\#(3.52) = 11,058$ #

ANCHORAGE UNKNOWN @ (N) BMU WALL OK

NO O.O.P. ANCHORAGE PRESENT @ S WALL

PROJECT FS 13
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HEIGHT → THICKNESS RATIO

VERT: $H_{max} = 12'6"$ $t = 6"$ $H:t = 25 < 30$ OK

HORIZ: $\ell = 17'6"$ $t = 6"$ $H:t = 35 > 30$ NG

FS 13

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PROJ. # R10

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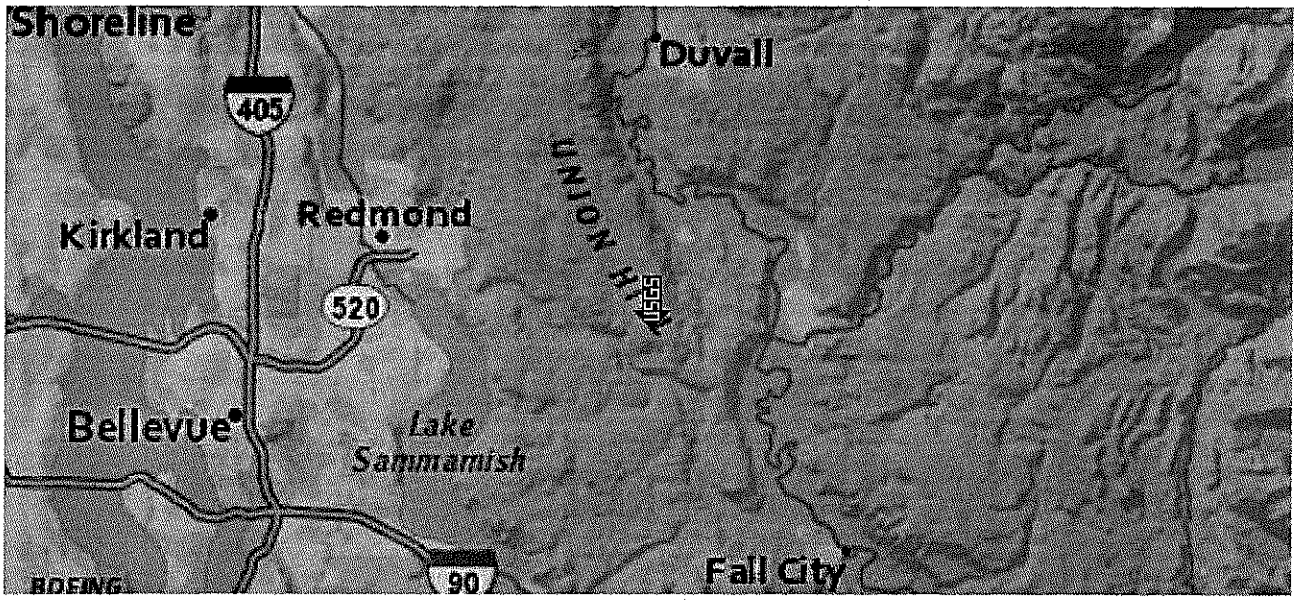
USGS Design Maps Summary Report

User-Specified Input

Building Code Reference Document ASCE 41-13 Retrofit Standard, BSE-1E
(which utilizes USGS hazard data available in 2008)

Site Coordinates 47.65196°N, 121.9878°W

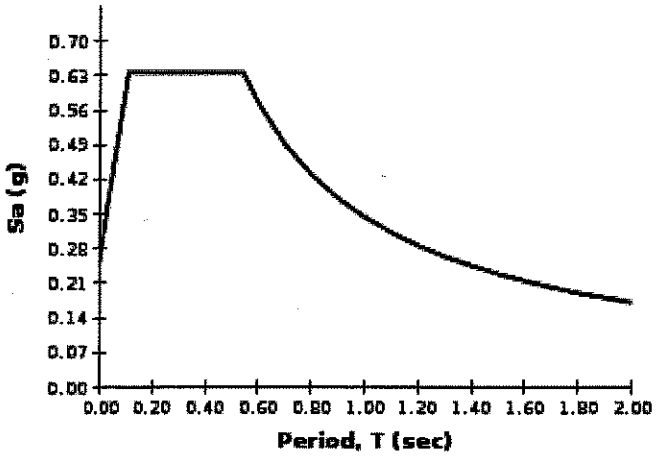
Site Soil Classification Site Class D – "Stiff Soil"



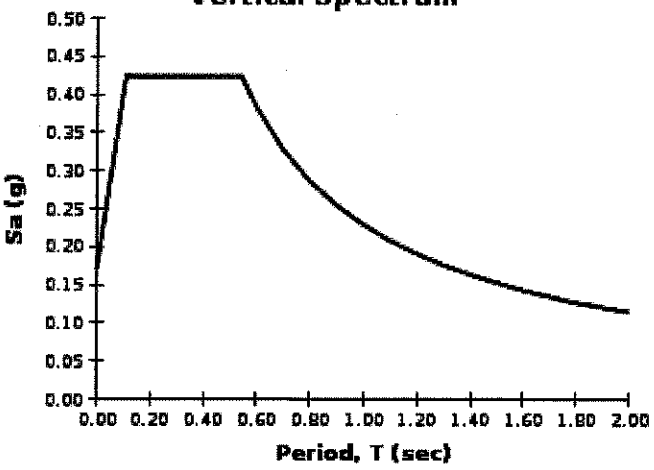
USGS-Provided Output

$S_{S,20/50}$	0.439 g	$S_{XS,BSE-1E}$	0.636 g
$S_{1,20/50}$	0.159 g	$S_{X1,BSE-1E}$	0.344 g

Horizontal Spectrum



Vertical Spectrum



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Seismic Design

Evaluation Method: ASCE 41-13 Tier 3

Analysis Procedure: Linear Static Procedure (LSP)

Performance Objective

Seismic Hazard Level	BSE-1E	BSE-1E, 2E, 1N, 2N per ASCE 41-13 Table 2-1.
Occupancy Category	IV	I, II, or III, or IV per ASCE 7-10 Table1-1
BOPE	IO	Immediate Occupancy Performance (1-B)

Soil

Site Class	D	per soils report (D assumed, without soils report)

Period Determination

T_1		sec	Method-1 (Eigenvalue)
h_n	22.5	ft	
Ct	0.02		
β	0.75		
T_2	0.21	sec	Method -2 (Eq. 7-18)
T_3		sec	Method-3 (Approx. Rayleigh's)
T	0.21	sec	Period Used

General Response Parameters

S_S	0.439		20% in 50-year USGS Latitude & Longitude lookup
S_1	0.159		20% in 50-year USGS Latitude & Longitude lookup
S_{XS}	0.64		(Eq. 2-1)
S_{X1}	0.34		(Eq. 2-2)
Fa	1.45		(Eq. 2-3)
Fv	2.16		(Eq. 2-4)
β	0.05		Effective Damping
β_1	1.00		(Eq. 2-11)
T_S	0.54	sec	(Eq. 2-9)
T_L		sec	Long Period Transition
Sa	0.63		(Eq. 2-5)

Pseudo Seismic Force for LSP

C1	1.29		(Eq. 7-22)
C2	1.02		(Eq. 7-23)
Cm	1		(Table 7-4)
DCRmax	2.62		
$\mu_{strength}$	1.75		(Eq. C7-3)
Bldg. Weight	169.0	k	
$V=C_1C_2C_mS_eW$	118	k	(Eq. 7-21)

$$C_1 = 1 + \frac{\mu_{strength} - 1}{aT^2} \qquad 0.83286459$$

$$C_2 = 1 + \frac{1}{800}\left(\frac{\mu_{strength} - 1}{T}\right)^2 \qquad 0.69797477$$

Vertical Distribution

k	1.00				Story Force for LSP		Diaphragm Force for LSP		
Level	hx ft	wx kips	hx^k ft	$Wxhx^k$ ft-kips	Cvx (%) %	Fx (k) kips	ΣFx kips	Σwi kips	Fpx kips
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
Roof	23	169	23	3,803	1.00	118.0	118	169	118
	Σ	169		3,803		118			

(Eq. 7-24) $F_x = C_{vx} V$

(Eq. 7-25) $$C_{vx} = \frac{w_x h_x^{\,k}}{\sum_{i=1}^{n} w_i h_i^{\,k}}$$

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Seismic Weight:

Roof Area = 8242 ft²

Mezzanine Area = 1036 ft²

Wall Length = 482.5 ft

htavg = 14'-6"

W_{roof} = 123.6 K

W_{mezz} = 10.4 K

W_{walls} = 35.0 K

W_{total} = 169 K

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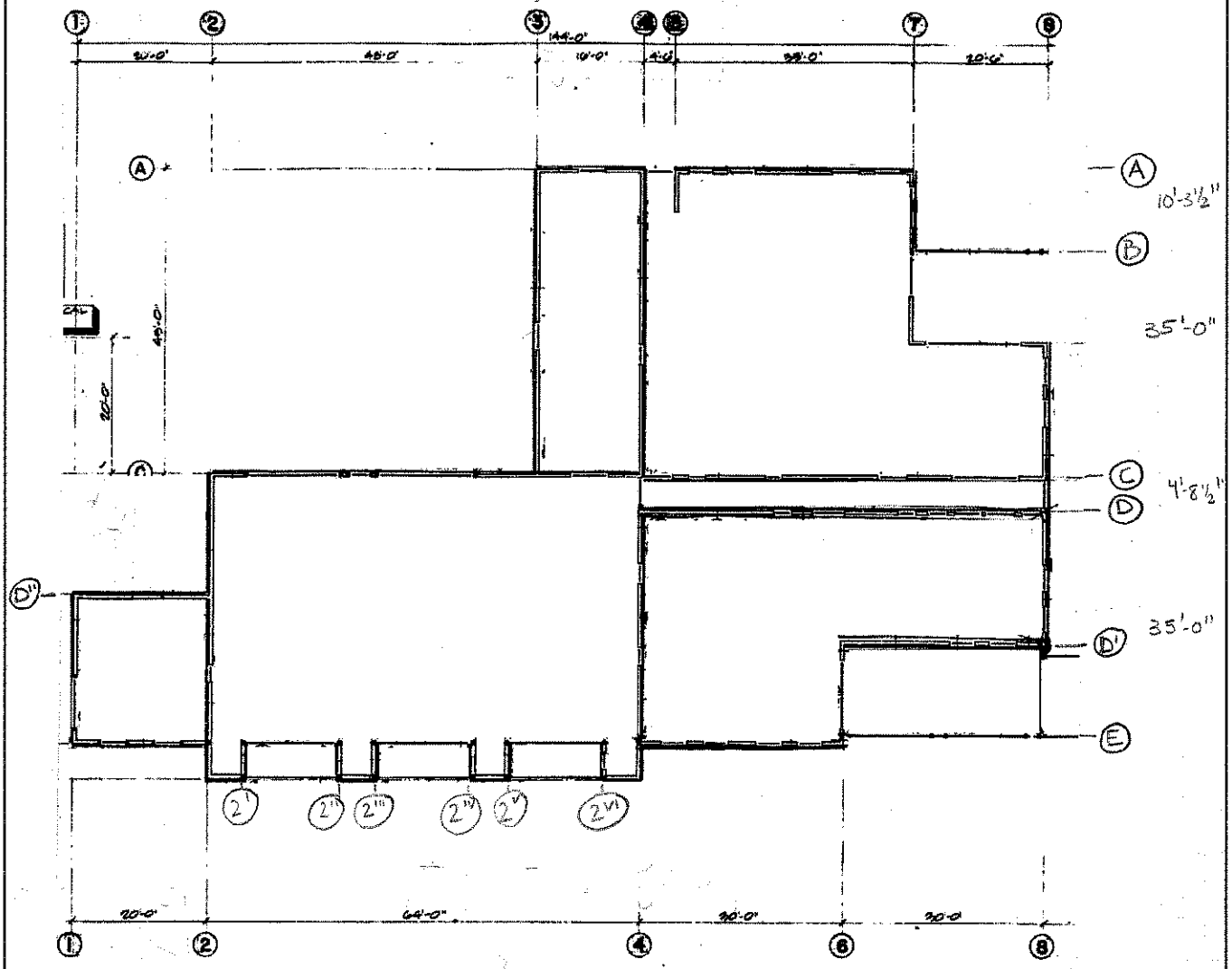

North-South: DCRmax = 2.102 ($C_1 C_2 C_m = 1.0$)

①	ℓ = 12'-2"	Trib = 216 ft²	V_1 = 2.91 k	w_1 = 239 #/l
②	ℓ = 43'-7"	Trib = 1871 ft²	V_2 = 25.18 k	w_2 = 578 #/l
③	ℓ = 41'-7"	Trib = 353 ft²	V_3 = 8.39 k	w_3 = 202 #/l
④	ℓ = 70'-10"	Trib = 2659 ft²	V_4 = 39.42 k	w_4 = 513 #/l
~~⑥~~	~~ℓ = 2'-10"~~	~~Trib = 800 ft²~~	~~V_6 = 27.33 k~~	~~w_6 = 2871 #/l~~
⑦	ℓ = 11'-0"	Trib = 1949 ft²	V_7 = 26.23 k	w_7 = 2384 #/l
⑧	ℓ = 15'-10"	Trib = 548 ft²	V_8 = 6.73 k	w_8 = 425 #/l

wall capacity = 760 + 290 = 1050 #/l × m = 1575 #/l

B wall capacity = 760 × m = 1140 #/l

m-factor from ASCE 41-13 Table 12-3
m = 1.5

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PROJ. #

DESIGN

East - West DCR max = 1.42

(A)	ℓ = 23'-2"	Trib = 1425 ft²	V_A = 22.82 k	w = 985 #/l
(C)+(D)	ℓ = 86'-10"	Trib = 3912 ft²	V_{CD} = 56.29 k	w = 648 #/l
(D')	ℓ = 20'-5"	Trib = 809 ft²	$V_{D'}$ = 10.89 k	w = 533 #/l
(E)	ℓ = 44'-8"	Trib = 1854 ft²	V_E = 24.95 k	w = 559 #/l
(D")	ℓ = 20'-0"	Trib = 221 ft²	$V_{D"}$ = 2.97 k	w = 149 #/l

Wall Capacities

(1)	w_n = 1140 #/l	DCR = 0.21
(2)	w_n = 1575 #/l	DCR = 0.37
(3)	w_n = 1140 #/l	DCR = 0.18
(4)	w_n = 1575 #/l	DCR = 0.33
(7)	w_n = 1575 #/l	DCR = 1.51
(8)	w_n = 1575 #/l	DCR = 0.27
(A)	w_n = 1140 #/l	DCR = 0.87
(C)+(D)	w_n = 1140 #/l	DCR = 0.57
(E)	w_n = 1575 #/l	DCR = 0.35
(D")	w_n = 1140 #/l	DCR = 0.13
(D')	w_n = 1140 #/l	DCR = 0.47

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Seismic Design

Evaluation Method: ASCE 41-13

Analysis Procedure: Linear Static Procedure (LSP)

Performance Objective

Seismic Hazard Level	BSE-1 20/50	Per 1.6.1.1
Occupancy Category	IV	I, II, or III, or IV per ASCE 7-10 Table1-1
Performance Level	IO	Immediate Occupancy

Soil

Site Class	D	per soils report (D assumed, without soils report)

Period Determination

T_1		sec	Method-1 (Eigenvalue)
h_n	24	ft	
Ct	0.02		
β	0.75		
T_2	0.22	sec	Method -2 (Eq. 3-6)
T_3		sec	Method-3 (Approx. Rayleigh's)
T	0.22	sec	Period Used

General Response Parameters

S_S	0.459		20% in 50-year USGS Latitude & Longitude lookup
S_1	0.167		20% in 50-year USGS Latitude & Longitude lookup
S_{XS}	0.66		(Eq. 2-1)
S_{X1}	0.36		(Eq. 2-2)
Fa	1.43		(Table 2-3)
Fv	2.13		(Table 2-4)
β	0.05		Effective Damping
β_1	1.00		(Eq. 2-11)
T_S	0.54	sec	(Eq. 2-9)
T_L		sec	Long Period Transition
Sa	0.66		(Eq. 2-5,2-6,2-7,2-8))

(Eq. 3-10) $F_x = C_{vx} V$

(Eq. 3-11) $C_{vx} = \dfrac{w_x h_x^k}{\sum_{i=1}^{n} w_i h_i^k}$

Pseudo Seismic Force for LSP

C1	1.35		
C2	1.03		
Cm	1		(Table 3-1)
DCRmax	3		
R	2.00		
Bldg. Weight	295.0	k	
$V=C_1C_2C_mS_aW$	269	k	(Eq. 3-9)

$$C_1 = 1 + \frac{R-1}{aT^2}$$

$$C_2 = 1 + \frac{1}{800}\left(\frac{R-1}{T}\right)^2$$

Vertical Distribution

k	1.00		Story Force for LSP				Diaphragm Force for LSP		
Level	hx ft	wx kips	hx^k ft	$Wxhx^k$ ft-kips	Cvx (%) %	Fx (k) kips	ΣFx kips	Σwi kips	Fpx kips
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
Roof	24	295	24	7,080	1.00	269.1	269	295	269
	Σ	295		7,080		269			

FS 16 COMPONENT WEIGHTS

ROOF - TYPICAL (OFFICE)

COMPOSITE ROOFING	1.5 psf
INSULATION	1.5 psf
5/8" PLY	1.9 psf
11 7/8 TJI 55C @ 24" o.c.	1.5 psf
GIRDERS (VARIES)	1.0 psf
5/8" GWB	3.1 psf
MISC/MEP	3 psf
	13.5 psf
PARTITION	5 psf
	18.5 psf → 19 psf

ROOF - TRUCK BAY (GARAGE)

COMPOSITE ROOFING	1.5 psf
INSULATION	1.5 psf
3/4" PLY	2.3 psf
48"/30 TJH @ 48" o.c.	1 psf
MISC/MEP	3 psf
	9.3 psf → 10 psf

NO INT PARTITIONS

EXT WALLS: LT. FRAMED WOOD - 10 psf, TYP

SECTION 1 WT: ROOF = 5180 ft² (19 psf) = 98,420 #

N/S WALLS = 102.5' (18'/2) (10 psf) = 9,225 #/WALL

W/E WALLS = 73' (18'/2) (10 psf) = 6570 #

W = 130 K

SECTION 2 WT: ROOF: 3900 ft² (10 psf) = 39 k

N/S WALLS 12' x 10 psf = 120 plf x (45+60) =

ROOF W/ STORAGE MEZZ BELOW: 15 + 15 + 0.25(125) = 62 psf

8" CMU GROUTED @ 32" o.c. : 55 psf

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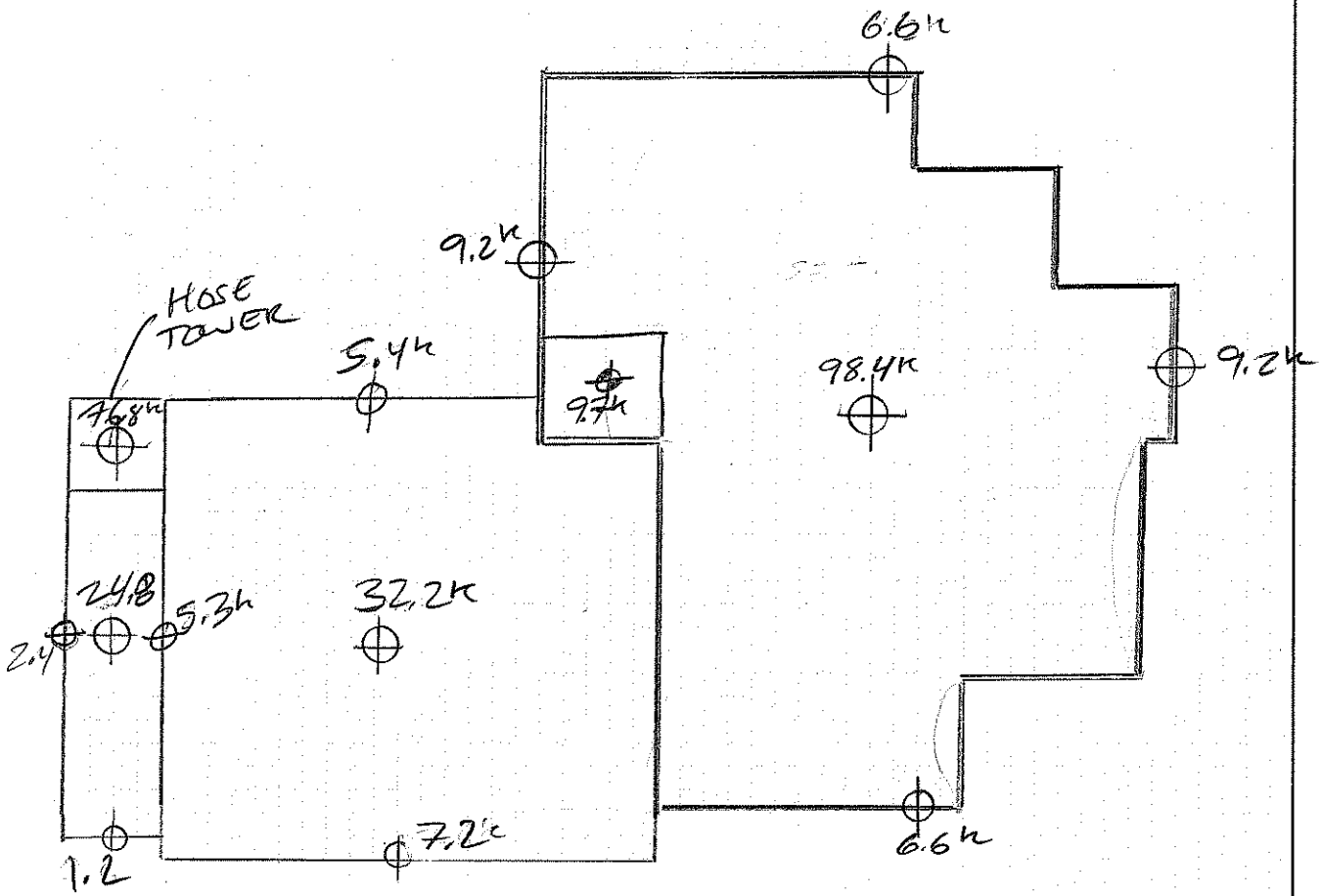

WEIGHT SUMMARY

OFFICE = 131.7k

GARAGE = 78.5k

HOSE TOWER = 76.8k

295k

TIER 2 $V = C_1 C_2 M S_a W = 0.92 W$

$V_{TOTAL} = 274$ K

TIER 1 BENDO SEISMIC FORCE

$V = C_s W = 1.3(0.66) W = 0.86 W$

$V = 256$ K

BASE SHEAR

V = 128.5k

V = 72.2k

V = 73 k

(TIER 2)

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STRUCTURAL ENGINEERING

PROJECT FS16

DATE 2/25/16

PROJ. #

DESIGN RDO

SHEET

TIER 1/2 CHECKS (TIER 1 DEFICIENCIES)

SHEAR WALL STRESS - CONSIDER PLY WALLS ONLY

N/S - $l_{WALL} = 134'$ $\quad v = \frac{271\,k}{134'} = 2.04\,k/ft$ $\quad > 1.0\,k/ft$

E/W - $l_{WALL} = 120'$ $\quad v = \frac{274\,k}{120'} = 2.28\,k/ft$ $\quad > 1.0\,k/ft$

BLOCKED ½" PLY w/ 10d @ 4" o.c. $\quad m = 1.7$

$MKQ_E = 1.7(1.0)(920\,plf) = 1564\,plf < 2280\,plf$

$DCR = 1.45$

NARROW WOOD SHEAR WALLS - OVERTURNING & SHEAR DEMAND

NARROWEST WALL SEGMENTS: N/S $\quad l = 4'6" \quad h = 13'-3"$

$h:l = 2.88:1$

$V = 2.04\,k/ft\,(4.5') = 9.18\,k$

CHECK HOLD DOWN CAPACITY TO RESIST O/T

$M_{ST} > \frac{M_{OT}}{C_1 C_2 J}$ $\quad C_1 C_2 = 1.4$ (ALT VALUE)

$J = 2.0$ (ALT VALUE)

HOLDOWN TENSION = $\frac{2.04\,k/ft\,(13')}{1.4(2.0)} = 9.47\,k$

HOLDOWN CAPACITY $M_{ST} = 2775\#$ (2.8k) NO GOOD

WALLS CONNECTED THRU FLOORS

- NO STRAPPING PROVIDED AT BALLOON FRAMED MEZZANINES TO CREATE CONTINUOUS SHEAR WALL CHORDS

PROVIDE CS STRAPS - FORCES TBD AFTER SHEAR WALLS ARE UPGRADED

DIAPHRAGM CONTINUITY

STEPS IN ROOF ARE NOT DETAILED TO PROPERLY TRANSFER FORCES.

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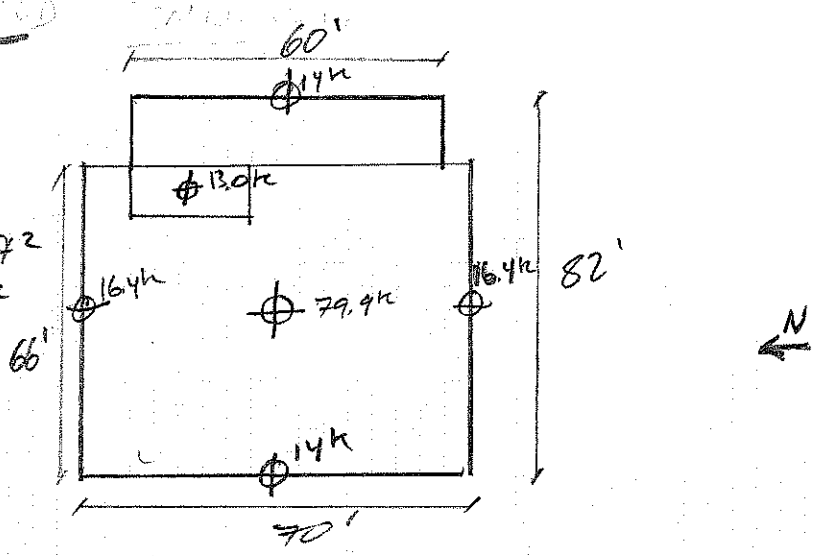
GARAGE



AREA

MAIN: 5325 ft²
MEZZ: 300 ft²

SEISMIC WEIGHTS

ROOF: $5325\ ft^2\ (15psf) = 79.9\ k$

MEZZ: $1300\ ft^2\ [12psf + 0.25(125psf)] = 13.0\ k$

$W_{TOT} = 153.7\ k$

TIER 1 : PSEUDO SEISMIC BASE SHEAR

$V = C \cdot S_a \cdot W$ $\quad C = 1.3$ $\quad S_a = 0.66$

$V = \underline{131.3\ k}$

TIER 2 LSP PSEUDO SEISMIC FORCE

$V = C_1 C_2 C_m S_a W$ $\quad C_1 C_2 = 1.4$, $C_m = 1.0$

$V = 1.4\,(1.0)(0.66)(153.7k) = \underline{142.0\ k}$

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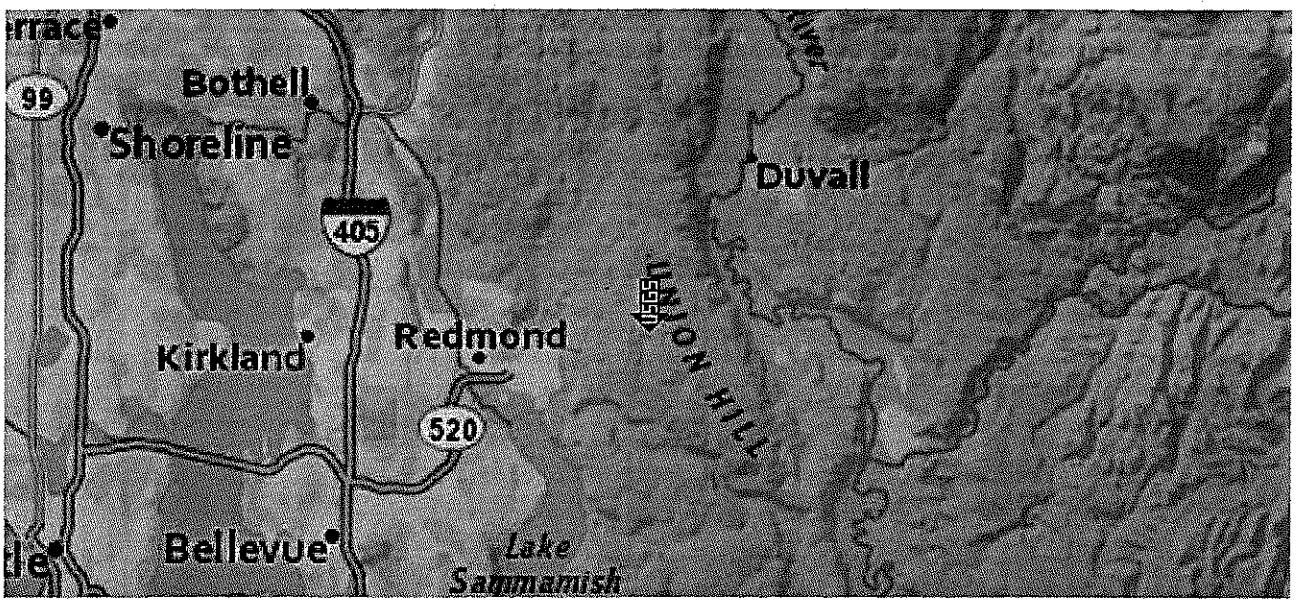
USGS Design Maps Summary Report

User-Specified Input

Building Code Reference Document ASCE 41-13 Retrofit Standard, BSE-1E
(which utilizes USGS hazard data available in 2008)

Site Coordinates 47.69224°N, 122.03718°W

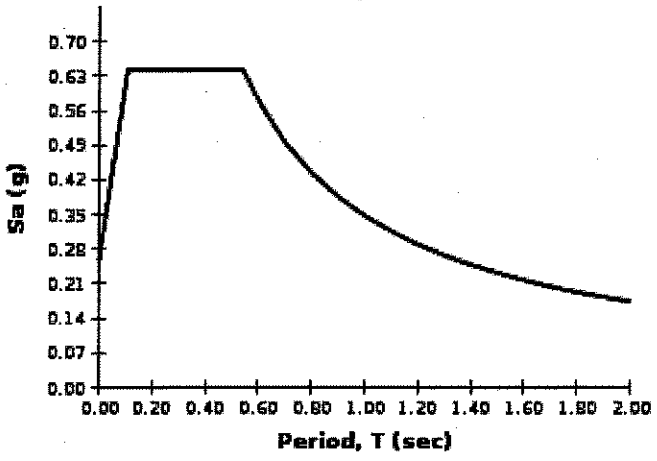
Site Soil Classification Site Class D – "Stiff Soil"



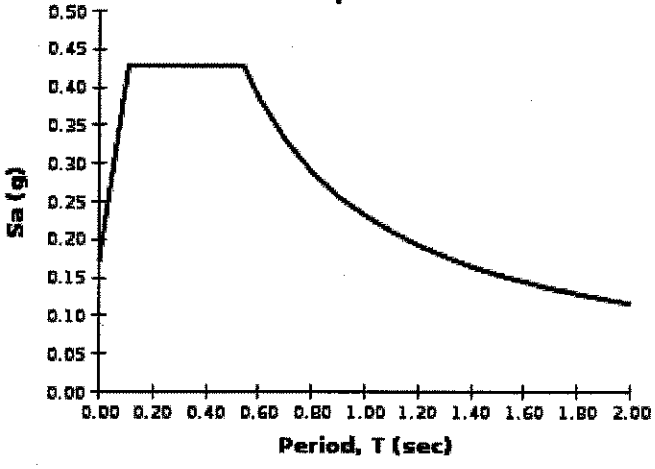
USGS-Provided Output

$S_{S,20/50}$	0.444 g	$S_{XS,BSE-1E}$	0.642 g
$S_{1,20/50}$	0.161 g	$S_{X1,BSE-1E}$	0.347 g

Horizontal Spectrum



Vertical Spectrum



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Seismic Design

Evaluation Method: ASCE 41-13 Tier 3

Analysis Procedure: Linear Static Procedure (LSP)

Performance Objective

Seismic Hazard Level	BSE-1E	BSE-1E, 2E, 1N, 2N per ASCE 41-13 Table 2-1.
Occupancy Category	IV	I, II, or III, or IV per ASCE 7-10 Table1-1
BOPE	IO	Immediate Occupancy Performance (1-B)

Soil

Site Class	D	per soils report (D assumed, without soils report)

Period Determination

T_1		sec	Method-1 (Eigenvalue)
h_n	20	ft	
Ct	0.02		
β	0.75		
T_2	0.19	sec	Method -2 (Eq. 7-18)
T_3		sec	Method-3 (Approx. Rayleigh's)
T	0.19	sec	Period Used

General Response Parameters

S_S	0.444		20% in 50-year USGS Latitude & Longitude lookup
S_1	0.161		20% in 50-year USGS Latitude & Longitude lookup
S_{XS}	0.64		(Eq. 2-1)
S_{X1}	0.35		(Eq. 2-2)
Fa	1.44		(Eq. 2-3)
Fv	2.16		(Eq. 2-4)
β	0.05		Effective Damping
β_1	1.00		(Eq. 2-11)
T_S	0.54	sec	(Eq. 2-9)
T_L		sec	Long Period Transition
Sa	0.64		(Eq. 2-5)

Pseudo Seismic Force for LSP

C1	1.14		(Eq. 7-22)	
C2	1.00		(Eq. 7-23)	1.30504668
Cm	1		(Table 7-4)	81.6959222
DCRmax	2			
$\mu_{strength}$	1.33		(Eq. C7-3)	44.0688586
Bldg. Weight	62.6	k		
$V=C_1C_2C_mS_aW$	46	k	(Eq. 7-21)	

$$C_1 = 1 + \frac{\mu_{strength} - 1}{aT^2}$$

$$C_2 = 1 + \frac{1}{800}\left(\frac{\mu_{strength} - 1}{T}\right)^2$$

Vertical Distribution

k = 1.00

Level	hx ft	wx kips	hx^k ft	$Wxhx^k$ ft-kips	Cvx (%) %	Story Force for LSP: Fx (k) kips	Diaphragm Force for LSP: ΣFx kips	Σwi kips	Fpx kips
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
			0	-	0.00	0.0	0	0	
Roof	20	63	20	1,252	1.00	45.8	46	63	46
	Σ	63		1,252		46			

(Eq. 7-24) $F_x = C_{vx}V$

(Eq. 7-25) $$C_{vx} = \frac{w_x h_x^k}{\sum_{i=1}^{n} w_i h_i^k}$$

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Tel: 253·284·9470 Fax: 253·284·9471

Seismic Weight: $W_{roof} = 58' \times 55' \times 15^{psf} = 47.9^{k}$

$W_{walls} = 2(58' + 55')(10)(13') = 29.4^{k} \div 2$

$W_{total} = 62.6^{k}$

$V_{base} = 46^{k}$

$V_{per\ brace} = \frac{V_{base}}{2 \cdot 3} = 7.67^{k}$

K-Brace: $\Delta = 0.4075"$

Braces: L 2 x 2 x 1/4

$P_u = -9.743^{k}$

$M_u = 0^{k\cdot l}$

$L_b = 2.9'$

$P_n/\Omega = 12.9^{k}$ OK

Verticals: WT 6 x 13

$P_u = -45.71^{k}$

$M_u = 2.759^{k\cdot l}$

$L_b = 3.5'$

$P_n/\Omega = 53.9^{k}$ OK

w/ $m = 1.25$: $V_{per\ brace} = 6.136^{k}$

Braces: $P_u = 7.79^{k} < P_n/\Omega = 12.9^{k}$

Verticals: $P_u = 36.57^{k} < P_n/\Omega = 53.9^{k}$

Reactions: $F_x = 6.86^{k}$

$F_y = 47.43^{k}$

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K-Brace Top Connection:

$V = 7.67^k$

weld: 1/4" fillet weld 2" @ 12" oc total $\ell = 6"$

$R_n/\Omega = 22.3^k > V_u$ OK

GL $3\frac{1}{8} \times 10\frac{1}{2}$: $F_t = 600^{psi} \times 3\frac{1}{8} \times 10\frac{1}{2} = 19.7^k > V_u$ OK

Lag screws: (3) 5/8" ϕ (embed 3 1/2")

$Z_n \times C_D = 945^{\#} \times 1.6 = 1512^{\#}$

Capacity $= 3 \times 1.512 = 4.54^k < V_u$ NG

DCR = 2.55

add (4) 5/8" ϕ lag screws (embed 3.5")

capacity $= 4.54 + 4\,(0.945)(1.6) = 10.58^k$ OK

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Grade Beam Check: North

18"x48" w/ (6) #3 T&B

$0.9M_{ST} > M_{OT}/C_1C_2M_{OT}$

$M_{OT} = 4$ (ASCE 41-13 eqtn 7-6)

$l = 42'-10"$

$P = \pm 47.43^K$ @ 2.5', 4.75', 20.25', 22.5', 38.25', 40.5'

$M_u = 88.83^{kl} \div M_{OT} = 22.21^{kl}$

$\phi M_n = 44.07^{kl} \times 0.9 = 39.66^{kl}$ OK

South:

18"x48" w/ (6) #5 T&B

$l = 60'-9"$

$P = \pm 35.58^K$ @ 2.5', 4.75', 20.25', 22.5', 38.25', 40.5', 56', 58.25'

$M_u = 87.33^{kl} \div M_{OT} = 21.83^{kl}$

$\phi M_n = 121.73^{kl} \times 0.9 = 109.56^{kl}$ OK

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Appendix D

Existing BMU Wall Investigation

SUBSURFACE INTERFACE RADAR INVESTIGATION REPORT 282868

Job Number: 16-0652	Permit Number:
Project: CITY OF REDMOND FACILITIES SIR	Client/Contact:
Address: VARIOUS	Phone Number:
Date: 9/7/2016	Technicians: D. NELSON

Important Notice

The operator has marked the approximate location of subsurface items detected by the equipment. The equipment may NOT detect some subsurface items. The client understands this fact and assumes full and complete responsibility for any subsurface items, detected or not, by the machine. This service is intended to provide information to the client only. Otto Rosenau & Associates, Inc. does not assume any responsibility for how the client interprets or utilizes this information. In the case of concrete slabs (slab on grade, structural and/or post-tensioned), walls, columns, Otto Rosenau & Associates, Inc. strongly recommends that the client does not core, drill, sawcut, bore, and/or excavate within 3" minimum of any marked locations by the operators of this equipment.

1. Representative to work with survey operator: YES
2. Itemized areas cleared for survey: YES
3. Alternate areas available: YES

Area and Purpose of Survey

INSPECTED AND PERFORMED RADAR LOCATE OF REDMOND FIRE STATION WALLS @ STATIONS 11 12 AND 13. USING STRUCTURE SCAN MINI SCANNED EXTERIOR EXISTING BRICK WALLS LOOKING FOR ANY AND ALL DETECTABLE SUBSURFACE EMBEDDED OBJECTS FOUND WHAT APPEARS TO BE REINFORCING STEEL AT ALL THREE STATIONS WITH A PATTERN OF 1 FEET ON CENTER VERTICAL BARS WITH 2-3 FOOT ON CENTER HORIZONTAL BARS

Authorized Signature

Title

Swanson Say Fagat

Company Name

9/7/16

Date

Tested by: D. Nelson

Reviewed by:

Start Time: / Finish Time:

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FACILITY CONDITION ASSESSMENT

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CITY OF REDMOND
FACILITY CONDITION ASSESSMENT
15 MARCH 2014

FCA Team:
Eric Meng, Database Design, Analysis and Reporting
Joel Davis, Principal
Doug Smith, Survey Team Leader/Mechanical
John Boatman, Cost Analysis & Fire Station Architectural
Rick Driftmier, Architectural
Geoff Anderson, Architectural (Pool)
Maureen Kwolek, Civil
Roger Au, Electrical
Brad Albert, Project Coordinator

MENG ANALYSIS PROJECT # 13914 www.menganalysis.com

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III. SUMMARY REPORTS - PREDICTED RENEWALS 16

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V. APPENDIX 452

I. EXECUTIVE SUMMARY

1.1 Introduction

The City of Redmond commissioned MENG Analysis to conduct facility condition assessments (FCAs) of fourteen (14) sites including twenty-six (26) buildings. This report includes the results of that assessment. This report and its supporting data is intended as a tool for the City to make important facility preservation decisions and determine requirements for effective major maintenance planning.

The purpose of this 2013 FCA is to assist City staff in planning and working with City Council to budget for short term correction of observed deficiencies (ODs), long term major maintenance (predicted renewals or "PRs") and city-wide capital facility master plans. In addition to observed deficiencies and predicted renewals, this study also identified facility improvement opportunities (OPS) that go beyond basic maintenance and repair. These include items such as energy conservation upgrades and features.

The city will also be provided a working copy of the MENG Analysis Microsoft Access-based FCA Database populated with all the data from the facility inventory, field surveys, and cost models.

The approved FCA scope of work includes:

- Preparation – Project scoping and prioritization; facility inventory and condition research.
- Field Surveys – Facility Condition Assessments.
- Database - preparation and data analysis.
- Draft and Final FCA Reports – Summary and Detail Reports.

The following list of 14 Sites and 26 Facilities were included in the City of Redmond 2013 FCA.

Site	Facility
Fire Station 11 Site	Fire Station 11 Building
Fire Station 11 Site	Old Medic One Building
Fire Station 12 Site	Fire Station 12 Building
Fire Station 13 Site	Fire Station 13 Building
Fire Station 14 Site	Fire Station 14 Building
Fire Station 16 Site	Fire Station 16 Building
Fire Station 16 Site	Fire Station 16 Shop Building
Fire Station 17 Site	Fire Station 17 Building
Fire Station 18 Site	Fire Station 18 Building
Hartman Park Site	Hartman Park Swimming Pool Building
Maintenance Operations	Central Stores Warehouse Building 5 Building
Maintenance Operations	Decant Facility Building 11 Building
Maintenance Operations	Maintenance Operations Center Building 1 Building
Maintenance Operations	Parks Operations Center Building 8 Building
Maintenance Operations	Street Department Modular Building 3 Building
Municipal Campus Site	City Hall Building
Municipal Campus Site	Municipal Campus Parking Garage Building
Municipal Campus Site	Police Garage North Building
Municipal Campus Site	Police Garage South
Municipal Campus Site	Public Safety Building
Municipal Campus Site	Senior Center Building
Old Fire House Teen Center	Old Fire House Teen Center Building
Old Redmond School House	Old Redmond School House Community Center Building
Sammamish River Business	Sammamish River Business Park Building 1
Sammamish River Business	Sammamish River Business Park Building 2
Trinity Building Site	Trinity Building

1.2 General Findings

The surveyed sites and buildings are moderately well maintained by a dedicated maintenance staff.

- Variety of usual (city hall, fire stations, and maintenance & operations center), and unusual (parking garage, leased school community center, and lightly used commercial office) facilities.
- Mix of well maintained (city hall), and less well maintained (pool, SRBP), but mostly moderately maintained facilities.
- Several serious concerns including PSB exterior enclosure; pool structure and aging systems; teen center hose tower; and several others.
- Many roof issues exacerbated by overgrown landscaping (trees).
- Inconsistency in system types makes maintenance more complicated.
- Many mid-life buildings have MEP systems in need of renewal.
- A master plan is needed for the MOC site.
- A Park's master plan effort is currently underway, and should be informed by this FCA process.
- Maintenance of all fire stations was recently (2013) turned over from the fire department to the city's facilities maintenance department.
- Recently added facility maintenance staff, specifically new HVAC technician, are making rapid progress in addressing the backlog of HVAC related deficiencies.
- City Hall and Parking Garage were DBOM facilities, purchased from Wright Runstad (WR) summer of 2013; the City should carry on the proactive preventive maintenance program established by WR, including scheduled technology upgrades.

Of greatest need are: the Public Safety Building, with major HVAC and exterior envelope requirements; the Old Redmond School House, also with HVAC needs; The Hartman Park Swimming Pool; and the Sammamish River Business Park Buildings.

1.3. General Condition Scores

Summary qualitative assessment (sorted from best to worse condition scores) for the City of Redmond building facilities:

Facility	Condition Score
Fire Station 17 Building	1.3
City Hall Building	1.7
Fire Station 18 Building	1.9
Police Garage North Building	2.0
Police Garage South Building	2.0
Fire Station 14 Building	2.4
Fire Station 16 Shop Building	2.4
Fire Station 16 Building	2.5
Municipal Campus Parking Garage Building	2.6
Public Safety Building	2.7
Fire Station 12 Building	2.9
Decant Facility Building 11 Building	3.0
Senior Center Building	3.0
Parks Operations Center Building 8 Building	3.0
Hartman Park Swimming Pool Building	3.0
Old Redmond School House Community Center Building	3.0
Trinity Building	3.1
Street Department Modular Building 3 Building	3.1
Central Stores Warehouse Building 5 Building	3.1
Fire Station 13 Building	3.1
Fire Station 11 Building	3.1
Old Medic One Building	3.1
Maintenance Operations Center Building 1 Building	3.2
Old Fire House Teen Center Building	3.4
Sammamish River Business Park Building 2	3.5
Sammamish River Business Park Building 1	3.5

The condition assessment process rates each subsystem in a facility with a qualitative score of 1 through 5 where 1=excellent, 2=good, 3=fair, 4=poor, 5=unacceptable. Subsystem scores are weighted by the cost of that subsystem relative to the total replacement value of the facility; and weighted average scores are compiled for each of the City's facilities.

1.4. Facility Condition Index

A Facility Condition Index (FCI) is an industry standard used for benchmarking and evaluating a portfolio of facility assets over time. The FCI is the ratio between a facility's backlog of maintenance and repair (BMAR) and the current replacement value (CRV) of the facility. Please see Glossary of terms later in this report for further explanation of FCI.

Facility	FCI
Police Garage South Building	0.02
Fire Station 17 Building	0.02
Police Garage North Building	0.02
City Hall Building	0.05
Fire Station 18 Building	0.06
Municipal Campus Parking Garage Building	0.10
Fire Station 16 Shop Building	0.11
Fire Station 14 Building	0.12
Decant Facility Building 11 Building	0.13
Public Safety Building	0.14
Fire Station 16 Building	0.14
Senior Center Building	0.16
Parks Operations Center Building 8 Building	0.16
Old Redmond School House Community Center Building	0.17
Central Stores Warehouse Building 5 Building	0.17
Street Department Modular Building 3 Building	0.17
Fire Station 12 Building	0.18
Trinity Building	0.18
Old Medic One Building	0.18
Fire Station 13 Building	0.20
Maintenance Operations Center Building 1 Building	0.21
Fire Station 11 Building	0.21
Old Fire House Teen Center Building	0.22
Hartman Park Swimming Pool Building	0.23
Sammamish River Business Park Building 1	0.27
Sammamish River Business Park Building 2	0.27

1.5. Projected Cost Summary

Estimated costs are calculated for both short-term Observed Deficiencies (ODs) as well as for long-term Predicted Renewals (PRs). These costs summarized herein include typical construction markups as well as project development markups (design, management, etc.) and are calculated as 2013 present value costs.

- Current Observed Deficiencies (2013-2018) = $21,400,000

    - The Hartman Swimming Pool, the Public Safety Facility, the Old Redmond School House Community Center, and the Sammamish River Business Park represent over half of the total OD costs.

    - Peak Cost Years:
        - 2016 = $ 5,600,000
        - 2013 = $ 4,800,000
        - 2015 = $3,800,000

    - Subsystem Deficiencies:
        - Controls and Instrumentation: $2,200,000
        - Lighting and Branch Wiring: $2,000,000
        - Cooling Generating Systems: $1,800,000
        - HVAC Distribution Systems: $1,500,000

- 20 year (2013-2032) Predicted Renewal = $77,900,000
- Additionally, Opportunities are cost estimated individually in the Summary Reports - Observed Deficiencies section.

- Note 5-year Observed Deficiencies should not be added to 20 year Predicted Renewals.

1.6. Enhanced FCA Services

While enhanced FCA and special studies have been discussed, they are not part of the initial 2013 FCA scope of work; and therefore not included in this report. However some of the ODs and Ops recommend further investigation for some of the facilities and/or systems. The most important are as follows.

- Seismic evaluations for the Teen Center hose tower, Pool building, Trinity, and others.
- Weather envelope study for PSB, and several others.
- Energy audit, particularly for old and middle age buildings.
- IR inspection of electrical panels (scheduled to begin 10/28/13).
- IR survey of building thermal envelopes; in conjunction with energy audit.
- Preventive maintenance plan, including major equipment inventory and CMMS program of proactive maintenance.
- Survey all powered buildings at MOC.
- Prioritize ODs and PRs, and fully fund a robust proactive major maintenance program.

1.7 Conclusions

The condition assessments found that the City of Redmond has done a good job maintaining systems in facilities that were constructed several decades ago. This condition assessment highlights facilities and systems that are in need of immediate repair as well as those that will benefit from long term planned maintenance and renewal.

II. SUMMARY REPORTS – OBSERVED DEFICIENCIES

2.1 Observed Deficiencies Summary

The majority of the costs for repairing Observed Deficiencies (OD) for the six-year period of 2013-2018 are found at the Public Safety Facility, The Old Redmond School House Community Center, and the Hartman Swimming Pool. These three buildings represent approximately half of the total OD costs. System costs that warrant attention in order of priority are HVAC, Electrical, and Exterior Closure.

2.1.1 Observed Deficiency Costs by Facility

The following table summarizes the 2013–2018 OD costs at each City facility:

Facility	Cost ($)
Hartman Park Swimming Pool Building	3,028,600
Public Safety Building	3,000,791
Old Redmond School House Community Center Building	2,932,352
Sammamish River Business Park Building 2	1,843,342
Sammamish River Business Park Building 1	1,842,620
Senior Center Building	1,463,986
Maintenance Operations Center Building 1 Building	1,123,969
Fire Station 11 Building	800,682
Trinity Building	660,180
Fire Station 13 Building	546,475
Parks Operations Center Building 8 Building	503,498
Old Fire House Teen Center Building	501,968
Fire Station 12 Building	443,410
Fire Station 16 Building	335,206
Maintenance Operations Center Infrastructure	276,312
Municipal Campus Parking Garage Building	256,764
Fire Station 16 Shop Building	245,304
Fire Station 14 Building	209,920
Trinity Building Infrastructure	166,997
Old Medic One Building	146,146
City Hall Building	145,530
Street Department Modular Building 3 Building	133,725
Central Stores Warehouse Building 5 Building	129,543
Municipal Campus Infrastructure	125,511
Hartman Park Infrastructure	118,109
Sammamish River Business Park Infrastructure	107,771
Decant Facility Building 11 Building	85,658
Fire Station 17 Building	70,071
Fire Station 11 Infrastructure	68,694
Fire Station 18 Building	46,347
Fire Station 12 Infrastructure	24,376
Fire Station 13 Infrastructure	24,376
Old Fire House Teen Center Infrastructure	10,834
Police Garage North Building	9,360
Police Garage South Building	4,680
Grand Total	**21,433,107**

Exhibit A – Observed Deficiency Costs by Facility

2.1.1 Observed Deficiency Costs by System

The adjacent table summarizes OD costs by System. HVAC, Electrical, and Plumbing are the systems in greatest need of major maintenance.

The largest HVAC costs are for Cooling at the Old School House Community Center, and Controls at the Public Safety Building

The largest Electrical costs are for Lighting and Branch Wiring Systems at the Sammamish Business Park and the Parks Operation Center Building and the Service and Distribution at the Pool Building.

The largest Plumbing costs are for water distribution and fixtures at the Old School House Community Center.

System	Cost ($)
HVAC	6,741,021
Electrical	3,118,370
Plumbing	2,385,951
Exterior Closure	1,885,365
Roofing	1,524,059
Fire Protection	1,395,562
Interior Finishes	1,351,820
Site Improvements	790,350
Interior Construction	711,609
Vertical Transportation	519,398
Superstructure	352,945
Foundations	249,171
Special Construction	160,010
Site Civil / Mechanical Utilities	85,019
Site Electrical utilities	47,611
Furnishings	43,480
Equipment	36,254
Staircases	35,112

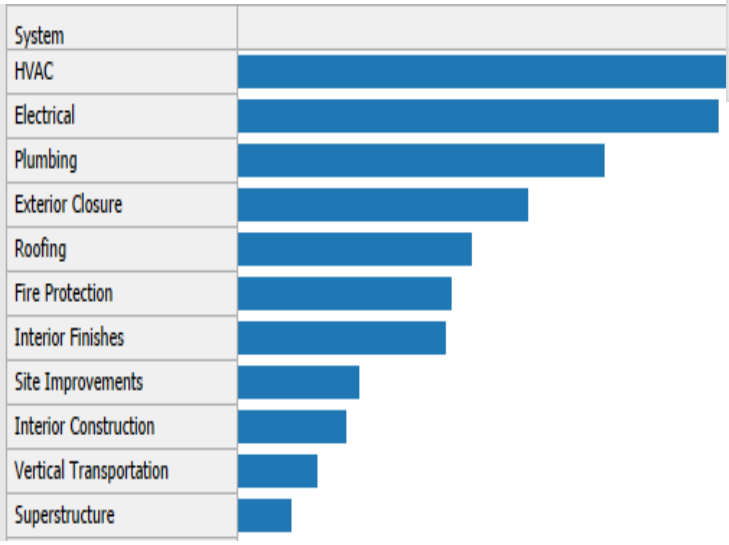

Exhibit B – Observed Deficiency Costs – by System

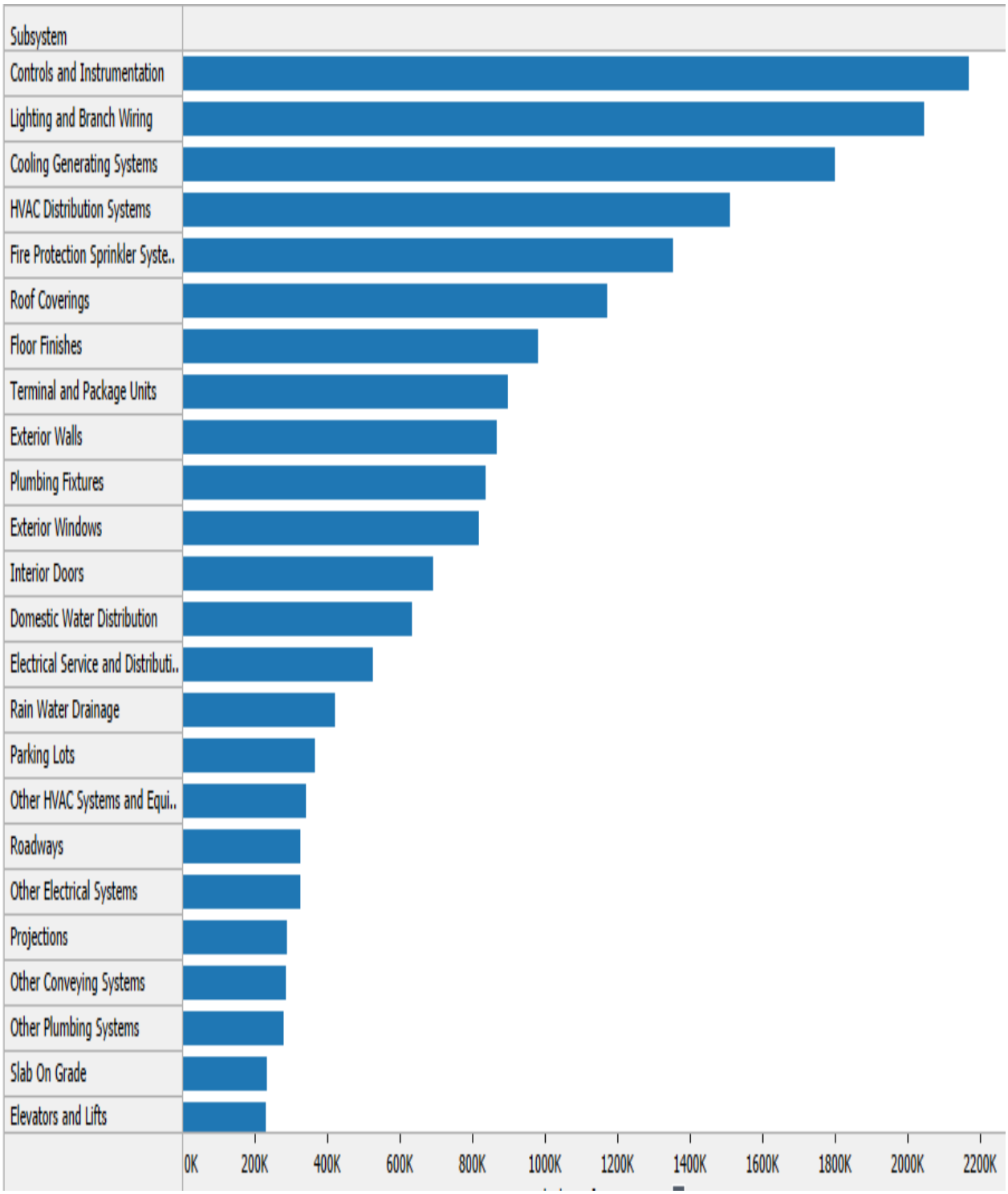

Exhibit C - Observed Deficiency Costs by Subsystem

2.1.2 Projected Annual Cost of Observed Deficiencies

2016 is projected as a peak year for addressing ODs with large costs for Controls at the Public Safety Building and Old School House; roofing at Hartman; and walls at the Senior Center.

Immediate projected needs for 2013 include HVAC systems at the Hartman Pool Complex and the Old School House.

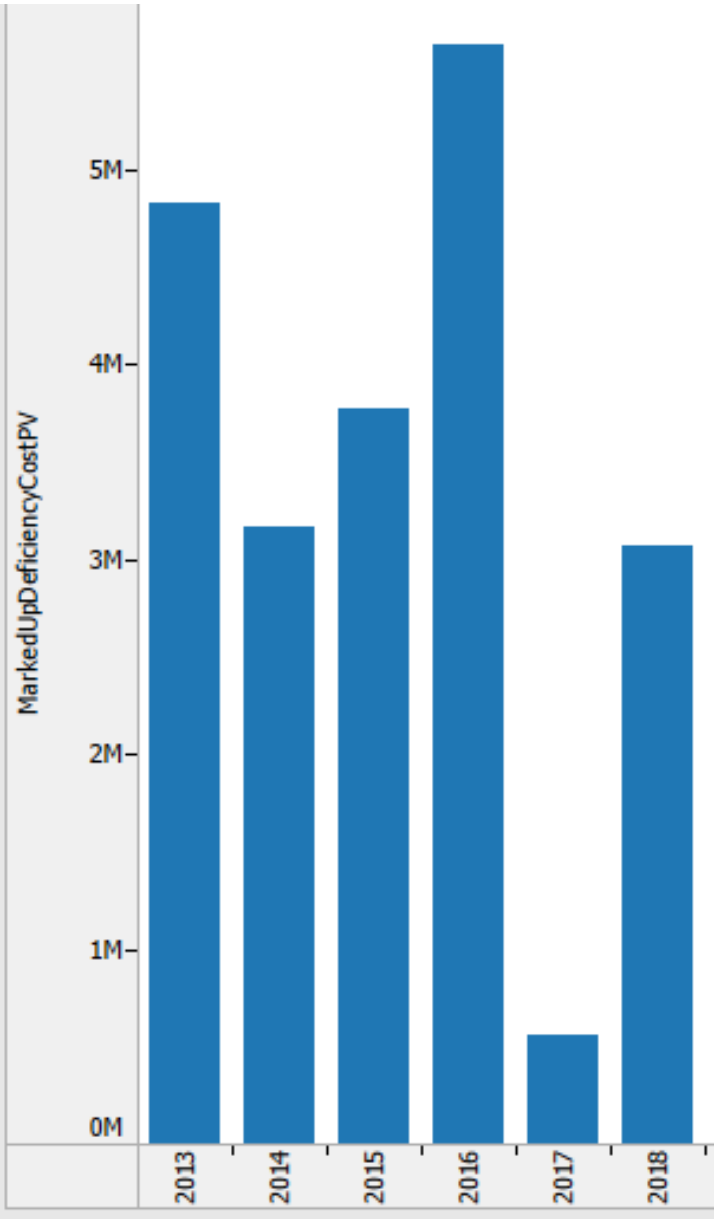

Exhibit D – Deficiency Costs – by Years

Department	Cost ($)
Parks	7,095,361
Police	4,478,817
Administration / Other	4,321,538
Fire	2,961,007
Public Works	2,576,384

Exhibit E – Deficiency Repair Costs – by Department, All Facilities

III. SUMMARY REPORTS – PREDICTED RENEWALS

3.1 Predicted Renewals for Building Systems are based on 2013 dollars for a 20 year period ranging from 2013 to 2032.

3.2 20 Year Predicted Renewals (PRs)

The MENG Analysis Facility Condition Analysis (FCA) Database generates parametric cost estimates for the renewal or replacement of all facility subsystems as they reach the end of their predicted life cycle. For the City of Redmond, a twenty (20) year horizon was selected, which will support planning and budgeting for long-term major maintenance needs. Predicted Renewal costs are projected at $78 million for this 2013-2032 twenty year period.

The Redmond Municipal Campus, with the Public Safety Facility; and the Old Redmond School House have the largest long term renewal costs, followed by the Fire Station 11 site.

Site	Cost ($)
Municipal Campus Site	34,357,165
Old Redmond School House Community Center Site	8,660,476
Fire Station 11 Site	6,149,079
Maintenance Operations Center Site	5,897,695
Sammamish River Business Park Site	4,943,692
Hartman Park Site	3,648,569
Fire Station 16 Site	2,752,667
Fire Station 14 Site	2,368,903
Trinity Building Site	2,269,901
Old Fire House Teen Center Site	2,111,796
Fire Station 13 Site	1,913,919
Fire Station 12 Site	1,287,396
Fire Station 18 Site	1,045,215
Fire Station 17 Site	461,939
Grand Total	**77,868,414**

Exhibit F – 20 Year Predicted Renewals by Site. (includes infrastructure and buildings)

It is important to note that for planning and budgeting purposes, one should not add both the 2013-2018 OD and the 2013-2018 PRs. ODs are Observed Deficiencies from the FCA Survey Team, whereas the PRs from the same period are theoretical projections that factor the age of systems, their relative conditions and modeled costs of systems. PRs are useful to highlight systems that may not have been observable.

Facility	Costs ($)
Public Safety Building	15,938,228
City Hall Building	10,496,676
Old Redmond School House Community Center Building	7,885,682
Fire Station 11 Building	5,505,974
Senior Center Building	3,847,195
Hartman Park Swimming Pool Building	2,406,942
Sammamish River Business Park Building 2	2,307,485
Sammamish River Business Park Building 1	2,211,770
Trinity Building	2,041,082
Old Fire House Teen Center Building	1,846,971
Fire Station 16 Building	1,666,019
Maintenance Operations Center Building 1 Building	1,463,733
Fire Station 14 Building	1,423,631
Fire Station 13 Building	1,309,856
Fire Station 12 Building	1,115,970
Municipal Campus Parking Garage Building	1,011,989
Parks Operations Center Building 8 Building	942,012
Fire Station 18 Building	882,322
Fire Station 16 Shop Building	637,433
Fire Station 17 Building	432,842
Decant Facility Building 11 Building	399,098
Central Stores Warehouse Building 5 Building	317,553
Street Department Modular Building 3 Building	293,918
Old Medic One Building	206,248
Police Garage North Building	7,776
Police Garage South Building	6,220

Exhibit G – Predicted Renewals (PR) – by facility (includes buildings only)

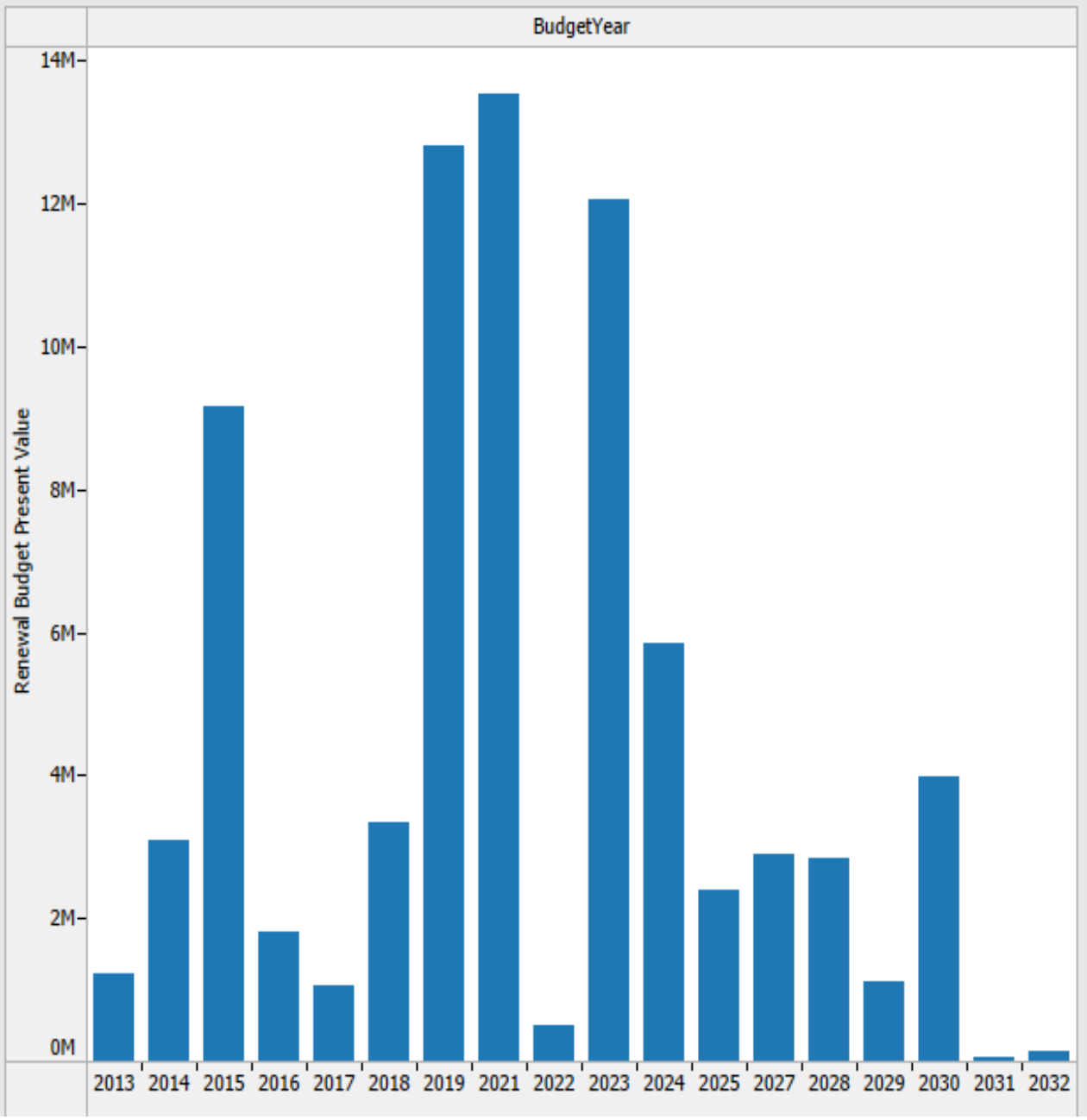

Exhibit H - Predicted Renewals by Year – 20 Years

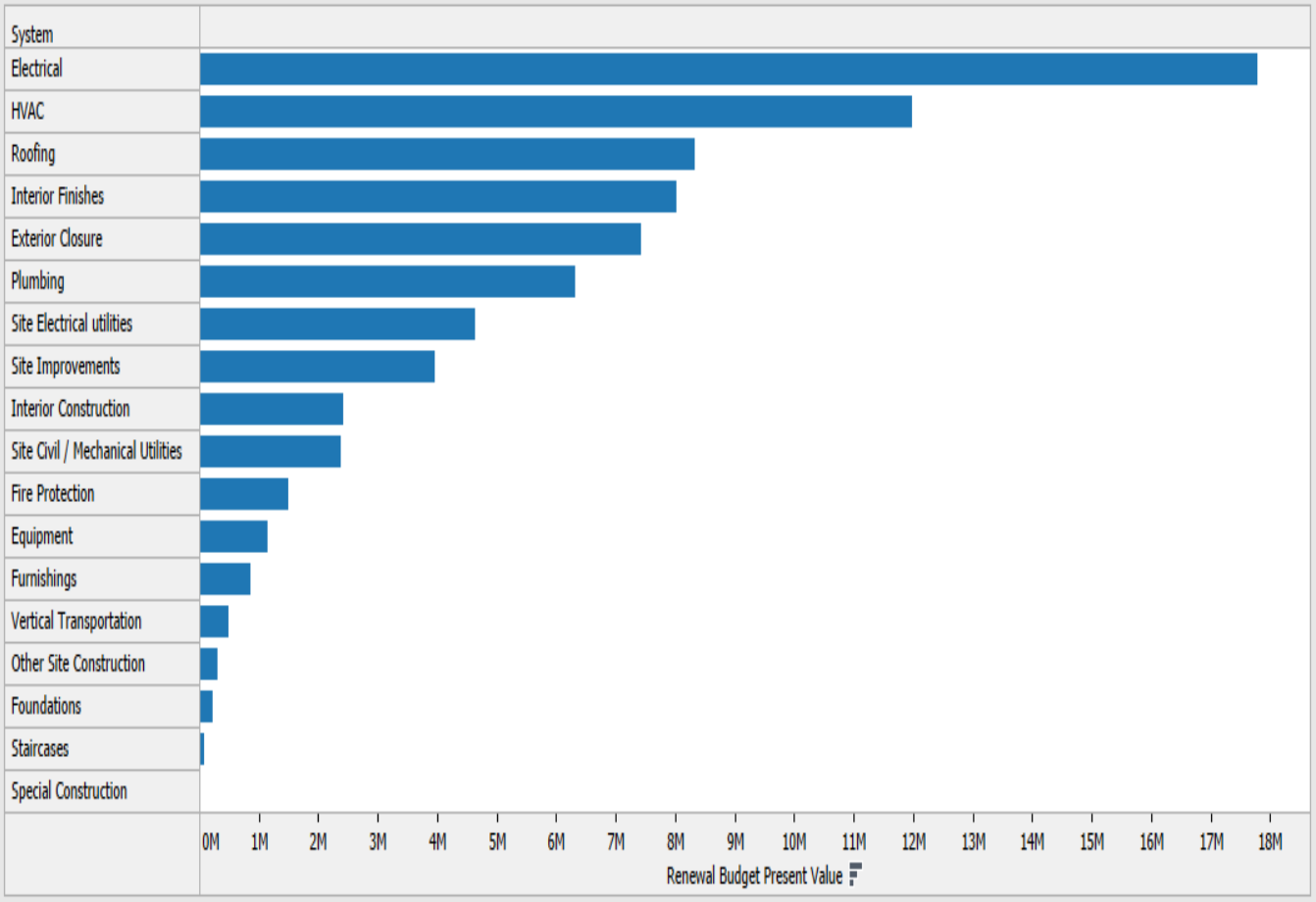

Exhibit I – Predicted Renewals by System

IV. FACILITY REPORTS

4.1 Facility Reports

Primary reports documenting current facility system conditions include:

a) Facility Summary – The overall facility condition, including facility condition index (FCI), systems and sub-systems condition scores and remaining useful life. Also includes qualitative assessments with system descriptions and condition comments from field surveys.

b) Observed Deficiency Cost with Markups – Break down of observed deficiencies by system per UNIFORMAT with markups. For repair costs planning purposes the following project mark-ups are used:

Contingency	30%
General Contractor Mark-ups (overhead & profit)	20%
Project Soft Costs	50%

Observed system deficiencies for each facility include a detailed itemization of facility system components that are in need of major maintenance or repair in order to maintain functionality. All building systems (e.g., exterior shell, mechanical systems, electrical systems, etc.) are evaluated and estimates presented for noted deficiencies.

c) Detailed Assessment – Observed Deficiency Report – Qualitative assessments and costs including condition score, remaining useful life and cost estimates of observed deficiencies.

d) Facility Improvement Opportunity – Includes detailed assessments and costs for system and facility upgrades that may improve the functional performance of the facility beyond basic maintenance and repair. Many opportunities are found in energy performance upgrades that are not required by code until the facilities are replaced or substantially modernized. Other opportunities include space utilization, occupant health/comfort and life/safety upgrades.

4.2 Facility Condition Assessment Database

The data supporting this FCA analysis is included in a relational database (Microsoft Access) and intended for ongoing use by the City's staff.

Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	23,800
Year Of Original Construction	1981
Facility Use Type	Fire Station
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2000
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.1**			
Facility Condition Index (FCI)	0.21			
Current Replacement Value (CRV)	$11,345,000	**Predicted Renewal Budget (6 yrs)**	$2,388,000	$2,291,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$6,207,000	$5,401,000
		Observed Deficiencies (6 yrs)	$690,000	$662,000
		Observed Deficiencies (ALL)	$874,000	$801,000
		Opportunity Total Project Cost	$1,202,000	N/A

Facility Condition Summary

Architectural:
Single story building with two (2) separate mezzanines. Foundation is slab on grade. Below grade pits at hose tower and apparatus bay. Wood framed structure with exterior masonry veneer. Aluminum windows and some aluminum store front with hollow metal doors and frames. Steel stairs to mezzanine levels. Wood beam and truss roof structure, with single ply roofing. Concrete masonry unit tower with all steel stairs and grated landings. Interior partitions are wood frame with gypsum wall board. Finishes are mixture of paint and wall tile on walls; floors are mostly carpet in dorms and administration, sealed concrete at apparatus bay, ceramic tile restrooms, some rubber flooring and sheet goods and quarry tile at kitchen. Most interior doors are hollow metal frames and wood doors. Various built in casework, moveable storage, and gear storage throughout.

Electrical:
Building has a 600A, 208/120V system, served by Puget Sound Energy 150-kva padmount transformer, feeding outdoor automatic transfer switch, to the main panel in the building. The building also has a 300-kw 208/120V outdoor generator feeding the emergency side of the outdoor automatic transfer switch, backup power to the main panel. Interior lighting is mostly T8 fluorescent, with some incandescent fixtures in the dayroom and kitchen. Outdoor lighting are high intensity discharge (HID). All branch wiring are in conduits. Devices are 15A and 20A grounding type. Kitchen needs to have more outlets and circuits to handle multiple toasters at the same time. Apparatus bays need to have more outlets and circuits for vehicle charging. The building has a fire alarm system. The building has no security alarm system.

Mechanical:
Headquarters fire station in downtown Redmond includes administration, living, apparatus bays (4), apparatus bay west mezzanine (one bay), training addition to east with mezzanine, generator yard to southeast, and patio to west.
HVAC in administration, living, and training are roof top gas pack units; the apparatus bay is gas-fired infrared heat with ceiling general exhaust plus vehicle engine exhaust.
Plumbing is city water and sewer with copper pipe and cast iron drain, waste, and vent. Special system for apparatus bay. Fire sprinkled throughout.

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City of Redmond
Fire Station 11 Site
Fire Station 11 Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**4.0**			
Foundations						
A1030 Slab On Grade						
	1981	1981	4	15	JB 09/03/13	Slab on grade. Office and dorm areas appear fine. Excessive cracking at apparatus bay with lifting in some places. Less than 1/2-inch recently repaired.
B Shell			**3.1**			
Superstructure						
B1010 Floor Construction						
	1981	1981	2	88	JB 09/03/13	Wood framed structure at both mezzanine areas . Good condition.
B1020 Roof Construction						
	1981	1981	2	56	JB 09/03/13	Wood framed roof structure throughout. Good condition.
Exterior Closure						
B2010 Exterior Walls						
	1981	2000	4	10	JB 09/03/13	Wood framed walls with brick veneer. Most exterior walls are in good condition, except lintels at exterior window openings and offset walls. Front entrance masonry lintel was recently replaced. Lintel does not appear to be supported by exterior wall. Additional seismic review recommended.
B2020 Exterior Windows						
	1981	2000	3	15	JB 09/03/13	Dual glazed aluminum windows. Good condition. No head flashing to offset drip. No roof overhang. Some moss growing at windows.
B2030 Exterior Doors						
	1981	2000	4	20	JB 09/03/13	Hollow metal frames and steel doors. Some store front doors at administration. Electronic key pads at most locations. Generally in fair condition. Hardware is older but functioning. Weather strip to be replaced.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.1**			
Exterior Closure						
B2030 Exterior Doors						Sweeps are missing at store front doors.
Roofing						
B3010 Roof Coverings	1981	1981	2	15	JB 09/03/13	Single ply membrane roofing. Recently re-coated. Good condition. See mechanical sections for roof drain evaluation.
B3020 Roof Openings	1981	1981	4	12	JB 09/03/13	Roof access hatch. No handle extension at either hatch.
B3030 Projections	1981	2000	4	5	JB 09/03/13	Mechanical screen, metal; located on roof. Paint is worn and fading at metal equipment screen.
C Interiors			**2.7**			
Interior Construction						
C1010 Partitions	1981	2000	1	22	JB 09/03/13	Wood framed interior partition walls; gypsum wall board. Good condition.
C1020 Interior Doors	1981	2000	2	30	JB 09/03/13	Hollow metal frames, wood doors, some hollow metal doors at painted assemblies. Few doors with relites. Good condition. Some hardware is worn but functional. Some doors need touch up paint.
C1030 Fittings	1981	2000	4	3	JB 09/03/13	Counters at several locations including restrooms, kitchen, workspaces, dorm rooms, reception counter.

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City of Redmond
Fire Station 11 Site
Fire Station 11 Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**2.7**			
Interior Construction						
C1030 Fittings						
						Some areas are in good condition; laundry, radio counter. Some counters delaminating.
Staircases						
C2010 Stair Construction						
	1981	2000	1	30	JB 09/03/13	Metal stairs at mezzanine (west). Metal stairs with concrete treads (east). Good condition.
Interior Finishes						
C3010 Wall Finishes						
	1981	2000	3	9	JB 09/03/13	Gypsum wall board and paint at most interior walls. Ceramic tile wainscot at restrooms. Paint needs some touchup. Generally in good condition. Ceramic tile is in good condition.
C3020 Floor Finishes						
	1981	2000	5	5	JB 09/03/13	Sealed concrete at apparatus bay. Dorm rooms/administration spaces are carpet. Weight room is rubber flooring. Wall base throughout. Quarry tile at kitchen and 1/3 break room. Ceramic tile at restrooms, locker room, and showers. Carpet is in poor condition; worn and stained in most places. Wall base is cracked and worn at main entrance lobby. Ceramic and quarry are in good condition.
C3030 Ceiling Finishes						
	1981	2000	4	10	JB 09/03/13	Mixture of acoustic tile and gypsum wall board ceilings. Gypsum wall board hard lid in restrooms, dorm rooms, mechanical/electrical, storage rooms. Acoustic ceiling tile is worn and has several locations where stained. At older building areas, the tile feels brittle.
D Services			**3.2**			

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City of Redmond
Fire Station 11 Site
Fire Station 11 Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.2**				
Vertical Transportation							
D1010 Elevators and Lifts							
	2001	2001	5	0	DCS	09/03/13	Genesis 750-lb lift. Lift has been problematic since new and is currently inoperable.
Plumbing							
D2010 Plumbing Fixtures							
	1981	2000	3	10	DCS	09/03/13	Porcelain water closets, urinals, and lavatories with stainless steel trim. Stainless steel sinks. Cooled drinking fountains. Fiberglass showers with tile floor. Stainless steel decontamination sinks. Porcelain with stainless steel rim janitor deep sink. All manual faucets and flush valves. Fixtures in fair condition in living areas and utility/shop spaces; good elsewhere (offices, training, etc.).
D2020 Domestic Water Distribution							
	1981	1981	3	10	DCS	09/03/13	City water from 1.5-inch service via 1.5-inch and 1-inch pressure reducing valves with bypass; 90-psig inlet and 50-psig outlet. Copper distribution piping. Approximately four (4) gas-fired domestic hot water heaters including WH-2, 50-gallon, 42-mbh, dated 2007; west mezzanine WH-X A.O. Smith 100-gallong, 240-mbh, dated 2001 with 100-gallon supplemental storage tank and two (2) receive pumps; WH-3, A.O. Smith, 75-gallon, 75-mbh, dated 2000 with XT. System is in fair to good condition with few issues reported or observed. Some domestic hot water piping is uninsulated. WH-X system on mezzanine receive pump motors may be running hot.
D2030 Sanitary Waste							
	1981	1981	3	10	DCS	09/03/13	Cast iron drain, waste, and vent (DW&V). Floor drains in men's and women's, floor drains in some utility areas. Catch basins in apparatus bay draining to an oil/water separator in apparatus bay west. Periodic waste drain backups at both flushing fixtures and shower floor drains. Frequent backups at apparatus bay catch basins. Recent environment regulation changes requiring

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.2**			
Plumbing						
D2030 Sanitary Waste						
						apparatus washing inside is placing excessive load on apparatus bay catch basins and oil/water separator.
D2040 Rain Water Drainage						
	1981	1981	3	10	DCS 09/03/13	Mostly interior roof drains and overflow roof drains with mostly insulated piping. Several roof drains with scupper overflows at 2000 addition areas. Several roof drains are missing drain bodies and companion overflow roof drains. Standing water in various locations. Trees overhang and/or close to roof making already marginal drainage
D2090 Other Plumbing Systems						
	1981	2000	3	7	DCS 09/03/13	Compressed air system in apparatus bay with 3-hp compressor and tank and distribution piping to hose reels. Extractor system. SCUBA charging station. Oxygen fill station with multiple full size bottles inside. Fuel island with gasoline and diesel underground storage tanks to south. Specialty plumbing systems are awkwardly located in apparatus bay; see other section(s) for opportunity to construct utility room for this equipment. Fuel island is reportedly scheduled for demolition in 2013.
HVAC						
D3010 Energy Supply						
	1981	2000	3	10	DCS 09/03/13	Natural gas from Puget Sound Energy via meter number 920737 with 425-cfh capacity. Painted black iron distribution pipe to gas-fired roof top units, apparatus bay infrared heaters, kitchen appliances, and domestic hot water heaters. Gas piping in unusually rusty for its age. Clean and protect to extend life. (Less than $2,000.)
D3030 Cooling Generating Systems						
	1981	1981	5	0	DCS 09/03/13	No dedicated cooling for several communications/computer/radio rooms. Several communications/computer/radio rooms are warm/hot; opportunity to install dedicated

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City of Redmond
Fire Station 11 Site
Fire Station 11 Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.2**			
HVAC						
D3030 Cooling Generating Systems						
						cooling.
D3040 HVAC Distribution Systems						
	1981	2000	3	10	DCS 09/03/13	Apparatus bay ventilation is by two (2) roof inlet hoods and one (1) general exhaust fan. General exhaust fans serve office and living areas, men's, women's, and miscellaneous. Apparatus bay ventilation does not meet current standards.
D3050 Terminal and Package Units						
	1981	2000	4	3	DCS 09/03/13	Apparatus bay overhead gas-fired, low-intensity, vented radiant heaters. Office, living, and training area roof top unit gas-pack units. Apparatus bay radiant heaters are near end of life. Roof top units are marginally designed, installed, and maintained resulting in discomfort throughout.
D3060 Controls and Instrumentation						
	1981	2000	4	2	DCS 09/03/13	DDC Metasys N30, 1998 technology, installed during 2000 renovation. Comfort complaints throughout all areas and spaces, but especially in office and living areas. Unbalanced air flows. Little or no outside air to many or most spaces.
D3090 Other HVAC Systems and Equipment						
	1981	2000	3	5	DCS 09/03/13	Nederman vehicle engine exhaust system for apparatus bay; one (1) per bay/door. Kitchen grease hood. Nederman system is older and ready for renewal. Kitchen hood is missing fire suppression system (see "Other Fire Protection Specialties" section below).
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1981	1981	3	10	DCS 09/03/13	Wet pipe fire sprinkler system throughout. City water service entry at 6-inch with 4-inch reduced pressure backflow prevention, yard post indicator

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.2**				
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
							valve and fire department connection. 100-psig service entry pressure. No issues reported or observed. Consider future dry pipe for apparatus bay, hose tower, and other semi-heated spaces.
D4030 Fire Protection Specialties							
	1981	2000	3	10	DCS	09/03/13	Fire extinguishers in cabinets and automatic external defibrillators (AED) in racks. Inspections current.
D4090 Other Fire Protection Systems							
	1981	1981	5	0	DCS	09/03/13	No fire suppression for kitchen hood. Install hood fire suppression.
Electrical							
D5010 Electrical Service and Distribution							
	1981	1981	3	7	RA	09/03/13	Building system, 600A 208/120V with main panel in building, fed by Puget Sound Energy transformer via an outdoor transfer switch, with backup generator. Main panel is Square-D, QMR fusible board with 600A main breaker, transfer switch; Cutter-Hammer, outdoor. Main panel has a 600A single breaker disconnect fed from the generator through an automatic transfer switch, age over 30 years old. Opportunity for a service equipment upgrade.
D5020 Lighting and Branch Wiring							
	1981	2000	3	17	RA	09/03/13	Lighting is all fluorescent T8 lamps in good condition in the office and dormitory wing; probably been upgraded in 2000. All branch wiring is in conduits with 15A and 20A devices. Lighting has no occupancy controls. Roof electrical disconnects are in fair, working condition with minor rusting on housing. In the apparatus bays, all lighting fixtures and all wiring devices are working, but age is over 30 years; recommend upgrade opportunity with added occupancy sensors. Circuits are tripping in apparatus bay for vehicle charging and in

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.2**			
Electrical						
D5020 Lighting and Branch Wiring						
						kitchen counter outlets.
D5030 Low Voltage Communication Security and Fire Alarm						
	1981	2000	2	12	RA 09/03/13	Building has a fire alarm system with control panel in fire alarm and sprinkler room, and a fire alarm annunciator in the hallway off the day room. Fire alarm system is Silent Knight #5280 in good working condition. Building has no security alarm system. Building has voice/data, Cat-5 wiring system and devices system; in good working condition. Building has sound paging system; in good working condition.
D5090 Other Electrical Systems						
	1981	2001	2	8	RA 09/03/13	Building electrical system has an outdoor generator with diesel base tank. Generator is manufactured by Generac, 300-kw, 208/120V, 2000 series, 2001. Generator is in good condition.
E Equipment and Furnishings			**3.8**			
Equipment						
E1010 Commercial Equipment						
	1981	1981	2	10	JB 09/03/13	Laundry, kitchen equipment, copiers, and computers. Good condition.
E1030 Vehicular Equipment						
	1981	2000	2	10	JB 09/03/13	Neiderman system. Functioning. Needs miscellaneous small parts, and ongoing maintenance.
Furnishings						
E2010 Fixed Furnishings						
	1981	2000	4	12	JB 09/03/13	Window treatments (blinds). Casework cabinets. Blinds are in good condition. Some wear and

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Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.8**			
Furnishings						
E2010 Fixed Furnishings						
						tear/delamination at casework.
E2020 Moveable Furnishings (Capital Funded Only)						
	1981	1981	1	17	JB 09/03/13	Good condition.

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Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Infrastructure

8450 161st Avenue NE
Redmond, WA 98052

Facility Condition Summary

The fire station headquarters and the old Medic One building are on a rectangular lot. There is a concrete drive apron for the four (4) truck bays off of NE 85th Street. There are asphalt parking lots on the west and east sides of the fire station building, with two (2) access drives from 161st Avenue NE. At the southeast corner of the site is the old Medic One building. A fuel island is also onsite, but is no longer used and is scheduled to be removed. The site has mature trees throughout and is served by City of Redmond utilities. At the northwest corner of the site is a small plaza with a memorial bench and sculpture.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	1981	1981	3	8	MK	09/03/13	Access roads include the asphalt lane on the south side of the site between 161st Avenue NE & the OMOB, including the fuel island. Roadways also includes the concrete apron at the front of the apparatus bays. Extruded concrete curbs. □ Concrete pavement is in fair to good condition, with some cracks throughout. Cracking is likely due to lack of expansion joints in original pavement, and displacement is not occurring. Some alligatoring present of asphalt access lane.
G2020 Parking Lots							
	1981	1981	3	4	MK	09/03/13	Parking lots on east and west sides of fire station building. Two (2) ADA accessible stalls at front of building. Extruded concrete curbs and concrete curb stops. Approximately one-third of the parking lots have newer pavement repairs. Recommend ongoing repairs.
G2030 Pedestrian Paving							
	1981	1981	2	8	MK	09/03/13	Concrete walks around perimeter of the fire station. Brick area at front entry. Concrete and brick walk along the east edge of the site. Brick plaza areas at northwest corner of site.□ Generally in good condition.
G2040 Site Development							

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Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Infrastructure

8450 161st Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2040 Site Development						
	1981	2004	2	20	MK 09/03/13	At the northwest corner of the site is a circular small plaza with a memorial bench and sculpture. Flag pole at front entry. □ Good condition.
G2050 Landscaping						
	1981	1981	3	8	MK 09/03/13	Mature trees and landscaping throughout the site. Irrigation system present. □ Landscaping is generally in good condition. Trees are overhanging building and some along the front of building are getting too large. Issues with leaves clogging roof and providing access for rats. Complaints about dripping from maples on cars in rear (east) parking lot. Likely this is 'honeydew' from aphids on maple trees.
Site Civil / Mechanical Utilities						
G3010 Water Supply						
	1981	1981	3	13	MK 09/03/13	Domestic water service (1-1/2") and fire sprinkler supply lines to fire station from City of Redmond system. Water service to OMOB also from City system.□ No known issues.
G3020 Sanitary Sewer						
	1981	1981	3	18	MK 09/03/13	Sanitary sewer service to buildings from the City of Redmond system. No known issues,
G3030 Storm Sewer						
	1981	1981	3	13	MK 09/03/13	Catch basin and pipe system in parking lots. Trench drain at perimeter of fuel island and at edge of drive apron at apparatus bays. Fire station building roof drains appear to be interior to the building. Exterior roof downspouts at OMOB connect to underground system. Storm drains likely connect into City of Redmond system. □ □ Trench drain at drive apron appears to be full of sediment and needs maintenance.

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Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Infrastructure

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Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Civil / Mechanical Utilities						
G3030 Storm Sewer						
G3060 Fuel Distribution						
	1981	1981	3	8	MK 09/03/13	Fuel Island at south side of site is no longer in service. Small propane tank at OMOB for the emergency generator. □ □ No known issues.
Site Electrical utilities						
G4010 Electrical Distribution						
	1981	1981	3	8	MK 09/03/13	Underground electric service to both buildings. 150-kva transformer at Fire Station, and emergency generator with base tank. Small emergency generator at OMOB (propane). □ □ No known issues.
G4020 Site Lighting						
	1981	1981	3	8	MK 09/03/13	Pole lights throughout the site. Bollard lights at the plaza at the northwest corner of the site. □ See also building electrical sections□
G4030 Site Communications and Security						
	1981	1981	3	7	MK 09/03/13	Underground telephone to the buildings. (See also building electrical sections.) □ No known issues.

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Facility Summary

City of Redmond
Fire Station 11 Site
Old Medic One Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	1,916
Year Of Original Construction	1985
Facility Use Type	Maintenance
Construction Type	Light
# of Floors	1
Energy Source	Electric
Year Of Last Renovation	2001
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.1**			
Facility Condition Index (FCI)	0.18			
Current Replacement Value (CRV)	$566,000	**Predicted Renewal Budget (6 yrs)**	$34,000	$32,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$236,000	$202,000
		Observed Deficiencies (6 yrs)	$153,000	$146,000
		Observed Deficiencies (ALL)	$153,000	$146,000
		Opportunity Total Project Cost	$492,000	N/A

Facility Condition Summary

Architectural:
The main part of the building is a modular on a concrete foundation, the apparatus bay stick built on a slab foundation. The building is old and could use maintenance and repair. Opportunity for renewed office space, see Opportunity section. The Old Medic One Building is a well worn but solid building whose life can be extended through a small investment and regular maintenance.

Electrical:
Building electrical service is 120/208V system, underground power from Puget Sound Energy padmount transformer. Indoor main panel with 200A main breaker subfeeding a transfer switch load center outside and a panel in the apparatus bay. Building interior lighting is mostly fluorescent throughout, original fixtures, T8 lamps, with minor quantities of incandescent fixtures in toilet and storage closet. Outside lights are a mix of newer high intensity discharge (HID) wall packs and a couple of compact fluorescent wall packs. Branch wiring and devices are original building system, 28 years old. Building has no lighting automatic controls, fire alarm system and monitoring, or battery backup lights for egress.

Mechanical:
The Old Medic One Building consists of original 1985 modular building (1,176 sf) set on concrete foundation with crawl space, newer 2001 single apparatus bay (640 sf), small (100 sf) interconnecting hallway between modular and apparatus bay structures, and covered entry (approximately 50 sf). The Old Medic One Building is located on the southeast corner of the Fire Station 11 site. The original modular building was first purchased by Shoreline Fire District in 1985, later moved to Evergreen Hospital, finally moved to the Fire Station 11 site in 2001.
HVAC in the original modular is forced air all electric heat pumps; the apparatus bay includes one (1) electric unit heater and one (1) sidewall exhaust fan.
Plumbing is city water and sewer with electric domestic hot water heater. No fire sprinkler.
While originally used for Medic One, the Old Medic One Building is now used for Emergency Preparedness and Emergency Medical Services (EMS) storage. The Old Medic One Building is commonly called the "Rat Shack" due to a past heavy rat infestation.

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City of Redmond
Fire Station 11 Site
Old Medic One Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
A Substructure			**3.0**				
Foundations							
A1010 Standard Foundations							
	1985	2001	3	76	RD	09/03/13	Concrete foundation under modular. Slab at apparatus bay. Most all foundation vents are filled with bark. Remove bark and clean. (Less than $2,000.)
A1030 Slab On Grade							
	2001	2001	3	76	RD	09/03/13	Slab on grade in apparatus bay. No deficiencies observed.
B Shell			**3.0**				
Superstructure							
B1010 Floor Construction							
	1985	1985	3	23	RD	09/03/13	Wood frame floor. There is some deflection but floor is acceptable.
B1020 Roof Construction							
	1985	2001	3	22	RD	09/03/13	Wood frame on modular and site built porch soffit/roof deck is rotting. Porch rail is rotting. Remove roof and deck at front porch. Replace deck and roof to provide dry condition. Replace porch rail.
Exterior Closure							
B2010 Exterior Walls							
	1985	2001	3	33	RD	09/03/13	T-111 siding. Needs cleaning, minor repair, and paint.
B2020 Exterior Windows							
	1985	1985	3	18	RD	09/03/13	Double glazed. Metal frame. No deficiencies observed.
B2030 Exterior Doors							
	1985	2001	3	23	RD	09/03/13	Hollow metal doors. Doors need maintenance and paint. (Less than

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Old Medic One Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.0**			
Exterior Closure						
B2030 Exterior Doors						
						$2,000.)
Roofing						
B3010 Roof Coverings						
	1985	2001	3	28	RD 09/03/13	Metal roof low slope celling. Shows past leaks. Roof insulation.
						Fill end voids to stop blown in water penetration (less than $2,000). Recommend further investigation of roof leaks. Insulation is placed on top of ceiling tile. Verify that light fixtures are "tented over" or are rated for insulation.
B3020 Roof Openings						
	1981	2001	3	28	RD 09/03/13	Very limited openings for vents.
						No deficiencies observed or reported.
B3030 Projections						
	1985	2001	3	18	RD 09/03/13	Front porch covered in "Roof Construction" section above.
						See "Roof Construction" section above.
C Interiors			**3.0**			
Interior Construction						
C1010 Partitions						
	1985	2001	3	13	RD 09/03/13	Wood frame with gypsum wall board or hard board.
						No deficiencies observed. Worn but functional.
C1020 Interior Doors						
	1985	2001	3	13	RD 09/03/13	Wood doors.
						Worn but functional.
C1030 Fittings						
	1985	2001	3	18	RD 09/03/13	Whiteboard.
						No deficiencies noted.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.0**			
Interior Construction						
C1030 Fittings						
Staircases						
C2010 Stair Construction						
	1985	2001	3	23	RD 09/03/13	Wood stair at entry and to apparatus bay. No deficiencies observed.
C2020 Stair Finishes						
	1985	2001	3	3	RD 09/03/13	Painted wood. No deficiencies observed.
Interior Finishes						
C3010 Wall Finishes						
	1985	2001	3	10	RD 09/03/13	Painted gypsum wall board. Painted textured hard board. Clean and repaint with normal maintenance.
C3020 Floor Finishes						
	1985	2001	3	12	RD 09/03/13	Carpet and sheet vinyl. Dated but functional.
C3030 Ceiling Finishes						
	1985	2001	3	8	RD 09/03/13	Suspended acoustical tile and painted gypsum wall board. Replace broken and stained tile. (Less than $2,000.)
D Services			**3.3**			
Vertical Transportation						
D1090 Other Conveying Systems						
	1985	2001	5	0	DCS 09/03/13	No roof access. Provide roof access.
Plumbing						

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Fire Station 11 Site
Old Medic One Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.3**				
Plumbing							
D2010 Plumbing Fixtures							
	1985	1985	4	5	DCS	09/03/13	One (1) bathroom with water closet, lavatory, and shower. One (1) kitchen sink, one (1) deep sink at apparatus bay, one (1) laundry hookup in apparatus bay. All dated and worn but functional.
D2020 Domestic Water Distribution							
	1985	2001	3	10	DCS	09/03/13	City water; copper piping; electric A.O. Smith domestic hot water heater, 50-gallons. Aged but functional. Domestic hot water heat is not installed per current code. Some or all domestic hot water piping is not insulated (less than $2,000.)
D2030 Sanitary Waste							
	1985	2001	3	10	DCS	09/03/13	City sewer; drain, waste, and vent (DW&V) of unknown materials, but ABS is suspected. No issues reported or observed. Fixtures drain and flush well.
D2040 Rain Water Drainage							
	1985	2001	4	3	DCS	09/03/13	Gutter and downspout from metal roof to site storm drain system. Gutter and downspouts are dirty and damaged. Downspouts connecting to storm are semi-open and full of debris.
HVAC							
D3010 Energy Supply							
	1985	2001	3	10	DCS	09/03/13	Currently all electric with original modular building. Split direct expansion (DX) heat pump, and apparatus bay electric unit heater. Opportunity to upgrade to gas heat.
D3030 Cooling Generating Systems							
	1985	2005	3	10	DCS	09/03/13	One (1) split direct expansion (DX) condensing unit serving original building forced air handling unit. Condensing unit is in good condition, but is

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Fire Station 11 Site
Old Medic One Building

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Redmond, WA 98052

Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.3**			
HVAC						
D3030 Cooling Generating Systems						surrounded by excessively deep landscape bark. Condensing unit should be regularly cleaned.
D3040 HVAC Distribution Systems	1985	2001	4	3	DCS 09/03/13	Forced air split direct expansion (DX) heat pump with crammed space supply air duct, floor diffusers, and one (1) return air grill near inside unit. System is not installed per codes and standards. No outside air. Little or no return air path. Double return air filters. Unit not serviced for over one year. Some floor diffusers are blocked or damaged. Dirty duct. Comfort marginal. Kitchen and bathroom exhaust is marginal. Laundry dry exhaust duct is missing (dryer exhaust is direct to apparatus bay). Exhaust issues are less than $2,000 to correct.
D3050 Terminal and Package Units	2001	2001	4	5	DCS 09/03/13	Approximately 5-kw electric resistance unit heater in apparatus bay with front outside air intake louver and rear sidewall exhaust fan. Unit heater is heavily worn and damaged. Outside air intake louver is open with no motor operated damper. Exhaust duct has mid-level intake only (not high/low). System should be reconfigured to meet code.
D3060 Controls and Instrumentation	1985	2001	3	7	DCS 09/03/13	Programmable thermostat for heat pump system. Manual thermostat for apparatus bay unit heater. Heat pump thermostat is OK but would be better located near return air grill by inside unit closet. Apparatus bay controls are aging but functional.
Fire Protection						
D4010 Fire Protection Sprinkler Systems	1985	1985	5	0	DCS 09/03/13	No fire sprinkler installed. Install fire sprinkler.

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Old Medic One Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.3**			
Fire Protection						
D4030 Fire Protection Specialties						
	1985	2001	3	17	DCS 09/03/13	Fire extinguishers. Inspections are current.
Electrical						
D5010 Electrical Service and Distribution						
	1985	1985	3	12	RA 09/03/13	Building has a 200A 120/280V system served by Puget Sound Energy transformer. In working condition. All electrical equipment are over 28 years old, an opportunity for upgrade. Building main panel, located in main entrance conference room area, is a WestingHouse Challenger panel, 200A main breaker panel. This panel subfeeds an outdoor load center panel located on outside of the building, backed up by the generator transfer switch.
D5020 Lighting and Branch Wiring						
	1985	1985	3	5	RA 09/03/13	Interior lighting is all fluorescent T8 lamps with minor incandescent fixtures in toilets and closet. Outdoor lighting has high intensity discharge (HID) and compact fluorescent wall packs. There are no occupancy lighting controls. Branch wiring in conduits, 15A grounding receptacles; no major deficiency, minor broken devices. Lighting is 28 years old, an opportunity for upgrade. Electrical devices and wiring are 28 years old, an opportunity for upgrade.
D5030 Low Voltage Communication Security and Fire Alarm						
	1985	2001	3	13	RA 09/03/13	Building has no fire alarm system or security alarm system. Building has voice/data Cat-5 wiring system. Opportunity for adding a fire alarm system.
D5090 Other Electrical Systems						
	1985	2001	2	8	RA 09/03/13	Building power is backed up by an outdoor propane generator located at the backside of the building supplying power to outside lights, kitchen lights, and garage lights. Generator manufacturer is Generac by EC power, 120/208V, 1-phase, 3-wire, 7-kw;

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Facility Summary

City of Redmond
Fire Station 11 Site
Old Medic One Building

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Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.3**				
Electrical							
D5090 Other Electrical Systems							
							appears to be 10 years old, in good condition. System has only one (1) transfer switch.
E Equipment and Furnishings			**4.0**				
Equipment							
E1010 Commercial Equipment							
	1985	2001	3	3	RD	09/03/13	Residential washer, dryer, and kitchen equipment.
							No deficiencies observed or reported.
E1030 Vehicular Equipment							
	1985	2001	3	13	RD	09/03/13	Vehicle exhaust removal system.
							No deficiencies observed or reported.
Furnishings							
E2010 Fixed Furnishings							
	1985	2001	4	2	RD	09/03/13	Built in kitchen cabinets dated, worn, and should be replaced.
							Replace kitchen cabinets.
E2020 Moveable Furnishings (Capital Funded Only)							
	1985	2001	3	18	RD	09/03/13	Miscellaneous chairs and tables.
							Worn but functional.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Fire Station 11 Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 11 Building	Exterior Closure	$21,600	$6,480	$5,616	$16,848	$50,544	$49,269
	Interior Construction	$2,700	$810	$702	$2,106	$6,318	$5,965
	Interior Finishes	$43,000	$12,900	$11,180	$33,540	$100,620	$94,978
	Vertical Transportation	$15,000	$4,500	$3,900	$11,700	$35,100	$35,100
	Plumbing	$23,000	$6,900	$5,980	$17,940	$53,820	$51,159
	HVAC	$138,900	$41,670	$36,114	$108,342	$325,026	$311,583
	Fire Protection	$3,000	$900	$780	$2,340	$7,020	$7,020
	Electrical	$31,000	$9,300	$8,060	$24,180	$72,540	$72,540
	Facility Total	**$278,200**	**$83,460**	**$72,332**	**$216,996**	**$650,988**	**$627,614**
Fire Station 11 Infrastructure	Site Improvements	$28,000	$8,400	$7,280	$21,840	$65,520	$60,669
	Facility Total	**$28,000**	**$8,400**	**$7,280**	**$21,840**	**$65,520**	**$60,669**
Old Medic One Building	Superstructure	$8,000	$2,400	$2,080	$6,240	$18,720	$18,364
	Exterior Closure	$4,625	$1,388	$1,203	$3,608	$10,823	$10,216
	Roofing	$2,500	$750	$650	$1,950	$5,850	$5,630
	Interior Finishes	$2,813	$844	$731	$2,194	$6,581	$6,332
	Vertical Transportation	$2,000	$600	$520	$1,560	$4,680	$4,680
	Plumbing	$21,000	$6,300	$5,460	$16,380	$49,140	$44,886
	HVAC	$10,500	$3,150	$2,730	$8,190	$24,570	$23,487
	Fire Protection	$9,101	$2,730	$2,366	$7,099	$21,296	$21,296
	Furnishings	$5,000	$1,500	$1,300	$3,900	$11,700	$11,258
	Facility Total	**$65,539**	**$19,662**	**$17,040**	**$51,120**	**$153,360**	**$146,149**
	Site Total	**$371,739**	**$111,522**	**$96,652**	**$289,956**	**$869,868**	**$834,432**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 11 Site

Total Observed Deficiency Repair Direct Cost : $371,739

Total Observed Deficiency Repair Direct Cost (Present Value): $356,595

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$21,600**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$21,055**
Exterior Walls								
Soffits	5	0 2013	Plaster soffit at east door at administration area (adjacent to hose tower) underside finish shows signs of water damage. Unknown if water source has been eliminated.	Investigate water source, possibly from roof. Remove affected materials, replace with new plaster. Repair leak and paint to match existing.	1	$8,000.00	ls	$8,000
Exterior Doors								
Rolling Doors	4	5 2013	Missing seal at top of steel roll-up doors.	Replace missing door seal at top of each door.	8	$250.00	ea	$2,000
Hollow Metal Doors and Frames	5	0 2013	Weather seals are worn and cracked.	Replace foam seal with rubber seal. Six (6) locations.	1	$2,000.00	ls	$2,000
Door Opener	4	2 2013	As reported by staff, automatic door openers frequently break and are in need of repairs.	Remove and replace existing automatic chain drive door openers with heavy duty chain operated openers.	12	$800.00	ea	$9,600

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 11 Site

Total Observed Deficiency Repair Direct Cost : $371,739

Total Observed Deficiency Repair Direct Cost (Present Value): $356,595

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,700**
System: Interior Construction				**Total System Deficiency Repair Cost (Present Value):**				**$2,549**
Fittings								
Countertops	4	3 2013	Countertops show delamination at several locations.	Replace plastic laminate countertop with new plastic laminate counter top.	60	$45.00	lf	$2,700
Facility: Fire Station 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$43,000**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$40,589**
Floor Finishes								
Carpet	5	3 2013	Carpeting is worn and soiled in most areas.	Replace carpet with new carpet and wall base.	8,600	$5.00	sf	$43,000
Facility: Fire Station 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$15,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$15,000**
Elevators and Lifts								
Lift	5	0 2013	Inoperable lift. Genesis 750-lb lift.	Troubleshoot and repair or replace lift.	1	$15,000.00	ea	$15,000
Facility: Fire Station 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$23,000**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$21,863**
Sanitary Waste								
Drain, Waste, and Vent	4	5 2013	Increasing backups.	Clean, test, inspect drain, waste, and vent (DW&V) system including side sewer to point of connection at street. Repair or replace as needed.	1	$5,000.00	ls	$5,000
Rain Water Drainage								

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 11 Site

Total Observed Deficiency Repair Direct Cost : $371,739

Total Observed Deficiency Repair Direct Cost (Present Value): $356,595

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Roof Drains	4	2 / 2013	Several roof drain bodies missing. Several companion overflow roof drains missing. Some roof drain piping insulation missing.	Install approximately six (6) roof drain assemblies including six (6) overflow roof drains, and insulate approximately six (6) 50-foot runs of roof drain piping at each location.	6	$3,000.00	ea	$18,000
Facility: Fire Station 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$138,900**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$133,155**
Terminal and Package Units								
Roof Top Units	4	2 / 2013	Some rooftop unit furnace heat exchangers showing signs of impending failure (excessive corrosion). Most rooftop units have not been serviced for well over one year. Few or no units have economizer.	Schedule replacement of seven (7) rooftop units. One (1) 1.5-ton, one (1) 2.5-ton, and five (5) 3-ton units.	7	$5,000.00	ea	$35,000
Controls and Instrumentation								
DDC	4	2 / 2013	Out of date DDC with extensive comfort complaints throughout Fire Station 11 occupied areas.	Replace with functional, modern system in conjunction with rooftop unit replacement.	23,800	$3.00	sf	$71,400
Other HVAC Systems and Equipment								
Vehicle Engine Exhaust	4	3 / 2013	Existing Nederman system is at end of life.	Refurbish or replace Nederman system.	6	$5,000.00	ea	$30,000
Kitchen Hood	4	1 / 2013	Kitchen hood is missing fire suppression.	Install hood fire suppression.	1	$2,500.00	ls	$2,500

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 11 Site

Total Observed Deficiency Repair Direct Cost : $371,739

Total Observed Deficiency Repair Direct Cost (Present Value): $356,595

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,000**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$3,000**
Other Fire Protection Systems								
Kitchen Hood	5	0 2013	No kitchen hood fire suppression.	Install kitchen hood fire suppression.	1	$3,000.00	ea	$3,000
Facility: Fire Station 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$31,000**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$31,000**
Lighting and Branch Wiring								
Branch Wiring	5	0 2013	Electrical circuits are tripping in the Apparatus Bays, overhead drop cord circuits feeding vehicle charging power; insufficient outlets.	Add eight (8) overhead power reel with retractable drop cord, 30A, 120v; eight (8) dedicated circuits.	8	$3,500.00	ea	$28,000
Branch Wiring	5	0 2013	Electrical circuits are tripping in the kitchen, at the counter; insufficient outlets.	Add three (3) outlets and circuits over counter in the kitchen.	1	$3,000.00	ls	$3,000
Facility: Fire Station 11 Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$28,000**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$25,927**
Parking Lots								
Asphalt Parking Lots	3	4 2013	Asphalt parking lots on east and west sides of fire station have cracking pavement with alligatoring and wear.	Replace pavement on approximately 1/3 of remaining parking lot areas. Remove and replace existing asphalt with full depth section.	700	$40.00	sy	$28,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 11 Site

Total Observed Deficiency Repair Direct Cost : $371,739

Total Observed Deficiency Repair Direct Cost (Present Value): $356,595

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$8,000**
System: Superstructure				**Total System Deficiency Repair Cost (Present Value):**				**$7,848**
Roof Construction								
Deck and Rail	4	1 2013	Roof deck/soffit is rotting and needs to be replaced. Wood deck/soffit. Wood deck rail.	Remove metal roof deck and inspect framing, repair, re-deck, and install water tight roof.	100	$80.00	sf	$8,000
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$4,625**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$4,366**
Exterior Walls								
Plywood Siding	4	3 2013	T-111 plywood siding is exposed to weather.	Clean and paint, scrape, clean, and paint siding.	1,850	$2.50	sf	$4,625
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,500**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$2,406**
Roof Coverings								
Metal Roof	4	2 2013	Extensive water spotting on ceiling tile. No apparent leaks in roof.	Investigate reason for water damage, locate source, and repair.	1	$2,500.00	ls	$2,500
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,813**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$2,706**
Ceiling Finishes								
Acoustical Ceiling Tile	4	2 2013	Extensive staining from water. Some broken tile.	Replace tile.	1,250	$2.25	sf	$2,813

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 11 Site

Total Observed Deficiency Repair Direct Cost : $371,739

Total Observed Deficiency Repair Direct Cost (Present Value): $356,595

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$2,000**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access.	Provide permanent outside ladder to roof.	1	$2,000.00	ea	$2,000
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$21,000**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$19,182**
Plumbing Fixtures								
Plumbing Fixtures	4	5 2013	Water closet, lavatory, shower, sink, deep sink, and wall box are all aged and worn; approaching end of life.	Replace plumbing fixtures.	6	$3,000.00	ea	$18,000
Rain Water Drainage								
Gutter and Downspouts	4	3 2013	Gutters and downspouts are damaged, dirty, and connection to storm are semi-open and full of debris.	Trim landscaping (trees) away from building. Clean and repair gutters and downspouts. Clean and test storm connections. Install downspout to storm caps to keep out debris.	1	$3,000.00	ls	$3,000
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$10,500**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$10,037**
Cooling Generating Systems								
Communications Room Cooling	5	0 2013	No cooling for communications room.	Install 1-ton ductless split cooling system for communications room.	1	$3,500.00	ls	$3,500
HVAC Distribution Systems								

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 11 Site

Total Observed Deficiency Repair Direct Cost : $371,739

Total Observed Deficiency Repair Direct Cost (Present Value): $356,595

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Heat Pump System	4	3 2013	Heat pump system does not meet codes or standards with no outside air, restricted return air path, blocked diffusers, and other issues.	Renew systems to meet current code minimum requirements.	1	$5,000.00	ls	$5,000
Terminal and Package Units								
Apparatus Bay HVAC	4	5 2013	Unit heater nearing end of life. Outside air intake missing motor operated damper. Exhaust not high/low.	Replace unit heater. Install outside air motor operated damper. Reconfigure exhaust intake for high/low intakes.	1	$2,000.00	ls	$2,000
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$9,101**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$9,101**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0 2013	No fire sprinkler installed.	Install non-metallic fire sprinkler system.	1,916	$4.75	sf	$9,101
Facility: Old Medic One Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Furnishings				**Total System Deficiency Repair Cost (Present Value):**				**$4,811**
Fixed Furnishings								
Kitchen Cabinets	4	2 2013	Worn and damaged wood cabinets.	Replace cabinets.	20	$250.00	lf	$5,000

Note: Cost estimates shown are direct construction costs.

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 11 Site **Total Site Opportunity Cost: $723,868**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 11 Building**						
System:	**Exterior Closure**	**Total Cost: $6,760**					
B2020	**Exterior Windows**						
		Exterior aluminum windows, recessed 0.5-inch from face of masonry. No roof overhang present. No protection of glazing unit from weather at wall surface above.	Install drip edge flashing at window head.	26.00	$260.00	ea	$6,760
Facility:	**Fire Station 11 Building**						
System:	**Roofing**	**Total Cost: $12,285**					
B3010	**Roof Coverings**						
		Apparatus bay insulation.	Install roof insulation at underside of high bay area at apparatus area.	5,460.00	$2.25	sf	$12,285
Facility:	**Fire Station 11 Building**						
System:	**Interior Construction**	**Total Cost: $4,060**					
C1030	**Fittings**						
		Metal shelving units, some tall cabinets are not anchored to wall with earthquake straps.	Install earthquake straps at all free standing tall shelving units and tall cabinets.	1.00	$2,500.00	ls	$2,500
		Interior walls throughout facility show heavy wear and damage at wall corners.	Provide 3x3 stainless steel corner guards at each outside wall corner.	60.00	$26.00	lf	$1,560
Facility:	**Fire Station 11 Building**						
System:	**Interior Finishes**	**Total Cost: $2,600**					
C3010	**Wall Finishes**						
		0.5-inch by 0.5-inch plastic, clear, corner guards installed in various locations.	Remove existing plastic corner guards. Provide 2x2 heavy duty, screwed in corner guards at all corridor corners throughout.	1.00	$2,600.00	ls	$2,600
Facility:	**Fire Station 11 Building**						
System:	**Plumbing**	**Total Cost: $50,000**					
D2030	**Sanitary Waste**						
		Apparatus now washed inside overloading apparatus bay catch basins, drains, piping, and oil/water separator.	Replace with trench drains in conjunction with A-Series slab on grade replacement.	300.00	$50.00	ft	$15,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 11 Site **Total Site Opportunity Cost: $723,868**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
D2040	**Rain Water Drainage**						
		With large roof area and regular apparatus washer, opportunity to wash vehicles with harvested rain water.	Install 10,000-gallon rain water harvesting to supply apparatus bay wash water and flushing water systems.	1.00	$35,000.00	ls	$35,000
Facility:	**Fire Station 11 Building**						
System:	**HVAC**	**Total Cost: $274,850**					
D3030	**Cooling Generating Systems**						
		Mission critical communications/radio/radio room equipment rooms are cooled only by general HVAC system. The most critical of these spaces should be cooled by dedicated equipment.	Install ductless split direct expansion (DX) cooling in mission critical equipment rooms. Approximately 1-ton each.	3.00	$3,000.00	ea	$9,000
D3040	**HVAC Distribution Systems**						
		Apparatus bay ventilation does not meet current codes and standards.	Provide distributed make-up air and high-low exhaust per code to improve indoor health and safety.	1.00	$10,000.00	ls	$10,000
D3050	**Terminal and Package Units**						
		Existing office, living, and training areas HVAC roof top unit systems provide poor comfort and waste energy. Opportunity to upgrade to variable refrigerant flow (VRF) and heat recovery ventilator (HRV) technology to greatly improve thermal comfort, indoor air quality, and energy efficiency.	Replace HVAC roof top unit system with variable refrigerant flow (VRF) and heat recovery ventilator (HRV) system.	23,800.00	$10.00	sf	$238,000
D3060	**Controls and Instrumentation**						
		Energy inefficient with simultaneous heating and cooling, unbalanced air flow, and unclear sequences.	Conduct retro-commissioning (Cx) and re-TAB (test, adjust, and balance) and/or energy audit. Seek Puget Sound Energy rebates for improvements.	23,800.00	$0.75	sf	$17,850
Facility:	**Fire Station 11 Building**						
System:	**Electrical**	**Total Cost: $157,100**					
D5010	**Electrical Service and Distribution**						
		Electrical service and distribution, branch panels, and transfer switch are over 30 years old. Recommend opportunity for upgrade.	Upgrade electrical service and transfer switch to larger capacity. Replace all branch panels.	23,800.00	$4.50	sf	$107,100

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 11 Site **Total Site Opportunity Cost: $723,868**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
D5020	**Lighting and Branch Wiring**						
		Apparatus bay lighting, controls, and devices are over 30 years old. Recommend opportunity for upgrade.	Upgrade lighting to fluorescent T5HO high bay with occupancy control in high ceiling. Low ceiling with fluorescent T75. Replace all wiring and receptacles.	1.00	$50,000.00	ls	$50,000
Facility:	**Fire Station 11 Building**						
System:	**Furnishings**	**Total Cost: $6,000**					
E2010	**Fixed Furnishings**						
		Building gear is currently stored by means of hooks and small benched.	Remove and provide bunker gear storage cabinets, sized for fire fighting equipment, at apparatus bay.	15.00	$400.00	ea	$6,000
Facility:	**Old Medic One Building**						
System:	**Exterior Closure**	**Total Cost: $134,120**					
B2010	**Exterior Walls**						
		The condition of the building is such that with limited maintenance it could easily deteriorate to the point that it needs to be demolished. On the other hand, a reasonable investment now could extend the life of the building another 20 years.	Remove and rebuild front porch. Repair roof and insure no leaks. Repair and repaint exterior. Reinstall roof and foundation vent screens. Remove below grade wood, clear foundation vents. Remove ceiling tile, paint, and straighten grid, install new ceiling tile. Replace all doors and trim. Repair and paint interior. Install new kitchen. Replace all flooring and install HVAC and electrical upgrades noted elsewhere in this report.	1,916.00	$70.00	sf	$134,120
Facility:	**Old Medic One Building**						
System:	**HVAC**	**Total Cost: $15,000**					
D3010	**Energy Supply**						
		Currently all electric heat. With natural gas available at street, upgrade to gas-furnace heat for original building and infrared gas heat for apparatus bay to increase comfort and reduce energy costs.	Install gas service when HVAC system is renewed.	1.00	$5,000.00	ls	$5,000
D3040	**HVAC Distribution Systems**						

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 11 Site **Total Site Opportunity Cost: $723,868**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
		Original building HVAC system does not meet code standards and delivers poor comfort and poor indoor air quality.	Upgrade to hybrid system with high efficiency gas furnace heat with split direct expansion (DX) heat pump with weather heat and DX cool.	1.00	$10,000.00	ls	$10,000
Facility:	**Old Medic One Building**						
System:	**Electrical**	**Total Cost: $61,093**					
D5010	**Electrical Service and Distribution**						
		Opportunity of replacing existing 200A 120/208V service and distribution and transfer switch (outdoor equipment); original building equipment, 28 years old.	Upgrade with new main panel transfer switch, emergency panel, and branch panel.	1.00	$25,000.00	ls	$25,000
D5020	**Lighting and Branch Wiring**						
		Electrical branch wiring and devices are 28 years old.	Provide electrical system branch wiring and devices upgrade.	1,916.00	$7.00	sf	$13,412
		Lighting system is 28 years old and has no lighting occupancy sensors.	Provide lighting system fixtures and add occupancy controls.	1,916.00	$7.00	sf	$13,412
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Building has no fire alarm system.	Add fire alarm system.	1,916.00	$2.75	sf	$5,269
D5090	**Other Electrical Systems**						
		Building has no emergency battery backup light.	Provide battery pack backup emergency lights in hallway and at exterior doors.	8.00	$500.00	ea	$4,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Facility Summary

City of Redmond
Fire Station 12 Site
Fire Station 12 Building

4211 148th Avenue NE
Redmond, WA 98007

Facility Code	
Facility Size - Gross S.F.	7,050
Year Of Original Construction	1980
Facility Use Type	Fire Station
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	1999
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**2.9**			
Facility Condition Index (FCI)	0.18			
Current Replacement Value (CRV)	$3,489,000	**Predicted Renewal Budget (6 yrs)**	$675,000	$645,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$1,221,000	$1,095,000
		Observed Deficiencies (6 yrs)	$472,000	$443,000
		Observed Deficiencies (ALL)	$472,000	$443,000
		Opportunity Total Project Cost	$446,000	N/A

Facility Condition Summary

Architectural:
Single story building with mezzanine. Foundation is footing stem wall with slab on grade. Exterior is a mix of load bearing masonry with some frames walls with metal siding at the east. Roof is wood construction with beams. Hose tower is uninsulated masonry. Apparatus bay is uninsulated. Roof is composite sheet with two (2) skylights. Interior walls are combination masonry and wood/steel frames. Stud walls are gypsum wall board with some ceramic tile in restrooms. Ceilings are a mix of quarry tile, sealed concrete, ceramic, carpet, and sheet flooring. Built-in casework of counters and tall storage. Kitchen has standard appliances and laundry has residential appliances.

Electrical:
Building electrical service is 600A, 120/240V, 1-phase, 3-wire served by Puget Sound Energy underground service, with current transformer and meter on outside wall of building. Building has a 35-kw 120/240V, 1-phase, 3-wire outdoor generator. Generator feeds underground to the transfer switch inside building apparatus bay. Interior lighting is mostly T8 fluorescent with some T12, and some incandescent fixtures in toilet room and shower. Outdoor lighting are old high intensity discharge (HID) type and compact fluorescent type. All branch wiring are in conduits. Devices are 15A and 20A grounding type. Circuits are tripping in the apparatus bay. Lack of power for vehicle charging. Building has a fire alarm system. Building has no security alarm system.

Mechanical:
Original Fire Station 12 (2,200 sf) was demolished and rebuilt in 1980, then partially renovated in 1999. Fire Station 12 building includes a 2.5-bay apparatus bay, hose tower, open administration and dayroom, kitchen and dining, and dorm area with men's and women's bathrooms. Fire Station 12 is located in Bellevue city limits.
HVAC is two (2) roof top unit gas-packs for station house, and forced air gas-fired furnace with under floor distribution for apparatus bay.
Plumbing is city water and sewer; copper piping; cast iron drain, waste, and vent (DW&V); and gas fired domestic hot water heater.
Fire sprinkled throughout.

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City of Redmond
Fire Station 12 Site
Fire Station 12 Building

4211 148th Avenue NE
Redmond, WA 98007

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**2.5**			
Foundations						
A1010 Standard Foundations						
	1980	1980	2	55	JB 09/04/13	Stem footing. Good condition.
A1030 Slab On Grade						
	1980	1999	3	20	JB 09/04/13	Slab on grade throughout. Apparatus bay slab on grade is cracking. Appears only saw cut joints, but no control joints. Cracks are level and show no signs of lift.
B Shell			**2.7**			
Superstructure						
B1010 Floor Construction						
	1980	1980	3	55	JB 09/04/13	Mezzanine floor is wood structure. Far excessively loaded with storage, some staining from stored materials and tools. Recommend replace wood floor decking and cover with sheet goods (vinyl flooring).
B1020 Roof Construction						
	1980	1980	2	55	JB 09/04/13	Wood framed roof structure. Good condition.
Exterior Closure						
B2010 Exterior Walls						
	1980	1999	2	27	JB 09/04/13	Mostly load bearing masonry, east wall is stud framed with metal siding. Good condition.
B2020 Exterior Windows						
	1980	1999	2	12	JB 09/04/13	Aluminum dual glazed windows. Good condition.
B2030 Exterior Doors						
	1980	1999	4	5	JB 09/04/13	Hollow metal doors and frames. Overhead sectional doors at apparatus bay. Storefront door

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**2.7**			
Exterior Closure						
B2030 Exterior Doors						
						and window unit at main entrance and patio. Door hardware includes keypad lock set. Hollow metal frames show rust at north side. Apparatus bay doors need paint and edge seals are failing. Apparatus bay hollow metal doors lever exit handles, should be panic hardware.
Roofing						
B3010 Roof Coverings						
	1980	1999	4	4	JB 09/04/13	Composite sheet roofing, glue down. Roofing is aged and is in need of replacement.
B3020 Roof Openings						
	1980	1999	4	0	JB 09/04/13	Two (2) single glazed skylights unit over men's room has additional translucent panel at ceiling. Skylights allow heat loss and should be replaced.
B3030 Projections						
	1980	1999	2	36	JB 09/04/13	Steel canopy at east entrance, standing seam roofing. Good condition, needs cleaning on roofing.
C Interiors			**3.2**			
Interior Construction						
C1010 Partitions						
	1980	1999	2	36	JB 09/04/13	Interior partitions are a mixture of load bearing masonry and stud framed walls. Interior windows are hollow metal frame at apparatus bay and wood frame sliding glass at entrance lobby. Good condition.
C1020 Interior Doors						
	1980	1999	4	5	JB 09/04/13	Interior doors are mix of hollow metal doors and frames and wood doors with hollow metal frames. Wood frames at dorm rooms. Older hardware.

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City of Redmond
Fire Station 12 Site
Fire Station 12 Building

4211 148th Avenue NE
Redmond, WA 98007

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.2**			
Interior Construction						
C1020 Interior Doors						Missing hollow metal door at apparatus bay storage room; not code compliant. Several door frames show rust or need paint. Doors need paint touchup. Hardware is not working or sticks on several doors.
C1030 Fittings	1980	1999	3	8	JB 09/04/13	Restroom countertops. Day room marker boards. Room signs. Countertops are in fair condition. Marker boards surface is wearing. Recommend new signs.
Staircases						
C2010 Stair Construction	1980	1980	2	55	JB 09/04/13	Steel stairs at hose tower, grated landing and risers. Good condition. No finish on stairs.
Interior Finishes						
C3010 Wall Finishes	1980	1999	4	5	JB 09/04/13	Gypsum wall board and paint in dorm rooms and administration, kitchen, and corridors. Gypsum wall board/paint/ceramic tile at apparatus bay restroom and men's room. Fiber reinforced plastic at women's restrooms. Gypsum wall board/paint at weight room. Restroom areas are in good condition. Corridors have worn paint, various dents, and dings. Heavy wear at weight room.
C3020 Floor Finishes	1980	1999	4	4	JB 09/04/13	Various floor finishes: sealed concrete in apparatus bay; carpet in dorms, administration, and corridors; quarry tile at men's restroom and kitchen; sheet vinyl at women's restroom. Carpet is worn at all traffic areas. Tile is good; sheet vinyl is good. Recommend rubber flooring at weight room.
C3030 Ceiling Finishes						

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City of Redmond
Fire Station 12 Site
Fire Station 12 Building

4211 148th Avenue NE
Redmond, WA 98007

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
C Interiors			**3.2**				
Interior Finishes							
C3030 Ceiling Finishes							
	1980	1999	4	3	JB	09/04/13	Acoustic ceiling tile in corridor, kitchen, day room, office, and weight room. Exposed ceiling in apparatus bay. Gypsum wall board hard lid in storage room, restrooms, and dorm rooms. Acoustic ceiling tile is worn and old, brittle and stained in several locations. Storage room at south side of apparatus bay has no hard lid or ceiling; not code compliant for fire rating.
D Services			**3.1**				
Vertical Transportation							
D1090 Other Conveying Systems							
	1980	1980	5	0	DCS	09/04/13	Short access ladder and small door to low roof; no ladder to high roof. Install short permanent ladder to high roof to facilitate maintenance. (Less than $2,000.)
Plumbing							
D2010 Plumbing Fixtures							
	1980	1999	3	21	DCS	09/04/13	Porcelain water closets, urinals, lavatories, and stainless steel sinks. Tile showers. Stainless steel decontamination sink. Laundry wall box. No custodial closet or mop sink. In fair to good condition. Opportunity for custodial sink.
D2020 Domestic Water Distribution							
	1980	1980	3	10	DCS	09/04/13	City water. Copper piping. Gas-fired A.O. Smith 1999, 75-gallon, 120-mbh domestic hot water heater. Hose bibs outside. In fair condition. Domestic hot water heater approaching end of life.
D2030 Sanitary Waste							
	1980	1980	3	10	DCS	09/04/13	City sewer with cast iron drain, waste, and vent (DW&V). Catch basins in each apparatus bay with drain to oil/water separator (in side apparatus bay at southeast corner). Apparatus bay heat from underground supply air ducts to

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City of Redmond
Fire Station 12 Site
Fire Station 12 Building

4211 148th Avenue NE
Redmond, WA 98007

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.1**				
Plumbing							
D2030 Sanitary Waste							
							catch basin sides. No debris screens in catch basins. New regulations require apparatus washing inside apparatus bay.
D2040 Rain Water Drainage							
	1980	1999	3	26	DCS	09/04/13	All internal roof drains and overflow roof drains, except at west entry canopy which has gutter and downspouts to storm. Low roof has three (3) sets of roof drains and overflow roof drains; high roof has two (2) sets. Roof drains and overflow roof drains are in good condition at roof levels. Overflow roof drain day lighting is inconsistent; verify all meet code requirements (less than $2,000). West canopy downspout connection to storm at grade is undersized (less than $2,000).
D2090 Other Plumbing Systems							
	1980	1999	3	10	DCS	09/04/13	Oil/water separator for apparatus bay. Oxygen fill station for medical response. SCUBA bottle storage only (refilled at Fire Station 11). No compressed air system. Confirm oxygen storage meets code requirements (less than $2,000). Opportunity to install compressed air system.
HVAC							
D3010 Energy Supply							
	1980	1999	3	26	DCS	09/04/13	Natural gas from Puget Sound Energy via meter number 1163338 rated at 425-cfh. No seismic valve at gas service entry. Small gas leak at patio barbeque connection. Tone alarm gas shut off system reportedly not connection to kitchen over barbeque (less than $2,000).
D3030 Cooling Generating Systems							
	1980	1999	5	0	DCS	09/04/13	Communications equipment in laundry/mechanical room. With little ventilation, no cooling, and unfiltered air, communications equipment is in poor

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.1**			
HVAC						
D3030 Cooling Generating Systems						
						location.
D3040 HVAC Distribution Systems						
	1980	1999	4	3	DCS 09/04/13	Apparatus bay is 100% outside air with outside air intake for low roof area to gas-fired forced air furnace to underground supply air duct to each bay's catch basin. No relief or exhaust observed. Two (2) ceiling fans. Regulation requirements inside apparatus washing now introduce moisture into apparatus bay. See "Sanitary Waste" section above for plumbing perspective and deficiency.
D3050 Terminal and Package Units						
	1980	1999	4	3	DCS 09/04/13	Roof top units A and B serve station house. Units are 4-ton gas-packs with power exhaust economizer. Roof top units are approaching end of life. Roof top units need service; filters are filthy, and intake screens are corroded and failing.
D3060 Controls and Instrumentation						
	1980	1999	3	5	DCS 09/04/13	Programmable and manual thermostats. Mix of older and newer controls. Replace older controls (less than $2,000). Opportunity to upgrade to DDC ($10,000+).
D3090 Other HVAC Systems and Equipment						
	1980	1999	3	5	DCS 09/04/13	Three (3) separate Nederman vehicle engine exhaust systems. Aged and in need of renewal.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1980	1999	3	26	DCS 09/04/13	Wet pipe throughout. Inspect and test current.
D4020 Stand-Pipe and Hose Systems						
	1980	1999	3	16	DCS 09/04/13	Fire extinguishers.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.1**			
Fire Protection						
D4020 Stand-Pipe and Hose Systems						
						Inspections current.
Electrical						
D5010 Electrical Service and Distribution						
	1976	1999	2	18	RA 09/04/13	Building electrical system is 600A, 120/240V, 1-phase, 3-wire with main wire way feeding main panel and transfer switch breaker. Service fed underground from Puget Sound Energy transformer. Main panel and branch panels are GE equipment, NLAB series; working well.
D5020 Lighting and Branch Wiring						
	1976	1999	3	16	RA 09/04/13	Lighting is all fluorescent T8 lamps; in the office and dorm areas lighting is in good condition. Lighting is old in the apparatus bay and storage mezzanine. No occupancy lighting controls. Branch wiring and devices are 15A and 20A grounding type, in good condition in the office and dorms, older condition in the apparatus bays. Circuits are tripping for vehicle charging. Opportunity for lighting upgrade in apparatus bay and mezzanine. Opportunity for electrical branch wiring upgrade in apparatus bay and mezzanine. Exterior lighting fixtures are old and in poor condition.
D5030 Low Voltage Communication Security and Fire Alarm						
	1976	1999	2	11	RA 09/04/13	Building has a fire alarm system with main panel located in communications room. Notifier AFP-200 fire alarm control panel. Devices consist of smoke detectors, horn strobes, and pull stations. Voice/data intermediate distribution frame (IDF) located in communications room, Cat-5 wiring and devices. Fire alarm system and voice/data system are both in good condition.
D5090 Other Electrical Systems						
	1976	1999	2	10	RA 09/04/13	Building has an outdoor generator with diesel base tank. Generator feeds the transfer switch inside building. Generator supplies standby

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City of Redmond
Fire Station 12 Site
Fire Station 12 Building

4211 148th Avenue NE
Redmond, WA 98007

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.1**			
Electrical						
D5090 Other Electrical Systems						power to building power/lighting load. Building also has battery pack emergency wall lights. Generator manufactured by Generac, 35-kw, 120/240V. Automatic transfer switch (ATS) manufactured by Generac. Generator and ATS are in good condition.
E Equipment and Furnishings			**3.0**			
Equipment						
E1010 Commercial Equipment						
	1980	1999	3	10	JB 09/04/13	Laundry equipment. Fair condition.
E1090 Other Equipment						
	1980	1999	2	15	JB 09/04/13	Weight room equipment. Good condition.
Furnishings						
E2010 Fixed Furnishings						
	1980	1999	3	9	JB 09/04/13	Window blinds. Casework. Window blinds are bent in some locations, pull strings need maintenance. Casework has signs of wear and tear; in fair condition.
E2020 Moveable Furnishings (Capital Funded Only)						
	1980	1999	3	16	JB 09/04/13	Office and station house furniture. Apparatus bay storage racks. Miscellaneous. Fair condition.

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Facility Summary

City of Redmond
Fire Station 12 Site
Fire Station 12 Infrastructure

4211 148th Avenue NE
Redmond, WA 98007

Facility Condition Summary

Fire Station 12 and associated pavement covers nearly the entire half acre site. There is a concrete drive apron for the three (3) truck bays off of 148th Avenue NE. There is an asphalt access drive along the south side of the building that extends around to the paved area at the rear of the building, allowing circular access through the back into the apparatus bays. There are some parking areas along the asphalt access drive. The site has mature landscaping with screening shrubs along the rear lot. The site is served by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	1980	1980	3	4	MK	09/03/13	Approximately half of site pavement is concrete, and half asphalt. Concrete pavement drive apron at front of building and at rear of apparatus bays. Asphalt access drive and parking stalls along south side of building. □ □ Concrete pavement is in fair to good condition, with some cracks throughout. Cracking is likely due to lack of expansion joints in original pavement, and displacement is not occurring. Some alligatoring and cracking of asphalt pavement.
G2030 Pedestrian Paving							
	1980	1980	3	8	MK	09/03/13	Concrete walk at front entry. Concrete patio at south side of building. □ □ Fair condition.
G2040 Site Development							
	1980	1980	4		MK	09/03/13	Fire station sign at front of building is missing. Supports are still in place. □ Station signage needed (less than $2,000).
G2050 Landscaping							
	1980	1980	3	7	MK	09/03/13	Mature landscaping and grass. Irrigation system unknown. □ □ Landscaping is generally in good condition. Trees are overhanging building at the front and north sides of the building and should be limbed up. (Less than $2,000.)

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Facility Summary

City of Redmond
Fire Station 12 Site
Fire Station 12 Infrastructure

4211 148th Avenue NE
Redmond, WA 98007

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2050 Landscaping							
Site Civil / Mechanical Utilities							
G3010 Water Supply							
	1980	1980	3	12	MK	09/03/13	Domestic water service and fire sprinkler supply lines to fire station from City of Redmond system. □ No known issues.
G3020 Sanitary Sewer							
	1980	1980	3	17	MK	09/03/13	Sanitary Sewer service to buildings from the City of Redmond system. □ □ No known issues.
G3030 Storm Sewer							
	1980	1980	3	12	MK	09/03/13	Catch basin and pipe system in pavement areas. Drive apron sheet flows toward 148th Avenue NE; no trench drain. Fire Station building roof drains appear to be interior to the building. Storm drains likely connect into City of Redmond system. □ No known issues.
G3060 Fuel Distribution							
	1980	1980	3	7	MK	09/03/13	Natural gas meter at northeast corner of the building. □ □ No known issues.
Site Electrical utilities							
G4010 Electrical Distribution							
	1980	1980	3	7	MK	09/03/13	Underground electric service to building. Emergency generator with base tank at rear of building. □ No known issues.
G4020 Site Lighting							
	1980	1980	3	7	MK	09/03/13	Wall lights on building exterior. □ Staff reports lighting not an issue.

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Facility Summary

City of Redmond
Fire Station 12 Site
Fire Station 12 Infrastructure

4211 148th Avenue NE
Redmond, WA 98007

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Electrical utilities						
G4020 Site Lighting						
G4030 Site Communications and Security						
	1980	1980	3	7	MK 09/03/13	Underground telephone to the buildings. "Hy-Security" brand access gate along south access drive. See also building electrical sections. □ □ No known issues.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Fire Station 12 Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 12 Building	Superstructure	$79,425	$23,828	$20,651	$61,952	$185,855	$174,985
	Exterior Closure	$12,600	$3,780	$3,276	$9,828	$29,484	$26,779
	Roofing	$4,000	$1,200	$1,040	$3,120	$9,360	$9,360
	Interior Construction	$30,000	$9,000	$7,800	$23,400	$70,200	$63,765
	Interior Finishes	$23,000	$6,900	$5,980	$17,940	$53,820	$49,985
	Plumbing	$5,000	$1,500	$1,300	$3,900	$11,700	$10,628
	HVAC	$26,500	$7,950	$6,890	$20,670	$62,010	$58,767
	Electrical	$21,000	$6,300	$5,460	$16,380	$49,140	$49,140
	Facility Total	**$201,525**	**$60,458**	**$52,397**	**$157,190**	**$471,569**	**$443,409**
Fire Station 12 Infrastructure	Site Improvements	$11,250	$3,375	$2,925	$8,775	$26,325	$24,376
	Facility Total	**$11,250**	**$3,375**	**$2,925**	**$8,775**	**$26,325**	**$24,376**
	Site Total	**$212,775**	**$63,833**	**$55,322**	**$165,965**	**$497,894**	**$467,785**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 12 Site

Total Observed Deficiency Repair Direct Cost : $212,775

Total Observed Deficiency Repair Direct Cost (Present Value): $199,908

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 12 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$79,425**
System: Superstructure				**Total System Deficiency Repair Cost (Present Value):**				**$74,780**
Floor Construction								
Wood Framed Floor Construction	4	5 2013	Mezzanine is wood framed beams, joists, and wood deck. Wood deck is stained with fluids, oil, and other fluids.	Remove plywood decking. Replace with wood deck and vinyl flooring. Relocate heavy storage items.	600	$9.00	sf	$5,400
Roof Construction								
Composite Roofing	4	3 2013	Roof material is aged and worn on both upper and lower roof. Temporary leak repair recently done at south edge. Composite sheet roofing, glue down.	Re-roof entire roof. Recommend complete tear off to generate opportunity to increase insulation.	7,050	$10.50	sf	$74,025
Facility: Fire Station 12 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$12,600**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$11,444**
Exterior Doors								
Hollow Metal Doors and Frames	4	5 2013	Rust on several doors and frames. Exit hardware is lever type.	Sand and prime doors and frames. Paint. Replace exit hardware with panic bars. Reset hinges.	3	$1,700.00	ea	$5,100
Sectional Overhead Doors	4	5 2013	Apparatus bay doors paint is worn and fading. Edge seals are cracked and coming off.	Remove old seals, replace with new. Prime and paint all doors.	5	$1,500.00	ea	$7,500

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 12 Site

Total Observed Deficiency Repair Direct Cost : $212,775

Total Observed Deficiency Repair Direct Cost (Present Value): $199,908

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 12 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$4,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$4,000**
Roof Openings								
Skylights	4	0 2013	Skylights are single glazed and allow heat loss.	Remove and replace skylights with translucent panel skylights.	2	$2,000.00	ea	$4,000
Facility: Fire Station 12 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$30,000**
System: Interior Construction				**Total System Deficiency Repair Cost (Present Value):**				**$27,250**
Interior Doors								
Doors	4	5 2013	Hardware is sticking and not functioning. Some hollow metal frames show rust. Door paint is worn and chipped. Interior hollow metal frames, wood frames, hollow metal doors, and wood doors. Older door hardware.	Sand, prep, primer, and paint hollow metal doors and frames. Replace outdated non-functioning hardware with new code compliant hardware. Approximately 20 doors.	20	$1,500.00	ea	$30,000
Facility: Fire Station 12 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$23,000**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$21,361**
Wall Finishes								
Gypsum Wall Board and Paint	4	5 2013	Gypsum wall board and paint at administration areas, weight room, corridor, and kitchen are worn, dented, damaged in several locations.	Patch, repair, and repaint gypsum wall board at dorms, corridor, day room, and weight room.	1,000	$3.50	sf	$3,500
Floor Finishes								
Carpet	4	4 2013	Carpet is worn in all traffic areas.	Replace old carpet with new in all areas except rubber flooring should go in weight room.	2,500	$5.00	sf	$12,500

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 12 Site

Total Observed Deficiency Repair Direct Cost : $212,775

Total Observed Deficiency Repair Direct Cost (Present Value): $199,908

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Ceiling Finishes								
Ceiling Finishes	4	3 2013	Acoustic ceiling tile is stained, old, and brittle. Missing gypsum wall board ceiling at apparatus bay storage.	Remove and replace acoustic ceiling tiles in administration space with new. Install cleanable acoustical ceiling tile in kitchen. Install finished, painted gypsum wall board at storage room.	1	$7,000.00	ls	$7,000
Facility: Fire Station 12 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$4,542**
Domestic Water Distribution								
Domestic Hot Water Heater	4	5 2013	Domestic hot water heater is approaching end of life.	Replace domestic hot water heater.	1	$5,000.00	ea	$5,000
Facility: Fire Station 12 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$26,500**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$25,114**
Cooling Generating Systems								
Communications Cooling	5	0 2013	Communications equipment is in warm/hot, humid space with poor indoor air quality.	Relocate communications equipment to dedicated communications closet with appropriate cooling; nominally 1/2-ton ductless split.	1	$7,500.00	ls	$7,500
HVAC Distribution Systems								
Apparatus Bay HVAC	4	3 2013	No general exhaust in apparatus bay.	Install high/low exhaust system per code.	1	$10,000.00	ls	$10,000
Other HVAC Systems and Equipment								

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 12 Site

Total Observed Deficiency Repair Direct Cost : $212,775

Total Observed Deficiency Repair Direct Cost (Present Value): $199,908

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Engine Exhaust	3	5 2013	Aged engine exhaust.	Renew engine exhaust.	3	$3,000.00	ea	$9,000
Facility: Fire Station 12 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$21,000**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$21,000**
Lighting and Branch Wiring								
Branch Wiring	5	0 2013	Insufficient outlets and circuits for vehicle charging power in apparatus bay. Circuits are tripping.	Add six (6) overhead power reels with receptacles drop cords, 30A, 120v, six (6) dedicated circuits. Connect to generator power panel.	6	$3,500.00	ea	$21,000
Facility: Fire Station 12 Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$11,250**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$10,417**
Roadways								
Roadways	3	4 2013	Asphalt parking lots on east and west sides of fire station have pavement cracking, alligatoring, and wear in some places.	Remove and replace existing asphalt where deteriorated with full depth section, suitable for fire truck loading.	250	$45.00	sy	$11,250

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 12 Site **Total Site Opportunity Cost: $190,400**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 12 Building**						
System:	**Interior Construction**	**Total Cost: $4,000**					
C1030	**Fittings**						
		Interior walls throughout facility show heavy wear and damage at wall corners.	Provide 3x3 stainless steel corner guards at each outside wall corner.	1.00	$2,000.00	ls	$2,000
		Metal shelving units, some tall cabinets are not anchored to wall with earthquake straps.	Install earthquake straps at all free standing tall shelving units and tall cabinets.	1.00	$2,000.00	ls	$2,000
Facility:	**Fire Station 12 Building**						
System:	**Plumbing**	**Total Cost: $60,000**					
D2010	**Plumbing Fixtures**						
		No custodial closet, deep sink, or mop sink. Currently decontamination sink is used for housekeeping introducing unsanitary conditions.	Install separate janitor closet with deep sink or mop sink.	1.00	$10,000.00	ls	$10,000
D2030	**Sanitary Waste**						
		New regulations requiring apparatus washing inside apparatus bay significantly increases load on catch basins and oil/water separator. Additional underground supply air evaporates wash water adding humidity to apparatus bay slowing bunker gear drying and increasing winter condensation on uninsulated surface.	Separate catch basins and HVAC system. Increase oil/water separator capacity as needed. Provide catch basin or new trench drain screen/pre-filter.	5.00	$5,000.00	ea	$25,000
D2040	**Rain Water Drainage**						
		Apparatus washed on site. Interior roof drain system. Opportunity to collect roof drains for wash water and/or flushing water.	Install rain water harvesting system, 5,000-gallons.	1.00	$20,000.00	ls	$20,000
D2090	**Other Plumbing Systems**						
		Compressed air is helpful in ensuring apparatus tires are at proper pressure.	Install permanent compressed air system with hose reels similar to Fire Station 11.	1.00	$5,000.00	ls	$5,000

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 12 Site **Total Site Opportunity Cost: $190,400**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 12 Building**						
System:	**HVAC**	**Total Cost: $76,400**					
D3040	**HVAC Distribution Systems**						
		Apparatus bay HVAC is inappropriate for use. Upgrade to overhead gas-fired infrared heat and demand controlled ventilation general high/low exhaust.	Install infrared heat and high/low exhaust.	1.00	$20,000.00	ls	$20,000
D3050	**Terminal and Package Units**						
		Roof top units deliver poor comfort and marginal indoor air quality.	Replace with variable refrigerant flow (VRF) and heat recovery ventilator (HRV) technology.	7,050.00	$5.00	sf	$35,250
D3060	**Controls and Instrumentation**						
		No DDC controls.	Install DDC controls.	7,050.00	$3.00	sf	$21,150
Facility:	**Fire Station 12 Building**						
System:	**Electrical**	**Total Cost: $50,000**					
D5020	**Lighting and Branch Wiring**						
		Apparatus bay lighting, controls, and electrical devices are old and dirty.	Upgrade lighting to T5HO fluorescent high bay, and T5 fluorescent lights in mezzanine. Add occupancy sensors. Replace all wiring, devices, and receptacles.	1.00	$50,000.00	ls	$50,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Facility Summary

City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Code	
Facility Size - Gross S.F.	6,500
Year Of Original Construction	1973
Facility Use Type	Fire Station
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2009
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.1**			
Facility Condition Index (FCI)	0.20			
Current Replacement Value (CRV)	$3,217,000	**Predicted Renewal Budget (6 yrs)**	$749,000	$718,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$1,436,000	$1,285,000
		Observed Deficiencies (6 yrs)	$548,000	$524,000
		Observed Deficiencies (ALL)	$574,000	$546,000
		Opportunity Total Project Cost	$495,000	N/A

Facility Condition Summary

Architectural:
Single story building with partial height mezzanine accessed by ceiling telescopy ladder. Original building apparatus bay and day room/administration, and kitchen; dorm rooms were added in 1993. Exterior is load bearing masonry with north wall stud wall framed. Standard foundations and slab on grade. Aluminum windows and hollow metal doors and frames on exterior. Apparatus bay includes pass-through configuration and four (4) aluminum sectional doors. Interior is 2x framing with gypsum wall board and newer finishes. Restrooms have ceramic wall tile, and quarry tile on floors. Built in showers. Laundry room is combination laundry and decontamination. Kitchen has residential appliances.

Electrical:
Building electrical service is 400A, 120/240v, 1-phase, 3-wire served by Puget Sound Energy underground service with current transformer and meter on outside wall at rear of building. Building has a 25-kw 120/240V, 1-phase, 3-wire outdoor diesel generator. Generator feeds underground to the transfer switch inside building apparatus bay. Interior lighting is mostly T8 fluorescent. Outdoor lighting are old, high intensity discharge (HID) type; insufficient exterior lighting. All branch wiring are in conduits. Devices are 15A and 20A grounding type. Circuits are tripping in apparatus bay. Lack of power for vehicle charging. Building has a fire alarm system. Building has data/voice Cat-5 wiring and devices. Building has no security alarm system.

Mechanical:
Fire Station 13 was built in 1973 as an un-manned fire station. The 1993 addition added a dorm wing with exercise room. The 2009 partial renovation of station house was to remediate heavy rat infestation.
HVAC is two (2) roof top unit gas-packs for station house, and two (2) Reznor gas-fired unit heaters for apparatus bay.
Plumbing is city water and on-site septic system. Storm to on-site wet land.
Wet pipe fire sprinkled throughout.

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Facility Summary

City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**2.0**			
Foundations						
A1010 Standard Foundations						
	1973	1973	2	48	JB 09/04/13	Standard footings. Stem wall footings. Good condition.
A1030 Slab On Grade						
	1973	1973	2	48	JB 09/04/13	Slab on grade at apparatus bay and building. Good condition.
B Shell			**3.1**			
Superstructure						
B1010 Floor Construction						
	1973	1973	2	48	JB 09/04/13	Mezzanine floor is wood construction. Good condition.
B1020 Roof Construction						
	1973	1973	3	48	JB 09/04/13	All wood beams, wood T&G (tongue and groove) planks at apparatus bay. Wood joists at addition. Some signs of previous water penetration, but structure is sound; fair condition.
Exterior Closure						
B2010 Exterior Walls						
	1973	1993	3	20	JB 09/04/13	Masonry walls with stud framed north side. Upper wall wood framed above masonry with metal siding. Front has drivet system. Masonry is in good condition. Siding is good. Drivet has some cracking and exposed corner metal. Soffit at roof at administration area; verify all soffit vents are in place.
B2020 Exterior Windows						
	1973	1993	2	25	JB 09/04/13	Aluminum sliding/operable windows with screens. Good condition.
B2030 Exterior Doors						

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Facility Summary

City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.1**			
Exterior Closure						
B2030 Exterior Doors	1973	1993	4	10	JB 09/04/13	Hollow metal doors and frames. Aluminum sectional rollup doors at apparatus bay. Older hardware. Overall, doors are below fair. Hollow metal doors have rust on some hinges. No rain drip edge at flush exterior walls. Sectional doors have no weather seals or insulation.
Roofing						
B3010 Roof Coverings	1993	2009	4	2	JB 09/04/13	2009 reroof consisted of single layer, partial adhered membrane roof. Membrane is loose laid and wearing. Roof deck has elevation differences and angled edges; some places are up to 3/4-inch difference. Deck is not smooth or flush. Some tears already showing at edges.
B3020 Roof Openings	1993	1993	2	20	JB 09/04/13	Flashing, trim. Good condition.
B3030 Projections	1973	1973	2	10	JB 09/04/13	Front entry canopy, metal roof, metal siding, soffit. Good condition.
C Interiors			**2.6**			
Interior Construction						
C1010 Partitions	1973	2009	1	15	JB 09/04/13	Wood framed partitions. Good condition.
C1020 Interior Doors	1973	2009	4	10	JB 09/04/13	Mix of hollow metal frames and wood doors, wood frames and wood doors. Various hardware, levers, and some knobs. No panic bars at some

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City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**2.6**			
Interior Construction						
C1020 Interior Doors						exit doors. Wood doors have various dents, scratches, hollow metal frames, paint chipped; some door hardware is not code compliant.
C1030 Fittings	1973	1973	3	26	JB 09/04/13	Marker boards, lockers, storage shelving, built in cabinets. Good condition.
Interior Finishes						
C3010 Wall Finishes	1973	2009	4	7	JB 09/04/13	Gypsum wall board, paint, wall tile in restrooms; showers have ceramic tile enclosures. Paint wearing in several locations, corridors, weight training room where weights are stored.
C3020 Floor Finishes	1973	2009	4	4	JB 09/04/13	Carpet in most administration and dorm room areas, sealed concrete in apparatus bay; quarry tile in men/women shower, restrooms; sheet vinyl at laundry. Carpet is worn and stained throughout; recommend replacement. Vinyl flooring in laundry is worn and some pulling apart; needs replacement.
C3030 Ceiling Finishes	2009	2009	1	29	JB 09/04/13	Acoustic tile in most administration areas, gypsum wall board painted ceilings in restrooms, dorm rooms, storage rooms, and kitchen. Good condition.
D Services			**3.5**			
Vertical Transportation						
D1090 Other Conveying Systems	1973	1993	4	3	DCS 09/04/13	Pull down stair to mezzanine. No roof access.

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City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.5**				
Vertical Transportation							
D1090 Other Conveying Systems							
							Provide fixed access to mezzanine. Provide permanent roof access to low and high roofs.
Plumbing							
D2010 Plumbing Fixtures							
	1973	1993	3	15	DCS	09/04/13	Porcelain water closets, urinals, lavatories. Tile showers. Stainless steel deep sinks in decontamination/laundry room. Stainless steel sinks in kitchen. Janitor mop sink in apparatus bay alcove. Water closets are tank type. All are in fair to good condition. Kitchen sink disposal due to septic system. Marginal at best decontamination at laundry room.
D2020 Domestic Water Distribution							
	1973	1973	3	10	DCS	09/04/13	City water with unknown backflow prevention and meter size. Water taste, color, and pressure is good. Copper distribution pipe observed in some locations. Two (2) gas-fired 1995 domestic hot water heaters with XTs; 74-gallon, 75-mbh each. Hose bibs outside. Domestic hot water heaters are near end of life and are currently functional. Domestic hot water piping observed is not insulated. Flow to fixtures is good. No reported or observed leaks.
D2030 Sanitary Waste							
	1973	1973	3	10	DCS	09/04/13	On-site septic system (See G-series). Cast iron drain, waste, and vent (DW&V). Floor drains in men's and women's and utility areas/rooms. Catch basins in apparatus bay. Catch basins original included heat and vent supply air, same as Fire Station 12, but has been abandoned with supply air duct in catch basins capped off. Oil/water separator center north in apparatus bay. New regulations now require apparatus washing inside placing more load on apparatus bay catch basins and oil/water separator system. On-site septic system reportedly overloaded during heavy rain and lift pump controller makes excessive noise.

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City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.5**				
Plumbing							
D2030 Sanitary Waste							
D2040 Rain Water Drainage							
	1973	1993	4	20	DCS	09/04/13	Flat roof roof drains and overflow roof drains at middle and south (high) roofs. Scuppers, scupper boxes, and downspouts at north addition roof. Overflow roof drain points of discharge inconsistent in size and location; some discharge directly onto wall structure. Rear entry canopy gutter downspouts reduces to much smaller storm connection. North addition scupper boxes are missing overflows.
D2090 Other Plumbing Systems							
	1973	1993	4	5	DCS	09/04/13	Portable compressed air system. Opportunity to install permanent compressed air system.
HVAC							
D3010 Energy Supply							
	1973	1993	3	20	DCS	09/04/13	Natural gas from Puget Sound Energy via meter number 953557 with 1,000-cfh capacity, with no seismic valve; supplying two (2) roof top unit gas-packs, two (2) apparatus bay unit heaters, and two (2) domestic hot water heaters. Black iron distribution pipe. Exposed distribution pipe on roof is corroding (less than $2,000). Opportunity to extend gas to kitchen range.
D3030 Cooling Generating Systems							
	1993	1993	4	3	DCS	09/04/13	One (1) high roof condensing unit, 1-ton serving split direct expansion (DX) evaporation in training room. No cooling for communications equipment on apparatus bay mezzanine. Training room system is approaching end of life with unconfirmed operability. Opportunity to develop a cooled communications room for communications equipment.
D3040 HVAC Distribution Systems							
	1973	1993	5	0	DCS	09/04/13	Original under floor (through catch basins) was

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City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.5**			
HVAC						
D3040 HVAC Distribution Systems						
						abandoned in place possibly during the 1993 renovation. No general exhaust or ventilation system for the apparatus bay as required by applicable codes and standards.
D3050 Terminal and Package Units						
	1973	1993	4	5	DCS 09/04/13	Station house roof top unit gas-packs, one (1) Payne 2.5-ton and one (1) Payne 3-ton R-22 refrigerant unit; both 1993. Two (2) gas-fired Reznor unit heaters in apparatus bay. Several electric wall heaters. 1993 roof top units are at end of life and need immediate service for continued use while their replacement is planned. Apparatus bay unit heaters are in fair condition with approximately 10 years of life remaining. Wall heaters are also in fair condition with 10 years remaining. Opportunity to replace station house roof top units with high performance system.
D3060 Controls and Instrumentation						
	1973	1993	3	5	DCS 09/04/13	Mix of older manual and newer programmable thermostats and on/off controls. Opportunity to upgrade to DDC controls.
D3090 Other HVAC Systems and Equipment						
	1973	1993	4	5	DCS 09/04/13	Nederman engine exhaust system. System is aged and in need of renewal.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1993	1993	3	20	DCS 09/04/13	Four-inch fire sprinkler service to riser closet at southeast corner riser closet with electric resistance heat. Water pressure is 115-psig at riser. Wet pipe throughout; exposed pipe in apparatus bay may be subject to freezing when doors are open during winter months.

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City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.5**			
Fire Protection						
D4030 Fire Protection Specialties						
	1973	1993	3	10	DCS 09/04/13	Fire extinguishers throughout. Inspection current.
Electrical						
D5010 Electrical Service and Distribution						
	1973	1994	3	21	RA 09/04/13	Building electrical system is 400A, 120/280V 1-phase 3-wire; main breaker main panel is in hallway next to dining. Main panel is a GE A-Series panel with branch panel-E; in good condition. Branch panel-B is off the kitchen wall; old Federal Pacific panel, outdated.
D5020 Lighting and Branch Wiring						
	1973	1994	3	11	RA 09/04/13	Interior lighting is mostly T8 fluorescent; fixtures are in good condition in the office and dormitory wings. Apparatus bays and mezzanine lighting are the older lighting fixtures. There are no occupancy lighting controls. Opportunity for lighting upgrade in apparatus bays and mezzanine. Branch circuits are tripping in the apparatus bays. Insufficient exterior lighting. Insufficient outlets in the mezzanine for communications equipment.
D5030 Low Voltage Communication Security and Fire Alarm						
	1994	1994	3	6	RA 09/04/13	The building has a fire alarm system. Building has no security alarm system. The building has data/voice Cat-5 wiring and devices. Fire alarm control panel is located in the hallway; manufacturer is Thorn Autocall 7788. In working condition. Opportunity for upgrade.
D5090 Other Electrical Systems						
	1994	1994	3	5	RA 09/04/13	The building has a 25-kw, 120/240V, 1-phase, 3-wire outdoor diesel generator. Generator supplies emergency power to equipment and lighting via a branch Panel-E. Building has no battery backup emergency egress lights. Generac outdoor generator, feeds underground to the transfer switch located in apparatus bay,

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Facility Summary

City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.5**				
Electrical							
D5090 Other Electrical Systems							
							feeds Panel-E. Opportunity to add battery pack emergency egress lights.
E Equipment and Furnishings			**2.9**				
Equipment							
E1010 Commercial Equipment							
	2009	2009	2	21	JB	09/04/13	Laundry equipment, office equipment, residential kitchen appliances. Good condition.
Furnishings							
E2010 Fixed Furnishings							
	1993	1993	3	10	JB	09/04/13	Casework in kitchen, laundry. Several chips at kitchen and laundry; approximately $500 repairs.
E2020 Moveable Furnishings (Capital Funded Only)							
	2009	2009	3	26	JB	09/04/13	Station house furniture. Apparatus bay storage racks and miscellaneous equipment. Good condition.

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Facility Summary

City of Redmond
Fire Station 13 Site
Fire Station 13 Infrastructure

8701 208th Avenue NE
Redmond, WA 98053

Facility Condition Summary

Fire Station 13 is located on 208th Avenue NE in a rural area. There is a concrete drive apron for the two (2) truck bays at the front of the building. There is an asphalt access drive along the south side of the building that extends around to a paved area at the rear of the building, allowing circular access through the back into the apparatus bays. There are some parking areas along the asphalt access drive. About one third of the site is wetlands and vegetated buffer. There is a grass lawn surrounding the building. The site has a septic system, and storm water likely is discharged onsite. Water service is by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	1972	1972	2	8	MK	09/03/13	Approximately 1/4 of site pavement is concrete, and 3/4 asphalt. Concrete pavement drive apron at front of building and an area of concrete at the back of the building. Asphalt access drive and parking stalls along south side of building. Asphalt does not appear to be original. □ □ Concrete pavement is in fair to good condition, with some cracks throughout. Cracking is likely due to lack of expansion joints in original pavement, and displacement is not occurring. Asphalt pavement is generally in good condition.
G2030 Pedestrian Paving							
	1972	1972	3	10	MK	09/03/13	Concrete walk at front entry. Concrete patio at northwest corner of building. □ □ Fair condition.
G2050 Landscaping							
	1972	1972	3	8	MK	09/03/13	Landscaping and grass. Irrigation system unknown. Vegetated buffer of native plants along wetland edge. □ □ Lawn areas are in fair condition. Trees and shrubs are in good condition. No known issues.
Site Civil / Mechanical Utilities							
G3010 Water Supply							
	1972	1972	3	4	MK	09/03/13	Domestic water service and fire hydrant supply lines to fire station from City of Redmond

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Civil / Mechanical Utilities						
G3010 Water Supply						system. □ □ No known issues.
G3020 Sanitary Sewer	1972	1972	3	9	MK 09/03/13	Building appears to be on septic system. An Orenco Systems control panel located at northeast corner of building with septic tank alarm and sand filter alarm. Three (3) manholes close together are septic system access and pump. The other manhole access appears to be sand filter system pump and is likely associated with the storm drain system. □ □ Reports of repeated alarms when it rains. This is more likely the sand filter system, rather than the septic. However the operation of both systems should be reviewed. All four (4) round access lids should be bolted down.
G3030 Storm Sewer	1972	1972	3	12	MK 09/03/13	Catch basin and pipe system in the front pavement areas. The pavement at the rear of the building sheet flows toward the wetland. Fire Station building downspout lines connect to an underground system, likely discharging onsite. See also "Sanitary Sewer" section above.□ □ No known issues.
G3060 Fuel Distribution	1972	1972	3	10	MK 09/03/13	Natural gas meter at west side of the building. Likely not original. □ □ No known issues.
Site Electrical utilities						
G4010 Electrical Distribution	1972	1972	3	8	MK 09/03/13	Underground electric service to building. Emergency generator with base tank at rear of building.□ □ No known issues.
G4020 Site Lighting						

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Facility Summary

City of Redmond
Fire Station 13 Site
Fire Station 13 Infrastructure

8701 208th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Electrical utilities						
G4020 Site Lighting						
	1972	1972	3	7	MK 09/03/13	Pole lights around building exterior □ No known issues. See also building electrical sections.
Other Site Construction						
G9090 Other Site Systems						
	1972	1972	3	10	MK 09/03/13	Concrete flow test vault at rear of building, approximately 12-feet by 25-feet. □ Used for flow tests of fire pumps. No known issues.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Fire Station 13 Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 13 Building	Exterior Closure	$20,250	$6,075	$5,265	$15,795	$47,385	$43,363
	Roofing	$68,250	$20,475	$17,745	$53,235	$159,705	$153,680
	Interior Finishes	$17,500	$5,250	$4,550	$13,650	$40,950	$37,730
	Vertical Transportation	$5,400	$1,620	$1,404	$4,212	$12,636	$12,636
	Plumbing	$13,000	$3,900	$3,380	$10,140	$30,420	$28,263
	HVAC	$32,800	$9,840	$8,528	$25,584	$76,752	$73,069
	Electrical	$77,000	$23,100	$20,020	$60,060	$180,180	$175,233
	Facility Total	**$234,200**	**$70,260**	**$60,892**	**$182,676**	**$548,028**	**$523,973**
Fire Station 13 Infrastructure	Site Improvements	$11,250	$3,375	$2,925	$8,775	$26,325	$24,376
	Facility Total	**$11,250**	**$3,375**	**$2,925**	**$8,775**	**$26,325**	**$24,376**
	Site Total	**$245,450**	**$73,635**	**$63,817**	**$191,451**	**$574,353**	**$548,349**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 13 Site

Total Observed Deficiency Repair Direct Cost : $245,450

Total Observed Deficiency Repair Direct Cost (Present Value): $234,337

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 13 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$20,250**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$18,531**
Exterior Doors								
Drip Edge	4	3 2013	Exterior door and window openings are flush with walls. No metal drip edge included.	Recommend installing drip edge at window and door head to divert water from top of doors and windows.	11	$350.00	ea	$3,850
Hollow Metal Doors	4	5 2013	Hollow metal doors and frames have fading paint. No drip edge at south side flush doors. Panic hardware is not code compliant. Some hinges are rusting.	Primer and paint doors. Replace rusted hinges with new hinges. Install drip edge above doors at flush masonry locations.	1	$8,000.00	ls	$8,000
Aluminum Sectional Doors	4	5 2013	Aluminum sections overhead doors at apparatus bay have no insulation or edge seals.	Add insulation blanket to interior side of doors at each section. Remove and provide new dual glazed or solar glazing at window sections. Install new edge seals.	4	$2,100.00	ea	$8,400
Facility: Fire Station 13 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$68,250**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$65,675**
Roof Coverings								
Membrane Roofing	4	2 2013	Single ply membrane roofing is showing wear and will continue to wear heavily where deck joints are not level and smooth.	Remove membrane, level deck, and reapply fully adhered membrane, preferably three-ply system.	6,500	$10.50	sf	$68,250

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 13 Site

Total Observed Deficiency Repair Direct Cost : $245,450

Total Observed Deficiency Repair Direct Cost (Present Value): $234,337

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 13 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$17,500**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$16,124**
Wall Finishes								
Wall Finishes	4	5 2013	Paint at several locations (i.e. weight training and corridors) is wearing. Chips in wall gypsum wall board.	Patch and repair gypsum wall board gouges and wall dings. Paint.	1	$4,500.00	ls	$4,500
Floor Finishes								
Floor Finishes	4	4 2013	Carpeting is worn and stained in most areas. Sheet vinyl in laundry area is worn; seam is failing.	Remove carpet and replace with new carpet. Remove vinyl flooring and replace with commercial grade vinyl flooring.	1	$13,000.00	ls	$13,000
Facility: Fire Station 13 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,400**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$5,400**
Other Conveying Systems								
Access	5	0 2013	Mezzanine pull-down access ladder blocks hallway, is bent and sticking, and provides awkward inconvenient mezzanine access. No access to roofs.	Provide permanent fixed access to mezzanine, low roof, and high roof.	3	$1,800.00	ea	$5,400
Facility: Fire Station 13 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$13,000**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$12,078**
Domestic Water Distribution								
Domestic Hot Water Heater	4	5 2013	Domestic hot water heaters are approaching end of life.	Replace domestic hot water heaters.	2	$4,000.00	ea	$8,000
Rain Water Drainage								

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 13 Site

Total Observed Deficiency Repair Direct Cost : $245,450

Total Observed Deficiency Repair Direct Cost (Present Value): $234,337

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Roof Drains	4	2 / 2013	Inconsistent and non-code compliant overflow roof drains with point of discharge too high, too low, too small, or direct onto wall or various locations. North scupper boxes missing overflow roof drain openings.	Reconfigure roof drain, overflow roof drain, and downspouts to meet code and good practice.	10	$500.00	ea	$5,000
Facility: Fire Station 13 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$32,800**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$31,226**
Cooling Generating Systems								
Ductless Split	4	3 / 2013	Ductless split is approaching end of life; installed in 1995.	Replace ductless split.	1	$5,000.00	ea	$5,000
HVAC Distribution Systems								
Apparatus Bay Ventilation	5	0 / 2013	No ventilation system for apparatus bay.	Install code minimum high/low exhaust system with associated outside air inlet and/or tempered make-up air system.	2,600	$3.00	sf	$7,800
Terminal and Package Units								
Roof Top Units	4	2 / 2013	Rooftop units are at end of life and need immediate service for continued use while replacement is planned.	Service immediately and schedule replacement.	2	$5,000.00	ea	$10,000
Other HVAC Systems and Equipment								
Engine Exhaust	4	5 / 2013	Nederman engine exhaust is aging and needs refurbishment or replacement.	Refurbish engine exhaust.	2	$5,000.00	ea	$10,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 13 Site

Total Observed Deficiency Repair Direct Cost : $245,450

Total Observed Deficiency Repair Direct Cost (Present Value): $234,337

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 13 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$77,000**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$74,886**
Electrical Service and Distribution								
Electrical Panel	4	2 2013	Existing panel-B 120/240, 200A, old branch panel at kitchen and day room area; obsolete. Existing panel-E, 120/240, 200A, circuits maxed out.	Provide new branch panel for Panel-B, and connect existing circuits. Provide new branch panel for Panel-E of 64 circuits, reconnect existing circuits , match 42 circuits, plus 17 new 20A/1 circuits and five (5) 30A/IP circuits.	1	$16,000.00	ls	$16,000
Lighting and Branch Wiring								
Mezzanine Branch Wiring	4	2 2013	Insufficient outlets for communications equipment in mezzanine.	Add two (2) dedicated circuits and two (2) double-duplex. Connect to generator power wall.	2	$2,500.00	ea	$5,000
Exterior Lighting	4	2 2013	Building exterior wall lights: two (2) pole lights and eleven existing soffit lights are old. Insufficient exterior wall lights over parking and driveways.	Provide new exterior light emitting diode (LED) lighting and controls for parking and driveways, around perimeter wall. Allow two (10) LED wall lights.	1	$35,000.00	ls	$35,000
Apparatus Bay Branch Wiring	5	0 2013	Insufficient outlets and circuits for vehicle charging power in apparatus bay; circuits are tripping.	Add six (6) overhead power reels with receptacle drop cords, 30A, 120v, and six (6) dedicated circuits.	6	$3,500.00	ea	$21,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 13 Site

Total Observed Deficiency Repair Direct Cost : $245,450

Total Observed Deficiency Repair Direct Cost (Present Value): $234,337

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 13 Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$11,250**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$10,417**
Roadways								
Roadways	3	4 2013	Asphalt parking lots on east and west side of fire station have pavement cracking, alligatoring, and wear in some places.	Remove and replace existing asphalt where deteriorated with full depth section, suitable for fire truck loading.	250	$45.00	sy	$11,250

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 13 Site **Total Site Opportunity Cost: $216,415**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 13 Building**						
System:	**Interior Construction**	**Total Cost: $3,040**					
C1030	**Fittings**						
		Metal shelving units and some tall cabinets are not anchored to wall with earthquake straps.	Install earthquake straps at all free standing tall shelving units and tall cabinets.	1.00	$2,000.00	ea	$2,000
		Interior walls throughout facility show heavy wear and damage at wall corners.	Provide 2x2 stainless steel corner guards at each outside wall corner.	40.00	$26.00	lf	$1,040
Facility:	**Fire Station 13 Building**						
System:	**Plumbing**	**Total Cost: $82,000**					
D2010	**Plumbing Fixtures**						
		High efficiency plumbing fixtures can sharply reduce load on septic system.	Install high efficiency (water conserving) plumbing fixtures and appliances.	10.00	$500.00	ea	$5,000
		Limited decontamination in laundry room. Decontamination is increasing importance for Fire Department operations.	Add separate decontamination space per codes and standards.	100.00	$350.00	sf	$35,000
D2030	**Sanitary Waste**						
		Apparatus wash inside places additional load on catch basins and oil/water separator. Oil/water separator is in an awkward location and is difficult to service. Unknown condition of capped off under floor supply air system.	Upgrade to trench type apparatus bay drain system with pre-filter/screen in trench.	4.00	$4,000.00	ea	$16,000
D2040	**Rain Water Drainage**						
		With possible storm water impact on septic system and/or wetland, opportunity for rain water harvesting system to intentionally direct some roof drain flow to flushing water; also reducing city water use.	Install 5,000-gallon rain water harvesting system.	1.00	$20,000.00	ls	$20,000
D2090	**Other Plumbing Systems**						
		Upgrade from temporary to permanent compressed air system.	Install air compressor, distribution, two (2) hose reels, and four (4) quick disconnect drops.	6.00	$1,000.00	ea	$6,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 13 Site **Total Site Opportunity Cost: $216,415**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 13 Building**						
System:	**HVAC**	**Total Cost: $63,500**					
D3030	**Cooling Generating Systems**						
		Communications equipment is located on warm/hot, unventilated, apparatus bay mezzanine adjacent to gas-fired unit heater and hole in wall to perimeter soffit.	Relocate communications equipment to proper communications room with ductless split direct expansion (DX) cooling.	50.00	$100.00	sf	$5,000
D3050	**Terminal and Package Units**						
		Existing two-zone roof top unit system provides marginal comfort, indoor air quality, and energy efficiency.	Replace current system with variable refrigerant flow (VRF) and heat recovery ventilator (HRV) technology.	3,900.00	$10.00	sf	$39,000
D3060	**Controls and Instrumentation**						
		Current stand alone controls can be upgraded to DDC controls to improve comfort, indoor air quality, and reduce energy use, and provide for remote monitoring and/or control.	Install new DDC system.	6,500.00	$3.00	sf	$19,500
Facility:	**Fire Station 13 Building**						
System:	**Electrical**	**Total Cost: $62,875**					
D5020	**Lighting and Branch Wiring**						
		Apparatus bay lighting and switches are old and dirty.	Upgrade lighting to T5HO fluorescent high bay and T8 fluorescent lights in mezzanine with wire guards. Add occupancy sensors.	1.00	$36,000.00	ls	$36,000
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Existing fire alarm system and devices are outdated.	Upgrade to new addressable fire alarm system.	6,500.00	$2.75	sf	$17,875
D5090	**Other Electrical Systems**						
		Building has no battery backup emergency egress lights.	Provide battery backup emergency lights at interior and exterior egress.	18.00	$500.00	ea	$9,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 13 Site **Total Site Opportunity Cost: $216,415**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 13 Infrastructure**						
System:	**Site Civil / Mechanical Utilities**	**Total Cost: $5,000**					
G3020	**Sanitary Sewer**						
		Reports of repeated alarms from the pumped systems. There is a sand filter system and a septic tank system on site, both of which have a pumped discharge. Recommend review of the operation of both systems. Switching within the control panel is heard within the living quarters. Recommend investigate this report and consider moving the control panel to a free-standing post away from the building. Recommend that all four (4) manhole access lids be bolted down.	Research record documents and investigate operation of sand filter and septic tank systems.	1.00	$5,000.00	ls	$5,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
Redmond, WA 98053

Facility Code	
Facility Size - Gross S.F.	9,490
Year Of Original Construction	1991
Facility Use Type	Fire Station
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2009
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**2.4**			
Facility Condition Index (FCI)	0.12			
Current Replacement Value (CRV)	$4,696,000	**Predicted Renewal Budget (6 yrs)**	$468,000	$440,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$1,642,000	$1,397,000
		Observed Deficiencies (6 yrs)	$221,000	$210,000
		Observed Deficiencies (ALL)	$221,000	$210,000
		Opportunity Total Project Cost	$539,000	N/A

Facility Condition Summary

Architectural:
Single story wood framed structure on standard foundation and slab on grade. Roof is wood framed sloped roof with composite shingle. Building is situated with three (3) bay apparatus area and shop to south, and office and living to the north. Apparatus bay has cast in place concrete walls to 48-inches and wood framed walls above. Exterior finish is recent painted cement board siding. Exterior windows are aluminum dual glazed. Main entrance door is wood frame and wood door; other exterior doors are hollow metal doors and frames. Exterior louvers at shop and attic vent louvers on gable ends. Front entry canopy and patio canopy are fully enclosed wood structures with steel columns on concrete footings. Interior partitions are wood framed, gypsum wall board with paint and wall tile in restrooms. Interior finishes include gypsum wall board ceilings and acoustical ceiling tile and carpet in most spaces. Other floors are sheet goods in restroom and kitchen. Various tall cabinets and furniture.

Electrical:
Building electrical service, 600A, 208/120V, 4-wire, served by Tanner Electric PUD, underground service, with current transformer and meter on outside wall of building. Building has a 40-kw indoor gas generator. Generator feeds underground to transfer switch inside building electrical room. Interior lighting is mostly fluorescent with T12 lamps and some incandescent recess down lights. Outdoor lighting are high intensity discharge (HID) type. All branch wiring are in conduits. Devices are 15A and 20A grounding type. Red cover plates are used for emergency power devices. Circuits are tripping in apparatus bay. Lack of 30A outlets for vehicle power charging. Need more outlets in mezzanine SCUBA repair room. Building has a fire alarm system. Building has a security alarm system which has been abandoned and is not used.

Mechanical:
Fire Station 14 was purpose built in 1991 with most exterior skin replaced in 2009 due to extensive water damage related to the original EIFIS system and poor roofing and related issues. It appears some water damaged system behind the skin including thermal envelope insulation and apparatus bay exhaust duct were removed for the remedial skin work, but not replaced. Fire Station 14 includes 2.5 bay (two are drive through) apparatus bay, small shop, SCUBA repair shop on mezzanine, two (2) small mechanical mezzanines, administration, living (dorm, men's and women's, kitchen, day room, etc.), training, and public room areas.
HVAC is five (5) zone forced air gas furnaces with split Dx cooling for station house, overhead gas infrared in apparatus bay with both general and vehicle engine exhaust, and gas fired unit heaters for both shop and SCUBA mezzanine shop. Packaged terminal air conditioners (PTAC)have been added to service uncomfortable dorm rooms.
Plumbing is city water and on-site septic sewer with gas domestic hot water heat. Fire sprinkler is wet pipe throughout.

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Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
A Substructure			**1.5**				
Foundations							
A1010 Standard Foundations							
	1991	1991	1	66	JB	09/04/13	Standard stem wall and continuous footings. Good condition. Recommend joint sealant between footing and site paving.
A1030 Slab On Grade							
	1991	1991	2	66	JB	09/04/13	Slab on grade. Some cracks at apparatus bay.
B Shell			**1.8**				
Superstructure							
B1010 Floor Construction							
	1991	1991	2	66	JB	09/04/13	Wood framed mezzanine floors. Good condition.
B1020 Roof Construction							
	1991	1991	1	66	JB	09/04/13	Pre-engineered roof truss system throughout. Good condition.
Exterior Closure							
B2010 Exterior Walls							
	1991	2009	2	56	JB	09/04/13	Wood framed walls, cast in place 48-inch walls at apparatus bay. Cement board, painted exterior finish. Wood trim. Cement board soffits. Metal flashing. Good condition, recently redone exterior siding and paint.
B2020 Exterior Windows							
	2009	2009	1	41	JB	09/04/13	Aluminum operable windows with screens. Good condition.
B2030 Exterior Doors							

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Facility Summary

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Fire Station 14 Building

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Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**1.8**				
Exterior Closure							
B2030 Exterior Doors							
	1991	1991	3	28	JB	09/04/13	Aluminum sectional, insulated apparatus bay doors. Main entrance door is wood door and frame. Remaining are hollow metal doors and frames with operable hardware and keypad entry. Some chips at frames and interior of door scratches that need touch up paint, fair overall.
Roofing							
B3010 Roof Coverings							
	2009	2009	2	21	JB	09/04/13	Recently replaced roof, composite shingle roof. Good condition, some roof insulation disturbed/moved away from roof at fitness area. Recommend additional investigation.
B3020 Roof Openings							
	2009	2009	2	36	JB	09/04/13	Flashing, vents, gutters. Good condition.
B3030 Projections							
	1991	2009	1	28	JB	09/04/13	Entrance and patio canopy, wood framed, cement board soffit, vented. Good condition.
C Interiors			**2.8**				
Interior Construction							
C1010 Partitions							
	1991	1991	2	28	JB	09/04/13	Wood framed interior partitions. Good condition.
C1020 Interior Doors							
	1991	2009	4	10	JB	09/04/13	Hollow metal frames, wood doors, some non-compliant hardware, some door knobs. Multiple chips in wood doors. Frames have several chips and worn areas.

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City of Redmond
Fire Station 14 Site
Fire Station 14 Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**2.8**			
Interior Construction						
C1030 Fittings	1991	1991	2	10	JB 09/04/13	Marker boards, shelving, restroom counters. Good condition.
Staircases						
C2010 Stair Construction	1991	1991	1	66	JB 09/04/13	Steel stairs and landing to mezzanine. Good condition.
Interior Finishes						
C3010 Wall Finishes	1991	2009	4	5	JB 09/04/13	Gypsum wall board and paint in most areas, ceramic tile wainscot in restrooms. Painted gypsum wall board in apparatus bay at east/west walls. Wall paint marks and damage, typically at lower wall areas.
C3020 Floor Finishes	1991	2009	4	5	JB 09/04/13	Sealed concrete. Mostly carpet in living/administration areas. Laundry sheet vinyl. Mezzanine painted wood. Restrooms sheet vinyl. Carpet in weight room. Carpets in weight room, office, and corridor are in poor condition and are stained and wearing.
C3030 Ceiling Finishes	1991	2009	2	29	JB 09/04/13	Painted hard lid in storage, kitchen, and restrooms. Acoustical tile in office and corridors are in good condition. Tile is cracked at acoustical ceiling tile in north-south corridor.
D Services			**3.0**			
Plumbing						
D2010 Plumbing Fixtures	1991	1991	3	13	DCS 09/04/13	Porcelain water closets, urinals, and lavatories.

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Fire Station 14 Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Plumbing							
D2010 Plumbing Fixtures							
							Tile showers. Stainless steel sinks. Non-metallic janitor sink. No decontamination stations (other than deep sink in laundry room). Laundry wall box. Fair to good condition with heavier wear in kitchen and men's rooms.
D2020 Domestic Water Distribution							
	1991	1991	3	18	DCS	09/04/13	Two-inch city water service with relatively low pressure at 50-psig, but good taste and color. Copper piping. Newer 2009 A.O. Smith gas-fired domestic hot water heater, 99-gallons, 250-mbh with expansion tank at northwest mechanical mezzanine. Low site water pressure is marginal at some fixtures, but functional. Visible domestic hot water piping is not insulated; maybe surrounding domestic hot water heater due to recent replacement. (Less than $2,000.) Hose bibs outside.
D2030 Sanitary Waste							
	1991	1991	3	14	DCS	09/04/13	On-site septic (see G-Series). Cast iron drain, waste, and vent (DW&V). Floor drains in men's and women's and utility rooms. Short narrow trench drains in apparatus bays; oil/water separator location is unclear. New regulations require apparatus washing inside, placing additional load on apparatus trench drains and apparatus bay oil/water separator. Code minimum plumbing fixtures place unneeded load on septic system.
D2040 Rain Water Drainage							
	1991	1991	2	24	DCS	09/04/13	Most gutter and downspout with several internal roof drains and overflow roof drain sets for small flat roof area(s). Double downspouts in most downspout locations. Storm to on-site detention pond (see G-series). Double downspout system is impressive with shared clean-outs at most downspouts to storm connection locations. Opportunity for rain water harvesting.

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Fire Station 14 Building

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Plumbing							
D2040 Rain Water Drainage							
D2090 Other Plumbing Systems							
	1991	1991	3	9	DCS	09/04/13	Shop compressed air system. Shop SCUBA fill station. SCUBA fill areas in shop may be unsanitary. Consider improved housekeeping practices or relocating SCUBA fill station. Compressed air system distribution appears limited. Consider hose reels at apparatus bay station to facilitate apparatus service.
HVAC							
D3010 Energy Supply							
	1991	1991	3	19	DCS	09/04/13	Natural gas from Puget Sound Energy via meter number 528159 with 1,000-cfh capacity. Black iron pipe distribution to furnaces, domestic hot water heater, apparatus bay infrared heater, shop unit heaters, and kitchen and barbeque. No seismic valve at service entry (less than $2,000). Opportunity for energy efficient grant from Puget Sound Energy to install high-efficiency equipment for renewal done under "HVAC Distribution System" section below.
D3030 Cooling Generating Systems							
	1991	1991	4	2	DCS	09/04/13	Five (5) condensing units to west outside at grade. Carrier with R-22 refrigerant. Condensing units 1, 2, 3, and 4 are 3-ton; Condensing unit 5 is 2-ton. Several packaged terminal air conditioners (PTAC) were retrofitted in 2009 at the most uncomfortable dorm rooms. Condensing units are nearing end of life. Opportunity for dedicated cooling for communications room. Several evaporative coils downstream of furnaces have fouled condensate drains, clean all. (Less than $2,000.)
D3040 HVAC Distribution Systems							
	1991	1991	4	2	DCS	09/04/13	Five (5) forced air gas furnace system with split direct expansion (DX) cooling serving five (5) station house zones. Apparatus bay general exhaust system with low exhaust inlet and high outside air entry via gravity dampers.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
HVAC						
D3040 HVAC Distribution Systems						Gas furnaces are approaching end of life. Half of the apparatus bay general exhaust system was removed for the 2009 building skin replacement, but has not been restored. Dorm room comfort is so bad that individual remote operated dampers were installed in each dorm room; when that didn't work, several packaged terminal air conditioners (PTAC) were added to the most uncomfortable dorm rooms. Equipment has not been serviced since April 2012 (over one year). Stand by generator room (shop) engine cooling vehicle air path partially blocked by paint storage wood enclosure/shelving.
D3050 Terminal and Package Units	1991	1991	3	9	DCS 09/04/13	Apparatus bay overhead gas infrared vented to roof and shop gas fired unit heaters. In fair to good condition.
D3060 Controls and Instrumentation	1991	1991	3	4	DCS 09/04/13	Mix of original and newer programmable and manual thermostats and on/off controls. Older thermostats should be replaced soon (less than $2,000.) Opportunity for DDC controls.
D3090 Other HVAC Systems and Equipment	1991	1991	3	6	DCS 09/04/13	Nederman Apparatus bay vehicle engine exhaust. Aging, but functional.
Fire Protection						
D4010 Fire Protection Sprinkler Systems	1991	1991	3	18	DCS 09/04/13	City service for street post indicator valve (PIV) and fire department connection (FDC); 8-inch service entry at south shop, reducing to 6-inch reduced pressure backflow prevention and 6-inch wet pipe main, and 3-inch dry pipe system. Pressure at 50 psig. While city water station pressure is low (50 psig), reportedly fire flow is acceptable.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
Fire Protection						
D4030 Fire Protection Specialties						
	1991	1991	3	9	DCS 09/04/13	Fire extinguishers throughout. Inspections current.
Electrical						
D5010 Electrical Service and Distribution						
	1991	1991	2	18	RA 09/04/13	Building electrical system is 600A, 208/120V, 3-phase, 4-wire, and main panel located inside building electrical room. Main panel, main lugs only, with four branch breaker, feed to four (4) separate panels. Main panel is Cutler Hammer, type PH panel, installed in 1991. Opportunity to replace one (1) branch Panel-E to provide additional circuits. Panel-E is 42-circuit panel, only has a couple spare circuits left.
D5020 Lighting and Branch Wiring						
	1991	1991	3	8	RA 09/04/13	Interior lighting is mostly fluorescent T12 lamps and some incandescent fixtures; on-off controls by manual switches. There are no occupancy lighting controls. Outside lighting is high intensity discharge (HID) type, pole lights in parking lot, wall lights on building, recess lights in soffit; fair working condition. All branch wiring and devices are good overall with some minor broken outlets. Insufficient outlets in apparatus bay for vehicle charging. Insufficient outlets in mezzanine, SCUBA repair room. Opportunity to upgrade building interior lights to T8 lamps with occupancy controls.
D5030 Low Voltage Communication Security and Fire Alarm						
	1991	1991	3	3	RA 09/04/13	Building has a fire alarm system, consisting of smoke detectors, pull stations, and horn strobes. Building has an old security alarm system; equipment and devices are abandoned and not used. Fire alarm system equipment is Pyrotronic CP-400 control panel, 1991. Components are over 20 years old, in working condition. Opportunity for upgrade. Building has a voice/data system, Cat-6 wiring and devices, IDF (intermediate distribution frame) in electrical room.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
Electrical						
D5030 Low Voltage Communication Security and Fire Alarm						
D5090 Other Electrical Systems						
	1991	1991	3	10	RA 09/04/13	Building has an indoor natural gas-fueled generator; generator feeds underground to the transfer switch in the electrical room. Generator supplies stand-by power to power and lighting load. Building has no battery backup emergency lights. Generator is by Generac and is 40-kw, 208/120V, 3-phase, 4-wire, and is over 20 years of age; provide testing for engine overhaul. Opportunity to install battery backup emergency lights.
E Equipment and Furnishings			**2.2**			
Equipment						
E1010 Commercial Equipment						
	1991	1991	4	1	JB 09/04/13	Residential appliances. Near end of life; recommend replacement.
Furnishings						
E2010 Fixed Furnishings						
	1991	1991	2	10	JB 09/04/13	Casework at laundry. Kitchen cabinets. Very minor cracks.
E2020 Moveable Furnishings (Capital Funded Only)						
	1991	1991	3	10	JB 09/04/13	Station house furniture. Apparatus bay storage racks and miscellaneous equipment. Fair condition.

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Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Infrastructure

5021 264th Avenue NE
Redmond, WA 98053

Facility Condition Summary

Fire Station 14 is in a rural area and has an on-site septic system and a large open storm water detention pond. Water service is provided from the public water system in NE 50th Street. Concrete access drives and asphalt parking areas are in good condition.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	1991	1991	3	8	MK	09/04/13	Concrete drive aprons at front and back of the apparatus bays, and an adjacent asphalt driveway with nine (9) parking stalls. Extruded concrete curbs. Asphalt appears to have been seal coated more recently. □ □ Concrete pavement could use joint filler in the gaps between panels (less than $2,000). Otherwise concrete is in good condition, asphalt is in fair condition.
G2020 Parking Lots							
	1991	1991	3	8	MK	09/04/13	Asphalt parking lot on the north side of station provides parking for 15 vehicles, including one (1) ADA stall. Extruded concrete curbs. Asphalt appears to have been seal coated more recently. □ □ ADA stall lacks pavement markings and a sign (less than $2,000).
G2030 Pedestrian Paving							
	1991	1991	3	8	MK	09/04/13	Concrete walkways at the perimeter of the building. Concrete patio area at rear of the building. □ □ A section of the concrete walk at the northeast corner of the station is uplifted approximately 1.5-inch due to tree roots. Recommend concrete be ground down to reduce tripping hazard. Concrete walks could use joint filler where they abut the curb. Total is less than $2,000. Otherwise in fair condition.
G2040 Site Development							
	1991	1991	2	8	MK	09/04/13	Flagpole. □

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Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Infrastructure

5021 264th Avenue NE
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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2040 Site Development						Good condition.
G2050 Landscaping	1991	1991	3	18	MK 09/04/13	Much of the area around the station is grass and ornamental plantings. West of the station is a large wooded area with a fenced-in storm water pond. Pond is generally covered in grass. Irrigation system present. Fair condition.
Site Civil / Mechanical Utilities						
G3010 Water Supply	1991	1991	3	23	MK 09/04/13	Domestic water supply (1-1/2") and fire sprinkler service provided from public system in NE 50th Street. No known issues.
G3020 Sanitary Sewer	1991	1991	3	28	MK 09/04/13	Onsite septic system with septic tank, pump, and large mound is located just northwest of the building. Zurn brand oil/water separator (600 gal) is located on the south side of the shop driveway. This is likely connected to the floor drains in the apparatus bay. No known issues. Details of the septic system configuration and operation are unknown, but it appears to be a pumped system. No alarm system for the septic tank was observed. It is critical that the septic tank be properly maintained and pumped out on a regular basis. Oil/water separator is in need of cleaning (less than $2,000).
G3030 Storm Sewer	1991	1991	3	23	MK 09/04/13	Catch basins throughout the paved areas. Building downspouts connect to an underground pipe system. It appears site storm water is routed to a open detention pond located west of the building. Pond is approximately 220-feet by 50-feet and is fenced. No known issues.

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Facility Summary

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Fire Station 14 Infrastructure

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Civil / Mechanical Utilities							
G3030 Storm Sewer							
G3060 Fuel Distribution							
	1991	1991	3	18	MK	09/04/13	Natural gas meter at the front of the building. Natural gas fueled barbeque grill on patio. □ □ No known issues.
Site Electrical utilities							
G4010 Electrical Distribution							
	1991	1991	3	18	MK	09/04/13	Underground electric service to the site. One 75-kva transformer along NE 50th Street. Emergency generator is located inside the shop. □ □ No known issues.
G4020 Site Lighting							
	1991	1991	3	8	MK	09/04/13	Pole lights are located throughout the site. □ □ No known issues.
Other Site Construction							
G9090 Other Site Systems							
	1991	1991	2	8	MK	09/04/13	Just west of the station building, at the center of the site, is a cell phone tower and associated equipment. □ □ Evidently this area is leased to cell companies. It is likely more recent than 1991.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Fire Station 14 Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 14 Building	Interior Construction	$10,000	$3,000	$2,600	$7,800	$23,400	$21,254
	Interior Finishes	$25,600	$7,680	$6,656	$19,968	$59,904	$54,412
	HVAC	$33,000	$9,900	$8,580	$25,740	$77,220	$74,571
	Electrical	$20,600	$6,180	$5,356	$16,068	$48,204	$47,287
	Equipment	$5,400	$1,620	$1,404	$4,212	$12,636	$12,395
	Facility Total	**$94,600**	**$28,380**	**$24,596**	**$73,788**	**$221,364**	**$209,919**
	Site Total	**$94,600**	**$28,380**	**$24,596**	**$73,788**	**$221,364**	**$209,919**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 14 Site

Total Observed Deficiency Repair Direct Cost : $94,600

Total Observed Deficiency Repair Direct Cost (Present Value): $89,709

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 14 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$10,000**
System: Interior Construction				**Total System Deficiency Repair Cost (Present Value):**				**$9,083**
Interior Doors								
Interior Doors	4	5 2013	Paint and finish is worn on hollow metal frames and wood doors have several chips. Hardware is not code compliant.	Sand, primer, and paint frames. Repair wood doors. Remove older non-compliant hardware and replace with new hardware.	1	$10,000.00	ls	$10,000
Facility: Fire Station 14 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$25,600**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$23,253**
Wall Finishes								
Paint	4	5 2013	Interior paint shows marks and wall nicks in several locations.	Patch and repair as necessary. Paint walls.	1	$5,600.00	ls	$5,600
Floor Finishes								
Carpet	4	5 2013	Carpet stained and worn.	Remove carpet and replace with new. Provide rubber flooring at fitness areas.	4,000	$5.00	sf	$20,000
Facility: Fire Station 14 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$33,000**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$31,868**
Cooling Generating Systems								
Condensing Units	4	2 2013	Condensing units are aged, rusted, and nearing end of life.	Replace condensing units.	5	$3,000.00	ea	$15,000
HVAC Distribution Systems								

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 14 Site

Total Observed Deficiency Repair Direct Cost : $94,600

Total Observed Deficiency Repair Direct Cost (Present Value): $89,709

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Furnaces	4	2 2013	Gas furnaces are approaching end of life.	Replace gas furnaces. Consider upgrade to high efficiency condensing type.	5	$3,000.00	ea	$15,000
Apparatus Bay Exhaust	5	0 2013	Half of the apparatus bay exhaust system was demolished and not replaced during the 2009 skin replacement.	Re-install the missing half of the apparatus bay general exhaust system.	1	$3,000.00	ls	$3,000
Facility: Fire Station 14 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$20,600**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$20,208**
Lighting and Branch Wiring								
Branch Wiring	5	0 2013	Insufficient outlets and circuits in mezzanine SCUBA room.	Provide eight (8) outlets, two (2) outlets per circuit.	8	$700.00	ea	$5,600
Branch Wiring	5	0 2013	Insufficient outlets and circuits in apparatus bay for vehicle charging power. Circuits are tripping.	Add two (2) overhead power reels with receptacles and drop cords, 30A, 120v, two (2) dedicated circuits. Connect to generator power panel.	2	$4,000.00	ea	$8,000
Other Electrical Systems								
Emergency Generator	4	3 2013	Existing natural gas fueled emergency generator is 40-kw, 208/120v, 3-phase, 4w, 22 years old and past expected life.	Provide generator engine test, overhaul.	1	$7,000.00	ls	$7,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 14 Site

Total Observed Deficiency Repair Direct Cost : $94,600

Total Observed Deficiency Repair Direct Cost (Present Value): $89,709

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 14 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,400**
System: Equipment				**Total System Deficiency Repair Cost (Present Value):**				**$5,297**
Commercial Equipment								
Residential Appliances	5	1 2013	Refrigerators at end of useful life.	Replace refrigerators.	3	$1,800.00	ea	$5,400

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 14 Site **Total Site Opportunity Cost: $230,225**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 14 Building**						
System:	**Interior Construction**	**Total Cost: $5,500**					
C1030	**Fittings**						
		Interior walls throughout facility show heavy wear and damage at wall corners.	Provide 2x2 stainless steel corner guards at each outside wall corner.	1.00	$3,000.00	ls	$3,000
		Metal shelving units, some tall cabinets are not anchored to the wall with earthquake straps.	Install earthquake straps at free standing tall shelving units and tall cabinets.	1.00	$2,500.00	ls	$2,500
Facility:	**Fire Station 14 Building**						
System:	**Interior Finishes**	**Total Cost: $2,100**					
C3010	**Wall Finishes**						
		Apparatus bay wall finish is painted gypsum wall board on east and west walls.	Install steel plate at bottom of wall to 4-inches above finish floor to protect finish and partition.	600.00	$3.50	sf	$2,100
Facility:	**Fire Station 14 Building**						
System:	**Plumbing**	**Total Cost: $36,000**					
D2030	**Sanitary Waste**						
		Regulations requiring apparatus washing inside apparatus bay place additional load on apparatus bay trench drains and oil/water separator. Additional moisture in apparatus bay may damage gypsum wall board finish and other structural and finish materials over time.	Double apparatus bay trench drain length, add trench drain pre-filters/screens, and upgrade oil/water separator as needed to accommodate inside apparatus work.	5.00	$1,000.00	ea	$5,000
		Code minimum (standard efficiency) plumbing fixtures place un-needed load on septic system; upgrade to high efficiency to reduce load.	Retrofit high efficiency fixtures and appliances.	12.00	$500.00	ea	$6,000
D2040	**Rain Water Drainage**						
		Rain water harvesting to apparatus bay wash and flushing water system would reduce storm load on detention pond and reduce city water cost; may allow for higher pressure to facilitate apparatus and apron wash.	Install 10,000-gallon rain water harvesting system.	1.00	$25,000.00	ls	$25,000

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 14 Site **Total Site Opportunity Cost: $230,225**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 14 Building**						
System:	**HVAC**	**Total Cost: $74,000**					
D3030	**Cooling Generating Systems**						
		Communications room is currently cooled by general HVAC; room is warm/hot, shortening equipment life and/or performance. Upgrade to dedicated ductless split Dx cooling.	Install 1-ton ductless split Dx cooling system for communications room.	1.00	$5,000.00	ls	$5,000
D3040	**HVAC Distribution Systems**						
		Current forced air furnace with split direct expansion (DX) station house system provides marginal at best comfort, has no economizer and is near end of life. Upgrade to _ comfortable and energy efficient variable refrigerant flow (VRF) and heat recovery ventilator (HRV) technology.	Upgrade to variable refrigerant flow (VRF) and heat recovery ventilator (HRV) technology in lieu of RIK under impending "HVAC Distribution Systems" section's renewal.	5.00	$10,000.00	ea	$50,000
D3060	**Controls and Instrumentation**						
		No DDC controls.	Install DDC controls.	9,500.00	$2.00	sf	$19,000
Facility:	**Fire Station 14 Building**						
System:	**Electrical**	**Total Cost: $112,625**					
D5010	**Electrical Service and Distribution**						
		Opportunity to replace existing emergency panel-E to provide additional circuits. Existing circuit capacity is at maximum.	Replace existing panel. Provide new electrical panel 64-circuit with 42 circuits to match existing, and 22 circuits for future use.	1.00	$8,000.00	ls	$8,000
D5020	**Lighting and Branch Wiring**						
		Opportunity to upgrade existing T12 lamp fixtures to T8 lamps, and to add occupancy sensors for lighting controls.	Upgrade existing fluorescent fixtures. Replace existing T12 lamps and ballasts with new T8 lamps and electronic ballasts. Add occupancy sensors.	9,500.00	$7.00	sf	$66,500
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Opportunity to replace existing fire alarm system. Existing control panel (Pyrotronics CP-400) and devices are over 20 years old.	Provide new addressable fire alarm system.	9,500.00	$2.75	sf	$26,125
D5090	**Other Electrical Systems**						

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 14 Site **Total Site Opportunity Cost: $230,225**

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Cost
	Opportunity to add battery backup emergency lights at interior and exterior egress.	Provide battery backup emergency lights.	24.00	$500.00	ea	$12,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	9,852
Year Of Original Construction	1996
Facility Use Type	Fire Station
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2006
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**2.5**			
Facility Condition Index (FCI)	0.14			
Current Replacement Value (CRV)	$4,875,000	**Predicted Renewal Budget (6 yrs)**	$414,000	$396,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$1,868,000	$1,634,000
		Observed Deficiencies (6 yrs)	$338,000	$322,000
		Observed Deficiencies (ALL)	$354,000	$335,000
		Opportunity Total Project Cost	$551,000	N/A

Facility Condition Summary

Architectural:
Single story, wood framed administration and apparatus bay; concrete masonry unit (CMU) hose tower. Metal siding exterior and composite torch down roofing. Wood roof truss structure. Two (2) metal aprons, north contains storage and south side includes some storage and mechanical area. Main entrance has open atrium extending past roof line with clerestory. Steel entrance canopy to exterior. Interior includes lobby area, offices, large conference/training room, day room, laundry, kitchen, several dorm rooms, and fitness area. Both day room and fitness area are open vaulted ceilings. Interior finishes include painted gypsum wall board, ceramic tile in restrooms, and carpet in most areas. Building also includes separate public restroom at lobby and medium office used as a workspace by police.

Electrical:
Building electrical service is 400A, 208/120V, 3-phase, 4-wire, served by Puget Sound Energy underground service from a 150-kva padmount transformer, at north side of building, with current transformer and meter on outside wall of building. This Puget Sound Energy transformer also feeds the Maintenance Shop Building. Building has an indoor diesel generator with base tank inside the building generator room. Generator feeds power to main panel via transfer switch in generator room. Interior lighting is all fluorescent fixtures with T8 and T12 lamps at different areas. Exterior lighting is all high intensity discharge (HID) consisting on small wall packs, recess soffit lights, surface mount Canopy lights, and pole lights in parking. All branch wiring are in conduits. Devices are 15A and 20A grounding type outlets; all building original systems. Building has a fire alarm system. Building has no security alarm system and no card access system.

Mechanical:
The Fire Station 16 site includes Fire Station 16 to west, Fire department vehicle maintenance shop to east, and small training area with roof props to southeast. Fire Station 16 includes 2.5-bay apparatus bay, hose tower, fire department office area, police area, and living area with dorms, day room, exercise room, and kitchen and dining room.
HVAC includes four (4) roof top gas-packs for station house, gas-fired infrared heat for apparatus bay, apparatus bay general exhaust, apparatus bay engine exhaust system, and miscellaneous exhaust fans and unit heaters.
Plumbing is city water and sewer with copper pipe and gas-fired tankless domestic hot water heaters. Fire sprinkled throughout.

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City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**1.5**			
Foundations						
A1010 Standard Foundations						
	1996	2006	1	71	JB 09/05/13	Continuous concrete footings and stem walls. Good.
A1030 Slab On Grade						
	1996	1996	2	71	JB 09/05/13	Concrete slab on grade. Good condition.
B Shell			**1.8**			
Superstructure						
B1010 Floor Construction						
	1996	1996	1	71	JB 09/05/13	Mezzanine floor, wood construction. Good condition.
B1020 Roof Construction						
	1996	1996	1	71	JB 09/05/13	Wood truss system. Good condition.
Exterior Closure						
B2010 Exterior Walls						
	1996	2006	1	53	JB 09/05/13	Wood frame with some cast in place concrete at low walls apparatus bay. Exterior vertical and horizontal siding. Replaced siding in 2006. Few dents but in generally good condition.
B2020 Exterior Windows						
	1996	1996	2	28	JB 09/05/13	Aluminum dual glazed windows. Good condition.
B2030 Exterior Doors						
	1996	1996	3	10	JB 09/05/13	Storefront main entry, hollow metal doors and frames with keypads. Sectional apparatus bay doors. Storefront entrance, no panic hardware. Hollow metal doors and frames are missing some

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City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**1.8**			
Exterior Closure						
B2030 Exterior Doors						
						weather striping, several chips and dents. Apparatus doors have dents, scrape marks where door center is hitting header. Weather seals need replacing.
Roofing						
B3010 Roof Coverings						
	1996	2006	3	10	JB 09/05/13	Composite torch down roofing, metal flashings, soffits. Sloped roof aprons have standing seam metal roofing. Roof is only seven years old. Several trees matured and in contact with metal flashings; need tree trimming. Check flashing screens where loose.
B3030 Projections						
	1996	1996	2	33	JB 09/05/13	Steel canopy at entrance. Good condition. Touch up paint on steel outrigger from roof.
C Interiors			**2.9**			
Interior Construction						
C1010 Partitions						
	1996	1996	2	33	JB 09/05/13	Painted gypsum wall board on wood studs; assume acoustic batt between studs where privacy is needed (i.e. at dorm rooms). Good.
C1020 Interior Doors						
	1996	1996	3	23	JB 09/05/13	Hollow metal door frames and wood doors. Touchup paint on interior doors and frames. Fair condition.
C1030 Fittings						
	1996	1996	3	13	JB 09/05/13	Station house staff lockers, office area white boards, and miscellaneous. Fair condition.

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City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**2.9**			
Interior Construction						
C1030 Fittings						
Staircases						
C2010 Stair Construction						
	1996	1996	2	71	JB 09/05/13	Metal stairs at both mezzanine areas. Good condition.
C2020 Stair Finishes						
	1996	1996	2	10	JB 09/05/13	Rubber treads at south stair. Good condition.
Interior Finishes						
C3010 Wall Finishes						
	1996	1996	4	5	JB 09/05/13	Interior paint. Restrooms have ceramic tile. Paint needed in most areas.
C3020 Floor Finishes						
	1996	1996	4	5	JB 09/05/13	Sealed concrete, ceramic tile, carpet. Sealed concrete and ceramic tile are in good condition. Carpet is in poor condition.
C3030 Ceiling Finishes						
	1996	1996	3	10	JB 09/05/13	Mix of hard lid gypsum wall board and T-bar acoustic ceiling tile in station house. Exposed, but painted, ceiling structure in apparatus bay. Paint in fair condition. Acoustic ceiling tile in fair condition.
D Services			**3.2**			
Vertical Transportation						
D1090 Other Conveying Systems						
	1996	1996	4	3	DCS 09/05/13	Roof access via mezzanine door to low roof. High roof access via temporary ladder. No permanent access to high roof.

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City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.2**				
Plumbing							
D2010 Plumbing Fixtures							
	1996	1996	3	18	DCS	09/05/13	Porcelain water closets, urinals, and lavatories in men's and women's. Stainless steel decontamination, kitchen, and other sinks. Janitor mop sink in janitor closet. Tiled showers with one-piece basins. Women's water closet is pulling away from the wall (less than $2,000). Several fixtures chronically back-up; may require drain, waste, and vent (DW&V) line cleaning and/or pre-filter/screen (less than $2,000).
D2020 Domestic Water Distribution							
	1996	1996	3	23	DCS	09/05/13	City water with 1.5-inch meter and 2-inch services line to reduced pressure backflow prevention in apparatus bay. Copper distribution piping. Two (2) Navien tankless gas-fired domestic hot water heaters. Outside perimeter hose bibs in water boxes. Tankless domestic hot water heaters have "constant issues."
D2030 Sanitary Waste							
	1996	1996	3	18	DCS	09/05/13	City sewer. Cast iron drain, waste, and vent (DW&V). Full size apparatus bay trench drains. Oil/water separator. Floor drains. See "Plumbing Fixtures" section above for fixture drain and waste backup issue. Fire Station 16 trench drains are a good example of what is needed at most other Redmond Fire Stations where apparatus washing is required to be performed inside.
D2040 Rain Water Drainage							
	1996	1996	3	18	DCS	09/05/13	Flat roof with scupper drains to scupper boxes and downspouts to site storm drain system; scupper box overflow holes. Trench drains at south station house patio door. Scupper overflow holes should be enlarged from approximately 1.5-inch diameter to 1.5-inch by 3-inch rectangle.
D2090 Other Plumbing Systems							
	1996	1996	3	8	DCS	09/05/13	Portable air compressor in small shop space off

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City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.2**			
Plumbing						
D2090 Other Plumbing Systems						
						apparatus bay. Opportunity to install permanent apparatus bay compressed air system with hose reels at each end of apparatus bay.
HVAC						
D3010 Energy Supply						
	1996	1996	3	20	DCS 09/05/13	Natural gas from Puget Sound Energy via meter number 399376 rated at 1,000-cfh, serving four (4) roof top unit gas-packs, apparatus bay infrared heaters, served shop/utility space unit heaters, two (2) tankless domestic hot water heaters, and station house kitchen range and patio barbeque appliances. No seismic shutoff valve (less than $2,000). Roof top unit gas piping is heavily rusted (less than $2,000). Unusually large gas meter for modest station size.
D3030 Cooling Generating Systems						
	1996	1996	5	0	DCS 09/05/13	No dedicated cooling for data closet/room. Opportunity to provide ductless split direct expansion (DX) cooling for communications equipment space.
D3040 HVAC Distribution Systems						
	1996	1996	3	10	DCS 09/05/13	Apparatus bay general exhaust; high only. Exhaust fans for command station house area.
D3050 Terminal and Package Units						
	1996	1996	4	5	DCS 09/05/13	Four (4) roof top unit gas-packs serving station house. Overhead gas-fired infrared serving apparatus bay. Gas-fired unit heaters serving several smaller spaces. Some comfort and reliability issues reported in station house. Roof top units are aged poorly installed and marginally maintained. Overhead infrared and unit heaters appear to be in better condition.
D3060 Controls and Instrumentation						

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City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.2**			
HVAC						
D3060 Controls and Instrumentation						
	1996	1996	3	5	DCS 09/05/13	Mix of old and newer local controls. Schedule replacement of local controls (less than $2,000). Opportunity to upgrade to DDC.
D3090 Other HVAC Systems and Equipment						
	1996	1996	3	5	DCS 09/05/13	Nederman vehicle engine exhaust system. Aging but functional.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1996	1996	3	23	DCS 09/05/13	City fire flow with reduced pressure backflow prevention in vault to northeast. 6-inch reduced pressure backflow prevention dry pipe risers in apparatus bay. Inspection reportedly current.
D4030 Fire Protection Specialties						
	1996	1996	3	23	DCS 09/05/13	Fire extinguishers throughout. Inspections current.
Electrical						
D5010 Electrical Service and Distribution						
	1996	1996	3	23	RA 09/05/13	Building electrical system is 400A, 208/120V, 3-phase, 4-wire with main disconnect switch in generator room, feeds underground to main panel via transfer switch. Main panels are 400A, subfeed to two (2) branch panels with feed-through lugs. All three (3) panels are located in the electrical room, south of the building. Main panel and branch panels are Westinghouse Challenger series, original 1996 building system. Capacity limited to 400A, no flexibility for growth.
D5020 Lighting and Branch Wiring						
	1996	1996	3	13	RA 09/05/13	Interior lighting is T8 and T12 type fluorescent fixtures, 2x4 troffers in hallway, sleeping rooms, kitchen, day room; recess down lights in kitchen, dining, conference room; fluorescent industrial in apparatus bay. No occupancy lighting controls.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.2**			
Electrical						
D5020 Lighting and Branch Wiring						Exterior lighting are small wall packs at door and recess lights at front of apparatus bay doors; difficult to re-lamp. Branch wiring are in conduits; 15A and 20A grounding devices are used. All lighting fixtures are 1996 building system. Fixtures are dirty in apparatus bay and storage rooms. Hose tower has wall high intensity discharge (HID) lights in stairwell; lack of lighting controls. No lighting found in mezzanine mechanical room. Building branch wiring and devices are in fair condition, original 1996 system.
D5030 Low Voltage Communication Security and Fire Alarm						
	1996	1996	3	8	RA 09/05/13	Building has a fire alarm system. Main control panel is located in apparatus bay. Devices consist of horn strobes, smoke detectors, and pull stations. Building has no security alarm system. Building has no card access system. Building has data/voice Cat-6, Cat-5 system. Fire alarm control panel, Notifier System 500, limited small capacity panel, in fair working condition. Opportunity for building card access control system.
D5090 Other Electrical Systems						
	1996	1996	3	8	RA 09/05/13	Building has an indoor generator with diesel base tank in generator room. Generator provides backup power to building power and lighting through transfer switch to main electrical panel. Building has no battery backup emergency lights. Indoor generator, Generac generator, is 125-kw, 208/120V, 3-phase, 4-wire original 1996 building system. Transfer switch, indoor, is 400A, 208/120V, 3-phase, 4-wire by Generac. Generator and transfer switch are in fair working condition.
E Equipment and Furnishings			**3.1**			
Equipment						
E1010 Commercial Equipment						

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Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.1**			
Equipment						
E1010 Commercial Equipment						
	1996	1996	4	2	JB 09/05/13	Laundry, residential appliances. Kitchen refrigerators are old and at end of useful life.
Furnishings						
E2010 Fixed Furnishings						
	1996	1996	3	10	JB 09/05/13	Window blinds. Casework. Window blinds are in fair condition; some have bends. Casework has some chips.

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Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Infrastructure

6502 185th Avenue NE
Redmond, WA 98052

Facility Condition Summary

This site is surrounded by public roads on three (3) sides: 185th Avenue NE, NE 65th Street, and NE 65th Court. Both the Fire Station and Maintenance Facility have 2-1/2 apparatus bays that are pull-through. There is an asphalt paved lot between the two buildings for access to the Fire Station. There is a secured concrete paved yard at the rear of the Maintenance building that contains the pump test pit and emergency generator. The site is served by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	1996	1996	3	13	MK	09/04/13	Concrete drive aprons at front & rear of Fire Station, and at front of Maintenance Facility. The rear yard of the Maintenance Facility is a majority concrete pavement with asphalt along one side. An asphalt access road with six (6) parking stalls including one (1) ADA stall extends along the south side of Station, providing access to the Maintenance yard. There is also an asphalt area between the two buildings with seven (7) additional parking stalls. Extruded concrete curbs. □ □ Asphalt and concrete pavements are in good to fair condition. Asphalt could be seal coated to extend the life; see Opportunities. Concrete curbs are chipped along the south access road and should be patched and repainted (less than $2,000). ADA stall lacks pavement markings (less than $2,000).
G2030 Pedestrian Paving							
	1996	1996	3	7	MK	09/04/13	Concrete walks along south access road and at Station entry. Concrete stairs, walks, landings, and dumpster pad in the area between the two buildings. Concrete patio for staff. □ □ Walks need joint filler in gaps between panels (less than $2,000).
G2040 Site Development							
	1996	1996	3	13	MK	09/04/13	Fixed seating bench and flagpole near Station entry. □ □ Fair condition.

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Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Infrastructure

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2040 Site Development						
G2050 Landscaping	1996	1996	2	23	MK 09/04/13	A variety of landscaping throughout the site including lawn, shrubs, groundcover, and trees. Irrigation system.□ □ In good condition. Three (3) trees at the front entry and one (1) at the back patio of the Station should be limbed up and away from the building (less than $2,000).
Site Civil / Mechanical Utilities						
G3010 Water Supply	1996	1996	3	28	MK 09/04/13	Domestic water (1-1/2" at Station), irrigation, and fire sprinkler supply to both buildings from the City of Redmond system. □ □ No known issues.
G3020 Sanitary Sewer	1996	1996	3	33	MK 09/04/13	Sanitary sewer service to both buildings from City of Redmond system. □ □ No known issues.
G3030 Storm Sewer	1996	1996	3	28	MK 09/04/13	Catch basins throughout paved areas of the site. Roof drains are connected to an underground pipe system. It appears there may be a large storm water detention and/or water quality tank on the west side of the site, based on access manholes in this area. □ □ Pre-survey report lists storm drain issue causing water at kitchen door. Assume this is the door that accesses the patio, with the small trench drain in front of it. It appears water from the adjacent downspout may cause flooding due to lack of capacity of the trench drain. Recommend downspout be rerouted overhead to discharge at building perimeter, rather than onto patio (less than $2,000). Catch basin in rear yard of Maintenance Facility is subject to runoff containing oil and foam. Installation of an oil/water separator on the basin outlet pipe should be considered; see Opportunities. Note

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City of Redmond
Fire Station 16 Site
Fire Station 16 Infrastructure

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Civil / Mechanical Utilities						
G3030 Storm Sewer						
						that additional investigation would be required to determine if this condition is a true deficiency or require other remediation, and would depend upon the frequency, volume, and type of contaminants.
G3060 Fuel Distribution						
	1996	1996	3	23	MK 09/04/13	Natural gas meters at both buildings. Natural gas supply line to exterior barbeque on patio. Waste oil tank in rear yard of the Maintenance Facility. □ □ No known issues.
Site Electrical utilities						
G4010 Electrical Distribution						
	1996	1996	3	23	MK 09/04/13	Underground electric service to the site. One 150-kva transformer at the east side of the Station building. Exterior emergency generator with base tank in the rear yard of the Maintenance Facility.□ □ No known issues.
G4020 Site Lighting						
	1996	1996	3	13	MK 09/04/13	Pole lighting throughout site. □ □ No known issues.
G4030 Site Communications and Security						
	1996	1996	3	5	MK 09/04/13	Security access gate at the rear lot of the Maintenance Facility. □ □ Gate appears to be newer than 17 years. No known issues.
Other Site Construction						
G9090 Other Site Systems						
	1996	1996	3	13	MK 09/04/13	Three wood roof training props are located at the southeast corner of the site. Underground pump test pit and associated above ground piping is located in rear yard of Maintenance Facility. Wood storage shed (8'x12') is located in rear yard of Maintenance Facility. Used for tires, equipment, etc.

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Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Infrastructure

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Other Site Construction						
G9090 Other Site Systems						
						No known issues.

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Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Shop Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	5,625
Year Of Original Construction	1996
Facility Use Type	Maintenance Shop
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2006
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**2.4**			
Facility Condition Index (FCI)	0.11			
Current Replacement Value (CRV)	$1,980,000	**Predicted Renewal Budget (6 yrs)**	$169,000	$158,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$742,000	$625,000
		Observed Deficiencies (6 yrs)	$197,000	$187,000
		Observed Deficiencies (ALL)	$267,000	$245,000
		Opportunity Total Project Cost	$419,000	N/A

Facility Condition Summary

Architectural:
Single story wood framed building includes 2.5 apparatus bay vehicle maintenance shop with mezzanine area consisting of storage rooms, shop work areas, office, restroom and lunch room. Roof construction is a truss system with plywood deck with membrane roof above. No insulation at roof deck in apparatus bay. Exterior walls are wood frame with gypsum wall board interior and metal siding/metal panel exterior. Apparatus bay contains total of five (5) sectional aluminum overhead doors. Exterior hollow metal doors and aluminum windows. Interior walls wood frame and wood frame mezzanine floor. Restroom has tile but all other walls are painted gypsum wall board. Hard lid ceilings in rooms except acoustical ceiling tile in office. Interior doors are hollow metal frame and door. Flooring is concrete except restroom tile.

Electrical:
Building electrical service is 400A, 208/120V, 3-phase, 4-wire served by Puget Sound Energy underground service from a 150-kva transformer with current transformer and meter on outside wall of building. Building has an outdoor diesel generator with base tank at back of building. Generator feeds underground power to transfer switch in building. Interior lighting is T12 fluorescent fixtures. Exterior lighting is small high intensity discharge (HID) wall packs, recess lights, and pole lights. All branch wiring are in conduits. Devices are 15A and 20A grounding type; all old original system. Building has a fire alarm system. Building has no security alarm system and no card access control system.

Mechanical:
The Shop building is on the Fire Station 16 site. The shop includes 2.5-bay drive through high may maintenance shop, low bay side shops to west, small office, small break room with kitchenette, one (1) bathroom with shower, shop fluids rooms, parts and tool room with mechanical (HVAC and Plumbing) equipment and air compressor, and partial storage mezzanine above the parts and tool room.
HAVC is overhead gas infrared for shop with high/low general exhaust and vehicle engine exhaust, and forced air heat pump heating and cooling for office and break room areas.
Plumbing is city water and sewer with copper pipe cast iron drain, waste, and vent (DW&V), and gas domestic hot water heater. Dry pipe fire sprinkled throughout.

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City of Redmond
Fire Station 16 Site
Fire Station 16 Shop Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**2.0**			
Foundations						
A1010 Standard Foundations						
	1996	1996	2	71	JB 09/05/13	West side of building is concrete low stem wall, cast in place concrete 48-inch height at apparatus bay doors. East side cast in place concrete wall grade separation. Good condition.
A1030 Slab On Grade						
	1996	1996	2	71	JB 09/05/13	Slab on grade. Good condition.
B Shell			**1.9**			
Superstructure						
B1010 Floor Construction						
	1996	1996	2	71	JB 09/05/13	Mezzanine wood construction. Good condition.
B1020 Roof Construction						
	1996	1996	2	71	JB 09/05/13	Wood truss system. Good condition.
Exterior Closure						
B2010 Exterior Walls						
	1996	2006	1	53	JB 09/05/13	Wood frame walls. Mixture of metal panel and metal siding. Good condition. All finishes replaced in 2006.
B2020 Exterior Windows						
	2006	2006	3	18	JB 09/05/13	Aluminum dual glazed windows, lower walls and upper wall areas. Southwest window at shop has seal coming out; needs to be repaired.
B2030 Exterior Doors						
	1996	2006	4	25	JB 09/05/13	Hollow metal doors and frames; some keypad locks. Aluminum sectional doors. Hardware fair.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**1.9**			
Exterior Closure						
B2030 Exterior Doors						
						Hollow metal doors are generally good, missing weather seals. Sectional doors have several dents and beat panels, scrape marks from vehicles, and edge seals are falling out.
Roofing						
B3010 Roof Coverings						
	2006	2006	2	18	JB 09/05/13	Composite torch down.
						Good condition.
B3020 Roof Openings						
	1996	2006	2	33	JB 09/05/13	Flashings.
						Good condition.
B3030 Projections						
	1996	1996	1	33	JB 09/05/13	Metal canopies at apparatus bay doors on both sides of building.
						Good condition.
C Interiors			**2.9**			
Interior Construction						
C1010 Partitions						
	1996	2006	2	33	JB 09/05/13	Wood framed gypsum wall board partitions; assume acoustic batt insulation between studs where appropriate (i.e. between office and shop).
						Good.
C1020 Interior Doors						
	1996	2006	4	10	JB 09/05/13	Mixture of hollow metal frames and doors, and hollow metal frames and wood doors. Door hardware.
						Doors and frames have dents, scratches, mix of non-code compliant hardware.
C1030 Fittings						

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Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**2.9**			
Interior Construction						
C1030 Fittings	1996	2006	3	10	JB 09/05/13	Storage shelving. Restroom countertops. Marker boards. Fair condition. Mezzanine railing gate needs hardware latch; currently being held closed with vehicle seat belt.
Staircases						
C2010 Stair Construction	1996	1996	3	71	JB 09/05/13	Wood stairs to mezzanine. Fair condition.
C2020 Stair Finishes	1996	2006	3	5	JB 09/05/13	Rubber stair tread. Fair. Tires stored in mezzanine appear to be pulled down stairs, wearing tread faster than expected.
Interior Finishes						
C3010 Wall Finishes	1996	2006	4	5	JB 09/05/13	Painted walls. Tile wainscot in restroom. Many marks on walls. Paint/gypsum wall board needs patch and paint. Holes in wall in office. Chair marks in lunchroom. Stair walls have heavy wear.
C3020 Floor Finishes	1996	1996	3	17	JB 09/05/13	Sealed concrete. Tile at restroom. Fair condition.
C3030 Ceiling Finishes	1996	1996	3	26	JB 09/05/13	Acoustic tile in office. Gypsum wall board painted in storage and restrooms. Fair condition.
D Services			**3.0**			
Vertical Transportation						

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Vertical Transportation							
D1090 Other Conveying Systems							
	1996	1996	3	15	DCS	09/05/13	One (1) 2-ton monorail hoist running overhead from mezzanine to drive through bays. No roof access. Crane is in fair condition. No roof access.
Plumbing							
D2010 Plumbing Fixtures							
	1996	1996	3	18	DCS	09/05/13	One (1) unisex sex bathroom with water closet, lavatory, and shower. One (1) kitchenette in break room. Moderately worn but functional.
D2020 Domestic Water Distribution							
	1996	1996	3	23	DCS	09/05/13	City water. Copper piping. Original 1997 domestic hot water heater, 89-gallon, 154-mbh, gas-fired with circulation pump. Hose bibs with hose on racks in shop. Hose bibs in boxes outside. In fair to good condition. Opportunity for water hose reels in shop.
D2030 Sanitary Waste							
	1996	1996	3	18	DCS	09/05/13	Cast iron drain, waste, and vent (DW&V) and trench drains at shop bay entries. Oil/water separator inside shop. No issues reported, and plumbing fixtures and trench drains flush and drain well. However, there are no floor drains in the parts/tool room where standing water collects from air compressor blow down.
D2040 Rain Water Drainage							
	1996	1996	3	23	DCS	09/05/13	Flat roof with scupper boxes at parapet. Scupper boxes have small overflow holes. Scupper box overflow holes are too small; approximately 1.5-inch diameter. Enlarge to approximately 1.5-inch high by 3-inch wide (less than $2,000).
D2090 Other Plumbing Systems							

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Plumbing							
D2090 Other Plumbing Systems							
	1996	1996	3	8	DCS	09/05/13	Air compressor (160-psig, 20-hp) and receiving unit auto-drain. Refrigerated air dryer (RAD), copper distribution piping, and drops throughout shop. Six (6) fluids pumping and distribution system with hose reels including: 10W40, 5W30, SynTrans, grease, waste oil, and water. Waste oil storage is outside in approximately 250-gallon double contained tank with pneumatic high level alarm "whistle." Compressed air system in fair to good condition. Shop fluids system is in fair to good condition. Waste oil tank is marginal. Battery room containment is poor; install more robust battery containment (less than $2,000) and evaluate battery room ventilation (less than $2,000).
HVAC							
D3010 Energy Supply							
	1996	1996	3	23	DCS	09/05/13	Natural gas from Puget Sound Energy via meter number 399835 with 425-chf capacity. Gas loads include high bay shop infrared heaters and domestic hot water heaters. No seismic shut-off valve (less than $2,000). Opportunity for gas heat in low bay shops and office/break room.
D3030 Cooling Generating Systems							
	1996	1996	4	5	DCS	09/05/13	One (1) 2.5-ton R-22 condensing unit serving the office/break room area air handling unit. Condensing unit is approaching end of life, but currently functional.
D3040 HVAC Distribution Systems							
	1996	1996	3	18	DCS	09/05/13	Split direct expansion (DX) heat pump serving offices and break room areas. General high/low exhaust serving shop with outside air from interlocked shop overhead (ceiling/roof) hood with motor operated damper. See "Energy Supply" section and "Cooling Generating Systems" section above for office system observed deficiencies and opportunities. While good high/low general exhaust is installed,

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
HVAC						
D3040 HVAC Distribution Systems						
						the low exhaust intakes are being blocked by shop equipment and materials. Welding exhaust is missing. See "Other Plumbing Systems" section for observed deficiencies at shop fluids room. Ceiling fans may assist in improving shop comfort and reduce energy cost.
D3050 Terminal and Package Units						
	1996	1996	3	10	DCS 09/05/13	High bay shop overhead Reverberay gas-fired vented (to roof) low intensity infrared heaters. Low bay electric resistance overhead infrared heat. Electric resistance wall heaters in several smaller spaces. Despite age, infrared heaters are in fair to good condition. See "HVAC Distribution Systems" section for ceiling fan opportunity.
D3060 Controls and Instrumentation						
	1996	1996	4	5	DCS 09/05/13	Stand alone controls. Aging stand alone controls. Opportunity for DDC.
D3090 Other HVAC Systems and Equipment						
	1996	1996	5	0	DCS 09/05/13	No welding hood and exhaust. Install welding hood.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1996	1996	3	23	DCS 09/05/13	City 6-inch fire service with post indicator valve (PIV) and fire department connection (FDC) on-site. 4-inch all dry-pipe risers and distribution main. Water at 70+ psig; air at 45 psig. Inspections are current.
D4030 Fire Protection Specialties						
	1996	1996	3	13	DCS 09/05/13	Fire extinguishers. Inspections are current.
Electrical						

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
Electrical						
D5010 Electrical Service and Distribution						
	1996	1996	3	23	RA 09/05/13	Building electrical system is 400A, 208/120V, 3-phase, 4-wire with main disconnect switch inside building; feeds main panel via transfer switch. Electrical meter on outside wall. Main panel is 400A, sub feed to two (2) branch panels with feed through lugs. All three (3) panels are located adjacent to each other. Main panel and branch panels are Westinghouse Challenger series, original 1996 building system. Capacity is limited to 400A, no flexibility for growth.
D5020 Lighting and Branch Wiring						
	1996	1996	3	13	RA 09/05/13	Interior lighting is T12 fluorescent with troffers in offices, open industrial in apparatus bay and storage rooms. No occupancy lighting controls. Branch wiring are in conduits, with 15A and 20A devices. Exterior lighting are small wall packs and recess lights at front of apparatus bay; difficult for re-lamping. All lighting fixtures are 1996 building system. Fixtures are dirty in the apparatus bay, building wall lights. Opportunity for upgrade. Devices and receptacles are also found dirty. In apparatus bay additional outlets are needed.
D5030 Low Voltage Communication Security and Fire Alarm						
	1996	1996	2	8	RA 09/05/13	Building has a fire alarm system. Main panel is located in fire sprinkler room. Devices consist of horn strobes and pull stations. Building has no security alarm system. Building has data/voice Cat-5 system. Building has no card access control system. Fire alarm control panel is Silent Knight #SK-5208; in good working condition. Opportunity for building card access system.
D5090 Other Electrical Systems						
	1996	1996	3	8	RA 09/05/13	Building has an outdoor generator with diesel base tank, located at back of building. Generator feeds underground to transfer switch inside building, next to main service disconnect switch, at storage room near building entrance. Generator supplies standby power to power

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Electrical							
D5090 Other Electrical Systems							
							equipment and lighting load. Outdoor generator manufactured by Generac, 125-kw, 208/120V, 3-phase, 4-wire. Oil leak was mentioned in pre-survey; issue not founded. Indoor automatic transfer switch (ATS) is 400A, 208/120V, 3-phase, 4-wire. Generator and transfer switch are in working condition. Building has no battery backup emergency lights.
E Equipment and Furnishings			**2.6**				
Equipment							
E1030 Vehicular Equipment							
	1996	1996	2	10	JB	09/05/13	Vehicle lifts. Tire machines. Good condition.
E1090 Other Equipment							
	1996	1996	2	10	JB	09/05/13	Shop equipment, welding, various cutters, electrical cord reels. Good condition.
Furnishings							
E2010 Fixed Furnishings							
	1996	1996	3	12	JB	09/05/13	Casework in lunchroom. Fair condition.
E2020 Moveable Furnishings (Capital Funded Only)							
	1996	1996	3	10	JB	09/05/13	Furniture in office and lunch room. Storage racks in parts/tool room, other miscellaneous. Fair condition.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Fire Station 16 Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 16 Building	Interior Finishes	$33,704	$10,111	$8,763	$26,289	$78,867	$72,804
	Vertical Transportation	$6,500	$1,950	$1,690	$5,070	$15,210	$14,358
	Plumbing	$10,000	$3,000	$2,600	$7,800	$23,400	$22,087
	HVAC	$46,500	$13,950	$12,090	$36,270	$108,810	$103,997
	Electrical	$42,500	$12,750	$11,050	$33,150	$99,450	$96,581
	Equipment	$5,400	$1,620	$1,404	$4,212	$12,636	$12,159
	Facility Total	**$144,604**	**$43,381**	**$37,597**	**$112,791**	**$338,373**	**$321,986**
Fire Station 16 Shop Building	Exterior Closure	$3,900	$1,170	$1,014	$3,042	$9,126	$8,614
	Interior Finishes	$18,000	$5,400	$4,680	$14,040	$42,120	$38,259
	Vertical Transportation	$5,000	$1,500	$1,300	$3,900	$11,700	$11,700
	Plumbing	$14,750	$4,425	$3,835	$11,505	$34,515	$33,432
	HVAC	$17,000	$5,100	$4,420	$13,260	$39,780	$37,964
	Electrical	$25,500	$7,650	$6,630	$19,890	$59,670	$57,419
	Facility Total	**$84,150**	**$25,245**	**$21,879**	**$65,637**	**$196,911**	**$187,387**
	Site Total	**$228,754**	**$68,626**	**$59,476**	**$178,428**	**$535,284**	**$509,374**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 16 Site

Total Observed Deficiency Repair Direct Cost : $228,754

Total Observed Deficiency Repair Direct Cost (Present Value): $217,681

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 16 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$33,704**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$31,113**
Wall Finishes								
Paint	4	5 2013	Paint has marks and wear throughout.	Patch and repair; repaint walls.	9,852	$2.00	sf	$19,704
Floor Finishes								
Carpet	4	3 2013	Carpeting is soiled and worn.	Remove and replace all carpeting.	3,500	$4.00	sf	$14,000
Facility: Fire Station 16 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$6,500**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$6,136**
Other Conveying Systems								
Roof Access	4	3 2013	No permanent access to high roof for equipment maintenance.	Install permanent high roof access ladder, about 8-feet high. Ladders to smaller roof(s) as needed.	1	$6,500.00	ea	$6,500
Facility: Fire Station 16 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$10,000**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$9,439**
Domestic Water Distribution								
Domestic Hot Water Heaters	4	3 2013	Navien tankless gas-fired domestic hot water heaters reportedly have "constant issues", despite what at first glance appears to be reasonable installation.	Replace with commercial grade, name brand domestic hot water heaters.	2	$5,000.00	ea	$10,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 16 Site

Total Observed Deficiency Repair Direct Cost : $228,754

Total Observed Deficiency Repair Direct Cost (Present Value): $217,681

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 16 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$46,500**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$44,443**
HVAC Distribution Systems								
HVAC	4	3 2013	No HVAC service to some mezzanine, shop, and utility/storage spaces.	Provide HVAC service to all spaces per code.	3	$2,500.00	ea	$7,500
Terminal and Package Units								
Roof Top Units	4	2 2013	All four (4) rooftop units are approaching end of life, with poor original installation.	Schedule replacement of rooftop units including redesign to most current code.	4	$7,500.00	ea	$30,000
Other HVAC Systems and Equipment								
Engine Exhaust	4	3 2013	Aging Nederman engine exhaust system.	Refurbish engine exhaust system.	3	$3,000.00	ea	$9,000
Facility: Fire Station 16 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$42,500**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$41,274**
Lighting and Branch Wiring								
Exterior Lighting	4	2 2013	Exterior building lights are insufficient. Difficult to re-lamp soffit lights. Leaking flag pole lights. Poor canopy lights.	Provide new light emitting diode (LED) lighting and time switches control. Replace and add exterior wall lights (14). Replace two (2) flag pole lights. Replace recess soffit lights with wall mounted fixtures on vertical face of soffit above apparatus door (6). Replace three (3) canopy lights with low profile shallow LED fixtures.	25	$700.00	ea	$17,500

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 16 Site

Total Observed Deficiency Repair Direct Cost : $228,754

Total Observed Deficiency Repair Direct Cost (Present Value): $217,681

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Lighting and Branch Wiring	5	0 2013	Hose tower has insufficient lighting and electrical outlets.	Remove high intensity discharge (HID) wall lights. Provide six (6) vapor tight 1x4 light emitting diode (LED) fixtures, two (2) battery emergency lights, three (3) occupancy sensors, and two (2) ground fault interrupter (GFI) outlets at ground level in work area.	1	$10,000.00	ea	$10,000
Branch Wiring	4	2 2013	Insufficient electrical outlets in apparatus bay.	Provide additional ground fault interrupter (GFI) outlets at bay door, inside building. Add overhead cable reel/drop cords in bay. Six (6) GFI, four (4) reel drops, and ten (10) circuits.	1	$15,000.00	ea	$15,000
Facility: Fire Station 16 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,400**
System: Equipment				**Total System Deficiency Repair Cost (Present Value):**				**$5,196**
Commercial Equipment								
Refrigerators	4	2 2013	Refrigerators are old and near end of life.	Remove and replace refrigerators with new appliances.	3	$1,800.00	ea	$5,400

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 16 Site

Total Observed Deficiency Repair Direct Cost : $228,754

Total Observed Deficiency Repair Direct Cost (Present Value): $217,681

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 16 Shop Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,900**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$3,681**
Exterior Doors								
Exterior Doors	4	3 2013	Some hollow metal exterior doors are missing weather seals. Aluminum sectional doors seals are worn and falling out. Panels are damaged and need repair.	Provide hollow metal door seals or replace where worn. Remove existing sectional door seals and replace with new. Straighten bent and damaged panels; replace as needed.	1	$3,900.00	ls	$3,900
Facility: Fire Station 16 Shop Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$18,000**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$16,350**
Wall Finishes								
Painted Walls	4	5 2013	Wall paint is worn and damaged.	Repaint and patch walls where necessary.	6,000	$3.00	sf	$18,000
Facility: Fire Station 16 Shop Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$5,000**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access to maintain roof and rooftop equipment.	Provide permanent ladder to roof from mezzanine via roof heaters.	1	$5,000.00	ls	$5,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 16 Site

Total Observed Deficiency Repair Direct Cost : $228,754

Total Observed Deficiency Repair Direct Cost (Present Value): $217,681

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 16 Shop Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$14,750**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$14,287**
Sanitary Waste								
Floor Drains	5	0 2013	No floor drains in parts/tool room. Air compressor receives blow down drain on to floor resulting in standing water, rusting and corroding wetted metallic racks and equipment feet.	Add floor drains to parts/tool room.	2	$2,500.00	ea	$5,000
Other Plumbing Systems								
Waste Oil Tank	4	3 2013	Waste oil tank is rusted and corroded with standing water on oil-canned top.	Schedule replacement including protective canopy.	1	$7,500.00	ls	$7,500
Shop Fluids Room	4	1 2013	Shop fluids room is under-ventilated with small exhaust and unclear make-up air. Strong odor with risk of fire/explosion.	Provide code minimum ventilation for shop fluids room.	150	$15.00	sf	$2,250
Facility: Fire Station 16 Shop Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$17,000**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$16,224**
Cooling Generating Systems								
Condensing Unit	4	5 2013	Condensing unit is approaching end of life.	Replace condensing unit.	1	$4,000.00	ea	$4,000
HVAC Distribution Systems								
Shop Exhaust	4	2 2013	Low shop exhaust is blocked by excessive shop equipment, hoses, parts, and supplies.	Install storage container in yard outside to relocate equipment materials blocking general exhaust low on inlet paths.	120	$50.00	sf	$6,000
Controls and Instrumentation								

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 16 Site

Total Observed Deficiency Repair Direct Cost : $228,754

Total Observed Deficiency Repair Direct Cost (Present Value): $217,681

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Controls	4	5 2013	Stand alone controls are aging.	Replace controls.	1	$2,000.00	ls	$2,000
Other HVAC Systems and Equipment								
Welding Exhaust	5	0 2013	No welding exhaust system.	Install welding exhaust system.	1	$5,000.00	ls	$5,000
Facility: Fire Station 16 Shop Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$25,500**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$24,538**
Lighting and Branch Wiring								
Branch Wiring	4	2 2013	Insufficient electrical outlets in apparatus bay.	Provide additional ground fault interrupter (GFI) outlets at bay door, inside building. Add overhead cable drop/reel cords in bay. Six (6) GFI, four (4) drops, ten (10) circuits.	1	$15,000.00	ea	$15,000
Lighting	4	2 2013	Exterior wall lights and apparatus bay door soffit lights are insufficient and difficult to re-lamp.	Replace exterior building lights with light emitting diode (LED) lights. Replace recess soffit lights with wall mounted lights on vertical face of the soffit at apparatus door front.	15	$700.00	ea	$10,500

Note: Cost estimates shown are direct construction costs.

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 16 Site **Total Site Opportunity Cost: $427,261**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 16 Building**						
System:	**Interior Construction**	**Total Cost: $3,748**					
C1030	**Fittings**						
		Metal shelving units, some tall cabinets are not anchored to wall with earthquake straps.	Install earthquake straps at all free standing tall shelving units and tall cabinets.	1.00	$2,500.00	ls	$2,500
		Interior walls throughout facility show heavy wear and damage at wall corners.	Provide 2x2 stainless steel corner guards at each outside wall corner.	48.00	$26.00	lf	$1,248
Facility:	**Fire Station 16 Building**						
System:	**Interior Finishes**	**Total Cost: $12,750**					
C3010	**Wall Finishes**						
		South wall of apparatus bay has exposed gypsum wall board. Fitness room has exposed gypsum wall board. Signs of walls used as backstops for equipment.	Provide fiber reinforced plastic (FRP) to 10-foot height at south wall of apparatus bay. Provide 4-foot height FRP at all fitness room walls.	1.00	$6,000.00	ls	$6,000
C3020	**Floor Finishes**						
		Carpet is currently used in fitness room.	Replace carpet with rubber flooring.	750.00	$9.00	sf	$6,750
Facility:	**Fire Station 16 Building**						
System:	**Plumbing**	**Total Cost: $7,500**					
D2090	**Other Plumbing Systems**						
		Temporary/portable compressed air system can be upgraded to permanent system with compressor, refrigerated air dryer, drops in shops/utility room, and hose reels.	Install permanent compressed air distribution system.	1.00	$7,500.00	ls	$7,500
Facility:	**Fire Station 16 Building**						
System:	**HVAC**	**Total Cost: $84,556**					
D3030	**Cooling Generating Systems**						
		Communications room cooling via general station house system. Opportunity to provide dedicated system.	Provide 1-ton ductless split Dx cooling systems for communications room/closet.	1.00	$5,000.00	ls	$5,000
D3050	**Terminal and Package Units**						

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 16 Site **Total Site Opportunity Cost: $427,261**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
		Packaged roof top unit gas-packs provide marginal occupant comfort.	Upgrade to variable refrigerant flow (VRF) with heat recovery ventilator (HRV) similar to Fire Station 17.	5,000.00	$10.00	sf	$50,000
D3060	Controls and Instrumentation						
		No DDC controls.	Install DDC controls.	9,852.00	$3.00	sf	$29,556
Facility:	Fire Station 16 Building						
System:	Electrical	Total Cost: $126,800					
D5020	Lighting and Branch Wiring						
		Opportunity to upgrade lighting and control in apparatus bay.	Provide new T5HO fluorescent fixtures with lens and occupancy controls in apparatus bay. T8 fixtures in adjacent rooms next to bay.	36.00	$800.00	ea	$28,800
		Opportunity to upgrade wiring circuits and devices in apparatus bays and adjacent work/storage rooms.	Provide new circuits, wiring, and ground fault interrupter (GFI) outlets.	40.00	$400.00	ea	$16,000
D5030	Low Voltage Communication Security and Fire Alarm						
		No security card access control system.	Provide card access control system with door controls.	1.00	$70,000.00	ea	$70,000
D5090	Other Electrical Systems						
		No emergency battery backup lights.	Provide emergency battery backup lights at interior and exterior egress.	30.00	$400.00	ea	$12,000
Facility:	Fire Station 16 Infrastructure						
System:	Site Improvements	Total Cost: $4,800					
G2010	Roadways						
		The asphalt pavement is showing surface wear. Application of a seal coat and restriping would extend the life of the pavement.	Clean, seal coat, and restripe asphalt pavements.	800.00	$6.00	sy	$4,800
Facility:	Fire Station 16 Infrastructure						
System:	Site Civil / Mechanical Utilities	Total Cost: $8,000					
G3030	Storm Sewer						
		Catch basin in rear yard of Maintenance Facility is subject to runoff containing oil and foam. Installation of an oil/water separator on the basin outlet pipe should be considered.	Install an oil/water separator on the outlet pipe from the catch basin.	1.00	$8,000.00	ls	$8,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 16 Site **Total Site Opportunity Cost: $427,261**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 16 Shop Building**						
System:	**Interior Construction**	**Total Cost: $2,000**					
C1020	**Interior Doors**						
		Metal shelving units, some tall cabinets are not anchored to wall with earthquake straps.	Install earthquake straps at all free standing tall shelving units and tall cabinets.	1.00	$2,000.00	ls	$2,000
Facility:	**Fire Station 16 Shop Building**						
System:	**Interior Finishes**	**Total Cost: $11,100**					
C3010	**Wall Finishes**						
		Stairwells show heavy wear. Additional protection needed for heavy use. Wall damage at lunchroom and tool areas, both sides of apparatus bay.	Recommend installing plywood over wall covering up and down stairs ($2,100). Recommend fiberglass reinforced panel installed to height of 10-feet above the floor in all work areas ($10,000).	1.00	$11,100.00	lf	$11,100
Facility:	**Fire Station 16 Shop Building**						
System:	**Plumbing**	**Total Cost: $2,000**					
D2020	**Domestic Water Distribution**						
		Shop water is from hose bibs and hoses on racks. Opportunity to install more convenient hose reels.	Install heavy duty water hose reels and hose at each end of the shop.	2.00	$1,000.00	ea	$2,000
Facility:	**Fire Station 16 Shop Building**						
System:	**HVAC**	**Total Cost: $32,875**					
D3010	**Energy Supply**						
		Offices and low bay shop areas are currently electric heat. The natural gas meter has capacity to heat these spaces for added comfort and reduced heating energy cost.	Upgrade office forced air heat to hybrid systems by adding on gas furnace sections. Replace low bay shop overhead electric infrared heat with gas infrared heat.	2.00	$5,000.00	ls	$10,000
D3040	**HVAC Distribution Systems**						
		High bay shop infrared heaters heat rises to high ceiling. Shop can be hot on warm/hot days. Ceiling fans can improve both comfort and energy efficiency.	Install ceiling fans in high bay shop.	4.00	$500.00	ea	$2,000
		No HVAC service for parts/tool room.	Provide HVAC for parts/tool room, including unit heaters and ventilation.	200.00	$20.00	sf	$4,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 16 Site **Total Site Opportunity Cost: $427,261**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
D3060	**Controls and Instrumentation**						
		Opportunity for upgrade to DDC controls to facilitate maintenance and improved energy efficiency.	Install DDC.	5,625.00	$3.00	sf	$16,875
Facility:	**Fire Station 16 Shop Building**						
System:	**Electrical**	**Total Cost: $131,132**					
D5020	**Lighting and Branch Wiring**						
		Opportunity for wiring circuits and devices upgrade.	Provide new circuit wiring and devices. Use ground fault interrupter (GFI) in apparatus bays.	5,625.00	$6.00	sf	$33,750
		Opportunity for interior lighting upgrade.	Upgrade interior lighting with occupancy controls.	5,626.00	$7.00	sf	$39,382
D5030	**Low Voltage Communication Security and Fire Alarm**						
		No security card access control system.	Provide card access control system with door controls.	1.00	$50,000.00	ea	$50,000
		No emergency battery backup lights.	Provide emergency battery backup lights at interior and exterior egress.	20.00	$400.00	ea	$8,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Facility Summary

City of Redmond
Fire Station 17 Site
Fire Station 17 Building

16917 NE 116th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	19,397
Year Of Original Construction	2012
Facility Use Type	Fire Station
Construction Type	Medium
# of Floors	2
Energy Source	Gas
Year Of Last Renovation	2012
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**1.3**			
Facility Condition Index (FCI)	0.02			
Current Replacement Value (CRV)	$9,511,000	**Predicted Renewal Budget (6 yrs)**	$126,000	$114,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$538,000	$425,000
		Observed Deficiencies (6 yrs)	$71,000	$70,000
		Observed Deficiencies (ALL)	$71,000	$70,000
		Opportunity Total Project Cost	$71,000	N/A

Facility Condition Summary

Architectural:
Two-story fire station building. Facility contains 2.5-bay apparatus area, dorms, day room, kitchen, office, weight room, restrooms, storage, specialty areas in lower level. Upstairs has large unfinished space, storage, restrooms, and large multi-use space. Building is concrete masonry unit walls to 12-feet above finished floor and wood framed 2nd floor and wood framed floor and roof construction. Exterior wall finish includes cement board in several colors. Hose tower is concrete masonry unit with concrete pan steel stairs, landings, and catwalks. Roofing is stamping seam metal roof. Exterior doors are aluminum storefront hollow metal, and apparatus doors are three (3) steel bifold and two (2) aluminum sectional doors. Interior partitions are wood framed and painted gypsum wall board. Apparatus bay has fiber reinforced plastic to 10-foot height. Wall corners have 2x2 stainless steel corner guard. Most floor finishes are diamond grind concrete. Ceramic tile in restroom. Decontamination room has epoxy flooring. Building is 1-year old, all finishes are in good condition including built in casework and shelving.

Electrical:
Building electrical service is 800A, 208/120V, 3-phase 4-wire, served by Puget Sound Energy, underground service from outdoor padmount 150-kva transformer. Electrical meter is on outside building wall. Building has an outdoor generator, 151-kw, 208/120V, 3-phase, 4-wire, located in generator yard. Generator feeds underground power to main panel via the transfer switch located in the mezzanine electrical room. Interior lighting is all new T8 fluorescent troffers, linear fixtures, and compact fluorescent down lights and wall sconces. Outdoor lighting are high intensity discharge (HID) wall lights and pole lights in parking. All branch wiring are in conduits. All devices are 15A and 20A grounding type. Building has a fire alarm system, card access system, CCTV security camera system, and Cat-6 data/voice system. Building has no security alarm system.

Mechanical:
Fire Station 17 is Redmond's newest fire station and is only partly occupied; significant portions are warm shell only, not built-out, including about 10 dorm rooms on the first floor, and several larger rooms on the second floor. Fire Station 17 is reported designed and built for LEED Certification, but no plaque was observed in the lobby. Fire Station 17 includes an elaborately landscaped site three (3) apparatus bay with accessory small shop and storage rooms including bunker gear drying room; training hose tower, station house with office, day room, exercise room, kitchen, dorm rooms, and men's and women's bathrooms; police office area; and second floor area with large conference and training room, toilet room, and several warm shell spaces. The large second floor conference/training room serves as the city's backup end of life. A new pump house with well is also located on-site producing non-potable water for irrigation.
HVAC includes variable refrigerant flow (VRF) with heat recovery ventilator (HRV) for station house and gas infrared with gas make-up air unit for apparatus bays.
Plumbing is city water and sewer with two (2) gas-fired domestic hot water heaters. Fire sprinkled throughout.

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City of Redmond
Fire Station 17 Site
Fire Station 17 Building

16917 NE 116th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
A Substructure			**1.0**				
Foundations							
A1010 Standard Foundations							
	2012	2012	1	87	JB	09/05/13	Continuous concrete footings and stem walls. Good.
A1030 Slab On Grade							
	2012	2012	1	87	JB	09/05/13	Slab on grade. Good condition.
B Shell			**1.1**				
Superstructure							
B1010 Floor Construction							
	2012	2012	1	87	JB	09/05/13	Wood frame floor construction. Good condition.
B1020 Roof Construction							
	2012	2012	1	87	JB	09/05/13	Wood framed.
Exterior Closure							
B2010 Exterior Walls							
	2012	2012	1	59	JB	09/05/13	Mix of concrete masonry unit, wood frame, cement board with rain screen. Good condition.
B2020 Exterior Windows							
	2012	2012	1	44	JB	09/05/13	Dual glazed aluminum. Good condition.
B2030 Exterior Doors							
	2012	2012	2	48	JB	09/05/13	Hollow metal doors, store front entry, and day room to patio. Apparatus doors: south aluminum sectional; north doors steel bifold doors.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**1.1**			
Exterior Closure						
B2030 Exterior Doors						
						Generally in good condition; except for hose tower door sills checked and cracked.
Roofing						
B3010 Roof Coverings						
	2012	2012	1	24	JB 09/05/13	Standing seem metal roofing.
						Good condition.
B3020 Roof Openings						
	2012	2012	1	39	JB 09/05/13	Framed roof curbs for mechanical equipment; fully flashed.
						Flashing poor at several curbs; actively leaking at condenser unit farm above southwest portion of apparatus bay.
B3030 Projections						
	2012	2012	1	49	JB 09/05/13	Entrance canopy.
						Good condition.
C Interiors			**1.0**			
Interior Construction						
C1010 Partitions						
	2012	2012	1	49	JB 09/05/13	Stud wall framing.
						Good condition.
C1020 Interior Doors						
	2012	2012	1	39	JB 09/05/13	Hollow metal frames with hollow metal frames, some with relites.
						Good condition.
C1030 Fittings						
	2012	2012	1	29	JB 09/05/13	Marker boards, counters.
						Good condition.

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Fire Station 17 Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**1.0**			
Staircases						
C2010 Stair Construction						
	2012	2012	1	87	JB 09/05/13	Wood framed strips at administration building; steel at apparatus bay. Good condition.
C2020 Stair Finishes						
	2012	2012	1	15	JB 09/05/13	Rubber stair treads. Good condition.
Interior Finishes						
C3010 Wall Finishes						
	2012	2012	1	21	JB 09/05/13	Painted gypsum wall board, ceramic tile, fiberglass reinforced panel (FRP). Good condition.
C3020 Floor Finishes						
	2012	2012	1	23	JB 09/05/13	Sealed concrete, rubber flooring. Good condition.
C3030 Ceiling Finishes						
	2012	2012	1	32	JB 09/05/13	Acoustic tile. Painted gypsum wall board. Good condition.
D Services			**1.5**			
Vertical Transportation						
D1010 Elevators and Lifts						
	2012	2012	1	35	DCS 09/05/13	Two-stop Thyssen Krupp hydraulic elevator with fully finished cab. New condition; working well. Unable to view elevator machine room (key not available), but appear to be cooled by ductless split direct expansion (DX) cooling system (based on condensing unit at roof above).
D1090 Other Conveying Systems						
	2012	2012	5	0	DCS 09/05/13	Roof access via hose tower.

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City of Redmond
Fire Station 17 Site
Fire Station 17 Building

16917 NE 116th Street
Redmond, WA 98052

Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**1.5**			
Vertical Transportation						
D1090 Other Conveying Systems						
						No pathway to high rooftop mechanical equipment. No access to low roof area to east.
Plumbing						
D2010 Plumbing Fixtures						
	2012	2012	1	33	DCS 09/05/13	Porcelain water closets, urinals, and lavatories with chrome trim. Stainless steel decontamination, kitchen, and other sinks. Showers in men's and women's and decontamination. Fixtures little used in near new condition.
D2020 Domestic Water Distribution						
	2012	2012	2	38	DCS 09/05/13	1/5-inch city water meter with 2.5-inch service to riser room at 45 psig. Two (2) gas-fired domestic hot water heaters, Rheem 160-mbh, 100-gallon, expansion tank, with receive pump. Hose bibs outside in wall boxes. Non-potable pump house with well, 1,000+ gallon storage tank and distribution pump. All in good to excellent condition except relatively low (45 psig) city water pressure and faulty non-potable water system and/or irrigation controls.
D2030 Sanitary Waste						
	2012	2012	2	33	DCS 09/05/13	City sewer. Cast iron drain, waste, and vent (DW&V). Apparatus bay trench drains. Floor drains in bathrooms, bunker gear drying, and other utility rooms. No issues reported or observed.
D2040 Rain Water Drainage						
	2012	2012	2	38	DCS 09/05/13	Gutter and downspout to storm. Gutter includes gutter screen. Gutter screens need cleaning, and most be cleaned regularly to remain effective and prevent damage to building structure and finishes. See "Domestic Water Distribution" section above for rain water harvesting opportunity.

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Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**1.5**				
Plumbing							
D2090 Other Plumbing Systems							
	2012	2012	2	23	DCS	09/05/13	Portable air compressor in apparatus bay small shop. Opportunity for permanent compressed air system in apparatus bay.
HVAC							
D3010 Energy Supply							
	2012	2012	2	38	DCS	09/05/13	Natural gas from Puget Sound Energy via meter number (TBD) with capacity of (TBD) cfh. Gas loads include apparatus bay infrared heaters, apparatus bay and station house make-up air units, domestic hot water heaters, kitchen appliances, and patio barbeque. No seismic shutoff valve. (Less than $2,000.)
D3030 Cooling Generating Systems							
	2012	2012	2	10	DCS	09/05/13	Four (4) roof top variable refrigerant flow (VRF) system condensing units in screened enclosure. Two (2) roof top ductless split condensing units not screened or enclosed. Ductless split condensing units appear to serve elevator machine room (but not observed) and communications room. Roof drainage issues at flashing in variable refrigerant flow (VRF) condensing unit enclosure (see "Roof Coverings"); otherwise no issues reported or observed.
D3040 HVAC Distribution Systems							
	2012	2012	2	33	DCS	09/05/13	State of the art variable refrigerant flow (VRF) with heat recovery ventilator (HRV) system serving station house, police, and large meeting room areas. Gas-fired make-up air units for apparatus bay and station house; unclear how station house HRV and make-up air unit subsystems interface (if at all). Apparatus bay exhaust system. Few issues reported or observed except controls (See "Controls and Instrumentation" section). Reportedly variable refrigerant flow (VRF) system condensing units are sized to early future load of warm-shell only spaces.

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Fire Station 17 Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**1.5**			
HVAC						
D3040 HVAC Distribution Systems						
D3050 Terminal and Package Units						
	2012	2012	2	18	DCS 09/05/13	Four (4) overhead gas-fired, vented, Modine low-intensity infrared heaters for apparatus bay. 5-kw ceiling electric resistance unit heaters for warm-shell space, bunker gear drying, and other small spaces. Warm-shell space should be upgraded to variable refrigerant flow (VRF) when built out.
D3060 Controls and Instrumentation						
	2012	2012	3	18	DCS 09/05/13	Proprietary DDC for variable refrigerant flow (VRF) system. Unclear interface between variable refrigerant flow (VRF) an non-VRF systems. Reportedly City IT Department will not allow use of VRF system control software on-site, so City and/or Fire Department is currently unable to optimize performance and achieve good thermal comfort and/or indoor air quality.
D3090 Other HVAC Systems and Equipment						
	2012	2012	1	18	DCS 09/05/13	Nederman vehicle engine exhaust system. No issues reported or observed. With no fire apparatus on-site, system is like new.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	2012	2012	1	38	DCS 09/05/13	City water with 6-inch service to 4-inch riser in riser room with reduced pressure backflow prevention; fire department connection and post indicator valve in north yard. Riser supply pressure at 45 psig. While station pressure is somewhat low (45 psig), reportedly residual pressure is adequate (greater than 20 psig).
D4030 Fire Protection Specialties						
	2012	2012	1	28	DCS 09/05/13	Fire extinguishers in cabinet. Good to excellent condition.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**1.5**				
Fire Protection							
D4090 Other Fire Protection Systems							
	2012	2012	3	10	DCS	09/05/13	No fire suppression at small commercial hood oven kitchen range. Opportunity to install automatic chemical based fire suppression at kitchen range hood.
Electrical							
D5010 Electrical Service and Distribution							
	2012	2012	1	39	RA	09/05/13	Building electrical system is 800A, 208/120V, 3-phase, 4-wire, underground service from Puget Sound Energy 150-kva padmount transformer outdoor. Main panel and transfer switch are located in mezzanine electrical room. All main panel, distribution, branch panels, Square-D, I-Line, NQ series; all in new condition.
D5020 Lighting and Branch Wiring							
	2012	2012	1	29	RA	09/05/13	Interior lighting is all fluorescent; all in new condition. Exterior lighting is all high intensity discharge (HID) fixtures; all in new condition. Branch wiring, conduits, and devices are all in new condition. Minor deficiencies observed: One (1) outdoor ground light has water inside; check condition. One (1) fixture in bunker gear room has loose lens; check condition. One (1) occupancy wall type sensor, in dead corner, should change to ceiling mounted type occupancy sensor to control lights in bunker gear room.
D5030 Low Voltage Communication Security and Fire Alarm							
	2012	2012	1	19	RA	09/05/13	Building has an outdoor generator with diesel base tank, located in outdoor generator yard. Generator feeds underground to transfer switch in mezzanine electrical room. Generator supplies standby power to equipment and lighting load. Building has batter backup emergency lights in hallway, recess down lights. Generator, manufactured by Detroit Diesel, is 151-kw, 208/120V, 3-phase, 4-wire system with the GE Zenith ATS transfer switch in the mezzanine electrical room. All generator, transfer switch, and battery backup emergency

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Fire Station 17 Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**1.5**			
Electrical						
D5030 Low Voltage Communication Security and Fire Alarm						
						lights are in new condition.
D5090 Other Electrical Systems						
	2012	2012	1	24	RA 09/05/13	Building has a fire alarm system, main panel is located in fire control room. Devices consist of smoke detectors, horn strobes, and pull stations. Fire alarm control panel is Silent Knight #9200U. Fire alarm is in new condition. Building has new data/voice Cat-6 wiring and devices system. Building has new CCTV camera system. Building has new card access control system.
E Equipment and Furnishings			**1.0**			
Equipment						
E1010 Commercial Equipment						
	2012	2012	1	24	JB 09/05/13	Laundry equipment. Good condition.
E1090 Other Equipment						
	2012	2012	1	24	JB 09/05/13	Gym equipment. Good condition.
Furnishings						
E2010 Fixed Furnishings						
	2012	2012	1	29	JB 09/05/13	Casework. Window coverings. Good condition.

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Facility Summary

City of Redmond
Fire Station 17 Site
Fire Station 17 Infrastructure

16917 NE 116th Street
Redmond, WA 98052

Facility Condition Summary

This new fire station site has a three-bay concrete drive off of NE 116th Street, along with a front plaza and building entry area. An asphalt drive on the west side of the building provides access to a secured parking lot and the two (2) drive-through bays from the rear of the building. A small building contains a well and storage tank for the irrigation system. The parking lot appears to have a large storm water vault beneath it. The site is served by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways	2012	2012	1	29	MK	09/04/13	Concrete drive aprons at front and rear of apparatus bay. Asphalt access drive with parking stalls extends along the west side and rear of the building. One (1) ADA stall at front of building. Vertical concrete curbing. Pavement in excellent condition.
G2030 Pedestrian Paving	2012	2012	1	23	MK	09/04/13	Concrete-paver plaza at the front of the building. Concrete patio for staff use, and concrete entry walkways. Concrete sidewalks at rear of building. Excellent condition.
G2040 Site Development	2012	2012	1	29	MK	09/04/13	Fixed bike rack, flagpole, and masonry seating areas near front of the building. Excellent condition.
G2050 Landscaping	2012	2012	2	39	MK	09/04/13	New plantings and irrigation around the perimeter of the building and adjacent to pavement areas. Plants are immature at this time. Native vegetation, including large trees was retained along the south side of the lot and is in good condition. There is a concrete masonry unit (CMU) well house at the southeast side of the station that houses a well head, 1200-gallon storage tank and pumps for the irrigation system. Some issues with the irrigation pumps were

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2050 Landscaping							reported in the pre-survey. There has been recent work on the pumps. Some of the irrigation heads at the front of the building were leaking and should be adjusted. The ornamental maple at the front of the building is in poor condition.
Site Civil / Mechanical Utilities							
G3010 Water Supply	2012	2012	2	44	MK	09/04/13	Domestic water (1-1/2") and fire sprinkler supply from the City of Redmond system. Fire hydrants throughout the site. □ □ Good condition.
G3020 Sanitary Sewer	2012	2012	2	49	MK	09/04/13	Sanitary sewer service provided by City of Redmond system. Oil/water separator for truck bay drains is located in planter area at the front of the building. □ □ Good condition.
G3030 Storm Sewer	2012	2012	2	44	MK	09/04/13	Catch basins throughout paved areas of the site. Roof drains connect into underground pipe system. Appears to be a large storm water detention and/or water quality vault in the paved area at the rear of the site. Two large open grates provide access into the vault. □ □ Good condition.
G3060 Fuel Distribution	2012	2012	1	39	MK	09/04/13	Natural gas meter located on east side of the building. □ □ Good condition.
Site Electrical utilities							
G4010 Electrical Distribution	2012	2012	1	39	MK	09/04/13	Underground electric service to the site. One 300-kva transformer at the front of the building. No exterior emergency generator observed at site. □

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Facility Summary

City of Redmond
Fire Station 17 Site
Fire Station 17 Infrastructure

16917 NE 116th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Electrical utilities						
G4010 Electrical Distribution						
						Good condition.
G4020 Site Lighting						
	2012	2012	1	29	MK 09/04/13	Pole lights throughout the site. Excellent condition.
G4030 Site Communications and Security						
	2012	2012	2	19	MK 09/04/13	Underground telephone and cable to the site. "Hy-Security" brand security gate with photo switch. Good condition. Staff reported some issues with the security gate operation. Apparently the key pads were recently changed out and system is operating better.
Other Site Construction						
G9090 Other Site Systems						
	2012	2012	2	29	MK 09/04/13	There is an approximately 10-foot by 15-foot concrete masonry unit (CMU) block well house with metal roof on site that houses the irrigation well and pumps. See "Landscaping" section above.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Fire Station 17 Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 17 Building	Exterior Closure	$2,500	$750	$650	$1,950	$5,850	$5,522
	Roofing	$8,000	$2,400	$2,080	$6,240	$18,720	$18,191
	Vertical Transportation	$13,000	$3,900	$3,380	$10,140	$30,420	$30,420
	Plumbing	$2,000	$600	$520	$1,560	$4,680	$4,680
	HVAC	$5,000	$1,500	$1,300	$3,900	$11,700	$11,258
	Facility Total	**$30,500**	**$9,150**	**$7,930**	**$23,790**	**$71,370**	**$70,071**
	Site Total	**$30,500**	**$9,150**	**$7,930**	**$23,790**	**$71,370**	**$70,071**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 17 Site

Total Observed Deficiency Repair Direct Cost : $30,500

Total Observed Deficiency Repair Direct Cost (Present Value): $29,945

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 17 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,500**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$2,360**
Exterior Doors								
Hollow Metal Doors	4	3 2013	Wood sills at access doors on hose tower checked and cracked.	Seal wood trim. Install metal flashing over top of wood sill.	10	$250.00	ea	$2,500
Facility: Fire Station 17 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$8,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$7,774**
Roof Coverings								
Gutters	4	2 2013	Metal gutter screens are bowed allowing materials to be trapped at upper scope adjacent to roof covering. Material shows signs of moss growth.	Remove gutter screens and replace with continuous sloping stainless steel screens.	1	$6,000.00	ls	$6,000
Roof Openings								
Flashing	5	0 2013	Poor flashing at several roof curbs; complex flashing at condenser unit farm above southwest portion of apparatus bay is actively leaking.	Inspect and correct all roof flashing with emphasis on condenser unit farm area.	1	$2,000.00	ls	$2,000
Facility: Fire Station 17 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$13,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$13,000**
Other Conveying Systems								
Roof Access Pathways	5	0 2013	No catwalk or pathway to rooftop mechanical equipment for maintenance.	Install pathway or catwalk.	1	$10,000.00	ls	$10,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 17 Site

Total Observed Deficiency Repair Direct Cost : $30,500

Total Observed Deficiency Repair Direct Cost (Present Value): $29,945

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Low Roof Access	5	0 2013	No access to low roof to east.	Install roof access to low roof.	1	$3,000.00	ls	$3,000
Facility: Fire Station 17 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,000**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$2,000**
Domestic Water Distribution								
Non-Potable Water Pump House	5	0 2013	Well pump found running continuously in "hand" position (manual on).	Troubleshoot and repair non-potable water controls.	1	$2,000.00	ls	$2,000
Facility: Fire Station 17 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$4,811**
Controls and Instrumentation								
DDC	4	2 2013	Reportedly, City IT Department will not allow DDC user interface software and/or hardware on-site, hampering ability to optimize HVAC system performance.	Provide software and/or hardware to allow proper operation and maintenance of Fire Station 17 HVAC systems.	1	$5,000.00	ls	$5,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 17 Site **Total Site Opportunity Cost: $30,580**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 17 Building**						
System:	**Interior Construction**	**Total Cost: $2,500**					
C1030	**Fittings**						
		Metal shelving units, some tall cabinets are not anchored to wall with earthquake straps.	Install earthquake straps at all free standing tall shelving units and tall cabinets.	1.00	$2,500.00	ls	$2,500
Facility:	**Fire Station 17 Building**						
System:	**Interior Finishes**	**Total Cost: $2,880**					
C3010	**Wall Finishes**						
		No wall protection provided at fitness room.	Provide MDF (medium-density fiberboard) panels to 48-inches above finished floor on all sides.	320.00	$9.00	sf	$2,880
Facility:	**Fire Station 17 Building**						
System:	**Plumbing**	**Total Cost: $22,000**					
D2020	**Domestic Water Distribution**						
		Non-potable water system can be used for rainwater harvesting from large station roof. Roof gutters already have complete gutter screens.	Incorporate rainwater harvesting to existing non-potable water system and install flushing and non-potable wash system in apparatus bay and station house.	1.00	$15,000.00	ls	$15,000
		Apparatus bay hoses on racks. Opportunity to install hose reels.	Install hose reels between full bays.	2.00	$1,000.00	ea	$2,000
D2090	**Other Plumbing Systems**						
		Current compressed air system is portable. Opportunity to install permanent distribution system to other utility area and apparatus bay with hose reel.	Install compressed air system with hose reels between full apparatus bays. Two (2) reels.	1.00	$5,000.00	ls	$5,000
Facility:	**Fire Station 17 Building**						
System:	**Fire Protection**	**Total Cost: $3,000**					
D4090	**Other Fire Protection Systems**						
		No fire suppression at kitchen hood range.	Retrofit chemical fire suppression at range hardware.	1.00	$3,000.00	ls	$3,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 17 Site **Total Site Opportunity Cost: $30,580**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 17 Infrastructure**						
System:	**Site Improvements**	**Total Cost: $200**					
G2010	**Roadways**						
		There is a large storm water grate in the rear access road with a "Weight Capacity" sign, however no weight value is posted. Because this area is used for fire truck access, gross vehicle weight may exceed the grate capacity. A weight value should be added to the sign. Although immediate cost is less than $2,000, this work should be accomplished to reduce the chance of failure of the grating, which would cost more.	Add grate capacity to existing "Weight Capacity" sign.	1.00	$200.00	ls	$200

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Code	
Facility Size - Gross S.F.	7,714
Year Of Original Construction	2002
Facility Use Type	Fire Station
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2002
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**1.9**			
Facility Condition Index (FCI)	0.06			
Current Replacement Value (CRV)	$3,817,000	**Predicted Renewal Budget (6 yrs)**	$114,000	$103,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$1,084,000	$866,000
		Observed Deficiencies (6 yrs)	$44,000	$43,000
		Observed Deficiencies (ALL)	$48,000	$46,000
		Opportunity Total Project Cost	$310,000	N/A

Facility Condition Summary

Architectural:
Single-story building with mezzanine, 2.5-bay apparatus fire statin. Building is open bay area and administrative space consisting of crew dorms, day room/kitchen, fitness, shower, restrooms, and some office and laundry areas. Building also includes police department work area. Building construction is wood frame walls, including hose tower, sloped roof system wit large sectional apparatus bay doors. Mezzanine area located over storage room contains additional storage and mechanical equipment. Exterior finish comprised of sloped composite shingle roofing and recently painted wood siding. Canopies are wood framed with steel column supports on concrete piers. Interiors consist of painted gypsum wall board, ceramic tile in restrooms, carpet in most other areas. Acoustic lay in ceiling tiles in doors, offices, and fitness with gypsum wall board hard lid in restrooms, laundry, and storage spaces.

Electrical:
Building electrical service is 600A, 208/120V, 3-phase, 4-wire, served by Puget Sound Energy, underground service from 45-kva padmount transformer. Current transformer, electrical meter, and main disconnect are located on outside building wall. Building has a 200-kw, 208/120V, 3-phase, 4-wire outdoor generator, feeds underground to building main panel through transfer switch. Transfer switch located inside building hallway closet. Interior building lighting is mostly T8 fluorescent; outdoor lighting has high intensity discharge (HID) wall lights, and pole parking lot lights. All branch wiring are installed in conduits. Devices are 15A and 20A grounding type. Building has a fire alarm system. Building has no security alarm system and no card access system.

Mechanical:
Fire Station 18 was formerly King County Fire Station 34. Fire Station 18 is located in and serves the newer Redmond Ridge neighborhood. While built in 2002, reportedly Fire Station 18 was not occupied until 2005. Fire Station 18 includes an apparatus bay with accessory small shops and storage area including a small storage mezzanine with mechanical room, hose tower, and station house with office, day room, exercise room, kitchen, men's and women's room, and dorm rooms.
HVAC is forced air gas furnaces with split direct expansion (DX) cooling for station house, and gas unit heaters in apparatus bay, with both general and engine exhaust.
Plumbing is city water and sewer with copper distribution piping, cast iron drain, waste, and vent (DW&V), and gas fired domestic hot water heater. Fire sprinkled throughout.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**1.0**			
Foundations						
A1010 Standard Foundations	2002	2002	1	77	JB 09/05/13	Concrete stem footing and stem wall. Good.
A1030 Slab On Grade	2002	2002	1	77	JB 09/05/13	Concrete slab on grade. Good.
B Shell			**1.6**			
Superstructure						
B1010 Floor Construction	2002	2002	1	77	JB 09/05/13	Wood floor construction mezzanine. Good condition.
B1020 Roof Construction	2002	2002	1	77	JB 09/05/13	Wood truss structure. Good condition.
Exterior Closure						
B2010 Exterior Walls	2002	2012	2	12	JB 09/05/13	Wood framed walls with wood siding. Some staples pulling out of wood siding. Recommend reattach with longer staples. Mostly good condition of exterior walls.
B2020 Exterior Windows	2002	2002	1	34	JB 09/05/13	Vinyl windows, dual-glazed. Good condition.
B2030 Exterior Doors	2002	2002	2	39	JB 09/05/13	Storefront, wood doors, hollow metal doors and frames, overhead apparatus bay doors. Good condition.

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City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**1.6**			
Exterior Closure						
B2030 Exterior Doors						
Roofing						
B3010 Roof Coverings						
	2002	2002	2	14	JB 09/05/13	Composite shingle roofing. Metal gutters with downspouts, rain chains at front entrance (plastic). Roofing in good condition. Gutters fair. Rain chain failing.
B3020 Roof Openings						
	2002	2002	2	29	JB 09/05/13	Roof hatch. Venting. Good condition.
B3030 Projections						
	2002	2002	1	39	JB 09/05/13	Wood entrance canopy, wood framed soffit at patio. Good condition.
C Interiors			**1.9**			
Interior Construction						
C1010 Partitions						
	2002	2002	1	39	JB 09/05/13	Wood framed partitions. Good condition.
C1020 Interior Doors						
	2002	2002	3	29	JB 09/05/13	Hollow metal doors and frames. Some wood doors. Some doors need touch up paint.
C1030 Fittings						
	2002	2002	1	19	JB 09/05/13	Marker boards, railing at mezzanine, metal ladder at hose tower. Good condition.
Interior Finishes						

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City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**1.9**			
Interior Finishes						
C3010 Wall Finishes	2002	2002	2	10	JB 09/05/13	Painted gypsum wall board, ceramic tile in restrooms. Medium density fiberboard (MDF) at apparatus bay east and west walls. Good. Interior walls need touch up paint. Recommend fiber reinforced plastic (FRP) at custodian room and fitness.
C3020 Floor Finishes	2002	2002	3	10	JB 09/05/13	Sealed concrete at apparatus bay. Wood at mezzanine. Carpet at administration. Ceramic tile at restrooms and kitchen. Fair condition of carpet. Some wear, stains.
C3030 Ceiling Finishes	2002	2002	2	22	JB 09/05/13	Open ceiling at apparatus bay. Acoustical tile in corridors, dorm rooms, fitness, and offices. Gypsum wall board hard lid in restrooms, storage, partial day room/kitchen. Good condition.
D Services			**2.4**			
Vertical Transportation						
D1090 Other Conveying Systems	2002	2002	5	0	DCS 09/05/13	No roof access. Provide roof access.
Plumbing						
D2010 Plumbing Fixtures	2002	2002	2	24	DCS 09/05/13	Porcelain water closets, urinals, and lavatories. Chrome trim with manual faucets and flush valves. One-piece fiberglass showers. Stainless steel decontamination and kitchen sinks. Water closet flush valve drops fitted with floor drain trap primer lines. Laundry wall box. Eye wash and safety shower with tempered water in apparatus bay decontamination area. All in good condition, except some water closets separating from wall (less then $2,000).

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.4**				
Plumbing							
D2010 Plumbing Fixtures							
D2020 Domestic Water Distribution							
	2002	2002	2	29	DCS	09/05/13	City water via 1.5-inch meter with 2-inch service line to reduced pressure backflow prevention or mechanical mezzanine room. Reduced pressure backflow prevention test tag not fount at reduced pressure backflow prevention (less than $2,000). Mechanical mezzanine floor is unprotected wood. A.O. Smith 2002 domestic hot water gas-fired heaters, 74-gallons, 75-mbh with expansion tank and recirculation pump.
D2030 Sanitary Waste							
	2002	2002	2	24	DCS	09/05/13	City sewer. Cast iron drain, waste, and vent (DW&V). Full length but narrow trench drains in apparatus bay. Grated floor at EW and stainless steel in apparatus bay northwest corner. Miscellaneous floor drains. Oil/water separator for apparatus trench drains. Good condition. Fixtures all drain and flush well. Condensate drains from high efficiency gas furnaces are not neutralized causing acid etch damage to janitor sink below; retrofit acid neutralization (less than $2,000) to solve this problem.
D2040 Rain Water Drainage							
	2002	2002	3	29	DCS	09/05/13	Gutters and downspouts at apparatus bay and rain chains at station house. Poor guttering system has caused significant damage to siding. Most or all undersized and plastic rain chains are failed.
D2090 Other Plumbing Systems							
	2002	2002	3	14	DCS	09/05/13	Air compressor in low bay shop. Opportunity for compressed air distribution system.
HVAC							
D3010 Energy Supply							

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City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.4**				
HVAC							
D3010 Energy Supply							
	2002	2002	2	29	DCS	09/05/13	Natural gas from Puget Sound Energy via meter number 35540 with 1,000-cfh capacity, serving apparatus bay unit heaters, station house gas furnaces, domestic hot water heaters, kitchen range, and patio barbeque. Gas service is approximately double the size needed for Fire Station 18. No seismic valve (less than $2,000).
D3030 Cooling Generating Systems							
	2002	2002	3	9	DCS	09/05/13	Two (2) condensing units to north; Carrier R-22. One (1) is approximately 2-ton; one (1) is approximately 1-ton. In fair condition. Consider upgrade to hybrid furnace and heat pump system when system is next renewed. Communications closet cooling from general space HVAC system; no ductless cooling.
D3040 HVAC Distribution Systems							
	2002	2002	3	24	DCS	09/05/13	Two (2) forced air high efficiency (condensing) gas furnaces with split direct expansion (DX) cooling (see "Cooling Generating Systems" section above) serving station house. Apparatus bay general exhaust with un-tempered make-up air louver. In fair to good condition, but additional maintenance attention is needed to keep furnace systems in optimal conditions. See "Sanitary Waste" section above for recommendation to install condensate neutralization system. Opportunity to install ceiling and/or ceiling fans to optimize heating performance. Confirm adequate outside air to both station house systems (less than $2,000).
D3050 Terminal and Package Units							
	2002	2002	3	9	DCS	09/05/13	Three (3) gas-fired Reznor unit heaters in apparatus bay. Smaller Reznor in hose tower. No HVAC service to apparatus bay shop room.
D3060 Controls and Instrumentation							

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City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.4**			
HVAC						
D3060 Controls and Instrumentation						
	2002	2002	3	9	DCS 09/05/13	Stand alone controls; mix of manual and automatic. Opportunity for DDC.
D3090 Other HVAC Systems and Equipment						
	2002	2002	3	13	DCS 09/05/13	Three (3) drop Nederman vehicle exhaust system. No issues reported or observed.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	2002	2002	3	29	DCS 09/05/13	City 6-inch service to rise room with 3-inch risers and wet pipe sprinkler main. fire department connection (FDC) line is 4-inch; ties in at riser. Station pressure is 65 psig. Inspections appear current.
D4030 Fire Protection Specialties						
	2002	2002	2	20	DCS 09/05/13	Fire extinguishers in stainless steel cabinets. Inspections are current.
Electrical						
D5010 Electrical Service and Distribution						
	2002	2002	2	28	RA 09/05/13	Building electrical system is 600A, 208/1200V, 3-phase, 4-wire. Main service fused disconnect on outside building wall. Main switch feeds main panel in hallway closet via the transfer switch located next to the main panel. Underground service from Puget Sound Energy, 45-kva padmount transformer. Main panel, main disconnect switch, and branch panels are all Square-D equipment; panels are the NQOD series. All equipment and panels are in good condition.
D5020 Lighting and Branch Wiring						
	2002	2002	2	18	RA 09/05/13	Interior lighting is all fluorescent fixtures, T8 lamps; in good condition. Building lighting are switched by manual wall switches. There are no

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.4**			
Electrical						
D5020 Lighting and Branch Wiring						
						occupancy sensors for automatic on-off. Exterior lights are generally good, except for the front entry lights are the older high intensity discharge (HID) soffit lights; can be upgraded. Branch wiring and conduits are 15A and 20A devices, and are in good condition. Opportunity to add occupancy sensors for lighting control. Opportunity to upgrade front entry canopy lights. Gas store controls are not working.
D5030 Low Voltage Communication Security and Fire Alarm						
	2002	2002	2	13	RA 09/05/13	Building has a fire alarm system. Fire alarm control panel is located in the front lobby. Devices consist of smoke detectors, horn strobes, and pull stations. Building has data/voice Cat-5 wiring and devices system. Fire alarm system is Silent Knight #5808 control panel, in good working condition. Data/voice system is in good working condition. Building has no card access system.
D5090 Other Electrical Systems						
	2002	2002	2	10	RA 09/05/13	Building has an outdoor generator with diesel base tank. Generator feeds the transfer switch inside building. Generator provides standby power to power equipment and lighting load. Building has emergency battery backup lights. Generator is Detroit Diesel MTU200, 200-kw, 208/120V, 3-phase, 4-wire. Generac transfer switch. Generator and automatic transfer switch are in good condition.
E Equipment and Furnishings			**2.0**			
Equipment						
E1010 Commercial Equipment						
	2002	2005	2	17	JB 09/05/13	Residential appliances. Good condition.
E1090 Other Equipment						

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Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**2.0**			
Equipment						
E1090 Other Equipment						
	2002	2005	2	17	JB 09/05/13	Extractor. Hose wash. Good condition.
Furnishings						
E2010 Fixed Furnishings						
	2002	2002	2	19	JB 09/05/13	Casework. Good condition.
E2020 Moveable Furnishings (Capital Funded Only)						
	2002	2002	3	10	JB 09/05/13	Station house furniture. Apparatus bay storage racks and miscellaneous equipment. Good condition.

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Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Infrastructure

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Condition Summary

This newer fire station has concrete drive aprons at the front and back of the building providing through access to 2-1/2 truck bays. An asphalt access drive with parking stalls extends around the east and north sides of the building. The building is served by public utilities. Note the station sign at the front is labeled "King County Fire District #34".

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	2002	2002	2	19	MK	09/04/13	Concrete drive aprons at front and back of the apparatus bays. Asphalt access drive with 13 parking stalls, including one (1) ADA stall, extends around the east and north sides of the building. Extruded and vertical concrete curbs.□ □ Concrete pavement could use joint filler in the gaps between panels. Otherwise in good condition.
G2030 Pedestrian Paving							
	2002	2002	2	13	MK	09/04/13	Concrete entry walks and patio at the east side of the building. □ □ Concrete walks could use joint filler in gaps between panels. Otherwise in good condition.
G2040 Site Development							
	2002	2002	2	19	MK	09/04/13	Fixed bike rack and flagpole □ □ Good condition.
G2050 Landscaping							
	2002	2002	2	29	MK	09/04/13	Ornamental landscaping at building perimeter, and grass and natural areas beyond the building. At the back of the building is an open grass area where City of Redmond light poles are stockpiled. No irrigation system observed, except for in the planting strip along NE Alder Crest Drive. □ □ Plantings in good condition with large variety.

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Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Infrastructure

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Civil / Mechanical Utilities						
G3010 Water Supply	2002	2002	2	34	MK 09/04/13	Domestic water supply (1-1/2") and fire sprinkler service provided from public system in NE Alder Crest Drive. □ □ No known issues.
G3020 Sanitary Sewer	2002	2002	2	39	MK 09/04/13	Several sanitary sewer manholes at the front of the building. Appears that the building is served by a public sewer in the adjacent street. □ □ No known issues.
G3030 Storm Sewer	2002	2002	2	34	MK 09/04/13	Catch basins and trench drain throughout the paved areas. Building downspouts connect to an underground pipe system. An original site plan showed a detention pond to be located on the site property at the northwest corner. This pond is not present. There is a storm water pond on the adjacent property to the north, however, it is unknown whether the Fire Station site discharges to this facility.□ □ There are three (3) locations where plastic chains extend between the gutter and the storm pipe connection at the ground. However these chains are disconnected and it appears may not function properly. These should be reconnected or repaired to function properly. Otherwise no known issues.
G3060 Fuel Distribution	2002	2002	2	29	MK 09/04/13	Natural gas meter at the rear of the building. □ □ No known issues.
Site Electrical utilities						
G4010 Electrical Distribution	2002	2002	2	29	MK 09/04/13	Underground electric service to the site. There is a 45-kva transformer at the northeast corner of the building. Emergency generator with base tank is located by the rear paved area. It is unclear whether the generator is operational, as a sign on it notes "Fueling only during natural disasters". □

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Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Infrastructure

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Electrical utilities						
G4010 Electrical Distribution						
						□ No known issues.
G4020 Site Lighting						
	2002	2002	2	19	MK 09/04/13	Pole lighting throughout the site. □ □ No known issues.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Fire Station 18 Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 18 Building	Roofing	$3,200	$960	$832	$2,496	$7,488	$7,345
	Vertical Transportation	$3,000	$900	$780	$2,340	$7,020	$7,020
	Plumbing	$7,500	$2,250	$1,950	$5,850	$17,550	$16,567
	Electrical	$5,000	$1,500	$1,300	$3,900	$11,700	$11,700
	Facility Total	**$18,700**	**$5,610**	**$4,862**	**$14,586**	**$43,758**	**$42,632**
	Site Total	**$18,700**	**$5,610**	**$4,862**	**$14,586**	**$43,758**	**$42,632**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Fire Station 18 Site

Total Observed Deficiency Repair Direct Cost : $18,700

Total Observed Deficiency Repair Direct Cost (Present Value): $18,219

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Fire Station 18 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,200**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$3,139**
Roof Coverings								
Rain Chains	5	1 2013	Plastic rain chains at front building areas are broken and not attached.	Remove gutter opening and plastic chains. Provide larger openings and metal downspouts to splash blocks.	8	$400.00	ea	$3,200
Facility: Fire Station 18 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$3,000**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access.	Provide roof access.	1	$3,000.00	ls	$3,000
Facility: Fire Station 18 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$7,500**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$7,080**
Domestic Water Distribution								
Domestic Hot Water Heating	4	3 2013	Domestic hot water heaters/storage tank is undersized for station use; capacity exceeded during shift changes.	Double capacity at next renewal.	1	$7,500.00	ls	$7,500
Facility: Fire Station 18 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$5,000**
Lighting and Branch Wiring								
Branch Wiring	5	0 2013	Gas range/stove cannot reset to normal operation after building station alarm shut off. Gas flow without ignition.	Provide new control for gas range/stove reset.	1	$5,000.00	ls	$5,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 18 Site **Total Site Opportunity Cost: $132,577**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Fire Station 18 Building**						
System:	**Interior Construction**	**Total Cost: $3,560**					
C1030	**Fittings**						
		Metal shelving units, some tall cabinets are not anchored to wall with earthquake straps.	Install earthquake straps at all free standing tall shelving units and tall cabinets.	1.00	$2,000.00	ls	$2,000
		Interior walls throughout facility show heavy wear and damage at wall corners.	Provide 2x2 stainless steel corner guards at each outside wall corner.	60.00	$26.00	lf	$1,560
Facility:	**Fire Station 18 Building**						
System:	**Interior Finishes**	**Total Cost: $875**					
C3010	**Wall Finishes**						
		Painted gypsum wall board at custodian room and fitness.	Recommend installing fiber reinforced plastic (FRP) at custodian and fitness rooms over existing gypsum wall board.	350.00	$2.50	sf	$875
Facility:	**Fire Station 18 Building**						
System:	**Plumbing**	**Total Cost: $6,000**					
D2020	**Domestic Water Distribution**						
		Mechanical mezzanine is exposed wood floor subject to water damage over time.	Install water tight floor; slope to floor drain.	150.00	$20.00	sf	$3,000
D2090	**Other Plumbing Systems**						
		Existing compressed air system is missing distribution.	Install copper distribution to apparatus bay including two (2) hose reels at each end of apparatus bay.	1.00	$3,000.00	ls	$3,000
Facility:	**Fire Station 18 Building**						
System:	**HVAC**	**Total Cost: $47,142**					
D3030	**Cooling Generating Systems**						
		Communications closet "cooling" is via station house general HVAC system unit heat (not cooling) in winter and conventional air conditioner in summer. Opportunity to install dedicated system.	Install 1/2-ton ductless split system to cool communications closet.	1.00	$3,000.00	ls	$3,000
D3040	**HVAC Distribution Systems**						

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 18 Site **Total Site Opportunity Cost: $132,577**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
		Heat concentrates in apparatus bay ceiling plenum space. Ceiling fans may allow cost effective movement of the warm air down to the apparatus bay floor.	Install ceiling fans.	6.00	$500.00	ea	$3,000
		No ceiling in apparatus bay allows most unit heater heat to rise into open attic space with no benefit to occupant.	Install ceiling to optimize apparatus bay heating.	3,000.00	$5.00	sf	$15,000
D3050	**Terminal and Package Units**						
		No HVAC service to apparatus bay shop room.	Install small unit heater or infrared heater and exhaust fan in shop.	1.00	$3,000.00	ls	$3,000
D3060	**Controls and Instrumentation**						
		No DDC.	Add DDC to next renewal.	7,714.00	$3.00	sf	$23,142
Facility:	**Fire Station 18 Building**						
System:	**Electrical**	**Total Cost: $75,000**					
D5020	**Lighting and Branch Wiring**						
		Opportunity to replace existing recess high intensity discharge (HID) lights in front entry, canopy, fixtures have no lenses.	Provide light emitting diode (LED) outdoor lights at entry canopy, with lens, recess mount.	6.00	$700.00	ea	$4,200
		No interior automatic occupancy lighting controls.	Provide ceiling type occupancy sensors in large space and wall type occupancy sensors in smaller rooms for automatic lighting controls.	30.00	$360.00	ea	$10,800
D5030	**Low Voltage Communication Security and Fire Alarm**						
		No card access system.	Provide card access system with door controls.	1.00	$60,000.00	ea	$60,000

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Facility Summary

City of Redmond
Hartman Park Site
Hartman Park Infrastructure

17535 NE 104th Street
Redmond, WA 98052

Facility Condition Summary

The pool building is located in a wooded area at the northeast corner of Hartman Park. The site includes the pool building, a small wood storage, two (2) parking lots, a playground, and pedestrian paths. The asphalt parking lots are small, with stalls intermingled between trees. One (1) is accessed off of NE 104th Street, and the other from 176th Avenue NE. The pool building is served by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2020 Parking Lots							
	1970	1970	4	3	MK	08/27/13	Asphalt parking lot accessed from NE 104th Street has parking for 15 vehicles including one (1) marked ADA. The 176th Avenue lot has parking for 28 vehicles including one (1) ADA. Both lots have stalls laid in between mature conifer trees. Lots are generally edged with extruded concrete curb. The NE 104th Street lot is in fair to good condition, and 176th Street lot is in poor to fair condition. In both lots, asphalt is worn with root upheaval, cracking, alligatoring, and general deterioration in places. Striping is faded. ADA markings and accessible routes are inadequate. Repairs to the asphalt pavement, concrete curb, and pavement markings should be made.
G2030 Pedestrian Paving							
	1970	1970	3	7	MK	08/27/13	There are two (2) exposed aggregate patios, one at the front of the building, and one at the southwest corner. Both have treated wood separating the concrete panels. There is a concrete sidewalk along the perimeter of about half of the west (104th Street) parking lot. There are 8-foot wide asphalt walkways south of the building accessing the parking lots, and around the playground area. There are several sections of gravel walkways throughout the site. Aggregate patios are dated and repaired but generally in good to fair condition. They are functional, though not highly attractive. Other walks are in good to fair condition. The asphalt walks should be repaired where roots have uplifted the pavement. Install joint filler in concrete walk joints where gaping. Repair cost

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City of Redmond
Hartman Park Site
Hartman Park Infrastructure

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2030 Pedestrian Paving						
						estimated to be less than $2,000 threshold.
G2040 Site Development						
	2000	2000	3	17	MK 08/27/13	Playground with three (3) play structures in a wood chip bed. Fixed site benches and picnic tables near the playground. Metal bike rack at pool building entry. A second concrete bike rack is near the entry. Playground and site fixtures are in good condition. The concrete bike rack has no means for locking bikes. (Less than $2,000 to correct.)
G2050 Landscaping						
	1970	1970	4	10	MK 08/27/13	Site is mostly wooded with mature conifer trees and native plant understory. Ground cover is bark or grass. There is limited landscaping near the front entry. Plants are in good condition. Some ornamental plantings are recommended near the front entry (less than $2,000). Large trees drop excessive debris on roof; assess and trim/remove as needed.
Site Civil / Mechanical Utilities						
G3010 Water Supply						
	1970	1970	3	7	MK 08/27/13	Water service to building provided from City of Redmond system. No known issues.
G3020 Sanitary Sewer						
	1970	2010	3	7	MK 08/27/13	Sanitary sewer service to building provided from City of Redmond system. No known issues.
G3030 Storm Sewer						
	1970	1970	3	7	MK 08/27/13	Site storm water runoff is collected in an underground pipe and catch basin system. Roof drains generally connect to underground piping. Storm drains likely connect into City of Redmond system.

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Facility Summary

City of Redmond
Hartman Park Site
Hartman Park Infrastructure

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Civil / Mechanical Utilities							
G3030 Storm Sewer							
							No known issues.
G3040 Heating Distribution							
	1970	1970	4	1	MK	08/27/13	Underground storage tank to east, north of boiler room. Underground storage tank appears abandoned in place. Investigate and decommission per applicable regulations if required. (Less than $2,000 for investigation.) See building's HVAC section for removal.
G3060 Fuel Distribution							
	1970	1970	3	7	MK	08/27/13	Natural gas meter at southeast corner of building. No known issues.
Site Electrical utilities							
G4010 Electrical Distribution							
	1970	1970	3	7	MK	08/27/13	Underground electric service to the building. No known issues.
G4020 Site Lighting							
	1970	2011	3	20	MK	08/27/13	Approximately 16 wall lights mounted on the exterior of the building. Recently upgraded. Pole lights throughout the site in two (2) parking lots and along pedestrian walkways. Pre-survey comments indicate the fixtures in the parking lot are old. Assume upgrade of pole lights is needed. Building wall pack light fixtures were replaced in 2011.
Other Site Construction							
G9090 Other Site Systems							
	2000	2000	4	10	MK	08/27/13	Approximately 8-foot by 10-foot wood storage shed on pier blocks at northeast corner of the building. Shed appears to be in good condition. Use unknown; condition inside unknown.

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Facility Summary

City of Redmond
Hartman Park Site
Hartman Park Swimming Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	12,554
Year Of Original Construction	1970
Facility Use Type	Natatorium
Construction Type	Heavy
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	1996
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.0**			
Facility Condition Index (FCI)	0.23			
Current Replacement Value (CRV)	$6,805,000	**Predicted Renewal Budget (6 yrs)**	$1,383,000	$1,340,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$2,687,000	$2,361,000
		Observed Deficiencies (6 yrs)	$3,177,000	$3,029,000
		Observed Deficiencies (ALL)	$3,177,000	$3,029,000
		Opportunity Total Project Cost	$2,066,000	N/A

Facility Condition Summary

Architectural:
The Redmond Pool is a Forward Thrust fixed pool that was turned over from King County to Redmond in 2010. It is a concrete frame and hollow brick structure with concrete (pre-cast) roof structure. There is a large skylight over the pool with wood decking. A lobby and men's and women's changing rooms serve the facility.

Electrical:
The building has a 400A service, 208/120V 4-wire underground from Puget Sound Energy power pole. Building lighting inside is an all fluorescent system with minor (two) incandescent wall cylinders at the lockers. Building outdoor lighting has one (1) old light by the back door of the mechanical room, the building perimeter has newer wall mounted high intensity discharge (HID) fixtures. Parking lighting is old; poles are square and round type with shoebox fixtures, HID type. All wiring are installed in conduits, except the low voltage wiring. All devices are 15A and 20A type grounding receptacles with switches. Building has no generator. Building has new fire alarm system and new security alarm system. Building has no data/voice wiring structures.

Mechanical:
Built in 1970 by King County, condemned and closed in the 2000s, then sold to the City of Redmond in 2010. Significant improvements were completed by King County in 1996 including new HVAC exhaust fans and return air duct, new light fixtures, and new roof and parapet cap; and by City of Redmond in 2010 including pool filters, sewer connection, and pool deck finishes. Small storage building (<100 sf) to north of mechanical room.
HVAC includes two (2) gas-fired hot water boilers serving pool heating, pool room heating, and domestic hot water heating. Pool room HVAC includes one (1) air handling unit (AHU) supplying underground supply air duct to perimeter floor diffusers, with high returns; two (2) lobby and locker room make-up air units (MAU) and eight (8) exhaust fans (EF).
Plumbing is city water and sewer with full locker room water closets, urinals, lavatories, and gang showers.
No fire sprinklers.

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City of Redmond
Hartman Park Site
Hartman Park Swimming Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**2.4**			
Foundations						
A1010 Standard Foundations						
	1970	1970	2	40	GA 08/29/13	Concrete stem walls. No signs of failure, but given slab on grade failure, especially at the east side, further investigation is recommended. One (1) horizontal crack observed. Uninsulated.
A1020 Special Foundations						
	1970	1970	2	40	GA 08/29/13	Basement for this building is assumed to be the below grade mechanical space. It was reportedly abandoned and previously flooded, but no signs remaining (i.e. wall staining).
A1030 Slab On Grade						
	1970	2010	4	10	GA 08/29/13	The interior slabs are exposed aggregate, reported fixed and sealed in 2010. There are signs of settling in several areas. Cracks and spalling present hazards to barefoot pool users. Washington Administration Code (WAC) requires decks to be "easily cleanable". The existing aggregate can be difficult to clean. Some ponding was seen on the pool decks.
Basements						
A2020 Basement Walls						
	1970	1970	2	40	GA 08/29/13	See "Special Foundations" section for basement.
B Shell			**3.0**			
Superstructure						
B1020 Roof Construction						
	1970	1970	2	40	GA 08/29/13	Roof is mostly concrete precast spans; signs of leakage at joints. Beams at skylight area show corrosion at underside. Wood decking at skylight over pool. The wood shows signs of water staining. This may be from condensation, not necessarily roof leaks, because the stains seem to be uniform all over the wood decking.

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Facility Summary

City of Redmond
Hartman Park Site
Hartman Park Swimming Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.0**			
Superstructure						
B1020 Roof Construction						
Exterior Closure						
B2010 Exterior Walls						
	1970	1970	3	20	GA 08/29/13	Walls are hollow brick between concrete pilasters. Exterior shows some signs of staining from rust assumed to be interior rebar. Suggest future investigation (infrared imaging, ultrasonic, or destructive testing). One location has major damage with bricks broken. Natatorium is currently holding negative pressure, but that may not have always been the case. High humidity and positive pressure could have put moisture into walls. Only one location (at the patio) showed spalling.
B2020 Exterior Windows						
	1970	1970	4	5	GA 08/29/13	Storefront type window system. The windows show signs of condensation and some possible air seal breaks.
B2030 Exterior Doors						
	1970	1970	4	5	GA 08/29/13	Storefront doors. Several closers for the exterior doors are rusting. Reports of doors sticking.
Roofing						
B3010 Roof Coverings						
	1970	1996	5	0	GA 08/29/13	Torch down roof with minimal, if any, insulation. Metal mansard. One (1) leak observed under scupper at natatorium roof (above the staff room). Roof does not drain well over entry/locker room portion of the building; several bubbles observed under membrane. No overflow roof drains; lots of tree debris means constant maintenance. Scuppers are OK but downspouts are leaking; temporary PVC needs to be replaced. Much of the metal roof is dented and the paint is peeling off of the galvanized metal.
B3020 Roof Openings						

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City of Redmond
Hartman Park Site
Hartman Park Swimming Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.0**			
Roofing						
B3020 Roof Openings	1970	2010	4	5	GA 08/29/13	Two (2) long, thin skylights at locker rooms. Array of nine (9) pyramids sit within a wood deck area over the deep end of the pool. The skylights at the men's locker room have been replaced. The women's still have an old Kalwall type which should be replaced. The pyramids over the pool (natatorium skylights) seem to be in fair condition, but are not insulated.
B3030 Projections	1970	1995	3	20	GA 08/29/13	Roof parapets are built-up with metal caps and counter flashing over the original mansard metal roofs. The brown color distinguishes the difference. Parapets are not very high.
C Interiors			**3.8**			
Interior Construction						
C1010 Partitions	1970	1970	2	20	GA 08/29/13	The interior walls are hollow brick masonry. The interior walls are in good shape. They are not exposed to the elements.
C1020 Interior Doors	1970	1970	4	5	GA 08/29/13	Most interior doors are wood. Reports of doors sticking. Most of the wood doors show wear and signs of rot at the base.
C1030 Fittings	1970	1996	3	7	GA 08/29/13	Metal lockers in each changing room. Wall mounted mirrors in changing rooms. Lobby reception desk. Staff/lifeguard station. The lobby reception desk appears to be about 15 years old; dated but in good condition. Staff/lifeguard counter seems original. Locker room lockers and mirrors are relatively new and in good condition.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.8**			
Staircases						
C2010 Stair Construction						
	1970	1970	3	20	GA 08/29/13	Metal stairs at mechanical room basement. Some signs of wear and deterioration, but overall in good condition.
Interior Finishes						
C3010 Wall Finishes						
	1970	1970	3	20	GA 08/29/13	Tile over brick in changing rooms. Tile is dated, but in good condition.
C3020 Floor Finishes						
	1970	2010	4	10	GA 08/29/13	Tile at changing rooms is dated, but not showing signs of structural failure. At some point, a grit was added to some sort of a sealer over the tile. The grit on the tile is not uniform and has darkened, making the floors look dirty.
C3030 Ceiling Finishes						
	1970	1970	4	5	GA 08/29/13	Acoustical ceiling tile over the pool. Wood decking at pool skylights. Exposed concrete. The ceiling tiles are sagging and there are six (6) to eight (8) that are damaged/broken; repair and replace. The wood ceiling at the pool skylights are stained; clean and re-stain (less than $2,000). Exposed concrete is not painted. Water stains are evident from roof leaks; clean and reseal (less than $2,000).
D Services			**3.8**			
Vertical Transportation						
D1090 Other Conveying Systems						
	1970	1970	3	6	DCS 08/29/13	Lifting eye in mechanical room for equipment services or replacement. Appears too small for larger equipment. Opportunity to add motorized chain fall if used regularly (less than $2,000).
Plumbing						

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.8**				
Plumbing							
D2010 Plumbing Fixtures							
	1970	1996	3	10	DCS	08/29/13	Porcelain water closets, urinals, and lavatories with chrome trim. Stainless steel gang showers. Drinking fountains and plumbed spittoon in pool room. Drinking fountain in lobby. No kitchenette. Fixtures are in fair condition; some trim is in poor condition. Several flushing fixtures are slow to flush (see "Sanitary Waste" section below).
D2020 Domestic Water Distribution							
	1970	1970	4	5	DCS	08/29/13	Three-inch city water service entry at basement mechanical room with backflow prevention, no pressure reducing valve, supplying: pool make-up, domestic cold water, and domestic hot water. Mix of copper and steel piping. Heavy corrosion at service entry; lighter corrosion elsewhere. Vented cylindrical 1,000-gallon domestic hot water storage tank heated by boiler hot water immersed heat exchanger; new in 2002 including domestic hot water circulation pump. Outside hose bibs OK.
D2030 Sanitary Waste							
	1970	1970	4	5	DCS	08/29/13	Cast iron drain, waste, and vent (DW&V), pool deck drains, and floor drains in locker room and other spaces. Some flushing fixtures are slow to drain. Some pool deck drains are slow or do not drain.
D2040 Rain Water Drainage							
	1970	1996	4	3	DCS	08/29/13	Mostly flat roof draining to perimeter scupper boxes with PVC downspouts to site storm drain. Lobby and locker room area flat roof to internal roof drains. Many scupper boxes are blocked by debris. PVC downspouts are temporary, leaking, and deteriorating. Rain water is ponding and spilling down the side of the building. No overflow roof drains for interior roof drains.
D2090 Other Plumbing Systems							
	1970	1996	4	5	DCS	08/29/13	Pool system includes: 1. Filter tank, approximately 1,000-gallons with two (2) diatomaceous earth filter banks and

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.8**			
Plumbing						
D2090 Other Plumbing Systems						heating heat exchanger tube bundle. 2. Main pool pump; 650-gpm at 70 feet-tdh, 20-hp. 3. Chlorine tablet based sterilization. 4. CO2-based pH control. 5. Piping, valves, and controls. See "Heat Generating Systems" section below for boilers. All are in poor to fair condition, except small portion of replaced piping and some newer pool water chemistry sub-systems. A full assessment of the pool mechanical system is recommended.
HVAC						
D3010 Energy Supply						
	1970	1996	2	25	DCS 08/29/13	Natural gas from Puget Sound Energy via rotary meter in wire cage enclosure; estimated capacity is 5,000-cfh. Coated black iron pipe to boilers and two (2) make-up air units serving locker rooms and lobby. Abandoned underground storage tank on east side, north of boiler room. Natural gas service and piping is in good condition. See B-series for opportunity to insulate the building to reduce energy use and increase occupant/user comfort. Abandoned underground storage tank should be decommissioned per code.
D3020 Heat Generating Systems						
	1970	2002	3	10	DCS 08/29/13	Two (2) Weil-McLain gas-fired hot water boilers, each with dedicated minimum flow circulation pumps. Boilers serve natatorium (pool room) space heating coil, pool water heat exchanger (in filter tank), and domestic hot water tank heat exchanger. Concrete lined stack. While boilers are only 10-years old, reported abandonment and boiler room flooding have shortened boiler life. See "Cooling Generating Systems" section below for heat recovery opportunity.
D3030 Cooling Generating Systems						
	1970	1996	3	7	DCS 08/29/13	Cooling is currently ventilation

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.8**			
HVAC						
D3030 Cooling Generating Systems						
						(economizer/cooling) only; humidity control is similarly ventilation only. Humidity control by ventilation only is marginal, resulting in condensation on interior surfaces. Opportunity to upgrade to modern direct expansion (DX)-based dehumidification system with heat recovery to both space and pool water.
D3040 HVAC Distribution Systems						
	1970	1996	4	3	DCS 08/29/13	Natatorium built-up air handling systems include: economizer, hot water heating coil, supply and return fans, underground metallic supply duct, and overhead return air duct. Underground duct on east side of natatorium has collapsed filling with fill and bedding material, resulting in failure of slab on grade and other structural and architectural elements above. Perimeter supply air risers are corroded and damaged. Air flow is unbalanced due to damage.
D3050 Terminal and Package Units						
	1970	1996	4	1	DCS 08/29/13	Two (2) make-up air units serving locker room and lobby; north (women's) is 192-mbh, south (men's and lobby) is 396-mbh and 3,520-cfm. The units are Weather Rite gas direct-fired and appear to be original (1970). Eight (8) exhaust fans replaced in 1996. Both make-up air units are past end of life. Exhaust fans are in fair condition.
D3060 Controls and Instrumentation						
	1970	1996	4	3	DCS 08/29/13	Mix of older and somewhat newer controls. Sequences unknown with poor performance and comfort. Replace with new controls.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1970	1970	5	0	DCS 08/29/13	No fire sprinkler. Install fire sprinkler.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.8**			
Fire Protection						
D4030 Fire Protection Specialties						
	1970	1996	3	10	DCS 08/29/13	Fire extinguishers. Inspection tags are current.
Electrical						
D5010 Electrical Service and Distribution						
	1970	1970	4	4	RA 08/29/13	Building main panel is 400A, 208/120V, 4-wire, main breaker with a distribution in one section. Feeds couple panels adjacent to it and some panels in janitor room. Main panel is original building equipment, Federal Pacific FPE. All branch panels are original building equipment and are old and rusty. All equipment is over 40 years old.
D5020 Lighting and Branch Wiring						
	1970	1996	4	5	RA 08/29/13	Fluorescent vapor tight lights over the pool perimeter, surface mounted. Office and staff room have 1x4 2T fluorescent recessed lights, and vapor tight 1x4 2T lights in locker rooms. Branch wiring and devices are original with the building; old raceways and boxes. The devices are not all GFI (ground fault interrupter) around the pool. Interior lighting is in working, generally good, condition. Some fixtures are missing lenses or have broken lenses; some lamps/ballasts are not working. Minor maintenance required. All wiring devices and branch wiring are over 40 years old, past end of life. Circuits are tripping in office.
D5030 Low Voltage Communication Security and Fire Alarm						
	1970	2013	1	25	RA 08/29/13	Building fire alarm system is new. Fire alarm control panel is Silent Knight #5700 and is located in the front office. Building security alarm system is new. Security alarm panel is located in the janitor room with key pad at front lobby; DSC equipment. Fire alarm system is in good working condition. Security alarm system is in good working condition. Building has data/voice wiring structure and devices.

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City of Redmond
Hartman Park Site
Hartman Park Swimming Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.8**			
Electrical						
D5090 Other Electrical Systems						
	1970	1996	3	5	RA 08/29/13	Building has no generator. Building has emergency backup lights in lobby, lockers, and around the pools near doors. Emergency lights are in working condition.
E Equipment and Furnishings			**2.0**			
Equipment						
E1010 Commercial Equipment						
	1995	1996	5	0	GA 08/29/13	There is a laundry dryer for staff towels in electrical room. It makes a lot of noise and is likely to break down. Laundry is past useful life. (Less than $2,000.)
E1020 Institutional Equipment						
	2010	2010	3	7	GA 08/29/13	There is a sound system that plays music in the natatorium. A small monitor on one wall. Score/timing equipment for swim meets. The sound system was observed in use. All equipment appears to be in good shape.
E1090 Other Equipment						
	1970	1970	2	7	GA 08/29/13	There is some staff food service equipment (microwave and fridge) in electrical room (originally labeled as storage room). Pool athletic equipment is stored on the pool deck, including lines, play equipment, training equipment, and more. The staff do not have a proper location to prepare food. The pool equipment stored on the deck appears messy and intrudes on the code required deck clearances/widths.
Furnishings						
E2010 Fixed Furnishings						
	1970	1970	5	0	GA 08/29/13	The walk-off mat at the entry should be replaced. The wood grandstand seating is broken. A section of the wood grandstands were struck in the open position and appears crooked.

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Facility Summary

City of Redmond
Hartman Park Site
Hartman Park Swimming Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**2.0**			
Furnishings						
E2010 Fixed Furnishings						
						Replace with retractable grandstands.
E2020 Moveable Furnishings (Capital Funded Only)						
	1996	1996	3	7	GA 08/29/13	Chairs in lobby. Aged but functional.
F Special Construction						
Special Construction						
F1040 Special Facilities						
	1970	2010	3	10	GA 08/29/13	In-ground indoor swimming pool. Six (6) lanes. Gutter is all around perimeter of pool set up with a 25-yard lap swimming at deep end. A moveable bulkhead separates a shallow end for lessons, etc. One-meter diving board (closed). The plaster is stained and some patching visible. The main drains have been updated (2010?) to comply with the Virginia Graeme Baker (VGB) Pool and Spa Safety Act. Two (2) covers can be seen from the deck and patching of the plaster indicates the piping may have been modified to equalize the drains. Verify that the permits for the work and final pool data forms from the Health Department are on file. ADA has been met with portable stairs at the shallow end and a lift. No lift is at the other side (deep end) of the bulkhead, which is required. Pool depth markings are not to code. Only mark 3-feet, 5-feet, and 14-feet. Need at all slope changes and at 25-inches or less apart.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Hartman Park Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Hartman Park Infrastructure	Site Improvements	$50,000	$15,000	$13,000	$39,000	$117,000	$111,309
	Site Electrical utilities	$3,200	$960	$832	$2,496	$7,488	$6,802
	Facility Total	**$53,200**	**$15,960**	**$13,832**	**$41,496**	**$124,488**	**$118,112**
Hartman Park Swimming Pool Building	Foundations	$39,500	$11,850	$10,270	$30,810	$92,430	$87,511
	Exterior Closure	$188,000	$56,400	$48,880	$146,640	$439,920	$400,601
	Roofing	$305,534	$91,660	$79,439	$238,317	$714,950	$683,137
	Interior Construction	$46,000	$13,800	$11,960	$35,880	$107,640	$101,605
	Interior Finishes	$129,000	$38,700	$33,540	$100,620	$301,860	$289,081
	Vertical Transportation	$5,600	$1,680	$1,456	$4,368	$13,104	$13,104
	Plumbing	$140,439	$42,132	$36,514	$109,542	$328,627	$301,319
	HVAC	$282,662	$84,799	$73,492	$220,476	$661,429	$654,264
	Fire Protection	$56,493	$16,948	$14,688	$44,065	$132,194	$132,194
	Electrical	$95,017	$28,505	$24,704	$74,113	$222,339	$206,571
	Equipment	$5,000	$1,500	$1,300	$3,900	$11,700	$11,700
	Furnishings	$9,800	$2,940	$2,548	$7,644	$22,932	$22,932
	Special Construction	$54,662	$16,399	$14,212	$42,636	$127,909	$124,584
	Facility Total	**$1,357,707**	**$407,312**	**$353,004**	**$1,059,011**	**$3,177,033**	**$3,028,604**
	Site Total	**$1,410,907**	**$423,272**	**$366,836**	**$1,100,507**	**$3,301,521**	**$3,146,715**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Hartman Park Site

Total Observed Deficiency Repair Direct Cost : $1,410,907

Total Observed Deficiency Repair Direct Cost (Present Value): $1,344,750

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Hartman Park Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$50,000**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$47,568**
Parking Lots								
Parking Lots	4	3 2013	Pavement is deteriorating with alligatoring, cracking, and wear. Concrete curb is of poor quality concrete and is spalling. Curbs are cracking and displaced in some locations. Pavement markings are faded or lacking.	In west lot, provide 50 sy of asphalt patching, then overlay lot with 1.5-inches Class B asphalt. In east lot, clean and seal coat asphalt. In both lots, remove and replace approximately 300 lf of extruded concrete curb and provide ADA accessible routes, and all new pavement markings.	1	$40,000.00	ls	$40,000
Landscaping								
Trees	4	1 2013	Large trees drop excessive material on roof.	Assess, trim, or remove trees as needed.	10	$1,000.00	ea	$10,000
Facility: Hartman Park Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,200**
System: Site Electrical utilities				**Total System Deficiency Repair Cost (Present Value):**				**$2,907**
Site Lighting								
Lighting	4	5 2013	Pole lights in parking lots are reported to have old fixtures.	Replace pole lights with energy efficient light emitting diode (LED) fixtures.	8	$400.00	ea	$3,200

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Hartman Park Site

Total Observed Deficiency Repair Direct Cost : $1,410,907

Total Observed Deficiency Repair Direct Cost (Present Value): $1,344,750

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$39,500**
System: Foundations				**Total System Deficiency Repair Cost (Present Value):**				**$37,398**
Standard Foundations								
Foundation	5	0	Slab on grade is failing in several areas, especially to the east, possibly due to foundation issues.	Investigate integrity of foundation in areas of slab on grade failure at north and south portions of east pool room outside wall.	2	$1,000.00	ea	$2,000
		2013	Concrete footing. Concrete stem walks.					
Slab On Grade								
Slab on Grade	4	3	Slab currently is cracking and spalling in areas with past repairs visible. Suspect subgrade issues (related to underground duct issues).	Replace slabs or shore up and add a top coat for new, uniform, non-slip surface.	2,500	$15.00	sf	$37,500
		2013						
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$188,000**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$171,197**
Exterior Walls								
Walls	4	2	Walls may be deteriorating from inside-out. Pilasters show exterior rust assumed from corroding (failing) interior rebar.	Conduct testing at worst location to determine cause of pilaster rust marks and assess structural integrity.	2	$1,000.00	ea	$2,000
		2013						
Exterior Windows								
Storefront Windows	4	5	Aluminum frame with double pane glass. Some seals look broken, condensation is a big issue unless building is heated up to 85 degrees.	Replace with new thermally broken frames and insulated glass.	3,000	$60.00	sf	$180,000
		2013						
Exterior Doors								

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City of Redmond

Site: Hartman Park Site

Total Observed Deficiency Repair Direct Cost : $1,410,907

Total Observed Deficiency Repair Direct Cost (Present Value): $1,344,750

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Storefront Doors	4	2 2013	Closers and hardware show signs of deterioration. In addition, see the deficiency for the "Exterior Windows" section above.	Replace doors.	60	$100.00	sf	$6,000
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$305,534**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$291,939**
Roof Coverings								
Roof Coverings	4	1 2013	Various issues with roof coverings (see "Inspection" Observed Deficiency noted in this section). Following full inspection, repair and replace as needed.	Budget to repair and replace roof coverings and minimal tapered insulation (to slope to drain) as recommended in the roofing inspection.	12,554	$7.00	sf	$87,878
Roof Insulation	4	3 2013	Roofing has minimal, if any, insulation.	Add insulation to the roof assembly. Tear off existing roof and add insulation to meet current energy code. Roof parapets would be raised.	12,554	$14.00	sf	$175,756
Inspection	5	0 2013	Multiple issues with roof coverings. See plumbing sections for downspouts and overflow roof drains. Scuppers, roof drains, membrane, trees, roof drains and overflow roof drains, metal roof.	Conduct detailed roof coverings inspection; repair and replace as recommended.	1	$5,000.00	ls	$5,000
Roof Openings								
Skylights	4	3 2013	The women's changing room skylights are original and have yellowed; some cracks are visible. The natatorium skylights appear to be original and have little thermal insulating value.	Upgrade skylights to increase energy efficiency, meet current code, and extend life.	13	$1,300.00	ea	$16,900
Projections								

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Hartman Park Site

Total Observed Deficiency Repair Direct Cost : $1,410,907

Total Observed Deficiency Repair Direct Cost (Present Value): $1,344,750

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Parapet/Mansard	4	3 2013	Parapets/mansard is bent, damaged, and peeling apart.	Repair, repaint, and replace parapets/mansard as needed.	1,000	$20.00	sf	$20,000
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$46,000**
System: Interior Construction				**Total System Deficiency Repair Cost (Present Value):**				**$43,421**
Interior Doors								
Interior Doors	4	3 2013	Doors have dry rot, peeling finish, and are failing and sticking.	Replace doors and hardware in existing frame.	20	$2,300.00	ea	$46,000
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$129,000**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$123,539**
Floor Finishes								
Floor Finishes	4	2 2013	Current floor finishes (tile at changing rooms) look dated. The grit added makes them look dirty and poorly maintained.	Replace tile (or cover if possible) with an elastomeric flooring system with embedded texture for non-slip surface.	2,000	$16.00	sf	$32,000
Tile Floor	4	1 2013	Locker room floor is dirty and gritty with excessive complaints from users, pool staff, and maintenance.	Remove top floor surface. Replace existing tile with terrazzo tile.	2,000	$16.00	sf	$32,000
Ceiling Finishes								
Ceiling Finishes	4	3 2013	The acoustic ceiling tiles over the pool deck are sagging and about six (6) are broken. The natatorium environment is tough on these tiles and the metal track.	Remove acoustical ceiling tile system and replace with an acoustic system designed for natatoriums.	10,000	$6.50	sf	$65,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Hartman Park Site

Total Observed Deficiency Repair Direct Cost : $1,410,907

Total Observed Deficiency Repair Direct Cost (Present Value): $1,344,750

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,600**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$5,600**
Other Conveying Systems								
Roof Access	5	0 2013	No permanent roof access.	Install permanent roof access ladders to low and high roofs.	2	$2,800.00	ea	$5,600
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$140,439**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$128,769**
Plumbing Fixtures								
Plumbing Fixtures	4	3 2013	Some 1996 plumbing fixture trim are slow or difficult to operate.	Test, adjust, and replace trim as needed.	20	$200.00	ea	$4,000
Domestic Water Distribution								
Service Distribution	4	5 2013	Water service and distribution at end of life with heavy corrosion at service entry.	Schedule replacement of distribution pipe.	12,554	$3.50	sf	$43,939
Sanitary Waste								
Drain, Waste, and Vent	4	5 2013	Some fixtures slow to flush and drain.	Test, inspect, and repair as needed.	10	$200.00	ea	$2,000
Pool Deck Drains	4	2 2013	Some drains are not draining; reportedly drain piping is corroded and/or crushed under the slab on grade.	Test, inspect, and repair or replace pool deck drains as needed.	300	$15.00	lf	$4,500
Rain Water Drainage								
Overflow Roof Drains	5	0 2013	No overflow roof drains for lobby and locker room roof area.	Install overflow roof drains per code.	2	$3,000.00	ea	$6,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Hartman Park Site

Total Observed Deficiency Repair Direct Cost : $1,410,907

Total Observed Deficiency Repair Direct Cost (Present Value): $1,344,750

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Downspouts	4	2 2013	PVC roof drain downspouts are temporary and deteriorating.	Install permanent roof drain downspouts.	10	$500.00	ea	$5,000
Other Plumbing Systems								
Pool System	4	5 2013	Filter tank, pool pump, pipe, valve, and fittings, and controls are all original equipment; all are at or near end of useful life and using old technology.	Replace equipment with modern pool waste systems.	1	$75,000.00	ls	$75,000
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$282,662**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$279,600**
Energy Supply								
Underground Storage Tank	4	2 2013	Underground storage tank is reportedly abandoned in place.	Decommission/remove underground storage tank per code.	1	$5,000.00	ls	$5,000
HVAC Distribution Systems								
Ductwork	5	0 2013	Underground duct has corroded, collapsed, and failed, apparently resulting in structural damage to slab on grade above.	Replace duct.	200	$1,000.00	ft	$200,000
Terminal and Package Units								
Make-Up Air Unit	4	1 2013	Men's and women's make-up air units are well past end of life.	Replace make-up air units and associated ductwork and grilles, registers, and diffusers (GRD).	2	$20,000.00	ea	$40,000
Controls and Instrumentation								
Controls	4	3 2013	Mix of older and some newer controls with unclear sequence. Marginal comfort and poor humidity control.	Replace with DDC controls.	12,554	$3.00	sf	$37,662

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Hartman Park Site

Total Observed Deficiency Repair Direct Cost : $1,410,907

Total Observed Deficiency Repair Direct Cost (Present Value): $1,344,750

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$56,493**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$56,493**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0 2013	No fire sprinkler.	Install fire sprinkler.	12,554	$4.50	sf	$56,493
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$95,017**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$88,278**
Electrical Service and Distribution								
Electrical Service Panel	4	4 2013	Main service panel is old. All equipment panel is old, obsolete, and rusty.	Replace electrical service panels, branch panels, and feeders.	12,554	$7.25	sf	$91,017
Lighting and Branch Wiring								
Branch Wiring	5	0 2013	Lack of circuits and receptacles in front office; circuits are tripping.	Add outlets and circuits in front office.	1	$4,000.00	ls	$4,000
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Equipment				**Total System Deficiency Repair Cost (Present Value):**				**$5,000**
Other Equipment								
Pool Equipment Storage	5	0 2013	Improper pool equipment storage violates code.	Provide code compliant storage and egress/safety.	1	$5,000.00	ls	$5,000
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$9,800**
System: Furnishings				**Total System Deficiency Repair Cost (Present Value):**				**$9,800**
Fixed Furnishings								
Wood Grandstands	5	0 2013	The original wood grandstand seating is broken and cannot retract.	Replace grandstands with new manual retractable grandstands. 20 feet 1x5 tiers high for both.	2	$4,900.00	ea	$9,800

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Hartman Park Site

Total Observed Deficiency Repair Direct Cost : $1,410,907

Total Observed Deficiency Repair Direct Cost (Present Value): $1,344,750

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Hartman Park Swimming Pool Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$54,662**
System: Special Construction				**Total System Deficiency Repair Cost (Present Value):**				**$53,241**
Special Facilities								
Pool Safety Remediation	4	2 2013	Address any safety issues identified in pool safety report (see observed deficiency for Pool Safety Report for details).	Repair, replace, or modify as recommended in safety study.	12,554	$3.00	ls	$37,662
Pool Safety Report	5	0 2013	No recent pool safety study/report.	Complete full pool safety inspection.	1	$5,000.00	ls	$5,000
ADA Lift	5	0 2013	Currently ADA code is not being met for access to the pool, since the existing access is only at the shallow end, and the bulkhead prevents access to the rest of the pool. Mounted lift on pool deck to serve deep end.	Add a new deck-mounted ADA lift to serve the deep end of the pool; 300-lbs, HiLo, armrests.	1	$7,000.00	ea	$7,000
Diving Board	5	0 2013	The existing one-meter diving board is corroded and appears to be shut down.	Analyze if the pool diving profile meets current code and replace the diving board (and/or add small water slide).	1	$5,000.00	ea	$5,000

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Opportunity Summary By Subsystem

City of Redmond

Site: Hartman Park Site **Total Site Opportunity Cost: $882,918**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Hartman Park Swimming Pool Building**						
System:	**Foundations**	**Total Cost: $4,500**					
A1010	**Standard Foundations**						
		Insulate the exterior slabs to meet current energy code.	Insulate slab.	300.00	$15.00	lf	$4,500
Facility:	**Hartman Park Swimming Pool Building**						
System:	**Exterior Closure**	**Total Cost: $288,000**					
B2010	**Exterior Walls**						
		Add insulation to exterior walls for increased user comfort and energy savings. This would also alter/update the look of the building.	Add an insulating wall system to the exterior and seal interior.	8,000.00	$36.00	sf	$288,000
Facility:	**Hartman Park Swimming Pool Building**						
System:	**Roofing**	**Total Cost: $125,540**					
B3010	**Roof Coverings**						
		Roofing has minimal, if any, insulation. Adding insulation can improve pool user guest and staff comfort, lower energy use, and reduce moisture condensation.	Add insulation to the roof assembly. Tear off existing roof and add insulation to meet current energy code. Roof parapets would be raised.	12,554.00	$10.00	sf	$125,540
Facility:	**Hartman Park Swimming Pool Building**						
System:	**Plumbing**	**Total Cost: $55,000**					
D2030	**Sanitary Waste**						
		Pool filter back wash and deck drain water is currently discharged to sanitary sewer. This water can be used for flushing water closets and urinals or for irrigation.	Install storage tank, pump and flushing water piping to water closets and urinals.	1.00	$30,000.00	ls	$30,000
D2040	**Rain Water Drainage**						
		Rain water is collected from roof and discharged to site storm system. This relatively clean rain water can be filtered and used as pool water make-up, flushing fixtures, or lavatory use.	Install 10,000-gallon rain water harvesting (RWH) system with pre-filter and make-up to pool water.	1.00	$25,000.00	ls	$25,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Hartman Park Site **Total Site Opportunity Cost: $882,918**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Hartman Park Swimming Pool Building**						
System:	**HVAC**	**Total Cost: $250,000**					
D3030	**Cooling Generating Systems**						
		Current cooling and humidity control is ventilation only. New direct expansion (DX)-cooling technology allows much improved humidity control plus heat recovery to both space and pool water.	Replace current air handling system with packaged direct expansion (DX) dehumidification system with heat recovery.	1.00	$200,000.00	ls	$200,000
D3050	**Terminal and Package Units**						
		Existing men's and women's locker room and lobby HVAC is 100% once-through outside air with no heat recovery.	Install 100% outside air units with heat recovery, including all new duct and grilles, registers, and diffusers (GRD).	2.00	$25,000.00	ea	$50,000
Facility:	**Hartman Park Swimming Pool Building**						
System:	**Electrical**	**Total Cost: $99,878**					
D5020	**Lighting and Branch Wiring**						
		Original building electrical branches are from 1970, over 40 years old. Opportunity to upgrade existing devices and wiring.	Provide new branch wiring and devices.	12,554.00	$7.00	sf	$87,878
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Opportunity for upgrade with a new data/voice system.	Provide Cat-6 wiring, devices, and IDF (intermediate distribution frame). Provide devices at front desk, office, and mechanical room, with wireless access.	1.00	$12,000.00	ls	$12,000
Facility:	**Hartman Park Swimming Pool Building**						
System:	**Equipment**	**Total Cost: $60,000**					
E1090	**Other Equipment**						
		Provide an appropriate staff lounge for preparing food. Add storage capacity for all equipment currently stored on the pool deck.	Review plan to see if a small space can be walled off and dedicated to a staff lounge (or electrical room or laundry storage?) Possibly add space for storage and staff.	400.00	$150.00	sf	$60,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Central Stores Warehouse Building 5 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	4,500
Year Of Original Construction	1988
Facility Use Type	warehouse with mezzanine
Construction Type	Medium
# of Floors	2
Energy Source	Electric
Year Of Last Renovation	1988
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.1**			
Facility Condition Index (FCI)	0.17			
Current Replacement Value (CRV)	$1,251,000	**Predicted Renewal Budget (6 yrs)**	$28,000	$27,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$374,000	$312,000
		Observed Deficiencies (6 yrs)	$132,000	$130,000
		Observed Deficiencies (ALL)	$132,000	$130,000
		Opportunity Total Project Cost	$250,000	N/A

Facility Condition Summary

Architectural:
No architectural comments.

Electrical:
The Central Stores Warehouse Building #5 has 200A 120/240V 3-wire service, the main panel is located at the corner of work/storage on the first floor. Service comes underground from Puget Sound Energy transformer outside of the building. The building has two (2) cobra head wall lights outside. Building has fluorescent lighting, mostly fluorescent industrial fixtures, some 2x4 troffers in office. All branch wiring installed in conduits; devices are 15A, grounded. All lighting controls are done by manual switches. Building has a fire alarm system. Building has no security alarm system.

Mechanical:
Two-story pre-engineered metal building including small office to southwest, semi-heated storage room to southeast, small shop to northeast, small lab to northwest, open high bay storage at center east with open lit path to second floor, one (1) toilet room off southeast storage room; second story is open unheated warehouse.
HVAC includes baseboard electric for office, overhead electric unit heaters for semi-heated shop and small storage spaces. Ventilation is natural by operable window for some first floor small spaces, and by operable main warehouse overhead door and second floor peak roof manual ridge vents. Plumbing in minimal with one toilet room and several hose bibs. No fire sprinkler.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Central Stores Warehouse Building 5 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1988	1988	3	63	RD 08/26/13	Poured in place foundation. No deficiencies observed.
A1030 Slab On Grade						
	1988	1988	3	63	RD 08/26/13	Floor slab. No deficiencies observed.
B Shell			**3.0**			
Superstructure						
B1010 Floor Construction						
	1988	1988	3	25	RD 08/26/13	See "Slab on Grade" section above. Second floor wood frame with 2x12 at 12-inch on center on bearing walls, built up beams and 6x16 beams. Plywood deck. Floor feels solid with no apparent deflection.
B1020 Roof Construction						
	1988	1988	3	25	RD 08/26/13	Corrugated metal roofing on metal purlins on steel bents. Typical pre-engineered metal building. Two (2) internal gutters and two (2) downspouts. Roof drainage has no overflow and downspouts are not connected to the drain.
Exterior Closure						
B2010 Exterior Walls						
	1988	1988	3	25	RD 08/26/13	Typical corrugated metal siding on metal frame for pre-engineered metal building. Siding damaged by impact in several locations exposing insulation, etc.
B2020 Exterior Windows						
	1988	1988	3	20	RD 08/26/13	Double glazed metal frame windows. Plastic trim broken and falling off.

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City of Redmond
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Central Stores Warehouse Building 5 Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.0**			
Exterior Closure						
B2030 Exterior Doors	1988	1988	3	25	RD 08/26/13	Hollow metal doors. Worn but functional condition.
Roofing						
B3010 Roof Coverings	1988	1988	3	15	RD 08/26/13	Corrugated metal roof. In acceptable condition except for drainage. See "Roof Construction" section above.
B3020 Roof Openings	1988	1988	3	15	RD 08/26/13	Roof hatch and limited mechanical openings. No opening assist. No hold open. Bad flashing.
C Interiors			**3.0**			
Interior Construction						
C1010 Partitions	1988	1988	3	25	RD 08/26/13	Wood frame partitions. No deficiencies reported or observed.
C1020 Interior Doors	1988	1988	3	15	RD 08/26/13	Wood interior doors and frames. Worn but functional.
C1030 Fittings	1988	1988	3	10	RD 08/26/13	Wood, metal, and plastic storage racks and shelving. Random and worn but functional.
Staircases						
C2010 Stair Construction	1988	1988	3	25	RD 08/26/13	Two (2) wooden stairways. Tread overhang and rails not to code.

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City of Redmond
Maintenance Operations Center Site
Central Stores Warehouse Building 5 Building

18080 NE 76th Street
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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.0**			
Interior Finishes						
C3010 Wall Finishes						
	1988	1988	3	3	RD 08/26/13	Painted gypsum wall board. Minor isolated repairs needed.
C3020 Floor Finishes						
	1988	1988	3	3	RD 08/26/13	Carpet in limited areas. Carpet is in acceptable condition.
C3030 Ceiling Finishes						
	1988	1988	3	8	RD 08/26/13	Limited suspended acoustical ceiling. Isolated tile replacement needed.
D Services			**3.4**			
Vertical Transportation						
D1090 Other Conveying Systems						
	1988	1988	5	0	DCS 08/26/13	No hoist. Opportunity to provide hoist. Deficiency for missing roof access ladder, see "Roof Openings" section for roof hatch issue.
Plumbing						
D2010 Plumbing Fixtures						
	1988	1988	3	10	DCS 08/26/13	One (1) water closet and one (1) lavatory. Fair condition.
D2020 Domestic Water Distribution						
	1988	1988	3	15	DCS 08/26/13	City water, copper piping, small (5 to 10 gallon) domestic hot water heater and two (2) outside hose bibs. Hose bibs are not installed correctly. Domestic hot water (DHW) piping is not insulated. DHW heater is not installed per code. All less than $2,000 to address.
D2030 Sanitary Waste						
	1988	1988	3	10	DCS 08/26/13	City sewer with unknown drain, waste, and vent

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City of Redmond
Maintenance Operations Center Site
Central Stores Warehouse Building 5 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.4**				
Plumbing							
D2030 Sanitary Waste							
							(DW&V) materials inside the warehouse, but assumed ABS. Water closet is somewhat slow flushing but not overly so.
D2040 Rain Water Drainage							
	1988	1988	4	1	DCS	08/26/13	Concealed gutter behind parapet with downspout to grade. No apparent overflow roof drain system. Needs work. See "Roof Construction" section for Observed Deficiency.
HVAC							
D3050 Terminal and Package Units							
	1988	1988	4	3	DCS	08/26/13	Electric resistance wall heaters and overhead unit heaters for heated and semi-heated spaces. Operable windows for natural ventilation of small office. No ventilation for semi-heated spaces. Natural ventilation for open warehouse area. Heaters are nearing end of life and provide marginal comfort. Ventilator is marginal. No cooling.
D3060 Controls and Instrumentation							
	1988	1988	4	3	DCS	08/26/13	Manual thermostats mounted on equipment. Replace with programmable thermostat.
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
	1988	1988	5	0	DCS	08/26/13	No fire sprinkler. Install dry pipe fire sprinkler.
D4030 Fire Protection Specialties							
	1988	1988	3	10	DCS	08/26/13	Several fire extinguishers. Consider providing extinguisher storage cabinet.
Electrical							

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City of Redmond
Maintenance Operations Center Site
Central Stores Warehouse Building 5 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.4**			
Electrical						
D5010 Electrical Service and Distribution						
	1988	1988	2	15	RA 08/26/13	The building has one (1) electrical panel, 200A 120/240V 3-wire Square-D equipment. Panel is in good condition.
D5020 Lighting and Branch Wiring						
	1988	1988	3	5	RA 08/26/13	The building has mostly fluorescent fixtures, consisting of fluorescent industrial fixtures in storage rooms, mezzanine, and 2x4 troffers in office area. On-off controls are done by switches. Devices are 15A grounded. Building lighting has no automatic controls. Need more outlets in office and work shop.
D5030 Low Voltage Communication Security and Fire Alarm						
	1988	1988	3	5	RA 08/26/13	Building has a fire alarm system, Kidde KAS-200 system with heat detectors, horn strobes, and pull station. Building has no security alarm system. Building fire alarm system is in working condition. 1988 equipment with newer alarm transmitter in 1998. Building has Cat-6 data/voice system; in good condition.
D5090 Other Electrical Systems						
	1988	1988	5	0	RA 08/26/13	Building has no emergency generator. Building has one (1) battery pack emergency light. Insufficient emergency lighting in building.
E Equipment and Furnishings			**3.0**			
Furnishings						
E2010 Fixed Furnishings						
	1988	1988	3	5	RD 08/26/13	Built-in counter. Functioning and in good shape.
E2020 Moveable Furnishings (Capital Funded Only)						
	1988	1988	3	5	RD 08/26/13	Desks and chairs. Dated and worn but functional.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Central Stores Warehouse Building 5 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.0**			
Furnishings						
E2020 Moveable Furnishings (Capital Funded Only)						

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Decant Facility Building 11 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	3,500
Year Of Original Construction	1998
Facility Use Type	office
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2013
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.0**			
Facility Condition Index (FCI)	0.13			
Current Replacement Value (CRV)	$1,690,000	**Predicted Renewal Budget (6 yrs)**	$14,000	$13,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$467,000	$391,000
		Observed Deficiencies (6 yrs)	$88,000	$86,000
		Observed Deficiencies (ALL)	$88,000	$86,000
		Opportunity Total Project Cost	$74,000	N/A

Facility Condition Summary

Architectural:
Extensive protect underway to expand facility to increase capacity and provide additional treatment.

Electrical:
The building has a 208/120V 4-wire electrical system, with underground service from Puget Sound Energy transformer. The main electrical panel and distribution equipment are located at the backside of the building. Building lighting in the Decant consists of wall flood and ceiling fixtures, high intensity discharge (HID) type lamps. In the small office, fluorescent strip fixtures are used. Building branch wiring are all installed in conduits. Electrical devices are 15A, grounding type. Building has fire alarm system. Building has no security alarm system. Building has generator power backup.

Mechanical:
The Decant Facility consists of two (2) major elements: covered decant bins totaling approximately 3,000 sf, and small 500 sf office, laundry, and mechanical equipment support space. A major addition and process upgrade is under construction at time of survey (August 2013).
HVAC for covered decant bins is natural ventilation (no wall to north). HVAC for support building is electric resistance wall heaters, natural ventilation via operable windows for offices and exhaust fans for laundry.
Plumbing includes large (1.5-inch) hydrant and wash-down hose for bins.
No fire sprinkler.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Decant Facility Building 11 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1998	1998	3	73	RD 08/27/13	Poured in place concrete. No deficiencies observed.
A1030 Slab On Grade						
	1998	1998	3	35	RD 08/27/13	Slab on grade is exterior. Heavy use but holding up well.
B Shell			**3.0**			
Superstructure						
B1010 Floor Construction						
	1998	1998	3	35	RD 08/27/13	Slab on grade. See "Slab on Grade" section above.
B1020 Roof Construction						
	1998	1998	3	45	RD 08/27/13	Plywood on 2x105 or 4x12 depending on location. Supported composite wood beams on steel pipe columns. Metal gutter; every joint leaks. Repair gutter, slope to drain. (Less than $2,000.)
Exterior Closure						
B2010 Exterior Walls						
	1998	1998	3	45	RD 08/27/13	Wood frame with metal siding. No deficiencies observed or reported.
B2020 Exterior Windows						
	1998	1998	3	80	RD 08/27/13	Metal frame with double pane glass. Limited windows. No deficiencies observed.
B2030 Exterior Doors						
	1998	1998	3	35	RD 08/27/13	Hollow metal doors and frames. Worn but functional.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Decant Facility Building 11 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**3.0**				
Roofing							
B3010 Roof Coverings							
	1998	1998	3	25	RD	08/27/13	Metal roof. Except for gutter noted in "Roof Construction" section above, no deficiencies observed or reported.
C Interiors			**3.1**				
Interior Construction							
C1010 Partitions							
	1998	1998	3	35	RD	08/27/13	Wood frame. Very limited partitions. No deficiencies observed.
Interior Finishes							
C3010 Wall Finishes							
	1998	1998	4	1	RD	08/27/13	Gypsum wall board. Painted. Wall at back of laundry space needs repair and paint.
C3030 Ceiling Finishes							
	1998	1998	3	18	RD	08/27/13	Hard-lid gypsum wall board in office and laundry rooms; mechanical room not available for inspection due to Decant facility expansion project. No deficiencies observed or reported.
D Services			**2.9**				
Vertical Transportation							
D1090 Other Conveying Systems							
	1998	1998	4	2	DCS	08/27/13	No roof access at support bay. Provide roof access.
Plumbing							
D2010 Plumbing Fixtures							
	1998	1998	3	25	DCS	08/27/13	Sink in support building wash room. Laundry wall

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.9**				
Plumbing							
D2010 Plumbing Fixtures							
							box. No issues reported.
D2020 Domestic Water Distribution							
	1998	1998	3	15	DCS	08/27/13	Large 1.5 to 2-inch yard hydrants and hoses for vehicle and material wash down. Several hydrants are difficult to operate. One has been recently replaced.
D2030 Sanitary Waste							
	1998	2013	3	15	DCS	08/27/13	City sewer via settling vault. System is currently undergoing major capacity increase.
D2040 Rain Water Drainage							
	1998	1998	3	25	DCS	08/27/13	Gutters and downspouts. See "Roof Coverings" section above for gutter leak issue.
D2090 Other Plumbing Systems							
	1998	2013	3	20	DCS	08/27/13	Decant water collections, treatment, and transfer system. 8,000-gallon de-icing fluid tank with 10-hp transfer pump. Decant system is undergoing major expansion. De-icing system should be studied for tank's seismic resistance and spill containment.
HVAC							
D3010 Energy Supply							
	1998	1998	3	25	DCS	08/27/13	Natural gas from Puget Sound Energy via meter number 1116709 with 1,000-cfh capacity, supplying support building mechanical room to southwest. Reportedly main gas load was for the pressure washer which has been moved to the Building 1 wash room area.
D3050 Terminal and Package Units							

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City of Redmond
Maintenance Operations Center Site
Decant Facility Building 11 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.9**			
HVAC						
D3050 Terminal and Package Units						
	1998	1998	4	3	DCS 08/27/13	Electric resistance heat for support building office and laundry rooms. Little ventilation. Heaters are in marginal condition. No mechanical ventilation except exhaust fans for laundry room.
D3060 Controls and Instrumentation						
	1998	1998	3	5	DCS 08/27/13	Manual thermostat for support building heated space. Replace with programmable thermostats when heaters are replaced. (Less than $2,000.)
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1998	1998	5	0	DCS 08/27/13	No fire sprinkler for wood superstructure and support building. Provide dry-pipe or deluge sprinkler system.
D4030 Fire Protection Specialties						
	1998	1998	3	10	DCS 08/27/13	Wall mounted fire extinguisher. Consider cabinets to protect fire extinguisher(s).
Electrical						
D5010 Electrical Service and Distribution						
	1998	1998	2	25	RA 08/27/13	Building electrical system is 208/120V 4-wire. Distribution consists of a main panel, transfer switch, and a branch panel; all Nema-3R, located outdoor. Another branch panel is located in the office building. All panels and equipment are in good condition.
D5020 Lighting and Branch Wiring						
	1998	1998	3	15	RA 08/27/13	Lighting in the office building is fluorescent with open strip 2-lamp fixtures. In the main Decant building, lighting consists of wall mount high intensity discharge (HID) floods and ceiling mount HID square box fixtures. Overall, lighting is working. Suggest to replace

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City of Redmond
Maintenance Operations Center Site
Decant Facility Building 11 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.9**			
Electrical						
D5020 Lighting and Branch Wiring						
						the high intensity discharge ceiling fixtures to light emitting diode (LED) vapor-tight fixtures which illuminate more evenly. Lighting has no occupancy control.
D5030 Low Voltage Communication Security and Fire Alarm						
	1998	1998	3	8	RA 08/27/13	Building has a fire alarm system. Heat detectors in the Decant building; pull station and horn strobes in office building. Building has no security alarm system. Building fire alarm system is in working condition.
D5090 Other Electrical Systems						
	1998	1998	2	10	RA 08/27/13	Building power has generator backup through the outdoor transfer switch. Transfer switch supplies power to the branch panel. Circuit loads were not available for survey.
E Equipment and Furnishings						
Equipment						
E1010 Commercial Equipment						
	1998	1998	3	10	RD 08/27/13	Residential washer and dryer. No deficiencies observed or reported.
Furnishings						
E2020 Moveable Furnishings (Capital Funded Only)						
	1998	1998	3	15	RD 08/27/13	Desk and two (2) chairs. Worn but usable and functional.
F Special Construction						
Special Construction						
F1040 Special Facilities						
	1998	2013	3	20	RD 08/27/13	Decant facility. Noted as sized too small for need. Currently

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Decant Facility Building 11 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
F Special Construction						
Special Construction						
F1040 Special Facilities						
						being expanded.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Maintenance Operations Center Building 1 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	11,700
Year Of Original Construction	1977
Facility Use Type	Maintenance
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	1998
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.2**			
Facility Condition Index (FCI)	0.21			
Current Replacement Value (CRV)	$3,803,000	**Predicted Renewal Budget (6 yrs)**	$623,000	$594,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$1,635,000	$1,436,000
		Observed Deficiencies (6 yrs)	$1,181,000	$1,124,000
		Observed Deficiencies (ALL)	$1,181,000	$1,124,000
		Opportunity Total Project Cost	$1,382,000	N/A

Facility Condition Summary

Architectural:
No architectural comments.

Electrical:
Maintenance Operations Center Building 1 has 280/120V 4-wire 800A electrical system; underground service comes into building from Puget Sound Energy 150-kva transformer. Building lighting is fluorescent for interior, high intensity discharge (HID) lighting for exterior. Building has branch wiring; wiring installed in conduits. Devices are 15A, grounding type. The building has a fire alarm system; older fire alarm panel; marginal coverage. The building has access control system which controls gates and doors. The building has no security alarm system. The building has a 250-kw outdoor generator.

Mechanical:
Maintenance and Operations Center Building 1 was purpose built in 1977 as Redmond's primary Maintenance Operations Center (MOC) building with administration to southeast, shops with loading dock to northeast, and vehicle maintenance to west. In 1998, the shops were connected to the office, air conditioning was added, windows were upgraded, and a roof-over reportedly completed.
HVAC includes three (3) roof top unit gas-packs for office areas, one (1) air handling unit for shop, shop infrared gas heater, shop vehicle engine exhaust, general and industrial exhaust and computer room ductless split air conditioning unit.
Plumbing includes city water and sewer, electric domestic hot water heater, toilet and locker room fixtures, kitchenette fixtures, shop compressed air, shop fluids, shop oily waste, and wash rack pressure washing system with water reclaim.
Fire sprinkler is not provided; newer fire extinguishers are located throughout.

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City of Redmond
Maintenance Operations Center Site
Maintenance Operations Center Building 1 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1977	1977	3	52	RD 08/26/13	Poured in place concrete. No exceptions noted.
A1030 Slab On Grade						
	1977	1977	3	52	RD 08/26/13	Slab on grade. No deficiencies noted.
B Shell			**3.0**			
Superstructure						
B1010 Floor Construction						
	1977	1977	3	52	RD 08/26/13	Wood mezzanine floor. Wood floor deflects and should be verified.
B1020 Roof Construction						
	1977	1977	3	52	RD 08/26/13	Plywood sheathing on wood joists and wood beams or trusses. No deficiencies noted.
Exterior Closure						
B2010 Exterior Walls						
	1977	1977	3	24	RD 08/26/13	Exterior walls are big brick units mostly without furring or insulation. Fur and insulate walls. Verify if existing furred walls have insulation.
B2020 Exterior Windows						
	1977	1977	3	9	RD 08/26/13	Double pane windows observed. Most are functioning correctly. Two (2) units in east wall are leaking. A work order is in. Several screens are damaged. At least one bucket style operable window should be reversed to awning style.
B2030 Exterior Doors						
	1977	1977	3	14	RD 08/26/13	Exterior hollow metal doors.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Maintenance Operations Center Building 1 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.0**			
Exterior Closure						
B2030 Exterior Doors						
						Clean, adjust, and paint needed.
Roofing						
B3010 Roof Coverings						
	1977	1998	3	10	RD 08/26/13	Torch down roof.
						Roof in acceptable condition for age.
B3020 Roof Openings						
	1977	1998	3	25	RD 08/26/13	There are many roof penetrations for mechanical/electrical equipment. All are on curbs.
						Openings at center roof well may leak if overflow roof drain allows deep ponding (see mechanical section).
B3030 Projections						
	1977	1977	3	25	RD 08/26/13	Projecting roof over doors.
						A door on south of Fleet Maintenance/Shop has been hit and needs repair or replacement.
C Interiors			**3.2**			
Interior Construction						
C1010 Partitions						
	1977	1998	3	35	RD 08/26/13	Masonry and wood frame with gypsum wall board.
						No deficiencies noted.
C1020 Interior Doors						
	1977	1998	3	25	RD 08/26/13	Solid core wood doors and frames.
						Dings need to be sanded and doors/jambs need to be refinished.
C1030 Fittings						
	1977	1998	3	12	RD 08/26/13	White boards and fittings.

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City of Redmond
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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.2**			
Interior Construction						
C1030 Fittings						Dated but functional.
Staircases						
C2010 Stair Construction	1977	1977	3	56	RD 08/26/13	Wood stair to mezzanine. Non ADA compliant stair.
C2020 Stair Finishes	1977	1977	3	5	RD 08/26/13	Wood stair at mezzanine. See "Stair Construction" section above.
Interior Finishes						
C3010 Wall Finishes	1977	1998	3	7	RD 08/26/13	Painted and unpainted masonry. Painted gypsum wall board. Minor isolated damage from use. Patch and paint as needed.
C3020 Floor Finishes	1977	1998	4	1	RD 08/26/13	Concrete, carpet, vinyl composition tile, sheet vinyl. All applied flooring needs to be replaced.
C3030 Ceiling Finishes	1977	1998	3	18	RD 08/26/13	Suspended acoustical tile. Gypsum wall board hard lid. Limited isolated damaged tiles to be replaced.
D Services			**3.5**			
Vertical Transportation						
D1090 Other Conveying Systems	1977	1977	5	0	DCS 08/26/13	Ladder to low roof. No ladder to two (2) high roofs. No shop hoists or cranes. Lack of high roof access complicates

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.5**				
Vertical Transportation							
D1090 Other Conveying Systems							
							maintenance. Shop should have overhead hoist(s) and/or crane(s).
Plumbing							
D2010 Plumbing Fixtures							
	1977	1998	4	5	DCS	08/26/13	Mix of mostly older and some newer water closets, urinals, lavatories, showers, drinking fountains, kitchenette sinks, custodial sinks, and shop deep sinks. Mostly poor and some fair fixtures with little or no ADA compliance.
D2020 Domestic Water Distribution							
	1977	1998	3	10	DCS	08/26/13	City water, mostly copper water distribution and 80-gallon domestic hot water electric heater replaced in 2007. Some poor, but mostly fair condition with no major issues reported or observed.
D2030 Sanitary Waste							
	1977	1977	4	5	DCS	08/26/13	City sewer, unknown drain, waste, and vent (DW&V) system materials of construction, trench drain at shop entry, floor drains in some locations. Some slow draining and flushing fixtures suggest further investigation is needed, followed by repairs or replacements as needed.
D2040 Rain Water Drainage							
	1977	1998	4	5	DCS	08/26/13	Mix of interior roof drains with unclear overflow roof drains and gutters and downspouts. Interior overflow roof drain is too distant and high from roof drains.
D2090 Other Plumbing Systems							
	1977	1998	4	5	DCS	08/26/13	Shop compressed air systems with 10-hp compressor, vertical storage tank, refrigerated air dryer and distribution system. Shop fluids system with tanks, pumps, distribution, and overhead hose reels. Oily waste collection and holding system. Wash room pressure washer

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.5**				
Plumbing							
D2090 Other Plumbing Systems							
							(gas-fired) with waste water recycling system. Mostly older systems in poor to fair condition. Detached fluids shed is deteriorating with variety of code issues. Opportunity to provide waste oil heat recovery system. Newer pressure washer system; but appears to be older water reclaim system.
HVAC							
D3010 Energy Supply							
	1977	1998	3	20	DCS	08/26/13	Natural gas from Puget Sound Energy via Meter Number 1116712 with 1,000-cfh capacity and seismic valve. Newer branch piping to pressure washer. Natural gas used by roof top unit gas-packs, shop infrared heaters, and wash rack pressure washer. Opportunity to replace older electric equipment with new gas-fired equipment.
D3020 Heat Generating Systems							
	1977	1998	3	10	DCS	08/26/13	Shop infrared overhead vented gas-fired heaters by Re-Verber-Ray. In fair condition; controls are unclear.
D3030 Cooling Generating Systems							
	1977	2012	4	3	DCS	08/26/13	Main distribution frame (MDF) ductless split cooling, Fujitsu 1.5-ton installed in 2012. Ventilation cooling for waste water department SCADA rack. Three (3) ceiling fans in shop. Main distribution frame (MDF) cooling is not properly designed or constructed. Unreliable cooling of SCADA closet; opportunity for improved cooling at shop.
D3040 HVAC Distribution Systems							
	1977	1977	4	3	DCS	08/26/13	Air handling unit (AHU) and ductwork serving maintenance shop. AHU has electric resistance heater. Air handling unit is past end of useful life.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.5**				
HVAC							
D3050 Terminal and Package Units							
	1977	1998	3	5	DCS	08/26/13	Original office electrical baseboard heat abandoned in place. Two (2) new 2013 roof top unit gas-packs (Trane 4-ton and 7.5-ton) and one (1) older 1992 roof top unit. Roof well may be recirculating contaminated air to occupied spaces. The older 1992 roof top unit is near end of life. Shop radiant heater is in fair condition.
D3060 Controls and Instrumentation							
	1977	1998	4	5	DCS	08/26/13	Mix of original 1977, middle aged 1998, and several new 2013 controls. Mix of mostly manual, some programmable, and no DDC controls. Replace remainder of original controls with newer. Plan upgrade to full DDC controls.
D3090 Other HVAC Systems and Equipment							
	1977	1998	3	10	DCS	08/26/13	Shop vehicle engine exhaust system is Nederman. Welding hood exhaust system. Newer engine exhaust is fair to good condition. Older welding exhaust system in fair to poor condition (less than $2,000 to renew). Opportunity for shop ventilation.
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
	1977	1977	5	0	DCS	08/26/13	No fire sprinkler. Install fire sprinkler.
D4030 Fire Protection Specialties							
	1977	1998	3	10	DCS	08/26/13	Fire extinguishers, automatic external defibrillator (AED) and first aid kits installed throughout. No issues.
Electrical							
D5010 Electrical Service and Distribution							
	1977	1977	3	5	RA	08/26/13	Building electrical system is 800A, 208/120V 4-wire. Main panel is located at hallway next to

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.5**			
Electrical						
D5010 Electrical Service and Distribution						exterior door. Main panel feeds subpanels throughout. Building electrical system is backed-up by an outdoor generator via a 800 transfer switch. The building's electrical equipment and panels are old, GE equipment over 30 years, and at end of life. Electrical system equipment is in working condition, marginal capacity. Electrical system should be upgraded in the next 5 years.
D5020 Lighting and Branch Wiring						
	1977	1977	4	8	RA 08/26/13	Building interior lighting is fluorescent, consists of 2x4 troffers in meeting rooms, 1x4 wraps in the hallways, 1x4 reflectors in large office areas, and some recess lights in the lobby. Controls of lighting by manual wall switch; minimal occupancy sensors are seen. Building wire devices are old, over 30 years old, 15A ground type outlets; insufficient outlets in Fleet Maintenance Bay. Building lighting is in working condition. Light fixtures are over 20 years old. Building has no automatic lighting controls. Lighting levels are adequate. Insufficient electrical outlets in Fleet Maintenance Bay and in shop.
D5030 Low Voltage Communication Security and Fire Alarm						
	1977	1977	3	2	RA 08/26/13	The building's fire alarm system is a Notifier System 500 with fire alarm control panel in the main hallway. Devices consist of heat detectors and horn strobes. Only one smoke detector seen at the entry lobby. Data/voice system is Cat-6 wiring system with IDF (intermediate distribution frame) located in IT room off the hallway. Building has no security alarm system. Building has access system for controls of exterior gates operators and doors. Fire alarm system is working but equipment is over 20 years old. Replace with new fire alarm system in next 5 years.
D5090 Other Electrical Systems						
	1977	2011	1	18	RA 08/26/13	Building power is backed-up by a 250-kw generator located at southwest corner of the site.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.5**			
Electrical						
D5090 Other Electrical Systems						Underground feeder runs between generator, step down 208/120 transformer, and building transfer switch and main panel. Transfer switch is located inside building, is old and outdated, breaker type switching devices, normal feed, three (3) sets of 250 MCM. Emergency feed, three (3) sets of 250 kcmil, load output wires, three (3) sets of 250 kcmil. Equipment is by Trans-O-Matic, Lake Shore Electric. The generator is 250-kw, 480/277V, Caterpillar, 2011. 400A output breaker. Wiring in 3-inch conduit; in excellent, new condition.
E Equipment and Furnishings			**3.0**			
Equipment						
E1010 Commercial Equipment	1977	1998	3	6	RD 08/26/13	Office equipment in office areas including multiple copiers. No issues reported or observed.
E1020 Institutional Equipment	1998	1998	3	6	RD 08/26/13	Minor lab equipment in several departments. No issues reported or observed.
E1030 Vehicular Equipment	1977	1977	3	10	RD 08/26/13	Overhead exhaust and fluid delivery floor lifts and repair equipment. No issues reported or observed.
E1090 Other Equipment	1977	1998	3	6	RD 08/26/13	Vending machine in hallway. Extensive maintenance equipment in shops. Hallway is not ventilated; warm/hot by machines. Some shop equipment is aged and worn, but functional; some equipment is newer.
Furnishings						

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Facility Summary

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.0**			
Furnishings						
E2010 Fixed Furnishings						
	1977	1998	3	15	RD 08/26/13	Fixed furnishings, cabinets, and counters. Dated and worn, but functional.
E2020 Moveable Furnishings (Capital Funded Only)						
	1977	1998	3	15	RD 08/26/13	Furnishings dated and worn, mostly functional. No deficiencies noted.
F Special Construction			**3.0**			
Special Construction						
F1020 Integrated Construction						
	1977	1998	3	15	RD 08/26/13	Pesticide storage unit with integrated containment. Miscellaneous fluid storage temporary containments. Pesticide storage unit is in good condition. Miscellaneous storage marginal; consider replacing with packaged unit(s) similar to pesticide unit.
F1030 Special Construction Systems						
	1977	1998	3	20	RD 08/26/13	Wash rack and shed. West wall and building end wall damaged.

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Facility Summary

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Facility Condition Summary

MOC site is located at the northeast corner of NE 76th Street and 178th Place NE. It is a large site, primarily covered with asphalt paving and numerous maintenance and operations buildings. Construction is currently underway for the "MOC Decant Facility Improvements", scheduled to be completed in Winter 2013. The site includes the following buildings and site structures. Buildings 1, 3, 5, 8, and 11 were included in the FCA building assessment.

Building 1 - Public Works Maintenance & Operations Center,11,700 sf, brick. Wash station on west end.
Building 2 - Signals, approximately 30' x 100', metal sided.
Building 3 - Street Department Modular, 1000 sf, metal sided.
Building 4 - Water and Storm storage, approximately 40' x 50', metal sided.
Building 5 - Central Stores Warehouse (Shipping and Receiving), 4,500 sf, metal sided.
Building 6 - Public Works Storage, approximately 20' x 120', metal sided and steel mesh.
Building 7 - Equipment Shed, approximately 20' x 60', open sides with roof only.
Building 8 - Parks Operation Center, 8,200 sf, metal sided.
Building 9 - Parks Storage & wash area, approximately 15' x 45', wood sided. Wash station on west end.
Building 10 - Fuel Island & Canopy.
Building 11 - Decant Facility & Canopy, approximately 35' x 170', metal sided.
Building 12 - Parks Storage, approximately 20' x 150', metal sided.

Other smaller out-buildings and structures are listed below. Note: there are also many dumpsters, storage racks, and 2-drum storage containers throughout the site that are not included herein.

South and west sides Building 1:
- Beige metal shed for air compressor room & bulk oil, 10' x 15'
- White metal shed "Hazardous Storage", 7' x 10'
- White metal storage container, 8' x 20'

North side of Building 2:
- Two (2) flammable material storage cabinets
- Metal "Emergency Shed", 8 x 40' container

North side of Building 6:
- Fabric storage garage for boom truck
- Blue wood storage shed w/ roll up door, for Natural Resources, 10' x 12'

East of Building 6:
- Quonset hut with ecology block base & fabric top, 30'x50'
- Metal storage racks for Parks Dept., approximately 42" wide x 135'
- Beige metal storage container, 8' x 20'

Building 8:
- Plastic cylindrical calcium chloride storage tank, 8,000 gallons

Westside of Building 12:
- Four (4) Metal Fuel storage cabinets
- White metal shed "Hazardous Storage", 7' x 10'
- Large dumpster with metal access stair/landing

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments

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Facility Summary

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2010 Roadways	1977	1998	3	5	MK 08/26/13	With the exception of the striped parking areas, the remaining asphalt and concrete pavement throughout the site is considered "Roadways", since it is all subject to vehicular traffic. The majority of the site is asphalt pavement, with concrete pavement at the two (2) storm water vaults, the east and west sides of Building 8 (Parks Operations), at the fuel island/underground fuel storage tanks, at the Decant Building 11, and at the area east of Building 6 that contains the open aggregate/spoils bins and Quonset hut. There are some extruded concrete curbs throughout the site. □ □ The concrete pavement areas exhibit more cracking and failures than the asphalt areas, and several of these areas should be replaced. There is some cracking of asphalt pavement, primarily along construction joints, that should be repaired. Some concrete curb requires repair. See Deficiencies. Cracked concrete pavement of the Storm water vaults is addressed in the "Storm Drain" section below. The asphalt access driveway on the east side of the Trinity Building site is included in the Trinity Assessment.
G2020 Parking Lots	1977	1998	2	15	MK 08/26/13	The majority of parking lots are around the Maintenance Operations Center Building 1. There is an additional parking lot southwest of the Parks Operations Building 8 and at the front and east side of this building. □ □ There are some ADA stalls throughout the site, but they are not in compliance. It appears there may be an inadequate number of stalls.
G2030 Pedestrian Paving	1977	1998	2	9	MK 08/26/13	Exposed aggregate walk at front of Maintenance Operations Center Building 1, and concrete walks at Street Department Building 3, and Parks Operations Building 8. □ □ Good condition.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2030 Pedestrian Paving							
G2040 Site Development							
	1977	1977	3	8	MK	08/26/13	A few fixed bike racks and benches throughout the site. □ □ No known issues.
G2050 Landscaping							
	1977	1977	3	8	MK	08/26/13	Mostly mature trees with limited shrubs and groundcover. The limited areas of open ground are covered with grass, ivy, or wood chips. □ □ Landscaping is adequate for the type of use.
Site Civil / Mechanical Utilities							
G3010 Water Supply							
	1977	1977	3	9	MK	08/26/13	Domestic service lines and fire sprinkler supply lines to buildings from the City of Redmond system. Numerous fire hydrants throughout the site. There are several wash areas (see General Comments for a list) and many exterior hose bibs throughout the site. □ □ No known issues with water supply.
G3020 Sanitary Sewer							
	1977	1977	3	14	MK	08/26/13	Sanitary sewer services to buildings from the City of Redmond system. □ □ No known issues with the sanitary sewer service.
G3030 Storm Sewer							
	1977	1977	3	9	MK	08/26/13	Catch basins and trench drains throughout the site in paved areas. Building downspouts discharge onto the ground or into underground system. There are two (2) large underground storm water vault: 1) Approximately 20'x120' vault along the west fence line of the site, and 2) Approximately 20'x60' vault due east of Building 6 in the aggregates/spoils storage bin area. Adjacent to the storage vaults are pump vaults and above grade control panels. Storm water is

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Civil / Mechanical Utilities						
G3030 Storm Sewer						pumped to City of Redmond system in adjacent streets.□ □ The storm water vault east of Building 6 has extensive cracking and damage to the top slab. Access hatch is currently covered with a steel plate and may be failing. Alarms sound several times a year. A technical review of the vault and pump systems should be considered.
G3060 Fuel Distribution	1977	1977	3	10	MK 08/26/13	Natural gas meter with seismic valve on south side of Building 1, and gas meter with no seismic valve on east side of Building 8. Propane fueling tank (250 gallons?), south side of Building 1. Underground fuel storage anks:1) on south side of Fuel Island, 2) on north side of Fuel Island. Underground waste oil storage tank, 500 gallons, on north side of Maintenance Operations Center Building 1.□ □ No known issues.
Site Electrical utilities						
G4010 Electrical Distribution	1977	1977	3	10	MK 08/26/13	Underground electrical services to all site buildings. This is a 150 kva transformer at south side of Maintenance Operations Center Building 1, a 100 kva transformer at north side of Streets Building 3, and a 225 kva transformer south of Parks Operations Building 8. There is a 480 volt, 250 kva emergency generator southwest of Maintenance Operations Center Building 1, and a small generator just east of Parks Operations Building 8. □ □ No known problems.
G4020 Site Lighting	1977	1977	3	8	MK 08/26/13	Pole lights and wall lights on building exteriors are present throughout the site. □ □ No known issues.
G4030 Site Communications and Security						

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G Sitework						
Site Electrical utilities						
G4030 Site Communications and Security						
	1977	1977	3	6	MK 08/26/13	"Elite" brand gate access gate system appears to have damaged safety edge. Underground telephone service. □ □ Cost of gate repair is less than $2.000.
Other Site Construction						
G9090 Other Site Systems						
	1970	1998	3	10	MK 08/26/13	Parks storage Building 9. Siding stain deteriorating; opportunity to re-stain.

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Facility Summary

City of Redmond
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Parks Operations Center Building 8 Building

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Facility Code	
Facility Size - Gross S.F.	8,202
Year Of Original Construction	1970
Facility Use Type	Maintenance
Construction Type	Medium
# of Floors	2
Energy Source	Gas
Year Of Last Renovation	1998
Historic Register	No

No Photo Available

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.0**			
Facility Condition Index (FCI)	0.16			
Current Replacement Value (CRV)	$2,691,000	**Predicted Renewal Budget (6 yrs)**	$237,000	$227,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$1,071,000	$924,000
		Observed Deficiencies (6 yrs)	$526,000	$503,000
		Observed Deficiencies (ALL)	$526,000	$503,000
		Opportunity Total Project Cost	$521,000	N/A

Facility Condition Summary

Architectural:
Steel framed original building to east purchased by the City from Hos Brothers Hauling and renovated in 1998 including addition of multipurpose room to west and locker room to east. Additions are wood framed.
High bay canopies were also added to east and west of north high bay shop areas. Outbuilding and equipment including small wash pad to east under canopy, plus wood shop dust collector; parks detached small equipment storage shed and grated wash rack to north; attached mechanical shack with pressure wash pump (no heater) and air compressor with refrigerated air dryer; covered patio/bike storage to west of multipurpose; and condensing units (CU -1, 2, and 4) to west under canopy and CU-3 and 5 to east under canopy. The Parks Operations Center is roughly half offices, half high bay shop.

Electrical:
The Parks Operations Center Building has a 208/120V 4-wire electrical system; underground service comes into the building from a Puget Sound Energy 225-kva transformer at front. Building lighting has many styles of fixtures. They are all fluorescent lamp type fixtures. Building branch wiring is all installed in conduits. Electrical devices are 15A, 20A grounding type. Building has a fire alarm system and a paging system. Building has no security system. Building has an outdoor generator.

Mechanical:
HVAC includes five (5) high efficiency gas-fired furnaces with split Dx cooling and semi-zoned variable volume and temperature (VVT) controls for office areas; gas-fired unit heaters and ceiling exhaust fans for main high bay shop; electric unit heaters and sidewall exhaust fans for wood shop; and electric unit heaters and exhaust fans plus ceiling fans for drying room.
Plumbing is city water and sewer with large gas domestic hot water heater in locker room addition.
Both original and addition are dry-pipe sprinkled throughout with post indicator valve (PIV) and fire department connection (FDC) at front of building.

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A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1970	1998	3	73	RD 08/27/13	Concrete foundation. No deficiencies observed.
A1020 Special Foundations						
	1970	1998	3	73	RD 08/27/13	Sonotube column/foundation. No deficiencies observed.
A1030 Slab On Grade						
	1970	1998	3	45	RD 08/27/13	Slab on grade/floors. Minor cracks appeared controlled in office areas. Recommend they be cleaned and sealed.
B Shell			**3.0**			
Superstructure						
B1010 Floor Construction						
	1970	1998	3	45	RD 08/27/13	Wood frame second floor. No deficiencies observed.
B1020 Roof Construction						
	1970	1998	3	43	RD 08/27/13	Pre-engineered metal building (1970). Metal clad wood frame (1998). Exterior soffits. Soffits generally need to be cleaned, lights caulked and painted. West canopy at multipurpose room shows water damage.
Exterior Closure						
B2010 Exterior Walls						
	1970	1998	3	15	RD 08/27/13	Wood and metal siding over wood and metal frame. No deficiencies observed except for minor wall damage.
B2020 Exterior Windows						
	1970	1998	3	10	RD 08/27/13	Double glazed metal frame windows.

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B Shell			**3.0**			
Exterior Closure						
B2020 Exterior Windows						
						No deficiencies observed.
B2030 Exterior Doors						
	1970	1998	3	10	RD 08/27/13	Exterior hollow metal doors and frames. Wood door on pressure washer shed. Replace rusted hinges. Clean and paint shop doors. Replace wood door.
Roofing						
B3010 Roof Coverings						
	1970	1998	3	7	RD 08/27/13	Corrugated and standing seam metal roofs. No roof access. See "Other Conveying System" section below.
B3020 Roof Openings						
	1970	1998	3	10	RD 08/27/13	Openings for vents and ventilators. No deficiencies observed.
B3030 Projections						
	1970	1998	3	3	RD 08/27/13	Wood sun screen on south façade second floor. Canopy roofs off shop area and multipurpose room. Steel column finish is oxidized and needs refinishing. Wood is exposed and needs to be retreated. (Less than $2,000.)
C Interiors			**3.0**			
Interior Construction						
C1010 Partitions						
	1970	1998	3	35	RD 08/27/13	Gypsum wall board on wood frame. Oriented-strand board (OSB) on wood frame. No deficiencies observed.
C1020 Interior Doors						
	1970	1998	3	25	RD 08/27/13	Hollow metal and wood.

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Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.0**			
Interior Construction						
C1020 Interior Doors						
						In need of some minor repairs (less than $2,000).
C1030 Fittings						
	1970	1998	3	15	RD 08/27/13	Whiteboards and lockers.
						Worn but functional.
Staircases						
C2010 Stair Construction						
	1970	1998	3	43	RD 08/27/13	Wood and concrete stairs.
						Stairs are in good condition.
C2020 Stair Finishes						
	1970	1998	2	10	RD 08/27/13	Rubber stair treads.
						No deficiencies observed.
Interior Finishes						
C3010 Wall Finishes						
	1970	1998	3	10	RD 08/27/13	Paint, sealed oriented-strand board (OSB), plastic laminate wainscot.
						Painted gypsum wall board needs limited wall repair and touchups.
C3020 Floor Finishes						
	1970	1998	3	2	RD 08/27/13	Carpet in office areas.
						Worn and needs replacement.
C3030 Ceiling Finishes						
	1970	1998	3	18	RD 08/27/13	Suspended acoustical ceiling tile (ACT) and hard lid.
						No deficiencies observed.
D Services			**3.0**			
Vertical Transportation						
D1010 Elevators and Lifts						

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Vertical Transportation							
	1993	1993	3	21	DCS	08/27/13	Two-stop hydraulic Thyssen Krupp 15-hp elevator with fully finished cab. No issues reported or observed.
D1090 Other Conveying Systems							
	1970	1970	5	0	DCS	08/27/13	No hoists or cranes. No roof access. Opportunity to add hoist and/or crane to high bay shop bay(s).
Plumbing							
D2010 Plumbing Fixtures							
	1970	1998	3	20	DCS	08/27/13	Porcelain water closets, urinals, and lavatories in first floor locker room and second floor toilet room. Shower in locker rooms. Stainless steel sinks in multipurpose room. Deep sink in shop. Drinking fountain in hallway. One (1) water closet in men's locker room is leaking. Most flushing fixtures trim needs adjustment.
D2020 Domestic Water Distribution							
	1970	1998	3	21	DCS	08/27/13	City water 2.5-inch service entry with 2-inch pressure reducing valve (PRV), 1.5-inch PRV and PRV bypass. All copper pipe. 1999 domestic hot water (DHW) heater is gas-fired standard efficiency 199-mbh, 125-gallon with recirculation pump. Domestic hot water (DHW) heater is aging but operational. Water pressure, color, and taste are good.
D2030 Sanitary Waste							
	1970	1998	3	25	DCS	08/27/13	City sewer with unknown materials in building. Floor drains in locker room. No issues reported or observed. Opportunity to add floor drains and/or trench drains in shop areas.
D2040 Rain Water Drainage							
	1970	1998	3	25	DCS	08/27/13	Metal gutter and PVC downspout to storm drain system.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Plumbing							
D2040 Rain Water Drainage							
							PVC downspouts are PVC with sleeved connections which are easily damaged; some sleeved connections are leaking (less than $2,000 to repair leaking sleeves). Opportunity for rain water harvesting (RWH).
D2090 Other Plumbing Systems							
	1970	2011	3	13	DCS	08/27/13	Equipment shack at northwest includes: compressed air system with 3-hp vertical 60-gallon infrared tank dated 2011 with refrigerated air dryer (RAD); and electric pressure wash pump (no heater). Equipment shack is in marginal condition with standing water on floor; a floor drain should be installed (less than $2,000). Opportunities to install compressed air distribution to shop area and add hot water to pressure wash system. See Decant Facility Building 11 reports for opportunity to reuse currently unused wash rack for park equipment washing in lieu of current plan to add new wash rack and oil/water separator at northwest corner of Parks Operations Center.
HVAC							
D3010 Energy Supply							
	1970	1998	3	25	DCS	08/27/13	Natural gas from Puget Sound Energy via meter number 503731 with 1,000-cfh capacity. Capacity appears generous for Parks Operations Center, allowing for additional gas-fired equipment.
D3030 Cooling Generating Systems							
	1970	1998	4	5	DCS	08/27/13	Four (4) Lennox R-22 208V condensing units (CU) installed with 1998 renovation; CU- 1, 2, 3, and 4. Small CU-5 added about 1999 during second floor mezzanine office additions. All condensing units appear functional but will soon be approaching end of life. Units are located under canopies which may concentrate heat near the building they are trying to cool. During replacement units should be relocated to

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
HVAC						
D3030 Cooling Generating Systems						
						avoid heat concentration.
D3040 HVAC Distribution Systems						
	1970	1998	4	5	DCS 08/27/13	Office areas include four (4) high efficiency gas-fired furnaces with split direct expansion (DX) cooling; all variable volume and temperature (VVT) distributed via sheet metal and flexible duct. System 5 serving mezzanine is a heat pump. Furnaces will soon be nearing end of life. Occupants report comfort complaints throughout. Fan coil serving mezzanine is not code compliant (no ventilation air or economizer).
D3050 Terminal and Package Units						
	1970	1998	3	10	DCS 08/27/13	One (1) large gas-fired vented unit heater serving high bay shop area. Electric resistance 7.5-kw King unit heater serving wood shop and gear drying rooms. Aging and dusty/dirty but in operable condition.
D3060 Controls and Instrumentation						
	1970	1998	4	2	DCS 08/27/13	Variable volume and temperature (VVT) controls for office areas. Manual controls and non-programmable controls for shop areas. Variable volume and temperature (VVT) is not working properly, and is torn apart in some areas. Marginal shop controls.
D3090 Other HVAC Systems and Equipment						
	1970	2008	4	2	DCS 08/27/13	United Air Specialists (UAS) wood shop dust collector systems installed in 2008. Despite newer dust collector, excessive dust in wood shop is fouling all surfaces and electrical devices, lighting, and other equipment.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1998	1998	3	25	DCS 08/27/13	Dry pipe sprinkled throughout. 6-inch service supplying 4-inch main with post indicator valve (PIV) and fire department connection (FDC) in

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
						yard island to southwest. Inspections appear to be current.
D4030 Fire Protection Specialties						
	1981	1998	3	15	DCS 08/27/13	Fire extinguishers, first aid kits, and automatic external defibrillators (AEDs). Inspections are current.
Electrical						
D5010 Electrical Service and Distribution						
	1970	1998	2	25	RA 08/27/13	Building electrical system, 208/120V, 4-wire, main service in electrical room on first floor; consists of six (6) service disconnects. Each disconnect feeds a panel directly. The automatic transfer switch (ATS) and the generator disconnect are located in same electrical room. Disconnect switches and panels are Square-D equipment; in good condition. Two (2) panels, panel-B and panel-C, are old and at end of life; consider replacement.
D5020 Lighting and Branch Wiring						
	1970	1998	4	15	RA 08/27/13	Building lighting is mostly fluorescent, mostly 2x4 parabolic wrap around industrial type reflector, 2x4 surface box fixtures. The second floor has special pendant lights for direct/indirect lighting. Building exterior lighting is high intensity discharge (HID) and fluorescent type fixtures. Shop/storage has old HID open high bay fixtures which are at end of life. There are no automatic lighting controls. Lighting is in good condition in operations office wing. Electrical devices are 15A grounding type in office wing and are in good condition. Lighting is in poor condition in shop storage and wood shop. Devices in shop/storage and wood shop are in poor condition. Wood shop electrical branches are in poor condition. A lot of sawdust has accumulated at the top of all outlet boxes and inside panel dead front. The sawdust should be removed, and outlets and devices cleaned immediately to avoid fire hazards. See

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
Electrical						
D5020 Lighting and Branch Wiring						
						mechanical section for ventilation improvement. Electrical installation should upgrade to dust-tight and power interlocking control.
D5030 Low Voltage Communication Security and Fire Alarm						
	1970	1998	2	10	RA 08/27/13	Building has fire alarm system, Notifier 5000 control panel, located in front office area, with a separate outdoor fire alarm annunciator at main entry. Building has no security alarm system. Building has a paging system with ceiling speakers and volume controls. Sound amplifier located in hallway. Data/voice system is a Cat-5 wiring system with intermediate distribution frame (IDF) located in IT room on second floor. Fire alarm system is in good condition. Devices consist of smoke detectors at elevator lobby and at fire alarm panel, duct smoke detectors at HVAC, horn strobes, and Building-9 heat detector. Paging system is in good condition.
D5090 Other Electrical Systems						
	1970	1997	2	15	RA 08/27/13	Building has an outdoor generator at southeast corner in parking lot area. The generator, manufactured by Generac, is 50-kw, diesel base tank, 208/120V. The generator feeder runs underground to an automatic transfer switch (ATS) in the building's electrical room, which feeds Panel-X in shop storage next to the elevator equipment room. The outdoor generator is in good condition. The generator provides backup power to building interior lights, exterior lights, equipment load, and plug load via one (1) transfer switch.
E Equipment and Furnishings			**3.0**			
Equipment						
E1010 Commercial Equipment						
	1970	1998	3	7	RD 08/27/13	Office copier, residential washer and dryer. No deficiencies reported or observed.
E1030 Vehicular Equipment						

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City of Redmond
Maintenance Operations Center Site
Parks Operations Center Building 8 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.0**			
Equipment						
E1030 Vehicular Equipment						
	1970	1998	3	7	RD 08/27/13	Wash down area. Insulated overhead doors. See "Exterior Doors" and "Other Plumbing Systems" sections above.
E1090 Other Equipment						
	1970	1998	3	10	RD 08/27/13	Kitchen equipment. No deficiencies reported or observed.
Furnishings						
E2010 Fixed Furnishings						
	1970	1998	3	15	RD 08/27/13	Casework and counters. No deficiencies reported or observed.
E2020 Moveable Furnishings (Capital Funded Only)						
	1970	1998	3	15	RD 08/27/13	Desks, tables, and chairs. Worn but functional.
F Special Construction			**3.0**			
Special Construction						
F1040 Special Facilities						
	1970	1998	3	10	RD 08/27/13	High bay shop. Under-used space. Current use is low rack storage.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Street Department Modular Building 3 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	1,850
Year Of Original Construction	1998
Facility Use Type	Office
Construction Type	Light
# of Floors	1
Energy Source	Electric
Year Of Last Renovation	2011
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.1**			
Facility Condition Index (FCI)	0.17			
Current Replacement Value (CRV)	$804,000	**Predicted Renewal Budget (6 yrs)**	$63,000	$61,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$339,000	$288,000
		Observed Deficiencies (6 yrs)	$139,000	$134,000
		Observed Deficiencies (ALL)	$139,000	$134,000
		Opportunity Total Project Cost	$68,000	N/A

Facility Condition Summary

Architectural:
No architectural comments.

Electrical:
The building is 120/240V 3-wire underground service from Puget Sound Energy padmount transformer, feeds main panel adjacent to rear entry door. Building has interior fluorescent lights, exterior high intensity discharge (HID) lights. Building has no fire alarm system, security alarm system, or emergency lights.

Mechanical:
Building is L&I Gold Labeled "Factory Built Housing" DSN #28438. One-story double wide modular structure on concrete foundation with crawl space. Includes two (2) large open and two (2) private offices, break room, and men's and women's locker and toilet rooms. A covered deck has been added to the north. HVAC is one (1) roof top unit heat pump (all electric forced air heating and cooling) and toilet room exhaust fans. Plumbing is city water and sewer with men's and women's toilet room fixtures and kitchenette sink. No fire sprinkler but at least one fire extinguisher is present.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Street Department Modular Building 3 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1999	1999	3	36	RD 08/26/13	Poured in place concrete forming crawl space. Crawl space ground vapor barrier is 20% to 30% damaged/missing. Crawl has excessive construction debris.
B Shell			**3.0**			
Superstructure						
B1010 Floor Construction						
	1999	1999	3	16	RD 08/26/13	Wood frame floor. No deficiencies observed.
B1020 Roof Construction						
	1999	1999	3	16	RD 08/26/13	Wood frame roof. Approximately 2-inch gap between the two halves of the building, but appear to be original construction intent.
Exterior Closure						
B2010 Exterior Walls						
	1999	1999	3	15	RD 08/26/13	Metal siding on wood frame.
B2020 Exterior Windows						
	1999	1999	3	15	RD 08/26/13	Awning frame double glazed. No deficiencies observed.
B2030 Exterior Doors						
	1999	1999	4	2	RD 08/26/13	Hollow metal doors. Rusting through and a cat door.
Roofing						
B3010 Roof Coverings						
	1999	1999	3	11	RD 08/26/13	PVC roof in acceptable condition for age. No deficiencies observed.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Street Department Modular Building 3 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**3.0**				
Roofing							
B3020 Roof Openings							
	1999	1999	3	16	RD	08/26/13	Limited openings. No deficiencies noted.
B3030 Projections							
	1999	1999	3	5	RD	08/26/13	Rear unpermitted deck and roof. Slope is very shallow, leaking, water damage to structure, building paper exposed.
C Interiors			**3.2**				
Interior Construction							
C1010 Partitions							
	1999	1999	3	16	RD	08/26/13	Wood frame with gypsum wall board. Only localized damage; repair as necessary.
C1020 Interior Doors							
	1999	1999	3	16	RD	08/26/13	Wood doors. Minor isolated damage. Repair minor damage.
C1030 Fittings							
	1999	1999	3	16	RD	08/26/13	Lockers. Lockers are worn but functional.
Interior Finishes							
C3010 Wall Finishes							
	1999	1999	3	8	RD	08/26/13	Paint on gypsum wall board. Minor isolated repairs needed.
C3020 Floor Finishes							
	1999	1999	4	2	RD	08/26/13	Vinyl composition tile and carpet. Replace flooring.
C3030 Ceiling Finishes							
	1999	1999	3	19	RD	08/26/13	Suspended acoustical ceiling.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Street Department Modular Building 3 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
C Interiors			**3.2**				
Interior Finishes							
C3030 Ceiling Finishes							
							Isolated tile needs to be replaced.
D Services			**3.1**				
Vertical Transportation							
D1090 Other Conveying Systems							
	1999	1999	2	16	DCS	08/26/13	Permanent ladder to roof located on north side. Good condition.
Plumbing							
D2010 Plumbing Fixtures							
	1999	1999	3	16	DCS	08/26/13	Water closets, urinals, lavatories in men's and women's. Signs of wear but no issues reported or
D2020 Domestic Water Distribution							
	1999	1999	3	16	DCS	08/26/13	City water 3/4-inch service. Mix of galvanized and copper piping. Electric 30-gallon domestic hot water heater. Galvanized should be replaced with all copper piping. (Less than $2,000.)
D2030 Sanitary Waste							
	1999	1999	3	16	DCS	08/26/13	City sewer. All ABS drain, waste, and vent (DW&V) piping. Floor drains in men's toilet room. Consider adding floor drains to women's room to facilitate housekeeping. (Less than $2,000.)
D2040 Rain Water Drainage							
	1999	1999	3	16	DCS	08/26/13	Four (4) sets of roof drains and overflow roof drains with interior drain bodies connecting to exterior downspouts. Rood drain downspouts are not sealed to storm sewer connection just above grade. (Less than $2,000.)

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Street Department Modular Building 3 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.1**				
HVAC							
D3030 Cooling Generating Systems							
	1999	1999	4	1	DCS	08/26/13	Small data cabinet in break room has field build ventilation cooling system. Cabinet vent filters are filthy, sharply reducing air flow resulting in overheated equipment cabinet. Clean and service. (Less than $2,000.)
D3040 HVAC Distribution Systems							
	1999	1999	4	3	DCS	08/26/13	Ceiling exhaust fans for men's and women's restrooms with side wall relief hoods. Exhaust fans and reliefs need service; replace if needed. (Less than $2,000.)
D3050 Terminal and Package Units							
	1999	1999	4	3	DCS	08/26/13	One (1) Carrier 4-ton rooftop heat pump package unit supplying fully ducted distribution system; duct is located in ceiling plenum space including galvanized sheet metal and insulated flex duct. The roof top unit is vibrating excessively despite reported recent repairs. Signs of occupant discomfort include portable heaters. Ductwork appears to be leaking in ceiling plenum space.
D3060 Controls and Instrumentation							
	1999	2010	2	12	DCS	08/26/13	Programmable thermostat in open office. Thermostat partially blocked by sign material. (Less than $2,000.)
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
	1999	1999	5	0	DCS	08/26/13	No fire sprinkler. Install fire sprinkler.
D4030 Fire Protection Specialties							
	1999	1999	3	16	DCS	08/26/13	Fire extinguisher on wall. Consider installing in cabinet. (Less than $2,000.)
Electrical							
D5010 Electrical Service and Distribution							

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City of Redmond
Maintenance Operations Center Site
Street Department Modular Building 3 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.1**			
Electrical						
	1999	1999	2	16	RA 08/26/13	Building has underground service, 120/240V system, 200A main panel, Square-D equipment. Only one (1) panel for the building. Main panel is in good condition with sufficient capacity.
D5020 Lighting and Branch Wiring						
	1999	1999	3	16	RA 08/26/13	Building interior lighting is fluorescent, consisting on mostly 2x4 troffers. Devices are 15A, ground type. Controls of lighting done by wall switches. There are no automatic occupancy controls. Some ballasts and lamps are not working, showing signs of wear, and may need replacement of fixtures. Not enough electrical outlets in break room and office.
D5030 Low Voltage Communication Security and Fire Alarm						
	1999	1999	2	11	RA 08/26/13	The building has no fire alarm system or security alarm system. The building has a small data/voice IDF (intermediate distribution frame) under the cabinet in the break room. Building data/voice is in good condition; Cat-6 system.
D5090 Other Electrical Systems						
	1999	1999	5	0	RA 08/26/13	The building has no emergency generator or emergency lights. Building has no battery backup egress lighting. Building battery backup exit lights are not working.
E Equipment and Furnishings			**3.0**			
Equipment						
E1010 Commercial Equipment						
	1999	1999	3	7	RD 08/26/13	Minor office equipment. No issues.
E1090 Other Equipment						
	1999	1999	3	6	RD 08/26/13	Kitchenette in break room.

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Facility Summary

City of Redmond
Maintenance Operations Center Site
Street Department Modular Building 3 Building

18080 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.0**			
Equipment						
E1090 Other Equipment						
Furnishings						
E2010 Fixed Furnishings						
	1999	1999	3	16	RD 08/26/13	Counters. Dated but functional.
E2020 Moveable Furnishings (Capital Funded Only)						
	1999	1999	3	16	RD 08/26/13	Desks and chairs. Functional.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Maintenance Operations Center Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Central Stores Warehouse Building 5 Building	Superstructure	$3,800	$1,140	$988	$2,964	$8,892	$8,724
	Exterior Closure	$4,300	$1,290	$1,118	$3,354	$10,062	$9,858
	Roofing	$3,000	$900	$780	$2,340	$7,020	$6,887
	Staircases	$4,400	$1,320	$1,144	$3,432	$10,296	$9,533
	Vertical Transportation	$2,000	$600	$520	$1,560	$4,680	$4,505
	HVAC	$4,000	$1,200	$1,040	$3,120	$9,360	$8,836
	Fire Protection	$27,000	$8,100	$7,020	$21,060	$63,180	$63,180
	Electrical	$7,750	$2,325	$2,015	$6,045	$18,135	$18,023
	Facility Total	**$56,250**	**$16,875**	**$14,625**	**$43,875**	**$131,625**	**$129,545**
Decant Facility Building 11 Building	Interior Finishes	$2,400	$720	$624	$1,872	$5,616	$5,508
	Vertical Transportation	$2,000	$600	$520	$1,560	$4,680	$4,505
	Plumbing	$10,500	$3,150	$2,730	$8,190	$24,570	$23,192
	HVAC	$1,500	$450	$390	$1,170	$3,510	$3,313
	Fire Protection	$21,000	$6,300	$5,460	$16,380	$49,140	$49,140
	Facility Total	**$37,400**	**$11,220**	**$9,724**	**$29,172**	**$87,516**	**$85,658**
Maintenance Operations Center Building 1 Building	Superstructure	$2,500	$750	$650	$1,950	$5,850	$5,630
	Exterior Closure	$4,000	$1,200	$1,040	$3,120	$9,360	$8,836
	Roofing	$3,500	$1,050	$910	$2,730	$8,190	$7,439
	Interior Construction	$8,000	$2,400	$2,080	$6,240	$18,720	$17,335
	Staircases	$4,500	$1,350	$1,170	$3,510	$10,530	$10,132
	Interior Finishes	$42,250	$12,675	$10,985	$32,955	$98,865	$96,981
	Vertical Transportation	$2,000	$600	$520	$1,560	$4,680	$4,680
	Plumbing	$76,000	$22,800	$19,760	$59,280	$177,840	$162,218
	HVAC	$161,400	$48,420	$41,964	$125,892	$377,676	$352,189
	Fire Protection	$58,500	$17,550	$15,210	$45,630	$136,890	$136,890
	Electrical	$130,000	$39,000	$33,800	$101,400	$304,200	$294,101
	Special Construction	$12,000	$3,600	$3,120	$9,360	$28,080	$27,544
	Facility Total	**$504,650**	**$151,395**	**$131,209**	**$393,627**	**$1,180,881**	**$1,123,975**
Maintenance Operations Center Infrastructure	Site Improvements	$90,000	$27,000	$23,400	$70,200	$210,600	$191,293
	Site Civil / Mechanical Utilities	$40,000	$12,000	$10,400	$31,200	$93,600	$85,019

Print Date: 03/10/14

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Maintenance Operations Center Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
	Facility Total	**$130,000**	**$39,000**	**$33,800**	**$101,400**	**$304,200**	**$276,312**
Parks Operations Center Building 8 Building	Foundations	$9,000	$2,700	$2,340	$7,020	$21,060	$20,264
	Superstructure	$4,000	$1,200	$1,040	$3,120	$9,360	$9,182
	Exterior Closure	$3,100	$930	$806	$2,418	$7,254	$7,116
	Roofing	$6,000	$1,800	$1,560	$4,680	$14,040	$13,511
	Interior Finishes	$12,000	$3,600	$3,120	$9,360	$28,080	$27,020
	Vertical Transportation	$6,000	$1,800	$1,560	$4,680	$14,040	$14,040
	Plumbing	$11,800	$3,540	$3,068	$9,204	$27,612	$25,387
	HVAC	$90,707	$27,212	$23,584	$70,751	$212,254	$198,755
	Electrical	$82,000	$24,600	$21,320	$63,960	$191,880	$188,225
	Facility Total	**$224,607**	**$67,382**	**$58,398**	**$175,193**	**$525,580**	**$503,500**
Street Department Modular Building 3 Building	Foundations	$2,775	$833	$722	$2,165	$6,494	$6,248
	Exterior Closure	$5,700	$1,710	$1,482	$4,446	$13,338	$12,835
	Roofing	$9,600	$2,880	$2,496	$7,488	$22,464	$20,800
	Interior Finishes	$16,650	$4,995	$4,329	$12,987	$38,961	$37,491
	HVAC	$11,850	$3,555	$3,081	$9,243	$27,729	$26,515
	Fire Protection	$9,250	$2,775	$2,405	$7,215	$21,645	$21,645
	Electrical	$3,500	$1,050	$910	$2,730	$8,190	$8,190
	Facility Total	**$59,325**	**$17,798**	**$15,425**	**$46,274**	**$138,821**	**$133,724**
	Site Total	**$1,012,232**	**$303,670**	**$263,180**	**$789,541**	**$2,368,623**	**$2,252,713**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Maintenance Operations Center Site

Total Observed Deficiency Repair Direct Cost : $1,012,232

Total Observed Deficiency Repair Direct Cost (Present Value): $962,698

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Central Stores Warehouse Building 5 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,800**
System: Superstructure				**Total System Deficiency Repair Cost (Present Value):**				**$3,728**
Roof Construction								
Roof Drains	4	1 2013	Roof drains lead to downspouts to tight line drains. Each side of roof have one (1) drain and no overflow. One of two downspouts is disconnected from drain.	Provide overflow scupper or drain on each side of roof. Route through soffit and expose. Reattach downspout to drain.	2	$1,900.00	ea	$3,800
Facility: Central Stores Warehouse Building 5 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$4,300**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$4,213**
Exterior Walls								
Metal Siding	4	1 2013	Corrugated metal siding is damaged by impact, bent, and open to weather. Insulation exposed.	Repair or replace panels.	400	$10.00	sf	$4,000
Exterior Windows								
Metal Windows	4	2 2013	Plastic trim and screen frames are failed and broken. Double glazed metal frame windows.	Replace trim and screen frames.	6	$50.00	ea	$300
Facility: Central Stores Warehouse Building 5 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$2,943**
Roof Openings								
Roof Hatch Openings	4	1 2013	Hatch has no spring or counter balance, no hold open. Hatch flashing is not tight to roof.	Provide approved hatch cover and hold open. Re-flash after installations.	1	$3,000.00	ea	$3,000

Note: Cost estimates shown are direct construction costs.

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Maintenance Operations Center Site

Total Observed Deficiency Repair Direct Cost : $1,012,232

Total Observed Deficiency Repair Direct Cost (Present Value): $962,698

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Central Stores Warehouse Building 5 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$4,400**
System: Staircases				**Total System Deficiency Repair Cost (Present Value):**				**$4,074**
Stair Construction								
Wood Stairs	4	4 2013	Tread overhang and handrail do not meet code requirements.	Permit and rebuild stairs.	2	$2,200.00	ea	$4,400
Facility: Central Stores Warehouse Building 5 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$1,925**
Other Conveying Systems								
Roof Access	4	2 2013	While a roof hatch is installed, there is no permanent ladder or stair to the hatch.	Install permanent ladder to roof; approximately 12-feet high.	1	$2,000.00	ea	$2,000
Facility: Central Stores Warehouse Building 5 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$4,000**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$3,776**
Terminal and Package Units								
Electric Heater	4	3 2013	Wall heater and unit heaters nearing end of life.	Schedule replacement in kind.	5	$500.00	ea	$2,500
Controls and Instrumentation								
Thermostats	4	3 2013	Manual thermostats.	Install programmable thermostats.	5	$300.00	ea	$1,500
Facility: Central Stores Warehouse Building 5 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$27,000**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$27,000**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0 2013	No fire sprinkler in warehouse full of combustible material.	Install dry-pipe fire sprinkler system.	4,500	$6.00	sf	$27,000

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Central Stores Warehouse Building 5 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$7,750**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$7,702**
Lighting and Branch Wiring								
Branch Wiring	5	1 2013	Insufficient electrical outlets in shop and office.	Add electrical outlets.	10	$250.00	ea	$2,500
Other Electrical Systems								
Emergency Lighting	5	0 2013	Building has one (1) emergency light; insufficient.	Add battery pack emergency lights at interior and exterior egress.	15	$350.00	ea	$5,250
Facility: Decant Facility Building 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,400**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$2,354**
Wall Finishes								
Painted Gypsum Wall Board	4	1 2013	Gypsum wall board finish in laundry room has been poorly repaired or revised.	Remove and rewall board; tape, finish, and paint.	120	$20.00	sf	$2,400
Facility: Decant Facility Building 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$1,925**
Other Conveying Systems								
Roof Access	4	2 2013	No roof access to maintain flues and inspect/maintain the roof itself.	Install ladder and roof hatch from support building mechanical room.	1	$2,000.00	ea	$2,000
Facility: Decant Facility Building 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$10,500**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$9,911**
Domestic Water Distribution								
Yard Hydrants	4	3 2013	Three (3) of four (4) yard hydrants are original and difficult to operate.	Replace hydrants.	3	$3,500.00	ea	$10,500

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Facility: Decant Facility Building 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$1,500**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$1,416**
Terminal and Package Units								
Heaters	4	3 2013	Heaters near end of life.	Replace heaters.	3	$500.00	ea	$1,500
Facility: Decant Facility Building 11 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$21,000**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$21,000**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0 2013	No fire sprinkler.	Provide dry pipe or deluge type fire sprinkler.	3,500	$6.00	sf	$21,000
Facility: Maintenance Operations Center Building 1 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,500**
System: Superstructure				**Total System Deficiency Repair Cost (Present Value):**				**$2,406**
Floor Construction								
Wood Floor	4	2 2013	Wood mezzanine floor deflects and appears heavily loaded.	Further study to verify load capacity for this 250 sf space.	1	$2,500.00	ls	$2,500
Facility: Maintenance Operations Center Building 1 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$4,000**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$3,776**
Exterior Doors								
Hollow Metal Doors	4	3 2013	Hollow metal doors have had heavy use. Paint is worn, doors are unprotected and sticking.	Clean, paint, repair as necessary, and adjust.	20	$200.00	ea	$4,000

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Facility: Maintenance Operations Center Building 1 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,500**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$3,179**
Projections								
Metal Canopy	4	5 2013	Metal canopy at south main door of Fleet Maintenance Shop is damaged by impact.	Repair or replace metal canopy.	1	$3,500.00	ea	$3,500
Facility: Maintenance Operations Center Building 1 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$8,000**
System: Interior Construction				**Total System Deficiency Repair Cost (Present Value):**				**$7,408**
Interior Doors								
Wood Doors	4	4 2013	Wood doors and frames damaged by use.	Sand and refinish doors.	40	$200.00	ea	$8,000
Facility: Maintenance Operations Center Building 1 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$4,500**
System: Staircases				**Total System Deficiency Repair Cost (Present Value):**				**$4,330**
Stair Construction								
Wood Stair	4	2 2013	Wood stair at mezzanine does not meet code for rails and rise/run.	Build new stair to meet code.	1	$4,500.00	ea	$4,500
Facility: Maintenance Operations Center Building 1 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$42,250**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$41,445**
Floor Finishes								
Floor Finishes	4	1 2013	Applied flooring (vinyl composition tile, carpet, sheet vinyl) finishes are worn and damaged.	Replace flooring.	6,500	$6.50	sf	$42,250

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Facility: Maintenance Operations Center Building 1 Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$2,000**
System: Vertical Transportation						**Total System Deficiency Repair Cost (Present Value):**		**$2,000**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access to two (2) high roofs.	Provide two (2) permanent ladders between low and high roofs.	2	$1,000.00	ea	$2,000
Facility: Maintenance Operations Center Building 1 Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$76,000**
System: Plumbing						**Total System Deficiency Repair Cost (Present Value):**		**$69,324**
Plumbing Fixtures								
Plumbing Fixtures	4	5 2013	Many damaged, discolored, improperly installed, ADA non-compliant, slow draining, slow flushing, and non-user friendly plumbing fixtures.	Replace plumbing fixtures.	12	$3,000.00	ea	$36,000
Sanitary Waste								
Drain, Waste, and Vent	4	5 2013	Some slow draining and flushing fixtures.	Investigate and repair/replace as needed.	1	$6,000.00	ls	$6,000
Rain Water Drainage								
Overflow Roof Drains	5	1 2013	Overflow roof drain is too high above roof drains risking flooding and/or structural damage.	Install new center roof well overflow roof drain.	1	$4,000.00	ea	$4,000
Other Plumbing Systems								
Shop Fluids	4	5 2013	Shop fluids building and systems are at end of life.	Schedule for renewal: compressed air, waste oil transfer, and four (4) shop fluid systems.	6	$5,000.00	ea	$30,000

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Facility: Maintenance Operations Center Building 1 Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$161,400**
System: HVAC						**Total System Deficiency Repair Cost (Present Value):**		**$150,508**
Cooling Generating Systems								
Cooling	4	3	Old main distribution frame (MDF) transfer air cooling system interfering with new system. SCADA systems transfer air cooling is unreliable.	Demo or layup main distribution frame (MDF) transfer air system. Provide ductless split cooling for SCADA.	2	$3,000.00	ea	$6,000
		2013	Computer room cooling.					
HVAC Distribution Systems								
Air Handling Unit	4	3	Shop air handling unit is past end of life.	Replace shop air handling unit. See "Energy Supply" Opportunity section for possible upgrade.	1	$15,000.00	ea	$15,000
		2013						
Terminal and Package Units								
Roof Top Units	4	2	Roof well may be recirculating flue gas, exhaust, drain waste and vent (DW&V) vent to roof (VTR) sewer gas, and shop exhaust to occupied spaces.	Reconfigure HVAC system to eliminate roof well short cycling effect.	11,700	$5.00	sf	$58,500
		2013						
Controls and Instrumentation								
Controls	4	5	Mix of old and new controls.	All newer controls plus retro-commissioning (Cx) and re-TAB (test, adjust, and balance).	11,700	$7.00	sf	$81,900
		2013						
Facility: Maintenance Operations Center Building 1 Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$58,500**
System: Fire Protection						**Total System Deficiency Repair Cost (Present Value):**		**$58,500**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0	No fire sprinkler system.	Install wet and dry pipe systems.	11,700	$5.00	sf	$58,500
		2013						

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Facility: Maintenance Operations Center Building 1 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$130,000**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$125,684**
Electrical Service and Distribution								
Transformer	5	0 2013	Outdoor dry transformer is rusted out and outdated.	Replace with new outdoor dry type transformer, 112.5-kva, 480-208/120.	1	$8,000.00	ea	$8,000
Lighting and Branch Wiring								
Branch Wiring	4	1 2013	Insufficient electrical outlets in Fleet Maintenance Bay and shop.	Replace existing and add additional outlets for Fleet Maintenance Bay and shop.	1	$50,000.00	ls	$50,000
Electrical Disconnect	5	0 2013	Roof equipment fuse disconnect switches are rusty and past end of life.	Replace roof disconnect switches with new. Replace electrical panel.	1	$12,000.00	ls	$12,000
Other Electrical Systems								
Automatic Transfer Switch	4	3 2013	Existing automatic transfer switch is outdated, obsolete equipment. 800A rated.	Replace transfer switch, 800A controls and feeders.	1	$60,000.00	ea	$60,000
Facility: Maintenance Operations Center Building 1 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$12,000**
System: Special Construction				**Total System Deficiency Repair Cost (Present Value):**				**$11,771**
Special Construction Systems								
Wash Rack	4	1 2013	Wash rack shed exterior wall and fiberglass panes damaged. Fiberglass deteriorated. Wood bollard rotting.	Replace exterior metal siding. Replace fiberglass and bollard.	1	$12,000.00	ls	$12,000

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Facility: Maintenance Operations Center Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$90,000**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$81,749**
Roadways								
Asphalt Roadways	3	5	Asphalt cracking along construction joints. Concrete curb is cracked and displaced.	Remove and replace asphalt pavement, full depth to match existing section. This quantity includes approximately 400 sy at the north side of the Decant Building 11, which is scheduled to be replaced during the current Decant Facility construction. Remove and replace approximately 200 lf of extruded concrete curb.	1,200	$45.00	sy	$54,000
		2013						
Concrete Pavement	3	5	Two concrete pavement areas are cracked and failing.	Remove existing concrete pavement and replace with full depth asphalt section.	800	$45.00	sy	$36,000
		2013	Concrete pavement slabs at east and west sides of Parks Operations Building 8.					
Facility: Maintenance Operations Center Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$40,000**
System: Site Civil / Mechanical Utilities				**Total System Deficiency Repair Cost (Present Value):**				**$36,333**
Storm Sewer								
Storm Water Vault Top Slab	3	5	All panels in concrete top slab are cracked and damaged. Access hatch appears to be damaged and is covered with a steel plate.	Remove and replace concrete top slabs, approximately 20' x 60'. Provide new truck bearing access hatches.	1	$40,000.00	ls	$40,000
		2013	Top slab of the storm water vault east of Building 6 is cracking and failing.					

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$9,000**
System: Foundations				**Total System Deficiency Repair Cost (Present Value):**				**$8,660**
Slab On Grade								
Slab on Grade	4	2 2013	Surface is worn and collecting dirt, especially in toilet and shower areas. 1970 and 1988 floor slabs.	Steam clean and reseal surface.	4,500	$2.00	sf	$9,000
Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$4,000**
System: Superstructure				**Total System Deficiency Repair Cost (Present Value):**				**$3,924**
Roof Construction								
Soffits	4	1 2013	Wood and gypsum wall board soffits. Water damage appears to be from above soffit. Lights need to be caulked and screens repaired.	General clean, repair caulk, and paint.	600	$3.00	sf	$1,800
Soffits	4	1 2013	Exterior soffits have extensive water spotting on west soffit.	Recommend further investigation for source of water.	1	$2,200.00	ea	$2,200
Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,100**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$3,041**
Exterior Doors								
Wood Doors	4	1 2013	Door on pressure washer shed is damaged with make-shift repairs. Leaks.	Replace door and frame with hollow metal and new hardware.	1	$3,100.00	ea	$3,100
Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$6,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$5,774**
Projections								
Steel Columns	4	2 2013	Structural steel at canopies exposed to weather. Protective paint is oxidized.	Prep and paint.	24	$250.00	ea	$6,000

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Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$12,000**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$11,547**
Floor Finishes								
Carpet	4	2 2013	Office carpet is worn and at end of useful life.	Remove and replace carpet.	2,000	$6.00	sf	$12,000
Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$6,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$6,000**
Other Conveying Systems								
Roof Access	5	0 2013	No permanent roof access to medium and high roofs.	Install caged ladder to medium and high roofs.	2	$3,000.00	ea	$6,000
Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$11,800**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$10,849**
Plumbing Fixtures								
Trim	4	1 2013	Most flushing fixture trim (flush valves) need adjustment (flushes too low, too short or difficult to start).	Adjust or replace flush valves.	9	$200.00	ea	$1,800
Domestic Water Distribution								
Domestic Hot Water Heater	3	5 2013	Aging domestic hot water heater.	Replace domestic hot water heater with high efficiency type.	1	$10,000.00	ea	$10,000

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Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$90,707**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$84,938**
Cooling Generating Systems								
Condensing Units	4	5 2013	Condensing units approaching end of life and concentrate heat near building.	Plan replacement including relocation away from semi-enclosed covered area.	5	$5,000.00	ea	$25,000
HVAC Distribution Systems								
Heat Pump	5	0 2013	Mezzanine fan coil unit has no outside air for ventilation and/or economized (free) cooling.	Provide ventilation and economized air per code.	1	$5,000.00	ls	$5,000
Furnaces	4	5 2013	Furnaces functional but nearing end of life.	Replace furnaces.	4	$5,500.00	ea	$22,000
Controls and Instrumentation								
Variable Volume and Temperature (VVT) Controls	4	2 2013	Variable volume and temperature (VVT) controls are failing with widespread comfort complaints. Improperly wired.	Replace with current variable volume and temperature (VVT) and/or Thermafuser technology. Programmable controls with override for shop.	8,202	$3.50	sf	$28,707
Other HVAC Systems and Equipment								
Dust Collection	4	2 2013	Despite newer 2008 dust collector, excessive wood dust is fouling all work surfaces and building systems.	Add points of collection and optimize system performance.	1	$10,000.00	ls	$10,000

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Facility: Parks Operations Center Building 8 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$82,000**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$80,438**
Lighting and Branch Wiring								
Lighting	4	1 2013	Shop/storage and wood shop building interior lighting is insufficient; fixtures are at end of life.	Provide new fluorescent lens fixtures with T5HO lamps. Provide occupancy sensors.	3,500	$8.00	ea	$28,000
Branch Wiring	4	1 2013	Electrical devices at shop/storage and wood shop are old and at end of life. Shop storage electrical devices are covered with dust.	Provide new electrical device wiring. Provide dust-tight conduits/boxes in wood shop. Provide power shunt trip and interlock controls.	4,500	$12.00	ea	$54,000
Facility: Street Department Modular Building 3 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,775**
System: Foundations				**Total System Deficiency Repair Cost (Present Value):**				**$2,670**
Standard Foundations								
Crawl Space	4	2 2013	Crawl space is cluttered with construction debris, and vapor barrier is folded and torn.	Clean crawl space and repair or replace vapor barrier.	1,850	$1.50	sf	$2,775
Facility: Street Department Modular Building 3 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,700**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$5,485**
Exterior Doors								
Hollow Metal Doors	4	2 2013	Hollow metal doors rusting through. One has cat door cut into bottom.	Replace doors in existing frame; new hardware.	3	$1,900.00	ea	$5,700

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Facility: Street Department Modular Building 3 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$9,600**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$8,889**
Projections								
Projections	4	4 2013	Unpermitted deck and roof. Roof too shallow, leaks, building paper exposed, water damage to structure.	Permit deck and stair; build new roof.	300	$32.00	sf	$9,600
Facility: Street Department Modular Building 3 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$16,650**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$16,022**
Floor Finishes								
Floor Finishes	4	2 2013	Vinyl composition tile and carpet severely worn.	Replace floor finishes.	1,850	$9.00	sf	$16,650
Facility: Street Department Modular Building 3 Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$11,850**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$11,331**
Terminal and Package Units								
Ductwork	4	2 2013	Duct is leaking.	Seal duct; balance system.	1,850	$1.00	sf	$1,850
Economizer	4	1 2013	While rooftop unit appears to have economizer, no building relief path observed.	Install relief system and interlock with rooftop unit economizer controls.	1	$3,000.00	ea	$3,000
Roof Top Unit	4	3 2013	Package unit heat pump vibrates excessively; appears to be near end of life.	Replace or repair rooftop unit.	1	$7,000.00	ea	$7,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Maintenance Operations Center Site

Total Observed Deficiency Repair Direct Cost : $1,012,232

Total Observed Deficiency Repair Direct Cost (Present Value): $962,698

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Street Department Modular Building 3 Building								**Total System Deficiency Repair Cost (Undiscounted/Unescalated): $9,250**
System: Fire Protection								**Total System Deficiency Repair Cost (Present Value): $9,250**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0 2013	No fire sprinkler.	Install residential style (non-metallic piping) fire sprinkler system with new stand pipe.	1,850	$5.00	sf	$9,250
Facility: Street Department Modular Building 3 Building								**Total System Deficiency Repair Cost (Undiscounted/Unescalated): $3,500**
System: Electrical								**Total System Deficiency Repair Cost (Present Value): $3,500**
Other Electrical Systems								
Emergency Lighting	5	0 2013	Building has no emergency lights. Exit light battery packs have failed.	Add battery pack emergency lights at interior and exterior egress. Replace exit lights.	10	$350.00	ea	$3,500

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Maintenance Operations Center Site **Total Site Opportunity Cost: $981,843**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Central Stores Warehouse Building 5 Building**						
System:	**Vertical Transportation**	**Total Cost: $5,000**					
D1090	**Other Conveying Systems**						
		A hoist may increase productivity in the warehouse by facilitating movement of materials between first and second floors.	Install 2 to 3-ton electric hoist.	1.00	$5,000.00	ea	$5,000
Facility:	**Central Stores Warehouse Building 5 Building**						
System:	**HVAC**	**Total Cost: $15,000**					
D3050	**Terminal and Package Units**						
		Offices have no mechanical ventilators and no cooling. Opportunity to improve comfort and indoor air quality for occupied space.	Install ductless split heat pumps and heat recovery ventilators for occupied spaces.	3.00	$5,000.00	ea	$15,000
Facility:	**Central Stores Warehouse Building 5 Building**						
System:	**Electrical**	**Total Cost: $86,625**					
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Building has no security alarm system.	Add security alarm system.	4,500.00	$2.50	sf	$11,250
		Building fire alarm system is old and outdated.	Replace fire alarm system with new addressable system.	4,500.00	$2.75	sf	$12,375
D5090	**Other Electrical Systems**						
		Existing electrical outlets are old and outdated.	Replace electrical outlets and wiring.	4,500.00	$7.00	sf	$31,500
		Existing lighting is over 20 years old and has no automatic controls.	Upgrade lighting fixtures and add occupancy sensors.	4,500.00	$7.00	sf	$31,500
Facility:	**Decant Facility Building 11 Building**						
System:	**HVAC**	**Total Cost: $12,000**					
D3010	**Energy Supply**						
		Parks plan to install a new wash rack with full oil water separator at Building 8 (Park Operations Center).	Restore Decant wash rack and designate for use by Parks in lieu of all new systems at Building 8 (Park Operations Center).	1.00	$10,000.00	ls	$10,000
D3050	**Terminal and Package Units**						
		No mechanical ventilation for support building office area.	Provide heat recovery ventilator (HRV) for support area ventilation.	1.00	$2,000.00	ea	$2,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Maintenance Operations Center Site **Total Site Opportunity Cost: $981,843**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Decant Facility Building 11 Building**						
System:	**Electrical**	**Total Cost: $19,600**					
D5020	**Lighting and Branch Wiring**						
		Lighting fixtures in the office are open strip fluorescent fixtures with no glare control and no occupancy control.	Replace light fixtures with wrap around lens fixtures and add occupancy sensors in office and storage room.	6.00	$600.00	ea	$3,600
		Lighting fixtures are ceiling mounted high intensity discharge (HID) lights, mounted at front of the bay, provide less illumination to the central area.	Replace ceiling mounted high intensity discharge (HID) lights with new 1x4 light emitting diode (LED) vapor-tight fixtures. Add LED lights over the center area, and timer control occupancy control.	20.00	$800.00	ea	$16,000
Facility:	**Maintenance Operations Center Building 1 Building**						
System:	**Superstructure**	**Total Cost: $26,325**					
B1020	**Roof Construction**						
		Roof is only sporadically insulated.	Insulate roof to R-38.	11,700.00	$2.25	sf	$26,325
Facility:	**Maintenance Operations Center Building 1 Building**						
System:	**Exterior Closure**	**Total Cost: $68,000**					
B2010	**Exterior Walls**						
		Most walls have no insulation. Some furred walls may have some insulation.	Fur and insulate exterior walls.	6,800.00	$10.00	sf	$68,000
Facility:	**Maintenance Operations Center Building 1 Building**						
System:	**Roofing**	**Total Cost: $35,100**					
B3010	**Roof Coverings**						
		Roof is in good condition for age. Suggest cleaning and coating to extend roof life.	Clean and coat roof.	11,700.00	$3.00	sf	$35,100
Facility:	**Maintenance Operations Center Building 1 Building**						
System:	**Vertical Transportation**	**Total Cost: $5,000**					
D1090	**Other Conveying Systems**						
		Vehicle shop needs overhead hoist(s) and/or crane(s).	Provide one (1) mobile 5-ton crane system.	1.00	$5,000.00	ea	$5,000

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Opportunity Summary By Subsystem

City of Redmond

Site: Maintenance Operations Center Site **Total Site Opportunity Cost: $981,843**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Maintenance Operations Center Building 1 Building**						
System:	**Plumbing**	**Total Cost: $50,000**					
D2040	**Rain Water Drainage**						
		The wash rack uses non-potable water.	Collect roof drain water in a rain water harvesting system for non-potable use, specifically for the wash rack.	1.00	$25,000.00	ls	$25,000
D2090	**Other Plumbing Systems**						
		Waste oil can be retained on-site for use in waste oil-to-energy furnace.	Install waste oil-to-energy system to assist in shop heating.	1.00	$25,000.00	ea	$25,000
Facility:	**Maintenance Operations Center Building 1 Building**						
System:	**HVAC**	**Total Cost: $106,800**					
D3010	**Energy Supply**						
		Shop ventilation system is electric resistance heat; domestic hot water heater is electric.	Connect shop ventilation and domestic hot water heater to gas-fired at next renewal.	2.00	$10,000.00	ea	$20,000
D3030	**Cooling Generating Systems**						
		Shop is often too hot for work during warm/hot summer weather. Ceiling fans are marginal.	Install evaporative cooling system for large shop areas.	1.00	$15,000.00	ls	$15,000
D3040	**HVAC Distribution Systems**						
		Some air handling units have no cooling. Ceiling fans are few and too small.	Install evaporative cooling system for partial shop cooling.	1.00	$25,000.00	ls	$25,000
D3060	**Controls and Instrumentation**						
		DDC controls can improve occupant comfort and productivity, save energy, and facilitate maintenance.	Install new DDC control system.	11,700.00	$3.00	sf	$35,100
D3090	**Other HVAC Systems and Equipment**						
		Currently unclear shop ventilation.	Install shop high/low ventilation with demand control ventilation (DCV).	5,850.00	$2.00	sf	$11,700
Facility:	**Maintenance Operations Center Building 1 Building**						
System:	**Electrical**	**Total Cost: $289,575**					
D5010	**Electrical Service and Distribution**						
		Electrical service panel and branch panels are old and outdated.	Replace electrical service panel, branch panel, and feeder wiring.	11,700.00	$8.00	ft	$93,600

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Maintenance Operations Center Site **Total Site Opportunity Cost: $981,843**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
D5020	**Lighting and Branch Wiring**						
		Existing wiring devices are old and past end of life.	Replace existing devices and branch wiring.	11,700.00	$7.00	sf	$81,900
		Existing lighting fixtures are old, outdated, and lack automatic lighting controls.	Upgrade lighting with new and add occupancy sensors.	11,700.00	$7.00	sf	$81,900
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Existing fire alarm is old and outdated.	Replace fire alarm system with new addressable fire alarm system.	11,700.00	$2.75	sf	$32,175
Facility:	**Maintenance Operations Center Building 1 Building**						
System:	**Special Construction**	**Total Cost: $10,000**					
F1020	**Integrated Construction**						
		Miscellaneous fluid storage is temporary.	Provide semi-permanent packaged hazardous materials storage unit with integral containment similar to pesticide unit; approximately 8-feet wide by 16-feet long by 8-feet high.	1.00	$10,000.00	ea	$10,000
Facility:	**Maintenance Operations Center Infrastructure**						
System:	**Other Site Construction**	**Total Cost: $1,200**					
G9090	**Other Site Systems**						
		Exterior plywood siding is exposed to weather.	Clean and re-stain or paint.	400.00	$3.00	sf	$1,200
Facility:	**Parks Operations Center Building 8 Building**						
System:	**Vertical Transportation**	**Total Cost: $6,000**					
D1090	**Other Conveying Systems**						
		Hoist and/or crane may increase functionality of high bay shop area.	Install 2-ton hoists.	2.00	$3,000.00	ea	$6,000
Facility:	**Parks Operations Center Building 8 Building**						
System:	**Plumbing**	**Total Cost: $75,000**					
D2010	**Plumbing Fixtures**						
		Existing fixtures are standard efficiency.	As fixtures and trim age, replace fixtures with high efficiency, water conserving fixtures and trim.	20.00	$1,000.00	ea	$20,000
D2030	**Sanitary Waste**						

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Opportunity Summary By Subsystem

City of Redmond

Site: Maintenance Operations Center Site **Total Site Opportunity Cost: $981,843**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
		Floor drain and/or trench drains may increase functionality of high bay shop areas when wet equipment is brought in.	Add trench drains at north drive-through bays.	2.00	$5,000.00	ea	$10,000
D2040	Rain Water Drainage						
		Roof drains may be collected to rain water harvesting (RHW) systems and used for flushing, laundry, and small equipment wash rack operations.	Install 10,000-gallon rain water harvesting system.	1.00	$30,000.00	ls	$30,000
D2090	Other Plumbing Systems						
		Pressure washing is improved by hot water.	Install gas-fired pressure wash heater at northwest wash area in conjunction with planned new oil/water separator wash.	1.00	$10,000.00	ls	$10,000
		Shop has no compressed air system, but compressed air system is installed at northwest shop corner of building.	Install compressed air distribution system in shop.	10.00	$500.00	drop	$5,000
Facility:	**Parks Operations Center Building 8 Building**						
System:	**HVAC**	**Total Cost: $80,000**					
D3040	HVAC Distribution Systems						
		Occupants report thermal discomfort throughout fully conditioned (office) areas.	Replace with variable refrigerant flow (VRF) and heat recovery ventilation (HRV) systems.	4,000.00	$20.00	sf	$80,000
Facility:	**Parks Operations Center Building 8 Building**						
System:	**Electrical**	**Total Cost: $59,505**					
D5010	Electrical Service and Distribution						
		Two (2) branch panels in shop/storage (Panel-B and Panel-C) are old and at end of life.	Replace two (2) branch panels.	2.00	$4,500.00	ea	$9,000
D5020	Lighting and Branch Wiring						
		Lighting and branch wiring devices are old and outdated.	Provide new lighting, branch wiring, devices, and occupancy sensors.	1.00	$10,000.00	ls	$10,000
		Upgrade building exterior lighting.	Provide new light emitting diode (LED) exterior lighting and controls.	1.00	$20,000.00	ls	$20,000
D5030	Low Voltage Communication Security and Fire Alarm						
		Building has no security alarm system.	Provide addressable security alarm system.	8,202.00	$2.50	sf	$20,505

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Opportunity Summary By Subsystem

City of Redmond

Site: Maintenance Operations Center Site **Total Site Opportunity Cost: $981,843**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Parks Operations Center Building 8 Building**						
System:	**Special Construction**	**Total Cost: $2,200**					
F1040	**Special Facilities**						
		High bay shop area appears under-used with low storage racks.	Review program to verify best use for this very high space. Consider high rack storage or mezzanine.	1.00	$2,200.00	ea	$2,200
Facility:	**Street Department Modular Building 3 Building**						
System:	**Electrical**	**Total Cost: $28,913**					
D5020	**Lighting and Branch Wiring**						
		Insufficient electrical outlets.	Add electrical outlets in break room and offices.	25.00	$250.00	ea	$6,250
		Existing lighting is starting to fail.	Upgrade lighting fixtures and add occupancy sensors.	1,850.00	$7.00	sf	$12,950
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Building has no fire alarm system.	Add fire alarm system with new addressable system.	1,850.00	$2.75	sf	$5,088
		Building has no security alarm system.	Add security alarm system.	1,850.00	$2.50	sf	$4,625

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Facility Summary

City of Redmond
Municipal Campus Site
City Hall Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	107,212
Year Of Original Construction	2005
Facility Use Type	Admin - Mid rise
Construction Type	Medium
# of Floors	4
Energy Source	Gas
Year Of Last Renovation	2005
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**1.7**			
Facility Condition Index (FCI)	0.05			
Current Replacement Value (CRV)	$60,360,000	**Predicted Renewal Budget (6 yrs)**	$905,000	$822,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$12,436,000	$10,297,000
		Observed Deficiencies (6 yrs)	$158,000	$146,000
		Observed Deficiencies (ALL)	$158,000	$146,000
		Opportunity Total Project Cost	$559,000	N/A

Facility Condition Summary

Architectural:
Four-story administration building on auger cast piles and standard foundation. 9-inch slab on grade with no basement. Structure consists of steel frame and composite metal deck. Roofing is PVC system, fully adhered. Exterior walls are combination of aluminum curtain wall, metal stud with stone veneer, and aluminum metal panels. Concrete column support floor and canopies. Canopies are metal frame with wood purlins. Steel sun shades occur on all wall sides. Interior partitions are steel frame with gypsum wall board. Wall finish consists of paint, stone, wood panel, and fabric panels. Acoustic ceiling tile and hard lid occur throughout. Flooring consists of combination of carpet, sealed concrete, tile, stone, and sheet vinyl. Elevators, passenger and freight, serve all four floors. Emergency stairs are precast concrete. Main lobby stairs are metal frame with tile treads. Stainless steel/glass handrails at interior stairs and balcony. City council room includes sloped floor and fixed seating. Wood casework throughout.

Electrical:
Power from Puget Sound Energy 750-kva pad mounted transformer at southwest corner of site supplying 480V 3-phase power to main electrical room at southwest first floor area; main switchboard is 480v/3-phase 2,000 amps. Standby dual-fuel (diesel and natural gas) generator is also at southwest corner of site, adjacent to Puget Sound Energy transformer. See Infrared Report of 2012 for two (2) "serious" problems. Site lighting includes pole mounted and building mounted fixtures. Several additional transformers and all-weather enclosures were reportedly recently installed for use by Parks Department or Municipal Campus outdoor events. Inside lighting is mostly T-8 fixtures with some compact fluorescent lamp (CFL) recessed can-lights in some public and community areas. Low voltage includes communications, access control, CCTV, and special systems.

Mechanical:
Redmond City Hall is located on the southwest quadrant of the Redmond Municipal Campus which borders the Sammamish River directly to the west. Redmond City Hall was designed, built, operated, and maintained (DBOM) by Wright Runstad from 2005 to September 2013, when the City exercised an option to buy City Hall and the associated parking garage from Wright Runstad. Wright Runstad is currently operating Redmond City Hall under an interim 90-day contract while the City evaluates long term operations and maintenance options.
Redmond City Hall is a four-story, medium construction, LEED certified, well designed and constructed facility with several special features including an unusually large lobby with fireplace, round council chamber surrounded by window wall overlooking a constructed reflecting pond with artwork, several large roof decks, and a large patio adjacent to a rain garden.
The HVAC system is four-pipe VAV with penthouse boilers and chillers, rooftop cooling tower, two (2) rooftop VAV air handling units, hydronic hot water terminal VAV reheat units, multiple dedicated/supplemental split direct expansion (DX) cooling systems, dedicated council chamber air handling unit, and recently upgraded DDC controls.
Plumbing is city water and sewer with all metallic piping and water conserving plumbing fixtures. Domestic hot water is electric tank-type heaters. Fire protection is wet pipe sprinkler in conditioned spaces, dry pipe under the large outside canopy covered areas, and a wet heat-traced standpipe

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in the unheated southeast glass stair well tower.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**1.6**			
Foundations						
A1010 Standard Foundations						
	2005	2005	1	80	JB 09/30/13	Standard concrete foundations.
A1020 Special Foundations						
	2005	2013	2	80	JB 09/30/13	Auger cast piles.
						Epoxy injection repairs on-going.
A1030 Slab On Grade						
	2005	2005	1	80	JB 09/30/13	9-inch slab on grade.
						Good condition.
B Shell			**1.1**			
Superstructure						
B1010 Floor Construction						
	2005	2005	1	80	JB 09/30/13	Concrete on metal deck, steel frame.
						Good condition.
B1020 Roof Construction						
	2005	2005	1	80	JB 09/30/13	Steel frame, concrete on composite deck.
						Good condition.
Exterior Closure						
B2010 Exterior Walls						
	2005	2005	2	52	JB 09/30/13	Steel frame, insulation, stone veneer/metal panel.
						Minor repairs for leaks reported at metal panels.
B2020 Exterior Windows						
	2005	2005	1	37	JB 09/30/13	Curtain wall system.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**1.1**			
Exterior Closure						
B2020 Exterior Windows						
						Good condition.
B2030 Exterior Doors						
	2005	2005	1	43	JB 09/30/13	Some hollow metal doors, coiling dock door.
						Good condition; hardware good.
Roofing						
B3010 Roof Coverings						
	2005	2005	1	17	JB 09/30/13	PVC roofing, parapet cap and flashing.
						Good condition.
B3030 Projections						
	2005	2005	1	42	JB 09/30/13	Steel frame canopies with wood purlins. Steel sun shades.
						Good condition.
C Interiors			**1.2**			
Interior Construction						
C1010 Partitions						
	2005	2005	1	42	JB 09/30/13	Steel stud frame.
						Good condition.
C1020 Interior Doors						
	2005	2005	1	32	JB 09/30/13	Hollow metal frame, wood doors, hardware, relites in some locations. Overhead coiling doors at some counters.
						Good condition.
C1030 Fittings						
	2005	2005	1	22	JB 09/30/13	Various marker boards, signs, shelving.
						Good condition.
Staircases						
C2010 Stair Construction						

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City of Redmond
Municipal Campus Site
City Hall Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
C Interiors			**1.2**				
Staircases							
	2005	2005	1	80	JB	09/30/13	Emergency stairs are precast concrete and steel handrails. Front lobby stairs are steel frame. Other miscellaneous stairs are precast concrete (i.e. council chambers). Good condition.
C2020 Stair Finishes							
	2005	2005	1	8	JB	09/30/13	Tile on main entry stairs, carpet at council chambers. Good condition.
Interior Finishes							
C3010 Wall Finishes							
	2005	2005	2	14	JB	09/30/13	Gypsum wall board, paint, some stone at fireplace, wood panels, fabric at acoustic applications. Good condition.
C3020 Floor Finishes							
	2005	2005	1	16	JB	09/30/13	Combination of carpet, tile, stone, and vinyl flooring. Good condition.
C3030 Ceiling Finishes							
	2005	2005	1	25	JB	09/30/13	Combination of gypsum wall board and acoustic ceiling tile. Good condition.
D Services			**2.5**				
Vertical Transportation							
D1010 Elevators and Lifts							
	2005	2005	2	28	DCS	09/30/13	Two (2) Thyssen Krupp TAC50 traction elevators with split direct expansion (DX) cooling at elevator machinery room (EMR). One (1) Thyssen Krupp Continental 50 TAC20 hydraulic freight elevator. All elevator cabs fully finished, four-stop.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.5**			
Vertical Transportation						
D1010 Elevators and Lifts						In good working order with smooth reliable operator. No major issues reported or observed except traction EMR condensing unit location.
D1090 Other Conveying Systems	2005	2005	3	27	DCS 09/30/13	Freight elevator to fourth floor; mechanical penthouse is on roof above. While freight elevator allows heavy mechanical equipment to reach the fourth floor, there is no fixed rigging to get replacement equipment between the fourth floor and roof mechanical penthouse. Opportunity to install permanent rigging.
Plumbing						
D2010 Plumbing Fixtures	2005	2005	3	32	DCS 09/30/13	Dual flush water closets, waterless urinals, infrared automatic lavatory faucets, kitchenette stainless steel sinks with chrome trim, men's and women's locker room showers (two each), dual height drinking fountains, and various other fixtures. Chronic problems with Caroma water closets including leaks, difficult to obtain replacement parts, and toilets pulling away from wall, reportedly due to weak carriers. Waterless urinals while well maintained may cause premature drain, waste, and vent system failure over time.
D2020 Domestic Water Distribution	2005	2005	2	36	DCS 09/30/13	Four-inch city water service with unknown meter size (assume three-inch) with two (2) reduced pressure backflow prevention at southeast riser room. Insulated copper distribution piping. Pressure at 80-psig (No pressure reducing valve). Two (2) 119-gallon electric domestic hot water heaters on first floor with receive pump and small expansion tank. One (1) medium size electric domestic hot water heater at penthouse security utility sink. Service may be over-sized for a LEED project with low flow plumbing fixtures. Pressure to lower

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.5**				
Plumbing							
D2020 Domestic Water Distribution							
							floors may be too high. Domestic hot water expansion tank may be undersized (less than $2,000).
D2030 Sanitary Waste							
	2005	2005	3	27	DCS	09/30/13	Cast iron hubless drain, waste, and vent piping; floor drains with trap primers. Cast iron piping life may be shortened by waterless urinals - see "Plumbing Fixtures" section for opportunity to change to pint-per-flush fixtures. Reportedly some concerns regarding plumbing fixture trim driven trap primers; opportunity to upgrade to independent trap primers.
D2040 Rain Water Drainage							
	2005	2005	2	32	DCS	09/30/13	Roof drain and overflow roof drain system with internal building piping to storm. Opportunity to capture rain water for reflecting pond make-up, cooling tower make-up, or flushing water use.
D2090 Other Plumbing Systems							
	2005	2005	3	17	DCS	09/30/13	Reflecting pond with underground ventilated pump, filter, and treatment vault. Four (4) pumps. One (1) sand filter. PVC piping. Reportedly one (1) pump is failing and scheduled for repair or replacement (less than $2,000).
HVAC							
D3010 Energy Supply							
	2005	2005	2	32	DCS	09/30/13	Natural gas service from Puget Sound Energy via a 7,000-cfh rotary meter with seismic shut-off valve. Loads include two (2) boilers, dual-fuel standby generator, and lobby fireplace. Gas service appears oversized for building loads, with opportunity for more gas-fired equipment including future upgrade to gas-fired domestic hot water heat or addition of commercial kitchen. See "Domestic Water Distribution" section above for domestic hot water opportunity.

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City of Redmond
Municipal Campus Site
City Hall Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.5**			
HVAC						
D3010 Energy Supply						
D3020 Heat Generating Systems						
	2005	2005	3	12	DCS 09/30/13	Two (2) RBI standard efficiency (80%) non condensing gas-fired hydronic hot water boilers in rooftop penthouse. Boilers are neatly installed, clean, and operable; but flue gas venting system does not appear compatible with the penthouse negative pressure ventilation system. Opportunity for future upgrade to high efficiency boiler.
D3030 Cooling Generating Systems						
	2005	2005	3	23	DCS 09/30/13	One (1) 220-ton Carrier water cooled chiller with one (1) BAC 171-ton horizontal forced draft open loop cooling tower. Five (5) Carrier split direct expansion (DX) roof top condensing units, 2- to 3-ton each. Awkward rooftop enclosure may be short cycling hot air from condensing units to cooling tower; main _ access to some equipment within the enclosure may be difficult. Cooling tower drift climate media is somewhat fouled; unable to observe cooling tower media directly. Cooling tower water chemistry pump is being replaced (less than $2,000).
D3040 HVAC Distribution Systems						
	2005	2005	2	32	DCS 09/30/13	Forced air VAV system with two (2) Aaon RL155 VAV air handling units at roof, Nailor terminal hydronic re-heat units at each zone, and open plenum returns. Dedicated air handling unit for council chamber. Rooftop air handling units are located in an innovative sliding panel enclosure to facilitate maintenance access and to a lesser degree optimize air flow. Occupants report good comfort throughout the building.
D3050 Terminal and Package Units						
	2005	2005	3	12	DCS 09/30/13	Five (5) split direct expansion (DX) systems for MDF, TV studio, traffic, and other heavy/special cooling load spaces. Runtal baseboard heat at council chamber outside perimeter window wall. Electric unit heaters and wall heaters in utility

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.5**			
HVAC						
D3050 Terminal and Package Units						
						rooms. No issues reported or observed except condensing unit location discussed in "Cooling Generating Systems" section above, and possible need for additional cooling in several smaller spaces.
D3060 Controls and Instrumentation						
	2005	2013	2	10	DCS 09/30/13	Full DDC with distributed controllers and central software upgraded to "reliable" controls in 2013. Optimization of recently upgraded hardware and software continues. Opportunity to complete this work with the assistance of more formal re-TAB (test, adjust, and balance) and retro-commissioning (Cx).
D3090 Other HVAC Systems and Equipment						
	2005	2005	2	16	DCS 09/30/13	Gas fireplace in main lobby with flue draft inducer at roof. Good condition. Possible opportunity for future light commercial kitchen or small coffee shop at unusually large break room first floor south.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	2005	2005	2	34	DCS 09/30/13	Eight-inch city fire service and six-inch riser manifold, leading to six-inch wet sprinkler riser, four-inch dry riser; six-inch fire department connector leading to sprinkler manifold and wet stand pipe below. Inspections current. City pressure is 95-psig, dry pipe pressure is 28-psig.
D4020 Stand-Pipe and Hose Systems						
	2005	2005	2	27	DCS 09/30/13	Wet standpipe in unconditioned southeast stairwell standpipe is heat-traced and insulated. Inspections current.
D4030 Fire Protection Specialties						
	2005	2005	2	15	DCS 09/30/13	Fire extinguishers, automatic external

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.5**				
Fire Protection							
D4030 Fire Protection Specialties							
							defibrillators (AED), and first aid kits throughout. Most fire extinguishers in cabinets. Fire extinguishers have current inspections.
Electrical							
D5010 Electrical Service and Distribution							
	2005	2005	2	32	DCS	09/30/13	Power from Puget Sound Energy 750-kva transformer to 480V, 3-phase, 60-hx, 2000 amp Cutler Hammer main switchboard; distributed to eight (8) stacked electrical rooms, one north, one south, one each floor with 480/208v transformer and panel boards. Good condition with no issues reported or observed; plenty of capacity for future upgrades to other building systems. Opportunity for internal monitoring for improved energy management.
D5020 Lighting and Branch Wiring							
	2005	2005	3	22	DCS	09/30/13	T-8 fluorescent lay-in lighting fixtures in office area, fluorescent recessed can-lights in hard lid and common areas. Receptacles in office areas. Recessed can lights under exterior canopies. No emergency lighting (selected lighting circuits powered by generator). Opportunity to upgrade emergency and can lights.
D5030 Low Voltage Communication Security and Fire Alarm							
	2005	2005	3	17	DCS	09/30/13	Notifier fire alarm system with main fire alarm control panel in sprinkler riser room and sub-panels in electrical rooms. Card-key access system in current use. Outside perimeter CCTV system with unclear status. Multiple communications and data carrier service entries at MDF, with unclear status. Main city data center located at adjacent Public Safety Building. No issues reported or observed other than some small room/spaces with low voltage and other electrical equipment appear minimally cooled/ventilated.
D5090 Other Electrical Systems							

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City of Redmond
Municipal Campus Site
City Hall Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.5**			
Electrical						
D5090 Other Electrical Systems						
	2005	2005	3	12	DCS 09/30/13	Dual fuel (diesel and natural gas) standby generator at southwest corner of site with three (3) automatic transfer switches (ATS) - two (2) in main electrical room and one (1) at mechanical penthouse. No dedicated emergency lighting system. Opportunity to install dedicated emergency lighting system to reduce panic upon loss of power.
E Equipment and Furnishings			**1.0**			
Equipment						
E1010 Commercial Equipment						
	2005	2005	1	17	JB 09/30/13	Miscellaneous kitchen equipment at café. Good condition.
E1020 Institutional Equipment						
	2005	2005	1	17	JB 09/30/13	Audio-visual equipment at council chambers. Good condition.
E1030 Vehicular Equipment						
	2005	2005	1	17	JB 09/30/13	Dock equipment. Good condition.
Furnishings						
E2010 Fixed Furnishings						
	2005	2005	1	22	JB 09/30/13	Casework at work areas, copier rooms, counters at reception areas, window coverings, artwork at elevator lobby at second floor, main lobby art, seating at council chambers. All in good condition.
F Special Construction						
Special Construction						

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Facility Summary

City of Redmond
Municipal Campus Site
City Hall Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
F Special Construction						
Special Construction						
F1020 Integrated Construction						
	2005	2005	1	27	JB 09/30/13	Fireplace. Good condition.

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Facility Summary

City of Redmond
Municipal Campus Site
Municipal Campus Infrastructure

8701 160th Avenue NE
Redmond, WA 98052

Facility Condition Summary

The Redmond Municipal Campus includes the following buildings:
Public Safety Building, 90,000 sf, constructed 1991, 3-story
Senior Center, 23,000 sf, constructed 1991, 1-story
City Hall, 38,000 sf footprint, constructed 2005, 4-story
Parking Garage, 34,000 sf footprint, constructed 2005, 3-story

The four Municipal Campus buildings are sited on an open campus, just east of the Sammamish River/Trail. The building sites have open lawn areas with landscaping, patio areas, and walkways. There are asphalt access roads to the buildings, and surface parking lots on the east and west sides of the Parking Garage, north of the Senior Center, and east of the City Hall. The City Hall lot is shared with the Redmond Regional Library. The site is accessed by vehicles via the main Municipal Campus entry drive off of 160th Avenue NE, and by the City Hall entry drive off of NE 85th Street. The buildings are served by City of Redmond utilities. The Redmond Regional Library and King County Court House are not part of the Municipal Campus.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	1990	2005	3	8	MK	08/19/13	Site roadways include the following: 1) an east-west access road into the Campus off of 160th Avenue NE. This road extends to and includes the cul-de-sac in front of the Senior Center, and includes the back-in parking along it; 2) a ramp driveway that extends to the lower garage level on the north side of the Public Safety Building; 3) a limited access road (police vehicles only) on the east side of the Public Safety Building; 4) a north-south access road on the east side of the Parking Garage; and 5) an entry drive and cul-de-sac on the east side of City Hall building. All roadways are asphalt pavement with concrete curb & gutter, except the City Hall cul-de-sac is concrete. Pavement is in good to fair condition. The main east-west access road (item 1 above) exhibits deficiencies due to asphalt deterioration (cracking & failure) and should be repaired. These areas should be saw cut and removed and replaced with new pavement. See deficiencies.
G2020 Parking Lots							
	1990	2005	3	8	MK	08/19/13	Campus asphalt parking lots are as follows:

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Facility Summary

City of Redmond
Municipal Campus Site
Municipal Campus Infrastructure

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2020 Parking Lots						1) parking lot east of the Senior Center (approx. 30 vehicles;, 2) lot north of the Senior Center (approx. 40 vehicles); 3) lot east of City Hall (50 vehicles; and 4) lot east of the Parking Garage (approx. 110 vehicles). Lots have extruded concrete curb, with lighting and striping. There are also two (2) small parking areas on north side of Public Safety Building at the Sally Port, of concrete pavement. These have limited access via the 'Green Gate' on the north and the 'Red Gate' on the east. The four-story Parking Garage provides approximately 380 parking stalls. Additional garage parking is provided in the basement level of the Public Safety Building. The asphalt lots at the Senior Center and City Hall are generally in good shape. Some minor pavement and curb repairs are warranted in the Senior Center lots. The concrete pavement on the east side of the Public Safety Building Sally Port exhibits cracking & spalling. Some repairs have been made. Additional repairs likely required within next five (5) years. The parking lot east of the Parking Garage has worn pavement markings and slope erosion along the west side. Recommend restriping of this lot and construction of landscape block wall. See deficiencies.
G2030 Pedestrian Paving	1990	2005	3	8	MK	08/19/13	Asphalt and concrete pedestrian walks, and plaza/patio areas of concrete pavement throughout the site. Walkways and plaza/patio areas are generally in good condition. They have significant remaining useful life. Some cracking and joint separation observed along west side of Public Safety Building where there is differential settlement due to underground parking garage.
G2040 Site Development	1990	2005	4	2	MK	08/19/13	Fixed bike racks and seating benches throughout. Picnic tables at Senior Center patios. Two (2) large metal/fabric sun canopies, two (2) tennis courts and an outdoor exercise equipment area on the west side of Senior Center. Flag poles at front of City Hall.

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Municipal Campus Infrastructure

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2040 Site Development						Approximately 2,500 SF of exterior decks at rear of City Hall. Trex-like decking is in poor condition due to buckling and flaking of material. All other site development in good condition. See deficiencies.
G2050 Landscaping	1990	2005	2	18	MK 08/19/13	Ornamental landscaping throughout site and in raised planters and parking lot islands. Supplemented with grass lawns, and areas of groundcover and bark. Very good variety and condition of plantings. Irrigation systems appears to function well.
Site Civil / Mechanical Utilities						
G3010 Water Supply	1990	2005	3	23	MK 08/19/13	Domestic service lines and fire sprinkler supply lines to the buildings from the City of Redmond system. Parking Garage is sprinklered but does not appear to have domestic water supply. No known issues with water supply.
G3020 Sanitary Sewer	1990	2005	3	28	MK 08/19/13	Sanitary sewer services to the Public Safety Building, Senior Center, and City Hall from the City of Redmond system. Reports of clogging of internal sanitary lines in the Public Safety Building - see building's Mechanical section.
G3030 Storm Sewer	1990	2005	3	23	MK 08/19/13	At the Public Safety Building, runoff from roof and slab areas appears to be piped by internal downspouts to three sump pump systems in the basement garage level. There are two (2) sumps at the southwest corner of the garage - one (1) for the groundwater (underdrain/footing drain system), and one (1) for the floor drains. The sump at the southeast corner of the garage, in the shop, is for the roof drains. All sumps have duplex pumps with 4-inch discharge pipes.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Civil / Mechanical Utilities						
G3030 Storm Sewer						Presumably these lines discharge into the City of Redmond system. The Senior Center, Parking Garage, and City Hall also appear to have internal roof downspouts, and likely connect into the City system. It appears some of the City Hall roof runoff is discharged to an infiltration area at the west side of the building. Runoff from site roadways, parking lots, and pedestrian areas are conveyed via catch basins, area/trench drains, and ditches to City of Redmond system. In the Public Safety Building there are reports of water infiltrating up into the garage from below the floor slab during rainy periods, with some flooding, especially in the event of sump pump failure. Rust stains and efflorescence (white powder) also indicate water intrusion. Review of the sump pump operation may be warranted in an effort to maintain a lower groundwater level within the system. Also, it is unfortunate that roof and parking area runoff from upper levels is routed to the basement and then pumped. The basis of this design is unknown but normally gravity discharge should be used for storm water where at all possible, and pumping used for only the portion of runoff that is too low to discharge by gravity.
G3060 Fuel Distribution						
	1990	2005	3	18	MK 08/19/13	Natural gas meters with seismic sensors are located at southeast corner of Public Safety Building, the north side of Senior Center, and the west side of City Hall. No known issues with fuel distribution.
Site Electrical utilities						
G4010 Electrical Distribution						
	1990	2005	3	18	MK 08/19/13	Underground electrical service to all buildings. Transformers present as follows: 500kva transformer at southeast corner of the Public Safety Building; 300 kVA transformers on north side of Senior Center and north side of Parking Garage; 750 kVA transformer on southwest

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City of Redmond
Municipal Campus Site
Municipal Campus Infrastructure

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Electrical utilities						
G4010 Electrical Distribution						
						corner, and 167 kVA transformer on northwest corner of City Hall. Emergency generators with base tanks at Public Safety Building and City Hall. □ □ See building Electrical sections.
G4020 Site Lighting						
	1990	2005	3	8	MK 08/19/13	Over a dozen large fixed light bollards in the patio west of the Public Safety Building. Several types of small pole lights, bollard lights, and tall pole lights are located throughout the site. All parking lots lit with pole lights. See also building Electrical sections. □ Site lighting appears adequate. See also building Electrical sections.
Other Site Construction						
G9090 Other Site Systems						
	2005	2005	2	7	MK 08/19/13	Water feature at front of City Hall, pool of water that surrounds the City Council chambers. □ □ Underground vault with four (4) pumps for water feature located east of City Hall. Minor leakage from pumps should be repaired.

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Facility Summary

City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	90,000
Year Of Original Construction	2005
Facility Use Type	Parking Garage
Construction Type	Heavy
# of Floors	3
Energy Source	Electric
Year Of Last Renovation	2005
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**2.6**			
Facility Condition Index (FCI)	0.10			
Current Replacement Value (CRV)	$8,857,000	**Predicted Renewal Budget (6 yrs)**	$613,000	$567,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$1,112,000	$993,000
		Observed Deficiencies (6 yrs)	$200,000	$192,000
		Observed Deficiencies (ALL)	$284,000	$257,000
		Opportunity Total Project Cost	$199,000	N/A

Facility Condition Summary

Architectural:
Three-story concrete parking garage. Slab on grade with concrete columns and beams supporting concrete deck. Roof top parking access by means of drive ramps for vehicles and concrete stairs and elevators for pedestrians. Structure includes a secure parking area, concrete masonry unit storage, and mechanical room and other interior fabricated spaces for workshop and media production. Exterior consists of precast concrete panels, aluminum storefront metal mesh panels, and some glazing. Sun shades and steel canopies provide architectural feature. Exterior doors include storefront at entrance area, roll-up vehicle gates, hollow metal doors to mechanical areas, and overhead coiling doors on northwest corner. Interior partitions consist of cast in place concrete, masonry, and steel mesh fencing panels. Steel handrails and parking rails exist throughout.

Electrical:
Electrical service from Puget Sound Energy pad mounted transformers to north. Electrical room includes one (1) 480V panel, 480/240/120V transformers, and one (1) 240/120V panel. Fluorescent T8 fixtures throughout Parking Garage with approximately 50% during daytime hours, and remainder on at night. Limited low voltage systems including fire alarm control panel.

Mechanical:
The Redmond Municipal Campus Parking Garage is located on the northeast corner of the Redmond Municipal Campus. The Parking Garage was designed, built, operated, and maintained by Wright Runstad from 2005 to September 2013, when the City exercised an option to buy the garage associated with City Hall from Wright Runstad. Wright Runstad currently operated the Parking Garage under a 90-day contract while the City evaluates long term operations and maintenance options.
The Parking Garage is a three-story, heavy construction, naturally ventilated (open) parking garage with one (1) elevator lobby at the southwest corner, and includes mobile TV station truck bay and support space to the northwest, two (2) shop storage spaces under the middle portions of the first floor, electrical and riser room to center north, and two (2) motor operated access control doors to the west adjacent to a unique public art rain chain system.
HVAC includes multiple electric resistance unit and wall heaters for support at shop/storage spaces. Ventilation cooling for elevator machinery room. No general parking garage ventilation.
Plumbing includes city water and storm drain with oil/water separator.
Fire protection includes dry pipe fire sprinklers throughout plus elevator/stair tower standpipe.

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City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**2.0**			
Foundations						
A1010 Standard Foundations	2005	2005	2	80	JB 09/30/13	Reinforced concrete. While cracking was reported, particularly in supported structure above, only very limited signs of cracking were observed. A more detailed investigation is recommended.
A1030 Slab On Grade	2005	2005	2	80	JB 09/30/13	Concrete slab on grade. Appear to be in fair to good condition.
B Shell			**2.5**			
Superstructure						
B1010 Floor Construction	2005	2005	2	80	JB 09/30/13	Concrete vehicle deck on concrete beams. Good condition; some cracking.
B1020 Roof Construction	2005	2005	2	80	JB 09/30/13	Upper vehicle deck is concrete supported by concrete beams. Some cracking.
Exterior Closure						
B2010 Exterior Walls	2005	2005	4	15	JB 09/30/13	Concrete tilt up panel. Cast in place at mechanical and elevator. Steel mesh panels. Steel wire mesh. Metal systems show signs of rusting in most areas.
B2020 Exterior Windows	2005	2005	2	37	JB 09/30/13	Storefront system at southwest stair, fixed, frosted glazing at east vehicle entrance. Fair condition.

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Facility Summary

City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**2.5**			
Exterior Closure						
B2030 Exterior Doors	2005	2005	3	15	JB 09/30/13	Large overhead coiling doors at northwest corner. Hollow metal doors and frames to mechanical areas. Doors are in need of paint. Function is fair. Replace weather seals where needed.
Roofing						
B3010 Roof Coverings	2005	2005	2	17	JB 09/30/13	Roofing at elevator/stair shaft. Good condition.
B3030 Projections	2005	2005	4	10	JB 09/30/13	Steel canopies. (Frame only) Steel sunshades. Paint needed. Rusting.
C Interiors			**4.0**			
Interior Construction						
C1010 Partitions	2005	2005	4	10	JB 09/30/13	Cast in place concrete at elevator. Some concrete masonry unit (CMU). Wire mesh panels. Steel wire mesh panels are rusting.
Staircases						
C2010 Stair Construction	2005	2005	4	10	JB 09/30/13	Steel frames and precast stair sections. Steel frame supporting southeast stairs shows considerable rust.
Interior Finishes						
C3010 Wall Finishes	2005	2005	3	10	JB 09/30/13	Paint at interior walls. Fair condition.

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City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.7**				
Vertical Transportation							
D1010 Elevators and Lifts							
	2005	2005	2	28	DCS	09/30/13	One (1) three-stop Thyssen Krupp hydraulic elevator with fully finished cab. Ventilation cooling from elevator machinery room (EMR). Hydraulic cylinder seals recently replaced. Inspections are current. No issues reported or observed.
Plumbing							
D2020 Domestic Water Distribution							
	2005	2005	3	32	DCS	09/30/13	1-inch city water service with reduced pressure backflow prevention (RPBP) and 80-psig pressure. Copper piping to several garage hose bibs for housekeeping. No water heater. Piping is exposed and unprotected in garage, but no damage reported or observed.
D2030 Sanitary Waste							
	2005	2005	3	27	DCS	09/30/13	Floor drains, cast iron drain, waste, and vent (DW&V) piping, leading to oil/water separator located immediately west of garage. DW&V is hubless cast iron. No issues reported or observed, except minor standing water and light oil/grease around several lower floor drains.
D2040 Rain Water Drainage							
	2005	2005	3	27	DCS	09/30/13	Top level floor drains, cast iron drain piping, appears to lead to same drain system as Sanitary Waste system, including oil/water separator. Confirm system configuration. If combined, consider separating covered and uncovered drains as permitted by code.
HVAC							
D3030 Cooling Generating Systems							
	2005	2005	3	22	DCS	09/30/13	Ventilation cooling system for elevator machinery room (EMR). No issues reported or observed.

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Municipal Campus Site
Municipal Campus Parking Garage Building

8701 160th Avenue NE
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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.7**			
HVAC						
D3050 Terminal and Package Units						
	2005	2005	3	12	DCS 09/30/13	Electric wall and vent heaters for utility and shop/storage spaces. Wall heaters and unit heaters are in fair to good condition, but shop/storage spaces are not ventilated per code.
D3060 Controls and Instrumentation						
	2005	2005	3	12	DCS 09/30/13	Stand alone controls for unit heaters, wall heaters, and elevator machinery room (EMR) cooling. No issues reported or observed. Opportunity to install DDC controls for remote monitoring.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	2005	2005	3	27	DCS 09/30/13	6-inch city fire service with post indicator valve (PIV) and fire department connector (FDC) to northwest. Three (3) dry-pipe sprinkler risers, one (1) for each level. One (1) dry pipe stand-pipe at southwest elevator/stairwell. Sprinkler piping throughout garage is not primed or painted, and is corroding, especially where exposed to weather.
D4020 Stand-Pipe and Hose Systems						
	2005	2005	3	27	DCS 09/30/13	Dry pipe stand-pipe in southwest stair/elevator tower. No issues reported or observed.
D4030 Fire Protection Specialties						
	2005	2005	3	17	DCS 09/30/13	Fire extinguishers mounted on walls. While fire extinguishers have current inspections, there are no cabinets. Cabinets should be provided to protect fire extinguishers (less then $2,000). Combustible material in shop/storage rooms may exceed limit.
Electrical						
D5010 Electrical Service and Distribution						

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City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.7**				
Electrical							
D5010 Electrical Service and Distribution							
	2005	2005	3	27	DCS	09/30/13	480V service from Puget Sound Energy to one (1) 480V panel at Level 1 electrical room. One (1) 480/240/120V transformer serving one (1) 240/120V distribution panel. No issues reported or observed.
D5020 Lighting and Branch Wiring							
	2005	2005	3	17	DCS	09/30/13	T8 fixtures with approximately 50% on during occupied daytime hours, and remainder on at night. Fixture lenses are yellowing prematurely. Controls are limited.
D5030 Low Voltage Communication Security and Fire Alarm							
	2005	2005	3	12	DCS	09/30/13	Fire alarm system with Notifier fire alarm control panel in riser room. Inspections are current.
E Equipment and Furnishings							
Equipment							
E1030 Vehicular Equipment							
	2005	2005	2	17	JB	09/30/13	Motor driven vehicle access. Overhead rolling gates. Pipe bollards. Vehicle wire fencing. Good condition; some minor damage due to use.
F Special Construction							
Special Construction							
F1020 Integrated Construction							
	2005	2005	2	27	JB	09/30/13	Exterior art work, east side of building, representing rain chain. Good condition.

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Facility Summary

City of Redmond
Municipal Campus Site
Police Garage North Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	1,250
Year Of Original Construction	2008
Facility Use Type	Parking Garage
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2008
Historic Register	No

No Photo Available

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**2.0**			
Facility Condition Index (FCI)	0.02			
Current Replacement Value (CRV)	$124,000	**Predicted Renewal Budget (6 yrs)**	$1,000	$1,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$10,000	$8,000
		Observed Deficiencies (6 yrs)	$9,000	$9,000
		Observed Deficiencies (ALL)	$9,000	$9,000
		Opportunity Total Project Cost	$26,000	N/A

Facility Condition Summary

Architectural:
The Police Garage North Building is located on the far northeast corner of the Public Safety Building sub-site, immediately north, across the concrete apron from the Police Garage South Building. Police Garage North houses Redmond Police Emergency Response Team (SWAT) vehicles and equipment. Police Garage North also includes a covered and fully enclosed trash container storage area. The Police Garage North is a two-bay garage with roll-up doors.

Electrical:
Power includes a 240/120V 50-amp panel serving lighting, receptacles, and miscellaneous equipment loads. Lighting includes exterior metal halide wall packs and interior sealed T8 fluorescent fixtures. Low voltage systems are minimal but include fire alarm.

Mechanical:
HVAC includes gas-fired overhead unit heaters, general exhaust, and vehicle engine exhaust systems. Plumbing includes city water for hose bibs, garage floor drains, and perimeter scupper box and downspout roof drains. Fire protection includes wet pipe fire sprinkler with unknown source, and wall mounted fire extinguishers.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**2.0**			

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City of Redmond
Municipal Campus Site
Police Garage North Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
Foundations							
A1010 Standard Foundations							
	2008	2008	2	75	DCS	08/19/13	Continuous concrete footings with concrete stem walls assumed. No issues reported or observed.
A1030 Slab On Grade							
	2008	2008	2	75	DCS	08/19/13	Concrete slab on grade. No issues reported or observed.
B Shell			**2.0**				
Superstructure							
B1020 Roof Construction							
	2008	2008	2	83	DCS	08/19/13	Steel framed building with steel roof deck supported directly by steel building frame. No issues reported or observed.
Exterior Closure							
B2010 Exterior Walls							
	2008	2008	2	45	DCS	08/19/13	Steel framed building. Assume steel girts with batt insulation between frames. Skin is heavy stucco. Good condition. With no eaves at roof, stucco will require regular cleaning to minimize dirt, mold, and mildew.
B2020 Exterior Windows							
	2008	2008	2	35	DCS	08/19/13	Minimal glazing. Some include security bars. No issues reported or observed.
B2030 Exterior Doors							
	2008	2008	2	40	DCS	08/19/13	Hollow metal man doors. Two (2) powered coiling overhead roll-up doors. Good condition.
Roofing							
B3010 Roof Coverings							
	2008	2008	2	20	DCS	08/19/13	White membrane roof.

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City of Redmond
Municipal Campus Site
Police Garage North Building

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Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**2.0**				
Roofing							
B3010 Roof Coverings							
							Good condition, except several small areas that may not be well sloped to roof drains (minor issue).
B3020 Roof Openings							
	2008	2008	2	35	DCS	08/19/13	Flashed and sealed openings for garage exhaust fan, heater B-vent, plumbing vent, engine exhaust and others.
							No issues reported or observed.
B3030 Projections							
	2008	2008	2	40	DCS	08/19/13	Canopy over garage doors to south.
							No issues reported or observed but clean height is not marked (less than $2,000).
C Interiors			**2.0**				
Interior Construction							
C1010 Partitions							
	2008	2008	2	40	DCS	08/19/13	Partitions between garage and trash storage area.
							No issues reported or observed.
C1030 Fittings							
	2008	2008	2	20	DCS	08/19/13	Minimal.
							No issues.
Interior Finishes							
C3010 Wall Finishes							
	2008	2008	2	12	DCS	08/19/13	Water and light impact resistance panel low and painted gypsum wall board (GWB) high.
							In good condition.
C3020 Floor Finishes							
	2008	2008	3	15	DCS	08/19/13	Unfinished, but apparently sealed concrete.

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**2.0**			
Interior Finishes						
C3020 Floor Finishes						
						In fair to good condition. Opportunity to seal floor with epoxy or similar heavy duty finish to better protect the underlying concrete and improve lighting performance (less than $2,000).
C3030 Ceiling Finishes						
	2008	2008	2	25	DCS 08/19/13	White painted exposed ceiling structure.
						No issues reported or observed. Annual cleaning of flat structural surfaces is suggested for good housekeeping.
D Services			**2.1**			
Vertical Transportation						
D1090 Other Conveying Systems						
	2008	2008	5	0	DCS 08/19/13	No roof access.
						Roof access is needed for roof maintenance.
Plumbing						
D2010 Plumbing Fixtures						
	2008	2008	3	30	DCS 08/19/13	No fixtures.
						Opportunity to install deep sink to improve function.
D2020 Domestic Water Distribution						
	2008	2008	2	35	DCS 08/19/13	City water to hose bibs.
						Water source unclear.
D2030 Sanitary Waste						
	2008	2008	2	30	DCS 08/19/13	Floor drain(s) in garage.
						Investigate if upgrade may be needed to allow inside vehicle wash, similar to fire stations. Need to install floor drains to sewer at trash enclosure per code.
D2040 Rain Water Drainage						
	2008	2008	2	35	DCS 08/19/13	Roof drains to perimeter scupper boxes with

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.1**				
Plumbing							
D2040 Rain Water Drainage							
							downspouts to site storm drain system. Confirm code compliant overflow roof drain path is present; add if needed (less than $2,000).
D2090 Other Plumbing Systems							
	2008	2008	3	15	DCS	08/19/13	No systems currently installed. Opportunity to install small permanent compressed air system for vehicle tire service (less than $2,000).
HVAC							
D3010 Energy Supply							
	2008	2008	2	35	DCS	08/19/13	Natural gas from Puget Sound Energy. Assumed to be a branch line from the adjacent Public Safety Building service. Opportunity to separately meter Police Garage North gas usage (less than $2,000).
D3040 HVAC Distribution Systems							
	2008	2008	2	30	DCS	08/19/13	General garage exhaust with roof top exhaust fan and side wall air intake louver. Not high/low ventilation, which may be acceptable assuming this is a storage garage, not a maintenance garage.
D3050 Terminal and Package Units							
	2008	2008	2	13	DCS	08/19/13	Gas-fired Reznor low profile (horizontal) unit heater. No issues reported or observed.
D3060 Controls and Instrumentation							
	2008	2008	2	13	DCS	08/19/13	Stand-alone unit heater and exhaust control. Carbon monoxide sensor/control. No issues reported or observed. Opportunity to add Public Safety Building DDC system for monitoring purposes (less than $2,000).
D3090 Other HVAC Systems and Equipment							

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Facility Summary

City of Redmond
Municipal Campus Site
Police Garage North Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.1**			
HVAC						
D3090 Other HVAC Systems and Equipment						
	2008	2008	2	15	DCS 08/19/13	One (1) vehicle engine exhaust system. Appears infrequently used; ensure periodic maintenance is performed.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	2008	2008	2	35	DCS 08/19/13	Fire sprinkled garage. Water source unclear; may be from adjacent Public Safety Building.
D4030 Fire Protection Specialties						
	2008	2008	2	20	DCS 08/19/13	Wall mounted fire extinguishers. Opportunity to install cabinets to better protect extinguishers.
Electrical						
D5010 Electrical Service and Distribution						
	2008	2008	2	35	DCS 08/19/13	One (1) 240/120V 50-amp panel; source assumed to be from adjacent Public Safety Building. While in good condition and adequate for current use, the 50-amp panel provides minimal flexibility for future use; a future upgrade to at least 100-amp should be considered.
D5020 Lighting and Branch Wiring						
	2008	2008	2	20	DCS 08/19/13	Miscellaneous receptacles for plug loads. Inside sealed (moisture resistant) T8 ceiling fixtures. Exterior halogen wall packs. No issues reported or observed.
D5030 Low Voltage Communication Security and Fire Alarm						
	2008	2008	2	15	DCS 08/19/13	Low voltage system appears limited to fire alarm system with ceiling mounted detectors, wall pull station(s), and notification device(s). No issues reported or observed. Opportunity to install security access control and/or monitoring (less than $2,000).

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Facility Summary

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.1**				
Electrical							
D5030 Low Voltage Communication Security and Fire Alarm							
D5090 Other Electrical Systems							
	2008	2008	3	10	DCS	08/19/13	None. Opportunity to install emergency interior lighting wall pack (bug-eyes) to provide minimal lighting while the on-site generator starts up (less than $2,000).
E Equipment and Furnishings							
Equipment							
E1020 Institutional Equipment							
	2008	2008	2	15	DCS	08/19/13	Miscellaneous shelving for police equipment storage. Storage could be better organized for function and safety.
E1090 Other Equipment							
	2008	2008	3	15	DCS	08/19/13	Dumpster(s) in trash storage area. Normal wear and tear.

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Facility Summary

City of Redmond
Municipal Campus Site
Police Garage South Building

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Facility Code	
Facility Size - Gross S.F.	1,000
Year Of Original Construction	2008
Facility Use Type	Parking Garage
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2008
Historic Register	No

No Photo Available

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**2.0**			
Facility Condition Index (FCI)	0.02			
Current Replacement Value (CRV)	$99,000	**Predicted Renewal Budget (6 yrs)**	$1,000	$0
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$8,000	$6,000
		Observed Deficiencies (6 yrs)	$5,000	$5,000
		Observed Deficiencies (ALL)	$5,000	$5,000
		Opportunity Total Project Cost	$30,000	N/A

Facility Condition Summary

Architectural:
The Police Garage South is located on the far southeast corner of the Public Safety Building sub-site, immediately south, across the concrete apron from the Police Garage North Building. Police Garage South houses the Redmond Police Incident Response vehicles and equipment. Police Garage South is nearly identical to Police Garage North, except: mirror image (garage door faces north instead of south), no additional structure (just open two-bay garage).

Electrical:
Power includes a 240/120V 50-amp panel serving lighting, receptacles, and miscellaneous equipment loads. Lighting includes exterior metal halide wall packs and interior sealed T8 fluorescent fixtures. Low voltage systems are minimal but include fire alarm.

Mechanical:
HVAC includes gas-fired overhead unit heaters, general exhaust, and vehicle engine exhaust systems. Plumbing includes city water for hose bibs, garage floor drains, and perimeter scupper box and downspout roof drains. Fire protection includes wet pipe fire sprinkler with unknown source, and wall mounted fire extinguishers.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**2.0**			

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
Foundations							
A1010 Standard Foundations							
	2008	2008	2	75	DCS	08/19/13	Continuous concrete footings with concrete stem wall assumed. No issues reported or observed.
A1030 Slab On Grade							
	2008	2008	2	75	DCS	08/19/13	Concrete slab on grade. No issues reported or observed.
B Shell			**2.0**				
Superstructure							
B1020 Roof Construction							
	2008	2008	2	83	DCS	08/19/13	Steel framed building with steel roof deck supported directly by steel building frame. No issues reported or observed.
Exterior Closure							
B2010 Exterior Walls							
	2008	2008	2	45	DCS	08/19/13	Steel framed building; assume steel girts with batt insulation between frames; skin is heavy stucco. Good condition. With no eaves at roof, stucco will require regular cleaning to minimize dirt, mold, and mildew.
B2020 Exterior Windows							
	2008	2008	2	35	DCS	08/19/13	Minimal glazing. Unlike Police Garage North, no security bars at windows. This is a less secure building.
B2030 Exterior Doors							
	2008	2008	2	40	DCS	08/19/13	Hollow metal man doors. Two (2) coiling overhead roll-up doors, both powered. Good condition.
Roofing							
B3010 Roof Coverings							

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Facility Summary

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**2.0**				
Roofing							
B3010 Roof Coverings							
	2008	2008	2	20	DCS	08/19/13	White membrane roof. Good condition except several small areas that may not be well sloped to the roof drains (minor issue).
B3020 Roof Openings							
	2008	2008	2	35	DCS	08/19/13	Flashed and sealed openings for garage exhaust, heater B-vent, and others. No issues.
B3030 Projections							
	2008	2008	2	40	DCS	08/19/13	Canopy over garage doors to north. No issues reported or observed but clear height is not marked (less than $2,000).
C Interiors			**2.1**				
Interior Construction							
C1030 Fittings							
	2008	2008	2	20	DCS	08/19/13	Minimal. No issues.
Interior Finishes							
C3010 Wall Finishes							
	2008	2008	2	12	DCS	08/19/13	Water and light impact resistant panel low and painted gypsum wall board high. In good condition.
C3020 Floor Finishes							
	2008	2008	3	15	DCS	08/19/13	Unfinished but apparently sealed concrete. In fair to good condition. Opportunity to seal floor with epoxy or similar heavy duty finish to better protect the underlying concrete and improve lighting performance (less than $2,000).
C3030 Ceiling Finishes							

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**2.1**			
Interior Finishes						
C3030 Ceiling Finishes	2008	2008	2	25	DCS 08/19/13	White painted exposed ceiling structure. No issues reported or observed; annual cleaning of flat structural surfaces is suggested for good housekeeping.
D Services			**2.1**			
Vertical Transportation						
D1090 Other Conveying Systems	2008	2008	5	0	DCS 08/19/13	No roof access. Roof access is needed for roof maintenance.
Plumbing						
D2010 Plumbing Fixtures	2008	2008	3	30	DCS 08/19/13	No fixtures. Opportunity to install deep sink to improve function.
D2020 Domestic Water Distribution	2008	2008	2	35	DCS 08/19/13	City water to hose bibs. Water source unclear.
D2030 Sanitary Waste	2008	2008	2	30	DCS 08/19/13	Floor drain(s) in garage. Investigate if upgrade may be needed to allow inside vehicle wash, similar to fire stations.
D2040 Rain Water Drainage	2008	2008	2	35	DCS 08/19/13	Roof drains to perimeter scupper boxes with downspouts to site storm drain system. Confirm code compliant overflow roof drain path is present; add if needed (less than $2,000).
D2090 Other Plumbing Systems	2008	2008	3	15	DCS 08/19/13	No systems currently installed.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.1**				
Plumbing							
D2090 Other Plumbing Systems							
							Opportunity to install small permanent compressed air system for vehicle tire service or minimum maintenance (less than $2,000).
HVAC							
D3010 Energy Supply							
	2008	2008	2	35	DCS	08/19/13	Natural gas from Puget Sound Energy; assumed to be a branch line from the adjacent Public Safety Building service. Opportunity to separately meter Police Garage South gas usage (less than $2,000).
D3040 HVAC Distribution Systems							
	2008	2008	2	30	DCS	08/19/13	General garage exhaust with roof top exhaust fan and side wall air intake louver. Not high/low ventilation, which may be acceptable assuming this is a storage garage, not a maintenance garage.
D3050 Terminal and Package Units							
	2008	2008	2	13	DCS	08/19/13	Gas-fired Reznor low profile (horizontal) unit heater. No issues reported or observed.
D3060 Controls and Instrumentation							
	2008	2008	2	13	DCS	08/19/13	Stand-alone unit heater and exhaust control. No issues reported or observed. Opportunity to add Public Safety Building DDC system for monitoring purposes (less than $2,000).
D3090 Other HVAC Systems and Equipment							
	2008	2008	3	15	DCS	08/19/13	None. Opportunity to install a vehicle engine exhaust system similar to Police Garage North to increase flexibility.
Fire Protection							
D4010 Fire Protection Sprinkler Systems							

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Facility Summary

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Police Garage South Building

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.1**				
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
	2008	2008	2	35	DCS	08/19/13	Fire sprinkled garage. Water source unclear, may be from adjacent Public Safety Building.
D4030 Fire Protection Specialties							
	2008	2008	2	20	DCS	08/19/13	Wall mounted fire extinguishers. Opportunity to install cabinets to better protect extinguishers.
Electrical							
D5010 Electrical Service and Distribution							
	2008	2008	2	35	DCS	08/19/13	One (1) 240/120V 50-amp panel; source assumed to be from adjacent Public Safety Building. While in good condition and adequate for current use, the 50-amp panel provides minimal flexibility for future use; a future upgrade to at least 100-amp should be considered.
D5020 Lighting and Branch Wiring							
	2008	2008	2	20	DCS	08/19/13	Miscellaneous receptacles for plug loads. Inside sealed (moisture resistant) T8 ceiling fixtures. Exterior halogen wall packs. No issues reported or observed.
D5030 Low Voltage Communication Security and Fire Alarm							
	2008	2008	2	15	DCS	08/19/13	Low voltage systems appears limited to fire alarm system with ceiling mounted detectors, wall panel pull station(s), and notification device(s). No issues reported or observed. Opportunity to install security access control and/or monitoring.
D5090 Other Electrical Systems							
	2008	2008	3	10	DCS	08/19/13	None. Opportunity to install emergency interior lighting wall packs (bug-eyes) to provide minimal lighting while the on-site generator starts up (less than $2,000).

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Facility Summary

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.1**			
Electrical						
D5090 Other Electrical Systems						
E Equipment and Furnishings						
Equipment						
E1020 Institutional Equipment						
	2008	2008	2	15	DCS 08/19/13	Limited shelving for storage. Consider additional shelving or wall lockers/cabinets for storage (less than $2,000).

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Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	94,975
Year Of Original Construction	1990
Facility Use Type	Police Station - with garage
Construction Type	Medium
# of Floors	2
Energy Source	Gas
Year Of Last Renovation	1990
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**2.7**			
Facility Condition Index (FCI)	0.14			
Current Replacement Value (CRV)	$53,803,000	**Predicted Renewal Budget (6 yrs)**	$3,545,000	$3,374,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$18,393,000	$15,635,000
		Observed Deficiencies (6 yrs)	$3,147,000	$3,001,000
		Observed Deficiencies (ALL)	$3,147,000	$3,001,000
		Opportunity Total Project Cost	$5,554,000	N/A

Facility Condition Summary

Architectural:
Public Safety Building is generally in good condition given its age of 23 years. Roof flashing and gutters, stucco and tile walls and soffits, and exterior windows present deficiencies. Otherwise, localized maintenance and repairs are needed.

Electrical:
Public Safety Building electrical 480/277 service, underground service from Puget Sound Energy padmount transformer. 480/277v service is connected to main switchboard in main electrical room on first floor. Main switchboard, 1200A, 480/277v, with breaker distribution section. 208/120 step down transformer to provide 208/3 and 120/1 power. Building lighting is all fluorescent with a few high intensity discharge lighting. The building's emergency power is served by two (2) diesel generators, 250-kw, and a separate 400-kw unit; both are 480/277v. The building has fire alarm system protection, CCTV system protection, card access system for access controls, voice/data system with main MDF room and IDF room per floor. Overall, the systems are in good working condition, with no major problems observed.

Mechanical:
The Redmond Public Safety Building is located in the center east area of the Redmond Municipal center. The Public Safety Building includes:
1) Original 1990 two-story main building with full semi-open below grade parking garage, partial east and west mechanical mezzanines, and large attic ceiling plenum space. Approximately 30,000 sf footprint for 90,000 sf total.
2) Original 1990 gun range below grade to northeast, roughly 1,500 sf; includes range, range control, and gun cleaning room.
3) Original 1990 utility building to southeast with one (1) 250-kw Cumming Onan diesel generator, one (1) condenser water system cooling tower, and underground fuel oil storage tank.
4) Three 2006 additions including: roughly 1,500 sf vehicle evidence storage to northwest; approximately 1,200 sf police garage to northeast including approximately 200 sf trash enclosure; and approximately 1,000 sf police garage to southeast.
5) New 2012 400-kw Caterpillar diesel generator with new emergency panel switchgear to far southeast.
The primary HVAC system is a water service heat pump (WSHP) system with two (2) nearly new (2010) gas-fired boiler, two (2) condenser water circulation pumps, one (1) evaporatively cooled closed loop fluid cooler (cooling tower), and 38 WSHPs distributed throughout the mechanical mezzanines and open plenum attic ceiling space. One (1) large air handling unit (AHU-1) serves the bulk of the building to the east; the unit appears to be a dedicated make-up air unit (MAU), not an AHU as labeled; this unit only partially conditions the make-up air using one condenser water coil with supplemental receive pump. Additionally multiple split Dx cooling system serves mission critical area such as 911 call center and data/communication/radio rooms. The evidence garage to the northwest is served by two (2) roof top units (RTU) gas packs. Both police parking garages are served by gas-fired overhead unit heaters and set of exhaust fans and intake louvers. The gun range has a gas-fired MAU and end-of-range large exhaust fan.

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The main HVAC system has multiple issues causing occupant thermal discomfort and poor indoor air quality. The mission critical systems are functionally but marginally so.
Building plumbing is City water with gas-fired domestic hot water (DHW) heat all in fair condition. Fire sprinklers include wet pipe, dry pipe, and pre-action systems.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
A Substructure			**3.0**				
Foundations							
A1010 Standard Foundations							
	1990	1990	3	65	RD	08/19/13	Poured in place concrete with some masonry walls. Concrete is in good condition, but shows efflorescence and markings from water intrusion. (See also "Slab on Grade" section below.)
A1030 Slab On Grade							
	1990	1990	3	65	RD	08/19/13	Reinforced slab on grade. Efflorescence in places; ground water intrusion.
Basements							
A2020 Basement Walls							
	1990	1990	3	65	RD	08/19/13	Poured in place concrete. Efflorescence and water intrusion. (See also "Slab on Grade" section above.)
B Shell			**2.6**				
Superstructure							
B1010 Floor Construction							
	1990	1990	2	65	RD	08/19/13	Concrete floors on steel deck. No deflection or problems noted.
B1020 Roof Construction							
	1990	1990	2	65	RD	08/19/13	Roof structure is metal or torch down on insulation over steel deck on steel frame. No significant problems noted.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**2.6**			
Exterior Closure						
B2010 Exterior Walls						
	1990	2005	3	30	RD 08/19/13	Stucco over metal frame; some sloped surface. Tile walls and soffits. Generally good condition. South wall second floor water enters wall at gutter or above windows. Stucco failing. Tile soffits at west entry loosening due to water intrusion.
B2020 Exterior Windows						
	1990	1990	3	10	RD 08/19/13	Anodized aluminum frame double pane windows. All fixed units. Windows in original building corroding, possibly due to contact with stucco. Glass seals failing.
B2030 Exterior Doors						
	1990	1990	3	27	RD 08/19/13	Metal doors and metal coiling doors. Hollow metal doors and frames are in generally good condition. Coiling doors show some rust and finish issues; need maintenance.
Roofing						
B3010 Roof Coverings						
	1990	2012	3	10	RD 08/19/13	Torch down roof recoated (Garco) 2012. Applied over insulation; generally in good condition. Standing seam metal roof; generally in good condition. Lower edge of panels need work. Gutters need support. Torch down shows some ponding. Metal needs surface maintenance at lower edge. South wall metal needs neoprene stops or similar to stop water intrusion in wind. North and south gutters need to be straightened, flashed, and supported.
B3020 Roof Openings						
	1990	1990	2	20	RD 08/19/13	Few roof penetrations. Generally good condition where there are penetrations. No issues noted.
B3030 Projections						
	1990	1990	2	27	RD 08/19/13	Parapets with stucco, tile, and metal cap.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**2.6**				
Roofing							
B3030 Projections							
							Balcony rails.
							All in good condition.
C Interiors			**2.4**				
Interior Construction							
C1010 Partitions							
	1990	1990	2	27	RD	08/19/13	Interior partition light gauge metal with gypsum wall board (GWB) each side.
							Well maintained and in good condition. Some minor repair needed in isolated locations.
C1020 Interior Doors							
	1990	1990	3	17	RD	08/19/13	Solid core wood doors.
							Need refinish and adjustment.
C1030 Fittings							
	1990	1990	3	10	RD	08/19/13	Shelving, lockers, built in counters.
							Acceptable condition.
Staircases							
C2010 Stair Construction							
	1990	1990	2	65	RD	08/19/13	Steel stairs with new carpet.
							Very good condition.
C2020 Stair Finishes							
	1990	2012	1	16	RD	08/19/13	Carpeted stairs with painted rails.
							Very good condition.
Interior Finishes							
C3010 Wall Finishes							
	1990	2004	3	7	RD	08/19/13	Painted walls.
							The City repairs as needed.

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City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
C Interiors			**2.4**				
Interior Finishes							
C3020 Floor Finishes							
	1990	2012	1	24	RD	08/19/13	Carpet tile, ceramic tile, vinyl composition tile (VCT). Carpet and vinyl composition tile (VCT) new in 2012. Other tile in good condition.
C3030 Ceiling Finishes							
	1990	1990	3	10	RD	08/19/13	Suspended acoustical tile, painted gypsum wall board (GWB). Painted ceilings are updated with wall paint. Suspended tile is in good condition, except for limited broken or damaged tile.
D Services			**2.9**				
Vertical Transportation							
D1010 Elevators and Lifts							
	1990	1990	3	13	DCS	08/19/13	One (1) passenger elevator to west; Dover 25-hp. One (1) freight elevator to mid-building; Dover 30-hp. Fully finished cab interiors in both. Dedicated water source heat pump (WSHP) cooling for both elevator machine rooms. Heat relief vents at top of both elevator hoist ways. Both elevators in fair to good condition; while occupants/users report slow operation of the freight elevator, speed appears normal for a hydraulic freight elevator.
D1090 Other Conveying Systems							
	1990	1990	5	0	DCS	08/19/13	No roof access to mid-level roofs to west or 2006 addition roofs. No fall protection for sloped metal roofs. No anchor points for wall or window maintenance. Provide roof access to all roofs with equipment and systems needed regular maintenance.
Plumbing							
D2010 Plumbing Fixtures							
	1990	1990	3	17	DCS	08/19/13	Porcelain water closets, urinals, and lavatories with chrome trim (faucets and flush valves); showers; drinking fountains; housekeeping mop

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.9**				
Plumbing							
D2010 Plumbing Fixtures							
							sinks, and kitchenette stainless steel sinks and trim. See "Other Plumbing Systems" section for correctional fixtures. In fair condition with many faucets and trim needing service or replacement. Several fixtures with minor damage.
D2020 Domestic Water Distribution							
	1990	1990	4	10	DCS	08/19/13	Two-inch city water service with pressure reduce valve (PRV) station at northwest basement mechanical room. Copper water distribution. Two (2) gas-fired domestic hot water (DHW) heaters at level 1 west mechanical room with 550-gallon DHW storage tank. Hose bibs outside perimeter. Water pressure is high on level 1 and low at level 2. Domestic hot water (DHW) heaters are near end of useful life. Taste and color are acceptable in most areas, but discolored with marginal taste at less used/remote fixtures. DHW pipe insulation is damaged or missing in some areas.
D2030 Sanitary Waste							
	1990	1990	4	12	DCS	08/19/13	Cast iron drain, waste, and vent (DW&V) piping with side sewer connection to campus sanitary sewer service (See G-series). Cast iron is single clamped hubless with mastic coating in parking garage areas. Floor drains in most toilet rooms, locker rooms, and mechanical room. Partially insulated in parking garage. While most fixtures flush or drain well, the drain, waste, and vent (DW&V) pipe in the parking overhead appear marginally installed with some runs not properly sloped to drain. There are few vents-to-roof (VTR). No trap primers reported or observed. No sanitary service to parking garages.
D2040 Rain Water Drainage							
	1990	1990	4	7	DCS	08/19/13	Sloped roofs are gutter and downspout. Flat roofs are interior drain to parking garage lift station. There are three (3) sumps with duplex lift pumps: large southeast roof drain (4-inch discharge), large southwest ground water (4-inch drainage), and medium southwest garage floor drain. An oil water separator (OWS) serves the

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.9**				
Plumbing							
D2040 Rain Water Drainage							
							garage floor drains. Roof gutters and downspout performance is marginal and may be resulting in needless building structure damage (see B-series). Storm pumps can not keep up with storm water flow during heavy rain allowing flooding in the garage.
D2090 Other Plumbing Systems							
	1990	1990	4	5	DCS	08/19/13	Stainless steel detention fixtures with remote pneumatic trim at approximately half dozen holding cells. Vertical 5-hp air compress at garage storage north center service vehicle evidence garage above. Detention fixture rusted with minor damage. Some trim inoperable or marginal. Air compressor surrounded by excessive combustible storage material.
HVAC							
D3010 Energy Supply							
	1990	1990	3	17	DCS	08/19/13	Natural gas service from Puget Sound Energy with Meter Number 325338 located to the northeast above gun range control room; capacity is 1,400-cfh and includes seismic valve. Approximately 3-inch line runs through gun range cleaning room to east mechanical mezzanine via garage area. Underground fuel oil storage tank of unknown size and exact location; appear to be under original and/or new generator. Gas meter assembly has a very minor gas leak; gas piping in gun range may not be a good idea. Check for proper diesel furl tank venting. Mark location of fuel tank and fill station.
D3020 Heat Generating Systems							
	1990	2010	1	22	DCS	08/19/13	Two (2) nearly new evolution (EVO) high efficiency condensing gas-fired boilers with receive pumps. Provide heat at water service heat pump (WSHP) condenser water loop during heating season. No issues reported or observed.

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.9**			
HVAC						
D3020 Heat Generating Systems						
D3030 Cooling Generating Systems						
	1990	1990	4	3	DCS 08/19/13	Condenser water loop piping, two (2) 550-gpm at 110-foot total dynamic head (TDH) pumps with 25-hp motors, and one (1) Baltimore Aircoil Company (BAC) Model F1343-N cooling tower (evaporated cooled closed loop fluid cooler). Piping is not insulated. Water chemistry control at cooling tower. Multiple condensing units for mission critical spaces. Cooling tower is at end of life. Pumps should be overhauled. Opportunity to retrofit variable speed pumping for energy savings. Ensure proper condensing water chemistry. Mix of old and new condensing units.
D3040 HVAC Distribution Systems						
	1990	1990	4	5	DCS 08/19/13	38 water source heat pumps (WSHP) serves most of the main building levels 1 and 2, plus mezzanine areas. Ducted supply air with open plenum return to recirculation WSHPs. Air handling unit (AHU-1) supply partially conditioned outside air to WSHPs at east end of building. West end outside air is ducted unconditioned from an outside air plenum. Waster source heat pumps (WSHP)are failing. Little or no outside air to west end of building. Questionable outside air delivery for AHU-1 to east end. Dirty and damaged other return air plenum. Outside air intake plenums damaged and dirty and do not meet code plenum requirements. Flex duct pinched, loose, and damaged in some attic locations. Duct sealing is unclear. Some sheet metal ducts not properly supported.
D3050 Terminal and Package Units						
	1990	2006	3	10	DCS 08/19/13	Two (2) roof top gas pack units (RTU) serves to 2006 north evidence storage garage addition. Electric resistant unit heaters serve many of the smaller storage rooms and mechanical, electrical, and plumbing (MEP) rooms, especially at the parking garage level. New roof top units are in good condition but location in roof pocket area with nearby exhaust may adversely effect indoor air quality. Some

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.9**				
HVAC							
D3050 Terminal and Package Units							
							unit heaters are close to excessive combustible material.
D3060 Controls and Instrumentation							
	1990	2005	4	5	DCS	08/19/13	Piece metal control systems with variety of manual and programmable stand alone controls, and partially upgraded DDC system. Many thermostat cover plates are broken or missing. Many abandoned in place old controls. Many control boxes open or exposed with improperly secured wiring.
D3090 Other HVAC Systems and Equipment							
	1990	2006	3	10	DCS	08/19/13	Gun range gas fired make-up air unit (MAU) and end of range backstop exhaust fan. Original generator engine plume booster. Northeast police garage vehicle engine exhaust systems. No garage exhaust system. Gun range system appears dirty, but functional. Original generator exhaust is too long and likely exceeding manufacture's backpressure limit. Portion of parking garage may not meet code minimum requirements for ventilation.
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
	1990	1990	3	17	DCS	08/19/13	8-inch city water fire service entry with 4-inch wet pipe riser, 4-inch dry pipe riser to parking garage, three (3) 4-inch floor control valves, and pre-action system for holding cells. Risers are in good condition; some corrosion, strike damage in garage. No pre-action for mission critical areas.
D4020 Stand-Pipe and Hose Systems							
	1990	1990	3	12	DCS	08/19/13	Hose system is abandoned in place. No stand pipe system. Clever use of several abandoned hose cabinets as art displays.
D4030 Fire Protection Specialties							

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.9**				
Fire Protection							
D4030 Fire Protection Specialties							
	1990	1990	3	7	DCS	08/19/13	Fire extinguishers in cabinets throughout. Automated external defibrillators (AED) and other rescue gear throughout. Inspection tags are up to date.
D4090 Other Fire Protection Systems							
	1990	1990	5	0	DCS	08/19/13	Rated egress corridor along spine of building on levels 1 and 2. Rated assembly damaged at multiple locations along level 2 corridor.
Electrical							
D5010 Electrical Service and Distribution							
	1990	1990	2	17	RA	08/19/13	Padmount transformer, Puget Sound Energy 500-kva, 480/277V, outside at building's southeast corner. 408/277V power feeds underground to main switchboard in first floor electrical room. 480/277V panels and 208/120V panels are derived from main switchboard and 208/120V step-down dry type transformers. Branch panels at each location including hallway, mechanical rooms, first floor, second floor, garages, etc. 480/277V and 208/120V panels are located side-by-side. Main switchboard (GE-AV line breaker board) from 1990, is in good condition. Branch panels (GE-A style) breaker panels are in good condition. Main electrical room is good size with good clearance per code, but all wall spaces are fully used. Only utility meters are used; no network electrical meters used.
D5020 Lighting and Branch Wiring							
	1990	1990	2	13	RA	08/19/13	Lighting wiring and device wiring are installed in a raceway system. Interior lighting is fluorescent with some high intensity discharge (HID) lights at stair step lights, and high pressure sodium (HPS) lights in the garage. Outside lights are all HID. Electrical outlets are 10A device, grounding type, with ivory plastic covers. Controls are by manual switch; there are no occupancy and daylight controls.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**2.9**			
Electrical						
D5020 Lighting and Branch Wiring						Interior lighting fixtures are in good condition, consist of 2x4 lens troffer, 1x4 paracube surface linears, recess down lights, 1x4 prison type surface lens. Exterior lights consist of recess soffit lights, wall lights, and bollards lighting. General lighting system is in good condition. Lighting level is good throughout the building. Garage level has some darker areas, and some more lights should be added over the driving lanes. Currently, there are no light fixtures over by the driving lanes. Insufficient electrical outlets in the garage levels. More receptacles could be added for convenience walls. Lighting fixtures in the firing range consist of open reflector 2-lamp fixtures, without lenses; they should be replaced with new vapor tight lens fixtures. The radio room, located in the mechanical mezzanine, needs to add more uninterrupted power supply (UPS) powered dedicated circuits and devices for radio equipment rack out back wall. Exterior lights at east end of building entry area: soffit lights are dirty, filled with dust debris, and should be cleaned. Exterior lighting at rear of the garage building: lenses are blinded with rust-like debris, and should be replaced. Exterior lighting at door entry of the Police garage building at north side: one wall light lens is heating up by the lamp and should be replaced. Both of the Police garage building at east of the Public Safety Building: the electrical power, lighting, and fire alarm system are in good condition and fully operational.
D5030 Low Voltage Communication Security and Fire Alarm						
	1990	1990	3	8	RA 08/19/13	Building has full fire alarm system. Fire alarm panel is Silent Knight with separate radio transmitter, and is located in the main electrical room. Building has full Cat-5e, Cat-6 data/voice wiring system with main distribution frame (MDF) room on first floor, and separate independent distribution frame (IDF) rooms on first and second floors. The building has full CCTV system, consisting on indoor and outdoor cambers. Building has full access control system, 2006 Altronix equipment. Overall systems are in good operating condition, but fire alarm system is the original 1990 system, the components are >20 years, system performance is functional, adequate; should look

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**2.9**				
Electrical							
D5030 Low Voltage Communication Security and Fire Alarm							
							for replacement in next 5 to 10 years. CCTV system with indoor and outdoor cameras: cameras are outdated and in fair condition; performance is adequate, with outdated camera controls. CCTV system should be upgraded in the next 5 years with high definition cameras and digital equipment with network capabilities.
D5090 Other Electrical Systems							
	1990	2012	2	15	RA	08/19/13	Building has two (2) diesel generators: one (1) 250-kw, and one (1) 400-kw. One (1) indoor automatic transfer switch (ATS) outside the generator room building. Generators supply emergency power to lighting, uninterrupted power supply (UPS) power and HVAC cooling equipment. Automatic transfer switch (ATS) and indoor generator, 250-kw, Onan, Cummins Northwest, 1990 equipment; excellent condition. ATS outdoor and indoor generator, 400-kw, Caterpillar, 2012 equipment; excellent condition.
E Equipment and Furnishings			**3.0**				
Equipment							
E1010 Commercial Equipment							
	1990	2000	2	15	RD	08/19/13	Office equipment including copiers, projectors, and screens. No dates available, but equipment is largely much newer than building. No deficiencies noted.
E1020 Institutional Equipment							
	1990	1990	3	5	RD	08/19/13	Detention, security, and presentation equipment. Presentation equipment is mostly newer than building. Detention and security equipment is dated but adequate. Upgrades should be considered.
E1030 Vehicular Equipment							
	1990	1990	3	8	RD	08/19/13	Sally port coiling doors. Secure parking gates. Parking gates appear to work correctly. Sally

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.0**			
Equipment						
E1030 Vehicular Equipment						
						port doors need maintenance.
Furnishings						
E2010 Fixed Furnishings						
	1990	1990	3	7	RD 08/19/13	Fixed counters and desks.
						Fixed counters and desks are dated but seem to work correctly.
F Special Construction						
Special Construction						
F1010 Special Structures						
	1990	1990	3	27	RD 08/19/13	Sally port, detention facilities.
						Dated and low-tech but functional. No deficiencies observed.
F1040 Special Facilities						
	2006	2006	3	28	RD 08/19/13	Generator building - steel frame.
						Structural components and roof grills rusting.
F1050 Special Controls and Instrumentation						
	1990	1990	2	10	RD 08/19/13	Lots of antennas and communication equipment and weather instruments on roof.
						No deficiencies observed.

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Facility Summary

City of Redmond
Municipal Campus Site
Senior Center Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	22,000
Year Of Original Construction	1990
Facility Use Type	Community Center
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	1990
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.0**			
Facility Condition Index (FCI)	0.16			
Current Replacement Value (CRV)	$9,725,000	**Predicted Renewal Budget (6 yrs)**	$428,000	$404,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$4,418,000	$3,774,000
		Observed Deficiencies (6 yrs)	$1,539,000	$1,464,000
		Observed Deficiencies (ALL)	$1,539,000	$1,464,000
		Opportunity Total Project Cost	$750,000	N/A

Facility Condition Summary

Architectural:
No architectural comments.

Electrical:
The Senior Center building has 208/120V, 3-phase, 4-wire power fed underground from Puget Sound Energy, 300-kva padmount transformer, located outside of main electrical room. The main switchboard is 1600A, 208/120v, 3-phase, 4-wire. 1600A main disconnect switch feeds a distribution panel to distribute power to branch panels. Building lighting is mostly fluorescent, with some minor quantities of incandescent lights used for track lighting, storage room, and multi-purpose room area. Exterior lighting is outdated and at end of life. Building emergency lights are wall mounted bug-eyes; many are not working. The building has no generator. The building has a fire alarm system, security alarm system, and voice/data system with main distribution frame (MDF) rack in fire sprinkler/mechanical room. Overall, the systems are working; original systems with building construction. Lamps were upgraded in 2007 from T12 to T8.

Mechanical:
The Redmond Senior Center includes: entry canopy and vestibule; lobby, administration, and store; dayroom, TV room, and coffee bar; activity, art, library, and pool (billiards) rooms; patio with dining, exercise, and tennis courts; multipurpose room with stage, low fly and dressing room; commercial kitchen and dining area; loading dock, dumpster yard, cooling tower enclosure; toilet rooms and custodial rooms; and north and south mechanical rooms.
The HVAC system is water source heat pump (WSHP) with one (1) natural gas boiler, one (1) cooling tower, and 18 WSHPs.
Plumbing includes city water and sewer service, gas and electric hot water heaters, toilet room, activity room sinks, and commercial kitchen support.
Wet and dry pipe fire sprinkler systems, fire extinguishers, automated external defibrillators (AED), and first aid kits.
While mechanical system ages and types are similar to the adjacent Public Safety Building, the Senior Center systems are better designed and constructed than those in the Public Safety Building. Nevertheless, much of the original (1990) mechanical equipment is at or near the end of useful life and will soon need replacement, including water source heat pumps (WSHP), cooling towers, domestic hot water heaters, kitchen make-up air units (MAU), and other items.

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City of Redmond
Municipal Campus Site
Senior Center Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1990	1990	3	65	RD 08/20/13	Poured in place concrete. No deficiencies observed.
A1030 Slab On Grade						
	1990	1990	3	65	RD 08/20/13	Slab on grade floor. No settlement or cracking observed.
B Shell			**3.0**			
Superstructure						
B1010 Floor Construction						
	1990	1990	3	65	RD 08/20/13	Wood floor on concrete at multipurpose room. Wood floor on wood frame at stage. Wood floor at stage level needs to be painted.
B1020 Roof Construction						
	1990	1990	3	65	RD 08/20/13	Wood joists, trusses, and glue-laminated beams and wood frame. No deficiencies observed.
Exterior Closure						
B2010 Exterior Walls						
	1990	1990	3	37	RD 08/20/13	Dryvit and ceramic tile. Dryvit is in good condition except at northwest corner and roof wall between pool room and library; each show prior water damage, likely from earlier roof problems. Tile on east and northeast walls near entry is cracked or loosened in places by temperature and water; repairs underway on a portion of the tile.
B2020 Exterior Windows						
	1990	1990	3	22	RD 08/20/13	Double glazed metal windows in good condition. Double and single glazed greenhouse glass in poor condition. Greenhouse glazing seals are broken, some glass is cracked; wall damaged.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**3.0**				
Exterior Closure							
B2020 Exterior Windows							
B2030 Exterior Doors							
	1990	1990	3	27	RD	08/20/13	Anodized aluminum doors. Hollow metal doors. Doors are in fair condition; need cleaning and adjustment.
Roofing							
B3010 Roof Coverings							
	1990	2004	3	15	RD	08/20/13	Torch down roof and standing seam metal roof. Some blistering on torch down. Ponding throughout. Need more drains. Metal is in generally good condition. Gutter overflow at patio exits through fascia.
B3020 Roof Openings							
	1990	1990	3	17	RD	08/20/13	Roof hatches and penetrations original to building. Re-flashed with re-roof in 2004. Need cosmetic maintenance.
B3030 Projections							
	1990	1990	4	3	RD	08/20/13	Canopy glue-laminated beams on steel pipe columns with polycarbonate panels. Entry canopy and vestibule roof. System leaks with polycarbonate breaking down in ultraviolet (UV) light; glue-laminated beams delaminating and water damage to finishes.
C Interiors			**3.0**				
Interior Construction							
C1010 Partitions							
	1990	1990	3	27	RD	08/20/13	Gypsum wall board (GWB) on wood frame. Generally in good condition. Continued maintenance and paint required.
C1020 Interior Doors							
	1990	1990	3	17	RD	08/20/13	Solid core wood doors, sliding panel room

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City of Redmond
Municipal Campus Site
Senior Center Building

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Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.0**			
Interior Construction						
C1020 Interior Doors						dividers, and accordion doors. Wood and divider doors are in good condition for age. Kitchen accordion door needs replacement.
C1030 Fittings	1990	1990	3	7	RD 08/20/13	Lockers, storage, and shelving. Storage cabinets, lockers, etc. are dated and show their age.
Interior Finishes						
C3010 Wall Finishes	1990	1990	3	15	RD 08/20/13	Wall finishes are paint. The ongoing program of painting when needed is working.
C3020 Floor Finishes	1990	2000	3	14	RD 08/20/13	Carpet, tile, concrete, and wood. Carpet new in 2000. Concrete looks new. Wood floor is well maintained.
C3030 Ceiling Finishes	1990	1990	3	10	RD 08/20/13	Drop in acoustical ceiling tile (ACT). Wood ceilings. Generally in good condition; some stained. Tiles are below equipment in some areas. Grid is rusting over coffee maker in kitchen.
D Services			**3.0**			
Vertical Transportation						
D1090 Other Conveying Systems	1990	1990	4	12	DCS 08/20/13	Two (2) low roof access hatches, one (1) at south mechanical room, and one (1) at the kitchen to the north. No access to high roof above stage fly space. No tie-offs for work on sloped roof above multipurpose room. (Less than $2,000.)

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Vertical Transportation							
D1090 Other Conveying Systems							
Plumbing							
D2010 Plumbing Fixtures							
	1990	1990	3	17	DCS	08/20/13	Porcelain water closets, urinals, and lavatories with mix of auto (infrared) and manual trim (flush valves and faucets). Commercial kitchen flow sink(s) and wall boxes. Electric cooled drinking fountain. Some water closets are pulling away from the wall. Staining and/or unsanitary condition at full-height urinals. Floor sinks are missing at commercial scullery area.
D2020 Domestic Water Distribution							
	1990	1990	3	21	DCS	08/20/13	City water service at 90 to 100 psig with 2.5-inch pressure reducing valve (PRV), 1.5-inch PRV, delivering 60-psig plus bypass. Hose bibs outside. One (1) 120-gallon 36-kw and electric domestic hot water (DHW) heater and circulation pump to south, and one (1) 125-gallon 300,000-btuh gas DHW heater and circulation pump to north. Pressure seems somewhat high at some plumbing fixtures, but not overly so. Original domestic hot water (DHW) heaters are at or near end of useful life.
D2030 Sanitary Waste							
	1990	1990	3	20	DCS	08/20/13	Cast iron drain, waste, and vent (DW&V) piping. Floor drains in toilet rooms and mechanical rooms. Cast iron is hubless double clamped. Cast iron drain, waste, and vent (DW&V) is in fair to good condition. Floor drains missing in men's rooms. Floor drain trap primers not observed, but few or no floor drain sewer gas odors were detected.
D2040 Rain Water Drainage							
	1990	1990	4	17	DCS	08/20/13	Primary and overflow roof drains at flat roof. Gutter and downspouts at sloped roof. Ponding on roof. Roof drains are blocked by tree debris. Overflow roof drains have been fit with

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
Plumbing							
D2040 Rain Water Drainage							
							temporary black PVC pipe to grade.
HVAC							
D3010 Energy Supply							
	1990	1990	2	20	DCS	08/20/13	Natural gas from Puget Sound Energy via Meter Number 473520 with 1,000-cfh capacity and earthquake valve. Gas to north back room, south gas log fireplace, and two (2) outside barbecue locations. Gas system is in good condition except portions of gas piping on roof is falling off of sleepers.
D3020 Heat Generating Systems							
	1990	2004	3	10	DCS	08/20/13	One (1) Laars 1,000,000-btu/hour 80% efficiency gas-fired boiler and two (2) 10-hp constant volume condensing water pumps. Boiler flue cap is corroded and failing. Opportunity to install water source heat pump (WSHP) two-way valve control and variable frequency drive (VFD) on both condensing water pumps.
D3030 Cooling Generating Systems							
	1990	1990	4	3	DCS	08/20/13	One (1) closed loop fluid cooling with evaporative spray cooling (cooling tower). Evaporative section circulation pump is 3/4-hp. New 2013 water chemistry with anti-corrosion and biocide tanks and injection pumps. See "Heat Generating Systems" section above for condensing water pumps (two at 10-hp each). One (1) kitchen refrigerator condensing unit in kitchen roof well. Original 1990 cooling tower is at end of useful life; otherwise in fair condition. Outside air intake for water source heat pumps (WSHP) serving north portion of building are nearly directly above the cooling tower.
D3040 HVAC Distribution Systems							
	1990	1990	3	17	DCS	08/20/13	Water source heat pump (WSHP) system with 18 WSHPs, ducted supply, returns, and outside air to each WSHP. General exhaust fans for toilet rooms, janitor closets, and similar.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
HVAC						
D3040 HVAC Distribution Systems						
						Water source heat pumps (WSHP) are at end of useful life and beginning to fail. Some outside air dampers are missing or damaged. Minor duct leakage throughout. Poor outside air intake location for some WSHPs, specifically to the north by cooling towers. Pool (billiards) room is chronically too hot/too cold and under-ventilated.
D3050 Terminal and Package Units						
	1990	1990	3	10	DCS 08/20/13	Electric resistance unit heaters for mechanical, electrical, and storage room(s). Unit heaters are in fair to good condition.
D3060 Controls and Instrumentation						
	1990	2006	3	10	DCS 08/20/13	Mix of some old and mostly new DDC controls. Unclear system type, commissioning, test adjust and balance (TAB), and sequences. No local operator interface. Low voltage control wiring junction boxes and water source heat pump (WSHP) control panel covers are often missing or open, with wires hanging loose.
D3090 Other HVAC Systems and Equipment						
	1990	1990	4	2	DCS 08/20/13	Commercial kitchen grease hood with Reznor gas-fired roof top make-up air units (MAU) and up blast exhaust fans. Ceiling fans in pool (billiards) room. Greenhouse exhaust fan. Kitchen walk-in cooler. Kitchen make-up air unit (MAU) is past end of useful life and may fail at any time. Grease hood exhaust is recirculated back to MAU intake under certain wind conditions since they are close proximity and in the same roof well. General kitchen exhaust does not capture some kitchen equipment moisture, specifically at the coffee maker. The pool room ceiling fans are operable. Greenhouse exhaust fans are in fair to good condition, but outside air intake louver appears frozen in position (<$2,000 to repair). No apparent auto wash system for grease hood, but probably not practical, given relatively light use of the kitchen. Walk-in cooler has excessive humidity and/or contaminants, resulting in dirt,

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.0**				
HVAC							
D3090 Other HVAC Systems and Equipment							
							mold, and mildew on food supplies.
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
	1990	1990	3	19	DCS	08/20/13	City fire service with 8-inch entry, 6-inch stub, and 4-inch riser, running at 95 psig. Branch off distribution main to dry pipe riser at dining area storage closet for entry and patio canopies. Wet pipe sprinkled throughout interior spaces. No issues reported or observed.
D4030 Fire Protection Specialties							
	1990	1990	3	12	DCS	08/20/13	Fire extinguisher in cabinets throughout. Automated external defibrillators (AED) and first aid kits wall are mounted in several locations. Fire extinguisher inspection tags are current. Automated external defibrillators (AED) alarm is not operable. First aid kits appear to need restocking.
D4090 Other Fire Protection Systems							
	1990	2000	3	10	DCS	08/20/13	Commercial kitchen grease hood fire suppression system. Minor corrosion on agent cylinders and controls, but inspection is current and no reported issues.
Electrical							
D5010 Electrical Service and Distribution							
	1990	1990	2	17	RA	08/20/13	Building electrical system is 1600A, 208/120V, 3-phase, 4-wire. Electrical service is served by Puget Sound Energy padmount transformer outside building, 300-kva. Service feeder is underground from transformer to main switchboard in electrical room. Main switchboard is rated 1600A; main disconnect switch is 208/120V. It has two (2) distribution sections serving branch panels throughout the building. Switchboard is GE-AV line. Branch panels are GE-A style. Original 1990 building electrical equipment; in good condition.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
Electrical						
D5010 Electrical Service and Distribution						
D5020 Lighting and Branch Wiring						
	1990	1990	3	10	RA 08/20/13	Lighting wiring and devices wiring are installed in a raceway system. Interior lighting is 90% fluorescent system with incandescent fixtures in multipurpose room. General lighting fixtures are 2x4, 4x4 lay-in troffers. Electrical outlets are 15A grounding type receptacles. Manual light switches. Interior lighting fixtures are in good condition; lamps were upgraded in 2007 from T12 to T8 lamps. Exterior lighting fixtures are in fair condition; lenses are dirty and need cleaning out and fixtures should be replaced in the next 5 years. Multipurpose room has stage lighting over by the stage; Strand Lighting Equipment. Main lighting controller is located at the corner of the stage. The house lighting controller at the main door is not working; non-functional. Interior lighting has no automatic controls per current energy code; only the smaller room and toilet lighting are controlled by wall occupancy sensors. Kitchen lighting troffers are 2x4 lay-in fixtures without gasket.
D5030 Low Voltage Communication Security and Fire Alarm						
	1990	1990	3	8	RA 08/20/13	The building has a full fire alarm system with horn strobes and pull stations. Horn strobes are mounted higher than 6'-6" above finished floor. The building has security alarm system with motion detectors and two (2) key pads; it is a small system with outdated equipment. Building fire alarm system is in good working order, but equipment is over 20 years old and needs to be upgraded within the next 8 years. Building security alarm system is in working condition, but equipment is outdated, and more motion detectors are needed; consider system upgrade within the next 8 years. Building has a Cat-5 data/voice system. Main distribution frame (MDF) is a wall rack and is located in fire sprinkler room. Data/voice system is in good condition.
D5090 Other Electrical Systems						
	1990	1990	4	2	RA 08/20/13	Building has no emergency generator.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.0**			
Electrical						
D5090 Other Electrical Systems						Emergency lights are battery backup wall type bug-eye fixtures. Emergency lights are located inside building area. There are no exterior emergency lights. The existing emergency lights are not reliable; they are over 23 years and at end of life.
E Equipment and Furnishings			**3.0**			
Equipment						
E1010 Commercial Equipment	1990	1990	3	5	RD 08/20/13	Laundry and office equipment. Equipment observed is dated but functional. No deficiencies noted.
E1020 Institutional Equipment	1990	1990	3	5	RD 08/20/13	Stage and audio/visual equipment. Small stage with fly and audio/visual units noted. No deficiencies noted.
E1030 Vehicular Equipment	1990	1990	3	20	RD 08/20/13	Concrete loading dock. No equipment. No deficiencies observed.
E1090 Other Equipment	1990	1990	3	8	RD 08/20/13	Kitchen equipment. Coffee maker needs repair; it turns off before done. Freezers need to be lockable. Pantry cupboard needs new doors. New commercial can opener needed.
Furnishings						
E2010 Fixed Furnishings	1990	1990	3	7	RD 08/20/13	Counters, cabinets. Fixed furnishings are very dated but functional. Tile grout needs steam cleaning and seal.

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Facility Summary

City of Redmond
Municipal Campus Site
Senior Center Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.0**			
Furnishings						
E2020 Moveable Furnishings (Capital Funded Only)						
	1990	1990	3	7	RD 08/20/13	Tables and chairs. Moveable furnishings are very dated but functional.
F Special Construction						
Special Construction						
F1050 Special Controls and Instrumentation						
	2005	2005	2	8	RD 08/20/13	Weather monitoring station with sensor on roof. No issues reported or observed.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
City Hall Building	Exterior Closure	$5,500	$1,650	$1,430	$4,290	$12,870	$12,383
	Vertical Transportation	$5,000	$1,500	$1,300	$3,900	$11,700	$10,628
	Plumbing	$48,000	$14,400	$12,480	$37,440	$112,320	$102,532
	HVAC	$9,000	$2,700	$2,340	$7,020	$21,060	$19,988
	Facility Total	**$67,500**	**$20,250**	**$17,550**	**$52,650**	**$157,950**	**$145,532**
Municipal Campus Infrastructure	Site Improvements	$25,000	$7,500	$6,500	$19,500	$58,500	$56,293
	Facility Total	**$25,000**	**$7,500**	**$6,500**	**$19,500**	**$58,500**	**$56,293**
Municipal Campus Parking Garage Building	Foundations	$2,000	$600	$520	$1,560	$4,680	$4,418
	Exterior Closure	$45,000	$13,500	$11,700	$35,100	$105,300	$101,327
	HVAC	$15,000	$4,500	$3,900	$11,700	$35,100	$35,100
	Fire Protection	$21,000	$6,300	$5,460	$16,380	$49,140	$45,279
	Electrical	$2,500	$750	$650	$1,950	$5,850	$5,522
	Facility Total	**$85,500**	**$25,650**	**$22,230**	**$66,690**	**$200,070**	**$191,646**
Police Garage North Building	Vertical Transportation	$2,000	$600	$520	$1,560	$4,680	$4,680
	Plumbing	$2,000	$600	$520	$1,560	$4,680	$4,680
	Facility Total	**$4,000**	**$1,200**	**$1,040**	**$3,120**	**$9,360**	**$9,360**
Police Garage South Building	Vertical Transportation	$2,000	$600	$520	$1,560	$4,680	$4,680
	Facility Total	**$2,000**	**$600**	**$520**	**$1,560**	**$4,680**	**$4,680**
Public Safety Building	Exterior Closure	$161,000	$48,300	$41,860	$125,580	$376,740	$348,618
	Roofing	$125,000	$37,500	$32,500	$97,500	$292,500	$281,462
	Vertical Transportation	$42,500	$12,750	$11,050	$33,150	$99,450	$99,450
	Plumbing	$141,200	$42,360	$36,712	$110,136	$330,408	$318,467
	HVAC	$804,505	$241,352	$209,171	$627,514	$1,882,542	$1,788,076
	Fire Protection	$60,000	$18,000	$15,600	$46,800	$140,400	$140,400
	Electrical	$10,800	$3,240	$2,808	$8,424	$25,272	$24,320
	Facility Total	**$1,345,005**	**$403,502**	**$349,701**	**$1,049,104**	**$3,147,312**	**$3,000,793**
Senior Center Building	Exterior Closure	$225,500	$67,650	$58,630	$175,890	$527,670	$498,731
	Roofing	$92,000	$27,600	$23,920	$71,760	$215,280	$202,211

Print Date: 03/10/14

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Senior Center Building	Interior Construction	$13,000	$3,900	$3,380	$10,140	$30,420	$29,271
	Vertical Transportation	$7,000	$2,100	$1,820	$5,460	$16,380	$16,380
	Plumbing	$85,500	$25,650	$22,230	$66,690	$200,070	$190,815
	HVAC	$206,500	$61,950	$53,690	$161,070	$483,210	$462,379
	Electrical	$28,000	$8,400	$7,280	$21,840	$65,520	$64,196
	Facility Total	**$657,500**	**$197,250**	**$170,950**	**$512,850**	**$1,538,550**	**$1,463,984**
	Site Total	**$2,186,505**	**$655,952**	**$568,491**	**$1,705,474**	**$5,116,422**	**$4,872,287**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Total Observed Deficiency Repair Direct Cost : $2,186,505

Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: City Hall Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,500**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$5,292**
Exterior Walls								
Aluminum Panels	4	2 2013	Reported leaks at exterior wall assembly where metal panel siding occurs.	Trace location of leaks, remove panels, and repair weather seal; caulk as needed.	1	$5,500.00	ls	$5,500
Facility: City Hall Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$4,542**
Elevators and Lifts								
Elevator Machine Room Cooling	4	5 2013	Condensing unit is wedged between traction elevator machine room stair and penthouse boiler room resulting in poor maintenance access, marginal airflow, and full exposure to afternoon sun.	Relocate to more appropriate location upon replacement.	1	$5,000.00	ls	$5,000
Facility: City Hall Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$48,000**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$43,817**
Plumbing Fixtures								
Water Closets	4	5 2013	Caroma water closets are failing prematurely with difficult to obtain parts. Toilets are pulling away from walls.	Replace with heavier duty dual flush or high efficient toilets.	30	$1,500.00	ea	$45,000
Domestic Water Distribution								

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Total Observed Deficiency Repair Direct Cost : $2,186,505

Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Pressure Reducing Valve	4	1 2013	No pressure reducing valve for building or pressure zones (floors) may be damaging fixture trim on lower levels.	Install duplex pressure reducing valves with bypass for floors 1 and 2 if piping configuration supports; alternately study possible retrofit paths.	1	$3,000.00	ls	$3,000
Facility: City Hall Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$9,000**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$8,542**
Heat Generating Systems								
Boilers	5	0 2013	Boiler flue draft dampers warped sticking and leaking flue gas to penthouse space.	Redesign and retrofit to meet manufacture and code requirements.	2	$2,000.00	ea	$4,000
Cooling Generating Systems								
Cooling Tower	4	5 2013	Based on observing drift elimination and condenser water color, assume cooling tower media may need replacement.	Schedule cooling tower media replacement.	1	$5,000.00	ls	$5,000
Facility: Municipal Campus Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$25,000**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$24,057**
Site Development								
Trex Decking	4	2 2013	Approximately 2500 sf of Trex decking appears to be failing and shows buckling and flaking. Decking appears to have expanded and no gaps remaining between boards, which is undesirable. Trex decking has been subject to several class action lawsuits.	Investigate possible warranty or class action settlements for replacement of failed decking. Replace all surface decking. Treated wood joists and supports are likely in acceptable condition.	2,500	$10.00	sf	$25,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Municipal Campus Parking Garage Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$2,000**
System: Foundations						**Total System Deficiency Repair Cost (Present Value):**		**$1,888**
Standard Foundations								
Foundation	3	3 2013	Reports of excessive cracking in several locations with unknown cause.	Investigate cause of cracking; plan corrective action as needed.	1	$2,000.00	ls	$2,000
Facility: Municipal Campus Parking Garage Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$45,000**
System: Exterior Closure						**Total System Deficiency Repair Cost (Present Value):**		**$43,302**
Exterior Walls								
Concrete Paint	4	2 2013	Paint is fading, chipped, and shows some damage.	Prep and repaint exterior.	1	$45,000.00	ls	$45,000
Facility: Municipal Campus Parking Garage Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$15,000**
System: HVAC						**Total System Deficiency Repair Cost (Present Value):**		**$15,000**
Terminal and Package Units								
Ventilation	5	0 2013	No ventilation for Level 1 shop and storage spaces.	Install ventilation per code.	3,000	$5.00	sf	$15,000
Facility: Municipal Campus Parking Garage Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$21,000**
System: Fire Protection						**Total System Deficiency Repair Cost (Present Value):**		**$19,350**
Fire Protection Sprinkler Systems								
Fire Sprinkler Piping	4	5 2013	Unprimed/unpainted, exposed fire sprinkler piping is rusting and corroding.	Clean, prime, and paint fire sprinkler piping.	90,000	$0.20	sf	$18,000
Fire Sprinkler Density	5	0 2013	Shop/storage room combustible material may exceed sprinkler density capacity.	Upgrade sprinkler.	3,000	$1.00	sf	$3,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Municipal Campus Parking Garage Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$2,500**
System: Electrical						**Total System Deficiency Repair Cost (Present Value):**		**$2,360**
Lighting and Branch Wiring								
Lighting Fixtures	4	3 2013	Garage light fixture lenses are yellowed, reducing light transmittance.	Replace light fixtures.	100	$25.00	ea	$2,500
Facility: Police Garage North Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$2,000**
System: Vertical Transportation						**Total System Deficiency Repair Cost (Present Value):**		**$2,000**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access.	Install permanent roof access ladder.	1	$2,000.00	ls	$2,000
Facility: Police Garage North Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$2,000**
System: Plumbing						**Total System Deficiency Repair Cost (Present Value):**		**$2,000**
Sanitary Waste								
Sanitary Floor Drain	5	0 2013	No floor drain for trash storage area.	Install two (2) floor drains leading to sanitary sewer as required by code.	2	$1,000.00	ea	$2,000
Facility: Police Garage South Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$2,000**
System: Vertical Transportation						**Total System Deficiency Repair Cost (Present Value):**		**$2,000**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access.	Install permanent roof access ladder.	1	$2,000.00	ls	$2,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Public Safety Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$161,000**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$148,982**
Exterior Walls								
Stucco and Tile	4	3	Stucco at second floor south wall has water from roof and from sloped stucco in wall. Stucco cracking and potential serious water damage in wall void. There appears to be water behind tile soffit at west entry and southeast corner walls.	Remove stucco and tile and sheathing. Investigate damage. Repair and refinish.	2,200	$35.00	sf	$77,000
		2013	Stucco walls, tile walls and soffits					
Exterior Windows								
Windows and Frames	4	5	Frames are corroding. Glass seals broken.	Remove and repair or replace frames. Reinstall with separation from stucco. Repair and recharge glass units.	24	$3,500.00	ea	$84,000
		2013	Anodized aluminum window frames. Double pane glass.					
Facility: Public Safety Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$125,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$120,283**
Roof Coverings								
Metal Gutters and Roof	4	2	Water is blowing up under roof and also leaking from overloaded gutters on north and south eaves of main roof.	Re-flash lower edge of roof and include neoprene gaskets to stop blind blown water intrusion. Remove and redesign gutters and gutter support. Flash from 24-inches up roof to over wall with gutter.	500	$250.00	lf	$125,000
		2013	Metal gutters; standing seam metal roof. Water penetration at bottom of metal roof edge and along metal gutters at north and south.					

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Public Safety Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$42,500**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$42,500**
Other Conveying Systems								
Fall Protection	5	0 2013	No fall protection or superstructure service anchors.	Install fall protection for sloped metal roof and anchors for wall and window maintenance.	30,000	$1.00	sf	$30,000
Roof Access	5	0 2013	No roof access to mid-level west end roofs and 2006 addition roofs.	Provide permanent roof access to all areas with equipment requiring regular maintenance.	5	$2,500.00	ea	$12,500
Facility: Public Safety Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$141,200**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$136,097**
Plumbing Fixtures								
Plumbing Fixtures	4	3 2013	Many lavatory faucets loose, poorly operating, aerators missing or blocked, etc. Some fixtures with minor damage. Some flush valves with marginal operation. Reportedly unoriginal shower conditions. Some fixtures, many faucets, and some other trim.	Repair or replace as needed.	24	$300.00	ea	$7,200
Domestic Water Distribution								
Piping Insulation	4	5 2013	Damaged or missing domestic hot water (DHW) pipe insulation in some areas.	Repair or replace pipe insulation.	500	$4.00	lf	$2,000
Domestic Hot Water Heater	4	2 2013	Domestic hot water (DHW) heaters near end of useful life.	Replace domestic hot water heaters.	2	$5,000.00	ea	$10,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Pressure Reducing Valves	4	3 2013	Pressure reducing valves and/or distribution configuration resulting in excessively high pressure on Level 1 and low pressure on Level 2.	Troubleshoot, repair, or replace pressure reducing valves as needed.	2	$2,500.00	ea	$5,000
Sanitary Waste								
Piping Insulation	4	2 2013	Drain, waste, and vent (DW&V) piping insulation is missing or damaged throughout the parking garage.	Repair and replace piping insulation as needed.	1,000	$5.00	lf	$5,000
Drain, Waste, and Vent Piping	4	5 2013	Drain, waste, and vent (DW&V) piping is single clamped hubless at parking garage with signs of deteriorations. Hubless, single clamped drain, waste, and vent (DW&V) piping.	Upgrade to double clamped and slope drain main to better drain.	500	$20.00	lf	$10,000
Trap Primers	5	0 2013	Drain, waste, and vent (DW&V) trap primers are missing, causing odors throughout.	Install trap primers.	20	$1,000.00	ea	$20,000
Rain Water Drainage								
Storm Sumps	4	2 2013	Pumps of marginal capacity, resulting in flooding during heavy rains and standing water at other times. Three systems: 1. Large southeast roof 2. Large southwest groundwater 3. Medium garage with oil water separator	Upgrade sumps to eliminate flooding and standing water.	3	$5,000.00	ea	$15,000
Garage Drainage	5	0 2013	Portions of parking garage used for vehicle wash and servicing drain to storm system.	Install new floor drain system with light station to sewer, not storm system.	1	$25,000.00	ls	$25,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Roof Drains	4	3 2013	Several areas of standing water on the flat roof.	Relocate or provide new roof drains to eliminate standing water.	3	$3,000.00	ea	$9,000
Gutter System	4	3 2013	Gutter system may be contributing to exterior wall damage.	Reconfigure gutter for proper metal roof drainage.	600	$50.00	lf	$30,000
Floor Drains	5	0 2013	Dumpster storage area missing floor drains to sewer; currently drains to storm.	Provide floor drains to sewer.	1	$3,000.00	ea	$3,000
Facility: Public Safety Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$804,505**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$764,135**
Cooling Generating Systems								
Condensing Unit	4	3 2013	Mix of old and new outside condensing units and inside units for mission critical 911 center, data/communications/radio room and related spaces.	Design and install bona fide mission critical cooling equipment for applicable spaces.	3	$10,000.00	ea	$30,000
Pumps	4	5 2013	Pumps are aging.	Refurbish pumps.	2	$2.50	ea	$5
Cooling Tower	4	2 2013	Cooling tower is corroded and leaking; past end of useful life.	Replace cooling tower.	1	$35,000.00	ea	$35,000
HVAC Distribution Systems								
Exhaust	5	0 2013	No apparent exhaust for kitchenette, break room, and copy center.	Install exhaust per code.	6	$2,000.00	ea	$12,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Total Observed Deficiency Repair Direct Cost : $2,186,505

Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Ductwork	4	5 2013	Damaged, leaking duct.	Clean, repair, seal, and leak test ducts.	60,000	$0.50	sf	$30,000
Return Air Plenum	4	3 2013	AH/ceiling return air plenum is dirty.	Clean ceiling return air plenum.	30,000	$0.25	sf	$7,500
Water Source Heat Pumps	4	3 2013	Water source heat pumps (WSHP) at end of life.	Schedule replacement of all water source heat pumps (WSHP) not already replaced.	30	$4,000.00	ea	$120,000
Outside Air	5	0 2013	Little or no outside air to some water source heat pumps (WSHP). Dirty, non-code compliant outside air intake plenums.	Bring outside air plenum up to code and provide minimum outside air to all spaces per code.	60,000	$0.50	sf	$30,000
Controls and Instrumentation								
Controls	4	3 2013	Various types and manufactured controls with unclear DDC system.	Test, repair, replace, re-TAB (test, adjust and balance), and retro-commissioning (Cx) as needed.	70,000	$7.00	sf	$490,000
Other HVAC Systems and Equipment								
Generator Exhaust	5	0 2013	Original generator exhaust and run to high roof is too long.	Retrofit booster; work should be similar to new generator.	1	$20,000.00	ea	$20,000
Garage Exhaust	5	0 2013	Portion of parking garage may not meet code ventilation requirements.	Install code minimum ventilation in parking garage.	10,000	$3.00	sf	$30,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Total Observed Deficiency Repair Direct Cost : $2,186,505

Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Public Safety Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$60,000**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$60,000**
Fire Protection Sprinkler Systems								
Pre-Action Sprinkler	5	0 2013	No pre-action sprinkler for mission critical areas (911 call center, data center, radio, communications, etc.)	Retrofit pre-action and/or gaseous fire suppression for mission critical areas.	5	$10,000.00	ea	$50,000
Other Fire Protection Systems								
Rated Ceiling Assemblies	5	0 2013	Level 2 rated corridor ceiling assemblies damaged.	Repair rated corridor ceiling assemblies.	2,000	$5.00	sf	$10,000
Facility: Public Safety Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$10,800**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$10,393**
Lighting and Branch Wiring								
Lighting & Branch Wiring Devices	4	2 2013	Insufficient electrical outlets in parking garage. Parking garage lighting; parking garage electrical outlets and circuits.	Add ground fault interrupter (GFI) electrical outlets, circuits in parking garage.	12	$400.00	ea	$4,800
Lighting & Branch Wiring Devices	4	2 2013	Insufficient lighting, poor lighting level in parking garage driving lanes. Parking garage lighting; parking garage electrical outlets and circuits.	Add lighting fixtures and controls over driving lanes.	10	$600.00	ea	$6,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Total Observed Deficiency Repair Direct Cost : $2,186,505

Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Senior Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$225,500**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$213,133**
Exterior Walls								
Stucco	4	2 2013	Portions of stucco is cracked. Unsealed aluminum extrusions embedded in stucco.	Repair crack and seal embedded extrusions per Wetherholt Report of 9/10/2013.	5,000	$3.00	sf	$15,000
Ceramic Tile	4	3 2013	Ceramic tile exterior wall skin is problematic. While current (2013) re-sealing may help, ultimately this system should be replaced.	Replace with masonry veneer with rain screen.	3,000	$50.00	sf	$150,000
Exterior Windows								
Windows	4	3 2013	Condensation and leaks have damaged glazing system, frame, and concrete wall. Metal frame windows and glass at greenhouse. Glass cracked, adjacent wall crumbing from water intrusion.	Remove glazing and wall, replace both. Refurbish frame and reinstall.	1	$48,000.00	ea	$48,000
Windows	4	3 2013	Clerestory and penthouse insulating glass units have failed and failing seals. Metal frame windows and glass at greenhouse. Glass cracked, adjacent wall crumbing from water intrusion.	Inspect and replace insulating glass units.	500	$25.00	sf	$12,500

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Total Observed Deficiency Repair Direct Cost : $2,186,505

Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Senior Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$92,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$86,415**
Roof Coverings								
Torch Down Roof	4	5 2013	Large blister in torch down roof is pulling seam apart. Gutter on west above patio overflows through fascia when full.	Remove air under roof, patch. Install mambrane patch. Re-flash and reseal. Provide overflow that will exit gutter without going through structure, clean drain.	80	$150.00	lf	$12,000
Projections								
Projections	4	3 2013	Ultraviolet (UV) light is breaking down the polycarbonate. Glue-laminated beams are delaminating. Finishes are stained. Steel pipe columns appear alright. Polycarbonate, wood, and steel. System is leaking and needs replacement.	Remove and construct new canopy.	1	$80,000.00	ea	$80,000
Facility: Senior Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$13,000**
System: Interior Construction				**Total System Deficiency Repair Cost (Present Value):**				**$12,509**
Interior Doors								
Accordion Door	4	2 2013	Kitchen sliding accordion door will no longer stay on track.	Remove existing and replace accordion door.	1	$13,000.00	ea	$13,000
Facility: Senior Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$7,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$7,000**
Other Conveying Systems								
Roof Access	5	0 2013	No access to high roof. No fall protection tie-offs to sloped roofs.	Install caged roof ladder and tie-offs at sloped roof (above multi-purpose room).	1	$7,000.00	ls	$7,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Total Observed Deficiency Repair Direct Cost : $2,186,505

Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Senior Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$85,500**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$81,545**
Plumbing Fixtures								
Flushing Fixtures	4	3 2013	Some water closets are pulling away from the wall. Urinals are difficult to maintain in sanitary condition.	Replace or repair water closets and urinals with new hangers.	10	$3,000.00	ea	$30,000
Kitchen Floor Sinks	5	0 2013	Scullery sinks are missing floor sink drains.	Provide sink drains per code.	3	$1,500.00	ea	$4,500
Domestic Water Distribution								
Domestic Hot Water Heater	4	3 2013	Gas domestic hot water heater is at end of useful life. Electric domestic hot water heater is nearing end of useful life.	Replace gas domestic hot water heater soon. Schedule electrical domestic hot water heater replacement in near future.	2	$5,000.00	ea	$10,000
Sanitary Waste								
Floor Drains	4	3 2013	No floor drains in men's room.	Install floor drains in men's room.	3	$3,000.00	ea	$9,000
Rain Water Drainage								
Roof Drains	4	2 2013	Ponding, roof drain blockage, and improper overflow roof drain modifications.	Add new roof drains and overflow roof drains. Establish roof debris maintenance schedule. Remove overflow roof drain's temporary piping.	10	$3,200.00	ea	$32,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

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Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Senior Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$206,500**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$197,598**
Energy Supply								
Gas Supply	5	0 2013	Rooftop gas piping falling off sleepers at northeast side of roof (near kitchen roof well).	Repair or replace rooftop gas piping. Replace and anchor sleeper.	100	$5.00	ft	$500
Cooling Generating Systems								
Cooling Tower	4	2 2013	Cooling tower at end of useful life.	Replace cooling tower.	1	$25,000.00	ea	$25,000
HVAC Distribution Systems								
Billiards Room HVAC	4	2 2013	Billiards room is reported by staff to be often too hot/too cold/under ventilated.	Provide dedicated rooftop units (RTU) to properly condition this heavily used space.	1	$15,000.00	ea	$15,000
Water Source Heat Pumps	4	2 2013	Water source heat pumps (WSHP) past end of useful life and failing.	Replace water source heat pumps.	16	$4,000.00	ea	$64,000
Controls and Instrumentation								
DDC	4	3 2013	Completion of 2006 control system upgrade is not evident. Many open panels, loose wires, and some comfort complaints from occupants.	Complete DDC upgrades; provide local operator interface; close up all junction boxes and equipment panels. Retro-commission (Cx) and re-TAB (test adjust and balance).	22,000	$3.50	sf	$77,000
Other HVAC Systems and Equipment								
Kitchen Hood Make-Up Air Unit	4	2 2013	Kitchen hood make-up air unit (MAU) is past end of useful life and recirculates odors from adjacent exhaust fans.	Replace and reconfigure to reduce recirculation from hood exhaust fan.	1	$15,000.00	ea	$15,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Municipal Campus Site

Total Observed Deficiency Repair Direct Cost : $2,186,505

Total Observed Deficiency Repair Direct Cost (Present Value): $2,082,174

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Kitchen General Exhaust	5	1 2013	Little or no exhaust near coffee maker is resulting in damage to ceiling and potentially the roof structure above.	Provide adequate general exhaust and ventilation for kitchen.	1	$5,000.00	ls	$5,000
Kitchen Walk-In Cooler	5	0 2013	Excessive dirt and moisture in walk-in cooler is resulting in mold and mildew growth in stored food products.	Investigate. Consider insulated floor, evaporative condensing drain, kitchen general exhaust ventilation air, house keeping practices and similar solutions.	1	$5,000.00	ls	$5,000
Facility: Senior Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$28,000**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$27,434**
Lighting and Branch Wiring								
Lighting Controller	5	0 2013	Multipurpose room lighting controller is not working/non-functional.	Replace house lighting controller.	1	$10,000.00	ls	$10,000
Kitchen Lighting	5	0 2013	No gasket provided for lighting fixtures in kitchen area.	Add A, B, and C gaskets to kitchen 2x4 troffers.	1	$3,000.00	ls	$3,000
Other Electrical Systems								
Emergency Lighting	4	2 2013	Building emergency lights are aged, unreliable, and insufficient.	Replace existing emergency lights. Provide additional emergency lights at indoor and exterior doors outside.	1	$15,000.00	ls	$15,000

Note: Cost estimates shown are direct construction costs.

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Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site **Total Site Opportunity Cost: $3,047,024**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**City Hall Building**						
System:	**Roofing**	**Total Cost: $2,200**					
B3010	**Roof Coverings**						
		Observed several parapet cap screws rusting and some backing out. Along east parapet on upper roof covered entry, sealant is coming out of flashing joint.	Reattach, rescreen with galvanized screens and neoprene washers all rusted or loose parapet cap screens.	1.00	$2,200.00	ls	$2,200
Facility:	**City Hall Building**						
System:	**Vertical Transportation**	**Total Cost: $7,500**					
D1090	**Other Conveying Systems**						
		Freight elevator to fourth floor but not to penthouse.	Install crane rail and hoist at southeast stair tower from fourth floor to penthouse roof level.	1.00	$7,500.00	ls	$7,500
Facility:	**City Hall Building**						
System:	**Plumbing**	**Total Cost: $59,000**					
D2010	**Plumbing Fixtures**						
		Beyond rough-in opportunity cited above, replace waterless urinals with pint-per-flush urinals for reduced operations and maintenance cost and improved sanitary conditions.	Replace waterless urinals with pint-per-flush urinals.	8.00	$1,000.00	ea	$8,000
		Current waterless urinals may shorten life of drain, waste, and vent piping and may be creating additional operations and maintenance cost beyond the value of the water they are saving. Opportunity to rough-in flushing water during upcoming water closet replacement and work.	Rough-in flushing water to urinal locations.	8.00	$500.00	ea	$4,000
D2020	**Domestic Water Distribution**						
		Assumed 3-inch city water meter; may be over-sized for water conserving plumbing fixtures.	Study actual water load and reduce meter size to reduce life-cycle cost related to meter demand (will serve) change.	1.00	$2,000.00	ea	$2,000
		All electric domestic hot water heat. Puget Sound Energy natural gas service has excess capacity.	Upon scheduled renewal of domestic hot water heater(s), upgrade to high efficiency gas-fired domestic hot water heat.	2.00	$5,000.00	ea	$10,000

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Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site **Total Site Opportunity Cost: $3,047,024**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
D2030	**Sanitary Waste**						
		Plumbing fixture trim driven floor drain trap primers.	Upgrade to automatic electric trap primers.	10.00	$500.00	ea	$5,000
D2040	**Rain Water Drainage**						
		Roof drain water currently directed to site storm drain system. Need for non-potable water for pond and cooling tower make-up and flushing water.	Install rain water harvesting system, approximately 20,000 gallons.	1.00	$30,000.00	ls	$30,000
Facility:	**City Hall Building**						
System:	**HVAC**	**Total Cost: $152,524**					
D3020	**Heat Generating Systems**						
		Upon scheduled replacement of current standard efficiency (80%) boilers, upgrade to high efficiency (90%) boilers.	Replace standard efficiency boilers with high efficiency boilers.	2.00	$50,000.00	ea	$100,000
D3030	**Cooling Generating Systems**						
		Opportunity for "free cooling" using "water-side economizer."	Install plaster framed water side economizer.	1.00	$15,000.00	ea	$15,000
D3060	**Controls and Instrumentation**						
		Continue optimization of newly upgraded DDC controls supplemented by formal re-TAB (test, adjust, and balance) and retro-commissioning (Cx).	Optimize DDC controls including re-TAB (test, adjust, and balance) and retro-commission (Cx).	107,212.00	$0.35	sf	$37,524
Facility:	**City Hall Building**						
System:	**Electrical**	**Total Cost: $17,500**					
D5010	**Electrical Service and Distribution**						
		No internal monitoring for active energy management.	Coordinate with Puget Sound Energy to install real-time energy demand and use monitoring to assist in pro-active energy management.	1.00	$5,000.00	ls	$5,000
D5090	**Other Electrical Systems**						
		No emergency lighting system; selected circuits powered by generator. Building is dark until generator starts and automatic transfer switch (ATS) transfers. Opportunity to install battery packs in main corridor and open offices to reduce panic.	Install battery pack emergency lighting in corridor, open offices, and other large areas.	50.00	$250.00	ea	$12,500

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Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site **Total Site Opportunity Cost: $3,047,024**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Municipal Campus Infrastructure**						
System:	**Site Civil / Mechanical Utilities**	**Total Cost: $5,000**					
G3030	**Storm Sewer**						
		In the Public Safety Building there are reports of water infiltrating up into the garage from below the floor slab during rainy periods. Piping of the underdrain system has apparently been inspected and is not clogged. It was noted that the inlet pipe to the sump from the underdrain system is generally submerged within the sump, indicating some or all of the underdrain system may be submerged. Review of the sump pump operation may be warranted in an effort to lower the groundwater elevation within the system.	Review and analyze the current operation of the groundwater sump pump system to see if the static water level in the system could be lowered. This would provide greater storage capacity with the system and perhaps reduce infiltration that is occurring through the slab.	1.00	$5,000.00	ls	$5,000
Facility:	**Municipal Campus Parking Garage Building**						
System:	**Exterior Closure**	**Total Cost: $37,200**					
B2020	**Exterior Windows**						
		Rust occurring at steel structure at southeast stair shaft. Ongoing maintenance issue.	Infill exterior storefront frame with glazing to keep rain from hitting stair structure.	600.00	$62.00	sf	$37,200
Facility:	**Municipal Campus Parking Garage Building**						
System:	**HVAC**	**Total Cost: $9,000**					
D3060	**Controls and Instrumentation**						
		No DDC controls.	Upgrade to DDC controls to improve remote monitoring and energy control.	90,000.00	$0.10	sf	$9,000
Facility:	**Municipal Campus Parking Garage Building**						
System:	**Electrical**	**Total Cost: $39,000**					
D5020	**Lighting and Branch Wiring**						
		Opportunity to install electric vehicle charging stations.	Install 12 electric vehicle charging stations.	12.00	$2,000.00	ea	$24,000
		Garage fixtures are T8 fluorescent with deteriorating lenses. Consider replacing with light emitting diode (LED) and/or auto-sensing fixtures.	Replace existing light fixtures with light emitting diode (LED).	100.00	$150.00	ea	$15,000

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Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site **Total Site Opportunity Cost: $3,047,024**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Police Garage North Building**						
System:	**Plumbing**	**Total Cost: $3,000**					
D2010	**Plumbing Fixtures**						
		Appears program may benefit from a deep sink.	Install deep sink with small electric water heater.	1.00	$3,000.00	ls	$3,000
Facility:	**Police Garage North Building**						
System:	**Electrical**	**Total Cost: $5,000**					
D5020	**Lighting and Branch Wiring**						
		Existing 50-amp service provides minimal future flexibility. Upgrade to 125-amp will greatly increase ability to add future loads.	Upgrade to 125-amp service.	1.00	$5,000.00	ls	$5,000
Facility:	**Police Garage North Building**						
System:	**Equipment**	**Total Cost: $3,000**					
E1020	**Institutional Equipment**						
		Excessive police equipment and materials are piled on the floor or haphazardly stored. Opportunity for better organized shelving and/or storage lockers.	Install shelving or lockers.	1.00	$3,000.00	ls	$3,000
Facility:	**Police Garage South Building**						
System:	**Plumbing**	**Total Cost: $3,000**					
D2010	**Plumbing Fixtures**						
		Appears program may benefit from a deep sink.	Install deep sink with small electric water heater.	1.00	$3,000.00	ls	$3,000
Facility:	**Police Garage South Building**						
System:	**HVAC**	**Total Cost: $5,000**					
D3090	**Other HVAC Systems and Equipment**						
		Police Garage North has a vehicle engine exhaust system. An identical system at Police Garage South may increase future flexibility.	Install vehicle engine exhaust system at Police Garage South.	1.00	$5,000.00	ls	$5,000

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Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site **Total Site Opportunity Cost: $3,047,024**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Police Garage South Building**						
System:	**Electrical**	**Total Cost: $5,000**					
D5010	**Electrical Service and Distribution**						
		Existing 50-amp service provides minimal furute flexibility. An upgrade to 125-amp will greatly increase ability to add future loads.	Upgrade to 125-amp service.	1.00	$5,000.00	ls	$5,000
Facility:	**Public Safety Building**						
System:	**Exterior Closure**	**Total Cost: $1,800,000**					
B2010	**Exterior Walls**						
		1990 code minimum insulation in thermal envelope. Opportunity to improve occupant thermal comfort and reduce energy use by bringing some or all thermal envelope systems to at least current energy code in conjunction with other repairs recommended by this Facility Condition Assessment.	Upgrade thermal envelope to current code including additions of encapsulated blanket insulation to underside of roof, furring out all water damaged walls, and replacing failed/failing windows.	60,000.00	$30.00	sf	########
Facility:	**Public Safety Building**						
System:	**HVAC**	**Total Cost: $158,000**					
D3030	**Cooling Generating Systems**						
		Large quantities of rain and especially ground water are reportedly pumped much of the year. The water may be used for cooling the building, and possibly even heating in conjunction with water source heat pumps (WSHP).	Install ground water heat recovery system.	1.00	$25,000.00	ls	$25,000
		Reduce energy use by varying condenser water loop flow based or water source heat pump (WSHP) condenser water demand.	Provide water source heat pump (WSHP) condenser water flow control valves (two-way) at each WSHP. Install variable frequency drive (VFD) at condensing water pipe.	2.00	$10,000.00	ea	$20,000
D3040	**HVAC Distribution Systems**						
		No economizer for free cooling.	Retrofit economizer per current energy code for free cooling.	1.00	$60,000.00	ls	$60,000
		No heat recovery from data center/communications room cooling. During heating season, heat can be recovered from data center/communications room to heat other spaces.	Install heat recovery systems.	3.00	$5,000.00	ea	$15,000

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Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site **Total Site Opportunity Cost: $3,047,024**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
		Code minimum water source heat pumps (WSHP).	Upgrade to high-efficiency water source heat pumps (WSHP) when replaced.	38.00	$1,000.00	ea	$38,000
Facility:	**Public Safety Building**						
System:	**Electrical**	**Total Cost: $415,600**					
D5020	**Lighting and Branch Wiring**						
		Firing range lighting fixtures are open type fluorescent industrial fixtures; not suitable for the environment uses. Dirt accumulates quickly. High maintenance.	Replace existing fluorescent open reflector lights with vapor lens light emitting diode (LED) 1x4 fixtures and controls.	24.00	$650.00	ea	$15,600
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Existing CCTV system is out of date.	Replace existing CCTV system with digital, network DVR equipment and high definition cameras.	1.00	$400,000.00	ls	$400,000
Facility:	**Senior Center Building**						
System:	**Exterior Closure**	**Total Cost: $152,000**					
B2010	**Exterior Walls**						
		Existing stucco walls are in need of current repair and on-going maintenance. Walls are batt insulated only. Opportunity to replace skin with metal panels and/or masonry including current code rigid insulation.	Remove existing stucco and replace with metal panels over 2-inch (R-10) continuous rigid insulation.	5,000.00	$30.00	sf	$150,000
B2020	**Exterior Windows**						
		Existing punched-opening windows do not have sill pans. Opportunity to upgrade to sill pane for additional protection against future leakage.	When windows are replaced, upgrade to include sill pane.	10.00	$200.00	sf	$2,000
Facility:	**Senior Center Building**						
System:	**HVAC**	**Total Cost: $64,000**					
D3020	**Heat Generating Systems**						
		Condenser water system is constant volume. Retrofit variable capacity system to improve energy efficiency.	Install two-way water source heat pump (WSHP) control valves and variable frequency drive (VFD) for pumps.	2.00	$5,000.00	ea	$10,000
D3040	**HVAC Distribution Systems**						
		No outside air economizer for free cooling and improved indoor air quality.	Retrofit economizer at all water source heat pumps (WSHP).	18.00	$3,000.00	ea	$54,000

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Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site **Total Site Opportunity Cost: $3,047,024**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Senior Center Building**						
System:	**Electrical**	**Total Cost: $104,500**					
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Out of date security alarm system.	Upgrade security alarm system with new addressable system.	22,000.00	$2.00	ls	$44,000
		Out of date fire alarm equipment.	Upgrade new fire alarm system with new addressable system.	22,000.00	$2.75	ls	$60,500

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Facility Summary

City of Redmond
Old Fire House Teen Center Site
Old Fire House Teen Center Building

16510 NE 79th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	8,600
Year Of Original Construction	1952
Facility Use Type	Community Center
Construction Type	Heavy
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2000
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.4**			
Facility Condition Index (FCI)	0.22			
Current Replacement Value (CRV)	$4,144,000	**Predicted Renewal Budget (6 yrs)**	$909,000	$865,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$2,024,000	$1,812,000
		Observed Deficiencies (6 yrs)	$520,000	$502,000
		Observed Deficiencies (ALL)	$520,000	$502,000
		Opportunity Total Project Cost	$1,286,000	N/A

Facility Condition Summary

Architectural:
The Facility Condition Assessment team was told, "This is the oldest, darkest, grimiest place for teens to go in Redmond." The building has served as City Hall, Fire and Police Station, YMCA, and as a community teen center. It needs to be refreshed, remodeled, and reconfigured to address the Teen Center mission. Building went through a comprehensive seismic retrofit in 2000. The inclusion of hose tower needs to be verified.

Electrical:
Old Fire House Teen Center building's electrical service is 120/208V IP, 3-wire overhead service from Puget Sound Energy pole mounted transformer, 37.5-kva rated. Building interior lighting is all fluorescent, T8 lamps, 2x4 troffer in offices; open reflector industrial in storage; and 1x4 wrap around fixtures in hallway. Building exterior lights are wall mounted high pressure sodium (HPS) wall pack, to provide lighting to building perimeter and parking area. Branch wiring devices are old and has insufficient outlets. Building fire alarm system and security alarm system are outdated and small capacity but are working. Building has battery pack emergency wall lights. In general, the building's electrical systems are working at marginal capacity, except the fluorescent lamps, main electrical service and main panels, along with two (2) newer branch panels; all other electrical systems are old and outdated.

Mechanical:
Original construction in 1952 for use as Redmond City Hall, Police, and Fire Station. Tenant improved approximately 1980 for use by YMCA. Use changed to Teen Center in the late 1990s. Tenant improvement in 2000 as Teen Center including: seismic retrofit; conversion of north garage addition to sound room/studio; ADA toilet room with shower; vinyl composition tile floor and carpet; outside paint; new main electrical panel (400 amp); darkroom; kitchen; and north storm drain improvement. In 2004 new torch down roof installed and awnings added. New computer lab in 2006. HVAC is four (4) gas fired unit heaters, one roofing gas-pack unit, several resistance wall heaters, natural ventilation via operable windows and doors and exhaust fans for toilet rooms.
Plumbing is city water and sewer with gas-fired domestic hot water heaters.
Fire sprinkler is from city services and is a dry pipe system throughout.

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Facility Summary

City of Redmond
Old Fire House Teen Center Site
Old Fire House Teen Center Building

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1952	1952	3	17	RD 08/22/13	Poured in place concrete. No deficiencies observed.
A1030 Slab On Grade						
	1952	1952	3	17	RD 08/22/13	Concrete slab floor.
Basements						
A2020 Basement Walls						
	1952	1952	3	20	RD 08/22/13	Very small basement area under hose tower with 2-foot wide by 3-foot high tunnel to kitchen area. Reportedly abandoned in place; all original MEP (mechanical, electrical, plumbing) distribution rerouted above grade around 1990.
B Shell			**3.2**			
Superstructure						
B1020 Roof Construction						
	1952	1952	3	17	RD 08/22/13	Wood deck on wood and steel beams on steel columns. Roof deck over multipurpose room has been damaged by earlier leaks.
Exterior Closure						
B2010 Exterior Walls						
	1952	2000	3	10	RD 08/22/13	Exterior stucco with rock aggregate on block cement board siding. Stucco is wearing well. Cement board is failing.
B2020 Exterior Windows						
	1952	1952	4	3	RD 08/22/13	Original metal frame, single pane windows. Windows are allowing air infiltration and some water which produces condensation; silicon caulk holding Plexiglas panes in some frames.
B2030 Exterior Doors						

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Facility Summary

City of Redmond
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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**3.2**				
Exterior Closure							
B2030 Exterior Doors							
	1952	1952	3	5	RD	08/22/13	Hollow metal doors. No deficiencies noted. Doors are worn but currently functional.
Roofing							
B3010 Roof Coverings							
	1952	2004	3	16	RD	08/22/13	Torch down roof. In good condition. Coating may extend roof life.
B3020 Roof Openings							
	1952	1952	3	30	RD	08/22/13	Limited roof openings. No exception.
B3030 Projections							
	1952	2004	3	15	RD	08/22/13	Awnings. Main awning is in good condition. Smaller red awnings need new covers.
C Interiors			**3.4**				
Interior Construction							
C1010 Partitions							
	1952	1952	3	10	RD	08/22/13	Partitions on frame or masonry with lath and plaster. Wall structure has no deficiencies.
C1020 Interior Doors							
	1952	1952	4	1	RD	08/22/13	Interior wood doors and frames. Doors damaged or missing. Frames damaged.
C1030 Fittings							
	1952	1952	3	5	RD	08/22/13	Counters and vanities. Counters and vanities are aged and dated but functional.

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Facility Summary

City of Redmond
Old Fire House Teen Center Site
Old Fire House Teen Center Building

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
C Interiors			**3.4**				
Interior Finishes							
C3010 Wall Finishes							
	1952	2000	3	2	RD	08/22/13	Wall paint is random, aged, discolored, and worn. Repaint majority of surfaces.
C3020 Floor Finishes							
	1952	2000	3	8	RD	08/22/13	Vinyl composition tile (VCT), carpet, and rubber tile. Except for carpet in storage rooms, floors are in good condition under heavy use.
C3030 Ceiling Finishes							
	1952	1980	4	5	RD	08/22/13	Open ceilings, suspended acoustical ceiling tile (ACT). Suspended ceilings are dated, lack sway braces and struts, and have broken tiles.
D Services			**3.6**				
Vertical Transportation							
D1090 Other Conveying Systems							
	1952	1952	5	0	DCS	08/22/13	No roof access. Provide roof access to facilitate maintenance.
Plumbing							
D2010 Plumbing Fixtures							
	1952	1980	4	3	DCS	08/22/13	Porcelain, fiberglass, and stainless steel plumbing fixtures with chrome trim. Plumbing fixtures are worn, damaged, slow draining, slow flushing, discolored, leaking, outdated, and mismatched.
D2020 Domestic Water Distribution							
	1952	1980	4	5	DCS	08/22/13	City water with mix of older galvanized and newer copper distribution piping. 1991 gas domestic hot water (DHW) heater. Irrigation system with reduced pressure backflow preventers from domestic cold water.

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City of Redmond
Old Fire House Teen Center Site
Old Fire House Teen Center Building

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.6**			
Plumbing						
D2020 Domestic Water Distribution						Marginal water pressure and taste. Domestic hot water (DHW) heaters are at end of useful life. DHW piping is uninsulated. DHW heaters and distribution piping do not meet several code requirements. Hose bibs are not frost free.
D2030 Sanitary Waste	1952	1952	4	5	DCS 08/22/13	City sewer service is a mix of cast iron and ABS drain, waste, and vent (DW&V) piping. Several floor drains in toilet rooms. Plumbing fixtures are slow draining and flushing. Screens in vents-to-roofs (VTR) may be a code violation.
D2040 Rain Water Drainage	1952	1980	4	5	DCS 08/22/13	Entire multi-level roof sheet flows to north to two (2) sets of gutters; one (1) east and one (1) west, each with one (1) downspout. Gutter is narrow and damaged. Downspouts are made of multiple materials. A second downspout should be added to each gutter to increase capacity and reliability.
D2090 Other Plumbing Systems	1952	2000	5	0	DCS 08/22/13	Dark room equipment and systems including plumbing support. Dark room appears abandoned in place but chemicals and support system remain in place. Hazardous materials and chemicals should be removed.
HVAC						
D3010 Energy Supply	1952	1980	3	10	DCS 08/22/13	Natural gas from Puget Sound Energy via Meter Number 804490 with 425-cfh capacity; gas distribution to four (4) unit heaters and one (1) rooftop gas-pack unit. No seismic valve at gas service entry. Some gas piping may be below grade/foundation. Less than $2,000 to address.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.6**				
HVAC							
D3030 Cooling Generating Systems							
	1952	1952	5	0	DCS	08/22/13	No cooling systems, except roof top units serving sound room/studio. Cooling should be provided for the staff administration area and computer rooms as a minimum. Opportunity for enhanced natural ventilation using hose tower.
D3040 HVAC Distribution Systems							
	1952	1980	5	0	DCS	08/22/13	Minimal HVAC for all areas except sound room/studio. Currently, most spaces are heated by gas-fired unit heaters, electric wall heaters, and naturally ventilated via operable windows and doors. Opportunity to install an HVAC system more suitable for current use. No exhaust fan kitchen. Unknown exhaust chemical containing darkroom. No HVAC service for vault and most storage rooms.
D3050 Terminal and Package Units							
	1952	2000	3	7	DCS	08/22/13	Four (4) gas-fired vented ceiling mounted unit heaters serving large spaces (multipurpose, activity, and game room). One (1) roof top unit gas-pack with rooftop internally insulated galvanized sheet metal ductwork. Surface mounted electric resistance wall heaters for administration and computer areas. Equipment is in fair to good condition. No discrete source of combustion air for unit heaters. Marginal comfort as detailed in "HVAC Distribution Systems" section above.
D3060 Controls and Instrumentation							
	1952	2000	3	3	DCS	08/22/13	Programmable thermostats for unit heaters and manual thermostats for wall heaters. Reverse acting manual thermostat for computer room transfer air fan. Thermostats are aging. Opportunity to upgrade to DDC in conjunction with all new HVAC system suggested in "HVAC Distribution Systems" section above.
Fire Protection							

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.6**			
D4010 Fire Protection Sprinkler Systems						
	1990	1990	3	17	DCS 08/22/13	There is a 4-inch fire service from city with post indicator valve (PIV) and fire department connection (FDC) in yard to southwest. One (1) 3-inch dry pipe riser serving entire building including outside sprinkler head under multipurpose room garage door awning. Service pressure is at 95-psig; air pressure is at 40-psig. Fire sprinkler riser room is dirty and used for storage, but riser is accessible. Sprinkler piping used to support various items in some locations (especially in the multipurpose room). Move items away from sprinkler riser and mark clear area on floor (less than $2,000).
D4030 Fire Protection Specialties						
	1990	1990	3	7	DCS 08/22/13	Fire extinguishers in plastic cabinets. Automatic external defibrillator (AED) in cabinets. First aid kit in administration area. Plastic cabinets are aging and discolored, but functional. Fire extinguisher tags are mostly current (outside units are out of date); (less than $2,000).
Electrical						
D5010 Electrical Service and Distribution						
	1952	2000	3	27	RA 08/22/13	Electrical panel MDP (main distribution panel) is in custodian room; 400A, 120/280v IP, 3-wire system, subfeeds two (2) newer Square-D branch panels and other small older Square-D load center in the building. All panels are breaker type. The main MDP panel and two (2) branch panels installed in 2000 and are in good condition. Service was upgraded to 400A, 120/280V. There are about four (4) Square-D load centers in storage room apparatus bay which are small and outdated; needs replacement.
D5020 Lighting and Branch Wiring						
	1952	2000	3	17	RA 08/22/13	Interior lighting is all fluorescent by manual control with switches; fixtures consist of 2x4 troffer, fluorescent industrial, recess down lights 1x4 wrap around. Lamps are T8. Fixtures are old, over 20 years. Exterior lighting is wall pack fixtures, high pressure sodium (HPS) lamps with

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City of Redmond
Old Fire House Teen Center Site
Old Fire House Teen Center Building

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.6**			
Electrical						
D5020 Lighting and Branch Wiring						insufficient coverage. All electrical branch wiring and devices are old, over 20 years, and at end of life. Interior lighting is generally working; fixtures are over 20 years and should be upgraded (including controls) in the next 5 years. Exterior lighting is insufficient, poorly installed, marginal wiring method; should be upgraded to provide sufficient lighting around the building. Insufficient electrical outlets throughout building.
D5030 Low Voltage Communication Security and Fire Alarm						
	1952	1990	3	5	RA 08/22/13	Building has a Cat-6 data/voice system with IDF (intermediate distribution frame) in janitor room; in working condition. The building has a small fire alarm system, Fire-Lite #5012, 4-zones, hard wired system. Fire alarm device consists of horn strobes, pull station, and old heat detectors. The building has a small security alarm system which consists of motion detectors and keypad. Fire alarm system and security alarm system are outdated but working. Recommend replacement in the next 5 years.
D5090 Other Electrical Systems						
	1952	1990	3	10	RA 08/22/13	Building has no emergency generator. Building emergency lights are battery backup type wall mounted units. Building emergency lights are located inside building egress paths. Some hallways, large rooms, and exterior door areas do not have emergency lights.
E Equipment and Furnishings			**3.0**			
Equipment						
E1020 Institutional Equipment						
	1952	2004	3	5	RD 08/22/13	Recording equipment. Older equipment; functional.
Furnishings						

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Facility Summary

City of Redmond
Old Fire House Teen Center Site
Old Fire House Teen Center Building

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
E Equipment and Furnishings			**3.0**				
E2010 Fixed Furnishings							
	1952	2004	3	3	RD	08/22/13	Vinyl blinds. No deficiencies.
E2020 Moveable Furnishings (Capital Funded Only)							
	1952	2004	3	3	RD	08/22/13	Office and casual furniture. Worn and aged but functional.
F Special Construction							
Special Construction							
F1010 Special Structures							
	1952	1952	3	10	RD	08/22/13	Hose drying tower. Tower leaks water into building. Recommend further investigation. Building has obvious seismic retrofit except for hose tower. Status of tower's seismic resistance as noted in presumed seismic report should be verified.
F1030 Special Construction Systems							
	2000	2000	3	7	RD	08/22/13	Sound room with recording studio equipment. While sound equipment and instruments are aging, reportedly they are donated so not carried as a cost item under this Facility Condition Assessment.

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Facility Summary

City of Redmond
Old Fire House Teen Center Site
Old Fire House Teen Center Infrastructure

16510 NE 79th Street
Redmond, WA 98052

Facility Condition Summary

The Old Fire House Teen Center site extends between NE 79th and NE 80th Streets. It includes two asphalt parking lots and a large fenced in outdoor patio area. There is a smaller patio of pavers near the front door. The site includes a paved basketball court and lawn area, and a gravel area at the rear for storm water infiltration. The building is served by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2020 Parking Lots							
	1952	1980	3	5	MK	08/21/13	Asphalt parking lot at north side of building for approximately 25 vehicles. Portion of the lot is an old concrete slab. Small parking lot on east side of building is deteriorating and lacks markings. ADA stalls do not have pavement markings but have signs. Parking lot on east side needs patching and striping.
G2030 Pedestrian Paving							
	1952	1980	3	10	MK	08/21/13	Large concrete patio at front of building. Asphalt walkways at rear of building. Patio is in good condition with some cracking. Asphalt areas are in good condition.
G2040 Site Development							
	1952	1980	2	10	MK	08/21/13	Picnic tables throughout. Basketball court at rear of building. All features are in good condition.
G2050 Landscaping							
	1952	1980	3	10	MK	08/21/13	Limited site landscaping, primarily grass and mature trees. Small vegetable area. Landscaping is in fair condition. Irrigation control valve is by the front door. Unclear if irrigation is operational.
Site Civil / Mechanical Utilities							
G3010 Water Supply							

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Facility Summary

City of Redmond
Old Fire House Teen Center Site
Old Fire House Teen Center Infrastructure

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Civil / Mechanical Utilities							
	1952	1980	3	10	MK	08/21/13	Domestic water and fire sprinkler supply from the City of Redmond system. No known issues.
G3020 Sanitary Sewer							
	1952	1980	3	10	MK	08/21/13	Building sanitary sewer connects to City of Redmond system. No known issues.
G3030 Storm Sewer							
	1952	2000	3	10	MK	08/21/13	Roof runoff discharges by downspout onto ground and to underground piping. Parking lot and site runoff is collected in catch basins and area drains and conveyed to City of Redmond system. There appears to be a gravel infiltration area at the rear of the building. No known issues.
G3060 Fuel Distribution							
	1952	1980	3	10	MK	08/21/13	Natural gas meter with seismic valve located near front entry. No known issues.
Site Electrical utilities							
G4010 Electrical Distribution							
	1952	2000	3	10	MK	08/21/13	Service to building from Puget Sound Energy; reportedly upgraded to 400-amp service in year 2000. No issues reported or observed.
G4020 Site Lighting							
	1952	2004	3	20	MK	08/21/13	Wall lights on all sides of the building. Pole lights throughout site and in parking areas. Some lighting is reported to be marginal, although there are a lot of exterior fixtures. Upgrades/repairs probably warranted. (See building's electrical sections.)

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Old Fire House Teen Center Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Old Fire House Teen Center Building	Superstructure	$3,500	$1,050	$910	$2,730	$8,190	$7,584
	Exterior Closure	$46,100	$13,830	$11,986	$35,958	$107,874	$105,387
	Roofing	$2,250	$675	$585	$1,755	$5,265	$4,970
	Interior Construction	$36,900	$11,070	$9,594	$28,782	$86,346	$83,936
	Interior Finishes	$23,800	$7,140	$6,188	$18,564	$55,692	$53,591
	Vertical Transportation	$2,500	$750	$650	$1,950	$5,850	$5,850
	Plumbing	$61,800	$18,540	$16,068	$48,204	$144,612	$135,428
	HVAC	$27,650	$8,295	$7,189	$21,567	$64,701	$64,348
	Electrical	$14,100	$4,230	$3,666	$10,998	$32,994	$32,994
	Special Construction	$3,500	$1,050	$910	$2,730	$8,190	$7,881
	Facility Total	**$222,100**	**$66,630**	**$57,746**	**$173,238**	**$519,714**	**$501,967**
Old Fire House Teen Center Infrastructure	Site Improvements	$5,000	$1,500	$1,300	$3,900	$11,700	$10,834
	Facility Total	**$5,000**	**$1,500**	**$1,300**	**$3,900**	**$11,700**	**$10,834**
	Site Total	**$227,100**	**$68,130**	**$59,046**	**$177,138**	**$531,414**	**$512,802**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Fire House Teen Center Site

Total Observed Deficiency Repair Direct Cost : $227,100

Total Observed Deficiency Repair Direct Cost (Present Value): $219,146

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Fire House Teen Center Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$3,500**
System: Superstructure						**Total System Deficiency Repair Cost (Present Value):**		**$3,241**
Roof Construction								
Wood Deck	4	4 2013	Wood roof deck in multipurpose room has water damage; some boards are loose and need repair.	Repair deck, pressure wash, and repaint.	1	$3,500.00	ls	$3,500
Facility: Old Fire House Teen Center Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$46,100**
System: Exterior Closure						**Total System Deficiency Repair Cost (Present Value):**		**$45,037**
Exterior Walls								
Cement Board Siding	4	1 2013	Cement board siding near main entry has failing seals and attachments.	Remove and repair underlying walls.	250	$100.00	sf	$25,000
Exterior Windows								
Windows	4	1 2013	Single glazed metal frame windows with caulked in fiberglass: condensation accumulates during winter, air infiltrates, and leaks water.	Remove and replace windows.	28	$575.00	ea	$16,100
Exterior Doors								
Exterior Doors	4	3 2013	Doors worn but functional.	Schedule door replacement at end of life.	5	$1,000.00	ea	$5,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Fire House Teen Center Site

Total Observed Deficiency Repair Direct Cost : $227,100

Total Observed Deficiency Repair Direct Cost (Present Value): $219,146

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Fire House Teen Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,250**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$2,124**
Projections								
Awnings	4	3 2013	Small red awnings are decorative and color has faded.	Remove and replace awnings.	5	$450.00	ea	$2,250
Facility: Old Fire House Teen Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$36,900**
System: Interior Construction				**Total System Deficiency Repair Cost (Present Value):**				**$35,870**
Interior Doors								
Wood Doors and Frames	4	1 2013	Severely damaged wood doors and frames. Damage from impact or misuse.	Remove and replace doors in existing frames. Provide new hardware.	18	$1,800.00	ea	$32,400
Fittings								
Fittings	4	5 2013	Several counters and vanities are aged and worn more than others.	Schedule counter and vanity renewals.	3	$1,500.00	ea	$4,500
Facility: Old Fire House Teen Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$23,800**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$22,902**
Wall Finishes								
Paint	4	2 2013	Much of painted wall surface is aged, discolored, and worn.	Repair surfaces and repaint.	1	$15,000.00	ls	$15,000
Ceiling Finishes								
Suspended Ceiling	4	2 2013	Suspended ceiling lacks sway bracing and struts; tiles are broken and system is dated.	Replace suspended ceiling.	1,600	$5.50	sf	$8,800

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Fire House Teen Center Site

Total Observed Deficiency Repair Direct Cost : $227,100

Total Observed Deficiency Repair Direct Cost (Present Value): $219,146

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Fire House Teen Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$2,500**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$2,500**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access to maintain roof and rooftop equipment.	Install man-door from existing hose tower to roof.	1	$2,500.00	ea	$2,500
Facility: Old Fire House Teen Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$61,800**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$57,875**
Plumbing Fixtures								
Plumbing Fixtures	4	3 2013	Many fixtures heavily worn and/or damaged with marginal function. Water closets, urinals, lavatories, sinks, drinking fountains, showers, and others.	Replace plumbing fixtures.	12	$3,000.00	ea	$36,000
Domestic Water Distribution								
Drain, Waste, and Vent	4	5 2013	Slow draining and flushing fixtures.	Clean, inspect, and repair or replace drain, waste, and vent system as necessary.	8,650	$2.00	sf	$17,300
Rain Water Drainage								
Gutter and Downspout	4	5 2013	Narrow damaged gutters and single downspout from each gutter.	Install wide (6-inch) gutter and two (2) downspouts for each gutter.	100	$35.00	lf	$3,500
Other Plumbing Systems								
Dark Room System	5	0 2013	Abandoned photo chemicals and system.	Properly dispose of abandoned chemicals and contaminated equipment and systems. Demo or lay-up as needed.	1	$5,000.00	ls	$5,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Fire House Teen Center Site

Total Observed Deficiency Repair Direct Cost : $227,100

Total Observed Deficiency Repair Direct Cost (Present Value): $219,146

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Fire House Teen Center Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$27,650**
System: HVAC						**Total System Deficiency Repair Cost (Present Value):**		**$27,499**
Cooling Generating Systems								
Cooling	5	0 2013	No cooling for administration and computer room areas.	Provide cooling.	1,000	$15.00	sf	$15,000
HVAC Distribution Systems								
Ventilation	5	0 2013	No exhaust for kitchen. Unclear exhaust for dark room. No exhaust for several storage rooms.	Provide code minimum ventilation and exhaust for all spaces.	8,650	$1.00	sf	$8,650
Terminal and Package Units								
Unit Heaters	4	2 2013	No discrete combustive air source for unit heaters. Combustive air is drawn from the served space.	Provide combustive air to unit heaters.	4	$1,000.00	ea	$4,000
Facility: Old Fire House Teen Center Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$14,100**
System: Electrical						**Total System Deficiency Repair Cost (Present Value):**		**$14,100**
Electrical Service and Distribution								
Electrical Panels	5	0 2013	Existing branch panel load centers have insufficient capacity and are outdated.	Replace existing outdated branch panel load centers.	4	$400.00	ea	$1,600
Other Electrical Systems								
Emergency Lighting	5	0 2013	Battery backup emergency wall lights are missing in hallways, large rooms, and building exterior doors.	Add emergency lights in hallways, large rooms, multipurpose room, and building exterior doors.	25	$500.00	ea	$12,500

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Fire House Teen Center Site

Total Observed Deficiency Repair Direct Cost : $227,100

Total Observed Deficiency Repair Direct Cost (Present Value): $219,146

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Fire House Teen Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,500**
System: Special Construction				**Total System Deficiency Repair Cost (Present Value):**				**$3,368**
Special Structures								
Hose Drying Tower	4	2 2013	Hose drying tower leaks water into building under east wall.	Recommend further investigation of tower.	1	$3,500.00	ls	$3,500
Facility: Old Fire House Teen Center Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$4,630**
Parking Lots								
Parking Lot	2	4 2013	East parking lot pavement is deteriorating and lacks striping.	Provide approximately 100 sy of pavement removal and replacement. Provide pavement markings for stalls and ADA.	1	$5,000.00	ls	$5,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Old Fire House Teen Center Site **Total Site Opportunity Cost: $549,725**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Old Fire House Teen Center Building**						
System:	**Superstructure**	**Total Cost: $77,850**					
B1020	**Roof Construction**						
		Building has no insulated roof construction.	Insulate under roof.	8,650.00	$9.00	sf	$77,850
Facility:	**Old Fire House Teen Center Building**						
System:	**Exterior Closure**	**Total Cost: $68,000**					
B2010	**Exterior Walls**						
		Building exterior walls are uninsulated.	Fur-out and insulate exterior walls. Assume 2x6 multi-stud with R-21 batt insulation and painted gypsum wall board (GWB).	3,400.00	$20.00	sf	$68,000
Facility:	**Old Fire House Teen Center Building**						
System:	**Interior Finishes**	**Total Cost: $60,200**					
C3020	**Floor Finishes**						
		Current tile and carpet will wear out over the next 5 to 10 years. Opportunity to simplify with polished concrete.	Upon end of life for tile and carpet, polish concrete slab on grade floors in lieu of re-covering.	8,600.00	$7.00	sf	$60,200
Facility:	**Old Fire House Teen Center Building**						
System:	**Plumbing**	**Total Cost: $45,000**					
D2040	**Rain Water Drainage**						
		With interior roof drains, crawl space and lightly used basement are opportunities for rain water harvesting system at modest cost.	Install rain water harvesting system to supply flushing water to toilets and urinals.	15,000.00	$3.00	gal	$45,000
Facility:	**Old Fire House Teen Center Building**						
System:	**HVAC**	**Total Cost: $105,950**					
D3030	**Cooling Generating Systems**						
		Natural ventilation is currently via operable windows and doors only. The abandoned in place hose tower may be cleaned and configured for enhanced natural ventilation of much of the Teen Center.	Clean hose tower. Install louvers from occupied spaces to base of tower. Install relief hood at top of tower.	1.00	$10,000.00	ls	$10,000
D3040	**HVAC Distribution Systems**						

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Old Fire House Teen Center Site **Total Site Opportunity Cost: $549,725**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
		Current HVAC system of unit heaters and natural ventilation is typical of semi-heated shop or warehouse space, not for human occupancy.	Install a code compliant HVAC system suitable for full heating and cooling.	7,000.00	$10.00	sf	$70,000
D3060	**Controls and Instrumentation**						
		Opportunity to install new DDC control system in conjunction with new HVAC for current use suggested in "HVAC Distribution Systems" section.	Install new DDC controls in conjunction with new HVAC system.	8,650.00	$3.00	sf	$25,950
Facility:	**Old Fire House Teen Center Building**						
System:	**Electrical**	**Total Cost: $142,725**					
D5020	**Lighting and Branch Wiring**						
		Old, outdated lighting fixtures and control switches. Lighting has no automatic lighting controls.	Upgrade building lighting and controls.	8,650.00	$7.00	sf	$60,550
		Old branch building wiring and devices are outdated are insufficient.	Upgrade building branch wiring and devices.	8,650.00	$6.00	sf	$51,900
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Existing security alarm system is small capacity and outdated.	Upgrade security alarm system to addressable system.	8,650.00	$1.50	sf	$12,975
		Existing fire alarm system is small capacity and outdated.	Upgrade fire alarm system to addressable system.	8,650.00	$2.00	sf	$17,300
Facility:	**Old Fire House Teen Center Building**						
System:	**Furnishings**	**Total Cost: $40,000**					
E2020	**Moveable Furnishings (Capital Funded Only)**						
		All furnishings are worn, dated, and unattractive. New furnishings would support the Teen Center programs.	Replace furnishings.	1.00	$40,000.00	ls	$40,000
Facility:	**Old Fire House Teen Center Building**						
System:	**Special Construction**	**Total Cost: $10,000**					
F1030	**Special Construction Systems**						
		Abandoned in place hose drying tower currently used mostly as an unapproved graffiti gallery. Opportunity to do something creative with the tower: 1) indoor rock climbing wall; 2) short bungee jump; or 3) other innovative idea.	Allowance for creative re-use of tower.	1.00	$10,000.00	ls	$10,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

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Facility Summary

City of Redmond
Old Redmond School House Community Center Site
Old Redmond School House Community Center Building

16600 NE 80th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	41,700
Year Of Original Construction	1922
Facility Use Type	Community Center
Construction Type	Medium
# of Floors	2
Energy Source	Gas
Year Of Last Renovation	1980
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.0**			
Facility Condition Index (FCI)	0.17			
Current Replacement Value (CRV)	$18,433,000	**Predicted Renewal Budget (6 yrs)**	$1,264,000	$1,227,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$9,029,000	$7,735,000
		Observed Deficiencies (6 yrs)	$3,047,000	$2,932,000
		Observed Deficiencies (ALL)	$3,047,000	$2,932,000
		Opportunity Total Project Cost	$3,096,000	N/A

Facility Condition Summary

Two floors with partial basement.

Architectural:
High school built in 1922, elementary signed as 1925, gym built in 1950. Building is in surprisingly good condition. Metal and wood siding and roof need work. Metal caps on parapets need cleaning and paint. Some floor tile needs replacement. Wood windows in gym are nearing failure. Single glazed wood windows in main building present an opportunity to save energy.

Electrical:
The Old Redmond School House Community Center building has a new 1200A 208/120v electrical service served by Puget Sound Energy. Building has full fluorescent lighting system for interior lighting, and has outdated high intensity discharge (HID) exterior lighting system. The building has small capacity fire alarm system and small capacity security alarm system. The building has no paging system or card access system. Overall, the systems are working and are in good to fair condition.

Mechanical:
The Old Redmond School House was built as a high school in 1922. An elementary school addition was added to the east in 1923. They gym was constructed in 1950 to the north. It appears a modernization was completed around 1980. Lake Washington School District closed the school in the 1990's and in 2000 leased for 40 years to the City of Redmond as a community center. Prior to occupancy, the city made a number of improvement in 2000, including new elevator, roof repair, new carpet, fire sprinklers, air conditioning for staff offices, asbestos abatement in crowd spaces, and more. In 2004, a new electrical service was installed. In 2006, a new chiller was added to provide air conditioning for the auditorium and several other spaces; the commercial kitchen was also replaced. Despite all the above renewals, many more are needed, and opportunities abound.
HVAC includes two 92) gas-fired steam boilers, steam radiators, unit ventilators, and steam heating coils at air handling units; one (1) newer air cooled chiller serving cooling coils at newer auditorium air handling units and four (4) other spaces; roof top unit gas-packs for administration area and general and specific exhaust.
Plumbing is city water and sewer with old failing plumbing fixtures, but some newer domestic hot water heaters.
Fire sprinklers throughout with both wet and dry pipe system.

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City of Redmond
Old Redmond School House Community Center Site — **16600 NE 80th Street**
Old Redmond School House Community Center Building — **Redmond, WA 98052**

Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
A Substructure			**3.0**				
Foundations							
A1010 Standard Foundations							
	1922	1922	3	30	RD	08/22/13	Poured in place concrete. Foundation appears to be in good condition. Limited cracks and no observed differential settlement.
Basements							
A2020 Basement Walls							
	1950	1950	3	25	RD	08/22/13	Concrete basement walls. Wood at crawl separations. No concerns noted.
B Shell			**3.0**				
Superstructure							
B1010 Floor Construction							
	1922	1922	3	25	RD	08/22/13	Wood frame 2x10 joists, built up beams, concrete beam wall support. Floors appear to be solid and free of undue deflection.
B1020 Roof Construction							
	1922	1950	3	25	RD	08/22/13	Gym roof steel purlins on steel trusses. Wood roof deck. Original building wood deck on 2x10's on wood frame. No concerns observed.
Exterior Closure							
B2010 Exterior Walls							
	1922	1950	3	30	RD	08/22/13	Brick and concrete walls in good condition. Wood siding and plywood at gym and rear needs maintenance and paint. Metal siding has lost paint and galvanizing. Hardie board at gym is broken and needs repair. All wood siding needs to be pressure washed, repaired where necessary, and painted. All metal needs to be cleaned, re-galvanized, and painted.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.0**			
Exterior Closure						
B2020 Exterior Windows	1922	1994	3	30	RD 08/22/13	Administration and classroom windows were new before 2000. Original wood windows in gym and hallways of main building. Good condition except wood windows in gym.
B2030 Exterior Doors	1922	1980	3	17	RD 08/22/13	Hollow metal doors. Worn but functional.
Roofing						
B3010 Roof Coverings	1922	1980	3	10	RD 08/22/13	Torch down roof is in good condition for age. Metal roof at gym. Gym metal roof is rusting and will fail in the near future.
B3020 Roof Openings	1922	1990	3	15	RD 08/22/13	HVAC, plumbing, and access penetrations. No deficiencies noted.
B3030 Projections	1922	1922	3	5	RD 08/22/13	Metal caps and parapet walls. Parapets have been braced and are in good condition. Metal caps are rusting. Clean and paint metal caps.
C Interiors			**3.0**			
Interior Construction						
C1010 Partitions	1922	2000	3	35	RD 08/22/13	Wood frame partitions and walls with plaster or gypsum wallboard, fiberboard wainscot in halls. Walls in good condition. Some isolated repairs needed.
C1020 Interior Doors						

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.0**			
Interior Construction						
C1020 Interior Doors	1922	1980	3	10	RD 08/22/13	Doors are worn but functional. No deficiencies noted.
C1030 Fittings	1922	1980	3	5	RD 08/22/13	Chalk boards. Dated but functional. Most are unused.
Staircases						
C2010 Stair Construction	1925	1925	3	25	RD 08/22/13	Wood stairs with rubber treads and risers. No deficiencies noted.
C2020 Stair Finishes	1925	2010	2	14	RD 08/22/13	Rubber treads. No deficiencies observed.
Interior Finishes						
C3010 Wall Finishes	1922	2000	3	9	RD 08/22/13	Walls are painted gypsum wall board, plaster, or fiberboard. Most walls are in good condition with minor isolated repairs needed.
C3020 Floor Finishes	1922	2000	3	11	RD 08/22/13	Vinyl composition tile (VCT), carpet, wood floors. Floors are in acceptable condition except vinyl composition tile (VCT) in main halls.
C3030 Ceiling Finishes	1922	1980	3	10	RD 08/22/13	Glued on acoustical ceiling tile (ACT). Generally in good condition. Random tile needs replacement or to be reattached.
D Services			**3.1**			

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.1**				
Vertical Transportation							
D1010 Elevators and Lifts							
	2000	2000	3	20	DCS	08/22/13	One (1) Kone 20-hp hydraulic two-stop passenger elevator. One (1) stage accessible lift. Elevator operation is abrupt and disconcerting to users. No issues to report regarding stage lift.
D1090 Other Conveying Systems							
	1922	1980	3	10	DCS	08/22/13	Roof access via ladder and roof hatch from second floor janitor closet to northeast. While general roof access is good, additional small ladders on stairs are needed to facilitate access.
Plumbing							
D2010 Plumbing Fixtures							
	1950	1980	4	3	DCS	08/22/13	Mostly older (1950) but some newer (1980) plumbing fixtures. Water closets, urinals, and gang lavatories; porcelain with chrome trim. Stainless steel sinks. One-piece fiberglass shower enclosure. Electric cooled and non-cooled drinking fountains. Most fixtures are past end of useful life with discoloration, chips, cracks, leaks, slow flushing, show draining, and other issues. Primary grade fixtures not needed. Largely non-ADA compliant.
D2020 Domestic Water Distribution							
	1922	1980	4	5	DCS	08/22/13	City water service with unknown service entry. Mix of older galvanized and newer copper piping. At least one (1) newer gas-fired domestic hot water heater. Older steam-to-hot water converter is abandoned in place in the boiler room. Few or no hose bibs observed. Water taste is reportedly poor in most or all areas, is often discolored, and sometimes has odors. Some or all domestic hot water (DHW) piping is not insulated per code. Hose bibs may be missing for maintenance and grounds keeping.
D2030 Sanitary Waste							
	1922	1980	3	15	DCS	08/22/13	Cast iron bell and spigot drain, waste, and vent (DW&V) piping throughout. Gravity draining to

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.1**				
Plumbing							
D2030 Sanitary Waste							city sewer system. Floor drains in some toilet room and mechanical room areas. While older, the bell and spigot cast iron system is well built. Slow draining and flushing fixtures appear due more to the fixtures themselves than the drain, waste, and vent (DW&V) system. Vent-to-roofs (VTR) are lead capped.
D2040 Rain Water Drainage	1922	1980	3	10	DCS	08/22/13	Mix of internal roof drains with overflow scupper box and downspout, and gutter and downspout. Aging and in need of cleaning and maintenance, but functional when properly serviced. Replace most or all with next reroof. (See B-series.)
D2090 Other Plumbing Systems	1922	2006	2	20	DCS	08/22/13	New commercial kitchen system installed in 2006 including grease cooking equipment with grease hood. No kitchen wastewater grease interceptor observed. The new kitchen is reportedly little used and in good to excellent condition.
HVAC							
D3010 Energy Supply	1922	1980	3	10	DCS	08/22/13	Natural gas from Puget Sound Energy via 5,000-cfh rotary meter and seismic shutoff valve. Black iron pipe distribution to gas using heating equipment and appliances. No issues reported or observed.
D3020 Heat Generating Systems	1922	1950	3	10	DCS	08/22/13	Two (2) 2.5-mmbtu/h gas-fired fire-tube forced draft steam heating boiler in semi-detached basement mechanical (boiler) room. New flue stack installed approximately 1990. Two (2) 0.75-hp feed water pumps, one (1) 200-gallon feed water tank, and water chemistry control system. Boilers are aged and inefficient but functional. Asbestos insulation materials through boiler room.

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City of Redmond
Old Redmond School House Community Center Site — **16600 NE 80th Street**
Old Redmond School House Community Center Building — **Redmond, WA 98052**

Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.1**			
HVAC						
D3020 Heat Generating Systems						
D3030 Cooling Generating Systems						
	1980	2006	2	23	DCS 08/22/13	One (1) older rooftop condensing unit. One (1) newer Petra 100-ton air-cooled chiller in fenced yard at grade north of boiler room to east. Two (2) 7.5-hp variable frequency drive (VFD) driven chilled water pumps. Old condensing unit has failed with no cooling to several spaces. New chilled water system was freeze damaged due to low glycol concentration but was reportedly repaired. The new chiller is oversized for future load creating turn down levels.
D3040 HVAC Distribution Systems						
	1922	1980	3	7	DCS 08/22/13	One (1) Pace 1980 air handling unit (AHU) for gym with 2010 replaced steam heating coil. One (1) abandoned in place 1968 AHU on roof for auditorium. Gym air handling unit (AHU) is aging but functional; but only serves the east half of the gym resulting in occupant/user discomfort. The abandoned auditorium unit should be demolished and roof curb insulated and capped off. Corridor HVAC system is reportedly non-operable. Steam piping in unknown condition; likely with asbestos insulation.
D3050 Terminal and Package Units						
	1922	1980	4	5	DCS 08/22/13	Classroom unit ventilators in old classrooms. Cast iron steam radiators in corridors and toilet rooms. Roof top unit gas-packs serving administration areas. Steam unit heaters serving mechanical, electrical, plumbing (MEP) and utility rooms. Ceiling steam cast iron radiator(s) in basement storage room(s). Unit ventilators are past end of useful life, but may have life remaining if refurbished. Steam radiators are in fair condition and can operate 100 years if periodically serviced. The administration area roof top units are newer with 5 to 10 years of life remaining. Opportunity for partial cooling via unit ventilators.

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.1**				
HVAC							
D3060 Controls and Instrumentation							
	1922	1980	4	3	DCS	08/22/13	Mix of mostly older stand alone controls and some newer programmable thermostats and limited DDC controls (mostly for 2006 installed chilled water systems). Many controls appear inoperable and/or abandoned in place. Some of the newer controls are in better condition.
D3090 Other HVAC Systems and Equipment							
	1922	2006	2	17	DCS	08/22/13	Commercial kitchen's grease hood with rooftop exhaust fan and gas fired make-up air unit (MAU) installed in 2006. Two (2) kiln room oven exhaust hoods with exhaust fans and flex duct to side wall exhaust. Kitchen exhaust fan and make-up air unit in awkward but operable roof locations. Kiln exhaust is marginal; flex duct may be failing due to heat.
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
	1980	1980	3	10	DCS	08/22/13	City supplied 6-inch fire service with risers at northwest shop space. Pressure at 95-psig. Four (4) risers: two (2) wet and two (2) dry for unconditioned attic and crawl space. Sprinkler coverage appears weak in some areas. Risers are in fair to good condition for their age.
D4030 Fire Protection Specialties							
	1980	2000	3	17	DCS	08/22/13	Fire extinguishers, automated external defibrillators (AED), and first aid kits. Fire extinguisher inspections are current.
D4090 Other Fire Protection Systems							
	1980	2006	2	23	DCS	08/22/13	Kitchen grease hood fire suppression system. Hallways and stairwells appear to be egress corridors. Kitchen use appears to be minimal. Egress corridors and stairwell doors are not labeled as fire rated.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.1**			
Fire Protection						
D4090 Other Fire Protection Systems						
Electrical						
D5010 Electrical Service and Distribution						
	1922	2004	3	31	RA 08/22/13	Building electrical service, 1200A, 208/120V, 4-wire, served by Puget Sound Energy padmount transformer outside building, 225-kva rated. Building main service disconnect switch is 1200A, 208/120V, 4-wire, Cutler-Hammer 2004 equipment and is located outdoors. Electrical service was upgraded in 2004 with outdoor Nema-3R switchboard in good condition, with three (3) indoor panels added inside the electrical room. Electrical panels in other rooms, including hallway, art pottery, and storage rooms, are not as new (from 1980s); in fair working condition.
D5020 Lighting and Branch Wiring						
	1922	1980	3	5	RA 08/22/13	Interior lighting is generally fluorescent and consists of 1x4 pendant reflector lights in classrooms. Hallway lights are 1x4 wrap with battery packs for emergency light. Staff office has cable hung direct/indirect fixtures. Administration office has some 2x4 parabolics at front desk. New lighting was done in the waiting area with down lights and wall sconces. Wiring devices are 20A, stainless steel plate, installed on wiremold with data/voice and TV outlets next to it. Offices have flushed electrical outlets, plus added outlets done by wiremold and surface conduits and boxes. Hallway has added electrical outlets by surface conduit and box. Classrooms are wiremold for data and power outlets, ground fault interrupter (GFI) outlets at sink station; original electrical outlets at front teaching wall. Auditorium lighting has 2x4, 4-lamp surface box fixtures at low and high ceilings with emergency bug-eyes mounted at over 20-feet high. There are not enough electrical outlets in the kitchen; only four (4) observed. Lighting in kitchen is 2x4; looks good. Gym lighting is 2x2 high ceiling mounted high intensity discharge (HID) light fixtures in working condition; no flickering seen, good lighting level. Toilet room has 1x4 surface mounted metal box fixtures controlled by switches. The coiling door power, kitchen electrical circuits, and auditorium electrical circuits are tripped.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.1**			
Electrical						
D5020 Lighting and Branch Wiring						
						Good lighting level. Manual switching. Lighting is not provided at the low ceiling area along wall with casework. Fixtures in classroom are old; some failing reflectors. T8 lamps are new, reflectors are yellowed out and aging. Exterior wall lights are old, over 20 years, and need upgrades. No automatic controls throughout the building. Branch wiring and devices are over 20 years, in working condition. Replacement within the next 8 years is recommended.
D5030 Low Voltage Communication Security and Fire Alarm						
	1922	2000	2	12	RA 08/22/13	Fire alarm system consists of: smoke detectors, horn strobes in hallway, horn strobe in classroom (no smoke detector in classroom), heat detector in lieu of smoke detector is used over the stair landing ceiling. No smoke detector in office space. Hallway has a mix of smoke and heat detectors, mostly heat detectors. The fire alarm panel is located in the fire sprinkler room, #EST-2 Edwards, 2000 Silent Knight 5128 STU-HL monetary unit; in good working condition. Security alarm consists of motion detectors in hallway and Radionic control panel in administration office; in good working condition. Intermediate distribution frame (IDF) in administration office, Cat-6 system, wall rack IDF, 110V blocks on plywood back board, providing phone and computer communications. The building has a TV distribution system; some TV sets were seen in classrooms and offices, and are in good working condition. The building has no intercom, paging, or clock system. Original master clock has been abandoned. The building has no card access system. Fire alarm system is working well, but needs minor fixes. Loose heat detector in stairway. Need to replace existing heat detectors.
D5090 Other Electrical Systems						
	1922	2004	2	10	RA 08/22/13	The building has no generator. Emergency lights are battery backup type. Battery-backed exit lights by exit doors. Batter pack 1x4 fluorescent lights in hallway. Battery pack wall mounted directional lights in hallway.

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City of Redmond
Old Redmond School House Community Center Site — **16600 NE 80th Street**
Old Redmond School House Community Center Building — **Redmond, WA 98052**

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.1**				
Electrical							
D5090 Other Electrical Systems							
							Plenty of emergency lights throughout the building; in good working condition.
E Equipment and Furnishings			**3.0**				
Equipment							
E1010 Commercial Equipment							
	1950	2005	3	18	RD	08/22/13	Commercial kitchen hood; complete commercial cooking kitchen with gas-fired cooking equipment, stainless steep prep, wash, and serving counters, and supporting system.
							No deficiencies noted.
E1030 Vehicular Equipment							
	1925	1980	3	10	RD	08/22/13	Concrete deck on wood frame loading dock.
							Dock sees limited use. Bumpers are worn but functional.
Furnishings							
E2010 Fixed Furnishings							
	1922	2000	3	17	RD	08/22/13	Artwork and fixed casework.
							Fixed casework is worn but functional.
E2020 Moveable Furnishings (Capital Funded Only)							
	1922	2000	3	17	RD	08/22/13	Tables and chairs.
							Most tables and chairs are in good condition.
F Special Construction							
Special Construction							
F1030 Special Construction Systems							
	1922	1980	3	10	RD	08/22/13	Seismic parapet braces.
							No deficiencies noted.

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Facility Summary

City of Redmond
Old Redmond School House Community Center Site
Old Redmond School House Community Center Infrastr

16600 NE 80th Street
Redmond, WA 98052

Facility Condition Summary

The Old School House Community Center has had extensive site improvements along the south and west sides of the building, with new entry patios, landscaping, and site improvements. There is a newer asphalt parking lot for approximately 85 vehicles on the west side of the building. An asphalt access road extends around the east and north sides of the building. These areas have older pavement with irregular, patched, and deteriorating areas. The building is served by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	1922	1980	3	8	MK	08/21/13	Asphalt access road extends around the north and east sides of the building. Some cracking, deterioration, and root intrusion is present. Some limited pavement repairs/patching is probably warranted, however this is a low use road and not a high priority.
G2020 Parking Lots							
	1922	2012	2	12	MK	08/21/13	Asphalt parking lot for 87 vehicles, including four (4) ADA stalls, plus an additional four (4) service truck stalls. Lot has concrete curbs and is well marked. Parking lot was renewed in 2004 and restriped in 2012, and is in good condition. Size of parking stalls and aisles is generous. Reports of insufficient parking during high use events. Some additional parking could be gained by filling the grass swale at the west side of the lot, and possibly along the north access road.
G2030 Pedestrian Paving							
	1922	1980	2	10	MK	08/21/13	Concrete walks around perimeter of the buildings. Newer concrete patio areas at south side entries. Asphalt pedestrian areas around the northeast corner of the building is rough and irregular. Most of the concrete walkways are in very good condition. Walkways and pedestrian areas along the north and east sides are in fair condition, but have limited use.

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Facility Summary

City of Redmond
Old Redmond School House Community Center Site — **16600 NE 80th Street**
Old Redmond School House Community Center Infrastr — **Redmond, WA 98052**

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2040 Site Development						
	1922	2004	2	10	MK 08/21/13	Fixed benches, picnic table, and bike racks throughout site. There are accessible ramps to building entries on the east and west sides. All features are in good condition.
G2050 Landscaping						
	1922	2004	2	20	MK 08/21/13	Extensive landscaping on west and south sides of the building including ornamentals, grass, and trees. Parking lot in planter islands. Landscaping is in good condition with very good variety, and many trees reaching maturity. Irrigation system appears to function well. Renewed in 2004.
Site Civil / Mechanical Utilities						
G3010 Water Supply						
	1922	1980	3	10	MK 08/21/13	Domestic water and fire sprinkler supply from the City of Redmond system. No known issues.
G3020 Sanitary Sewer						
	1922	1980	3	10	MK 08/21/13	Building sanitary sewer connects to City of Redmond system. No known issues.
G3030 Storm Sewer						
	1922	1980	3	10	MK 08/21/13	Roof runoff discharges by downspout onto ground in many areas. Parking lot and site runoff is collected in catch basins and area drains and conveyed to City of Redmond system. There is a grass drainage swale at the northwest corner of the parking area. Reportedly the existing catch basin in alcove on the east side (just south of boiler room) drains poorly and is full of gravel. Recommend cleaning and repair as required.
G3060 Fuel Distribution						
	1922	1980	3	10	MK 08/21/13	Natural gas meter with seismic sensor located at northeast corner of building.

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Facility Summary

City of Redmond
Old Redmond School House Community Center Site — **16600 NE 80th Street**
Old Redmond School House Community Center Infrastr — **Redmond, WA 98052**

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Civil / Mechanical Utilities						
G3060 Fuel Distribution						
						No known issues.
Site Electrical utilities						
G4010 Electrical Distribution						
	1922	1980	3	10	MK 08/21/13	Underground service to building is 225-kva transformer located at northwest corner of the building. See also building's electrical sections.
G4020 Site Lighting						
	1922	2004	3	20	MK 08/21/13	Wall lights on the north, east, and south sides of the building are high near roofline. Pole lights in parking area and some city street lights along adjacent public roads. Site lighting was upgraded in 2004.
						No known issues.
G4030 Site Communications and Security						
	1992	2000	3	7	MK 08/21/13	See building's electrical sections for details. The Old Redmond School House Community Center has communication (voice and data) service to support current operations.
						No issues reported or observed, but several opportunities may be present.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Old Redmond School House Community Center Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Old Redmond School House Community Center Building	Exterior Closure	$70,700	$21,210	$18,382	$55,146	$165,438	$155,172
	Roofing	$16,000	$4,800	$4,160	$12,480	$37,440	$35,341
	Interior Construction	$130,000	$39,000	$33,800	$101,400	$304,200	$304,200
	Interior Finishes	$22,750	$6,825	$5,915	$17,745	$53,235	$51,227
	Vertical Transportation	$10,000	$3,000	$2,600	$7,800	$23,400	$22,090
	Plumbing	$305,950	$91,785	$79,547	$238,641	$715,923	$671,369
	HVAC	$727,650	$218,295	$189,189	$567,567	$1,702,701	$1,648,495
	Electrical	$19,000	$5,700	$4,940	$14,820	$44,460	$44,460
	Facility Total	**$1,302,050**	**$390,615**	**$338,533**	**$1,015,599**	**$3,046,797**	**$2,932,355**
	Site Total	**$1,302,050**	**$390,615**	**$338,533**	**$1,015,599**	**$3,046,797**	**$2,932,355**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Redmond School House Community Center Site

Total Observed Deficiency Repair Direct Cost : $1,302,050

Total Observed Deficiency Repair Direct Cost (Present Value): $1,253,143

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Redmond School House Community Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$70,700**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$66,313**
Exterior Walls								
Cement Board Siding	4	2 2013	Hardie board panels at gym have been hit and broken; pieces missing.	Remove and replace panels.	8	$400.00	ea	$3,200
Metal Siding	4	5 2013	Metal siding at gym is exposed and rusting.	Clean, re-galvanize, and repaint metal siding.	2,000	$5.00	sf	$10,000
Wood Siding	4	2 2013	Wood is uncovered and exposed. Paint is flaking or missing.	Power wash. Repair as necessary. Paint.	5,000	$5.00	sf	$25,000
Exterior Windows								
Wood Windows	4	4 2013	Wood windows at gym are weathered, sills and jambs exposed, leak air and likely water.	Replace windows.	13	$2,500.00	ea	$32,500
Facility: Old Redmond School House Community Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$16,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$15,103**
Roof Coverings								
Metal Roof	4	3 2013	Metal roof at gym is exposed and has lost paint and galvanized coating.	Clean, re-galvanize, and paint metal roof.	1,000	$12.00	sf	$12,000
Projections								
Metal Caps	4	3 2013	Sheet metal flashing caps on parapet are rusting.	Clean and repaint metal flashing caps.	1,000	$4.00	lf	$4,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Redmond School House Community Center Site

Total Observed Deficiency Repair Direct Cost : $1,302,050

Total Observed Deficiency Repair Direct Cost (Present Value): $1,253,143

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Redmond School House Community Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$130,000**
System: Interior Construction				**Total System Deficiency Repair Cost (Present Value):**				**$130,000**
Interior Doors								
Doors	5	0 2013	Doors are not fire rated.	Replace doors with code compliant fire rated doors, including door frames and automatic closure hardware.	50	$2,600.00	ea	$130,000
Facility: Old Redmond School House Community Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$22,750**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$21,892**
Floor Finishes								
Vinyl Composition Tile	4	2 2013	Vinyl composition tile (VCT) in hallways have broken edges and corners.	Remove and replace vinyl composition tile (VCT).	3,500	$6.50	sf	$22,750
Facility: Old Redmond School House Community Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$10,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$9,440**
Elevators and Lifts								
Elevator	4	3 2013	Elevator operation is abrupt at start and/or stop.	Troubleshoot and repair elevator.	1	$5,000.00	ea	$5,000
Other Conveying Systems								
Roof Access	4	3 2013	No roof access to several high and drop roof areas.	Provide permanent ladder or stair access to all roof areas to facilitate maintenance.	5	$1,000.00	ea	$5,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Redmond School House Community Center Site

Total Observed Deficiency Repair Direct Cost : $1,302,050

Total Observed Deficiency Repair Direct Cost (Present Value): $1,253,143

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Old Redmond School House Community Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$305,950**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$286,910**
Plumbing Fixtures								
Plumbing Fixtures	4	2 2013	Most fixtures and trim are beyond end of useful life with damage, discoloration, code violation, poor drain and flush, etc. Water closets, urinals, lavatories, trim, sinks.	Replace plumbing fixtures.	50	$3,000.00	ea	$150,000
Domestic Water Distribution								
Piping	4	5 2013	Mix of old galvanized and middle-age copper piping. Missing domestic hot water pipe insulation. Inadequate hose bibs and shut off valves. Piping, insulation, hose bibs, and shut off valves.	Renew, replace, insulate, and upgrade domestic hot water piping as needed.	41,700	$3.50		$145,950
Other Plumbing Systems								
Grease Interceptor	5	0 2013	Missing grease interceptor.	Install grease interceptor.	1	$10,000.00	ea	$10,000
Facility: Old Redmond School House Community Center Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$727,650**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$704,485**
Cooling Generating Systems								
Chilled Water System	4	3 2013	Chilled water system can not be turned down to serve spaces other than the auditorium due to short cycling.	Install thermal storage tank and advanced controls to allow full use of new chilled water system.	1	$25,000.00	ls	$25,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Redmond School House Community Center Site

Total Observed Deficiency Repair Direct Cost : $1,302,050

Total Observed Deficiency Repair Direct Cost (Present Value): $1,253,143

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Cooling	5	0 2013	The Old Redmond Schoolhouse was designed and built as a school, closed in summer. The community center appears to be the busiest during the summer. Due to summer heat and no cooling for most program areas, an excessive number of portable fans are in use, creating a variety of safety and health hazards.	Install a cooling system compatible with occupancy and use.	20,000	$15.00	sf	$300,000
Data/Communications Cooling	4	2 2013	No dedicated cooling for data/communications area/closet.	Provide ductless spot cooling for data/communications area.	1	$5,000.00	ls	$5,000
Cooling	5	0 2013	None of the 1980s installed classroom high outside wall outside air inlet louver and associated exhaust fans appear to work.	Repair or replace outside air inlet louver and exhaust fans as needed in kind.	30	$1,500.00	ea	$45,000
HVAC Distribution Systems								
Gym HVAC	4	3 2013	West half of gym not served by current HVAC.	Install HVAC for west side of gym.	2,000	$10.00	sf	$20,000
Corridor HVAC	5	0 2013	Corridor HVAC has failed.	Replace corridor HVAC.	5,000	$5.00	sf	$25,000
Terminal and Package Units								
Unit Ventilators	4	5 2013	Unit ventilators are past end of useful life, but life can be extended with refurbishment.	Refurbish unit ventilators.	30	$3,000.00	ea	$90,000
Radiant Heaters	4	3 2013	Radiant heaters are corroded, blocked, disconnected, and damaged.	Refurbish radiant heaters.	20	$1,500.00	ea	$30,000
Controls and Instrumentation								

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Old Redmond School House Community Center Site

Total Observed Deficiency Repair Direct Cost : $1,302,050

Total Observed Deficiency Repair Direct Cost (Present Value): $1,253,143

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
DDC Controls	4	3 2013	No integrated DDC. Many inoperable, out of date, and abandoned in place controls.	Replace all controls with modern DDC system.	41,700	$4.50	sf	$187,650
Facility: Old Redmond School House Community Center Building						**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**		**$19,000**
System: Electrical						**Total System Deficiency Repair Cost (Present Value):**		**$19,000**
Lighting and Branch Wiring								
Branch Electrical Outlets	5	0 2013	Insufficient electrical outlets in kitchen and auditorium; circuits tripped.	Add outlets in kitchen and auditorium.	8	$500.00	ea	$4,000
Branch Electrical Outlets	5	0 2013	Circuits tripped for coiling door, no backup power after normal power loss.	Add dedicated circuit to coiling door. Add uninterruptible power supply (UPS) for coiling door power backup.	1	$5,000.00	ea	$5,000
Low Voltage Communication Security and Fire Alarm								
Fire Alarm System	5	0 2013	Old heat detectors used in the hallway are unreliable and in poor condition.	Replace old heaters with new smoke detectors.	1	$10,000.00	ls	$10,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Old Redmond School House Community Center Site **Total Site Opportunity Cost: $1,383,000**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Old Redmond School House Community Center Building**						
System:	**Exterior Closure**	**Total Cost: $52,500**					
B2020	**Exterior Windows**						
		There are a number of likely original single glazed wood framed windows in both the main building and gym. Replacement with double glazed thermal break metal or metal clad windows or vinyl windows is recommended for energy, air infiltration, and water infiltration advantages.	Replace windows with double glazed thermal break metal or metal clad windows or vinyl windows.	35.00	$1,500.00	ea	$52,500
Facility:	**Old Redmond School House Community Center Building**						
System:	**HVAC**	**Total Cost: $382,500**					
D3020	**Heat Generating Systems**						
		Old boilers are approximately 75% efficient. Rather than refurbishing at end of useful life, replace with new high efficiency condensing boilers. Additionally consider wholesale change from steam to hot water heat, which may be more familiar to city operations and maintenance staff.	Replace all low efficiency boilers with new high efficiency boilers.	2.00	$150,000.00	ea	$300,000
D3030	**Cooling Generating Systems**						
		Excessive use of portable fans.	Install ceiling fans in all regularly occupied spaces.	50.00	$450.00	ea	$22,500
D3050	**Terminal and Package Units**						
		Unit ventilators may be connected to seasonal partial cooling.	Connect unit ventilators and modify steam and condensate system and/or chilled water system for partial unit ventilator cooling.	30.00	$2,000.00	ea	$60,000
Facility:	**Old Redmond School House Community Center Building**						
System:	**Electrical**	**Total Cost: $888,000**					
D5020	**Lighting and Branch Wiring**						
		Building exterior wall lights are old, over 20 years.	Replace existing wall lights on building wall and roof. Add controls.	1.00	$20,000.00	ls	$20,000
D5030	**Low Voltage Communication Security and Fire Alarm**						

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Old Redmond School House Community Center Site **Total Site Opportunity Cost: $1,383,000**

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Cost
	Building has a small capacity security alarm system with limited use of motion detector.	Replace existing security alarm system with new addressable system. Provide motion detectors in major egress, hallways, and offices.	124,000.00	$2.00	ls	$248,000
	Building has no card access system.	Provide card access system for building.	124,000.00	$1.50	ls	$186,000
	Building has no paging system for communications, selected paging, or emergency call paging.	Provide sound system for paging.	124,000.00	$3.50	ls	$434,000
Facility:	**Old Redmond School House Community Center Infrastr**					
System:	**Site Improvements** **Total Cost: $60,000**					
G2020	**Parking Lots**					
	Reportedly insufficient parking during community events. Opportunity for additional parking at west side of parking lot.	Fill grass swale at west side of parking lot and along north access wall.	1,000.00	$60.00	sy	$60,000

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Facility Summary

City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 1

15503 NE 90th Street
Redmond, WA 98502

Facility Code	
Facility Size - Gross S.F.	17,450
Year Of Original Construction	1980
Facility Use Type	Maintenance
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	1980
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.5**			
Facility Condition Index (FCI)	0.27			
Current Replacement Value (CRV)	$5,673,000	**Predicted Renewal Budget (6 yrs)**	$1,700,000	$1,645,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$2,347,000	$2,170,000
		Observed Deficiencies (6 yrs)	$1,882,000	$1,843,000
		Observed Deficiencies (ALL)	$1,882,000	$1,843,000
		Opportunity Total Project Cost	$483,000	N/A

Facility Condition Summary

Architectural:
No architectural comments.

Electrical:
Sammamish River Business Park Building 1's electrical service is a 208/120V, 3-phase, 4-wire system service underground from Puget Sound Energy padmount transformer 225-kva. Main electrical disconnect, 400A, 208/120v, serving a distribution with multiple meter/breaker units. The building's lighting system throughout is mostly all original building system consisting of incandescent, high intensity discharge (HID) lights; all are old, out of date, and at end of life. Fluorescent lights were added to spaces where occupied. Branch wiring and devices are old, out of date, and insufficient. Some outlets and circuits are abandoned. The building's fire alarm system is outdated with insufficient coverage. The building has no security alarm system; abandoned devices and control panel were left in place. The building has no emergency lighting system. In general, the building's electrical systems are working at marginal capacity, lighting fixtures in warehouses are failing due to failing ballasts.

Mechanical:
The Sammamish River Business Park site includes two buildings (1 and 2), which are mirror images of each other. Built in 1980 as a light industrial commercial property, the City purchased the site and both buildings approximately year 2000 in conjunction with construction of the adjacent bridge. HVAC is gas-fired unit heaters, several rooftop gas-pack units (RTU) serving the south-end Traffic Department signals shop areas, toilet room exhaust fans, and electric baseboard and wall heaters. Plumbing is City water and sewer with copper piping, electric resistance domestic hot water (DHW) heaters, and what appears to be largely ABS drain, waste, and vent (DW&V) piping. There is no fire sprinkler system.

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City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 1

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1980	1980	3	55	RD 08/21/13	Poured in place concrete. No deficiencies observed.
A1030 Slab On Grade						
	1980	1980	3	55	RD 08/21/13	Slab on grade. Minor cracking observed with tight contact and no separation observed.
B Shell			**3.3**			
Superstructure						
B1010 Floor Construction						
	1980	1980	3	55	RD 08/21/13	Slab on grade; limited wood mezzanine area. Slab floor construction is in good condition. Unpermitted mezzanine floor is stable and firm but lacks headroom, legal stairs, handrails, etc.
B1020 Roof Construction						
	1980	1980	3	55	RD 08/21/13	Roof is wood deck on wood joists on wood purlins supported by glue-laminated beams on steel pipe columns. System is functioning as designed.
Exterior Closure						
B2010 Exterior Walls						
	1980	1980	3	27	RD 08/21/13	Fluted and flat concrete masonry walls (CMU). Walls are in good condition with limited efflorescence and some cracking in from lateral movement. Cracks have been caulked and appear tight.
B2020 Exterior Windows						
	1980	1980	4	2	RD 08/21/13	Single pane glass windows in aluminum frames. Single pane glass with wood stops. Opportunity to upgrade windows to meet current energy code and improve energy efficiency. Glass in wood stops is failing and deficient.

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Facility Summary

City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 1

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.3**			
Exterior Closure						
B2020 Exterior Windows						
B2030 Exterior Doors						
	1980	1980	3	17	RD 08/21/13	Aluminum entrance doors. Hollow metal doors. Aluminum doors in good condition. Hollow metal doors in central delivery court need maintenance and, in some cases, repair.
Roofing						
B3010 Roof Coverings						
	1980	1980	4	3	RD 08/21/13	Torch down roofing on majority of building is in passable condition but needs maintenance and repair. Coating roof would extend life. Metal roofs are in good condition. Venting is compromised by building paper closing upper vents. Downspouts need to be reconnected in some cases. Roof drains need weekly maintenance in fall. Overflow roof drains need to be reconstructed lower and bigger.
B3020 Roof Openings						
	1980	1980	3	7	RD 08/21/13	Roof openings consist of mechanical and pipe penetrations. Mechanical equipment seems to leak water into building in limited places. This is likely due to standing water from overflow roof drain deficiency noted above.
B3030 Projections						
	1980	1980	3	5	RD 08/21/13	Metal cap on roof parapet. Metal cap on roof parapet is rusting, fasteners have risen above surface and lack caulking; joints have disengaged. Cap is missing on court area wing walls.
C Interiors			**3.2**			
Interior Construction						
C1010 Partitions						
	1980	1990	3	17	RD 08/21/13	Numerous partitions have been installed and

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
C Interiors			**3.2**				
Interior Construction							
C1010 Partitions							
							modified over the years. All appear to be gypsum wall board over wood frame. Walls are in generally good condition but some need surface repair.
C1020 Interior Doors							
	1980	2000	3	7	RD	08/21/13	Interior doors are solid core wood doors in wood frames. Most doors are in acceptable condition.
C1030 Fittings							
	1980	1980	3	5	RD	08/21/13	Most counters and vanities are original to the building. Many are nearing end of they useful life. Some counters and vanities are newer and in good condition. Some have solid structure, but doors and drawers are failing.
Staircases							
C2010 Stair Construction							
	1980	1990	4	2	RD	08/21/13	Wood stair to unpermitted mezzanine. See flooring deficiency report for "Floor Construction" section.
Interior Finishes							
C3010 Wall Finishes							
	1980	1995	3	4	RD	08/21/13	Numerous walls in building have been installed at random times. Minor wall repair and continued painting are needed.
C3020 Floor Finishes							
	1980	1995	4	1	RD	08/21/13	Most of building is concrete slab floor; limited carpet and sheet vinyl in areas. Concrete should be cleaned and resealed. Carpet needs to be replaced.
C3030 Ceiling Finishes							

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City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 1

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.2**			
Interior Finishes						
C3030 Ceiling Finishes						
	1980	1990	3	10	RD 08/21/13	Drop in acoustical ceiling, open space to underside of roof. Drop in ceiling in some areas is in fair condition. In some areas it is stained and broken from roof leaks. In signals storage area, it is suspended from limited cables.
D Services			**4.3**			
Vertical Transportation						
D1090 Other Conveying Systems						
	1980	1980	5	0	DCS 08/21/13	No roof access. Provide roof access.
Plumbing						
D2010 Plumbing Fixtures						
	1980	1980	4	5	DCS 08/21/13	Porcelain floor mount water closets, wall or counter mounted lavatories. Fixtures are heavily worn, damaged, discolored, poorly draining, and leaking.
D2020 Domestic Water Distribution						
	1980	1980	3	10	DCS 08/21/13	City water service, with service entry not found, appears to be at least 3/4-inch service size. Copper cold and hot water distribution pipe, not insulated. Electronic domestic hot water (DHW) tanks, 10 to 20-gallons located above toilet rooms, of various ages. One (1) hose bib each on east and west outside walls. Little or no valving observed. Domestic hot water (DHW) piping is not insulated per code, wasting energy and delaying arrival of hot water at plumbing fixtures. Hose bibs may not be frost free and are not properly installed. Backflow prevention devices are not working properly.
D2030 Sanitary Waste						
	1980	1980	4	5	DCS 08/21/13	ABS drain, waste, and vent (DW&V) piping with lead vent-to-roof (VTR) pipe caps. Floor drains in

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Facility Components Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**4.3**				
Plumbing							
D2030 Sanitary Waste							
							some shop and warehouse locations. Slow or no flush at some flushing fixtures. Dirty or completely blocked floor drains. Several vent-to-roof pipe caps are almost completely blocked off by improperly installed lead caps.
D2040 Rain Water Drainage							
	1980	1980	5	0	DCS	08/21/13	Four (4) cast iron roof drain bodies with ABS pipe down through interior wall and connected below grade to site storm drain system. Overflow roof drains are parapet wall box scuppers to mansard entry metal roof, down to gutter and downspout, discharging at grade in from (west), and direct to wall in back (east). Obvious signs of frequent roof drain back-ups including high water marks from 6-inch and 12-inch deep ponding on roof and roof leak damage in space below, especially to south in the Traffic Department signals shop. ABS piping is not insulated. Roof drain screens were all removed and scattered across the roof (some were replaced during the Facility Condition Assessment site visit.) The roof should be inspected monthly during the rainy season for proper drainage, while more permanent and robust solutions are developed.
D2090 Other Plumbing Systems							
	1980	2000	3	10	DCS	08/21/13	Light duty compressed air system in facilities maintenance shop areas. Consider upgrading to heavier duty compressed air system and extending to other shop areas, if need exists.
HVAC							
D3010 Energy Supply							
	1980	1990	3	10	DCS	08/21/13	Natural gas from Puget Sound Energy via three (3) banks of meters: north meter numbers 559965 at 250-cfh and 1189229 at 250-cfh; middle meter number 1076667 at 250-cfh; south meter numbers 953092 at 1,000-cfh and 423706 at 175-cfh. Gas is distributed to roof top unit (RTU) gas-packs serving Traffic Department

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**4.3**				
HVAC							
D3010 Energy Supply							
							signals shop and multiple shop and warehouse unit heaters. Five (5) meters is excessive for only two tenants in the building, incurring needless meter charges. Opportunity to consolidate metering to reduce monthly gas utility bill. Gas piping on roof is corroding with poor sleeper support.
D3030 Cooling Generating Systems							
	1980	1990	4	3	DCS	08/21/13	One (1) condensing unit serving air handling unit for north office area. Ceiling fans in several locations. Operable windows in some offices. Two (2) warehouse gravity ventilators. Many dozens of portable fans. Condensing unit is failed and abandoned in place. Ceiling fans may be inoperable or blocked by moveable furnishings. Well below code minimum operable windows for natural ventilation. Rusty but semi-operable gravity ventilators, but missing controllable back-draft dampers. Excessive number of portable fans with variety of related safety concerns.
D3040 HVAC Distribution Systems							
	1980	1980	4	5	DCS	08/21/13	Toilet room ceiling exhaust fans up to sheet metal roof jacks. Toilet room ceiling exhaust fans are filthy; some are at end of useful life.
D3050 Terminal and Package Units							
	1980	1990	5	1	DCS	08/21/13	Four (4) roof top units (RTU- 1, 2 , 3, and 4)gas-pack serving Traffic signals shop and offices. Baseboard and wall electric resistance heat in most other office areas. Gas-fired Reznor 75% efficient ceiling mounted B-vented unit heaters. All four roof top units are past end of useful life; one appears to be partially operable, others appear to be abandoned in place. However, distribution duct below is in fair to good condition. Baseboard and wall heaters in various conditions; some blocked by fixed and/or moveable furniture and combustible storage, creating a fire hazard. Shop and warehouse gas-

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**4.3**			
HVAC						
D3050 Terminal and Package Units						
						fired unit heaters may be mix of original 1980 and later 1990 installed units.
D3060 Controls and Instrumentation						
	1980	1990	4	3	DCS 08/21/13	Stand alone thermostats, on/off switches, and other simple manual controls. Largely original thermostats and switch controls, some are failed and abandoned in place. Opportunity to add city-wide energy management and control system (EMCS).
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1980	1980	5	0	DCS 08/21/13	No fire sprinkler system. Retrofit fire sprinkler to protect life and property.
D4030 Fire Protection Specialties						
	1980	1990	3	10	DCS 08/21/13	Wall mounted fire extinguishers in several locations. Install cabinets to better protect fire extinguishers.
D4090 Other Fire Protection Systems						
	1980	1980	5	0	DCS 08/21/13	Rated fire separation between north and south halves of building. Holes are present in the fire structure.
Electrical						
D5010 Electrical Service and Distribution						
	1980	1980	4	20	RA 08/21/13	Building has a 400A 208/120V service main disconnect, serving about 12 tenant meter/breaker units and a house panel. Square-D GE equipment. There is one small electrical load center located in each addressed tenant space. All electrical equipment and branch panels are old, 1980, over 30 years old. The system has minimum, small capacity. All branch panels have limited capacity; insufficient capacity for tenant

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City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 1

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**4.3**			
Electrical						
D5010 Electrical Service and Distribution						
						uses and future expansion.
D5020 Lighting and Branch Wiring						
	1980	1980	4	1	RA 08/21/13	Interior lighting consists of 2x4 troffer. 8-foot strips, incandescent sockets, are seen throughout the building. Occupied office spaces have better 2x4 troffer lights. No automatic control; manual switches and breakers are used to switch lights. Exterior lights are old and at end of life. Electrical wiring and devices are old, original building system, and at end of life. Approximately 85% of the interior lighting should be replaced. Existing lamps and ballasts are failing. All electrical wiring and devices are old, outdated, at end of life, and should be replaced. Insufficient outlets and circuits.
D5030 Low Voltage Communication Security and Fire Alarm						
	1980	1980	4	2	RA 08/21/13	The building has fire alarm system; it is old, outdated, and consists of heat detectors and horns. Fire-Lites Miniscan #4020. The building has no security alarm system. Old control panels seen; abandoned. The building has data/voice system devices in occupied offices. Replace old, obsolete fire alarm system with code compliant coverage.
D5090 Other Electrical Systems						
	1980	1980	5	0	RA 08/21/13	Building has no emergency lighting. Add battery pack emergency lights inside building egress and exterior building egress.
E Equipment and Furnishings			**3.0**			
Furnishings						
E2010 Fixed Furnishings						
	1980	2000	3	15	RD 08/21/13	Window treatments. No deficiencies noted.

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Facility Summary

City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 2

15503 NE 90th Street
Redmond, WA 98502

Facility Code	
Facility Size - Gross S.F.	17,450
Year Of Original Construction	1980
Facility Use Type	Maintenance
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	1980
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.5**			
Facility Condition Index (FCI)	0.27			
Current Replacement Value (CRV)	$5,673,000	**Predicted Renewal Budget (6 yrs)**	$1,700,000	$1,645,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$2,457,000	$2,264,000
		Observed Deficiencies (6 yrs)	$1,890,000	$1,843,000
		Observed Deficiencies (ALL)	$1,890,000	$1,843,000
		Opportunity Total Project Cost	$483,000	N/A

Facility Condition Summary

Architectural:
Sammamish River Business Park Building 2 is generally in good condition structurally. Needs new finishes inside and limited roof drainage work. Roof cleaning and coating will significantly extend useful life.

Electrical:
Sammamish River Business Park Building 2's electrical service is a 208/120V, 3-phase, 4-wire system service underground from Puget Sound Energy padmount transformer 225-kva. Main electrical disconnect, 400A, 208/120v, serving a distribution with multiple meter/breaker units. The building's lighting system throughout is mostly all original building system consisting of incandescent, high intensity discharge (HID) lights; all are old, out of date, and at end of life. Fluorescent lights were added to spaces where occupied. Branch wiring and devices are old, out of date, and insufficient. Some outlets and circuits are abandoned. The building's fire alarm system is outdated with insufficient coverage. The building has no security alarm system; abandoned devices and control panel were left in place. The building has no emergency lighting system. In general, the building's electrical systems are working at marginal capacity, lighting fixtures in warehouses are failing due to failing ballasts.

Mechanical:
The Sammamish River Business Park site includes two buildings (1 and 2), which are mirror images of each other. Built in 1980 as a light industrial commercial property, the City purchased the site and both buildings approximately year 2000 in conjunction with construction of the adjacent bridge. HVAC is gas-fired unit heaters, two (2) vehicle shop low exhaust systems, toilet room exhaust fans, and electric baseboard and wall heaters. Plumbing is City water and sewer with copper piping, electric resistance domestic hot water (DHW) heaters, and what appears to be largely ABS drain, waste, and vent (DW&V) piping. There is no fire sprinkler system.

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Facility Summary

City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 2

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1980	1980	3	55	RD 08/21/13	Poured in place concrete. No deficiencies observed.
A1030 Slab On Grade						
	1980	1980	3	55	RD 08/21/13	Slab on grade. Minor cracking observed with tight contact and no separation observed.
B Shell			**3.3**			
Superstructure						
B1010 Floor Construction						
	1980	1980	3	55	RD 08/21/13	Slab on grade. Limited wood mezzanine area. Slab floor construction is in good shape. One (1) unpermitted mezzanine is stable and firm but lacks headroom, legal stairs, handrails, etc. Second unpermitted mezzanine floor is loose and soft. And built ladder access, lacks headroom, etc.
B1020 Roof Construction						
	1980	1980	3	55	RD 08/21/13	Roof is wood deck on wood joists on wood purlins supported by glue-laminated beams on steel pipe columns. System is functioning as designed.
Exterior Closure						
B2010 Exterior Walls						
	1980	1980	3	27	RD 08/21/13	Fluted and flat concrete masonry walls. Walls are in good condition with limited efflorescence and some cracking from lateral movement. Cracks have been caulked and appear tight.
B2020 Exterior Windows						
	1980	1980	4	2	RD 08/21/13	Single pane glass windows in aluminum frames. Single pane glass with wood stops.

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Facility Summary

City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 2

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
B Shell			**3.3**			
Exterior Closure						
B2020 Exterior Windows						Opportunity to upgrade windows to meet current energy code and improve energy efficiency. Glass in wood stops is failing and deficient.
B2030 Exterior Doors	1980	1980	3	17	RD 08/21/13	Aluminum entrance doors. Hollow metal doors. Aluminum doors are in good condition. Hollow metal doors in central delivery court need maintenance and, in some cases, repair.
Roofing						
B3010 Roof Coverings	1980	1980	4	3	RD 08/21/13	Torch down roofing on a majority of the building is in passable condition but needs maintenance and repair. Metal roofs are in good condition. Venting is compromised by building paper closing upper vents. Downspouts need to be reconnected in some areas. Roof drains need weekly maintenance in fall. Overflow roof drains need to be reconstructed lower and bigger. Opportunity to coat roof to extend life.
B3020 Roof Openings	1980	1980	3	7	RD 08/21/13	Roof openings consist of mechanical and pipe penetrations. Mechanical equipment seems to leak water into the building in limited places. This is likely due to standing water from overflow roof drain deficiency noted above.
B3030 Projections	1980	1980	3	5	RD 08/21/13	Metal cap on roof parapet. Metal cap on roof parapet is rusting, fasteners have risen above surface and lack caulking, joints have disengaged. Cap missing on court area wing walls.
C Interiors			**3.2**			

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.2**			
Interior Construction						
C1010 Partitions	1980	1990	3	17	RD 08/21/13	Numerous partitions have been installed and modified over the years. All appear to be gypsum wall board over wood frame. Walls are generally in good condition but some need surface repair.
C1020 Interior Doors	1980	2000	3	7	RD 08/21/13	Interior doors are solid core wood doors in wood frames. Most interior doors are in acceptable condition.
C1030 Fittings	1980	1980	3	5	RD 08/21/13	Most counters and vanities are original to the building. Many are nearing end of useful life. Some counters and vanities are newer and in good condition. Some have solid structure but doors and drawers are failing.
Staircases						
C2010 Stair Construction	1980	1980	4	2	RD 08/21/13	Wood stair to unpermitted mezzanine. See flooring deficiency report for "Floor Construction" section.
Interior Finishes						
C3010 Wall Finishes	1980	1995	3	4	RD 08/21/13	Numerous walls in building have been installed at random times. Minor wall repair and continued painting are needed.
C3020 Floor Finishes	1980	1995	4	1	RD 08/21/13	Most of the building is concrete slab floor. Limited carpet and sheet vinyl in areas. Concrete should be cleaned and resealed. Carpet need to be replaced.
C3030 Ceiling Finishes						

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.2**			
Interior Finishes						
	1980	1990	3	10	RD 08/21/13	Poorly installed drop in ceiling, open space to underside of roof. Drop in ceiling in some areas is in fair condition. In some areas, it is stained and broken from roof leaks.
D Services			**4.3**			
Vertical Transportation						
D1090 Other Conveying Systems						
	1980	1980	5	0	DCS 08/21/13	No roof access. Provide roof access.
Plumbing						
D2010 Plumbing Fixtures						
	1980	1980	4	5	DCS 08/21/13	Porcelain floor mount water closets, wall or counter mount lavatories. Fixtures heavily worn, damaged, discolored, poorly draining, and leaking.
D2020 Domestic Water Distribution						
	1980	1980	3	10	DCS 08/21/13	City water service with service entry not found, but appears to be at least 3/4-inch service size. Copper cold and hot water distribution piping, not insulated. Electric domestic hot water (DHW) tanks, 10 and 20-gallons located above toilet rooms, of various ages. One (1) hose bib each on east and west outside walls. Little or no valving observed. Domestic hot water piping is not insulated per code, is wasting energy, and delaying arrival of hot water to fixtures. Hose bibs may not be free and are not properly installed. Backflow prevention devices are not working properly.
D2030 Sanitary Waste						
	1980	1980	4	5	DCS 08/21/13	ABS drain, waste, and vent (DW&V) piping with lead vent-to-roof (VTR) pipe caps. Floor drains in some shop and warehouse locations. Slow or no flush at some flushing fixtures. Dirty

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**4.3**			
Plumbing						
D2030 Sanitary Waste						
						or completely blocked floor drains. Several vent-to-roof pipe caps are almost completely blocked off by improperly installed lead caps.
D2040 Rain Water Drainage						
	1980	1980	5	0	DCS 08/21/13	Four (4) cast iron roof drain bodies with ABS pipe down through interior wall and connected below grade to site storm drain system. Overflow roof drains are parapet wall box scuppers to mansard entry metal roof, down to gutter and downspout, discharging at grade in front (west), and direct to wall in back (east). Obvious signs of frequent roof drain backups including high water marks from 12-inch to 18-inch deep ponding on roof and roof leak damage in space below, especially at lab tenant space to southeast. ABS piping is not insulated. The northeast overflow roof drain scupper is roofed over. The roof should be inspected monthly during the rainy season for proper drainage, while more permanent and robust solutions are developed. Signs of winter weather flooding at grade to north, evidenced by sand bags and water marks.
D2090 Other Plumbing Systems						
	1980	1990	3	10	DCS 08/21/13	Miscellaneous shop systems in lab tenant space; assume tenant owned. Investigate life/safety code compliance of lab tenant space.
HVAC						
D3010 Energy Supply						
	1980	1990	3	10	DCS 08/21/13	Natural gas from Puget Sound Energy via three (3) banks of meters: north meter numbers 409880 at 175-cfh, 1052037 at 250-cfh, and 440275 at 200-cfh; middle meter numbers 392401 at 200-cfh and 1189698 at 250-cfh; and south meter numbers 513329 at 275-cfh, 225044 at 275-cfh, and 1129561 at 250-cfh. Gas is distributed to multiple shop and warehouse unit heaters. Eight (8) meters is excessive for only two tenants

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**4.3**			
HVAC						
D3010 Energy Supply						
						in the building, incurring needless meter charges. Opportunity to consolidate metering to reduce monthly gas utility bill.
D3030 Cooling Generating Systems						
	1980	1990	4	3	DCS 08/21/13	One (1) condensing unit serving air handling unit for north office area. Ceiling fans in several locations. Operable windows in some offices. Two (2) warehouse gravity ventilators. Many dozens of portable fans. Condensing unit is failed and abandoned in place. Ceiling fans may be inoperable or blocked by moveable furnishings. Well below code minimum operable windows for natural ventilation. Rusty, but semi-operable gravity ventilators, but missing controllable back-draft dampers. Excessive number of portable fans with variety of related safety concerns.
D3040 HVAC Distribution Systems						
	1980	1980	4	5	DCS 08/21/13	Toilet room ceiling exhaust fans are up to sheet metal roof jacks. Two vehicle shop low exhaust systems. Toilet room ceiling fans are filthy; some are at end of useful life. Vehicle shop exhaust duct is damaged, not functional.
D3050 Terminal and Package Units						
	1980	1990	5	1	DCS 08/21/13	Four (4) roof top units (RTU- 1, 2, 3, and 4) gas-packs serving traffic signals shop and offices. Baseboard and wall electric resistance heat in most other office areas. Gas-fired Reznor 75% efficient ceiling mounted B-vented unit heaters. All four roof top units are past end of useful life; one appears to be partially operable, other appear to be abandoned in place. However, distribution duct below is in fair to good condition. Baseboard and wall heaters in various conditions; some are blocked by fixed and/or moveable furniture and combustible storage, creating a fire hazard. Shop and warehouse gas-fired unit heaters may be mix of original 1980 and later 1990 installed units.

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City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 2

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**4.3**				
HVAC							
D3060 Controls and Instrumentation							
	1980	1990	4	3	DCS	08/21/13	Stand alone thermostats, on/off switches, and other simple manual controls. Largely original thermostats and switch controls; some are failed and abandoned in place. Opportunity to add city-wide energy management and control system (ECMS).
Fire Protection							
D4010 Fire Protection Sprinkler Systems							
	1980	1980	5	0	DCS	08/21/13	No fire sprinkler system. Retrofit fire sprinkler to protect life and property.
D4030 Fire Protection Specialties							
	1980	1990	3	10	DCS	08/21/13	Wall mounted fire extinguishers in several locations. Install cabinets to better protect fire extinguishers.
D4090 Other Fire Protection Systems							
	1980	1980	5	0	DCS	08/21/13	Rated fire separation between north and south halves of building. Double leaf fire door hardware is missing and doors are blocked open.
Electrical							
D5010 Electrical Service and Distribution							
	1980	1980	4	20	RA	08/21/13	The building has a 400A 208/120V service main disconnect serving about 12 tenant meter/breaker units, and a house panel. Square-D, GE equipment. There is one small electrical load center located in each addressed tenant space. All electrical equipment and branch panels are old, 1980, over 30 years old. The system has minimum, small capacity. All branch panels have limited capacity; insufficient capacity for tenant uses and future expansion.
D5020 Lighting and Branch Wiring							

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Facility Summary

City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Building 2

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**4.3**			
Electrical						
D5020 Lighting and Branch Wiring						
	1980	1980	4	1	RA 08/21/13	Interior lighting consists of 2x4 troffer 8-foot strips, incandescent sockets are seen throughout the building. Occupied spaces have better 2x4 troffer lights. No automatic control; manual switches and breakers are used to switch lights. Exterior lights are old and at end of life. Electrical wiring and devices are old, original building system, and at end of life. Approximately 85% of the interior lighting should be replaced. Lamps and ballasts of the existing lights are failing. All electrical wiring and devices are old, outdated, and at end of life; should be replaced. Insufficient outlets and circuits.
D5030 Low Voltage Communication Security and Fire Alarm						
	1980	1980	4	2	RA 08/21/13	The building has fire alarm system; the system is old, outdated, and consists of heat detectors and horns. Fire-Lites Miniscan #4020. The building has no security alarm system. An old control panel is seen, but abandoned. The building has data/voice system devices in occupied offices.
D5090 Other Electrical Systems						
	1980	1980	5	0	RA 08/21/13	The building has no emergency lighting. Add battery pack emergency lights inside building egress and exterior building egress.
E Equipment and Furnishings			**3.0**			
Furnishings						
E2010 Fixed Furnishings						
	1980	2000	3	15	RD 08/21/13	Window treatments. No deficiencies noted.

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Facility Summary

City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Infrastructure

15503 NE 90th Street
Redmond, WA 98502

Facility Condition Summary

The Sammamish River Business Park is a rectangular site with two similar buildings, surrounded by parking on the south and west. Evidently a strip of land along the north side of the original site was used for construction of NE 90th Street. An asphalt trail currently extends along the north side between the buildings and a retaining wall for NE 90th Street. The parking lots are asphalt with limited landscape islands. The Sammamish River and a green belt lies due-east of the site. The site is served by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2020 Parking Lots	1980	1980	4	4	MK	08/21/13	Parking lots consist of head-in parking stalls towards the west and south sides of the buildings, and a paved yard between the two buildings. All are asphalt with extruded concrete curbs. Pavement is in fair to poor condition. Pavement markings are faded or non-existent. Portions of the parking area along the south side of the buildings exhibit deficiencies due to asphalt deterioration (cracking and failure) and broken curbing; these should be repaired. These areas should be saw cut and removed and replaced with new pavement. The paved yard has extensive alligatoring, including subgrade weakness. Recommend an asphalt overlay of the entire yard.
G2030 Pedestrian Paving	1980	1980	3	7	MK	08/21/13	There are concrete pedestrian walkways around the outer perimeter of the buildings (but not in between the buildings). An asphalt walkway lies along the north side of the buildings. Walkways and patio areas are generally in good condition. Some minor cracking and joint separation observed.
G2050 Landscaping	1980	1980	4	7	MK	08/21/13	Mostly mature landscaping of limited variety. Some landscape areas are bare. Trees are mature. Parking islands are mostly ivy. Landscaping is aged and lacks variety. Some

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2050 Landscaping							
							have been removed or died. Trees along east side of Building 2 are overhanging and need limbing. Large tree with cracks may require removal.
Site Civil / Mechanical Utilities							
G3010 Water Supply							
	1980	1980	3	12	MK	08/21/13	Domestic service lines from City of Redmond system. No known issues with water supply.
G3020 Sanitary Sewer							
	1980	1980	3	17	MK	08/21/13	Sanitary sewer service to each building from the City of Redmond system. No known issues with sanitary sewer service.
G3030 Storm Sewer							
	1980	1980	3	12	MK	08/21/13	Runoff from building roofs discharges by downspouts onto adjacent walkways and paved area. Runoff from paved areas is conveyed to catch basins and into City of Redmond system. There appears to be sufficient slope throughout the site to allow it to drain. No known problems.
G3060 Fuel Distribution							
	1980	1980	3	7	MK	08/21/13	Six (6) sets of natural gas meters without seismic sensors are located in the paved yard between the buildings. No known issues with fuel distribution.
Site Electrical utilities							
G4010 Electrical Distribution							
	1980	1980	3	7	MK	08/21/13	Underground electrical service to buildings. One (1) 225-kva transformer at the southeast corner of Building 1. (See also buildings' electrical sections.)
G4020 Site Lighting							
	1980	1980	4	0	MK	08/21/13	Two exterior wall pack lights are located on each

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Facility Summary

City of Redmond
Sammamish River Business Park Site
Sammamish River Business Park Infrastructure

15503 NE 90th Street
Redmond, WA 98502

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Electrical utilities						
G4020 Site Lighting						
						side of both buildings. Site lighting is outdated. Replace with new light emitting diode (LED) energy efficient wall lights.
G4030 Site Communications and Security						
	1980	1980	3	7	MK 08/21/13	Underground telephone service to buildings. Telephone vault box located at southeast corner of Building 1. No known problems. See also buildings' electrical sections.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Sammamish River Business Park Building 1	Superstructure	$18,000	$5,400	$4,680	$14,040	$42,120	$40,531
	Exterior Closure	$1,600	$480	$416	$1,248	$3,744	$3,674
	Roofing	$6,000	$1,800	$1,560	$4,680	$14,040	$13,254
	Interior Finishes	$87,500	$26,250	$22,750	$68,250	$204,750	$200,849
	Vertical Transportation	$5,000	$1,500	$1,300	$3,900	$11,700	$11,700
	Plumbing	$41,813	$12,544	$10,871	$32,614	$97,841	$93,502
	HVAC	$164,495	$49,349	$42,769	$128,306	$384,918	$375,984
	Fire Protection	$107,700	$32,310	$28,002	$84,006	$252,018	$252,018
	Electrical	$372,288	$111,686	$96,795	$290,384	$871,153	$851,109
	Facility Total	**$804,395**	**$241,319**	**$209,143**	**$627,428**	**$1,882,284**	**$1,842,621**
Sammamish River Business Park Building 2	Superstructure	$36,000	$10,800	$9,360	$28,080	$84,240	$81,062
	Exterior Closure	$1,600	$480	$416	$1,248	$3,744	$3,674
	Roofing	$6,000	$1,800	$1,560	$4,680	$14,040	$13,773
	Interior Finishes	$87,500	$26,250	$22,750	$68,250	$204,750	$200,849
	Vertical Transportation	$5,000	$1,500	$1,300	$3,900	$11,700	$11,700
	Plumbing	$41,813	$12,544	$10,871	$32,614	$97,841	$93,502
	HVAC	$141,895	$42,569	$36,893	$110,678	$332,034	$318,348
	Fire Protection	$106,700	$32,010	$27,742	$83,226	$249,678	$249,678
	Electrical	$381,013	$114,304	$99,063	$297,190	$891,569	$870,756
	Facility Total	**$807,520**	**$242,256**	**$209,955**	**$629,866**	**$1,889,597**	**$1,843,342**
Sammamish River Business Park Infrastructure	Site Improvements	$31,000	$9,300	$8,060	$24,180	$72,540	$66,964
	Site Electrical utilities	$19,200	$5,760	$4,992	$14,976	$44,928	$40,810
	Facility Total	**$50,200**	**$15,060**	**$13,052**	**$39,156**	**$117,468**	**$107,773**
	Site Total	**$1,662,115**	**$498,635**	**$432,150**	**$1,296,450**	**$3,889,349**	**$3,793,737**

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Total Observed Deficiency Repair Direct Cost : $1,662,115

Total Observed Deficiency Repair Direct Cost (Present Value): $1,621,255

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$18,000**
System: Superstructure				**Total System Deficiency Repair Cost (Present Value):**				**$17,321**
Floor Construction								
Wood Mezzanine	4	2 2013	Stair to mezzanine has non-uniform riser, no handrail or extension, and no toe kicks. Mezzanine lack headroom, has no lateral bracing and is of undetermined capacity.	Structure needs to be demolished or documented and permitted with required upgrades or replacement.	1	$18,000.00	ea	$18,000
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$1,600**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$1,570**
Exterior Windows								
Wood Stopped Glass	5	1 2013	Wood stops are failing and glass in some cases is slipping down to door frames. Both are hazards and allow energy loss.	The glass needs to be supported and new stops installed. This in an opportunity to add double pane glass.	8	$200.00	ea	$1,600
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$6,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$5,664**
Roof Coverings								
Roof Drains	4	3 2013	There are only four (4) roof drains and overflow roof drains for a 17,000 sf roof with many nearby trees. Drains are easily clogged and overflows are too small and too high leaving up to 12 inches of water on roof at times as seen by staining on parapet.	Install new larger overflow roof drains at 2-inches above roof deck. Provide weekly roof drain inspection during fall and early winter to remove debris.	4	$1,500.00	ea	$6,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Total Observed Deficiency Repair Direct Cost : $1,662,115

Total Observed Deficiency Repair Direct Cost (Present Value): $1,621,255

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$87,500**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$85,833**
Floor Finishes								
Concrete and Carpet Floor Finishes	4	1 2013	Carpet is well past useful life. Concrete needs cleaning and resealing.	Remove and replace carpet. Clean and reseal concrete floor.	17,450	$5.00	sf	$87,250
Ceiling Finishes								
Suspended Ceiling	4	1 2013	Some ceiling tiles are severely damaged or stained. In signals storage, remaining ceiling and lights are not adequately supported. Suspended ceilings damaged by water or earlier demolition.	Remove and replace damaged tiles. Remove unsupported ceiling and lights.	50	$5.00	ea	$250
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$5,000**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access.	Provide roof access from electrical room, including permanent ladder and roof hatch.	1	$5,000.00	ea	$5,000
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$41,813**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$39,958**
Plumbing Fixtures								
Plumbing Fixtures	4	3 2013	Low quality fixtures and trim have been heavily used and abused and are damaged, failing, discolored, backing-up, and leaking. Water closets, lavatories, and trim.	Replace plumbing fixtures.	10	$2,000.00	ea	$20,000
Sanitary Waste								

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Total Observed Deficiency Repair Direct Cost : $1,662,115

Total Observed Deficiency Repair Direct Cost (Present Value): $1,621,255

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Drain, Waste, and Vent	4	3 2013	Slow or blocked waste drains; dirty or blocked floor drains.	Troubleshoot and repair waste drains as needed.	17,450	$0.75	sf	$13,088
Rain Water Drainage								
Roof Drains	5	0 2013	Roof drains back up and overflow roof drains are too high and may back up as well. On-going roof leaks are damaging space below and adversely impacting city operations and tenant business.	Implement a roof drain maintenance program and retrofit roof with more robust roof drain and overflow roof drain system.	17,450	$0.50	sf	$8,725
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$164,495**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$160,677**
Cooling Generating Systems								
Cooling	5	1 2013	No cooling or ventilation for shop and warehouse areas; marginal for others.	Provide adequate cooling and ventilation for shop and warehouse areas.	12,215	$5.00	sf	$61,075
Cooling	5	1 2013	Little or no cooling in most office areas, with excessive number of portable fans, power strips, and extension cords.	Install permanent office cooling systems throughout.	5,235	$10.00	sf	$52,350
Condensing Unit	5	0 2013	Condensing unit is failed and abandoned in place.	Replace condensing unit.	1	$3,000.00	ea	$3,000
Terminal and Package Units								
Heaters	4	3 2013	Some Reznor gas fired unit heaters are approaching end of useful life.	Clean, inspect, test, and repair or replace unit heaters as needed.	1	$15,000.00	ls	$15,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Total Observed Deficiency Repair Direct Cost : $1,662,115

Total Observed Deficiency Repair Direct Cost (Present Value): $1,621,255

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Roof Top Units	5	1 2013	Rooftop units 1, 2, 3, and 4 are past end of useful life.	Replace rooftop units.	4	$7,000.00	ea	$28,000
Heaters	4	3 2013	Baseboard electric resistance heaters and electric resistance wall heaters: some units are damaged, blocked, undersized, oversized, or other issues.	Clean, inspect, test, and replace baseboard and wall heaters as needed.	2,535	$2.00	sf	$5,070
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$107,700**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$107,700**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0 2013	Retrofit new fire sprinkler system to protect assets. Wet pipe and dry pipe.	Install fire protection system.	17,450	$6.00	sf	$104,700
Other Fire Protection Systems								
Fire Separation Wall	5	0 2013	Fire separation wall is damaged.	Repair fire separation wall.	1	$3,000.00	ls	$3,000
Facility: Sammamish River Business Park Building 1				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$372,288**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$363,722**
Electrical Service and Distribution								
Panels	4	2 2013	Equipment/panels are old, over 30 years, and lack capacity on all electrical branch panels.	Replace all existing branch panels.	1	$60,000.00	ls	$60,000
Lighting and Branch Wiring								
Interior Lighting	4	1 2013	Building interior lighting is old, out of date, and is insufficient.	Replace and upgrade lighting and controls and branch wiring.	17,450	$7.50	sf	$130,875

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Total Observed Deficiency Repair Direct Cost : $1,662,115

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Branch Wiring	4	1 2013	Electrical branch wiring is old, out of date, and insufficient.	Replace and upgrade electrical branch wiring and devices.	17,450	$7.00	sf	$122,150
Low Voltage Communication Security and Fire Alarm								
Fire Alarm System	4	2 2013	Old fire alarm system equipment and detectors with insufficient coverage.	Replace existing fire alarm system with new addressable system, with code compliant coverage.	17,450	$2.25	sf	$39,263
Other Electrical Systems								
Emergency Lighting	5	0 2013	No emergency lights.	Add emergency battery backup lights inside building egress and exterior building egress.	50	$400.00	ea	$20,000

Facility: Sammamish River Business Park Building 2 — **Total System Deficiency Repair Cost (Undiscounted/Unescalated): $36,000**

System: Superstructure — **Total System Deficiency Repair Cost (Present Value): $34,642**

Floor Construction								
Wood Mezzanine	4	2 2013	Stair has non-uniform risers, no handrail or extension, and no toe kicks. Mezzanine lacks headroom, had no lateral bracing, and is of undetermined load capacity. Second mezzanine is similar but uses ladder; floor will not support weight.	Structure needs to be demolished or documented and permitted with required upgrades or replacement.	2	$18,000.00	ea	$36,000

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Total Observed Deficiency Repair Direct Cost : $1,662,115

Total Observed Deficiency Repair Direct Cost (Present Value): $1,621,255

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Sammamish River Business Park Building 2				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$1,600**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$1,570**
Exterior Windows								
Wood Stopped Glass	5	1 2013	Wood stops are failing and glass in some cases is slipping down to door frame. Both are hazards and cause energy loss.	The glass needs to be supported and new stops installed. This is an opportunity to add double pane glass.	8	$200.00	ea	$1,600
Facility: Sammamish River Business Park Building 2				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$6,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$5,886**
Roof Coverings								
Roof Drains	5	1 2013	There are only four (4) roof drains and three (3) overflow roof drains for a 17,000 sf roof with many nearby trees. Drains are easily clogged and overflow roof drains are too small and too high for having up to 12-inches of water on roof at times as seen by staining on parapet. An additional overflow roof drain has been roofed over. Some overflow roof drains are up to 10-inches above drain level. Clogged roof drains.	Install new larger overflow roof drains at 2-inches above roof deck. Provide weekly roof drain inspection during fall and early winter to remove debris.	4	$1,500.00	ea	$6,000
Facility: Sammamish River Business Park Building 2				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$87,500**
System: Interior Finishes				**Total System Deficiency Repair Cost (Present Value):**				**$85,833**
Floor Finishes								
Floor Finishes	4	1 2013	Carpet is well past its useful life. Concrete needs replacement.	Remove and replace carpet. Clean and reseal concrete.	17,450	$5.00	sf	$87,250
Ceiling Finishes								
Suspended Ceiling	4	1 2013	Some ceiling tiles are severely damaged or stained.	Remove and replace damaged ceiling tiles.	50	$5.00	ea	$250

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Sammamish River Business Park Building 2				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$5,000**
Other Conveying Systems								
Roof Access	5	0 2013	No roof access.	Provide roof access from electrical room, including permanent ladder and roof hatch.	1	$5,000.00	ea	$5,000
Facility: Sammamish River Business Park Building 2				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$41,813**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$39,958**
Plumbing Fixtures								
Plumbing Fixtures	4	3 2013	Low quality fixtures and trim have been heavily used and abused and are damaged, failing, discolored, backing up, and leaking. Water closets, lavatories, and trim.	Replace plumbing fixtures in Building 2.	10	$2,000.00	ea	$20,000
Sanitary Waste								
Drain, Waste, and Vent	4	3 2013	Slow or blocked waste drain. Dirty or blocked floor drains.	Troubleshoot and repair waste drain and floor drains as needed.	17,450	$0.75	sf	$13,088
Rain Water Drainage								
Roof Drains	5	0 2013	Roof drains back up; overflow roof drains are too high and may back up as well. Ongoing roof leaks are damaging space below and adversely impacting city operations and tenant business.	Implement a roof drain maintenance program and retrofit roof with more robust roof drain and overflow roof drain system.	17,450	$0.50	sf	$8,725

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Total Observed Deficiency Repair Direct Cost : $1,662,115

Total Observed Deficiency Repair Direct Cost (Present Value): $1,621,255

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Sammamish River Business Park Building 2				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$141,895**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$136,046**
Cooling Generating Systems								
Office Cooling	5	1 2013	Little or no office cooling in most office areas, with excessive number of portable fans, power strips, and extension cords.	Install permanent office cooling systems throughout.	5,235	$10.00	sf	$52,350
Shop and Warehouse Cooling	4	3 2013	No cooling or ventilation for shop and warehouse areas; marginal for other areas.	Provide adequate cooling and ventilation for shop and warehouse areas.	12,215	$5.00	sf	$61,075
HVAC Distribution Systems								
Exhaust Ductwork	4	0 2013	Vehicle shop exhaust ductwork: both systems have damaged ductwork, possibly due to vehicle strike.	Repair damaged galvanized sheet metal duct. Install bollards to protect from future vehicle strikes.	2	$1,500.00	ea	$3,000
Terminal and Package Units								
Heaters	4	3 2013	Some gas-fired Reznor unit heaters are approaching end of useful life.	Clean, inspect, test, and repair or replace gas-fired unit heaters as needed.	5,000	$3.00	sf	$15,000
Heaters	4	3 2013	Some baseboard electric resistance heaters and electric resistance wall heaters are damaged, some are blocked, some are under-sized, some are over-sized, and other issues.	Clean, inspect, test and replace baseboard and wall heaters as needed.	5,235	$2.00	sf	$10,470

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

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Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Sammamish River Business Park Building 2				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$106,700**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$106,700**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0 2013	Retrofit new fire sprinkler system to protect assets. Wet pipe and dry pipe.	Install fire protection system.	17,450	$6.00	sf	$104,700
Other Fire Protection Systems								
Fire Separation Wall	5	0 2013	Fire doors at fire separation wall in Building 2 are missing hardware and are blocked open.	Repair fire doors as soon as possible.	1	$2,000.00	ls	$2,000
Facility: Sammamish River Business Park Building 2				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$381,013**
System: Electrical				**Total System Deficiency Repair Cost (Present Value):**				**$372,118**
Electrical Service and Distribution								
Panels	4	2 2013	Equipment and panels are old, over 30 years, lacking in capacity on all electrical branch panels.	Replace all existing branch panels.	1	$60,000.00	ls	$60,000
Lighting and Branch Wiring								
Branch Wiring	4	1 2013	Electrical branch wiring is old, out of date, and insufficient.	Replace and upgrade electrical branch wiring and devices.	17,450	$7.00	sf	$122,150
Interior Lighting	4	1 2013	Building 2 interior lighting is old, out of date, and insufficient.	Replace and upgrade lighting and controls, and branch wiring.	17,450	$7.50	sf	$130,875
Low Voltage Communication Security and Fire Alarm								
Fire Alarm System	4	2 2013	Old fire alarm system equipment and detectors with insufficient coverage.	Replace existing fire alarm system with new addressable system with code compliant coverage.	17,450	$2.75	sf	$47,988

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

Total Observed Deficiency Repair Direct Cost : $1,662,115

Total Observed Deficiency Repair Direct Cost (Present Value): $1,621,255

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Other Electrical Systems								
Emergency Lighting	5	0 2013	No emergency lights.	Add emergency battery backup lights inside building egress and exterior building egress.	50	$400.00	ea	$20,000
Facility: Sammamish River Business Park Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$31,000**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$28,617**
Parking Lots								
Parking Area	4	4 2013	Pavement markings are in poor condition. Additional parallel parking stalls along 154th Avenue NE could be striped to increase parking count. Reports of insufficient parking stalls.	Restripe all parking stalls with new. Consider use of some designated compact stalls to increase count. Stripe new parallel stalls along curb on west side of Building 1.	1	$3,000.00	ls	$3,000
Parking Area	4	4 2013	Portions of the parking area along the south side of the buildings exhibits deficiencies due to asphalt deterioration (cracking and failure) and broken curbing.	Saw cut, remove, and replace sections of pavement as required. Remove and replace broken curb.	100	$50.00	sy	$5,000
Paved Yard	4	4 2013	The paved yard has extensive alligatoring, indicating subgrade weakness.	Recommend an asphalt overlay of the entire yard. Prep existing pavement and install asphalt overly. Provide pavement markings.	1,200	$15.00	sy	$18,000
Landscaping								

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Sammamish River Business Park Site

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Total Observed Deficiency Repair Direct Cost (Present Value): $1,621,255

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Landscaping	4	5 2013	Landscaping is aged and lacks variety. Some has been removed or died. Trees along east side of Building 2 are overhanging and need limbing. Large trees with cracks may require removal.	Install new landscaping in areas where missing. Limb up the overhanging trees and remove one (1) large cracked maple on east side of Building 1.	1	$5,000.00	ls	$5,000
Facility: Sammamish River Business Park Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$19,200**
System: Site Electrical utilities				**Total System Deficiency Repair Cost (Present Value):**				**$17,440**
Site Lighting								
Site Lighting	5	5 2013	Site lighting is outdated. There are two (2) wall lights on each side of both buildings.	Replace with new light emitting diode (LED) energy efficiency wall lights.	16	$1,200.00	ea	$19,200

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Opportunity Summary By Subsystem

City of Redmond

Site: Sammamish River Business Park Site **Total Site Opportunity Cost: $413,200**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Sammamish River Business Park Building 1**						
System:	**Exterior Closure**	**Total Cost: $26,880**					
B2020	**Exterior Windows**						
		Single glazed windows in aluminum frames could be replaced by double glazed unit with thermal break.	Remove all aluminum frame windows and replace with double glazed thermal break units.	56.00	$480.00	ea	$26,880
Facility:	**Sammamish River Business Park Building 1**						
System:	**Roofing**	**Total Cost: $17,450**					
B3010	**Roof Coverings**						
		Life of existing roof may be extended 10 to 15 years by coating.	Clean and apply elastomeric coating to roof.	17,450.00	$1.00	sf	$17,450
Facility:	**Sammamish River Business Park Building 1**						
System:	**HVAC**	**Total Cost: $54,350**					
D3010	**Energy Supply**						
		Consolidate five (5) natural gas meters to two (2) meters to reduce monthly multiple gas meter charges.	Consolidate five (5) natural gas meters to two (2) meters to reduce monthly multiple gas meter charges.	2.00	$1,000.00	ea	$2,000
D3060	**Controls and Instrumentation**						
		Currently largely old and outdated non-programmable, non-intelligent temperature and ventilation controls, with little or no remote monitoring.	Retrofit simplified DDC system to monitor key equipment.	17,450.00	$3.00	sf	$52,350
Facility:	**Sammamish River Business Park Building 1**						
System:	**Electrical**	**Total Cost: $107,920**					
D5010	**Electrical Service and Distribution**						
		Small electrical service, minimum capacity, insufficient for future use.	Upgrade electrical service to larger size.	1.00	$80,000.00	ls	$80,000
D5030	**Low Voltage Communication Security and Fire Alarm**						
		No security alarm system.	Add security alarm system with addressable system.	17,450.00	$1.60	sf	$27,920

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Sammamish River Business Park Site **Total Site Opportunity Cost: $413,200**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Sammamish River Business Park Building 2**						
System:	**Exterior Closure**	**Total Cost: $26,880**					
B2020	**Exterior Windows**						
		Single glazed windows in aluminum frames could be replaced with double glazed with thermal break units.	Remove all aluminum frame windows and replace with double glazed thermal break units.	56.00	$480.00	ea	$26,880
Facility:	**Sammamish River Business Park Building 2**						
System:	**Roofing**	**Total Cost: $17,450**					
B3010	**Roof Coverings**						
		Existing roof life may be extended 10 to 15 years by coating.	Clean and coat with elastomeric coating.	17,450.00	$1.00	sf	$17,450
Facility:	**Sammamish River Business Park Building 2**						
System:	**HVAC**	**Total Cost: $54,350**					
D3010	**Energy Supply**						
		Consolidate eight (8) natural gas to two (2) meters to reduce monthly multiple gas meter charges for Building 2.	Consolidate eight (8) natural gas to two (2) meters to reduce monthly multiple gas meter charges for Building 2.	2.00	$1,000.00	ea	$2,000
D3060	**Controls and Instrumentation**						
		Currently largely old and outdated non-programmable, non-intelligent temperature and ventilation controls, with little or no remote monitoring.	Retrofit simplified DDC system to motor key equipment.	17,450.00	$3.00	sf	$52,350
Facility:	**Sammamish River Business Park Building 2**						
System:	**Electrical**	**Total Cost: $107,920**					
D5010	**Electrical Service and Distribution**						
		Small electrical service, minimum capacity, insufficient for future use.	Upgrade electrical service to large size.	1.00	$80,000.00	ls	$80,000
D5030	**Low Voltage Communication Security and Fire Alarm**						
		No security alarm system.	Add security alarm system with addressable system.	17,450.00	$1.60	sf	$27,920

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Facility Summary

City of Redmond
Trinity Building Site
Trinity Building

18104 NE 76th Street
Redmond, WA 98052

Facility Code	
Facility Size - Gross S.F.	18,200
Year Of Original Construction	1981
Facility Use Type	Maintenance Shop
Construction Type	Medium
# of Floors	2
Energy Source	Gas
Year Of Last Renovation	1997
Historic Register	No

			Total Project Cost	Total Project Cost - Present Value
Weighted Avg Condition Score	**3.1**			
Facility Condition Index (FCI)	0.18			
Current Replacement Value (CRV)	$6,349,000	**Predicted Renewal Budget (6 yrs)**	$503,000	$462,000
Beginning Budget Year	2013	**Predicted Renewal Budget (20 yrs)**	$2,382,000	$2,002,000
		Observed Deficiencies (6 yrs)	$669,000	$660,000
		Observed Deficiencies (ALL)	$669,000	$660,000
		Opportunity Total Project Cost	$869,000	N/A

Facility Condition Summary

Architectural:
No architectural comments.

Electrical:
Building has underground electrical service from Puget Sound Energy, 480/277v, served by 225-kva padmount transformer at front of building. Building has fluorescent 2x4 parabolic fixtures in the office wing, and high intensity discharge (HID) high bay fixtures in warehouse bays. Building branch wiring all installed in conduits. Building has 15A, 20A ground type, isolated ground type receptacles throughout the office wing. Open bay area devices are mostly 15A type devices. Building has fire alarm system and card access system; building has no security alarm system. Building has no generator.

Mechanical:
Constructed in 1981 and occupied by Genie for light manufacturing until sold to City of Redmond in 2008.Major improvement in 1997 including roof insulation, new storefront windows (double glazed with window film and mini blinds), three (3) new roof top unit gas-packs, and general tenant improvement work. High bay shop/warehouse to north and west; offices, training, and core system to southeast quadrant, two-story.
HVAC is roof top unit gas-pack for office and training area. High bay shop's HVAC is gas-fired unit heaters with no ventilation system, other than several operable doors.
Plumbing is city water and sewer with electric domestic hot water heat. Abandoned copper compressed air distribution piping in shop/warehouse space (no compressor).
No fire sprinkler.

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Facility Summary

City of Redmond
Trinity Building Site
Trinity Building

18104 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
A Substructure			**3.0**			
Foundations						
A1010 Standard Foundations						
	1981	1997	3	56	RD 08/28/13	Poured in place concrete. Foundation is largely covered with bark. No deficiencies observed.
A1030 Slab On Grade						
	1981	1981	3	15	RD 08/28/13	Slab on grade. Slab shows excessive directional cracking.
B Shell			**2.8**			
Superstructure						
B1010 Floor Construction						
	1981	1997	3	56	RD 08/28/13	Second floor wood frame. No deficiencies observed.
B1020 Roof Construction						
	1981	1997	3	56	RD 08/28/13	Plywood on 2x wood frame on glue-laminated purlins on glue-laminated beams on steel columns. Roof deck damaged by barrier leak(s). Steel pulling away from wall panel. See "Slab on Grade" section above. Gutters leaking; scuppers clogged.
Exterior Closure						
B2010 Exterior Walls						
	1981	1981	3	28	RD 08/28/13	Tilt up concrete. Panels on north wall show rust at strike locations. Panels show damage at panel connections. Movement? See also "Slab on Grade" section above.
B2020 Exterior Windows						
	1981	1997	3	31	RD 08/28/13	Metal frame double glazed windows. No deficiencies observed except deterioration of window film. Suggest exterior shade.

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Facility Summary

City of Redmond
Trinity Building Site
Trinity Building

18104 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
B Shell			**2.8**				
Exterior Closure							
B2030 Exterior Doors							
	1981	1997	3	18	RD	08/28/13	Aluminum storefront is in good condition. Hollow metal doors and frames. Some doors rusting or have impact damage.
Roofing							
B3010 Roof Coverings							
	1981	2013	2	10	RD	08/28/13	Snow coated (2013) torch down roof. Coating shows telegraphed breaks in roofing and needs to be recoated in areas.
B3020 Roof Openings							
	1981	1997	3	15	RD	08/28/13	Curbs and openings. No deficiencies observed.
B3030 Projections							
	1981	1997	3	17	RD	08/28/13	Canopy near west main door. Canopy not over door. Relocate. (Less than $2,000.)
C Interiors			**3.0**				
Interior Construction							
C1010 Partitions							
	1981	1997	3	34	RD	08/28/13	Wood frame. No deficiencies observed.
C1020 Interior Doors							
	1981	1997	3	24	RD	08/28/13	Solid core wood doors and frames. Door worn but functional.
C1030 Fittings							
	1981	1997	3	14	RD	08/28/13	White boards, rails, and counters. Worn but functional.

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City of Redmond
Trinity Building Site
Trinity Building

18104 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
C Interiors			**3.0**			
Staircases						
C2010 Stair Construction						
	1981	1997	3	56	RD 08/28/13	Wood stairs. No deficiencies observed.
C2020 Stair Finishes						
	1981	1997	3	10	RD 08/28/13	Rubber stair tread. No deficiencies observed.
Interior Finishes						
C3010 Wall Finishes						
	1981	1997	3	7	RD 08/28/13	Painted gypsum wall board. Isolated damage to be repaired and painted with normal maintenance. (Less than $2,000.)
C3020 Floor Finishes						
	1981	1997	3	8	RD 08/28/13	See "Slab on Grade" section above. Carpet. Carpet worn but functional.
C3030 Ceiling Finishes						
	1981	1997	3	18	RD 08/28/13	Acoustical ceiling in office, Limited isolated tile replacement needed. (Less than $2,000.)
D Services			**3.4**			
Vertical Transportation						
D1010 Elevators and Lifts						
	1981	1981	5	0	DCS 08/28/13	No elevator to second floor. Install elevator.
D1090 Other Conveying Systems						
	1981	1981	3	10	DCS 08/28/13	Roof hatch and ladder. No hoists or cranes in shop. Roof access is in fair condition. Opportunity for hoists and/or cranes.

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.4**				
Plumbing							
D2010 Plumbing Fixtures							
	1981	1981	4	5	DCS	08/28/13	Porcelain water closets, urinals, and lavatories in men's and women's with chrome trim. Stainless steel sinks at coffee bars. Aged by largely operable with some trim issues. Signs of occasional flushing fixture back-ups.
D2020 Domestic Water Distribution							
	1981	1981	3	10	DCS	08/28/13	City water. Copper distribution piping. Electric domestic hot water heaters, A.O. Smith 40-gallong, 1997. Hose bibs outside and inside. Domestic hot water piping is not insulated. Domestic hot water heater not installed per code.
D2030 Sanitary Waste							
	1981	1981	4	5	DCS	08/28/13	City sewer with visible ABS drain, waste, and vent (DW&V) piping, Hidden materials unknown. Signs of flushing fixture drainage problems. Investigate and repair or replace as needed.
D2040 Rain Water Drainage							
	1981	1981	4	3	DCS	08/28/13	Roof drains via scupper boxes and gutters and downspouts down to site storm drain system. Ponding at perimeter, especially south. Scupper opening, not protected, small and quickly blocked by pine tree needles. PVC downspout subject to vehicular damage where exposed and ultraviolet (UV) damage to south. Several storm sewer connections failed.
D2090 Other Plumbing Systems							
	1981	1997	3	10	DCS	08/28/13	Copper compressed air distribution loop with valved stubs, no drops, no air compressor. Piping is in fair to good condition. Air compressor shed outside north wall is empty (no compressor). Opportunity to install compressor and drops to active shop and maintenance areas.
HVAC							
D3010 Energy Supply							
	1981	1997	3	25	DCS	08/28/13	Natural gas supplied by Puget Sound Energy via

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
D Services			**3.4**				
HVAC							
D3010 Energy Supply							
							meter number 1106964 with 1,000-cfh capacity including seismic valve. Steel distribution pipe to three (3) roof top units and three (3) unit heaters. Large natural gas service with opportunity to upgrade to gas domestic hot water and fully heated shop with insulation upgrade.
D3030 Cooling Generating Systems							
	1981	1997	4	3	DCS	08/28/13	Small ventilation cooling fan for small main electrical, communication, MDF (main distribution frame) room. Negative pressure in electrical room drawn duct and _ into room adversely impacting equipment. Room is warm/hot during warm weather.
D3040 HVAC Distribution Systems							
	1981	1997	5	0	DCS	08/28/13	Toilet room ceiling exhaust fans. No exhaust service for first floor janitor room or most storage rooms. No shop exhaust. Toilet room exhaust fans are nearing end of life. Ventilation for janitor closet and other storage areas, may not meet code.
D3050 Terminal and Package Units							
	1981	1997	3	10	DCS	08/28/13	Three (3) Dayton gas-fired vented (to roof) unit heaters for high bay shop. Three (3) roof top unit gas-packs for office areas: large 12.5-ton, medium 8.5-ton, and small 2-ton Trane units with sheet metal and flex duct supply; combination of ducted and open plenum returns. Shop unit heaters for freeze protection semi-heating. See "Energy Supply" section for opportunity to provide comfort heating. While unit heaters and roof top units are 15-years old, little use since late 2000's coupled with good maintenance should extend life.
D3060 Controls and Instrumentation							
	1981	1997	3	10	DCS	08/28/13	Programmable thermostats. See "Terminal and Packed Units" section for opportunity for semi-zone control using variable volume and temperature (VVT) or Thermafuse

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.4**			
HVAC						
D3060 Controls and Instrumentation						
						technology. Opportunity to upgrade to DDC for additional building automation and remote monitoring.
D3090 Other HVAC Systems and Equipment						
	1981	1997	3	7	DCS 08/28/13	Hole(s) in high bay roll-up door(s) for vehicle engine exhaust. No industrial equipment. Former paint booth at center north was removed by previous tenant. Opportunity to install vehicle engine exhaust and industrial ventilation as needed to support program changes.
Fire Protection						
D4010 Fire Protection Sprinkler Systems						
	1981	1981	5	0	DCS 08/28/13	No fire sprinkler. Install fire sprinkler.
D4030 Fire Protection Specialties						
	1981	1997	3	15	DCS 08/28/13	Fire extinguishers on wall in shop area and in cabinets in office area. Inspections current.
Electrical						
D5010 Electrical Service and Distribution						
	1981	1981	3	8	RA 08/28/13	Building electrical system is 480/277V 4-wire with five (5) main service disconnect switches. Each disconnect feeds directly to the panel. Electrical room is small and full of equipment. Service equipment and branch panels and transformers are old, over 32 years old, and outdated; should be replaced in future building planning.
D5020 Lighting and Branch Wiring						
	1981	1981	3	8	RA 08/28/13	Building interior lighting is the fluorescent 2x4 parabolic fixtures in the office wing, and high intensity discharge (HID) high bay fixtures in the open bays. Building exterior lights are HID wall packs and roof flood lights. All lighting is in

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Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
D Services			**3.4**			
Electrical						
D5020 Lighting and Branch Wiring						working condition. No automatic occupancy controls. Branch wiring and devices are in new, good condition in all office areas on first and second floors. Branch wiring and devices are in older condition, 1981, and probably should be replaced in future building planning. All the high intensity discharge (HID) lighting in the warehouse bays are over 30 years old; the fixtures are high bay 400w, not energy efficient, and should be replaced in future building planning.
D5030 Low Voltage Communication Security and Fire Alarm						
	1981	1981	3	6	RA 08/28/13	Building has fire alarm system, control panel is Silent Knight #5207, located in electrical room. Devices consist of smoke detectors, heat detectors, and horn strobes. Building has a small access control and card readers at exit doors. Fire alarm system is in working condition at over 30 years, but should consider an upgrade with future building planning. Building access system is working well; Altronix system. Building has data/voice, Cat-5E system, which is in good condition.
D5090 Other Electrical Systems						
	1981	1981	3	5	RA 08/28/13	Building has no generator. Emergency battery backup pack wall fixtures are used. Emergency battery backup wall fixtures are located at main stairway and exit doors, are in fair condition and marginal quantities.
E Equipment and Furnishings			**3.0**			
Equipment						
E1020 Institutional Equipment						
	1981	1997	3	10	RD 08/28/13	Motorized training screen. No deficiencies observed.
E1030 Vehicular Equipment						

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Facility Summary

City of Redmond
Trinity Building Site
Trinity Building

18104 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
E Equipment and Furnishings			**3.0**			
Equipment						
E1030 Vehicular Equipment						
	1981	1981	3	8	RD 08/28/13	Motorized overhead doors with auto-open in-floor sensors at exit door to east. No deficiencies observed or reported.
Furnishings						
E2010 Fixed Furnishings						
	1981	1997	3	15	RD 08/28/13	Window shades. No deficiencies observed.
E2020 Moveable Furnishings (Capital Funded Only)						
	1981	1997	3	15	RD 08/28/13	Limited tables and chairs. Some damaged. Replace as needed. (Less than $2,000.)

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Facility Summary

City of Redmond
Trinity Building Site
Trinity Building Infrastructure

18104 NE 76th Street
Redmond, WA 98052

Facility Condition Summary

The Trinity Building is located near the southeast corner of the City of Redmond Maintenance Operations Center site, along the north side of NE 76th Street. The building has asphalt parking areas along the south and west sides. The asphalt access road on the east side of the building is shared with Genie Lift Company. There are mature trees along the south side of the site and the south side of the building. There is active construction underway on the westernmost 40' of the site, for the "MOC Decant Facility Improvements" project. This area is currently an open excavation for future decant and bio-retention facilities. Excavated material is stockpiled in the south parking lot. The building is served by City of Redmond utilities.

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date		Comments
G Sitework							
Site Improvements							
G2010 Roadways							
	1981	1981	4	2	MK	08/27/13	Access road, 20-feet wide, along east side of building is shared with Genie Lift Company. Asphalt drive at northeast corner at building. Asphalt is in poor condition with alligatoring, cracking, and failures. Concrete driveway apron at NE 76th is also significantly cracked. Assume responsibility for half of drive repair cost only.
G2020 Parking Lots							
	1981	1981	3	5	MK	08/27/13	Asphalt parking lots on west and south side of building are worn and cracking. There is a concrete slab on a portion of the west lot, also cracked and worn. Pavement markings are faded. Asphalt lot on west side is in fair to poor condition, with cracking and spalling. Asphalt lot on south side is in fair condition, with some cracking and failure along the construction joints. Recommend new asphalt overlay and new curbs. Note the extent of repairs will depend on the restoration associated with the Decant Facility construction that is currently underway, as some pavement repair may occur under contract.
G2030 Pedestrian Paving							
	1981	1981	2	10	MK	08/27/13	Concrete entry sidewalk on east side of building, and a small concrete landing by south entry door.

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Facility Summary

City of Redmond
Trinity Building Site
Trinity Building Infrastructure

18104 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Improvements						
G2030 Pedestrian Paving						Walks are in good condition.
G2050 Landscaping	1981	1981	3	8	MK 08/27/13	Site has mature trees on south side of building, and along south side of parking lot. Groundcover is generally grass and woodchips. Trees appear to be in fair condition, suitable for current use of the site. Trees adjacent to building should be trimmed to reduce fouling of roof surfaces, especially roof drains (less than $2,000).
Site Civil / Mechanical Utilities						
G3010 Water Supply	1981	1981	3	13	MK 08/27/13	Water service to building provided by City of Redmond system. No known issues.
G3020 Sanitary Sewer	1981	1981	3	18	MK 08/27/13	Sanitary sewer service to building provided by City of Redmond system. No known issues.
G3060 Fuel Distribution	1981	1981	3	8	MK 08/27/13	Natural gas meter with seismic valve on east side of the building. No known issues.
Site Electrical utilities						
G4010 Electrical Distribution	1981	1981	3	8	MK 08/27/13	Underground electric service to the building, 225-kva transformer on the south side of the building. No known issues.
G4020 Site Lighting	1981	1981	3	10	MK 08/27/13	Wall lights on exterior perimeter walls of the building. Three (3) newer double light fixtures on the roof are directed to the site areas below.

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Facility Summary

City of Redmond
Trinity Building Site
Trinity Building Infrastructure

18104 NE 76th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Major System Renew.	Cond. Scores	Subsystem Remain.Useful Life - Yrs	Surveyor/ Survey Date	Comments
G Sitework						
Site Electrical utilities						
G4020 Site Lighting						
						No known issues.

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Deficiency Repair Cost Markups By System 2013 - 2018

City of Redmond

Site: Trinity Building Site

Facility	System	Direct Construction Cost	Contingency 30%	Contractor's OH & P 20%	Project Soft Cost 50%	Total Project Cost	Total Project Cost (Present Value)
Trinity Building	Foundations	$5,000	$1,500	$1,300	$3,900	$11,700	$11,045
	Superstructure	$3,000	$900	$780	$2,340	$7,020	$6,887
	Exterior Closure	$10,600	$3,180	$2,756	$8,268	$24,804	$23,868
	Roofing	$11,000	$3,300	$2,860	$8,580	$25,740	$24,469
	Vertical Transportation	$75,000	$22,500	$19,500	$58,500	$175,500	$175,500
	Plumbing	$24,000	$7,200	$6,240	$18,720	$56,160	$51,845
	HVAC	$39,000	$11,700	$10,140	$30,420	$91,260	$89,746
	Fire Protection	$118,300	$35,490	$30,758	$92,274	$276,822	$276,822
	Facility Total	**$285,900**	**$85,770**	**$74,334**	**$223,002**	**$669,006**	**$660,182**
Trinity Building Infrastructure	Site Improvements	$77,500	$23,250	$20,150	$60,450	$181,350	$166,996
	Facility Total	**$77,500**	**$23,250**	**$20,150**	**$60,450**	**$181,350**	**$166,996**
	Site Total	**$363,400**	**$109,020**	**$94,484**	**$283,452**	**$850,356**	**$827,178**

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Trinity Building Site

Total Observed Deficiency Repair Direct Cost : $363,400

Total Observed Deficiency Repair Direct Cost (Present Value): $353,495

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Trinity Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$5,000**
System: Foundations				**Total System Deficiency Repair Cost (Present Value):**				**$4,720**
Slab On Grade								
Concrete Slab	4	3 2013	Excessive cracking together with broken joints in concrete panels. Structural steel separating from wall at southwest corner.	Investigate differential movement and structural integrity.	1	$5,000.00	ea	$5,000
Facility: Trinity Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$3,000**
System: Superstructure				**Total System Deficiency Repair Cost (Present Value):**				**$2,943**
Roof Construction								
Metal Gutter	4	1 2013	Metal gutter at north wall is leaking and water is staining wall. Scuppers at south wall are clogged with debris and have no screens.	Clean and screen scuppers. Replace gutter and slope to drain.	200	$15.00	lf	$3,000
Facility: Trinity Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$10,600**
System: Exterior Closure				**Total System Deficiency Repair Cost (Present Value):**				**$10,200**
Exterior Windows								
Window Film	4	2 2013	Shading film on interior side of windows is coming off/damaged.	Remove film. (Opportunity for exterior shade.)	40	$85.00	ea	$3,400
Exterior Doors								
Hollow Metal Doors	4	2 2013	Hollow metal doors in used and worn condition. Paint is oxidized; doors show damage and rust.	Clean, repair, replace hardware as needed, and paint.	8	$900.00	ea	$7,200

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Trinity Building Site

Total Observed Deficiency Repair Direct Cost : $363,400

Total Observed Deficiency Repair Direct Cost (Present Value): $353,495

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Trinity Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$11,000**
System: Roofing				**Total System Deficiency Repair Cost (Present Value):**				**$10,457**
Roof Coverings								
Snow Coat	2	1 2013	2013 snow coating has pulled apart over existing cracks in roof.	Recoat areas where cracking shows.	1	$2,000.00	ls	$2,000
Insulation	4	3 2013	Second floor roof insulation is inconsistent. Shop ceiling at southeast is missing insulation at past roof leak.	Remove roofing. Replace missing insulation and vapor barrier. Reroof with new.	1,000	$9.00	sf	$9,000
Facility: Trinity Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$75,000**
System: Vertical Transportation				**Total System Deficiency Repair Cost (Present Value):**				**$75,000**
Elevators and Lifts								
Elevator	5	0 2013	No elevator to second floor.	Install two-stop hydraulic passenger elevator.	1	$75,000.00	ea	$75,000
Facility: Trinity Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$24,000**
System: Plumbing				**Total System Deficiency Repair Cost (Present Value):**				**$22,156**
Plumbing Fixtures								
Plumbing Fixtures	4	5 2013	Water closets, urinals, sinks, and trim are aged and worn.	Repair or replace as needed.	1	$7,000.00	ls	$7,000
Domestic Water Distribution								
Domestic Hot Water Heater	4	5 2013	Domestic hot water heater is approaching end of life, is not code compliant, and piping is not insulated.	Schedule domestic hot water heater replacement, bring up to code, and insulate pipe.	1	$5,000.00	ls	$5,000
Sanitary Waste								

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Trinity Building Site

Total Observed Deficiency Repair Direct Cost : $363,400

Total Observed Deficiency Repair Direct Cost (Present Value): $353,495

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Drain, Waste, and Vent	4	5 2013	Signs of water drainage issues.	Investigate and repair/replace as needed.	1	$2,000.00	ls	$2,000
Rain Water Drainage								
Roof Drains	4	3 2013	Ponding at south side. Blocked scupper openings. PVC downspouts. Some downspouts not connected.	Add new scuppers and downspouts at most heavily ponded areas. Enlarge scupper opening and add overflow roof drain-type scupper boxes. Replace PVC downspouts with metal downspouts in vehicle traffic area and south façade.	10	$1,000.00	ea	$10,000
Facility: Trinity Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$39,000**
System: HVAC				**Total System Deficiency Repair Cost (Present Value):**				**$38,353**
Cooling Generating Systems								
Cooling	4	3 2013	Ventilate cooling only for main electrical room with communications equipment, drawing dust and dirt in space.	Install dedicated split direct expansion (DX) cooling system.	1	$5,000.00	ea	$5,000
HVAC Distribution Systems								
General Exhaust	4	5 2013	Toilet room ceiling fans approaching end of life. Little or no ventilation for janitor closet, kitchenette, and storage areas.	Schedule toilet room exhaust fans for replacement. Provide code minimum exhaust/ventilation for janitor, kitchenette, and storage room.	8	$500.00	ea	$4,000
Ventilation	5	0 2013	No ventilation or exhaust for high bay shop.	Provide code minimum ventilation and exhaust.	10,000	$3.00	sf	$30,000

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Detailed Assessment - Observed Deficiencies 2013 - 2018

City of Redmond

Site: Trinity Building Site

Total Observed Deficiency Repair Direct Cost : $363,400

Total Observed Deficiency Repair Direct Cost (Present Value): $353,495

Material	Cond.	Material Useful Life / Survey Year	Deficiency / Condition Notes	Action	Qty	Unit Cost	Unit	Direct Construction Cost
Facility: Trinity Building				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$118,300**
System: Fire Protection				**Total System Deficiency Repair Cost (Present Value):**				**$118,300**
Fire Protection Sprinkler Systems								
Fire Sprinkler System	5	0 2013	No fire sprinkler.	Install dry pipe in shop and wet pipe sprinkler in office area with stand pipe.	18,200	$6.50	sf	$118,300
Facility: Trinity Building Infrastructure				**Total System Deficiency Repair Cost (Undiscounted/Unescalated):**				**$77,500**
System: Site Improvements				**Total System Deficiency Repair Cost (Present Value):**				**$71,366**
Roadways								
Roadways	4	2 2013	Asphalt access road is in poor condition with alligatoring, cracking, and failures. Concrete driveway apron is also significantly cracked. Both should be replaced. (Assume responsibility for half of drive repair cost only.) Asphalt access road along east side of building, including concrete apron at NE 76th Street.	Replace asphalt drive and concrete apron. Pavement section must be suitable for truck loading, minimum 4-inch Class B asphalt on 6-inch base.	300	$60.00	sy	$18,000
Parking Lots								
Parking Lots	4	5 2013	Asphalt lot on west side is in fair to poor condition, with cracking and spalling. Asphalt lot on south side is in fair condition, with some cracking and failures along the construction joints. Asphalt parking lots along west and south sides of building.	Recommend remove and replace existing concrete curbs. Limited replacement of failed pavement sections, and new asphalt overlay (1.5-inches) over entire lot. New pavement markings.	1,700	$35.00	sy	$59,500

Note: Cost estimates shown are direct construction costs.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Trinity Building Site **Total Site Opportunity Cost: $371,550**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
Facility:	**Trinity Building**						
System:	**Exterior Closure**	**Total Cost: $30,000**					
B2020	**Exterior Windows**						
		There has been an obvious effort to control solar gain.	Install an exterior shade awning above both rows of windows on the south elevation.	150.00	$200.00	lf	$30,000
Facility:	**Trinity Building**						
System:	**Vertical Transportation**	**Total Cost: $600**					
D1090	**Other Conveying Systems**						
		High bay space functionality may be improved with hoists and/or lifts.	Install 2-ton overhead hoists.	2.00	$300.00	ea	$600
Facility:	**Trinity Building**						
System:	**Plumbing**	**Total Cost: $20,000**					
D2090	**Other Plumbing Systems**						
		Existing compressed air distribution loop is abandoned in place.	Install 10-hp 100-gallon ventilation air compressor, refrigerated air dryer, and twelve (12) pressure regulated drops with 1/2-inch quick disconnects.	1.00	$20,000.00	ls	$20,000
Facility:	**Trinity Building**						
System:	**HVAC**	**Total Cost: $116,600**					
D3010	**Energy Supply**						
		Domestic hot water is electric and approaching end of life. Replacement can be upgraded to high efficiency gas.	Install new high efficiency gas-fired domestic hot water heater and recirculation pump.	1.00	$7,500.00	ls	$7,500
		High bay shop space walls are not insulated. Shop is semi-heated only.	Install wall insulation per current energy code to improve space comfort and energy efficiency.	10,000.00	$8.00	sf	$80,000
D3060	**Controls and Instrumentation**						
		Current thermostats provide no integrated control or remote monitoring.	Opportunity to upgrade to DDC systems for optimal control and remote monitoring.	18,200.00	$0.50	sf	$9,100
D3090	**Other HVAC Systems and Equipment**						

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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Opportunity Summary By Subsystem

City of Redmond

Site: Trinity Building Site **Total Site Opportunity Cost: $371,550**

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Cost
		Previous tenant employed industrial ventilator to improve high bay shop, indoor air quality, and occupant health, well being, and productivity.	Study, design, and install industrial ventilators, specifically vehicle engine exhaust to support current operation.	2.00	$10,000.00	ea	$20,000
Facility:	**Trinity Building**						
System:	**Electrical**	**Total Cost: $204,350**					
D5010	**Electrical Service and Distribution**						
		Building electrical service and panels are old and outdated.	Replace existing electrical service and distribution.	18,200.00	$4.50	ea	$81,900
D5020	**Lighting and Branch Wiring**						
		Warehouse open bays lighting fixtures are old, outdated, and approaching end of life.	Upgrade existing high intensity discharge (HID) lights to fluorescent high bay fixtures with occupancy sensors and new branch wiring.	45.00	$800.00	ea	$36,000
D5030	**Low Voltage Communication Security and Fire Alarm**						
		Building has no security alarm system. Add security alarm system with future building planning.	Provide new addressable security system.	18,200.00	$2.00	sf	$36,400
		Upgrade existing fire alarm system with future building planning.	Provide new addressable fire alarm system.	18,200.00	$2.75	sf	$50,050

Note: Cost estimates shown are raw construction costs and do not include any mark-ups or escalation.

Print Date: 03/10/14

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V. APPENDIX

5.1 Facility List

5.2 FCA Project Team

5.3 FCA Terminology

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5.6. MENG Analysis FCA *Database*

5.7. Cost Model & Cost Estimating

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5.9. Renewal Budget by Facility by Subsystem by Year

6.0. Facility Survey Highlights

6.1 Infrared Electrical

6.2 Infrared Envelope

6.3 Redmond Facilities Map

5.1 List of Facilities

Site/Bldg (number)	Site/Bldg Name	Abbreviation	Address (please verify all)	Survey Date (date)	Site Purchased (yr)	Original Construction (year)	Last Renovation (year)	Site Area (acres or ksf)	Bldg Area (sf)	Assign - able (%)	Assign - able (sf)	Capital Funding (source)	Fuel Source (type)	Historic (Y/N/M)	Life Adj (factor)	Stories (qty)	IBC Const (type)	Structure (type)	Structure (class)	Last Survey (score)	Current Survey (score)	Pri IBC Occ (type)	Sec IBC Occ (type)	Cost Model (type)	Cost ($/sf)	CRV ($)	Department	Comments
1	Redmond Municipal Campus	RMC	Unknown	9/30/2013	Unknown	Unknown	none	500,000	n/a	n/a	n/a	Unknown	n/a	n/a	100%	n/a	n/a	n/a	n/a	n/a	2	n/a	n/a	Large Site	$ 5	$ 2,500,000	Admin/Other	Site; includes PSB & RSC sub-site
1.1	Redmond City Hall	RCH	15670 NE 85th St Redmond, WA 98052	9/30/2013	n/a	2005	none	RMC	107,212	80%	85,770	DBOM	Gas	N	100%	4	TBD	Unknown	Medium	n/a	1.7	B	A-3	Admin Mid-rise	$ 563	$ 60,362,500	Admin/Other	Wright Runstad DBOM
1.2	Municipal Campus Parking Garage	CCPG	Unknown	9/30/2013	n/a	2005	none	RMC	90000	60%	54,000	DBOM	Elec	N	110%	3	TBD	Reinf Cncrt	Heavy	n/a	2.6	S-2	n/a	Pkng Garage	$ 91	$ 8,199,000	Admin/Other	On City Hall site; also WR DBOM
2	PSB & RSC Site	Site	Unknown	8/19/2013	Unknown	Unknown	none	315,000	n/a	n/a	n/a	Unknown	n/a	n/a	100%	n/a	n/a	n/a	n/a	n/a	2.5	n/a	n/a	Medium site	$ 5	$ 1,575,000	Police	Sub-part of City Muni Campus site?
2.1	Public Safety Building	PSB	8701 160th Ave NE	8/18/2013	n/a	1990	none	PSB & RSC	94,975	85%	80,729	City	Gas	N	95%	1+2+Mezz	TBD	Reinf Cncrt	Heavy	n/a	2.7	B	I-3	Pol Sta w/ Pkg Grg	$ 550	$ 52,241,949	Police	Poor condition for age; several serious issues
2.1.1	North Police Garage	NPG	Unknown	8/18/2013	n/a	Newer	none	PSB & RSC	1,250	95%	1,188	Unknown	Gas	N	100%	1	TBD	TBD	Medium	n/a	2.0	S-1	n/a	Maintenance	$ 301	$ 376,188	Police	
2.1.3	South Police Garage	SPG	Unknown	8/18/2013	n/a	Newer	none	PSB & RSC	1,000	95%	950	Unknown	Gas	N	100%	1	TBD	TBD	Medium	n/a	2.0	S-1	n/a	Maintenance	$ 301	$ 300,950	Police	
2.2	Redmond Senior Center	SC	8703 160th Ave NE	8/20/2013	n/a	1990	none	PSB & RSC	22,000	80%	17,600	Unknown	Gas	N	110%	1	TBD	Wd Frm	Medium	n/a	3.0	A-3	B	Civic Center	$ 300	$ 6,600,000	Parks	Good condition for age
3	Sammamish River Business Park Site	SRBP	15503 NE 90th St	8/21/2013	Unknown	1980	none	75,000	n/a	n/a	n/a	Unknown	n/a	n/a	100%	n/a	n/a	n/a	n/a	n/a	3	n/a	n/a	Small Site	$ 5	$ 375,000	Admin/Other	
3.1	Sammamish River Business Park Bldg 1	SRBP1	15503 NE 90th St	8/21/2013	n/a	1980	none	SRBP	17,450	95%	16,578	Unknown	Gas	N	100%	1	TBD	Reinf CMU	Medium	n/a	3.5	S-2	B	Maintenance	$ 301	$ 5,251,578	Admin/Other	Purchased; no Dwgs.
3.2	Sammamish River Business Park Bldg 2	SRBP2	15523 NE 90th St	8/21/2013	n/a	1980	none	SRBP	17,450	95%	16,578	Unknown	Gas	N	100%	1	TBD	Reinf CMU	Medium	n/a	3.5	S-2	B	Maintenance	$ 301	$ 5,251,578	Admin/Other	Purchased; no Dwgs.
4	Old Redmond School House Community Center	CC	16600 NE 80th St	8/22/2013	Leased	1922	1980	124,000	46,000	75%	34,500	Unknown	Gas	Y	100%	2 + PB	TBD	Brick	Medium	n/a	3.0	A-3	A-4	Community Center	$ 421	$ 19,361,400	Parks	Was "Old School/Comm Cntr"
5	Old Fire House Teen Center	TC	16510 NE 79th St	8/22/2013	Unknown	1952	2000	40,000	8,000	85%	6,800	Unknown	Gas	M	100%	1 + HT	TBD	Masonry	Heavy	n/a	3.4	A-3	B	Community Center	$ 421	$ 3,367,200	Parks	Was "Old Fire Sta/Teen Cntr"
6	Redmond Pool	Pool	17535 NE 104th St	8/29/2013	Unknown	1970	2010	160,000	12,554	90%	11,299	Unknown	Gas	N	100%	1 + PB	TBD	Reinf Cncrt	Heavy	n/a	3.0	A-3	n/a	Pool Bldg (new)	$ 478	$ 6,004,955	Parks	Structural integrity concern at east wall
7	Public Works Maintenance & Operations Center	MOC	Unknown	8/26/2013	Unknown	Unknown	none	331,056	n/a	n/a	n/a	Unknown	n/a	n/a	80%	n/a	n/a	n/a	n/a	n/a	3.5	n/a	n/a	Large Site	$ 5	$ 1,655,280	Public Works	Site
7.1	MOC Main Building (Bldg 1)	Bldg 1	18080 NE 76th St	8/26/2013	n/a	1977	1998	MOC	11,700	85%	9,945	Unknown	Gas	N	100%	1 + Mezz	TBD	Wd Frm	Medium	n/a	3.2	S-1	B	Maintenance Shop	$ 323	$ 3,783,078	Public Works	Originally all shops; now mix of shop & office; 1 ksf wash rack
7.3	Street Department Modular (Bldg 3)	SDM	18080 NE 76th St	8/26/2013	n/a	1998	none	MOC	1,850	90%	1,665	Unknown	Elec	N	100%	1	TBD	Wd Frm	Light	n/a	3.1	B	n/a	Office	$ 443	$ 819,106	Public Works	Two-module (double-wide) on crawlspace foundation
7.5	Central Stores Warehouse (Bldg 5)	CSW	18080 NE 76th St	8/26/2013	n/a	1988	none	MOC	4,500	95%	4,275	Unknown	Elec	N	100%	2	TBD	Metal	Light	n/a	3.2	S-2	B	Warehouse-Mezz	$ 255	$ 1,146,510	Public Works	Semi and non-heated space
7.8	Park Operations Center (Bldg 8)	POC	18120 NE 76th St	8/27/2013	n/a	1970	1998	MOC	8,202	85%	6,972	Unknown	Gas	N	100%	1.5	TBD	Wd & Mtl Fm	Light	n/a	3.0	B	S-2	Maintenance	$ 301	$ 2,468,392	Public Works	City purchased from Hos Brothers Hauling
7.11A	Decant Office (Bldg 11A)	Decant	18100 NE 76th St	8/27/2013	n/a	1998	none	MOC	500	50%	250	Unknown	Elec	N	90%	1	TBD	Wd Frm	Light	n/a	3.1	B	n/a	Office	$ 443	$ 221,380	Public Works	Office, laundry, and mechanical/electrical room
7.11B	Decant Structure (Bldg 11B)	Decant	18100 NE 76th St	8/27/2013	n/a	1998	2013	MOC	3,000	80%	2,400	Unknown	Elec	N	70%	1+	TBD	Wd Frm	Medium	n/a	3.1	U	n/a	Warehouse (weak fit)	$ 255	$ 764,340	Public Works	Material bins, settling, & OWS; expansion underway
8	Trinity Building	Trinity	18104 NE 76th St	8/28/2013	Unknown	1981	1996	45,000	18,200	90%	16,380	Unknown	Gas	N	100%	1.5	TBD	Tilt-up Conc	Medium	n/a	3.1	S-2	B	Maintenance Shop	$ 323	$ 5,884,788	Public Works	Purchased, no Dwgs. Has own parking.
11	Fire Station 11 Site	FS-11 Site	8450 161st Ave NE	9/3/2013	Unknown	1981	n/a	63,738	n/a	n/a	n/a	Unknown	n/a	n/a	85%	n/a	n/a	n/a	n/a	n/a	3	n/a	n/a	Small Site	$ 5	$ 318,690	Fire	Site
11.1	Fire Station 11	FS-11	8450 161st Ave NE	9/3/2013	n/a	1981	2000	FS-11 Site	23,800	80%	19,040	Unknown	Gas	N	85%	1.5	TBD	Wd Frm & Brick	Medium	n/a	3.1	B	S-1	Firesta; Mezz & HT	$ 454	$ 10,798,060	Fire	
11.2	Old Medic One Bldg	OMOB	8440 161st Ave NE	9/3/2013	n/a	1985	2001	FS-11 Site	1,916	90%	1,724	Unknown	Elec	N	90%	1	TBD	Wd Frm	Light	n/a	3.1	S-2	B	Maintenance	$ 301	$ 576,620	Fire	Was "Old Medic One Bldg"
12	Fire Station 12	FS-12	4211 148th Ave NE	9/4/2013	Unknown	1980	1999	24,000	7,050	80%	5,640	Unknown	Gas	N	85%	1 + Mezz	TBD	CMU & Wood	Medium	n/a	2.9	B	R2/S2	Firesta; no Mezz, HT	$ 454	$ 3,198,585	Fire	City has as-builts
13	Fire Station 13	FS-13	8701 208th Ave NE	9/4/2013	Unknown	1972	2009	89,000	6,500	80%	5,200	Unknown	Gas	N	85%	1 + Mezz	TBD	CMU & Wood	Medium	n/a	3.1	B	R2/S2	Firesta; Mezz, no HT	$ 454	$ 2,949,050	Fire	Received from KC with no Dwgs
14	Fire Station 14	FS-14	5021 264th Ave NE	9/4/2013	Unknown	1992	2009	129,000	9,500	80%	7,600	Unknown	Gas	N	85%	1 + Mezz	TBD	Wood Frmd	Medium	n/a	2.4	B	R2/S2	Firesta; Mezz, no HT	$ 454	$ 4,310,150	Fire	Re-skinned in 2009
16	Fire Station 16 Site	FS-16 Site	6502 185th Ave NE	9/4/2013	Unknown	1996	none	70,000	n/a	n/a	n/a	Unknown	none	n/a	85%	n/a	n/a	n/a	Medium	n/a	2	n/a	n/a	Small Site	$ 5	$ 350,000	Fire	Dwgs are on-site for site and both Bldgs
16.1	Fire Station 16	FS-16	6502 185th Ave NE	9/5/2013	n/a	1996	2006	FS-16 Site	9,852	80%	7,882	Unknown	Gas	N	85%	1 + Mezz	TBD	Wood Frmd	Medium	n/a	2.5	B	R2/S2	Firesta; Mezz & HT	$ 454	$ 4,469,852	Fire	Re-skinned in 2006
16.2	Maintenance Shop	Shop	6502 185th Ave NE	9/5/2013	n/a	1996	2006	FS-16 Site	5,625	85%	4,781	Unknown	Gas	N	90%	1 + Mezz	TBD	Wood Frmd	Medium	n/a	2.4	F-1	B	Maintenance Shop	$ 323	$ 1,818,788	Fire	Re-skinned in 2006
17	Fire Station 17	FS-17	16917 NE 116th St	9/5/2013	Unknown	2012	none	75,000	19,397	80%	15,518	Unknown	Gas	N	85%	2	TBD	CMU & Wood	Medium	n/a	1.2	B	R2/S2	Firesta; 2-stry; HT	$ 454	$ 8,800,419	Fire	City has as-builts.
18	Fire Station 18	FS-18	22710 Aldercrest Dr	9/5/2013	Unknown	2005	none	67,000	7,714	80%	6,171	Unknown	Gas	N	85%	1 + Mezz	TBD	Wd Frm	Medium	n/a	1.9	B	R2/S2	Fire Sta; Mezz & HT	$ 454	$ 3,499,842	Fire	Received from KC. Dwgs received.

5.2 FCA Project Team

MENG Analysis was contracted to lead the FCA using both in-house as well as sub-consultants for the field assessments. Mike Paul served as the City's Project Manager with the assistance of Tess Wilkinson and field surveys were supported by Tim Fountain and Dale Helgeson for the Fire Department sites. Joel Davis of MENG Analysis served as the FCA Project Manager wtth Doug Smith of MENG Analysis serving as the Team Leader for the field assessments. John Boatman provided cost estimating support. Eric Meng provided database design and analysis.

5.2.b. Personnel, Disciplines

The project team with contact information follows:

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Kristin Ashton, Data Entry and Report Production

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5.3. FCA Terminology

Facility Condition Assessment (FCA): A structured process to document the conditions of site infrastructure and building systems. FCAs are typically performed by a multi-disciplinary team of architects, engineers, construction, and cost specialists. Facility information and condition data should be maintained in a database for ease of updating and reporting. The data should be renewed over time.

Facility Condition Index (FCI): A benchmark used to compare relative condition of facilities within a portfolio of assets; derived by the following formula:

$$FCI = \frac{\text{Backlog of Maintenance and Repair (BMAR)}}{\text{Current Replacement Value (CRV)}}$$

There are a number of different methods used by various organizations to calculate that backlog. For this reason, using FCI's to compare a city's facilities to other organizations is not always appropriate.

This study uses a parametric method that calculates BMAR based on the assessed condition scores. The statistical basis is a study conducted by NASA on over 10,000 surveyed facilities that evaluated the backlog of repair items relative to qualitative condition scores 1 through 5. The parametric backlog for each system is calculated based on a statistical theoretical percentage of that system that would need repair or replacement for each of the qualitative condition scores. The costs of those systems are the facility use cost models customized for Redmond.

Life Cycle Renewal Model: A theoretical forecast of when building systems will exceed their typical lifespan and funding will be required for renewals.

Parametric Costs: Parametric cost estimating is a technique that uses statistical relationships between historical cost data and other program variables such as system condition or age. Historical cost data is typically used at a high level (e.g., cost per square foot) and often represent conceptual, order-of-magnitude costs for initial planning or discussion purposes.

Remaining Useful Life: An estimate of the years that a facility system may remain serviceable or in operation before failure; which would then require system renewal or replacement.

Subsystem: The term "subsystem" in this report refers to a UniFormat Level 3 building systems category (e.g., B3010 - Roof Coverings; or B3020 – Roof Opening; or B3030 – Projections).

System: The term "system" in this report refers to a UniFormat Level 2 building system category (e.g., B3000 – Roofing)

The following terms are used in the MENG Analysis FCA Database:
(See also the database user's manual for more specific definitions.)

Last Major System Renewal: The year in which a system was last renewed (substantially repaired or replaced).

Original System Date: The year a system was originally constructed/installed.

Subsystem Assessed Condition Score: The field surveyors' assessment of condition assigned to each facility subsystem. The rating uses a scale of 1 through 5, where 1=excellent, 2=good, 3=fair, 4=poor, 5=unacceptable. Different subsystem % of CRV's are included in the database for each of the different facility use types (e.g. Maintenance shops vs. police station Vs fire station, etc.)

BMAR (backlog of maintenance and repair): This is an estimated amount that would need to be spent to bring the facility up to good condition.

Subsystem Normal Life: Industry standard subsystem life between renewals or replacement cycles.

System Coverage: The amount of area in a facility containing a specific system, expressed as percent of building or site size.

Certain FCA terms are also expressed as formulas in the MENG Analysis FCA Database, as follows:

Adjusted Current Replacement Value (CRV) ($/SF) = Base CRV * Geographic Adjustment Factor * Construction Type Adjustment Factor * Gross Square Footage Adjustment Factor
Base CRV: is the current replacement cost of the facility, including construction and project cost markups. It is contained in the CRV models for each facility use type. That base CRV is factored by geographic, size, and type of construction specific to each facility to attain the facility specific CRV.

Current Replacement Value (CRV) = Adjusted CRV * Gross Square Footage

Facility Condition Index (FCI) =

$$FCI = \frac{\text{Backlog of Maintenance and Repair (BMAR)}}{\text{Current Replacement Value (CRV)}}$$

Renewal Budget (for Infrastructure) = [Site Area]*[System Coverage]*[Infrastructure Unit Cost]*[Subsystem Renewal Factor]

Renewal Budget (for Building) = ([Facility Size Gross]*[System Coverage]*[Subsystem Unit Cost]*[Subsystem Renewal Factor])

Subsystem Age = Age of system in years since last major system renewal = Year of Survey – Year of Last Major System Renewal

5.4 FCA O&M Workshop Wall Sheets

Op: Future MOC Main/ Bldg.

Was office & Manuf; City bought 2009 => Storage use

Site: Trinity

Site Size (acres): ~~2.3~~ Acres 0.85 Ac

Facility: Trinity

Bldg Size (sf): 18,200

Workshop Date: 8/13/13

Original Construction (yr): 1981

Major Renovation (yr):

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).	1981		SOG
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.	—		None
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.	1981	1996	1996? - Roof replaced after snow collapse - Glulam beams; flat
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.	1981		Concrete tilt-up - Partial insulation (check)
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.	1981	1996	- Membrane; recoated in 2013 • leaks near sewers
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).	1981		Office 2nd Floor
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.	1981		Two (2) sets => OK
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.	1981		Carpet old
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	1981		Op: Add Elec to 2nd Flr
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).	1981		2 TR's; 2 TR's down; Kitchette
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1981	1996	- RTU's @ offices => work - Gas-fired UH's for shop
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.	1981		- No fire sprinkler - Has Ext.
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.	1981		- Partial Pro-watch - No Stby Power
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.	—		- Air compressor?
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).	1981		- Minimal Furnishes - Cabinets/Counter Original (dated)
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.	—		None
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.	1981		- Paving aging
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			- Storm water drainage issue - Lift station @ SE corner
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

City of Redmond

Trinity
Bldg 8 - Parks
Bldg 9 - Parks Storage
Bldg 10 - Fuel Island

Bldg 11 - Decant

O and M Workshop Poster

Bldg 1 - (Main Bldg)
Bldg 2 - Storage
Bldg 3 - Street Modular

Bldg 7 ~~(Gone)~~ Covered Storage
Bldg 4 - Storage
Bldg 5 - Warehouse
Bldg 6 - Covered Storage

Facility Condition Assessment

Site: MOC
Site Size (acres): 7.6 acres (includes Parks & others)
Facility: Bldg 1 one-story
Bldg Size (sf): 11,700 (excluding 1 ksf wash rack)
Workshop Date: 8/13/13
Original Construction (yr): 1977
Major Renovation (yr): 1998 Roof-over

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).	1977		- Footer & stem w/ SOG - - Patchwork in shop
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.	—		None
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.	1977	1998	- Mezzanine, small, wood - Wood deck marginal - Roof-over, wood, over Admin
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.	1977		- East wall water leakage - Single pane windows - Roll-up doors original
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.	1977	1998	- Torch down roof
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).	1977		- Walls & doors have moved (TI's) - 1998 Ladies lounge & Women's TR
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.	1977		- Wood to mezz - Handrails - Concrete shop to admin in & out
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.	1977	2012/3	Carpet replacement (offices)
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	—		None Op: overhead lift in shop (E1020)
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).	1977		Op: Need more - DHW new ? (90's?) - Assigns - sinks too small - Propane for vehicle fueling & equipment/tools
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1977	2013	2 of 3 RTU replacements
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.	1977		Op: Add sprinkler (none currently) - ATS old - Wiring not documented / code issues
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.	250 KW New Generator 1977	1998 2012	- Pro-watch security system - Maxed-out - Issues from TI's Op: Add capacity
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.	1977	2005 2011	New vehicle lift; only 1 original - Shop equip New appliances in Kitchette (refr.)
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).	1977		Mix of older & newer 1) Middle 2) West side
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.	1977		~~None~~ Wash rack, pressure wash, water recycle
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.	1977	1998	- Cracking entry Gravel => 1998 Paved (original) - Access control area issues (failing)
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			- Storm water vaults & two pump stations - NG old => alarms do occur 1x/2x/yr - NG OK Op: future NG vehicle fleet
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			~~None~~ No issues
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).		Op Op	- Lack of waste oil storage (temporary secondary containment) - Hazmat shed => need opportunity

- Abandoned UST (waste oil)
- Not ADA compliant

- Opportunity for full kitchen with oven, stove, etc.

Site: MOC
Site Size (acres): 7.6 acre (MOC)
Facility: Bldg 3 - Street Dept
Bldg Size (sf): 1000 sf
Workshop Date: 8/13/13 Bldg
Original Construction (yr): 1998
Major Renovation (yr): none

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).	1998		On blocks? Floor "wavy"
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.	1998		Crawl space formed by Skirt
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.	1998		Floor "wavy"; soft spots in floor Roof OK - Deck w/wood roof
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.	1998		- Metal panel - Cat door - Some hardware corrossion
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.	1998		- Flat roof OK
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).	1998	2011	Remodel
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.	1998		~~None~~ outside OK
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.	1998	2011	Remodel
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	—		None
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).	1998		Mens & womens; Kitchette all OK Gutter & DS
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1998	2012?	One(1) RTU; ~~teen~~ recently repaired
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.	1998		No sprinkler; has Fire Ext.
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.	1998		- Op: Add to stby generator - Missing fire alarm
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.	1998		- Office equipment only
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).	1998	2011	Kitchen cabinets => worn Furniture updated (partial)
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.	—		None
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.	1977		MOC Bldg 1
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

Site: MOC
Site Size (acres): 7.6 Acres (MOC)
Facility: Bldg 5 - Warehouse
Bldg Size (sf): 4,500 sf incl 2nd Floor (75% footprint)
Workshop Date: 8/13/13
Original Construction (yr): 1988
Major Renovation (yr): Added offices 1988

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).	1988		Footings, SOG no issues
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.	—		None
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.	1988		2nd Floor ~~OK~~ Weak (spongy)
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.	1988		- Metal siding - Not insulated
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.	1988		Roof OK Gutter issues - metal fascia blocks accel
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).	1988		
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.	1988		Two (2) staircases - wood · Location? · Handrail issues), - Not wide enough
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.	1988		Minimal (Plywood); Plastic strip doors
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	—		None (hatch/opening)
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).	1988		One (1) toilet room
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1988		Elec resistence heat (not gas)
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.	1988		No sprinkler; have extinguishers
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.	1988		OK Pro-watch security Server Room/no A/C? (check)
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.	—		None?
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).	1988		Shelving; old
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.	?		- Haz Mat Storage?
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.	1977		MOC Fenced area for parts storage (1988)
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

Site: MOC | Site Size (acres): ~~8.~~ 7.6 Ac

Facility: Decant | Bldg Size (sf): 3000 sf decant; 500 sf office

Workshop Date: 8/13/13 | Original Construction (yr): 1998 | Major Renovation (yr): 2013 expansion (under construction)

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).	1998		Wall damaged by loader => repaired under 2013 work
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.	—		None
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.	1998		
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.	1998		Double glazed office windows
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.	1998		
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).	1998		Office
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.	—		none
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.	1998		Office
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	—		none
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).	1998	2011	Washer & dryer added (pressure washer moved to Bldg 1) - Deicing tank outside office
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1998		Electric heat - office
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.	-		None
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.	1998		
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.	-		
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).	?		Any?
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.	—		Non
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.	1977	1998	MOC
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

Undersized => damage to walls (too much material)
Undersized for water as well (decant process)

One of the City's Best Bldgs — Bought in 1995/6 from Hos Brothers (Hauling)

Site: MOC | Site Size (acres): MOC Campus

Facility: Park Ops Cntr | Bldg Size (sf): 8,202 sf | Added 1998 • Multipurpose • Locker room

Workshop Date: 8/14/13 | Original Construction (yr): 1970's | Major Renovation (yr):

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			SOG OK
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			None
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			2nd Floor Loft area - 1999
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.		1998	Dable glazed windows Metal siding
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.		1998	Standing seam metal roof
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).		1998	Renovation (TI)
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			- Stair to 2nd Floor OK - Small stair to Loft OK
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.			- GWB in office - shop GWB - CARPET worn - OSB in general - Ceiling & Floor OK
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.		1998	One (1) two-stop => works great!
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).		1998	~~Good~~ Copper pipe pin-hole leaks (2 x's)
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.		1998	VUT => Comfort issues
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.		1998	Fire sprinklers => OK
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.			Stby Generator Unusual lighting above Mostly OK Admin on 2nd Flr => OK
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			- Washer & Dryer OK - Wood shops → OK (dust collection OK)
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).		1998	All OK
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			Drying Room
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Equipment Wash Rack Missing OWS (op)
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).		2005	Added covered storage

2-Story + Mezz + "Basement" Additions
& U/G Parking

Evidence 2008
Vehicle Processing 2008

Site: Muni Campus | Site Size (acres):

Facility: Public Safety | Bldg Size (sf): 94,975 (incl U/G Pkng)

Workshop Date: 8/14/13 | Original Construction (yr): 1990 | Major Renovation (yr): (Additions

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			CIP
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			Parking Garage & Gun Range CIP SOG floor (Water Intrusion)
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			Concrete on metal pan deck Floor OK Roof Structure (at windows) Metal Stud 2x6
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors. OK Steel Frame Structure	Leaking @ edge		- Water damage; Mold found at 1st Flr East end Suspect other areas - South side Main floor & 2nd water infiltration
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.		2013	Gutter allow leakage into walls for many years Flat roof recoated Metal Standing Seam
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			GWB on metal stud
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			Three (3) sets concrete => OK
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.		2012	Re-carpet Ceiling Tiles => water damage @ SE corner Re-paint-on-going
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.			Two(2) elevators; secure elevator at Middle slow
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).			- Sump Pumps (2 outside, 2 in ~~sink~~) can't keep up - Bathrooms; showers bad (Bad smell) - ~~Parking garage pipes freeze in winter~~ Insulated in 2004
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.		2010 new Blrs	* Major issue: Too Hot / Too Cold / Poor Ventilation Fresh air via plenums; Approx 38 HP's (WSHP) Blrs Replaced
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.			Wet pipe fire sprinkler Op: ~~Dry-pipe~~ Pre-action for both data centers
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.			Parking Garage lighting Upgrade in ~~2004~~ 2010 - Generator(s): Two(2): 250 KW original 1990 2012 New 400 KW additional - Key card (Pro-watch) outdated - CCTV outdated
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			Kitchenettes (limited) => Op: Stove (for 24/7) Dog Kennel in Garage
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).			Old lockers => need replacement - New Training Room Fixed Finishings Some new counters in public TR
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			- Detention fixtures => aging - Interview Room out-of-date (does not support video)
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Concrete at ~~for~~ Jail ~~@ U/G Pkg~~ - Concrete cracked @ Jail drive
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			- Storm issues in below grade garage
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			Stby Gen & Cooling Tower Enclosure

Two Entry Cntrs – Police ~~Comm Room~~ Computer Rm

– Program issues with Lay out, opportunity to do better

BIS Issues: 1) Roof leaks / windows
2) HVAC
3) Plumbing Odor

1-Story + hose tower

15 to 20 Ksf ?

Site: Old Firehouse | Site Size (acres): ~~771,978 sf~~

Facility: Teen Center | Bldg Size (sf): 8,650 sf

Workshop Date: 8/14/13 | Original Construction (yr): 1952 | Major Renovation (yr): 2000

- seismic
- media room
- handicap FR
- New Floor
- Paint Outside

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).	1952		- Partial Crawl Space - SOG under App Bays
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			~~None~~ - Tunnel to Kitchen
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.		2000	Seismic Upgrade Roof O/R
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.			Hose tower brick w/ stucco => Leaking Original Windows (single glazed)
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.		2004 2004	Torch down awning @ front
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			- Door asing, sticking - walls lath & plaster - Ap Bay CMU
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			Ladder at hose tower - original
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.		2000 Floor	Paint dated Tile Carpet VCT Rubber Floor Ceilings => aged
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	-		None
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).		2000	Kitchen, ADA - Clogging Toilets Older elsewhere
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.		2000	Media Room (OK) EWH - Offices Gas-fired ceiling ~~Ductwork~~ Uncomfortable thermostat
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.		1980s?	Sprinkled => OK
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.		2000	Upgrade => 200 Amp Panel Added Ap Bay Upgrade 2011 Offices new 2013
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.		2000	Dishwasher, Refer, Stove, Micro
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).		2006 2011	New computer Lab New chairs
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.		2000	Dark Room
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Failing : tree root damage New fence 2012 (patio area)
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.		2000	North area Storm improved
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			Marginal site lighting
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

40-yr Lease started 2000
2-Story

Historic Bldg

Site: Old School House
Facility: Community Center
Workshop Date: 8/14/13

Site Size (acres): 2.76 Acres (some lost to new adjacent school?)
Bldg Size (sf): 41,700 sf => Dwg 45,400 sf
Original Construction (yr): 1922 Major Renovation (yr):

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Gym 1950 Addition Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).	1922		Crawl Space
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.	~~1922~~	1950	Gym Basement for Storage
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			Wood floor => OK Roof Structure Wood Attic unfinished, no floor
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.		2009	Brick veneer over concrete (heavy const?) Windows ~~replaced~~ recaulked; windows replaced previously by LWSD
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.		2001	Roof repairs; no leaks
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			TI work (walls moved) => various Doors OK
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			Four (4) stairwells => ~~concrete~~ wood treads redone 2010; Concrete outside
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.		2000	Most carpet replaced - Front Steps need repair Some other flooring done => Main floor area, hallways => aged
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.		2000 2000	One (1) Elev One (1) Lift to Stage } OK
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).	Children's Fixtures (low)		Some very old fixtures => many issues - Leaks - Blockage - Discolored - Bad Taste
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.		2000 2006	RTU 1-5 (office OK) 2006 Chiller installed for Addition, some Room (1/2 lower level) Constant Problems
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.		2000	Sprinkled => ~~test~~ Added in 2000 / Op: Public Address Hood System / Op: Add Security
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.		2004 2010	New Elec Service (behind old Elec Rm) - circuit overloads New lighting in Hallways - Breakers Trip - Security issues after loss of power
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.		2005	Commercial Kitchen Hood - 2005 $0.5M
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).			Sinks in cabinets -> older - Lobby redone 2012 Closets -> older
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.		2006	Clay Studio/Kilns
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.		2004	~~New~~ Renewed parking & landscape (good) re-striped in 2012
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			- No flooding - Landscape OK
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			- Lighting redone outside 2004
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			Boiler Room separate - entry area has flooding issue

Too hot/Too Cold
Boilers & Unit Ventilators (older)

Op: Add Parking (currently 80 spaces)

Biggest Issues: 1) HVAC
2) Plumbing

Site: Senior Center | Site Size (acres): Muni Campus

Facility: Senior Center | Bldg Size (sf): 22,000 sf

Workshop Date: 8/14/13 | Original Construction (yr): 1990 | Major Renovation (yr): n/a

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			SOG OK
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			None
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			Mech mezz above ~~stage~~ dressing Rms = OK
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. ~~B2030 - Exterior doors.~~ (Wood Framed)		2009	New doors installed in social hall Ceramic tile & Stucco => leaks; repairs on-going
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections. • Vestible leaks • Canopy @ Entry failing		2004	Re-roof Torch-down; Metal Roof overlayed OK Wood framed; soft spots Roof leaks in Billiard Rm & Staff Offices
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			OK
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			- Ladder (portable) to ~~stage~~ mezz - Loading dock & stairs to north - Aluminum stair to Elec Rm
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.		2005	Re-carpet Re-paint on-going
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.			None
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).		2009	Fixtures original; all OK New DHW Htr Elec 2009
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.		2009	New Boiler (NG) (comfort OK Bathroom odor issues DDC - Robert Shaw
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.		2002	Fire Sprinkler Kitchen Hood Fire Suppression Added
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.		2007	No generator Lighting Upgrade (some on-going)
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			Washer & dryer Full Kitchen => Steamer failing (replacement planned)
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).		2011	Some Fixed dated (mauve) New chairs 2011 New countertops (granite) (in Toilet Rooms)
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			Greenhouse attached - water leakage; glass panels failed (used occasionally; mostly storage)

Two Tennats -one in each Bld
1) Hardwoods Flooring Co. (Bldg 1)
2) Computer Repair Company (Bldg 2)

City uses three areas:
1) Facilitie Maint using 2 KSF (Bldg 1) 2) PW Signals using 6 KSF (Bldg 1)
3) Nat Resource Lab 1 KSF (Bldg 2)
City Purchased approx 2000

Site: SRBP
Site Size (acres): 1-2 Acres — One Story
Facility: Bldgs 1 & 2
Bldg Size (sf): 17,450 sf each
Workshop Date: 8/14/13
Original Construction (yr): 1980
Major Renovation (yr):

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			SOG
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.	—		None
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			Mezzanine for storage (not permitted) < 1KSF Roof Wood truss; added fire barrier in 2006
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.			CMU Block? - Windows single pane => old but OK No issues - Doors; ~~some sticking~~ Store front OK
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.			Torch-down flat; no leaks!
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			Interior doors => Sticking Wood Stud w/ GWB
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			Bldg 1 wood stair to mezz
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.			Carpet in office; poor in signals
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	—		None
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).			Mens & Womens original => dated; works
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.			Baseboard Electric Gas unit heaters RTU for Bldg 1 Signals
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.			Not sprinkled
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.			No generator No security ~~No FA?~~ old FACP w/ heat detectors
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			none
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).		2011	Minimal, dated New furniture
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			None
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			No issues
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

- Parking sub-leased to Micro-soft; not enough parking for City Staff

Dwss Exist

KC Pool transfered to City in 2010

Tim reports 19,700 sf

Site: Hartman Park | Site Size (acres):

Facility: Pool | Bldg Size (sf): 13,000 (small?)

Workshop Date: 8/14/13 | Original Construction (yr): 1970 | Major Renovation (yr):

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			SOG
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			Boiler Room
Super-structure	B10	B1010 - Floor construction. X B1020 - Roof construction.			Gluetam Beams - discolored
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.			- Condensation in pool area - Storefront Doors Sticking - windows leak (air & heat)
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.	1970		Leaks above locker & office areas Torch-down
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			CMU - OK Some doors sticking; wood
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			Metal stairs to basement - OK
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.			• Locker room floor too slick or too dirty - ACT sassing / rusty frame over pool
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.			~~Done~~ • Pool lifts (1) (need 2nd in rm)
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).			- DHW heat too long (no recir) OP - Deck drains not draining (line collapse)
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1970	1995 2010	HVAC Renewal (see Dwss) - Boiler tune-up - Too cool in locker room in winter - New EFIS
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.			- No sprinkler - Fire Ext ✓
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.		2010	- Fire Alarm (new FACP in 2013) - Some circuits tripping in office - Old Comm
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.		2010	- Pool filters replaced - Diving board corrossion - Pool boiler aging - Old pooling piping & pumps
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).		2010	3 New benches in locker rooms - lockers OK Old bleachers to be replaced 2013/4
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			None
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Two(2) parking lots define site • one poor • other good (back)
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.		2010	East side new side sewer
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			- Old light fixtures in parking lot - Comm is old
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			- Storage shed OK - Patio old, dated, cracking

OMOB From Evergreen Hospital } 2001

Site: FS 11 | Site Size (acres): ?

Facility: FS 11 & OMOB (2 Bldgs) | Bldg Size (sf): FS11 23,800 (verify) OMOB 1500 SF (verify)

Workshop Date: 8/28/13 | Original Construction (yr): (1981 | Major Renovation (yr): FS11 2000 (prior to)

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).	1981		* SOG cracks
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.	1981		~~Done~~ Hose tower sump
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			Mezz OK; west-end plywood soft Flat roof
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.			Brick OK
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.			Roof leaks (sealing recently partly done)
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			Some doors sticking / don't latch
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			Metal stair to Mezz OK
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.			SOG cracking (see above) Carpet in Qtrs poor; Admin OK
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	1981		Man lift to East Mezz; problems
* Plumbing Many Issues	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).	1981		OWS Ap Bay drains; drains constant problem (blocking up) Fixtures worn/old
* HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1981	2000	Worst design control system (for contractor!) (Simplex) Discomfort throughout (both heating/cooling)
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.	1981		Wet; OK
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.	1981		- Ap Bay chargers trip breaker - - Kitchen trips breakers - Generator OK
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.	1981		Dryers => vent run too long SCUBA Fill => older Extractor: older Fitness
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).	1981		Cabinetry Poor Kitchen Veneer Poor
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.	1981		Hose Tower
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Foyer bricks loose, missing Aprons cracking
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			Storm issues courtyard & foyer
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			Training Props

OMOB: 1) One Bay
2) Offices
3) Kitchen
4) Meeting Room

(1) Rat infestation (crawl space)
(2) Old; poor insulation
(3) ~~Diesel~~ Generator => Propane
(4) Roof / tree problem

Gated access

Site: FS 12 | Site Size (acres): ?

Facility: FS 12 | Bldg Size (sf): 7000 2 1/2 Bays

Workshop Date: 8/28/13 | Original Construction (yr): Before 1976 | Major Renovation (yr): Move & Expansion 1980 1999?

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			SOG Cracks inside & outside
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			Mezz work
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.			
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.			Flat roof => leaks; cleaning
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			One stair
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.			Carpet worn Water damage
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.			None
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).			OK
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.			Major issues (too hot / too cold)
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.			~~Check~~ sprinkled
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.			Ap Bay overload from Rig Chargers & Merg GENSET
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).			Dated/ Kitchen worn
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Aprons cracking Turning radius issue; curb damage
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

2-Bay One-Story; Partial Mezz (pull down)

Site: FS-13 | Site Size (acres): ?

Facility: FS-13 | Bldg Size (sf): 6,500 sf

Workshop Date: 8/28/13 | Original Construction (yr): 1977 | Major Renovation (yr): 2009

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			SOG cracking in bay Front Ramp damage
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			*Roof bad => spongy (some plywood replaced) dangerous @ soffits
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.		2009	OK
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.			
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			Pull-down to Mezz marginal
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.	1972	2009	New carpet
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.			
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).			Issues => on septic OWS bad *Odors in Ap Bay (sewer gas)
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1972	?	OK Reagno in Ap Bay (old and OK)
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.			
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.	1972		Ap Bay charger issue
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).	1972	2009	New cabinets
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Front Apron (ramp) damage
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			*Site Septic systems Wetland adjacent • RD connection? alarm when rains
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

~~Formerly~~ King County

Site: FS14 | Site Size (acres): 2.9 Acres

Facility: FS14 | Bldg Size (sf): 9,500 sf 2 1/2 Bays

Workshop Date: 8/28/13 | Original Construction (yr): 1991 | Major Renovation (yr): 2009

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.		2009	Siding replaced Windows "
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.		2009	New roof
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.			
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.			
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).	1991	2009	New DHW Htr ~~Pipe Freeze in 2011~~
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.	1991	2009	New HVAC Units; some issues => retrofit to Dorm Room Area
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.	1991		Dry & Wet (dry comp replaced 2013) · pipe freeze damage in 2011 (fixed)
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.	1991		AP Bay charger issue Emerg Gen is Natural Gas inside station
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.	1991		Laundry OK
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).			
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Ramps OK
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			Septic; mound system Detention Pond => Storm Pond
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

Site: FS16 Site | Site Size (acres): ?

Facility: FS16 & Shop (2 Bldgs) | Bldg Size (sf): Verify | 2½ Bay

Workshop Date: 8/28/13 | Original Construction (yr): 1996 | Major Renovation (yr):

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			Ap Bay damage from Ladder Truck (here 70,000 lbs
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			None
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			Mezz Fa storage Hose wash tower
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.		2006	New siding (installed backwards in 1996)
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.		2006	New roof; flat
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			metal
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.		2006	Carpet worn
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.			None
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).			Backups; ~~Bunker~~ Tankless DHW Htr => constant issues
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.			Some furnace issues
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.			Sprinkled OK
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.			Diesel Gen => Oil leak?
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			Bunker Gear Extractor issue
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).			
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Storm drain issue; water in Kitchen area
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

Shop: - ~~3~~ - Bays (90%) 2.5
- Tools / Parts
- Office
- Toilet Rm
- Car lift
- Mobile lift
- Issues: 1) Emers Gen (diesel)
2) ~~SOS~~
3) ~~Test~~ Pump Pit (Overflows)

- Training room upstairs
- Two story

Just part warranty
- Just

LEED Bldg ?

Site: FS-17 | Site Size (acres): ?

Facility: FS-17 | Bldg Size (sf): 16,799 sf

Workshop Date: 8/28/13 | Original Construction (yr): 2012 | Major Renovation (yr):

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.			
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.			
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.			
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.	2012		Elev OK
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).			
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.			DDC controls => did not get computer to interface
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.			
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.			AP Bay Card issue (fixed 20A vs 30A fixed)
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			Dishwasher issue (trip breaker)
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).			
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			Security Gate => issues
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			Water Tank in back; pump issues
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

1-story

Site: FS-18 | Site Size (acres):

Facility: FS-18 | Bldg Size (sf): 6,900 sf 2 1/2 Bay

Workshop Date: 8/28/13 | Original Construction (yr): 2005 | Major Renovation (yr):

LEVEL II UNIFORMAT SYSTEM NAME & CODE		INCLUDES	YEAR OF ORGINAL CONSTRUCTION	YEAR OF LAST MAJOR RENEWAL	Workshop Comments (system types, significant issues, and major projects)
Foundations	A10	A1010 - Standard foundations. A1020 - Special foundations. A1030 - Slab-on-grade (SOG).			
Basements	A20	A2020 - Structural walls, water proofing, drainage, exterior surfaces.			
Super-structure	B10	B1010 - Floor construction. B1020 - Roof construction.			Small Mezz (MUSIC & DECK Attic) Wealth Striping
Exterior Closure	B20	B2010 - Exterior walls. B2020 - Exterior windows. B2030 - Exterior doors.			Siding separating AP Bay Doors - ~~work from~~ clearance too close; bissprss lin u
Roofing	B30	B3010 - Roof coverings. B3020 - Roof openings. B3030 - Roof projections.			Pitched Roof Plastic rain chain, fillers Gutter overwhelmed; ORD side of Bldg
Interior Construction	C10	C1010 - Partitions (fixed & moveable). C1020 - Interior doors. C1030 - Fittings (specialties).			
Staircases	C20	C2010 - Stair construction. C2020 - Stair finishes.			No Stair to Mezz (using ~~Genie Lift~~ rolling ladder)
Interior Finishes	C30	C3010 - Wall finishes. C3020 - Floor finishes. C3030 - Ceiling finishes.			
Vertical Transport	D10	D1010 - Elevators & lifts. D1090 - Other conveying systems.			
Plumbing	D20	D2010 - Fixtures. D2020 - Water distribution. D2030 - Sanitary waste. D2040 Rain water drainage. D2090 - Other (special).			DHW => not enough / intermittent Toilet separatin from wall
HVAC	D30	D3010 - Energy supply. D3020 - Heating. D3030 - Cooling. D3040 - Dist. D3050 - Terminal & Pkgd. D3060 - Controls. D3090 - Other HVAC.			OK
Fire Protection	D40	D4010 - Fire protection sprinkler. D4020 - Stand-pipe & hose systems. D4030 - Fire protection specialties. D4090 - Special fire protection.			
Electrical	D50	D5010 - Electrical service & dist. D5020 - Lighting & branch wiring. D5030 - Low voltage (comm, security & safety). D5090 - Other.			Tone Alarm => gas two easily reset issue
Equipment	E10	E1010 - Commercial (laundry, office). E1020 - Institutional (lab, AV). E1030 - Vehicular (lifts, parking, dock). E1090 - Other.			Ice Maker in Kitchen => leaking on floor => repaired? ~~2007~~ 2009
Furnishings	E20	E2010 - Fixed furnishings (art, casework, window treatments, floor mats, seating). E2020 - Moveable furnishings (tables, chairs, shelves).			
Special Construction	F10	F1010 Special structures. F1020 Integrated const. F1030 Special const. F1040 Special facilities. F1050 Special controls & inst.			
Site Improvements	G20	G2010 - Roadways. G2020 - Parking lots. G2030 - Pedestrian paving. G2040 - Site development. G2050 - Landscaping.			
Site Wet Utilities	G30	G3010 Water supply. G3020 Sanitary sewer. G3030 Storm sewer. G3040 Heating distribution. G3050 Cooling distribution. G3060 Fuel dist.			
Site Dry Utilities	G40	G4010 - Site electrical distribution. G4020 - Site lighting. G4030 - Site communications & security.			
Other Site Construction	G90	G9010 - Service & pedestrian tunnels (including utilidors), G9090 - Other site systems (outbuildings, yard racks, etc.).			

~~Deer~~ Deer & Bear visits

5.5. FCA Survey Forms & Methodology

5.5.a Condition Survey Form Development

Survey forms were developed for the facility condition assessments based on the UniFormat Level 3. All Level 3 subsystems are described with evaluation criteria. The evaluation criteria descriptions clearly explain what elements were included and excluded from each Level 3 subsystem.

Each survey form is accompanied by a deficiency report form that is completed when Observed Deficiencies (ODs) are noted. This Observed Deficiency form notes the problem and the recommended action to correct the deficiency. Raw construction costs (i.e., labor and materials) for facility component replacements or repairs are estimated.

Additionally, Opportunity forms are provided to document options that may improve facility performance and that may not necessarily be condition related improvements.

5.5.b Sample Condition Scoring Criteria

The following section provides six (6) examples of the condition scoring definitions that were used during the condition surveys.

Roof Construction **B1020**	Roof structural frame, structural interior walls supporting roof, roof decks, slabs and sheathing, canopies. Excludes insulation and roofing. **1- Excellent:** New; Structure is sound and stable; no evidence of cracking, deflection or separation of framing members. Preventative inspection. **2 - Good:** Structure is sound and stable; no evidence of cracking, deflection or separation of framing members. Minor preventative maintenance: rust proofing and / or sealants and tightening of connections. **3 - Fair:** Minor surface cracking or separation of framing members. Preventative maintenance and minor restorative repairs of isolated items. **4 - Poor:** Structural damage evident; Twisting, cracking, or separation of structural members affecting surrounding finishes or moisture intrusion. Restorative repairs. **5 - Unsatisfactory:** Structurally deficient or damaged beyond repair; major damage to surrounding finishes; jeopardizing occupancy. Replacement.

Exterior Windows **B2020**	Screens, storm windows, exterior louvers, frame, trim, sills, caulking, flashing. Excludes window shades and treatments. **1 -Excellent:** New; doors operating smoothly; no finish degradation. Preventative inspection. **2 - Good:** Functioning smoothly; no finish degradation. Secure hardware and emergency exiting. Minor preventative maintenance. **3 - Fair:** Worn but functional; requires paint or resealing; glass or hardware damage only in isolated doors. Preventative maintenance and minor restorative repairs of isolated items. **4 - Poor**: Damaged or deficient hardware, glass, trim or seals; water intrusion. Restorative repairs. **5 - Unsatisfactory:** Extensive damage, deficient beyond repair; Hardware not operating, moisture intrusion. Replacement.

Exterior Wall Finishes **B2040**	Exterior wall - exterior applied finishes **1 - Excellent:** New; no finish degradation. Preventative inspection. **2 - Good:** no cracking or moisture intrusion. Minor finish degradation. Minor preventative maintenance. Cleaning. **3 - Fair:** Minor undamaged but requires sealing. Preventative maintenance and minor restorative repairs of isolated items. **4 - Poor:** Restorative repairs. **5 - Unsatisfactory:** Damaged beyond repair, Replacement.

Plumbing Fixtures **D2010**	Water closets, urinals, lavatories, sink, showers, bathtubs, drinking fountains. Excludes hot water heaters. **1 – Excellent:** New; All fixtures operating well. Preventative inspection. **2 – Good:** system components operational, free of defect, and of adequate utility service capacity for intended use. Includes water saving features. Minor preventative maintenance. **3 – Fair:** Some components worn, fixtures stained. Preventative maintenance and minor restorative repairs of isolated items. **4 – Poor:** Many components damaged; limited parts; leaking valves, rust and corrosion. Operating parts > 30 years old. Restoration repairs. **5 – Unsatisfactory:** Many fixtures not operational. Rust, corrosion, and mineral deposits. Leaks causing damage to other finishes and components. Replacement.

Heat Generating Systems **D3020**	Boilers, piping and fittings adjacent to boilers, primary pumps, auxiliary equipment, equipment and piping insulation. **1 - Excellent:** New. Preventative inspection. **2 - Good:** System is fully operational, suitable capacity, efficient utility utilization, integrated energy management controls. Minor preventative maintenance. **3 - Fair:** Equipment worn but reliable, older energy controls; Preventative maintenance and minor restorative repairs of isolated items. **4 - Poor:** Equipment marginal/hard to obtain parts, insulated ext. ductwork, no energy controls. > 40 years old. Restorative repairs. **5 - Unsatisfactory:** System non-functional or seriously deficient, Not delivering supply to required spaces. Replacement.

Distribution Systems **D3040**	Supply & return air systems, ventilation & exhaust systems, steam, hot water & chilled water distribution, terminal devices, heat recovery equipment, auxiliary equipment such as secondary pumps, and heat exchangers, piping, duct & equipment insulation. **1 - Excellent**: New. Preventative inspection. **2 - Good:** System is fully operational, suitable capacity, efficient utility utilization, integrated energy management controls. Good insulation. Minor preventative maintenance. **3 - Fair:** Equipment worn but reliable, older energy controls; Insulation. Some joints/ sealants loose. Preventative maintenance and minor restorative repairs of isolated items. **4 - Poor:** Equipment marginal/hard to obtain parts, no energy controls; Many grilles missing or loose. Air leaks and unbalance. Restorative repair **5 - Unsatisfactory:** Non-functional or seriously deficient. Grilles corroded, missing. Replacement.

5.5.c Facility Survey Methodology

The general methodology for recording the City of Redmond FCA surveys started with an initial familiarization tour of the City's facilities for an initial scope assessment. Site and floor plan drawings were reviewed in advance of the FCA surveys. Information was gathered during two separate half-day pre-survey workshop with City staff. This was followed by on-site field surveys of architectural, site/civil, mechanical and electrical systems for each facility building and site infrastructure. The facility surveys were facilitated by an FCA Team Leader to maintain consistency in evaluation and on-going training with survey forms, condition ratings and system categorization. Following each facility walk-through, the FCA Team completed condition survey, observed deficiency, and opportunity forms.

Each team member used survey forms to document the apparent facility conditions including:

i. Describing the nature of facility systems per UniFormat;
ii. Determining the overall condition score and useful remaining life of each system;
iii. Identifying major maintenance deficiencies greater than $2,000 that are likely to be required for immediate major maintenance repairs (i.e., 2013), plus the next five (5) years period (i.e., 2014-2018);
iv. Documenting specific deficiencies of systems with narrative as well as budgetary level cost estimates to repair or replace deficiencies;
v. Documenting Opportunities for system or facility performance improvements.

5.6. MENG Analysis FCA Database

The City of Redmond survey data is organized and stored in a MS Access relational database, called the *Facilities Database*, which was developed by MENG Analysis for documenting facility condition data. The Database consists of two files: a "Front End" file provides user interface for data entry and reporting and this is linked to a "Back-End" file containing all of the data tables. Data entry forms make it easy to enter/ edit facility information and the pre-formatted reports present data in a user friendly and intuitive format. Data residing in the Back-End file is organized in tables. The queries that have been developed are also used to provide data for reports that serve a reporting dashboard. For this project, MENG Analysis utilized ***Tableau*** as the reporting dashboard, which facilitates the reporting of data in both table and graph formats. These queries can also be used to generate customized reports.

Training Manual: A MENG Analysis FCA Database training manual and instructional sessions will be provided to the City of Redmond to support the maintenance and associated updates of conditions of facilities over time.

5.7.1. Cost Models

The cost models developed for the City of Redmond identify general facility use types that were included in the facility condition assessment scope of work. Therefore the application of the cost model's facility use types to other new types of facilities is not recommended.

5.7.2. Cost Estimating

This report section discusses the basis of cost estimating that was utilized both to develop conceptual cost estimates for Observed Deficiencies during the facility condition surveys as well as the replacement costs that are used as factors in the Predicted Renewals.

5.7.2.a. Estimating Methodology

The MENG Analysis team uses the UniFormat II system to organize cost estimates. Depending upon the condition and type of system, cost estimates are based upon square foot area (SF), lineal feet (LF), and lump-sum (LS) quantity factors.

For the cost estimating of Observed Deficiencies of building systems, the FCA survey team estimated costs for system repairs or replacements. A proprietary cost model was used for the cost estimating that is used to support the PR costs of building systems. This model is updated on a yearly basis and adjusted to the specific geographical region. It uses a UniFormat II breakdown for building systems and also provides an overall building cost per square foot ($/SF) for various building types. The team refined SF costs for structural, mechanical, plumbing and electrical sub-systems to reflect the systems typically found in City of Redmond facilities. Specific analysis of similar projects that have been estimated and managed by the team were also referenced against the modeled costs for additional verification of recent costs. Once the basic cost

model was established to represent a strong correlation with City of Redmond facilities, the team went through several iterations of independent peer reviews by local cost estimating professionals.

5.7.2.b. Estimating Accuracy

Cost estimates made using square foot costs can anticipate 10% to 15% accuracy.[1] Cost estimates that were developed for ODs do consider impacts to related building systems. For example, costs for the demolition and replacement/refinishing of interior walls are considered and included when replacing water piping. Therefore, these cost estimates also include, but do not delineate contingency costs to address reasonable, unforeseen conditions.

5.7.2.c. Estimating Limitations

The cost estimating for the Observed Deficiencies and the cost model used for Predicted Renewals should both be considered useful for City project planning purposes. These costs provide planners with a good order-of-magnitude understanding of potential costs. Moving to the next level of accuracy for budgeting actual projects, additional analysis of each specific system deficiency and related systems is recommended. Costs are developed to reflect each system replacement or repair and as such do not make any assumptions relative to project packaging. For example, one should assume that aggregating multiple system deficiencies into a single project, either within a given facility or system-wide, would result in lower costs due to economy of scale.

[1] *Successful Estimating Methods: From Concept to Bid* by John D. Bledsoe

5.8. Renewal Budget by Facility by Year

Renewal Budget By Facility By Year

Facility	BudgetYear																		
	2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031	2032	**Grand Total**
Central Stores Warehouse Building 5 Building	7,865	7,728	12,437				89,601	65,001		17,341	2,767	16,107		98,704					**317,553**
City Hall Building						838,369	1,685,095	3,881,660	0	624,436	654,375	777,913	25,737		1,103,272	905,820			**10,496,676**
Decant Facility Building 11 Building	0	11,725	0			1,986	124,826	77,413	0	27,420	90,230	4,676		60,823					**399,098**
Fire Station 11 Building	332,486	526,883	472,553	514,863	489,207		288,576	381,983		1,042,736	642,368		814,320						**5,505,974**
Fire Station 11 Infrastructure						8,558		138,468		158,347	55,636	20,634	13,045			42,170			**436,858**
Fire Station 12 Building	5,895	82,841	368,191	158,322		42,739	23,175	125,381	2,692	145,907	74,263		86,565						**1,115,970**
Fire Station 12 Infrastructure			21,189			3,222	2,865	58,526		56,905	20,950	7,770							**171,426**
Fire Station 13 Building	45,374	129,789	339,812	145,970		70,901	93,086	135,885		196,005	40,405		378	112,252					**1,309,856**
Fire Station 13 Infrastructure							2,125	110,073		271,522	77,688	28,812				113,843			**604,063**
Fire Station 14 Building		33,531	239,555			175,724	166,458	158,114		160,265	58,991	179,246	219,443			10,029		22,274	**1,423,631**
Fire Station 14 Infrastructure							15,397	174,304		481,243	112,604	41,762				119,963			**945,272**
Fire Station 16 Building	8,238	196,721	91,469			107,465	438,511	242,297	0	492,165	61,241	27,912							**1,666,019**
Fire Station 16 Infrastructure						9,398	8,355	205,515		142,183	61,103	22,661							**449,215**
Fire Station 16 Shop Building	129	43,124	12,501	23,545	0	81,892	32,989	93,980	0	169,571	37,324		142,377						**637,433**
Fire Station 17 Building	0					116,511		436			130,297		33,331	0		81,121		71,147	**432,842**
Fire Station 17 Infrastructure											8,972					20,124			**29,097**
Fire Station 18 Building	0					105,458	90,629	27,651		177,309	33,306	22,059	273,542			113,780		38,588	**882,322**
Fire Station 18 Infrastructure													6,857			156,037			**162,893**
Hartman Park Infrastructure			433,377				19,097	272,703		324,989	139,664	51,797							**1,241,627**
Hartman Park Swimming Pool Building	213,779	160,098	902,919	84,973		4,500	105,228	34,268	0	138,005			567,993	195,179					**2,406,942**
Maintenance Operations Center Building 1 Building	0	57,540	429,590		0	117,937	351,760	88,713	53	135,692	73,146	68,452		89,341			51,508		**1,463,733**
Maintenance Operations Center Infrastructure						44,441		1,178,794		747,320	288,930	107,156	6,775			107,966			**2,481,381**
Municipal Campus Infrastructure			441,429				119,353	740,232		1,015,590	436,450	161,867				134,162			**3,049,083**
Municipal Campus Parking Garage Building			0	1,902	576,435	0	108,436	183,018	2,734	123,983	1,644	3,871	9,965						**1,011,989**
Old Fire House Teen Center Building	140,580		367,243	169,336		204,430	436,540	200,966	0	171,804		60,032		96,040					**1,846,971**
Old Fire House Teen Center Infrastructure							14,322	67,735		108,437	34,916	12,949				26,465			**264,825**
Old Medic One Building	0	5,684	19,313		0	7,925	59,917	35,579		34,713	19,646	10,182		13,289					**206,248**
Old Redmond School House Community Center Building		735,208	321,138	194,081			1,788,442	1,606,467	1,026	1,805,877	492,795	215,903	236,360	427,229		61,156			**7,885,682**
Old Redmond School House Community Center Infrastr						16,649		170,377		251,866	108,240	40,143	38,068			149,451			**774,794**
Parks Operations Center Building 8 Building	0	40,711	148,811			41,721	253,466	72,805	61	161,319	93,447	40,041	26,421	63,210					**942,012**
Police Garage North Building	0					594	125			78	0	57	3,998			2,821		103	**7,776**
Police Garage South Building	0					475	100			62	0	45	3,199			2,257		82	**6,220**
Public Safety Building	0	862,308	1,412,689	367,347		796,977	4,893,283	1,255,837	507,931	1,533,480	1,344,326	6,815	0	1,008,686		1,948,549			**15,938,228**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility. The data is filtered on Subsystem and SubsystemType. The Subsystem filter keeps 67 of 67 members. The SubsystemType filter keeps Building and Infrastructure. The view is filtered on BudgetYear and Facility. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members.

Renewal Budget By Facility By Year

Facility	BudgetYear																		
	2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031	2032	**Grand Total**
Sammamish River Business Park Building 1	226,686	85,818	1,295,930	68,459			49,057	151,522		48,558	50,399	102,093		133,248					**2,211,770**
Sammamish River Business Park Building 2	226,686	85,818	1,295,930	68,459			49,057	247,237		48,558	50,399	102,093		133,248					**2,307,485**
Sammamish River Business Park Infrastructure			163,330			10,070	8,952			152,339	65,468	24,280							**424,437**
Senior Center Building		8,525	269,346			133,708	1,107,707	848,695		772,181	340,746	140,891		225,397					**3,847,195**
Street Department Modular Building 3 Building	11,187	25,615	21,743	3,809			32,131	67,505		28,839	42,286	6,229	25,640	28,934					**293,918**
Trinity Building	11,151		71,436		0	388,280	353,916	341,639	0	194,656	92,018	73,183	368,652	146,150					**2,041,082**
Trinity Building Infrastructure			9,217					87,837		106,698	9,579	14,568	921						**228,820**
Grand Total	**1,230,057**	**3,099,667**	**9,161,149**	**1,801,065**	**1,065,642**	**3,329,929**	**12,812,576**	**13,528,614**	**514,498**	**12,068,398**	**5,846,618**	**2,392,201**	**2,903,583**	**2,831,731**	**1,103,272**	**3,995,713**	**51,508**	**132,195**	**77,868,414**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility. The data is filtered on Subsystem and SubsystemType. The Subsystem filter keeps 67 of 67 members. The SubsystemType filter keeps Building and Infrastructure. The view is filtered on BudgetYear and Facility. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members.

5.9. Renewal Budget by Facility by Subsystem by Year

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Central Stores Warehouse Building 5 Building	Lighting and Branch Wiring								56,175									
	Roof Coverings							51,431										
	Low Voltage Communication Security and Fire Alarm							13,747										
	Exterior Walls														98,704			
	Terminal and Package Units		6,078															
	Floor Finishes							2,194										
	Controls and Instrumentation		1,650															
	Wall Finishes							22,229										
	Other Electrical Systems	7,865																
	Ceiling Finishes								2,185									
	Exterior Windows											1,827						
	Plumbing Fixtures										4,712							
	Sanitary Waste										818							
	Exterior Doors												13,356					
	Interior Doors										8,426							
	Domestic Water Distribution											941						
	Fire Protection Sprinkler Systems	0																
	Fixed Furnishings								5,996									
	Rain Water Drainage			12,437														
	Fittings								645									
	Partitions												2,751					
	Fire Protection Specialties								0									
	Roof Openings										3,385							
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems	0																
City Hall Building	Lighting and Branch Wiring								1,851,801									
	Roof Coverings																788,508	

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	**Grand Total**
Central Stores Warehouse Building 5 Building	Lighting and Branch Wiring		**56,175**
	Roof Coverings		**51,431**
	Low Voltage Communication Security and Fire Alarm		**13,747**
	Exterior Walls		**98,704**
	Terminal and Package Units		**6,078**
	Floor Finishes		**2,194**
	Controls and Instrumentation		**1,650**
	Wall Finishes		**22,229**
	Other Electrical Systems		**7,865**
	Ceiling Finishes		**2,185**
	Exterior Windows		**1,827**
	Plumbing Fixtures		**4,712**
	Sanitary Waste		**818**
	Exterior Doors		**13,356**
	Interior Doors		**8,426**
	Domestic Water Distribution		**941**
	Fire Protection Sprinkler Systems		**0**
	Fixed Furnishings		**5,996**
	Rain Water Drainage		**12,437**
	Fittings		**645**
	Partitions		**2,751**
	Fire Protection Specialties		**0**
	Roof Openings		**3,385**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
City Hall Building	Lighting and Branch Wiring		**1,851,801**
	Roof Coverings		**788,508**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
City Hall Building	Low Voltage Communication Security and Fire Alarm							1,648,088										
	Terminal and Package Units						276,662											
	Floor Finishes															1,103,272		
	Controls and Instrumentation											654,375						
	Wall Finishes												777,913					
	Other Electrical Systems						561,707											
	Plumbing Fixtures										277,950							
	Sanitary Waste										346,486							
	Cooling Generating Systems								1,159,354									
	Heat Generating Systems								870,505									
	Other Plumbing Systems							37,008										
	Institutional Equipment																0	
	Commercial Equipment																45,427	
	Other HVAC Systems and Equipment													25,737				
	Vehicular Equipment																0	
	Fire Protection Specialties																71,884	
	Stair Finishes								0									
	Other Conveying Systems									0								
Decant Facility Building 11 Building	Lighting and Branch Wiring								70,572									
	Roof Coverings							58,856										
	Low Voltage Communication Security and Fire Alarm							62,862										
	Exterior Walls														60,823			
	Terminal and Package Units		10,769															
	Controls and Instrumentation						1,986											
	Wall Finishes		956															
	Other Electrical Systems											19,033						
	Ceiling Finishes								6,433									

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
City Hall Building	Low Voltage Communication Security and Fire Alarm		**1,648,088**
	Terminal and Package Units		**276,662**
	Floor Finishes		**1,103,272**
	Controls and Instrumentation		**654,375**
	Wall Finishes		**777,913**
	Other Electrical Systems		**561,707**
	Plumbing Fixtures		**277,950**
	Sanitary Waste		**346,486**
	Cooling Generating Systems		**1,159,354**
	Heat Generating Systems		**870,505**
	Other Plumbing Systems		**37,008**
	Institutional Equipment		**0**
	Commercial Equipment		**45,427**
	Other HVAC Systems and Equipment		**25,737**
	Vehicular Equipment		**0**
	Fire Protection Specialties		**71,884**
	Stair Finishes		**0**
	Other Conveying Systems		**0**
Decant Facility Building 11 Building	Lighting and Branch Wiring		**70,572**
	Roof Coverings		**58,856**
	Low Voltage Communication Security and Fire Alarm		**62,862**
	Exterior Walls		**60,823**
	Terminal and Package Units		**10,769**
	Controls and Instrumentation		**1,986**
	Wall Finishes		**956**
	Other Electrical Systems		**19,033**
	Ceiling Finishes		**6,433**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Decant Facility Building 11 Building	Exterior Windows											54,255						
	Plumbing Fixtures										2,878							
	Sanitary Waste										14,392							
	Exterior Doors												3,367					
	Domestic Water Distribution											16,942						
	Fire Protection Sprinkler Systems	0																
	Rain Water Drainage										8,635							
	Partitions												1,310					
	Other Plumbing Systems							3,108										
	Energy Supply										1,514							
	Commercial Equipment							0										
	Fire Protection Specialties								407									
	Special Facilities									0								
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems			0														
Fire Station 11 Building	Lighting and Branch Wiring								368,893									
	Roof Coverings													530,147				
	Low Voltage Communication Security and Fire Alarm													281,508				
	Exterior Walls					489,207												
	Terminal and Package Units		376,783															
	Floor Finishes	219,460																
	Controls and Instrumentation		150,100															
	Wall Finishes							73,580										
	Other Electrical Systems											98,988						
	HVAC Distribution Systems										264,084							
	Ceiling Finishes			149,245														
	Exterior Windows											400,865						

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Decant Facility Building 11 Building	Exterior Windows		**54,255**
	Plumbing Fixtures		**2,878**
	Sanitary Waste		**14,392**
	Exterior Doors		**3,367**
	Domestic Water Distribution		**16,942**
	Fire Protection Sprinkler Systems		**0**
	Rain Water Drainage		**8,635**
	Partitions		**1,310**
	Other Plumbing Systems		**3,108**
	Energy Supply		**1,514**
	Commercial Equipment		**0**
	Fire Protection Specialties		**407**
	Special Facilities		**0**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Fire Station 11 Building	Lighting and Branch Wiring		**368,893**
	Roof Coverings		**530,147**
	Low Voltage Communication Security and Fire Alarm		**281,508**
	Exterior Walls		**489,207**
	Terminal and Package Units		**376,783**
	Floor Finishes		**219,460**
	Controls and Instrumentation		**150,100**
	Wall Finishes		**73,580**
	Other Electrical Systems		**98,988**
	HVAC Distribution Systems		**264,084**
	Ceiling Finishes		**149,245**
	Exterior Windows		**400,865**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 11 Building	Plumbing Fixtures										145,282							
	Sanitary Waste										115,939							
	Electrical Service and Distribution										304,161							
	Cooling Generating Systems	95,851																
	Exterior Doors				514,863													
	Domestic Water Distribution											142,515						
	Fire Protection Sprinkler Systems										72,999							
	Fixed Furnishings			225,370														
	Rain Water Drainage										87,312							
	Fittings			97,938														
	Elevators and Lifts	14,139																
	Other Plumbing Systems							46,374										
	Slab On Grade							141,183										
	Energy Supply										52,960							
	Commercial Equipment													2,664				
	Other HVAC Systems and Equipment							27,438										
	Vehicular Equipment													0				
	Fire Protection Specialties								13,090									
	Roof Openings			0														
	Projections			0														
	Other Fire Protection Systems	3,036																
Fire Station 11 Infrastructure	Electrical Distribution										113,917							
	Site Lighting								58,496									
	Site Development																42,170	
	Roadways								38,775									
	Storm Sewer											42,069						
	Landscaping										28,884							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 11 Building	Plumbing Fixtures		**145,282**
	Sanitary Waste		**115,939**
	Electrical Service and Distribution		**304,161**
	Cooling Generating Systems		**95,851**
	Exterior Doors		**514,863**
	Domestic Water Distribution		**142,515**
	Fire Protection Sprinkler Systems		**72,999**
	Fixed Furnishings		**225,370**
	Rain Water Drainage		**87,312**
	Fittings		**97,938**
	Elevators and Lifts		**14,139**
	Other Plumbing Systems		**46,374**
	Slab On Grade		**141,183**
	Energy Supply		**52,960**
	Commercial Equipment		**2,664**
	Other HVAC Systems and Equipment		**27,438**
	Vehicular Equipment		**0**
	Fire Protection Specialties		**13,090**
	Roof Openings		**0**
	Projections		**0**
	Other Fire Protection Systems		**3,036**
Fire Station 11 Infrastructure	Electrical Distribution		**113,917**
	Site Lighting		**58,496**
	Site Development		**42,170**
	Roadways		**38,775**
	Storm Sewer		**42,069**
	Landscaping		**28,884**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 11 Infrastructure	Parking Lots								41,197									
	Sanitary Sewer												20,634					
	Fuel Distribution										15,546							
	Water Supply											13,567						
	Pedestrian Paving													13,045				
	Site Communications and Security						8,558											
	Lighting and Branch Wiring								113,436									
	Roof Coverings			205,339														
	Low Voltage Communication Security and Fire Alarm													86,565				
	Terminal and Package Units		57,931															
	Floor Finishes			64,938														
	Controls and Instrumentation						42,739											
	Wall Finishes		24,910															
	Other Electrical Systems											30,439						
	HVAC Distribution Systems			47,356														
	Ceiling Finishes			13,768														
	Plumbing Fixtures										44,674							
	Sanitary Waste										35,651							
	Cooling Generating Systems	5,895																
	Exterior Doors				158,322													
Fire Station 12 Building	Interior Doors			36,790														
	Domestic Water Distribution											43,823						
	Fire Protection Sprinkler Systems										22,447							
	Fixed Furnishings								9,262									
	Rain Water Drainage										26,849							
	Fittings								2,683									
	Other Equipment													0				

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 11 Infrastructure	Parking Lots		**41,197**
	Sanitary Sewer		**20,634**
	Fuel Distribution		**15,546**
	Water Supply		**13,567**
	Pedestrian Paving		**13,045**
	Site Communications and Security		**8,558**
Fire Station 12 Building	Lighting and Branch Wiring		**113,436**
	Roof Coverings		**205,339**
	Low Voltage Communication Security and Fire Alarm		**86,565**
	Terminal and Package Units		**57,931**
	Floor Finishes		**64,938**
	Controls and Instrumentation		**42,739**
	Wall Finishes		**24,910**
	Other Electrical Systems		**30,439**
	HVAC Distribution Systems		**47,356**
	Ceiling Finishes		**13,768**
	Plumbing Fixtures		**44,674**
	Sanitary Waste		**35,651**
	Cooling Generating Systems		**5,895**
	Exterior Doors		**158,322**
	Interior Doors		**36,790**
	Domestic Water Distribution		**43,823**
	Fire Protection Sprinkler Systems		**22,447**
	Fixed Furnishings		**9,262**
	Rain Water Drainage		**26,849**
	Fittings		**2,683**
	Other Equipment		**0**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 12 Building	Other Plumbing Systems							14,260										
	Energy Supply										16,286							
	Commercial Equipment							478										
	Other HVAC Systems and Equipment							8,437										
	Roof Openings			0														
	Stand-Pipe and Hose Systems									2,692								
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems	0																
Fire Station 12 Infrastructure	Electrical Distribution										42,894							
	Site Lighting								22,026									
	Site Development			21,189														
	Roadways								36,500									
	Storm Sewer											15,841						
	Landscaping										8,157							
	Sanitary Sewer												7,770					
	Fuel Distribution										5,854							
	Water Supply											5,109						
	Pedestrian Paving							2,865										
	Site Communications and Security						3,222											
Fire Station 13 Building	Lighting and Branch Wiring								104,586									
	Roof Coverings			189,319														
	Low Voltage Communication Security and Fire Alarm							93,086										
	Exterior Walls														112,252			
	Terminal and Package Units		106,823															
	Floor Finishes			59,872														
	Controls and Instrumentation						39,404											
	Wall Finishes		22,966															

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 12 Building	Other Plumbing Systems		**14,260**
	Energy Supply		**16,286**
	Commercial Equipment		**478**
	Other HVAC Systems and Equipment		**8,437**
	Roof Openings		**0**
	Stand-Pipe and Hose Systems		**2,692**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Fire Station 12 Infrastructure	Electrical Distribution		**42,894**
	Site Lighting		**22,026**
	Site Development		**21,189**
	Roadways		**36,500**
	Storm Sewer		**15,841**
	Landscaping		**8,157**
	Sanitary Sewer		**7,770**
	Fuel Distribution		**5,854**
	Water Supply		**5,109**
	Pedestrian Paving		**2,865**
	Site Communications and Security		**3,222**
Fire Station 13 Building	Lighting and Branch Wiring		**104,586**
	Roof Coverings		**189,319**
	Low Voltage Communication Security and Fire Alarm		**93,086**
	Exterior Walls		**112,252**
	Terminal and Package Units		**106,823**
	Floor Finishes		**59,872**
	Controls and Instrumentation		**39,404**
	Wall Finishes		**22,966**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 13 Building	Other Electrical Systems						31,496											
	HVAC Distribution Systems	45,374																
	Plumbing Fixtures										41,190							
	Sanitary Waste										32,871							
	Electrical Service and Distribution										86,234							
	Cooling Generating Systems			5,229														
	Exterior Doors				145,970													
	Interior Doors			33,919														
	Domestic Water Distribution											40,405						
	Fire Protection Sprinkler Systems										20,696							
	Fixed Furnishings								2,847									
	Rain Water Drainage			28,871														
	Fittings								24,741									
	Other Plumbing Systems			14,199														
	Energy Supply										15,015							
	Commercial Equipment													378				
	Other HVAC Systems and Equipment			8,401														
	Fire Protection Specialties								3,711									
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems			0														
Fire Station 13 Infrastructure	Electrical Distribution										159,067							
	Site Lighting								81,680									
	Roadways																113,843	
	Storm Sewer											58,743						
	Landscaping										90,747							
	Sanitary Sewer												28,812					
	Fuel Distribution										21,708							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 13 Building	Other Electrical Systems		**31,496**
	HVAC Distribution Systems		**45,374**
	Plumbing Fixtures		**41,190**
	Sanitary Waste		**32,871**
	Electrical Service and Distribution		**86,234**
	Cooling Generating Systems		**5,229**
	Exterior Doors		**145,970**
	Interior Doors		**33,919**
	Domestic Water Distribution		**40,405**
	Fire Protection Sprinkler Systems		**20,696**
	Fixed Furnishings		**2,847**
	Rain Water Drainage		**28,871**
	Fittings		**24,741**
	Other Plumbing Systems		**14,199**
	Energy Supply		**15,015**
	Commercial Equipment		**378**
	Other HVAC Systems and Equipment		**8,401**
	Fire Protection Specialties		**3,711**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Fire Station 13 Infrastructure	Electrical Distribution		**159,067**
	Site Lighting		**81,680**
	Roadways		**113,843**
	Storm Sewer		**58,743**
	Landscaping		**90,747**
	Sanitary Sewer		**28,812**
	Fuel Distribution		**21,708**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 13 Infrastructure	Water Supply											18,945						
	Other Site Systems								28,393									
	Pedestrian Paving							2,125										
	Lighting and Branch Wiring								152,695									
	Roof Coverings													219,443				
	Low Voltage Communication Security and Fire Alarm							135,905										
	Terminal and Package Units						72,207											
	Floor Finishes			87,414														
	Controls and Instrumentation						57,531											
	Wall Finishes		33,531															
	Other Electrical Systems						45,986											
	HVAC Distribution Systems			63,746														
	Ceiling Finishes																	
	Plumbing Fixtures										60,136							
	Sanitary Waste										47,991							
Fire Station 14 Building	Cooling Generating Systems			38,179														
	Exterior Doors												179,246					
	Interior Doors			49,522														
	Domestic Water Distribution											58,991						
	Fire Protection Sprinkler Systems										30,216							
	Fixed Furnishings																6,991	
	Fittings																3,038	
	Other Plumbing Systems							19,196										
	Energy Supply										21,922							
	Commercial Equipment			695														
	Other HVAC Systems and Equipment							11,358										
	Fire Protection Specialties								5,418									

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 13 Infrastructure	Water Supply		**18,945**
	Other Site Systems		**28,393**
	Pedestrian Paving		**2,125**
	Lighting and Branch Wiring		**152,695**
	Roof Coverings		**219,443**
	Low Voltage Communication Security and Fire Alarm		**135,905**
	Terminal and Package Units		**72,207**
	Floor Finishes		**87,414**
	Controls and Instrumentation		**57,531**
	Wall Finishes		**33,531**
	Other Electrical Systems		**45,986**
	HVAC Distribution Systems		**63,746**
	Ceiling Finishes	22,274	**22,274**
	Plumbing Fixtures		**60,136**
	Sanitary Waste		**47,991**
Fire Station 14 Building	Cooling Generating Systems		**38,179**
	Exterior Doors		**179,246**
	Interior Doors		**49,522**
	Domestic Water Distribution		**58,991**
	Fire Protection Sprinkler Systems		**30,216**
	Fixed Furnishings		**6,991**
	Fittings		**3,038**
	Other Plumbing Systems		**19,196**
	Energy Supply		**21,922**
	Commercial Equipment		**695**
	Other HVAC Systems and Equipment		**11,358**
	Fire Protection Specialties		**5,418**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 14 Building	Moveable Furnishings (Capital Funded Only)								0									
Fire Station 14 Infrastructure	Electrical Distribution										230,558							
	Site Lighting								118,390									
	Site Development																85,349	
	Roadways								39,238									
	Storm Sewer											85,145						
	Landscaping										219,220							
	Parking Lots								16,676									
	Sanitary Sewer												41,762					
	Fuel Distribution										31,464							
	Water Supply											27,459						
	Other Site Systems																34,614	
	Pedestrian Paving							15,397										
Fire Station 16 Building	Lighting and Branch Wiring								158,520									
	Roof Coverings							265,704										
	Low Voltage Communication Security and Fire Alarm							141,089										
	Terminal and Package Units		161,911															
	Floor Finishes			90,748														
	Controls and Instrumentation						59,725											
	Wall Finishes		34,810															
	Other Electrical Systems						47,740											
	HVAC Distribution Systems										113,482							
	Ceiling Finishes								57,144									
	Plumbing Fixtures										62,430							
	Sanitary Waste										49,822							
	Electrical Service and Distribution										130,704							
	Cooling Generating Systems	8,238																

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 14 Building	Moveable Furnishings (Capital Funded Only)		**0**
Fire Station 14 Infrastructure	Electrical Distribution		**230,558**
	Site Lighting		**118,390**
	Site Development		**85,349**
	Roadways		**39,238**
	Storm Sewer		**85,145**
	Landscaping		**219,220**
	Parking Lots		**16,676**
	Sanitary Sewer		**41,762**
	Fuel Distribution		**31,464**
	Water Supply		**27,459**
	Other Site Systems		**34,614**
	Pedestrian Paving		**15,397**
Fire Station 16 Building	Lighting and Branch Wiring		**158,520**
	Roof Coverings		**265,704**
	Low Voltage Communication Security and Fire Alarm		**141,089**
	Terminal and Package Units		**161,911**
	Floor Finishes		**90,748**
	Controls and Instrumentation		**59,725**
	Wall Finishes		**34,810**
	Other Electrical Systems		**47,740**
	HVAC Distribution Systems		**113,482**
	Ceiling Finishes		**57,144**
	Plumbing Fixtures		**62,430**
	Sanitary Waste		**49,822**
	Electrical Service and Distribution		**130,704**
	Cooling Generating Systems		**8,238**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

		BudgetYear															
Facility	Subsystem	2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 16 Building	Exterior Doors												27,912					
	Interior Doors										44,080							
	Domestic Water Distribution											61,241						
	Fire Protection Sprinkler Systems										31,369							
	Fixed Furnishings								17,258									
	Rain Water Drainage										37,520							
	Fittings								3,750									
	Other Plumbing Systems							19,928										
	Energy Supply										22,758							
	Commercial Equipment			721														
	Other HVAC Systems and Equipment							11,791										
	Fire Protection Specialties								5,625									
	Stair Finishes									0								
	Other Conveying Systems			0														
	Electrical Distribution										125,109							
	Site Lighting								64,243									
	Site Development								55,065									
	Roadways								63,875									
	Storm Sewer											46,203						
Fire Station 16 Infrastructure	Sanitary Sewer												22,661					
	Fuel Distribution										17,074							
	Water Supply											14,900						
	Other Site Systems								22,332									
	Pedestrian Paving							8,355										
	Site Communications and Security						9,398											
	Lighting and Branch Wiring								89,107									
Fire Station 16 Shop Building	Roof Coverings													114,993				

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 16 Building	Exterior Doors		**27,912**
	Interior Doors		**44,080**
	Domestic Water Distribution		**61,241**
	Fire Protection Sprinkler Systems		**31,369**
	Fixed Furnishings		**17,258**
	Rain Water Drainage		**37,520**
	Fittings		**3,750**
	Other Plumbing Systems		**19,928**
	Energy Supply		**22,758**
	Commercial Equipment		**721**
	Other HVAC Systems and Equipment		**11,791**
	Fire Protection Specialties		**5,625**
	Stair Finishes		**0**
	Other Conveying Systems		**0**
Fire Station 16 Infrastructure	Electrical Distribution		**125,109**
	Site Lighting		**64,243**
	Site Development		**55,065**
	Roadways		**63,875**
	Storm Sewer		**46,203**
	Sanitary Sewer		**22,661**
	Fuel Distribution		**17,074**
	Water Supply		**14,900**
	Other Site Systems		**22,332**
	Pedestrian Paving		**8,355**
	Site Communications and Security		**9,398**
Fire Station 16 Shop Building	Lighting and Branch Wiring		**89,107**
	Roof Coverings		**114,993**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
	Low Voltage Communication Security and Fire Alarm													19,056				
	Terminal and Package Units						48,144											
	Floor Finishes							31,832										
	Controls and Instrumentation		29,361															
	Wall Finishes		13,763															
	Other Electrical Systems						33,747											
	HVAC Distribution Systems										11,479							
	Ceiling Finishes								2,339									
	Exterior Windows											20,082						
	Plumbing Fixtures										13,291							
	Sanitary Waste										49,839							
	Electrical Service and Distribution										53,591							
	Cooling Generating Systems			0														
Fire Station 16 Shop Building	Exterior Doors				23,545													
	Interior Doors			12,501														
	Domestic Water Distribution											17,243						
	Fire Protection Sprinkler Systems										37,513							
	Fixed Furnishings								1,671									
	Rain Water Drainage										3,322							
	Fittings								185									
	Other Equipment													0				
	Other Plumbing Systems							1,157										
	Energy Supply										536							
	Other HVAC Systems and Equipment	129																
	Vehicular Equipment													8,328				
	Fire Protection Specialties								677									
	Stair Finishes					0												

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	**Grand Total**
	Low Voltage Communication Security and Fire Alarm		**19,056**
	Terminal and Package Units		**48,144**
	Floor Finishes		**31,832**
	Controls and Instrumentation		**29,361**
	Wall Finishes		**13,763**
	Other Electrical Systems		**33,747**
	HVAC Distribution Systems		**11,479**
	Ceiling Finishes		**2,339**
	Exterior Windows		**20,082**
	Plumbing Fixtures		**13,291**
	Sanitary Waste		**49,839**
	Electrical Service and Distribution		**53,591**
	Cooling Generating Systems		**0**
Fire Station 16 Shop Building	Exterior Doors		**23,545**
	Interior Doors		**12,501**
	Domestic Water Distribution		**17,243**
	Fire Protection Sprinkler Systems		**37,513**
	Fixed Furnishings		**1,671**
	Rain Water Drainage		**3,322**
	Fittings		**185**
	Other Equipment		**0**
	Other Plumbing Systems		**1,157**
	Energy Supply		**536**
	Other HVAC Systems and Equipment		**129**
	Vehicular Equipment		**8,328**
	Fire Protection Specialties		**677**
	Stair Finishes		**0**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 16 Shop Building	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems									0								
Fire Station 17 Building	Terminal and Package Units											130,297						
	Controls and Instrumentation						116,511											
	Other Electrical Systems																	
	Cooling Generating Systems																81,121	
	Other Plumbing Systems													33,331				
	Stair Finishes														0			
	Other Fire Protection Systems								436									
	Other Conveying Systems	0																
Fire Station 17 Infrastructure	Other Site Systems																20,124	
	Site Communications and Security											8,972						
Fire Station 18 Building	Lighting and Branch Wiring																104,393	
	Roof Coverings													178,376				
	Low Voltage Communication Security and Fire Alarm													94,718				
	Terminal and Package Units						58,694											
	Floor Finishes							65,793										
	Controls and Instrumentation						46,765											
	Wall Finishes												22,059					
	Other Electrical Systems											33,306						
	HVAC Distribution Systems										88,855							
	Ceiling Finishes																	
	Cooling Generating Systems								27,651									
	Interior Doors										34,515							
	Fire Protection Sprinkler Systems										24,562							
	Fixed Furnishings																5,683	
	Rain Water Drainage										29,378							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 16 Shop Building	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Fire Station 17 Building	Terminal and Package Units		**130,297**
	Controls and Instrumentation		**116,511**
	Other Electrical Systems	71,147	**71,147**
	Cooling Generating Systems		**81,121**
	Other Plumbing Systems		**33,331**
	Stair Finishes		**0**
	Other Fire Protection Systems		**436**
	Other Conveying Systems		**0**
Fire Station 17 Infrastructure	Other Site Systems		**20,124**
	Site Communications and Security		**8,972**
Fire Station 18 Building	Lighting and Branch Wiring		**104,393**
	Roof Coverings		**178,376**
	Low Voltage Communication Security and Fire Alarm		**94,718**
	Terminal and Package Units		**58,694**
	Floor Finishes		**65,793**
	Controls and Instrumentation		**46,765**
	Wall Finishes		**22,059**
	Other Electrical Systems		**33,306**
	HVAC Distribution Systems		**88,855**
	Ceiling Finishes	36,212	**36,212**
	Cooling Generating Systems		**27,651**
	Interior Doors		**34,515**
	Fire Protection Sprinkler Systems		**24,562**
	Fixed Furnishings		**5,683**
	Rain Water Drainage		**29,378**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

		BudgetYear																
Facility	Subsystem	2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Fire Station 18 Building	Fittings																	
	Other Equipment													0				
	Other Plumbing Systems							15,603										
	Commercial Equipment													448				
	Other HVAC Systems and Equipment							9,232										
	Fire Protection Specialties																3,704	
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems	0																
Fire Station 18 Infrastructure	Site Lighting																51,717	
	Site Development																44,329	
	Roadways																59,991	
	Pedestrian Paving													6,857				
Hartman Park Infrastructure	Electrical Distribution										285,963							
	Site Lighting								146,840									
	Site Development								125,863									
	Storm Sewer											105,606						
	Landscaping			232,556														
	Parking Lots			116,066														
	Sanitary Sewer												51,797					
	Fuel Distribution										39,026							
	Water Supply											34,058						
	Other Site Systems			57,288														
	Pedestrian Paving							19,097										
	Heating Distribution			27,467														
Hartman Park Swimming Pool Building	Lighting and Branch Wiring			546,570														
	Roof Coverings	213,513																
	Exterior Walls														195,179			

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Fire Station 18 Building	Fittings	2,376	**2,376**
	Other Equipment		**0**
	Other Plumbing Systems		**15,603**
	Commercial Equipment		**448**
	Other HVAC Systems and Equipment		**9,232**
	Fire Protection Specialties		**3,704**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Fire Station 18 Infrastructure	Site Lighting		**51,717**
	Site Development		**44,329**
	Roadways		**59,991**
	Pedestrian Paving		**6,857**
Hartman Park Infrastructure	Electrical Distribution		**285,963**
	Site Lighting		**146,840**
	Site Development		**125,863**
	Storm Sewer		**105,606**
	Landscaping		**232,556**
	Parking Lots		**116,066**
	Sanitary Sewer		**51,797**
	Fuel Distribution		**39,026**
	Water Supply		**34,058**
	Other Site Systems		**57,288**
	Pedestrian Paving		**19,097**
	Heating Distribution		**27,467**
Hartman Park Swimming Pool Building	Lighting and Branch Wiring		**546,570**
	Roof Coverings		**213,513**
	Exterior Walls		**195,179**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Hartman Park Swimming Pool Building	Terminal and Package Units		75,879															
	Floor Finishes			136,681														
	Controls and Instrumentation		84,219															
	Wall Finishes							12,460										
	Other Electrical Systems						4,500											
	HVAC Distribution Systems			48,631														
	Ceiling Finishes			29,293														
	Exterior Windows				13,076													
	Plumbing Fixtures										138,005							
	Sanitary Waste			55,878														
	Electrical Service and Distribution			40,048														
	Cooling Generating Systems								0									
	Exterior Doors				1,369													
	Interior Doors			27,080														
	Domestic Water Distribution				70,527													
	Fire Protection Sprinkler Systems	0																
	Heat Generating Systems								32,966									
	Fixed Furnishings	159																
	Rain Water Drainage			5,149														
	Fittings								1,302									
	Other Equipment													567,993				
	Other Plumbing Systems			13,588														
	Slab On Grade							92,768										
	Institutional Equipment							0										
	Commercial Equipment	107																
	Fire Protection Specialties								0									
	Roof Openings			0														

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Hartman Park Swimming Pool Building	Terminal and Package Units		**75,879**
	Floor Finishes		**136,681**
	Controls and Instrumentation		**84,219**
	Wall Finishes		**12,460**
	Other Electrical Systems		**4,500**
	HVAC Distribution Systems		**48,631**
	Ceiling Finishes		**29,293**
	Exterior Windows		**13,076**
	Plumbing Fixtures		**138,005**
	Sanitary Waste		**55,878**
	Electrical Service and Distribution		**40,048**
	Cooling Generating Systems		**0**
	Exterior Doors		**1,369**
	Interior Doors		**27,080**
	Domestic Water Distribution		**70,527**
	Fire Protection Sprinkler Systems		**0**
	Heat Generating Systems		**32,966**
	Fixed Furnishings		**159**
	Rain Water Drainage		**5,149**
	Fittings		**1,302**
	Other Equipment		**567,993**
	Other Plumbing Systems		**13,588**
	Slab On Grade		**92,768**
	Institutional Equipment		**0**
	Commercial Equipment		**107**
	Fire Protection Specialties		**0**
	Roof Openings		**0**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Hartman Park Swimming Pool Building	Projections										0							
	Special Facilities									0								
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems									0								
Maintenance Operations Center Building 1 Building	Lighting and Branch Wiring			195,986														
	Roof Coverings							262,836										
	Low Voltage Communication Security and Fire Alarm							43,554										
	Exterior Walls														89,341			
	Terminal and Package Units						117,937											
	Floor Finishes			67,370														
	Controls and Instrumentation		57,540															
	Wall Finishes							32,666										
	Other Electrical Systems																	51,508
	HVAC Distribution Systems			13,119														
	Ceiling Finishes								55,007									
	Exterior Windows											39,355						
	Plumbing Fixtures			30,378														
	Sanitary Waste			113,917														
	Electrical Service and Distribution										105,024							
	Cooling Generating Systems			0														
	Exterior Doors												38,808					
	Interior Doors										21,005							
	Domestic Water Distribution											33,791						
	Fire Protection Sprinkler Systems	0																
	Heat Generating Systems								5,457									
	Fixed Furnishings								19,646									
	Rain Water Drainage			7,595														

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Hartman Park Swimming Pool Building	Projections		**0**
	Special Facilities		**0**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Maintenance Operations Center Building 1 Building	Lighting and Branch Wiring		**195,986**
	Roof Coverings		**262,836**
	Low Voltage Communication Security and Fire Alarm		**43,554**
	Exterior Walls		**89,341**
	Terminal and Package Units		**117,937**
	Floor Finishes		**67,370**
	Controls and Instrumentation		**57,540**
	Wall Finishes		**32,666**
	Other Electrical Systems		**51,508**
	HVAC Distribution Systems		**13,119**
	Ceiling Finishes		**55,007**
	Exterior Windows		**39,355**
	Plumbing Fixtures		**30,378**
	Sanitary Waste		**113,917**
	Electrical Service and Distribution		**105,024**
	Cooling Generating Systems		**0**
	Exterior Doors		**38,808**
	Interior Doors		**21,005**
	Domestic Water Distribution		**33,791**
	Fire Protection Sprinkler Systems		**0**
	Heat Generating Systems		**5,457**
	Fixed Furnishings		**19,646**
	Rain Water Drainage		**7,595**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Maintenance Operations Center Building 1 Building	Fittings								7,276									
	Other Equipment							0										
	Partitions												29,644					
	Other Plumbing Systems			1,225														
	Energy Supply										1,050							
	Institutional Equipment							10,889										
	Commercial Equipment							680										
	Other HVAC Systems and Equipment							1,134										
	Vehicular Equipment							0										
	Fire Protection Specialties								1,327									
	Stair Finishes					0												
	Roof Openings										8,402							
	Projections										210							
	Special Construction Systems									32								
	Integrated Construction									21								
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems	0																
Maintenance Operations Center Infrastructure	Electrical Distribution										591,587							
	Site Lighting								303,776									
	Site Development								260,379									
	Roadways								604,079									
	Storm Sewer											218,473						
	Landscaping										74,999							
	Parking Lots																107,966	
	Sanitary Sewer												107,156					
	Fuel Distribution										80,734							
	Water Supply											70,457						

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Maintenance Operations Center Building 1 Building	Fittings		**7,276**
	Other Equipment		**0**
	Partitions		**29,644**
	Other Plumbing Systems		**1,225**
	Energy Supply		**1,050**
	Institutional Equipment		**10,889**
	Commercial Equipment		**680**
	Other HVAC Systems and Equipment		**1,134**
	Vehicular Equipment		**0**
	Fire Protection Specialties		**1,327**
	Stair Finishes		**0**
	Roof Openings		**8,402**
	Projections		**210**
	Special Construction Systems		**32**
	Integrated Construction		**21**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Maintenance Operations Center Infrastructure	Electrical Distribution		**591,587**
	Site Lighting		**303,776**
	Site Development		**260,379**
	Roadways		**604,079**
	Storm Sewer		**218,473**
	Landscaping		**74,999**
	Parking Lots		**107,966**
	Sanitary Sewer		**107,156**
	Fuel Distribution		**80,734**
	Water Supply		**70,457**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Maintenance Operations Center Infrastructure	Other Site Systems								10,560									
	Pedestrian Paving													6,775				
	Site Communications and Security						44,441											
Municipal Campus Infrastructure	Electrical Distribution										893,635							
	Site Lighting								458,875									
	Site Development			441,429														
	Roadways								152,084									
	Storm Sewer											330,019						
	Parking Lots								129,272									
	Sanitary Sewer												161,867					
	Fuel Distribution										121,955							
	Water Supply											106,431						
	Other Site Systems																134,162	
	Pedestrian Paving							119,353										
Municipal Campus Parking Garage Building	Lighting and Branch Wiring								181,160									
	Roof Coverings													9,965				
	Low Voltage Communication Security and Fire Alarm							100,648										
	Exterior Walls					576,435												
	Terminal and Package Units						0											
	Controls and Instrumentation						0											
	Wall Finishes							454										
	Sanitary Waste										6,258							
	Electrical Service and Distribution										97,219							
	Cooling Generating Systems								0									
	Exterior Doors												3,871					
	Domestic Water Distribution											1,644						
	Fire Protection Sprinkler Systems										15,645							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Maintenance Operations Center Infrastructure	Other Site Systems		**10,560**
	Pedestrian Paving		**6,775**
	Site Communications and Security		**44,441**
Municipal Campus Infrastructure	Electrical Distribution		**893,635**
	Site Lighting		**458,875**
	Site Development		**441,429**
	Roadways		**152,084**
	Storm Sewer		**330,019**
	Parking Lots		**129,272**
	Sanitary Sewer		**161,867**
	Fuel Distribution		**121,955**
	Water Supply		**106,431**
	Other Site Systems		**134,162**
	Pedestrian Paving		**119,353**
Municipal Campus Parking Garage Building	Lighting and Branch Wiring		**181,160**
	Roof Coverings		**9,965**
	Low Voltage Communication Security and Fire Alarm		**100,648**
	Exterior Walls		**576,435**
	Terminal and Package Units		**0**
	Controls and Instrumentation		**0**
	Wall Finishes		**454**
	Sanitary Waste		**6,258**
	Electrical Service and Distribution		**97,219**
	Cooling Generating Systems		**0**
	Exterior Doors		**3,871**
	Domestic Water Distribution		**1,644**
	Fire Protection Sprinkler Systems		**15,645**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Municipal Campus Parking Garage Building	Rain Water Drainage										4,861							
	Partitions				1,902													
	Vehicular Equipment													0				
	Fire Protection Specialties								1,858									
	Stand-Pipe and Hose Systems									2,734								
	Projections			0														
	Stair Construction							7,334										
Old Fire House Teen Center Building	Lighting and Branch Wiring								166,276									
	Roof Coverings							201,230										
	Low Voltage Communication Security and Fire Alarm							53,378										
	Exterior Walls														96,040			
	Terminal and Package Units						160,106											
	Floor Finishes							120,005										
	Controls and Instrumentation						40,961											
	Wall Finishes							61,591										
	Other Electrical Systems						3,364											
	HVAC Distribution Systems	113,698																
	Ceiling Finishes			136,991														
	Exterior Windows				125,708													
	Plumbing Fixtures			72,190														
	Sanitary Waste			37,877														
	Electrical Service and Distribution										98,785							
	Cooling Generating Systems	19,064																
	Exterior Doors												28,746					
	Interior Doors			98,278														
	Domestic Water Distribution				43,628													
	Fire Protection Sprinkler Systems										55,220							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Municipal Campus Parking Garage Building	Rain Water Drainage		**4,861**
	Partitions		**1,902**
	Vehicular Equipment		**0**
	Fire Protection Specialties		**1,858**
	Stand-Pipe and Hose Systems		**2,734**
	Projections		**0**
	Stair Construction		**7,334**
Old Fire House Teen Center Building	Lighting and Branch Wiring		**166,276**
	Roof Coverings		**201,230**
	Low Voltage Communication Security and Fire Alarm		**53,378**
	Exterior Walls		**96,040**
	Terminal and Package Units		**160,106**
	Floor Finishes		**120,005**
	Controls and Instrumentation		**40,961**
	Wall Finishes		**61,591**
	Other Electrical Systems		**3,364**
	HVAC Distribution Systems		**113,698**
	Ceiling Finishes		**136,991**
	Exterior Windows		**125,708**
	Plumbing Fixtures		**72,190**
	Sanitary Waste		**37,877**
	Electrical Service and Distribution		**98,785**
	Cooling Generating Systems		**19,064**
	Exterior Doors		**28,746**
	Interior Doors		**98,278**
	Domestic Water Distribution		**43,628**
	Fire Protection Sprinkler Systems		**55,220**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Old Fire House Teen Center Building	Fixed Furnishings								2,939									
	Rain Water Drainage			21,908														
	Fittings								31,750									
	Partitions												31,286					
	Other Plumbing Systems	7,818																
	Energy Supply										15,615							
	Institutional Equipment							337										
	Fire Protection Specialties								0									
	Roof Openings										1,357							
	Projections										826							
	Special Construction Systems									0								
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems	0																
	Special Structures												0					
Old Fire House Teen Center Infrastructure	Electrical Distribution										71,491							
	Site Lighting								36,710									
	Site Development																26,465	
	Storm Sewer											26,402						
	Landscaping										27,190							
	Parking Lots								31,025									
	Sanitary Sewer												12,949					
	Fuel Distribution										9,756							
	Water Supply											8,514						
	Pedestrian Paving							14,322										
Old Medic One Building	Lighting and Branch Wiring								25,976									
	Roof Coverings							39,097										
	Low Voltage Communication Security and Fire Alarm							6,479										

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Old Fire House Teen Center Building	Fixed Furnishings		**2,939**
	Rain Water Drainage		**21,908**
	Fittings		**31,750**
	Partitions		**31,286**
	Other Plumbing Systems		**7,818**
	Energy Supply		**15,615**
	Institutional Equipment		**337**
	Fire Protection Specialties		**0**
	Roof Openings		**1,357**
	Projections		**826**
	Special Construction Systems		**0**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
	Special Structures		**0**
Old Fire House Teen Center Infrastructure	Electrical Distribution		**71,491**
	Site Lighting		**36,710**
	Site Development		**26,465**
	Storm Sewer		**26,402**
	Landscaping		**27,190**
	Parking Lots		**31,025**
	Sanitary Sewer		**12,949**
	Fuel Distribution		**9,756**
	Water Supply		**8,514**
	Pedestrian Paving		**14,322**
Old Medic One Building	Lighting and Branch Wiring		**25,976**
	Roof Coverings		**39,097**
	Low Voltage Communication Security and Fire Alarm		**6,479**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
	Exterior Walls														13,289			
	Terminal and Package Units		5,684															
	Floor Finishes							9,279										
	Controls and Instrumentation						7,925											
	Wall Finishes							4,859										
	Other Electrical Systems											8,766						
	HVAC Distribution Systems			2,732														
	Ceiling Finishes								8,865									
	Exterior Windows											5,854						
	Plumbing Fixtures			4,518														
	Sanitary Waste										14,529							
	Electrical Service and Distribution										15,622							
	Cooling Generating Systems								0									
Old Medic One Building	Exterior Doors												5,773					
	Interior Doors										3,125							
	Domestic Water Distribution											5,026						
	Fire Protection Sprinkler Systems	0																
	Fixed Furnishings			10,933														
	Rain Water Drainage			1,130														
	Fittings								541									
	Partitions												4,409					
	Energy Supply										156							
	Commercial Equipment							203										
	Vehicular Equipment							0										
	Fire Protection Specialties								198									
	Stair Finishes					0												
	Roof Openings										1,250							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
	Exterior Walls		**13,289**
	Terminal and Package Units		**5,684**
	Floor Finishes		**9,279**
	Controls and Instrumentation		**7,925**
	Wall Finishes		**4,859**
	Other Electrical Systems		**8,766**
	HVAC Distribution Systems		**2,732**
	Ceiling Finishes		**8,865**
	Exterior Windows		**5,854**
	Plumbing Fixtures		**4,518**
	Sanitary Waste		**14,529**
	Electrical Service and Distribution		**15,622**
	Cooling Generating Systems		**0**
Old Medic One Building	Exterior Doors		**5,773**
	Interior Doors		**3,125**
	Domestic Water Distribution		**5,026**
	Fire Protection Sprinkler Systems		**0**
	Fixed Furnishings		**10,933**
	Rain Water Drainage		**1,130**
	Fittings		**541**
	Partitions		**4,409**
	Energy Supply		**156**
	Commercial Equipment		**203**
	Vehicular Equipment		**0**
	Fire Protection Specialties		**198**
	Stair Finishes		**0**
	Roof Openings		**1,250**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Old Medic One Building	Projections										31							
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems	0																
	Lighting and Branch Wiring								739,677									
	Roof Coverings							895,163										
	Low Voltage Communication Security and Fire Alarm													203,593				
	Exterior Walls														427,229			
	Terminal and Package Units		538,425															
	Floor Finishes							533,836										
	Controls and Instrumentation		196,783															
	Wall Finishes							273,985										
	Other Electrical Systems											13,332						
	HVAC Distribution Systems										417,294							
	Ceiling Finishes								542,987									
	Exterior Windows											479,463						
	Plumbing Fixtures			321,138														
	Sanitary Waste										144,468							
	Electrical Service and Distribution										439,443							
	Cooling Generating Systems																61,156	
	Exterior Doors												76,726					
	Interior Doors										374,843							
	Domestic Water Distribution				194,081													
Old Redmond School House Community Center Building	Fire Protection Sprinkler Systems										245,645							
	Heat Generating Systems								212,905									
	Fixed Furnishings								26,155									
	Rain Water Drainage										83,559							
	Fittings								84,743									

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	**Grand Total**
Old Medic One Building	Projections		**31**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
	Lighting and Branch Wiring		**739,677**
	Roof Coverings		**895,163**
	Low Voltage Communication Security and Fire Alarm		**203,593**
	Exterior Walls		**427,229**
	Terminal and Package Units		**538,425**
	Floor Finishes		**533,836**
	Controls and Instrumentation		**196,783**
	Wall Finishes		**273,985**
	Other Electrical Systems		**13,332**
	HVAC Distribution Systems		**417,294**
	Ceiling Finishes		**542,987**
	Exterior Windows		**479,463**
	Plumbing Fixtures		**321,138**
	Sanitary Waste		**144,468**
	Electrical Service and Distribution		**439,443**
	Cooling Generating Systems		**61,156**
	Exterior Doors		**76,726**
	Interior Doors		**374,843**
	Domestic Water Distribution		**194,081**
Old Redmond School House Community Center Building	Fire Protection Sprinkler Systems		**245,645**
	Heat Generating Systems		**212,905**
	Fixed Furnishings		**26,155**
	Rain Water Drainage		**83,559**
	Fittings		**84,743**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Old Redmond School House Community Center Building	Elevators and Lifts									0								
	Partitions												139,178					
	Other Plumbing Systems													26,568				
	Energy Supply										69,466							
	Commercial Equipment							85,458										
	Other HVAC Systems and Equipment													6,199				
	Vehicular Equipment							0										
	Fire Protection Specialties								0									
	Stair Finishes									1,026								
	Roof Openings										5,437							
	Projections										25,722							
	Other Fire Protection Systems																0	
	Special Construction Systems									0								
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems									0								
Old Redmond School House Community Center Infrastr	Electrical Distribution										221,622							
	Site Lighting								113,801									
	Site Development																82,041	
	Roadways								56,575									
	Storm Sewer											81,845						
	Parking Lots																67,410	
	Sanitary Sewer												40,143					
	Fuel Distribution										30,245							
	Water Supply											26,395						
	Pedestrian Paving													38,068				
	Site Communications and Security						16,649											
Parks Operations Center Building 8 Building	Lighting and Branch Wiring			138,664														

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Old Redmond School House Community Center Building	Elevators and Lifts		**0**
	Partitions		**139,178**
	Other Plumbing Systems		**26,568**
	Energy Supply		**69,466**
	Commercial Equipment		**85,458**
	Other HVAC Systems and Equipment		**6,199**
	Vehicular Equipment		**0**
	Fire Protection Specialties		**0**
	Stair Finishes		**1,026**
	Roof Openings		**5,437**
	Projections		**25,722**
	Other Fire Protection Systems		**0**
	Special Construction Systems		**0**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Old Redmond School House Community Center Infrastr	Electrical Distribution		**221,622**
	Site Lighting		**113,801**
	Site Development		**82,041**
	Roadways		**56,575**
	Storm Sewer		**81,845**
	Parking Lots		**67,410**
	Sanitary Sewer		**40,143**
	Fuel Distribution		**30,245**
	Water Supply		**26,395**
	Pedestrian Paving		**38,068**
	Site Communications and Security		**16,649**
Parks Operations Center Building 8 Building	Lighting and Branch Wiring		**138,664**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
	Roof Coverings							185,962										
	Low Voltage Communication Security and Fire Alarm													26,421				
	Exterior Walls														63,210			
	Terminal and Package Units						41,721											
	Floor Finishes							44,136										
	Controls and Instrumentation		40,711															
	Wall Finishes							23,111										
	Other Electrical Systems											41,694						
	HVAC Distribution Systems			9,282														
	Ceiling Finishes								38,919									
	Exterior Windows											27,845						
	Plumbing Fixtures										18,428							
	Sanitary Waste										69,105							
	Cooling Generating Systems			0														
	Exterior Doors												27,457					
	Interior Doors										14,862							
	Domestic Water Distribution											23,908						
Parks Operations Center Building 8 Building	Fire Protection Sprinkler Systems										52,014							
	Fixed Furnishings								27,799									
	Rain Water Drainage										4,607							
	Fittings								5,148									
	Other Equipment							0										
	Elevators and Lifts									0								
	Partitions												12,584					
	Other Plumbing Systems							161										
	Energy Supply										743							
	Commercial Equipment							96										

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	**Grand Total**
	Roof Coverings		**185,962**
	Low Voltage Communication Security and Fire Alarm		**26,421**
	Exterior Walls		**63,210**
	Terminal and Package Units		**41,721**
	Floor Finishes		**44,136**
	Controls and Instrumentation		**40,711**
	Wall Finishes		**23,111**
	Other Electrical Systems		**41,694**
	HVAC Distribution Systems		**9,282**
	Ceiling Finishes		**38,919**
	Exterior Windows		**27,845**
	Plumbing Fixtures		**18,428**
	Sanitary Waste		**69,105**
	Cooling Generating Systems		**0**
	Exterior Doors		**27,457**
	Interior Doors		**14,862**
	Domestic Water Distribution		**23,908**
Parks Operations Center Building 8 Building	Fire Protection Sprinkler Systems		**52,014**
	Fixed Furnishings		**27,799**
	Rain Water Drainage		**4,607**
	Fittings		**5,148**
	Other Equipment		**0**
	Elevators and Lifts		**0**
	Partitions		**12,584**
	Other Plumbing Systems		**161**
	Energy Supply		**743**
	Commercial Equipment		**96**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Parks Operations Center Building 8 Building	Other HVAC Systems and Equipment			866														
	Vehicular Equipment							0										
	Fire Protection Specialties								939									
	Stair Finishes									0								
	Roof Openings										1,486							
	Projections										74							
	Special Facilities									61								
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems	0																
	Lighting and Branch Wiring																2,133	
	Roof Coverings													2,790				
	Low Voltage Communication Security and Fire Alarm													1,208				
	Terminal and Package Units											0						
	Floor Finishes							100										
	Controls and Instrumentation											0						
	Wall Finishes												57					
	Other Electrical Systems						594											
Police Garage North Building	Ceiling Finishes																	
	Plumbing Fixtures										78							
	Fittings																666	
	Other Equipment							0										
	Other Plumbing Systems							25										
	Institutional Equipment													0				
	Other HVAC Systems and Equipment													0				
	Fire Protection Specialties																22	
	Other Conveying Systems	0																
Police Garage South Building	Lighting and Branch Wiring																1,706	

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Parks Operations Center Building 8 Building	Other HVAC Systems and Equipment		**866**
	Vehicular Equipment		**0**
	Fire Protection Specialties		**939**
	Stair Finishes		**0**
	Roof Openings		**1,486**
	Projections		**74**
	Special Facilities		**61**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
	Lighting and Branch Wiring		**2,133**
	Roof Coverings		**2,790**
	Low Voltage Communication Security and Fire Alarm		**1,208**
	Terminal and Package Units		**0**
	Floor Finishes		**100**
	Controls and Instrumentation		**0**
	Wall Finishes		**57**
	Other Electrical Systems		**594**
Police Garage North Building	Ceiling Finishes	103	**103**
	Plumbing Fixtures		**78**
	Fittings		**666**
	Other Equipment		**0**
	Other Plumbing Systems		**25**
	Institutional Equipment		**0**
	Other HVAC Systems and Equipment		**0**
	Fire Protection Specialties		**22**
	Other Conveying Systems		**0**
Police Garage South Building	Lighting and Branch Wiring		**1,706**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Police Garage South Building	Roof Coverings													2,232				
	Low Voltage Communication Security and Fire Alarm													966				
	Terminal and Package Units											0						
	Floor Finishes							80										
	Controls and Instrumentation											0						
	Wall Finishes												45					
	Other Electrical Systems						475											
	Ceiling Finishes																	
	Plumbing Fixtures										62							
	Fittings																533	
	Other Plumbing Systems							20										
	Institutional Equipment													0				
	Other HVAC Systems and Equipment							0										
	Fire Protection Specialties																18	
	Other Conveying Systems	0																
Public Safety Building	Lighting and Branch Wiring																1,948,549	
	Roof Coverings							2,104,474										
	Low Voltage Communication Security and Fire Alarm							1,840,120										
	Exterior Walls														941,970			
	Terminal and Package Units						796,977											
	Controls and Instrumentation		862,308															
	Wall Finishes							734,979										
	Other Electrical Systems											894,379						
	HVAC Distribution Systems			808,749														
	Ceiling Finishes								709,537									
	Exterior Windows											449,947						
	Plumbing Fixtures										589,431							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Police Garage South Building	Roof Coverings		**2,232**
	Low Voltage Communication Security and Fire Alarm		**966**
	Terminal and Package Units		**0**
	Floor Finishes		**80**
	Controls and Instrumentation		**0**
	Wall Finishes		**45**
	Other Electrical Systems		**475**
	Ceiling Finishes	82	**82**
	Plumbing Fixtures		**62**
	Fittings		**533**
	Other Plumbing Systems		**20**
	Institutional Equipment		**0**
	Other HVAC Systems and Equipment		**0**
	Fire Protection Specialties		**18**
	Other Conveying Systems		**0**
Public Safety Building	Lighting and Branch Wiring		**1,948,549**
	Roof Coverings		**2,104,474**
	Low Voltage Communication Security and Fire Alarm		**1,840,120**
	Exterior Walls		**941,970**
	Terminal and Package Units		**796,977**
	Controls and Instrumentation		**862,308**
	Wall Finishes		**734,979**
	Other Electrical Systems		**894,379**
	HVAC Distribution Systems		**808,749**
	Ceiling Finishes		**709,537**
	Exterior Windows		**449,947**
	Plumbing Fixtures		**589,431**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Public Safety Building	Sanitary Waste			342,355														
	Cooling Generating Systems			31,469														
	Exterior Doors												6,815					
	Interior Doors										352,033							
	Domestic Water Distribution				367,347													
	Fire Protection Sprinkler Systems										585,721							
	Fixed Furnishings								276,421									
	Rain Water Drainage			228,149														
	Fittings								269,879									
	Elevators and Lifts									472,174								
	Other Plumbing Systems			1,967														
	Energy Supply										6,295							
	Institutional Equipment							173,522										
	Commercial Equipment													0				
	Other HVAC Systems and Equipment							3,036										
	Vehicular Equipment							37,152										
	Fire Protection Specialties								0									
	Stair Finishes														66,716			
	Stand-Pipe and Hose Systems									35,757								
	Other Fire Protection Systems	0																
	Special Facilities									0								
	Other Conveying Systems	0																
	Special Controls and Instrumentation											0						
	Special Structures												0					
Sammamish River Business Park Building 1	Lighting and Branch Wiring			292,304														
	Roof Coverings			423,354														
	Low Voltage Communication Security and Fire Alarm			70,153														

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Public Safety Building	Sanitary Waste		**342,355**
	Cooling Generating Systems		**31,469**
	Exterior Doors		**6,815**
	Interior Doors		**352,033**
	Domestic Water Distribution		**367,347**
	Fire Protection Sprinkler Systems		**585,721**
	Fixed Furnishings		**276,421**
	Rain Water Drainage		**228,149**
	Fittings		**269,879**
	Elevators and Lifts		**472,174**
	Other Plumbing Systems		**1,967**
	Energy Supply		**6,295**
	Institutional Equipment		**173,522**
	Commercial Equipment		**0**
	Other HVAC Systems and Equipment		**3,036**
	Vehicular Equipment		**37,152**
	Fire Protection Specialties		**0**
	Stair Finishes		**66,716**
	Stand-Pipe and Hose Systems		**35,757**
	Other Fire Protection Systems		**0**
	Special Facilities		**0**
	Other Conveying Systems		**0**
	Special Controls and Instrumentation		**0**
	Special Structures		**0**
Sammamish River Business Park Building 1	Lighting and Branch Wiring		**292,304**
	Roof Coverings		**423,354**
	Low Voltage Communication Security and Fire Alarm		**70,153**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

		BudgetYear																
Facility	Subsystem	2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Sammamish River Business Park Building 1	Exterior Walls														133,248			
	Terminal and Package Units	96,825																
	Floor Finishes			100,480														
	Controls and Instrumentation		85,818															
	Wall Finishes							48,719										
	Other Electrical Systems	108,597																
	HVAC Distribution Systems			11,740														
	Ceiling Finishes								41,021									
	Exterior Windows				68,459													
	Plumbing Fixtures			45,307														
	Sanitary Waste			169,902														
	Electrical Service and Distribution			182,691														
	Cooling Generating Systems			0														
	Exterior Doors												57,879					
	Interior Doors										31,328							
	Domestic Water Distribution											50,399						
	Fire Protection Sprinkler Systems	0																
	Fixed Furnishings								97,669									
	Rain Water Drainage	11,771																
	Fittings								10,852									
	Partitions												44,214					
	Other Plumbing Systems							338										
	Energy Supply										1,566							
	Fire Protection Specialties								1,980									
	Roof Openings										12,531							
	Projections										3,133							
	Other Fire Protection Systems	9,493																

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Sammamish River Business Park Building 1	Exterior Walls		**133,248**
	Terminal and Package Units		**96,825**
	Floor Finishes		**100,480**
	Controls and Instrumentation		**85,818**
	Wall Finishes		**48,719**
	Other Electrical Systems		**108,597**
	HVAC Distribution Systems		**11,740**
	Ceiling Finishes		**41,021**
	Exterior Windows		**68,459**
	Plumbing Fixtures		**45,307**
	Sanitary Waste		**169,902**
	Electrical Service and Distribution		**182,691**
	Cooling Generating Systems		**0**
	Exterior Doors		**57,879**
	Interior Doors		**31,328**
	Domestic Water Distribution		**50,399**
	Fire Protection Sprinkler Systems		**0**
	Fixed Furnishings		**97,669**
	Rain Water Drainage		**11,771**
	Fittings		**10,852**
	Partitions		**44,214**
	Other Plumbing Systems		**338**
	Energy Supply		**1,566**
	Fire Protection Specialties		**1,980**
	Roof Openings		**12,531**
	Projections		**3,133**
	Other Fire Protection Systems		**9,493**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Sammamish River Business Park Building 1	Stair Construction							0										
	Other Conveying Systems	0																
	Lighting and Branch Wiring			292,304														
	Roof Coverings			423,354														
	Low Voltage Communication Security and Fire Alarm			70,153														
	Exterior Walls														133,248			
	Terminal and Package Units	96,825																
	Floor Finishes			100,480														
	Controls and Instrumentation		85,818															
	Wall Finishes							48,719										
	Other Electrical Systems	108,597																
	HVAC Distribution Systems			11,740														
	Ceiling Finishes								136,736									
	Exterior Windows				68,459													
	Plumbing Fixtures			45,307														
	Sanitary Waste			169,902														
	Electrical Service and Distribution			182,691														
	Cooling Generating Systems			0														
Sammamish River Business Park Building 2	Exterior Doors												57,879					
	Interior Doors										31,328							
	Domestic Water Distribution											50,399						
	Fire Protection Sprinkler Systems	0																
	Fixed Furnishings								97,669									
	Rain Water Drainage	11,771																
	Fittings								10,852									
	Partitions												44,214					
	Other Plumbing Systems							338										

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Sammamish River Business Park Building 1	Stair Construction		**0**
	Other Conveying Systems		**0**
	Lighting and Branch Wiring		**292,304**
	Roof Coverings		**423,354**
	Low Voltage Communication Security and Fire Alarm		**70,153**
	Exterior Walls		**133,248**
	Terminal and Package Units		**96,825**
	Floor Finishes		**100,480**
	Controls and Instrumentation		**85,818**
	Wall Finishes		**48,719**
	Other Electrical Systems		**108,597**
	HVAC Distribution Systems		**11,740**
	Ceiling Finishes		**136,736**
	Exterior Windows		**68,459**
	Plumbing Fixtures		**45,307**
	Sanitary Waste		**169,902**
	Electrical Service and Distribution		**182,691**
	Cooling Generating Systems		**0**
Sammamish River Business Park Building 2	Exterior Doors		**57,879**
	Interior Doors		**31,328**
	Domestic Water Distribution		**50,399**
	Fire Protection Sprinkler Systems		**0**
	Fixed Furnishings		**97,669**
	Rain Water Drainage		**11,771**
	Fittings		**10,852**
	Partitions		**44,214**
	Other Plumbing Systems		**338**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Sammamish River Business Park Building 2	Energy Supply										1,566							
	Fire Protection Specialties								1,980									
	Roof Openings										12,531							
	Projections										3,133							
	Other Fire Protection Systems	9,493																
	Stair Construction							0										
	Other Conveying Systems	0																
Sammamish River Business Park Infrastructure	Electrical Distribution										134,045							
	Site Lighting			77,250														
	Storm Sewer											49,503						
	Landscaping			9,911														
	Parking Lots			76,169														
	Sanitary Sewer												24,280					
	Fuel Distribution										18,293							
	Water Supply											15,965						
	Pedestrian Paving							8,952										
	Site Communications and Security						10,070											
Senior Center Building	Lighting and Branch Wiring								390,236									
	Roof Coverings							472,268										
	Low Voltage Communication Security and Fire Alarm							125,276										
	Exterior Walls														225,397			
	Terminal and Package Units						37,575											
	Floor Finishes							281,640										
	Controls and Instrumentation						96,132											
	Wall Finishes							144,548										
	Other Electrical Systems		8,525															
	HVAC Distribution Systems										220,156							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Sammamish River Business Park Building 2	Energy Supply		**1,566**
	Fire Protection Specialties		**1,980**
	Roof Openings		**12,531**
	Projections		**3,133**
	Other Fire Protection Systems		**9,493**
	Stair Construction		**0**
	Other Conveying Systems		**0**
Sammamish River Business Park Infrastructure	Electrical Distribution		**134,045**
	Site Lighting		**77,250**
	Storm Sewer		**49,503**
	Landscaping		**9,911**
	Parking Lots		**76,169**
	Sanitary Sewer		**24,280**
	Fuel Distribution		**18,293**
	Water Supply		**15,965**
	Pedestrian Paving		**8,952**
	Site Communications and Security		**10,070**
Senior Center Building	Lighting and Branch Wiring		**390,236**
	Roof Coverings		**472,268**
	Low Voltage Communication Security and Fire Alarm		**125,276**
	Exterior Walls		**225,397**
	Terminal and Package Units		**37,575**
	Floor Finishes		**281,640**
	Controls and Instrumentation		**96,132**
	Wall Finishes		**144,548**
	Other Electrical Systems		**8,525**
	HVAC Distribution Systems		**220,156**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Senior Center Building	Ceiling Finishes								257,822									
	Exterior Windows											252,954						
	Plumbing Fixtures										145,265							
	Sanitary Waste										76,218							
	Cooling Generating Systems			172,213														
	Exterior Doors												67,464					
	Interior Doors										197,759							
	Domestic Water Distribution											87,792						
	Fire Protection Sprinkler Systems										129,597							
	Heat Generating Systems								112,324									
	Fixed Furnishings								13,799									
	Rain Water Drainage			51,416														
	Fittings								74,514									
	Other Equipment							23,059										
	Partitions												73,427					
	Institutional Equipment							15,831										
	Commercial Equipment							45,085										
	Other HVAC Systems and Equipment			41,195														
	Vehicular Equipment							0										
	Fire Protection Specialties								0									
	Roof Openings										3,187							
	Projections			4,522														
	Other Fire Protection Systems								0									
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems			0														
	Special Controls and Instrumentation											0						
Street Department Modular Building 3 Building	Lighting and Branch Wiring								33,572									

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	**Grand Total**
Senior Center Building	Ceiling Finishes		**257,822**
	Exterior Windows		**252,954**
	Plumbing Fixtures		**145,265**
	Sanitary Waste		**76,218**
	Cooling Generating Systems		**172,213**
	Exterior Doors		**67,464**
	Interior Doors		**197,759**
	Domestic Water Distribution		**87,792**
	Fire Protection Sprinkler Systems		**129,597**
	Heat Generating Systems		**112,324**
	Fixed Furnishings		**13,799**
	Rain Water Drainage		**51,416**
	Fittings		**74,514**
	Other Equipment		**23,059**
	Partitions		**73,427**
	Institutional Equipment		**15,831**
	Commercial Equipment		**45,085**
	Other HVAC Systems and Equipment		**41,195**
	Vehicular Equipment		**0**
	Fire Protection Specialties		**0**
	Roof Openings		**3,187**
	Projections		**4,522**
	Other Fire Protection Systems		**0**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
	Special Controls and Instrumentation		**0**
Street Department Modular Building 3 Building	Lighting and Branch Wiring		**33,572**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
	Roof Coverings							27,999										
	Low Voltage Communication Security and Fire Alarm													25,640				
	Exterior Walls														28,934			
	Terminal and Package Units		25,615															
	Floor Finishes			15,255														
	Controls and Instrumentation											8,417						
	Wall Finishes							4,132										
	Other Electrical Systems	11,187																
	HVAC Distribution Systems			5,234														
	Ceiling Finishes								30,604									
	Exterior Windows											25,810						
	Plumbing Fixtures										6,846							
	Sanitary Waste										6,846							
Street Department Modular Building 3 Building	Cooling Generating Systems			1,254														
	Exterior Doors				3,809													
	Interior Doors										11,039							
	Domestic Water Distribution											8,059						
	Fire Protection Sprinkler Systems	0																
	Fixed Furnishings								1,583									
	Rain Water Drainage										4,108							
	Fittings								776									
	Other Equipment							0										
	Partitions												6,229					
	Commercial Equipment							0										
	Fire Protection Specialties								969									
	Roof Openings										0							
	Projections										0							

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Street Department Modular Building 3 Building	Roof Coverings		**27,999**
	Low Voltage Communication Security and Fire Alarm		**25,640**
	Exterior Walls		**28,934**
	Terminal and Package Units		**25,615**
	Floor Finishes		**15,255**
	Controls and Instrumentation		**8,417**
	Wall Finishes		**4,132**
	Other Electrical Systems		**11,187**
	HVAC Distribution Systems		**5,234**
	Ceiling Finishes		**30,604**
	Exterior Windows		**25,810**
	Plumbing Fixtures		**6,846**
	Sanitary Waste		**6,846**
	Cooling Generating Systems		**1,254**
	Exterior Doors		**3,809**
	Interior Doors		**11,039**
	Domestic Water Distribution		**8,059**
	Fire Protection Sprinkler Systems		**0**
	Fixed Furnishings		**1,583**
	Rain Water Drainage		**4,108**
	Fittings		**776**
	Other Equipment		**0**
	Partitions		**6,229**
	Commercial Equipment		**0**
	Fire Protection Specialties		**969**
	Roof Openings		**0**
	Projections		**0**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear																
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Street Department Modular Building 3 Building	Moveable Furnishings (Capital Funded Only)								0									
Trinity Building	Lighting and Branch Wiring								285,668									
	Roof Coverings													368,652				
	Low Voltage Communication Security and Fire Alarm							71,249										
	Exterior Walls														146,150			
	Terminal and Package Units						192,929											
	Floor Finishes							102,049										
	Controls and Instrumentation						87,159											
	Wall Finishes							53,437										
	Other Electrical Systems						108,192											
	HVAC Distribution Systems	11,151																
	Ceiling Finishes								29,995									
	Exterior Windows											64,379						
	Plumbing Fixtures			12,424														
	Sanitary Waste			46,588														
	Electrical Service and Distribution										171,805							
	Cooling Generating Systems			0														
	Exterior Doors												63,484					
	Interior Doors										6,872							
	Domestic Water Distribution											27,639						
	Fire Protection Sprinkler Systems	0																
	Fixed Furnishings								21,425									
	Rain Water Drainage			12,424														
	Fittings								2,381									
	Elevators and Lifts	0																
	Partitions												9,699					
	Other Plumbing Systems							2,783										

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	Grand Total
Street Department Modular Building 3 Building	Moveable Furnishings (Capital Funded Only)		**0**
Trinity Building	Lighting and Branch Wiring		**285,668**
	Roof Coverings		**368,652**
	Low Voltage Communication Security and Fire Alarm		**71,249**
	Exterior Walls		**146,150**
	Terminal and Package Units		**192,929**
	Floor Finishes		**102,049**
	Controls and Instrumentation		**87,159**
	Wall Finishes		**53,437**
	Other Electrical Systems		**108,192**
	HVAC Distribution Systems		**11,151**
	Ceiling Finishes		**29,995**
	Exterior Windows		**64,379**
	Plumbing Fixtures		**12,424**
	Sanitary Waste		**46,588**
	Electrical Service and Distribution		**171,805**
	Cooling Generating Systems		**0**
	Exterior Doors		**63,484**
	Interior Doors		**6,872**
	Domestic Water Distribution		**27,639**
	Fire Protection Sprinkler Systems		**0**
	Fixed Furnishings		**21,425**
	Rain Water Drainage		**12,424**
	Fittings		**2,381**
	Elevators and Lifts		**0**
	Partitions		**9,699**
	Other Plumbing Systems		**2,783**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024	2025	2027	2028	2029	2030	2031
Trinity Building	Energy Supply										1,718							
	Institutional Equipment							17,812										
	Other HVAC Systems and Equipment							2,783										
	Vehicular Equipment							103,803										
	Fire Protection Specialties								2,171									
	Stair Finishes					0												
	Roof Openings										13,745							
	Projections										516							
	Moveable Furnishings (Capital Funded Only)								0									
	Other Conveying Systems									0								
	Electrical Distribution										80,427							
	Site Lighting								41,299									
	Roadways			9,217														
	Landscaping										15,295							
Trinity Building Infrastructure	Parking Lots								46,538									
	Sanitary Sewer												14,568					
	Fuel Distribution										10,976							
	Water Supply											9,579						
	Pedestrian Paving													921				
Grand Total		**1,230,057**	**3,099,667**	**9,161,149**	**1,801,065**	**1,065,642**	**3,329,929**	**12,812,576**	**13,528,614**	**514,498**	**12,068,398**	**5,846,618**	**2,392,201**	**2,903,583**	**2,831,731**	**1,103,272**	**3,995,713**	**51,508**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

Renewal Budget By Facility By Subsystem by Year

Facility	Subsystem	BudgetYear 2032	BudgetYear Grand Total
Trinity Building	Energy Supply		**1,718**
	Institutional Equipment		**17,812**
	Other HVAC Systems and Equipment		**2,783**
	Vehicular Equipment		**103,803**
	Fire Protection Specialties		**2,171**
	Stair Finishes		**0**
	Roof Openings		**13,745**
	Projections		**516**
	Moveable Furnishings (Capital Funded Only)		**0**
	Other Conveying Systems		**0**
Trinity Building Infrastructure	Electrical Distribution		**80,427**
	Site Lighting		**41,299**
	Roadways		**9,217**
	Landscaping		**15,295**
	Parking Lots		**46,538**
	Sanitary Sewer		**14,568**
	Fuel Distribution		**10,976**
	Water Supply		**9,579**
	Pedestrian Paving		**921**
Grand Total		**132,195**	**77,868,414**

Sum of Renewal Budget Present Value broken down by BudgetYear vs. Facility and Subsystem. The data is filtered on SubsystemType, which keeps Building and Infrastructure. The view is filtered on BudgetYear, Facility and Subsystem. The BudgetYear filter has multiple members selected. The Facility filter keeps 40 of 40 members. The Subsystem filter keeps 67 of 67 members.

6.0. City of Redmond FCA 2013

Field Survey Highlights

This field survey highlights section includes: 1) Major issues and opportunities, and 2) Additional work to extend the usefulness of the FCA process; both at selected facilities, and from an overall portfolio perspective. In the broader context additional or enhanced FCA work may be better characterized as "Asset Preservation".

Facility	Major Issues	Big Opportunities	Additional FCA Work
OVERALL			
Muni-campus	No master plan	Sustainability master plan for the Muni-campus.	Draft sustainability plan; incorporate into master plan.
Parks Department	Master plan under development	Use this FCA to inform the Parks master plan.	Already underway.
M&O Department	Several permanent and powered/heater buildings at MOC not surveyed	Extend life by including in FCA program.	Survey additional buildings at MOC; about 3 or 4 permanent buildings/structures.
FCA Prioritization	2013 FCA Report "ODs" and "PRs" not prioritized	Prioritize to most cost-effectively maintain function of the City's most important facilities and systems.	Develop criteria, prioritize ODs and PRs, issue 2013 FCA Report supplement.
Routine Maintenance	Usually reactive	Use CMMS to become proactive.	Draft CMMS Plan; inventory major equipment; implement Plan.
Major Maintenance	Usually reactive	Use FCA database to become proactive.	Deploy FCA Database and update annually.
Landscape Maintenance	Overgrown/overhanging trees complicating roof drainage and shortening roof lives.	Replace with drought-tolerant, low-height trees & shrubs.	Landscape Assessment

Facility	Major Issues	Big Opportunities	Additional FCA Work
Housekeeping	Chronic rat infestations at some facilities suggest housekeeping issues.	Consider IPM approach to pest management.	Conduct IPM Assessment
Energy	Widely varying performance (ranging from poor to good)	Conduct energy audits and PSE-incentivized ECM retrofits.	Energy Audits; refer to recently completed IR survey for near term envelope repairs.
Thermal Envelopes	Variety of visible and non-visible damage and sub-par weather and thermal envelopes	Conduct infrared thermography (IR) for all facilities and repair or upgrade as appropriate.	Expand IR survey from Muni-campus buildings to all City buildings.
Electrical Panels	Older panels outdated; past useful life; some panels/circuits may be at max capacity and/or overloaded.	Conduct IR for all electrical panels.	Already completed as a 2013 FCA additional service – see report for action items.
Water	Unknown performance	Conduct water audits and water & sewer utility-incentivized retrofits. Sites on septic may benefit most from water efficient fixtures.	Water Audits
MEP Systems	Many mid-life buildings have MEP systems at end of life	Upgrade to more comfortable, more efficient equipment & systems. Multi-facility bid packages. Leverage new Maintenance staff HVAC expertise.	MEP Renewal Plan

Facility	Major Issues	Big Opportunities	Additional FCA Work
Low Voltage Systems	Many facilities have little or no security system; some have no fire alarm.	Opportunity to improve safety and security with new low voltage systems.	Safety & Security Cost/Benefit Analysis
Thermal Comfort	Discomfort complaint at many facilities	Survey occupants and plan upgrades.	Thermal Comfort Surveys
Indoor Air Quality	Unknown performance	Conduct IAQ survey and target upgrades.	IAQ Assessment
Program	Low utilization of some facilities	Conduct program audit; sell/lease low-use assets	Program Assessment
Owner Project Requirements	No OPR for new or major capital projects. Widely varying system types and quality between facilities.	Develop master OPR and related master specs	Draft Master OPR
ADA	Some older facilities are not compliant	ADA compliance improves customer and staff access.	Conduct ADA Study
Fire Protection	Some older facilities do not have fire sprinkler	Install fire sprinkler to reduce risk/increase safety.	Prioritize.
FIRE			
FS-11 Built 1981; renovated 2000. Fair condition; Score 3.1 CRV = $11.2M	Minor structural and water damage needs immediate attention. Finishes and HVAC systems nearing end of life.	Upgrade to more comfortable and energy efficiency HVAC, and more durable, low maintenance finishes.	Full energy audit and IR survey.
FS-12 Built 1980;	Located outside City of Redmond. Roof and	Upgrade roof insulation in	Full energy audit and IR survey.

Facility	Major Issues	Big Opportunities	Additional FCA Work
renovated 1999. Outside City of Redmond. Fair condition; Score 3.1 CRV = $3.5M	doors are failing; immediate attention needed. Inadequate electrical receptacles for app bay.	conjunction with reroof. Upgrade HVAC and plumbing to better meet program.	Study relocation of FS-12 functions to within Redmond City Limits.
FS-13 Built 1973; renovated 2009. Fair condition; Score 3.1 CRV = $3.2M	Water ponding on new roof. Some MEP systems obsolete and/or near end of life. Sanitary lift station may be failing.	Upgrade HVAC and lighting for comfort and efficiency improvements.	Full energy audit and IR survey. Investigate sanitary lift station performance ASAP.
FS-14 Built 1991; renovated 2009. Fair to good condition; Score 2.4 CRV =$4.7M	Remedial envelope work remains incomplete; removed insulation must be replaced. Electrical circuits lacking and tripping, especially in Ap Bay.	Upgrade HVAC and lighting for comfort and efficiency improvements.	Full energy audit and IR survey. Verify performance of on-site septic system.
FS-16 Built 1996; renovated 2006. Fair to good condition; Score 2.5 CRV = $4.9M	No HVAC service for some spaces. HVAC equipment nearing end of life, with some code violations. Inadequate electrical receptacles, circuits and lighting in some spaces.	Upgrade HVAC and lighting for comfort and efficiency improvements.	Abbreviated energy audit and IR survey for this recently renovated fire station.
FS-17 Built 2012. Underutilized. Good condition; Score 1.2 CRV = $9.5M	Roof leaks. Damaged wood door sills. Pump station controls failed. No access to low roof. Dangerous access to high roof equipment. Incompatible DDC software does not allow communication with EMCS.	Best score at 1.2. Best FCI at 2%. Opportunity to build-out this new fire station, and close-down an older station? Harvest rain water to fill cistern in lieu of running well pump.	Program study to better utilize this new station. Abbreviated IR survey for this nearly new fire station to ensure thermal envelope integrity.
FS-18 Built 2002 by King County;	Incorrect name (KC #34) on this relatively new fire station.	Third best score at 1.9. Add ceiling and/or	Simplified energy audit and IR survey for this relatively

Facility	Major Issues	Big Opportunities	Additional FCA Work
turned-over to City of Redmond. Good condition; Score 1.9 CRV = $3.8M	Domestic hot water system is under capacity for staffing. Roof drain plastic "rain chains" are nearly all broken.	ceiling fans to Ap Bay to improve comfort and reduce energy use. Add DDC and connect to EMCS.	new fire station.
Old Medic One (at FS-11) Built 1985 (office); Garage addition 2001. Fair condition; Score 3.1 CRV = $0.6M	Older part (1985 office area) is heavily worn needing renovation.	Little used building in good structural condition could be renovated and re-purposed.	Simplified energy audit and IR survey for this small building.
Shop (at FS-16) Built 1996; renovated 2006. Serves other Fire Departments (generates revenue). Fair to good condition; Score 2.4 CRV = $2.0M	Code violation with no roof insulation. No roof access to maintain rooftop equipment. Inadequate shop bay lighting and receptacles.	Upgrade from electric to gas heat, and add DDC controls. Upgrade power and lighting systems; add security system.	Simplified energy audit and IR survey for this shop building.
PARKS			
Hartman Park Pool Built 1970 by KC; turned-over to Redmond in 2010. Should be closed, assessed and demolished or renovated as appropriate. Fair condition; Score 3.0	Third lowest FCI at 23%. Third highest OD cost at $2.9M. Failing underground ductwork resulting floor and structure instability. Many systems at or near end of life. No fire sprinkler. Pavement is failing. Site lighting at end of life.	Opportunity to demolish and replace with an all new facility located in downtown Redmond. However, basic structure is "heavy duty", if not damaged from settling and/or seismic activity. If renovated,	Immediate full structural assessment. Assess program relative to Parks Master Plan.

Facility	Major Issues	Big Opportunities	Additional FCA Work
CRV = $6.8M		opportunity to fully insulate and upgrade to energy efficient HVAC, lighting, and pool systems.	
Community Center Built 1922; renovated 1980. Leased from LWSD to Redmond. Fair condition; Score 3.0 CRV =	Second highest OD cost at $2.8M. Outdated mechanical system which does not support current year-round programming; no A/C for most spaces.	With solid structure, opportunity to fully renovate and replace mechanical systems for high efficiency and improved comfort. Recently installed chiller can cool many more spaces with new air-side equipment.	Assess program relative to Parks Master Plan. Full energy audit with IR survey.
Senior Center Built 1990; not renovated. Fair condition; Score 3.0 CRV = $9.7M	Despite recent work, chronic weather & thermal envelope issues persist, including walls & roofs – see Wetherholt and IR Reports.	MEP systems are nearing end of life; opportunity to upgrade to high-efficiency system, for example ground-source heat pump (GSHP). Make use of greenhouse.	Full energy audit. Correlate Wetherholt and IR reports.
Teen Center Built 1952 as City Hall; renovated 1980 for YMCA; purchase and partial seismic retrofit by City in 2000 Poor to fair	Third lowest condition score at 3.4. Seismic risk at hose tower. "The oldest, darkest, grimiest place for Teens to go in Redmond". Un-insulated envelope with single glazed windows. Piece-meal and aging MEP systems; some non-code compliant.	Demolish hose tower, or seismically retrofit and incorporate unique program. Despite appearances and outdated systems, most	Near-term structural assessment of tower. Assess program relative to Parks Master Plan. Abbreviated energy audit and IR survey for this relatively low-use facility.

Facility	Major Issues	Big Opportunities	Additional FCA Work
condition; Score 3.4 CRV = $4.4M		the structure is "built like a tank" – good candidate for major renovation.	
Park Ops Built 1970; addition & renovation 1998 Fair condition; Score 3.0 CRV = $2.7M	Wood shop and mezzanine office ventilation not code compliant. Condensing units in awkward locations. MEP systems approaching end of life with numerous comfort complaints.	High-bay shop is under-utilized. Upgrade MEP systems for improved comfort and efficiency. Harvest rain water for pressure wash system.	Full energy audit and IR survey. Indoor air quality study for shop and office areas. Program study for better use of high-bay shop space.
MOC			
Central Stores Warehouse Bldg 5 Built 1988; not renovated. Fair condition; Score 3.1 CRV = $1.2M	No overflow roof drains. Metal siding damaged from vehicular impact. Dangerous roof access. Non-code compliant stairs. No fire sprinkler.	Bring up to current code including ventilation for occupied spaces.	Abbreviated energy audit and limited IR survey (of fully heated areas). Life/safety study.
Decant Facility Bldg 11 Built 1998; addition 2013. Fair condition; Score 3.1 CRV = $1.7M	Yard hydrants nearing end of life. No fire sprinkler.	Use existing wash rack in lieu of new wash rack at Park Ops Bldg 8. Upgrade lighting to LED.	None apparent.
MOC Bldg 1 Built 1977; renovated 1998. Fair condition; Score 3.2 CRV =$3.8M	Piece-meal modifications with unclear code compliance, thermal comfort, and indoor air quality complaints. Most MEP systems at or near end of life. No fire sprinkler.	Upgrade MEP systems for improved comfort and efficiency. Harvest rain water for pressure wash system.	Full energy audit and IR survey. Life/safety code study.
Street Dept Modular Bldg 3	Non-compliance deck. Finishes and HVAC RTU nearing end of life. No	Upgrade RTU to high efficiency unit upon	Abbreviated energy audit and IR survey. Confirm

Facility	Major Issues	Big Opportunities	Additional FCA Work
Built 1998; renovated 2011 Fair condition; Score 3.1 CRV = $0.8M	fire sprinkler.	replacement.	foundation integrity.
Trinity Built 1981; renovated 1997; purchased by City in 2008 Fair condition; Score 3.1 CRV = $6.3M	Not rated for change of occupancy from low hazard factory to vehicle storage/repair. No elevator to 2nd floor (ADA issue). Parking lot failing. No fire sprinkler.	Install permanent sun shades on glazed south façade. Insulate high-bay shop/warehouse space and provide proper HVAC. Fully renovate to replace functions at MOC Bldg 1.	Near-term seismic assessment of tilt-up wall structure. Code study for change of use/occupancy. Abbreviated energy audit and IR survey of this currently low-use Bldg.
MUNI CAMPUS			
City Hall Built under DBOM contract in 2005; purchased by City in 2013. Good condition; Score 1.7 CRV = $60M	Thermal envelope issues – see IR Report. Surprising number of issues for a relatively new facility; for example improper boiler flue exhaust.	Second best score at 1.7. Fourth best FCI at 5%. Surprising number of basic opportunities to improve performance, such as high efficiency boilers, "free cooling", and emergency egress lighting.	Back-check WR action items. Investigate IR Report thermal bridging issues; develop action plan to address.
Parking Garage Built 2005 under DBOM contract; purchased by City in 2013. Fair condition; Score 2.6 CRV = $8.9M	Possible structural damage. Non-compliant shop and/or storage spaces. Paint is fading, chipped, & damaged. Fire sprinkler is corroding. Light fixtures are yellowed.	Enclose SE stair to reduce weather expose and chronic damage. Install DDC controls. Upgrade to LED lighting. Install EV charging stations.	Fully investigate reports of structural damage/slab cracking.

Facility	Major Issues	Big Opportunities	Additional FCA Work
Public Safety Bldg Built 1990. Fair condition; Score 2.7 CRV = $54M	Highest OD cost at $3.7M. Chronic south façade water intrusion. Basement flooding. Poor high roof guttering. Many outdated and under-performing systems.	Upgrade thermal envelope and MEP systems in conjunction with major renovation and/or system renewals.	Full energy audit. Comprehensive weather envelope investigation. Follow-up on IR Report. Flooding analysis.
Police Garage North Built 2008. Good condition; Score 2.0 CRV = $0.1M	No roof access. No floor drain for trash storage enclosure.	Third best FCI at 2.2%. Add deep sink, upgrade electrical service, and add storage racks & lockers.	Abbreviated energy audit (check EUI & ECI and lighting).
Police Garage South Built 2008. Good condition; Score 2.0 CRV = $0.1M	No roof access.	Second best FCI at 2.1%. Add vehicle exhaust, upgrade electrical service.	Abbreviated energy audit (check EUI & ECI and lighting).
OTHER			
SRBP 1 Built 1980. Purchased by City about 2000. Poor to fair condition; Score 3.5 CRV = 5.7M	Second lowest score at 3.50. Second lowest FCI at 27.0%. Single pane windows. Aging roof with marginal drainage. Unpermitted stairs. No roof access. Outdated and failing MEP systems.	Sell to those who can better renovate and utilize this awkward property. Alternately renovate and bring-up to current code.	Utilization study and/or pre-sale market valuation.
SRBP 2 Built 1980. Purchased by City about 2000. Poor to fair condition; Score 3.5 CRV = $5.7M	Lowest score at 3.51. Lowest FCI at 27.1%. Similar to SRBP 1, but with more severe roof drainage issues, and more serious code violations.	Sell to those who can better renovate and utilize this awkward property. Alternately renovate and bring-up to current code.	Utilization study and/or pre-sale market valuation.

Notes:

1. CRV = Current replacement value.
2. FCI = Facility condition index = BMAR/CRV (backlog of maintenance & repair/CRV).
3. OD = Observed deficiency (observed in the field by survey team).
4. DBOM = Design, build, own, & maintain.
5. IR = Infrared.
6. Score: 1 = Excellent, 2 = Good, 3 = Fair, 4 = Poor, 5 = Failed.
7. Energy Audit is per ASHRAE standards for commercial building energy audits; "abbreviated" is Level 2, "full" is Level 3. Prior to any site visits for Level 2 or 3, a Level 1 "audit" should be performed to collect and review at least three years of historical energy use data (much of this has already been provided by the City to MENG Analysis).

6.1 Infrared Electrical

Infrared Thermographic Inspection
Of
Selected Electro-Mechanical Equipment

Provided For
City of Redmond Buildings
10/28/2013

Summary:

An Infrared Electrical / Mechanical inspection was performed on 10/28/2013 for City of Redmond Buildings

All of the items inspected are listed in the inventory section of this Thermal Trend report. Any anomalies that were found at the time of the inspection (if any) are documented in the Problem Detail section of this report with their appropriate associated data, i.e. Thermograms, Photos, comments, measurements, etc.. They are also listed in the Prioritized list of problems section, in their order of priority based on the components temperature rise, as compared to a similar reference component of equal type, loading, and environmental influences, at the time of the inspection.

The final decision as to the repair priority of any and all problems in this report rests on the owners, management, and/or facilities engineering teams. Colbert Infrared Services, Inc. and the IR Thermographer assumes no liability directly or indirectly as a result of this inspection or the decisions made as to establishing the priority and timeline of repair decisions made by the owners, management, and/or facilities engineering teams. This inspection is not a guarantee or warranty of any kind.

Executive Overview - for Thermal Items:

Total number of locations in the database:	116
Total number of pieces of equipment in the database:	247
Total number of Items (open and closed covering all inspections) in the database	
Acute Items:	7
Chronic Items:	0
Overall total of all acute and chronic:	**7**
Current status of Items, acute and chronic	
Total closed Items (covering all inspections):	0
Current total open Items (tested or not tested at the time of this inspection):	**7**

I herby certify that the above project was inspected by myself or under my direction and that the enclosed data is the direct result of this inspection.

Fred Colbert

President CIS,Inc.

Certified Level III Infrared Thermographer / Instructor: The Professional Thermographers Association

Professional Thermographers Association

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Colbert Infrared Services

Thermal Trend

Thermal Item List - Prioritized by Temperature Rise

Site: City of Redmond Buildings **Inspection #** 1 **Start Date:**

Site: City of Redmond Buildings Insp. No. 1 Start Date: **Thermal Item # 2** At: Oct 28 2013 1:46PM

Indirect Measurement: No Severity: 3 Repair Status: Problem Status: OPEN

Route: Sammamish River Business Park Building 1 (NE 154th Ave) \ Suite 15517

Location/Equipment: Panel - A-6

Barcode: 108VCS Asset ID:

Voltage: 120 Rated Load: Wind Speed: 0 Ambient:70.0

IR/Image GUID File : d47d2f05-4347-4dc8-83cb-0cde6d42401f.idn

	Temp	Phase	Load	% of
Component:	140.0			@N/A
Reference:	99.0			@N/A
Delta T:	**41.0**			@N/A

Comment: Stripped lug on main neutral wire on terminal strip

Site: City of Redmond Buildings Insp. No. 1 Start Date: **Thermal Item # 7** At: Oct 30 2013 7:12AM

Indirect Measurement: No Severity: 3 Repair Status: Problem Status: OPEN

Route: MOC Center (18080 NE 76th Street) \ Building #2 (Storage) \ Sewer Storage

Location/Equipment: Panel - Unmarked

Barcode: 108ZFW Asset ID:

Voltage: 120 Rated Load: 200 Wind Speed: 0 Ambient:51.0

IR/Image GUID File : 9a2dc980-2f7d-4e8b-bb79-9ad3850bc897.idn

	Temp	Phase	Load	% of
Component:	101.0		80Amps	@40.0%
Reference:	77.0	B Phase	93Amps	@46.5%
Delta T:	**24.0**			@40.0%

Comment: A phase line side wire lug connection on incoming main lines

---

Site: City of Redmond Buildings Insp. No. 1 Start Date: **Thermal Item # 1** At: Oct 28 2013 8:33AM

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Public Safety Building (8701 160th Ave NE) \ 01 Floor \ 164 Mechanical Room

Location/Equipment: Panel - 1XA4

Barcode: 108VFH Asset ID:

Voltage: 480 Rated Load: 100 Wind Speed: 0 Ambient:70.0

IR/Image GUID File : 4bacbb65-4ebb-4533-b599-3a38cf8e9552.idn

	Temp	Phase	Load	% of
Component:	103.0	B Phase		@N/A
Reference:	82.0			@N/A
Delta T:	**21.0**			@N/A

Comment: B phase load side wire lug connection on 100amp breaker "Panel 1XB2 (rm 164) via XRMR"

Site: City of Redmond Buildings Insp. No. 1 Start Date: **Thermal Item # 4** At: Oct 29 2013 8:53AM

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Old Redmond Schoolhouse Community Center (16600 NE 80th St) \ 01 Floor \ Auditorium \ Stage

Location/Equipment: Panel - Unmarked

Barcode: 108ZJK Asset ID:

Voltage: 120 Rated Load: 20 Wind Speed: 0 Ambient:70.0

IR/Image GUID File : 58f61881-38b9-4696-bd41-5f5ea13de975.idn

	Temp	Phase	Load	% of
Component:	85.0	N/A	6.6Amps	@33.0%
Reference:	68.0	N/A	8.1Amps	@40.5%
Delta T:	**17.0**			@33.0%

Comment: Line side bolt to bus connection on Breaker 4A "House Balcony"

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Thermal Item List - Prioritized by Temperature Rise

Site: City of Redmond Buildings **Inspection #** 1 **Start Date:**

Site: City of Redmond Buildings Insp. No. 1 Start Date: **Thermal Item # 5** At: Oct 29 2013 12:33PM

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Redmond Pool (17535 NE 104th Street) \ Pool Electrical Room

Location/Equipment: Main Switchboard

Barcode: 108ZHA Asset ID:

Voltage: 480 Rated Load: 100 Wind Speed: 0 Ambient:85.0

IR/Image GUID File : 6e359a0b-c42c-4d1c-820b-eec88a4597a8.idn

	Temp	Phase	Load	% of
Component:	109.0	C Phase	27Amps	@27.0%
Reference:	95.0	A Phase	27Amps	@27.0%
Delta T:	**14.0**			@27.0%

Comment: C phase load side wire lug connection an breaker "Panel BR"

Site: City of Redmond Buildings Insp. No. 1 Start Date: **Thermal Item # 6** At: Oct 29 2013 12:33PM

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Redmond Pool (17535 NE 104th Street) \ Pool Electrical Room

Location/Equipment: Main Switchboard

Barcode: 108ZHA Asset ID:

Voltage: 480 Rated Load: 100 Wind Speed: 0 Ambient:85.0

IR/Image GUID File : 62a3e164-7aed-4975-954d-dbb10c99df3f.idn

	Temp	Phase	Load	% of
Component:	105.0	A Phase	40Amps	@40.0%
Reference:	95.0	Center phase	40Amps	@40.0%
Delta T:	**10.0**			@40.0%

Comment: A phase load side wire lug connection on Breaker "Pump"

Site: City of Redmond Buildings Insp. No. 1 Start Date: **Thermal Item # 3** At: Oct 28 2013 2:01PM

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Sammamish River Business Park Building 1 (NE 154th Ave) \ Suite 15503 \ Kitchenette

Location/Equipment: Panel - A-1

Barcode: 108ZKD Asset ID:

Voltage: 120 Rated Load: Wind Speed: 0 Ambient:70.0

IR/Image GUID File : 1c0618dc-7c6d-4538-bdd3-7c806d17107b.idn

	Temp	Phase	Load	% of
Component:	86.0	B Phase		@N/A
Reference:	76.0	A Phase		@N/A
Delta T:	**10.0**			@N/A

Comment: B phase line side wire lug connection on incoming lines

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Thermal Trend

Thermal Items: Detail Report

Site: City of Redmond Buildings Insp. No. 1 Start Date: 10/28/2013 **Thermal Item # 1** At: 10/28/2013 08:33

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Public Safety Building (8701 160th Ave NE) \ 01 Floor \ 164 Mechanical Room

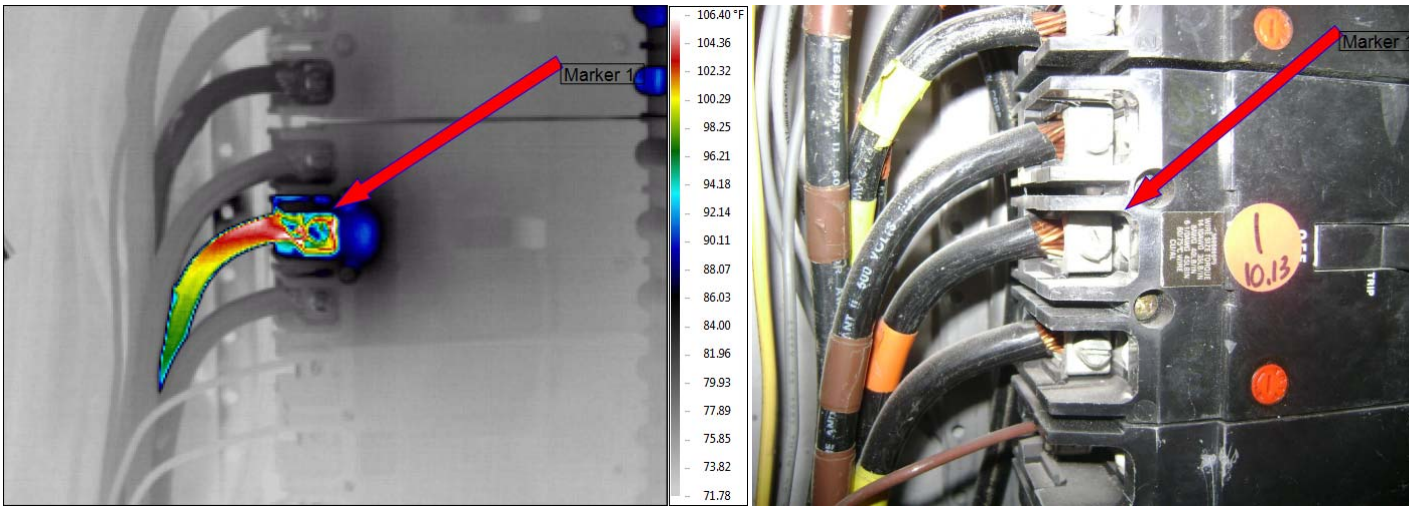
Location/Equipment: Panel - 1XA4

Barcode: 108VFH Asset ID:

Voltage: 480 Rated Load: 100 Wind Speed: 0 Ambient:70.0

IR/Image GUID File : 4bacbb65-4ebb-4533-b599-3a38cf8e9552.idn

	Temp	Phase	Load	% of
Component:	103.0	B Phase		@N/A
Reference:	82.0			@N/A
Delta T:	**21.0**			@N/A



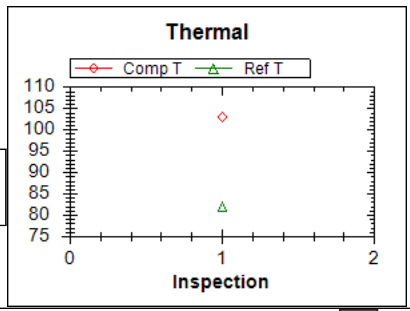
Comment: **B phase load side wire lug connection on 100amp breaker "Panel 1XB2 (rm 164) via XRMR"**

Probable Cause: Loose or corroded connection

Recommendation: Clean, inspect, and repair or replace as necessary

Historical Sub Report

Insp.#	Prob.#	Date	Comp Temp	Ref. Temp	Temp Rise	Sev. Code	Load	% Load	Wind Spd.	Amb. Temp
1	1	10/28/2013	103.0	82.0	21.0	4	N/A			70.0



Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

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Thermal Items: Detail Report

Site: City of Redmond Buildings Insp. No. 1 Start Date: 10/28/2013 **Thermal Item # 2** At: 10/28/2013 13:46

Indirect Measurement: No Severity: 3 Repair Status: Problem Status: OPEN

Route: Sammamish River Business Park Building 1 (NE 154th Ave) \ Suite 15517

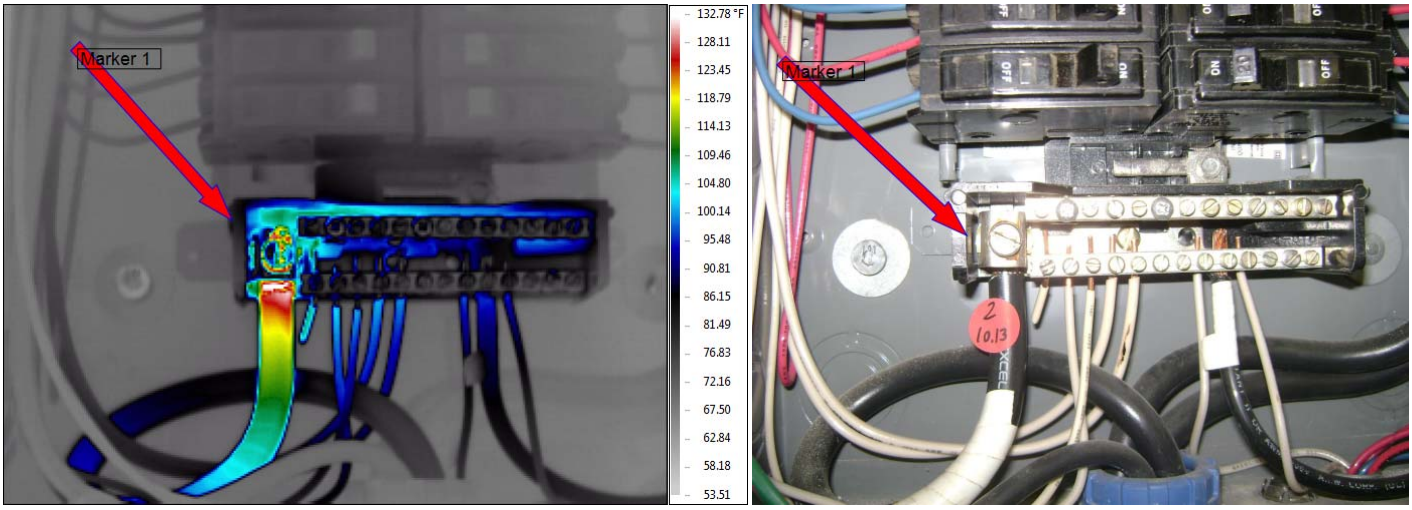
Location/Equipment: Panel - A-6

Barcode: 108VCS Asset ID:

Voltage: 120 Rated Load: Wind Speed: 0 Ambient:70.0

IR/Image GUID File : d47d2f05-4347-4dc8-83cb-0cde6d42401f.idn

	Temp	Phase	Load	% of
Component:	140.0			@N/A
Reference:	99.0			@N/A
Delta T:	**41.0**			@N/A



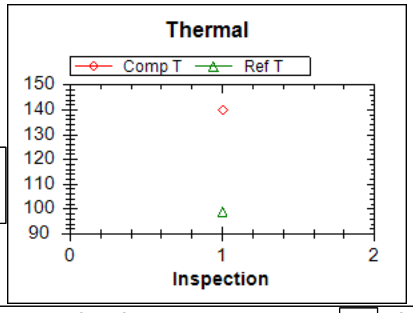
Comment: **Stripped lug on main neutral wire on terminal strip**

Probable Cause: Loose or corroded connection

Recommendation: Clean, inspect, and repair or replace as necessary

Historical Sub Report

Insp.#	Prob.#	Date	Comp Temp	Ref. Temp	Temp Rise	Sev. Code	Load	% Load	Wind Spd.	Amb. Temp
1	2	10/28/2013	140.0	99.0	41.0	3		N/A		70.0



Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

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Thermal Trend

Thermal Items: Detail Report

Site: City of Redmond Buildings Insp. No. 1 Start Date: 10/28/2013 **Thermal Item # 3** At: 10/28/2013 14:01

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Sammamish River Business Park Building 1 (NE 154th Ave) \ Suite 15503 \ Kitchenette

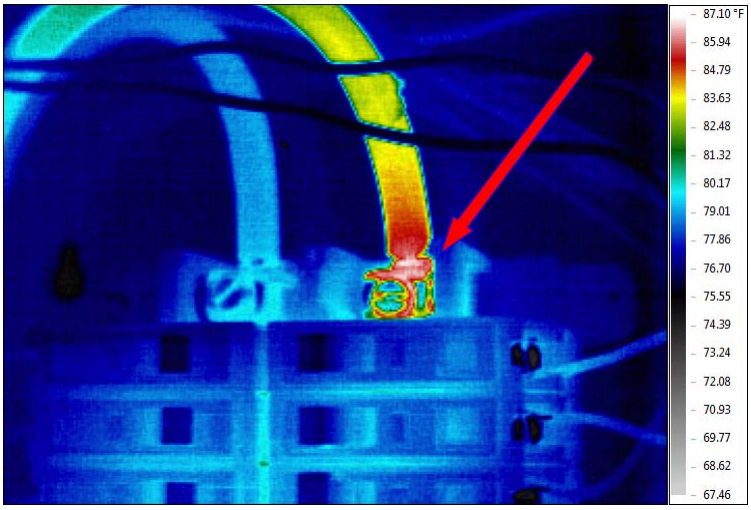
Location/Equipment: Panel - A-1

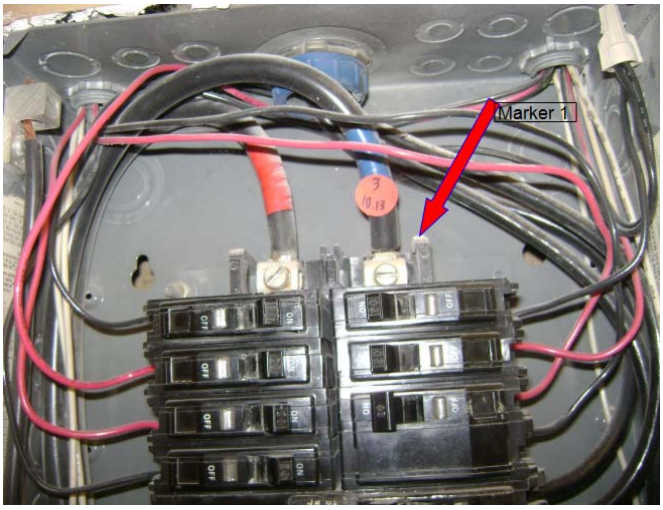
Barcode: 108ZKD Asset ID:

Voltage: 120 Rated Load: Wind Speed: 0 Ambient:70.0

IR/Image GUID File : 1c0618dc-7c6d-4538-bdd3-7c806d17107b.idn

	Temp	Phase	Load	% of
Component:	86.0	B Phase		@N/A
Reference:	76.0	A Phase		@N/A
Delta T:	**10.0**			@N/A

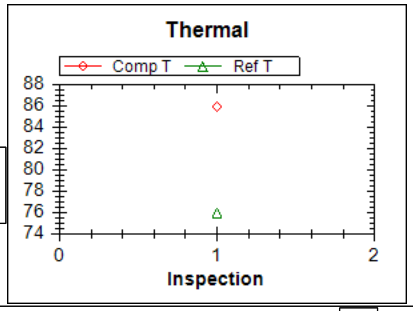




Comment: **B phase line side wire lug connection on incoming lines**

Probable Cause: Loose or corroded connection

Recommendation: Clean, inspect, and repair or replace as necessary



Historical Sub Report

Insp.#	Prob.#	Date	Comp Temp	Ref. Temp	Temp Rise	Sev. Code	Load	% Load	Wind Spd.	Amb. Temp
1	3	10/28/2013	86.0	76.0	10.0	4	N/A			70.0

Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

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Thermal Trend

Thermal Items: Detail Report

Site: City of Redmond Buildings Insp. No. 1 Start Date: 10/28/2013 **Thermal Item # 4** At: 10/29/2013 08:53

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Old Redmond Schoolhouse Community Center (16600 NE 80th St) \ 01 Floor \ Auditorium \ Stage

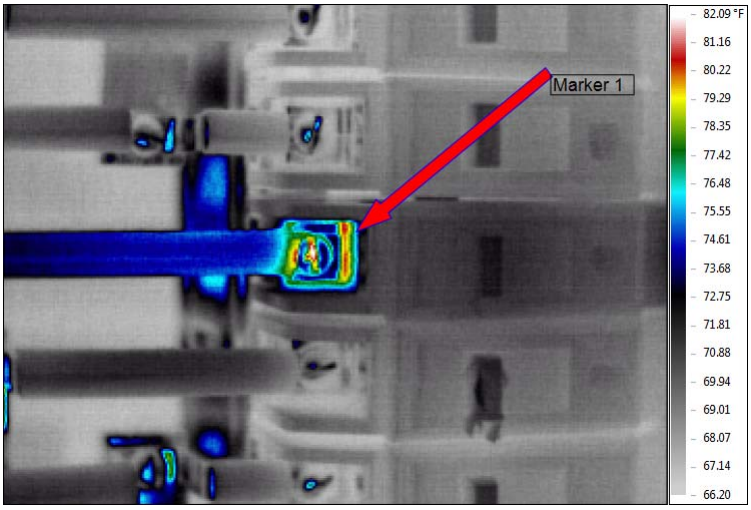
Location/Equipment: Panel - Unmarked

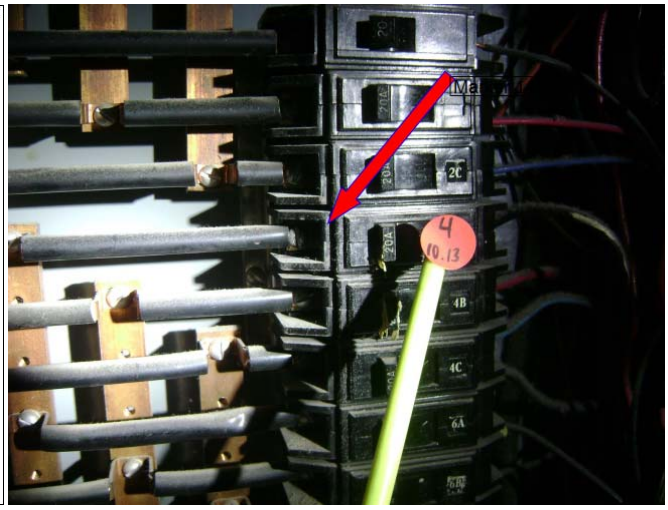
Barcode: 108ZJK Asset ID:

Voltage: 120 Rated Load: 20 Wind Speed: 0 Ambient:70.0

IR/Image GUID File : 58f61881-38b9-4696-bd41-5f5ea13de975.idn

	Temp	Phase	Load	% of
Component:	85.0	N/A	6.6Amps	@33.0%
Reference:	68.0	N/A	8.1Amps	@40.5%
Delta T:	**17.0**			@33.0%





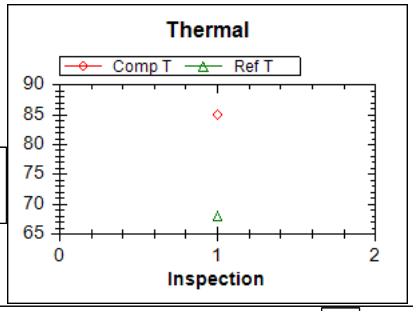
Comment: **Line side bolt to bus connection on Breaker 4A "House Balcony"**

Probable Cause: Loose or corroded connection

Recommendation: Clean, inspect, and repair or replace as necessary

Historical Sub Report

Insp.#	Prob.#	Date	Comp Temp	Ref. Temp	Temp Rise	Sev. Code	Load	% Load	Wind Spd.	Amb. Temp
1	4	10/29/2013	85.0	68.0	17.0	4	6.6	33.0%		70.0



Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

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Thermal Trend

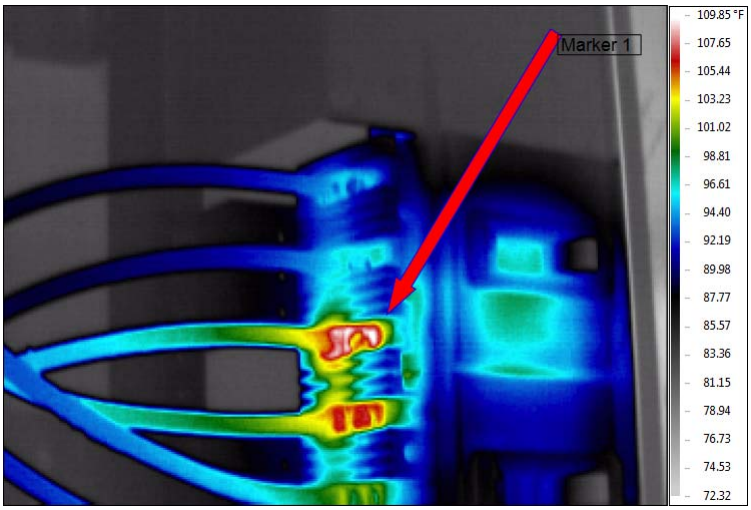
Thermal Items: Detail Report

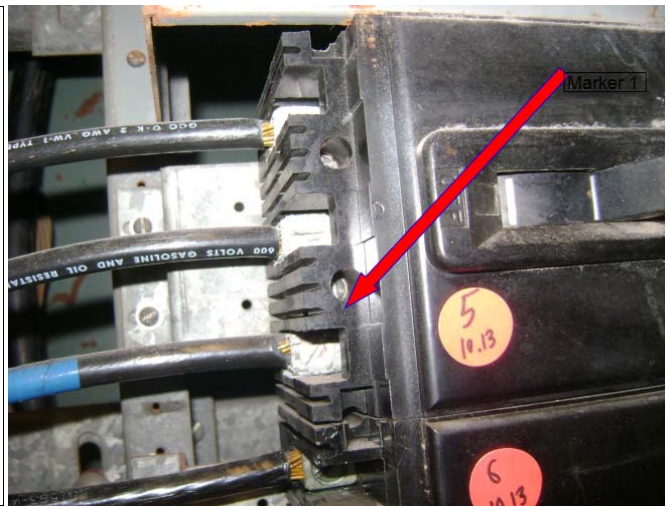
Site: City of Redmond Buildings Insp. No. 1 Start Date: 10/28/2013 **Thermal Item # 5** At: 10/29/2013 12:33

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Redmond Pool (17535 NE 104th Street) \ Pool Electrical Room
Location/Equipment: Main Switchboard
Barcode: 108ZHA Asset ID:
Voltage: 480 Rated Load: 100 Wind Speed: 0 Ambient:85.0
IR/Image GUID File : 6e359a0b-c42c-4d1c-820b-eec88a4597a8.idn

	Temp	Phase	Load	% of
Component:	109.0	C Phase	27Amps	@27.0%
Reference:	95.0	A Phase	27Amps	@27.0%
Delta T:	**14.0**			@27.0%

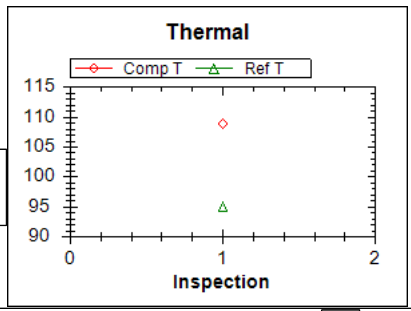




Comment: C phase load side wire lug connection an breaker "Panel BR"
Probable Cause: Loose or corroded connection
Recommendation: Clean, inspect, and repair or replace as necessary

Historical Sub Report

Insp.#	Prob.#	Date	Comp Temp	Ref. Temp	Temp Rise	Sev. Code	Load	% Load	Wind Spd.	Amb. Temp
1	5	10/29/2013	109.0	95.0	14.0	4	27	27.0%		85.0



Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

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Thermal Trend

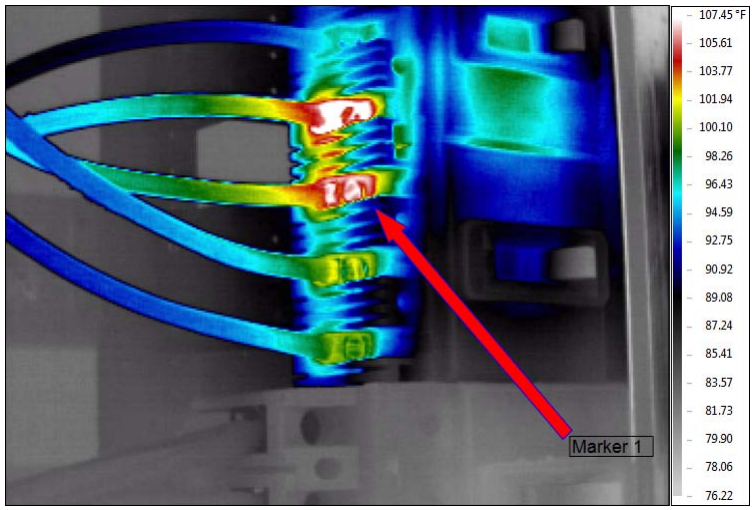
Thermal Items: Detail Report

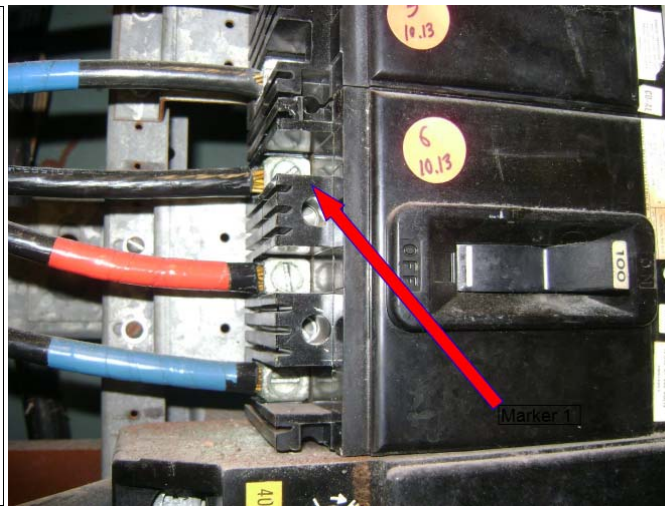
Site: City of Redmond Buildings Insp. No. 1 Start Date: 10/28/2013 **Thermal Item # 6** At: 10/29/2013 12:33

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Redmond Pool (17535 NE 104th Street) \ Pool Electrical Room
Location/Equipment: Main Switchboard
Barcode: 108ZHA Asset ID:
Voltage: 480 Rated Load: 100 Wind Speed: 0 Ambient:85.0
IR/Image GUID File : 62a3e164-7aed-4975-954d-dbb10c99df3f.idn

	Temp	Phase	Load	% of
Component:	105.0	A Phase	40Amps	@40.0%
Reference:	95.0	Center phase	40Amps	@40.0%
Delta T:	**10.0**			@40.0%

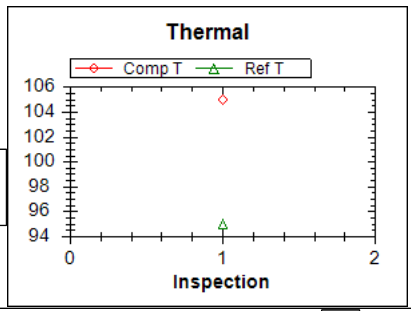




Comment: **A phase load side wire lug connection on Breaker "Pump"**
Probable Cause: Loose or corroded connection
Recommendation: Clean, inspect, and repair or replace as necessary

Historical Sub Report

Insp.#	Prob.#	Date	Comp Temp	Ref. Temp	Temp Rise	Sev. Code	Load	% Load	Wind Spd.	Amb. Temp
1	6	10/29/2013	105.0	95.0	10.0	4	40	40.0%		85.0



Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

Professional Thermographers Association

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Thermal Trend

Thermal Items: Detail Report

Site: City of Redmond Buildings Insp. No. 1 Start Date: 10/28/2013 **Thermal Item # 7** At: 10/30/2013 07:12

Indirect Measurement: No Severity: 3 Repair Status: Problem Status: OPEN

Route: MOC Center (18080 NE 76th Street) \ Building #2 (Storage) \ Sewer Storage

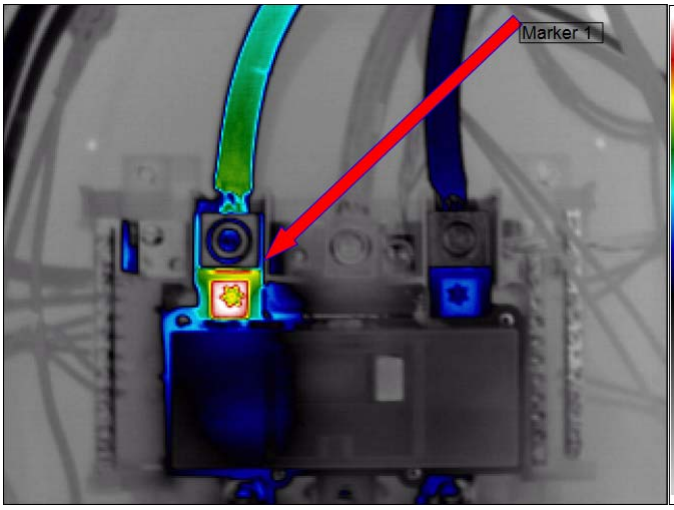
Location/Equipment: Panel - Unmarked

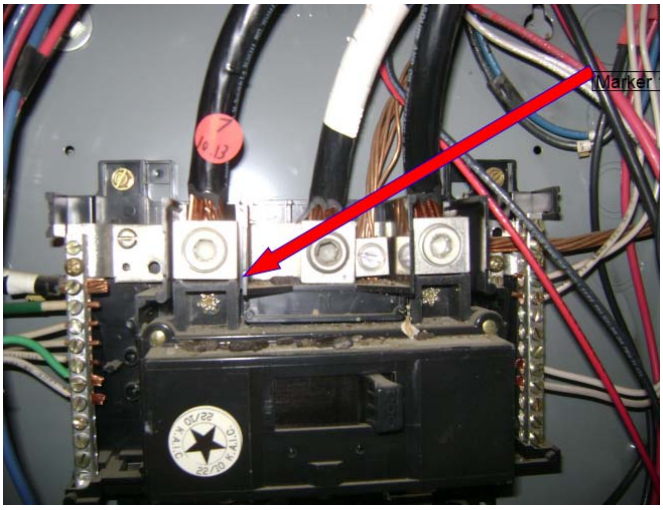
Barcode: 108ZFW Asset ID:

Voltage: 120 Rated Load: 200 Wind Speed: 0 Ambient:51.0

IR/Image GUID File : 9a2dc980-2f7d-4e8b-bb79-9ad3850bc897.idn

	Temp	Phase	Load	% of
Component:	101.0		80Amps	@40.0%
Reference:	77.0	B Phase	93Amps	@46.5%
Delta T:	24.0			@40.0%





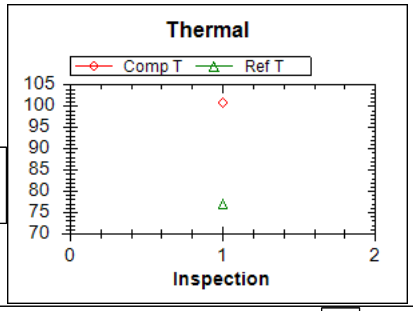
Comment: **A phase line side wire lug connection on incoming main lines**

Probable Cause: Loose or corroded connection

Recommendation: Clean, inspect, and repair or replace as necessary

Historical Sub Report

Insp.#	Prob.#	Date	Comp Temp	Ref. Temp	Temp Rise	Sev. Code	Load	% Load	Wind Spd.	Amb. Temp
1	7	10/30/2013	101.0	77.0	24.0	3	80	40.0%		51.0



Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

Professional Thermographers Association

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Visual Problem List

Site: City of Redmond Buildings **Inspection #** 1

Problem # 1 **Barcode:** 108VD9 **Severity Code:**
Location: Sammamish River Business Park Building 2 (NE 154th Ave) \ Main Electrical Room
Equipment: Main Disconnect
Description: Safety Bypass is broken
Picture: 7c8a0f26-3cfc-4e4c-9ba9-82940595ab78.idn

Problem # 2 **Barcode:** 108ZK9 **Severity Code:**
Location: Old Redmond Schoolhouse Community Center (16600 NE 80th St) \ 01 Floor \ Main Hallway
Equipment: Panel - CP1 (near Room 103)
Description: Main Breaker is broken, exposed metal on C phase of 3-pole 100amp breaker
Picture: ae1718a3-9bc9-4523-b997-336beb96e308.idn

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Colbert Infrared Services

Thermal Trend

Visual Problem Details Report

Site: City of Redmond Buildings
Problem Status: OPEN
Location: Sammamish River Business Park Building 2 (NE 154th Ave) \ Main Electrical Room
Equipment: Main Disconnect
IDN File: 7c8a0f26-3cfc-4e4c-9ba9-82940595ab78.idn

Severity: **Work Order #:**

Inspection#: 1	**Problem#:** 1
Prob Date&Time:	10/28/2013 13:39
Barcode:	108VD9
AssetID:	

Description: Safety Bypass is broken
Probable Cause:
Recommendation:

Historical Sub Report

Inspection	Prob#	Date	Sev.Code
1	1	10/28/2013	

Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

Professional Thermographers Association

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Visual Problem Details Report

Site: City of Redmond Buildings
Problem Status: OPEN
Location: Old Redmond Schoolhouse Community Center (16600 NE 80th St) \ 01 Floor \ Main Hallway
Equipment: Panel - CP1 (near Room 103)
IDN File: ae1718a3-9bc9-4523-b997-336beb96e308.idn

Severity:
Work Order #:

Inspection#: 1	**Problem#:** 2
Prob Date&Time:	10/29/2013 07:18
Barcode:	108ZK9
AssetID:	

Description: Main Breaker is broken, exposed metal on C phase of 3-pole 100amp breaker
Probable Cause:
Recommendation:

Historical Sub Report

Inspection	Prob#	Date	Sev.Code
1	2	10/29/2013	

Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

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Inspection Notes List

Site: City of Redmond Buildings **Inspection #** 1 **Date:**

Inspection Note # 1 **Barcode:** 108VF9 **Asset ID:** **Severity Code:**
Date-Time: Oct 28 2013 9:31AM
Location: Public Safety Building (8701 160th Ave NE) \ 02 Floor \ 257 Computer Room
Equipment: Panel - UPS Section 2
Test Status: Tested
Description: Panel missing some screws
Notes:

Inspection Note # 2 **Barcode:** 108ZJD **Asset ID:** **Severity Code:**
Date-Time: Oct 29 2013 9:16AM
Location: Old Redmond Schoolhouse Community Center (16600 NE 80th St) \ 02 Floor \ Main Hallway
Equipment: Panel - E (near Room 206)
Test Status: Tested
Description: Panel E needs to have its screws/brackets repaired or replaced
Notes:

Inspection Note # 3 **Barcode:** 108ZJB **Asset ID:** **Severity Code:**
Date-Time: Oct 29 2013 9:27AM
Location: Old Redmond Schoolhouse Community Center (16600 NE 80th St) \ 02 Floor \ Main Hallway
Equipment: Panel - F (near Room 203 & 204)
Test Status: Tested
Description: Panel F needs to have its screws/brackets repaired or replaced
Notes:

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Inventory Report

Site: City of Redmond Buildings **Inspection #** 1 **Date:** 10/28/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested		MOC Center (18080 NE 76th Street)
No	Tested		Building #1 (Main Building)
No	Tested		Hallway
No	Tested	108ZFZ	Panel - P2
No	Tested		Lunch Room
No	Tested	108ZG0	Distribution Panel - M
No	Tested	108ZG1	Panel - L
No	Tested	108ZG2	Panel - P1
No	Tested	108ZG3	Panel - Unmarked
No	Tested		Oil Shed (by Garage)
No	Tested	108ZG7	Disconnect - Air Supply
No	Tested	108ZG6	Disconnect - Hydraulic Pump
No	Tested		Wash Rack (by Garage)
No	Tested	108ZG5	Disconnect - CWP 3,5
No	Tested	108ZG4	Disconnect - Panel H/14,16,18
No	Tested		Welding Shop
No	Tested		Contactor - Unmarked (upstairs)
No	Tested	108ZG8	Disconnect - Unmarked (upstairs)
No	Tested	108ZGA	Panel - M1A
No	Tested	108ZG9	Panel - Upstairs (Upstairs)
No	Tested		Building #11A (Decant Office)
No	Tested		Office Laundry Room
No	Tested	108ZFT	Contactor - Brine Tank Pump
No	Tested	108ZFS	Contactor - Decant Lights
No	Tested	108ZFR	Panel - DB
No	Tested		Building #11B (Decant Structure)
No	Tested		South East Wall
No	Tested	108ZFN	Disconnect - Generator
No	Tested	108ZFM	Panel - DDP
No	Tested	108ZFQ	Panel - DE
No	Tested	108ZFP	Transfer Switch
No	Tested		Building #2 (Storage)
No	Tested		Sewer Storage
Yes	Tested	108ZFW	Panel - Unmarked
No	Tested		Street Storage
No	Tested	108ZFX	Panel - 2
No	Tested		Building #3 (Street Department Modular)
No	Tested		Break Room
No	Tested	108ZFY	Panel - Unmarked
No	Tested		Building #4 (Storage)
No	Tested		Water Storage
No	Tested	108ZFV	Panel - A
No	Tested		Building #5 (Central Stores Warehouse)
No	Tested		Shop
No	Tested	108ZFU	Panel - 1
No	Tested		Building #8 (Redmond Park Operations Center)
No	Tested		01 Floor
No	Tested		Elevator Equipment Room
No	Tested	108ZEW	Breaker - Shunt Trip

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Inventory Report

Site: City of Redmond Buildings **Inspection #** 1 **Date:** 10/28/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested		Garage
No	Tested	108ZET	Panel - C
No	Tested	108ZEV	Panel - E (by Elevator Equipment Room)
No	Tested	108ZER	Transformer - F (by Wood Shop)
No	Tested		Hallway
No	Tested		Electrical Closet
No	Tested	108ZEX	Panel - B
No	Tested		Womens Restroom
No	Tested		Electrical Room
No	Tested	108ZF4	Disconnect - Generator
No	Tested	108ZEZ	Disconnect - Panel B
No	Tested	108ZF0	Disconnect - Panel C
No	Tested	108ZEY	Disconnect - Panel D
No	Tested	108ZF3	Disconnect - Panel E
No	Tested	108ZF2	Disconnect - Panel F
No	Tested	108ZF1	Panel - A
No	Tested	108ZF5	Transfer Switch - Panel E
No	Tested		Wood Shop
No	Tested	108ZEU	Panel - F
No	Tested		02 Floor
No	Tested	108ZEQ	Panel - D
No	Tested		Storage Shed
No	Tested	108ZES	Panel - Unmarked
No	Tested		Trinity Building
No	Tested		Electrical Room
No	Tested	108ZFD	Disconnect - H1 Main
No	Tested	108ZFE	Disconnect - H3-Main
No	Tested	108ZF9	Disconnect - L1
No	Tested	108ZFC	Disconnect - Mill NW
No	Tested	108ZFF	Disconnect - Spiral
No	Tested	108ZFB	Disconnect - Transformer L1
No	Tested	108ZF6	Disconnect - Unmarked (outside)
No	Tested	108ZFG	Panel - H1
No	Tested	108ZF8	Panel - L1
No	Tested	108ZF7	Starter - Exhaust Fan Pad Oven (Outside)
No	Tested	108ZFA	Transformer - L1
No	Tested		Garage
No	Tested	108ZFL	Disconnect - Spot Welder
No	Tested	108ZFH	Panel - H-3
No	Tested	108ZFJ	Panel - L-3
No	Tested	108ZFK	Transformer - TF-3
No	Tested		Municipal Garage (8701 160th Ave NE)
No	Tested		102 Elevator Room
No	Tested	108VDT	Breaker - Elevator
No	Tested		Sprinkler Room
No	Tested		109 Electrical Room
No	Tested	108VDW	Disconnect - GD-1
No	Tested	108VDU	Panel - 2GP1
No	Tested	108VDX	Panel - 4GP1

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Inventory Report

Site: City of Redmond Buildings **Inspection #** 1 **Date:** 10/28/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested	108VDV	Transformer - TGA
No	Tested		Old Firehouse Teen Center (16510 NE 79 Street)
No	Tested		01 Floor
No	Tested		Fire Alarm Control Room
No	Tested	108ZJ8	Panel - 1
No	Tested	108ZJ9	Panel - MDP
No	Tested		Media Room
No	Tested	108ZJ4	Panel - B
No	Tested		Pool Room
No	Tested	108ZJ5	Breaker - Panel B
No	Tested	108ZJ6	Panel - A
No	Tested		Rubber Room
No	Tested	108ZJ7	Panel - Unmarked
No	Tested		Old Redmond Schoolhouse Community Center (16600 NE 80th St)
No	Tested		01 Floor
No	Tested		101 Fire Sprinkler Room
No	Tested	108ZJU	Disconnect - Sprinkler Compressor
No	Tested		110 Storage
No	Tested	108ZJN	Panel - D
No	Tested	108ZJP	Panel - EM
No	Tested	108ZJQ	Panel - M
No	Tested		111 Electrical Room
No	Tested	108ZJM	Panel - A
No	Tested		170 Arts and Crafts
No	Tested	108ZJR	Contactor Box - Gym Lighting
No	Tested	108ZJT	Disconnect - PNL M (by Kilns)
No	Tested	108ZJS	Panel - H
No	Tested		Auditorium
No	Tested		East Mezzanine
No	Tested	108ZJL	Starter - AHU-1
No	Tested		Stage
Yes	Tested	108ZJK	Panel - Unmarked
No	Tested		West Mezzanine
No	Tested	108ZJJ	Starter - AHU-2
No	Tested		Elevator Machine Room
No	Tested	108ZK7	Breaker - Cab Lights
No	Tested	108ZK5	Breaker - Elevator
No	Tested	108ZK6	Disconnect - Elevator
No	Tested		Main Hallway
No	Tested	108ZK8	Panel - B (near Room 104)
No	Tested		Panel - C (near Room 107)
Yes	Tested	108ZK9	Panel - CP1 (near Room 103)
No	Tested		02 Floor
No	Tested		211 Storage
No	Tested	108ZJC	Panel - CP2
No	Tested		Custodial Room (near room 206)
No	Tested	108ZJH	Contactor - Exhaust Fan 1st Floor Boys
No	Tested	108ZJG	Contactor - Exhaust Fan 1st Floor Girls
No	Tested	108ZJE	Contactor - Exhaust Fan 2nd Floor Girls

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Inventory Report

Site: City of Redmond Buildings **Inspection #** 1 **Date:** 10/28/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested	108ZJF	Contactor - Exhaust Fan Women Lounge
No	Tested		Main Hallway
Yes	Tested	108ZJD	Panel - E (near Room 206)
Yes	Tested	108ZJB	Panel - F (near Room 203 & 204)
No	Tested		Offices
No	Tested	108ZJA	Panel - P1
No	Tested		Basement
No	Tested		Boiler Room
No	Tested	108ZJZ	Contactor - Breaker 10C
No	Tested	108ZJW	Contactor - Feed Pump 2
No	Tested	108ZJV	Contactor - FW Pump 1
No	Tested	108ZK0	Disconnect - CWP-1
No	Tested	108ZK1	Disconnect - CWP-2
No	Tested	108ZJX	Panel - P
No	Tested	108ZJY	Sub Panel - fed by Panel P
No	Tested	108ZK2	VFD - CWP-1
No	Tested	108ZK4	VFD - CWP-2
No	Tested		Public Safety Building (8701 160th Ave NE)
No	Tested		01 Floor
No	Tested		123A Mechanical Electrical Room
No	Tested	108VG8	Distribution Panel - SS4B
No	Tested	108VG5	Panel - 1D2
No	Tested	108VG9	Panel - 1E4
No	Tested	108VG6	Panel - 1F2
No	Tested	108VGB	Panel - 1G2
No	Tested	108VG7	Panel - 1XC4
No	Tested	108VGA	Small Panel - Unmarked
No	Tested	108VGC	Transformer - Unmarked
No	Tested		164 Mechanical Room
No	Tested	108VFQ	ATS (Normal Power)
No	Tested	108VFG	Cabinet - Contactor
No	Tested	108VFN	Contactor - B2A
No	Tested	108VFL	Control Panel - Public Safety Building Standy Generators Monitoring
No	Tested	108VFS	Disconnect - Unmarked
No	Tested		Main Switchboard
No	Tested	108VFU	Breaker Section
No	Tested	108VFT	Incoming Power
No	Tested	108VFV	Panel - 1A4
No	Tested	108VFY	Panel - 1B2
Yes	Tested	108VFH	Panel - 1XA4
No	Tested	108VFK	Panel - 1XB2
No	Tested	108VFM	Panel - B2A
No	Tested	108VFW	Starter - 1A4
No	Tested	108VFX	Transformer - 1B2
No	Tested	108VFJ	Transformer - fed by 1XA4
No	Tested	108VFP	Transformer - fed to B2A
No	Tested	108VFR	Transformer - Unmarked
No	Tested		Evidence Room

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Inventory Report

Site: City of Redmond Buildings **Inspection #** 1 **Date:** 10/28/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested	108VG3	Panel - 1L2
No	Tested		J105 Door (Jail)
No	Tested	108VG4	Panel - 1H2
No	Tested		02 Floor
No	Tested		200 Mechanical Room
No	Tested	108VEL	Control Panel - Sump Pump Left
No	Tested	108VEM	Control Panel - Sump Pump Right
No	Tested	108VEK	Disconnect - 2H4
No	Tested	108VEC	Disconnect - 31A
No	Tested	108VED	Disconnect - 31B
No	Tested	108VEF	Disconnect - 32A
No	Tested	108VEE	Disconnect - 32B
No	Tested	108VEH	Disconnect - 35A
No	Tested	108VEG	Disconnect - 35B
No	Tested		Elevator Room
No	Tested	108VEB	Breaker - Elevator Cab
No	Tested	108VEA	Panel - 2H4
No	Tested	108VE9	Panel - 2J2
No	Tested	108VEJ	Starter - EF-4
No	Tested		209A Investigations Door
No	Tested	108VEN	Panel - 2E4
No	Tested	108VEP	Panel - 2F2
No	Tested	108VEQ	Panel - 2G2
No	Tested		209B Investigations
No	Tested		Computer Room
No	Tested	108VES	Panel - Non UPS
No	Tested	108VER	Panel - UPS1
No	Tested		249A Door (ECC)
No	Tested	108VFB	Panel - 2XA4
No	Tested	108VFA	Panel - 2XB2
No	Tested		257 Computer Room
No	Tested	108VF8	Panel - Non UPS fed from Panel 2XB2
No	Tested	108VF7	Panel - UPS Section 1
Yes	Tested	108VF9	Panel - UPS Section 2
No	Tested		263 Room (911 Norcom)
No	Tested		261 Room
No	Tested	108VEU	Battery Cabinet - 1
No	Tested	108VEW	Panel - Radio Equipment
No	Tested	108VEV	Switch - Maintenance Bypass
No	Tested	108VET	UPS - 1
No	Tested		295 Stairs No. 6 to Mechanical Mezzanine
No	Tested		302 Elevator Room
No	Tested	108VE8	Breaker - Elevator Cabinet
No	Tested	108VF6	Disconnect - 911 Computer Room Back up Cooling Unit
No	Tested	108VF3	Panel - MX4
No	Tested	108VEZ	Panel - MX5
No	Tested	108VF2	Panel - Unmarked
No	Tested	108VEY	Panel - UPS Transformer Output
No	Tested	108VF1	Starter - 1P-2

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Inventory Report

Site: City of Redmond Buildings **Inspection #** 1 **Date:** 10/28/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested	108VF5	Starter - AHU-1
No	Tested	108VF0	Starter - P-1
No	Tested	108VF4	Starter - Unmarked
No	Tested	108VEX	Transformer - UPS
No	Tested		Garage Level
No	Tested		Sprinkler Room
No	Tested	108VDY	Disconnect - Unmarked
No	Tested		Sump Cage
No	Tested	108VDZ	Control Panel - Sump Pump
No	Tested	108VE0	Disconnect - 1
No	Tested	108VE1	Disconnect - 2
No	Tested	108VE2	Disconnect - 3
No	Tested	108VE3	Disconnect - 4
No	Tested		Wood Shop
No	Tested	108VE4	Control Panel - Sump Pump
No	Tested	108VE7	Disconnect - Center
No	Tested	108VE5	Disconnect - Left
No	Tested	108VE6	Disconnect - Right
No	Tested		North and South Garages and Outside
No	Tested		Backup Generator
No	Tested		Breaker - Strobic Fan
No	Tested	108VFD	Disconnect - Unmarked
No	Tested		Panel - Unmarked
No	Tested	108VFC	Starter - Strobic Fan
No	Tested		SWAT Garage
No	Tested	108VG0	Breaker - Bldg Service
No	Tested	108VFZ	Panel - SVS
No	Tested		Traffic Garage
No	Tested	108VG1	Breaker - Bldg Service
No	Tested	108VG2	Panel - SVN
No	Tested		Redmond Pool (17535 NE 104th Street)
No	Tested		Boiler Room
No	Tested	108ZH4	Contactor - Exhaust Fan
No	Tested	108ZH1	Contactor - Unmarked
No	Tested	108ZGT	Control Panel - Boiler Left
No	Tested	108ZGS	Control Panel - Boiler Right
No	Tested	108ZGX	Control Panel - Mixer
No	Tested	108ZH0	Control Panel - Operator Interface
No	Tested	108ZGZ	Control Panel - Pumps
No	Tested	108ZGV	Disconnect - Building Heat
No	Tested	108ZGU	Disconnect - Domestic Hot Water
No	Tested	108ZH3	Disconnect - Exhaust Fan
No	Tested	108ZGY	Disconnect - Pool Water Heat
No	Tested	108ZH2	Disconnect - Unmarked
No	Tested	108ZGW	Disconnect - Unmarked (by Building Heat Disconnect)
No	Tested		Pool Electrical Room
Yes	Tested	108ZHA	Main Switchboard
No	Tested	108ZH9	Panel - A
No	Tested	108ZH5	Panel - B

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Inventory Report

Site: City of Redmond Buildings **Inspection #** 1 **Date:** 10/28/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested	108ZH7	Panel - C
No	Tested	108ZH6	Panel - Under Water Lights
No	Tested	108ZH8	Panel - Unmarked
No	Tested		Reception
No	Tested		Janitor Closet
No	Tested	108ZHD	Contactor - Unmarked
No	Tested	108ZHB	Panel - Two Vent Units on Roof
No	Tested	108ZHC	Panel - Unmarked
No	Tested	8ZHE	Starter - Unmarked
No	Tested		Redmond Senior Center (8703 160th Ave NE)
No	Tested		105 Mechanical Room
No	Tested	108VDJ	Panel - E
No	Tested	108VDK	Panel - F
No	Tested		109A Store Room
No	Tested	108VDH	Panel - D
No	Tested	108VDG	Panel - D2
No	Tested		Kitchen
No	Tested	108VDF	Panel - K-1
No	Tested	108VDE	Panel - K-2
No	Tested		Main Electrical Room
No	Tested		Main Switchboard
No	Tested	108VDR	Breaker Section 1
No	Tested	108VDQ	Breaker Section 2
No	Tested	108VDS	Main Breaker
No	Tested	108VDN	Panel - A
No	Tested	108VDP	Panel - B
No	Tested		Pump Room
No	Tested	108VDL	Starter - 1
No	Tested	108VDM	Starter - 2
No	Tested		Sammamish River Business Park Building 1 (NE 154th Ave)
No	Tested		Main Electrical Room
No	Tested	108VD0	Disconnect - 15509 Front
No	Tested	108VCZ	Disconnect - Panel A-7
No	Tested	108VCY	Disconnect - Panel A-9
No	Tested	108VCW	Main Disconnect
No	Tested	108VCX	Panel - HA
No	Tested		Suite 15503
No	Tested		Kitchenette
Yes	Tested	108ZKD	Panel - A-1
No	Tested	108ZKC	Panel - A2
No	Tested	108ZKB	Panel - A-2
No	Tested	108ZKA	Panel - A-3
No	Tested		Suite 15509
No	Tested	108ZKE	Panel - A-4
No	Tested	108ZKF	Panel - Unmarked
No	Tested		Suite 15517
Yes	Tested	108VCS	Panel - A-6
No	Tested	108VCV	Panel - A-7
No	Tested	108VCU	Panel - A-8

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Inventory Report

Site: City of Redmond Buildings **Inspection** # 1 **Date:** 10/28/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested		Sammamish River Business Park Building 2 (NE 154th Ave)
No	Tested		Main Electrical Room
No	Tested	108VDB	Disconnect - 15523 Training Lab
No	Not Tested	108VDA	Disconnect - 15527 Hinds Bock (Locked out)
Yes	Not Tested	108VD9	Main Disconnect
No	Tested	108VD8	Panel - HB
No	Tested		Suite 15519
No	Tested	108VD6	Panel - B-3
No	Tested		Suite 15521
No	Tested	108VD5	Panel - B-2
No	Tested		Suite 15523
No	Tested	108VD3	Disconnect - Unmarked
No	Tested	108VD2	Panel - B-1
No	Tested	108VD4	Panel - Unmarked
No	Tested	108VD1	Panel - Unmarked (next to B-1)
No	Tested		Suite 15525
No	Tested	108VD7	Panel - Unmarked
No	Tested		Suite 15527
No	Tested	108VDC	Panel - B-5
No	Tested		Suite 15529
No	Tested	108VDD	Panel - B-6

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Infrared Thermographic Inspection
Of
Selected Electro-Mechanical Equipment

Provided For
City of Redmond Fire Stations
10/29/2013

Summary:

An Infrared Electrical / Mechanical inspection was performed on 10/29/2013 for City of Redmond Fire Stations

All of the items inspected are listed in the inventory section of this Thermal Trend report. Any anomalies that were found at the time of the inspection (if any) are documented in the Problem Detail section of this report with their appropriate associated data, i.e. Thermograms, Photos, comments, measurements, etc.. They are also listed in the Prioritized list of problems section, in their order of priority based on the components temperature rise, as compared to a similar reference component of equal type, loading, and environmental influences, at the time of the inspection.

The final decision as to the repair priority of any and all problems in this report rests on the owners, management, and/or facilities engineering teams. Colbert Infrared Services, Inc. and the IR Thermographer assumes no liability directly or indirectly as a result of this inspection or the decisions made as to establishing the priority and timeline of repair decisions made by the owners, management, and/or facilities engineering teams. This inspection is not a guarantee or warranty of any kind.

Executive Overview - for Thermal Items:

Total number of locations in the database:	32
Total number of pieces of equipment in the database:	69
Total number of Items (open and closed covering all inspections) in the database	
Acute Items:	1
Chronic Items:	0
Overall total of all acute and chronic:	**1**
Current status of Items, acute and chronic	
Total closed Items (covering all inspections):	0
Current total open Items (tested or not tested at the time of this inspection):	**1**

I herby certify that the above project was inspected by myself or under my direction and that the enclosed data is the direct result of this inspection.

Fred Colbert

President CIS,Inc.

Certified Level III Infrared Thermographer / Instructor: The Professional Thermographers Association

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Thermal Trend

Thermal Item List - Prioritized by Temperature Rise

Site: City of Redmond Fire Stations **Inspection #** 1 **Start Date:**

Site: City of Redmond Fire Stations Insp. No. 1 Start Date: **Thermal Item #** 1 At: Oct 30 2013 11:56AM

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Station #13 (8701 208 Ave NE) \ Break Room

Location/Equipment: Panel - A

Barcode: 108ZE2 Asset ID:

Voltage: 120 Rated Load: 150 Wind Speed: 0 Ambient:70.0

IR/Image GUID File : cc716b59-47bd-4260-b470-89505b3d29f7.idn

	Temp	Phase	Load	% of
Component:	90.0		25Amps	@16.7%
Reference:	73.0		13Amps	@8.7%
Delta T:	**17.0**			@16.7%

Comment: A phase load side wire lug connection on 2-pole Breaker "Panel E To ATS Normal"

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Thermal Trend

Thermal Items: Detail Report

Site: City of Redmond Fire Stations Insp. No. 1 Start Date: 10/29/2013 **Thermal Item # 1** At: 10/30/2013 11:56

Indirect Measurement: No Severity: 4 Repair Status: Problem Status: OPEN

Route: Station #13 (8701 208 Ave NE) \ Break Room

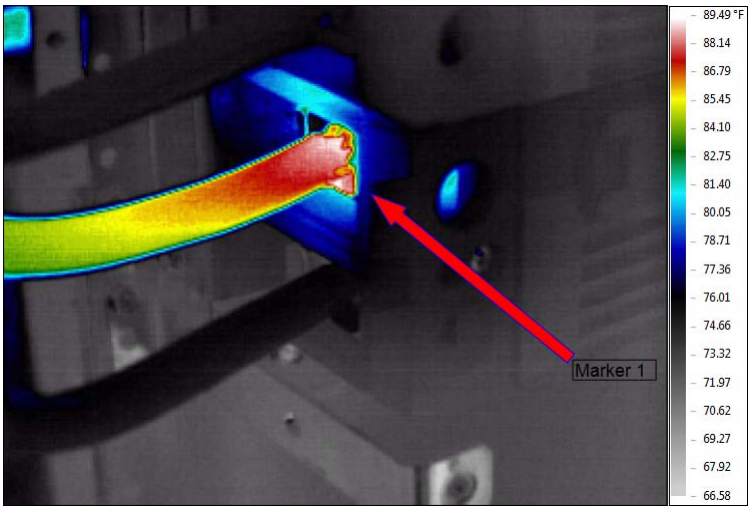
Location/Equipment: Panel - A

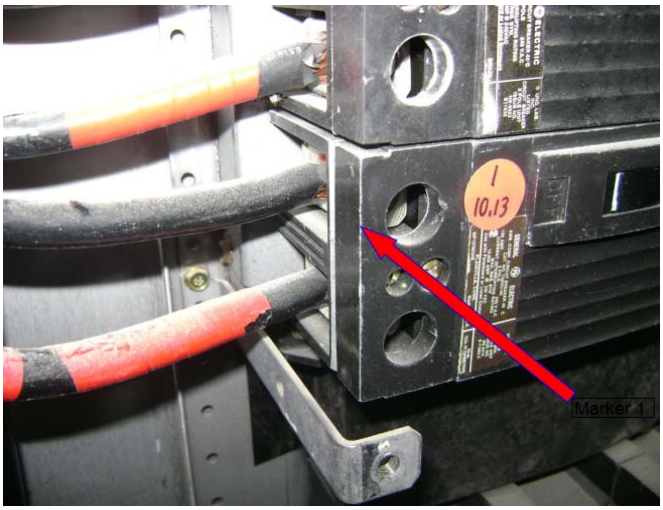
Barcode: 108ZE2 Asset ID:

Voltage: 120 Rated Load: 150 Wind Speed: 0 Ambient:70.0

IR/Image GUID File : cc716b59-47bd-4260-b470-89505b3d29f7.idn

	Temp	Phase	Load	% of
Component:	90.0		25Amps	@16.7%
Reference:	73.0		13Amps	@8.7%
Delta T:	**17.0**			@16.7%

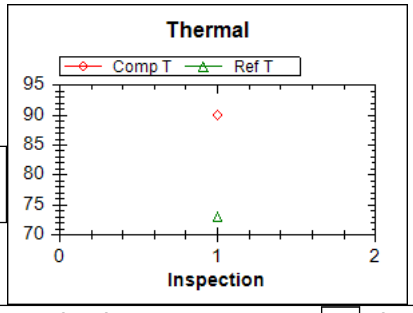




Comment: **A phase load side wire lug connection on 2-pole Breaker "Panel E To ATS Normal"**

Probable Cause: Loose or corroded connection

Recommendation: Clean, inspect, and repair or replace as necessary



Historical Sub Report

Insp.#	Prob.#	Date	Comp Temp	Ref. Temp	Temp Rise	Sev. Code	Load	% Load	Wind Spd.	Amb. Temp
1	1	10/30/2013	90.0	73.0	17.0	4	25	16.7%		70.0

Problem Status:	☐ Not repaired	☐ Repair made, but needs IR recheck	☐ Closed
Repair assigned to:		Repair target date:	
Repair assigned by:		Date:	
Repaired by:		Date:	
Type of defect found:			
Corrective action taken:			

Professional Thermographers Association

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Inventory Report

Site: City of Redmond Fire Stations **Inspection #** 1 **Date:** 10/29/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested		Old Medic One Building (next to Station #11)
No	Tested	108ZHF	Panel - Unmarked
No	Tested		Station #11 (8450 NE 161st Ave)
No	Tested		01 Floor
No	Tested		Electrical Room
No	Tested		Main Switchboard
No	Tested	108ZHK	Section 1
No	Tested	108ZHJ	Section 2
No	Tested	108ZHG	Panel - M (Section 1)
No	Tested	108ZHH	Panel - M (Section 2)
No	Tested		Garage
No	Tested	108ZHR	Control Panel - Exterior Lighting
No	Tested	108ZHL	Disconnect - Air Compressor
No	Tested	108ZHM	Disconnect - H20 Extractor
No	Tested	108ZHN	Disconnect - Panel B Section 2
No	Tested	108ZHQ	Panel - A (Section 1)
No	Tested	108ZHP	Panel - A (Section 2)
No	Tested		Tele / Data Room
No	Tested	108ZHT	Contactor - Plectron Kitchen
No	Tested	108ZHS	Contactor - Unmarked
No	Tested	108ZHU	Control Panel - Plectron Lighting
No	Tested		Station #12 (4211 NE 148th Ave)
No	Tested		Garage
No	Tested	108ZJ2	ATS (Normal Side)
No	Tested	108ZJ1	Breaker - ATS Normal Side
No	Tested	108ZHY	Contactor - Lighting
No	Tested	108ZHX	Contactor - Recepticles
No	Tested	108ZHW	Control Panel - Exhaust Fan
No	Tested	108ZHV	Control Panel - Exterior Lighting
No	Tested	108ZHZ	Panel - A (Section 1)
No	Tested	108ZJ0	Panel - A (Section 2)
No	Tested	108ZJ3	Panel - B
No	Tested		Station #13 (8701 208 Ave NE)
No	Tested		Break Room
Yes	Tested	108ZE2	Panel - A
No	Tested	108ZE0	Panel - B
No	Tested	108ZE1	Panel - E
No	Tested		Station #14 (5021 264 Ave NE)
No	Tested		Generator Room
No	Tested	108ZE9	Disconnect - Panel E
No	Tested		Main Electrical Room
No	Tested	108ZE7	Distribution Panel
No	Tested	108ZE8	Panel - A
No	Tested	108ZE3	Panel - B
No	Tested	108ZE5	Panel - C
No	Tested	108ZE4	Panel - E
No	Tested	108ZE6	Transfer Switch (Normal Power)
No	Tested		Station #16 (6205 185 Ave NE)
No	Tested		Garage

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Inventory Report

Site: City of Redmond Fire Stations **Inspection #** 1 **Date:** 10/29/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested		Electrical Room
No	Tested	108ZEM	Panel - A
No	Tested	108ZEP	Panel - B
No	Tested	108ZEN	Panel - C
No	Tested		Generator Room
No	Tested	108ZEK	Disconnect - Generator
No	Tested	108ZEL	Transfer Switch (Normal Power)
No	Tested		Station #16 Mechanic Shop
No	Tested		Chemical Room
No	Tested	108ZEA	Contactor - Hydraulic Pump
No	Tested	108ZEB	Disconnect - Hydraulic Pump
No	Tested		Parts Room
No	Tested	108ZEH	Contactor - Air Compressor
No	Tested	108ZEJ	Disconnect - Air Compressor
No	Tested	108ZEF	Disconnect - Generator
No	Tested	108ZEC	Panel - M1
No	Tested	108ZEE	Panel - M2
No	Tested	108ZED	Panel - M3
No	Tested	108ZEG	Transfer Switch (Normal Power)
No	Tested		Station #17 (16917 NE 116th Street)
No	Tested		01 Floor
No	Tested		Elevator Machine Room
No	Tested	108ZGC	Disconnect - PNL:MDP
No	Tested	108ZGD	Disconnect - PNLP2
No	Tested	108ZGB	Panel - EL
No	Tested		02 Floor
No	Tested		Main Electrical Room
No	Tested	108ZGG	ATS (Normal Supply)
No	Tested	108ZGH	Disconnect - Generator
No	Tested	108ZGL	Panel - 1
No	Tested	108ZGM	Panel - 1A
No	Tested	108ZGP	Panel - 2
No	Tested	108ZGQ	Panel - 3
No	Tested	108ZGR	Panel - 4
No	Tested	108ZGN	Panel - Control Relay
No	Tested	108ZGF	Panel - D
No	Tested	108ZGJ	Panel - MDP
No	Tested	108ZGK	Panel - N
No	Tested		Tele/Com Room
No	Tested	108ZGE	Panel - TC
No	Tested		Station #18 (22710 NE Aldercrest Drive)
No	Tested		Garage
No	Tested	108ZDW	Panel - R2
No	Tested	108ZDX	Panel - Unmarked
No	Tested		Hallway
No	Tested		Main Electrical Closet
No	Tested	108ZDZ	Main Switchboard
No	Tested	108ZDY	Transfer Switch (Normal Power)
No	Tested	108ZDT	Panel - LM

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Inventory Report

Site: City of Redmond Fire Stations **Inspection #** 1 **Date:** 10/29/2013

Open Problem	Status	Barcode	Location\Equipment
No	Tested	108ZDU	Panel - R1
No	Tested		Outside
No	Tested	108ZDV	Breaker - Main

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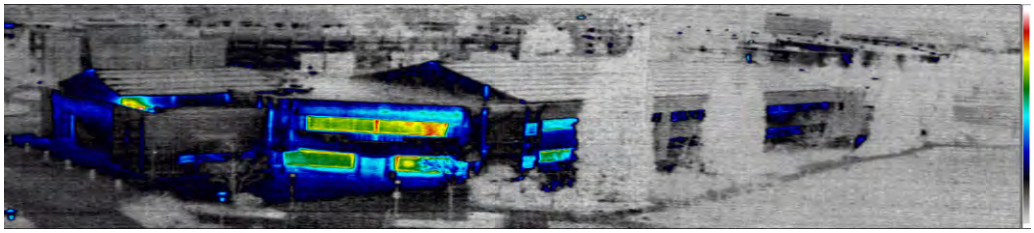
Infrared Building Envelope Survey

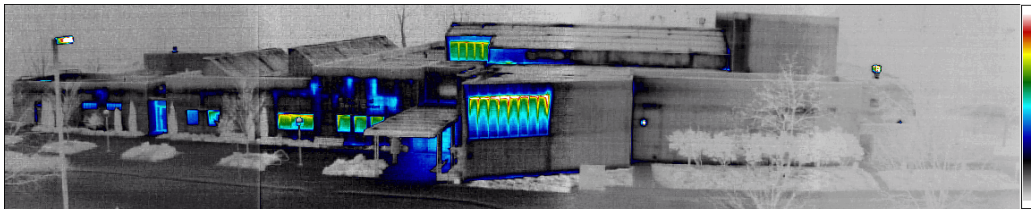
City of Redmond : December 16th 2013

City Hall

Public Safety Building



Senior Center



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Infrared Services

Overview:

On the evening of December 16th 2013, an Infrared Thermographic Building Envelope Survey was performed under the direction of Meng Analysis by Colbert Infrared Services, Inc.. With the intent to identify any areas of the exterior of the building (walls and roof surfaces) that showed non-uniform thermal continuity as compared to similar areas.

The survey was started at approximately 7:00 pm at night to allows for as much solar loading from the day to diminish. The outside ambient air temperature was approximately 42 deg. F and the interior building air temperature was held as closed to 70 deg. F as possible during the night. The weather conditions at the time of the test were cold with no accumulable rain fall, and no significant wind/air flow.

The infrared images that comprise this report were taken with three different thermographic cameras depending on which system could produce the best results given conditions of the testing environments. A Mikron 7600 Pro, Fluke Ti32 and a ICI 760 were used for the inspection. All of the images have been post processed using Thermal Trend – Image Analyzer to produce Ultra-X HD infrared thermographic images.

All of the images in this report, for the three buildings are in separate report sections following this section. Further testing and study may be required to provide remedial solutions to the items that have been found, and were not a part of this survey. Colbert Infrared Services, Inc. is not responsible for any follow up actions that may be required to alleviate any of the items documented in this report.

Please contact us If we can be of any further assistance in answering any questions or clarifications are needed.

Fred Colbert

Fred Colbert

President, CIS Inc.

Level III Certified Thermographer/Instructor

Colbert
Infrared Services

Infrared Thermographic Building Envelope Evaluation

There are as many ways that heat loss can manifest itself through a building walls/floor structures as there are different methods of building construction and materials used, combined with as many ways that you can construct inappropriately those materials or methods.

One of the great advantages of Infrared Thermography is that it allows for quick qualitative evaluation of the homogeneity of the wall structure, or the connection points between different structures and materials.

The term **"Thermal bridging"** is where excess heat flow from the interior of the building is manifesting on building exterior walls. The exact cause of these anomalies can not be determined by the use of infrared thermography alone, but further forensic testing by reviewing construction details, as well as in the field testing (destructive testing like core samples and non-destructive testing; for example capacitance) can all be combined to evaluate the actual causes of the thermal anomalies.

Thermal bridging / Heat transfer: Conduction, Convection, and Radiation, depending on the construction material and the way that the structure is formed, can all happen in conjunction with one another. In any given scenario, one or the other may be of more influence than the others. For example warm air that is escaping from poor window or door seals will not only warm the exterior surfaces of the structure by the transfer of heat by convection (warm air exfiltration) but will also influence the heat loss in that area by conduction. In areas where the wall section is not penetrable by air exfiltration, you can still have convection on (or within) the wall structure, that will be influencing the amount of heat loss by conduction through the exterior wall section. Infrared Thermography in and of its self can not determine the exact cause, but is a tremendous tool for finding the locations and the extent of these anomalies. Detailed follow up investigation (as described above) at the locations where these anomalies have been found as compared to adjacent locations where no anomalies were found (to be used as controls), is the best follow up action for the result of a Thermographic building envelope evaluation.

If we can be of further assistance in this additional testing, or clarification of the imaging results, please let us know and we will be pleased to assist you.

6.2 Infrared Envelope

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Redmond, City of: City Hall

Infrared Building Envelope Survey

December 16th 2013

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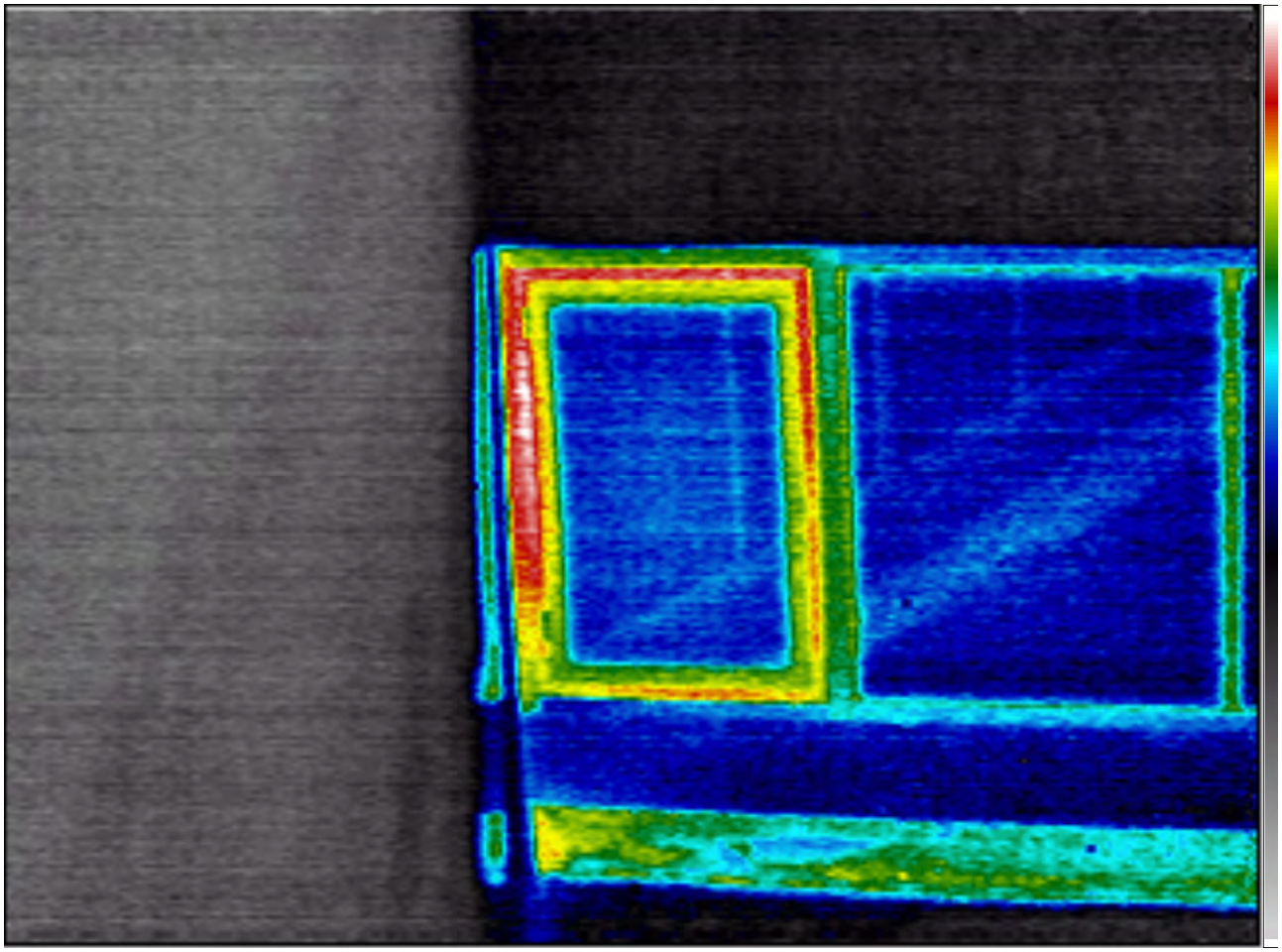
3rd Floor, roof level above main entrance



Heat escaping around the window/door seal for the south window that is used as a access point to the outside roof level.

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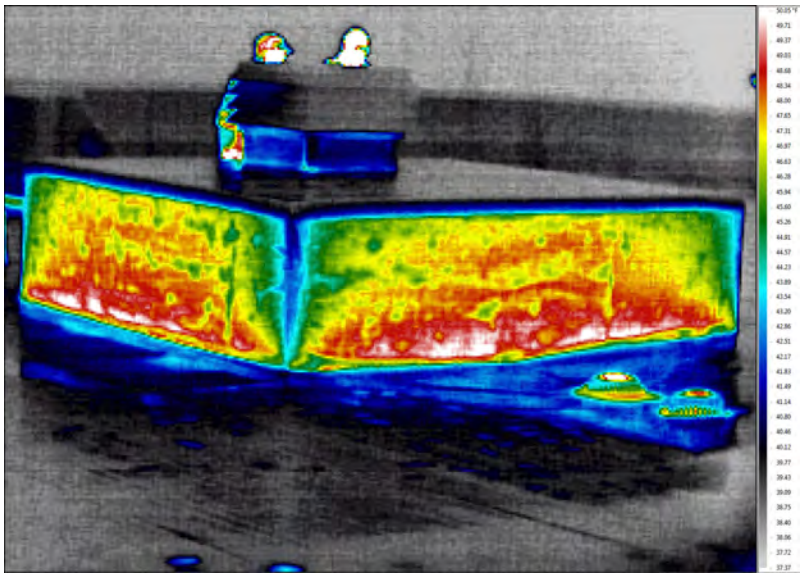
4th Floor Roof, Fright Elevator Shaft, Southeast corner of cap.



Thermal bridging though the walls of the elevator shaft.

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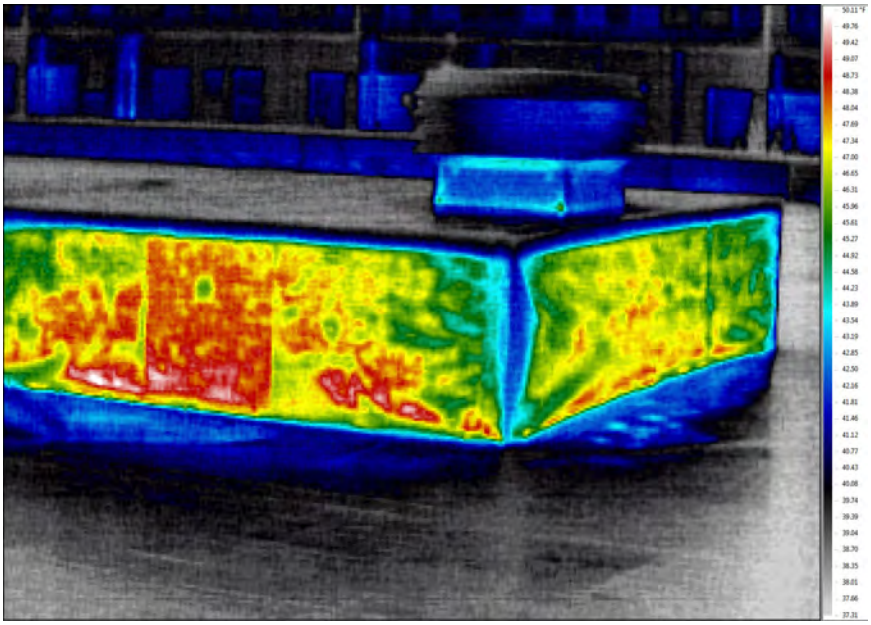
Infrared Services

4th Floor Roof, Fright Elevator Shaft, Northwest corner of cap.



Thermal bridging though the walls of the elevator shaft.

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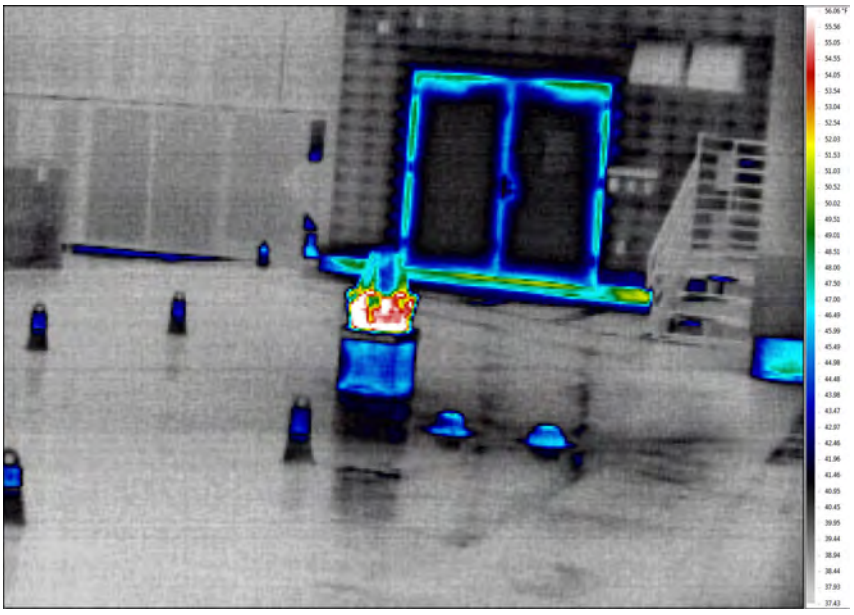
4th Floor rooftop, and door entryway.



Heat escaping around the edge of the door frame for the mechanical room.

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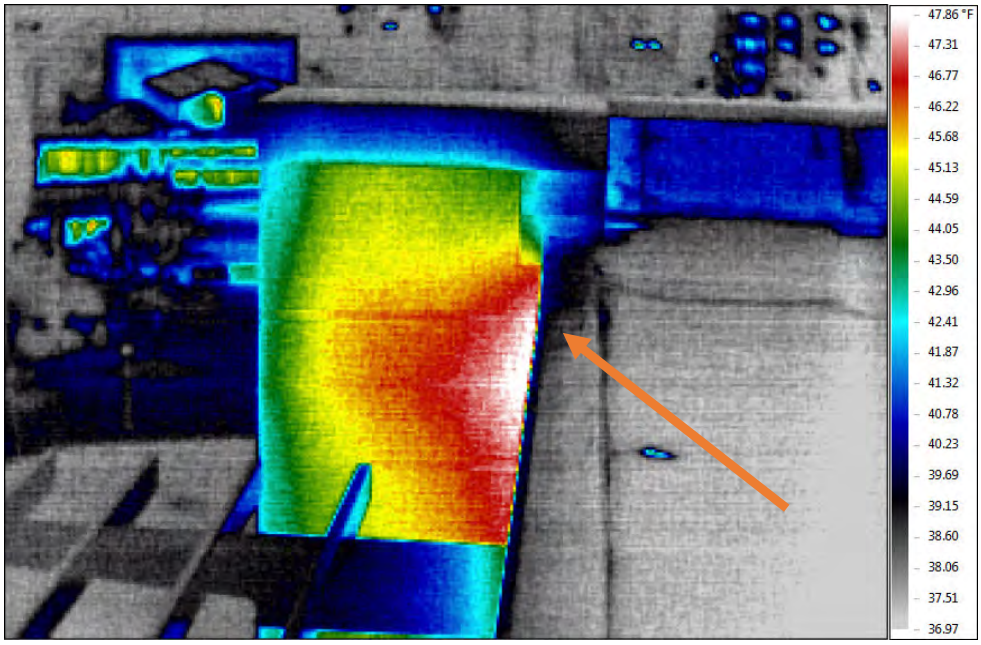
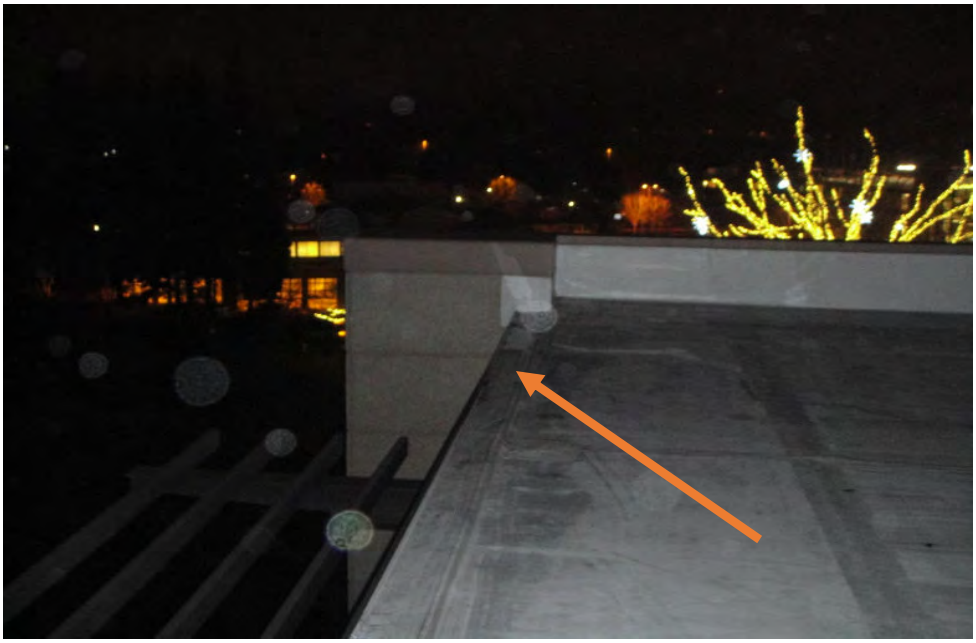
4th Floor Roof level, Northwest corner architectural wing.





Thermal bridging at intersection of roof and wing wall

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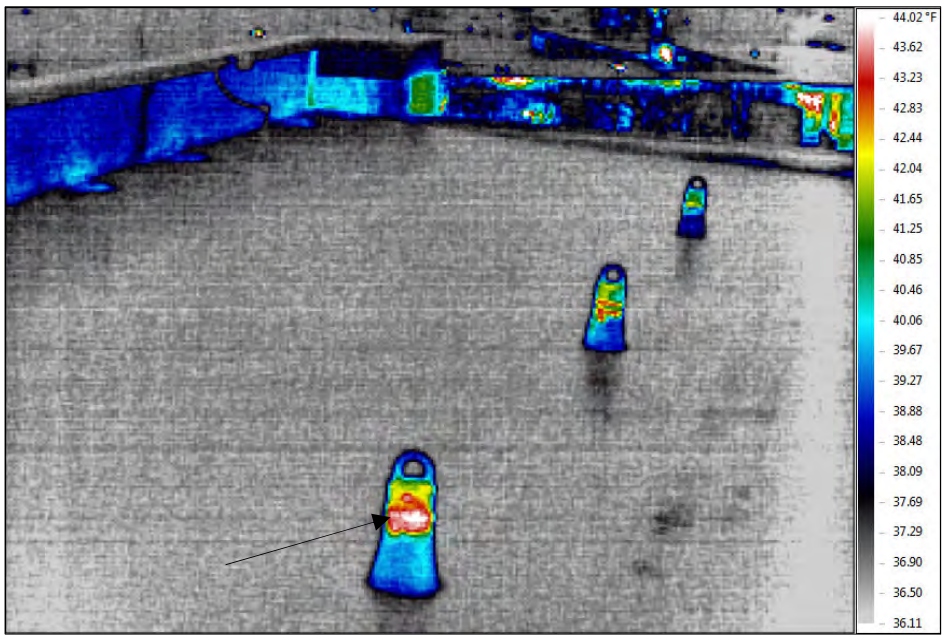
4th Floor Roof, Northeast corner.



Thermal bridging from fall protection footings.

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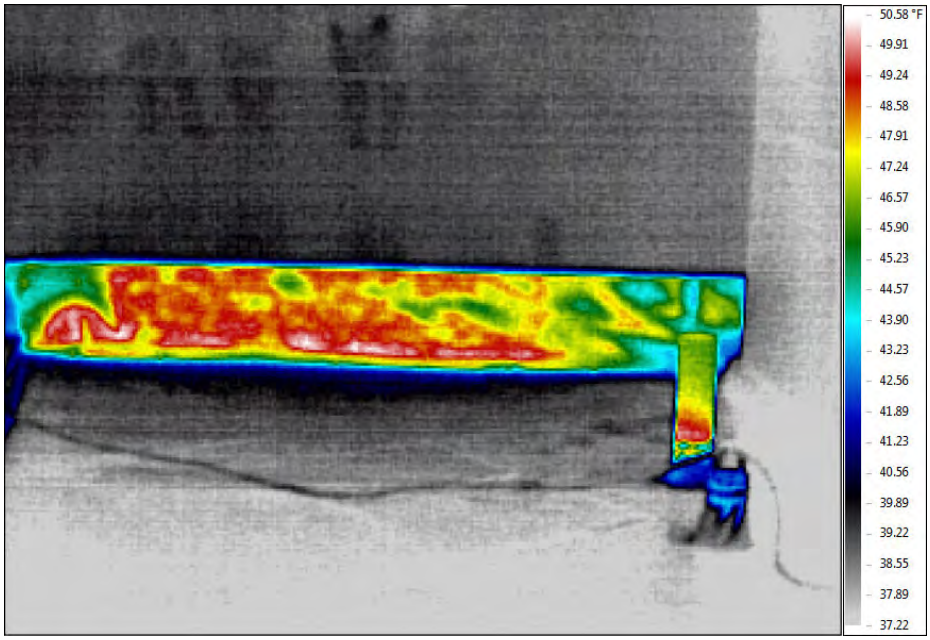
4th Floor Roof, North wall of Mechanical penthouse.



North wall, thermal bridging at base of the wall

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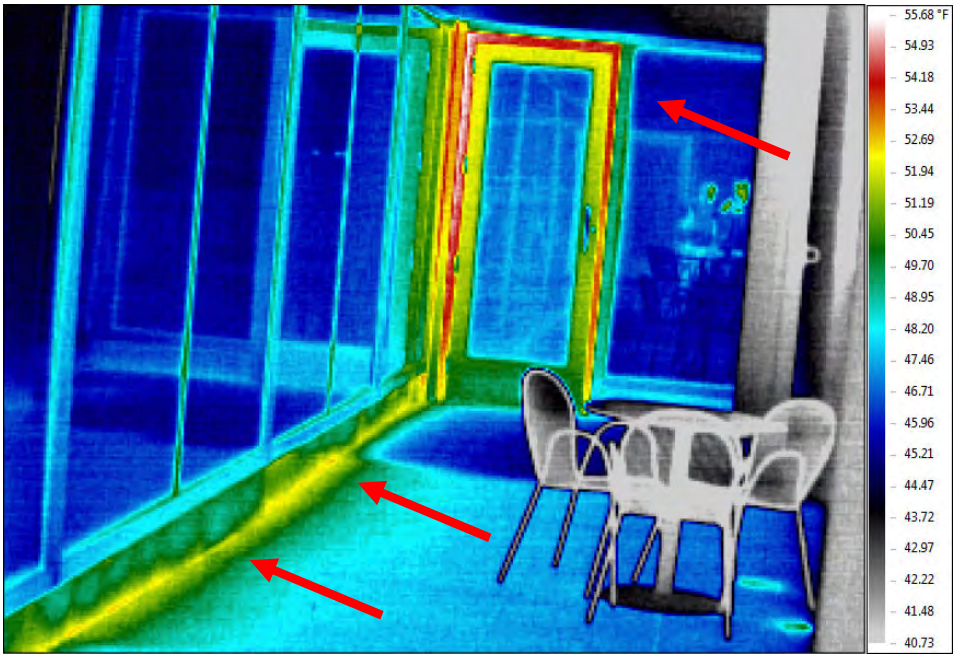
4th Floor, North Balcony



Heat escape from the West door frame and base of south wall

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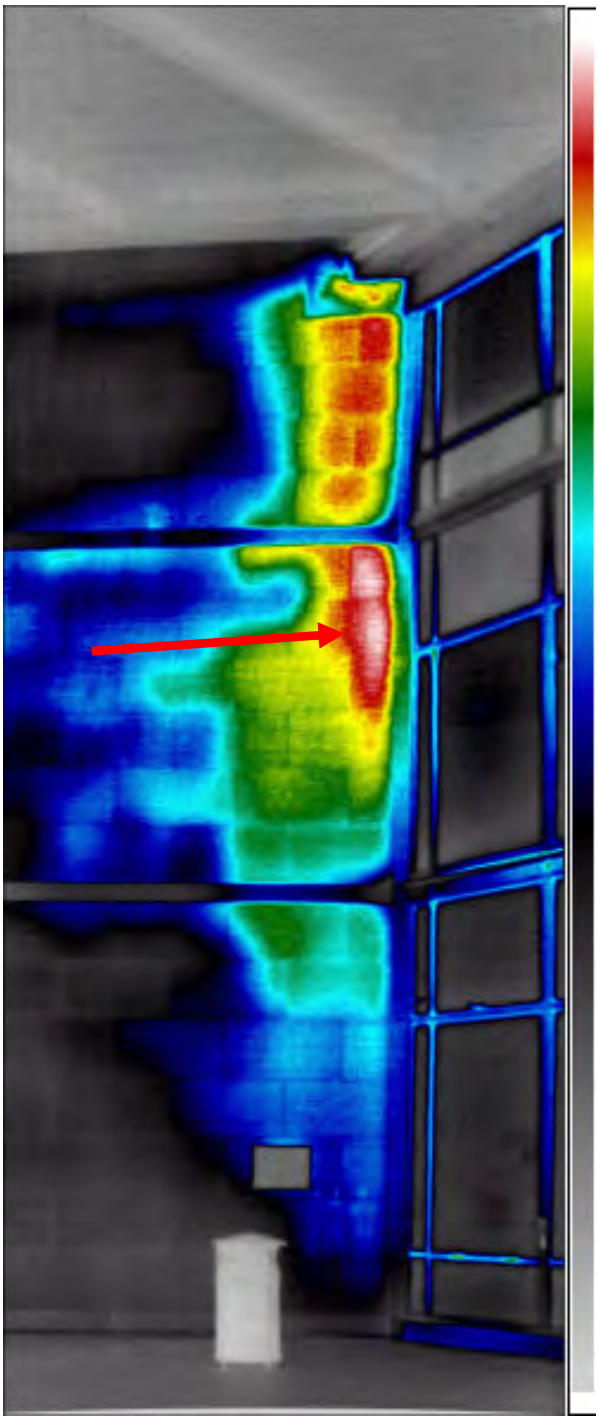
1st Floor east main entrance.



Unusual thermal bridging in the wall next to the glass entrance in the front of the building.

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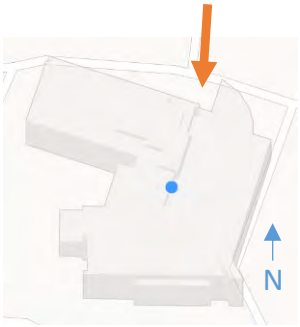
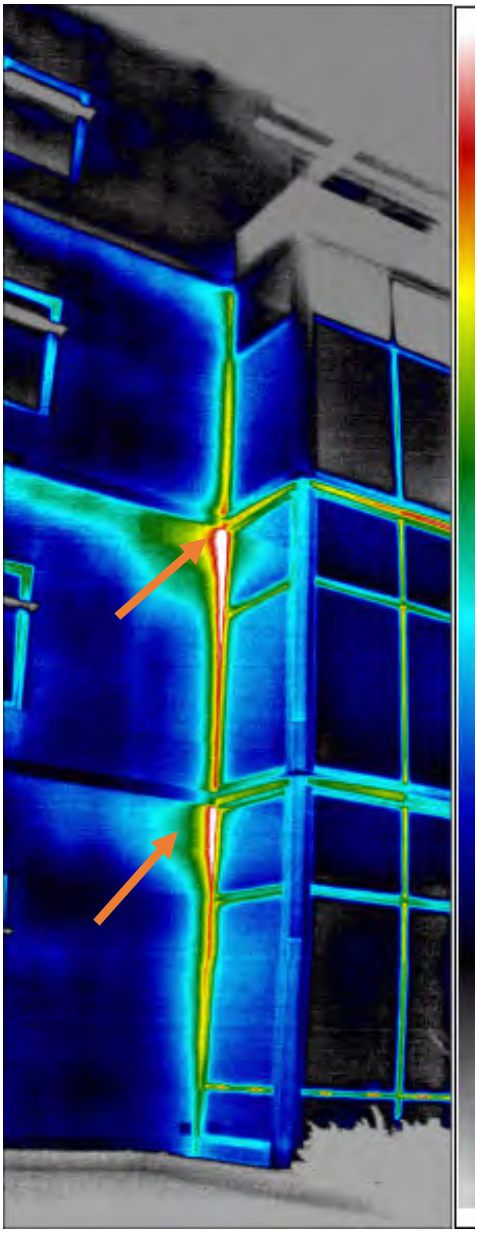


North side, East wall seam.



Thermal bridging along the seam of the building as the wall protrudes outward.

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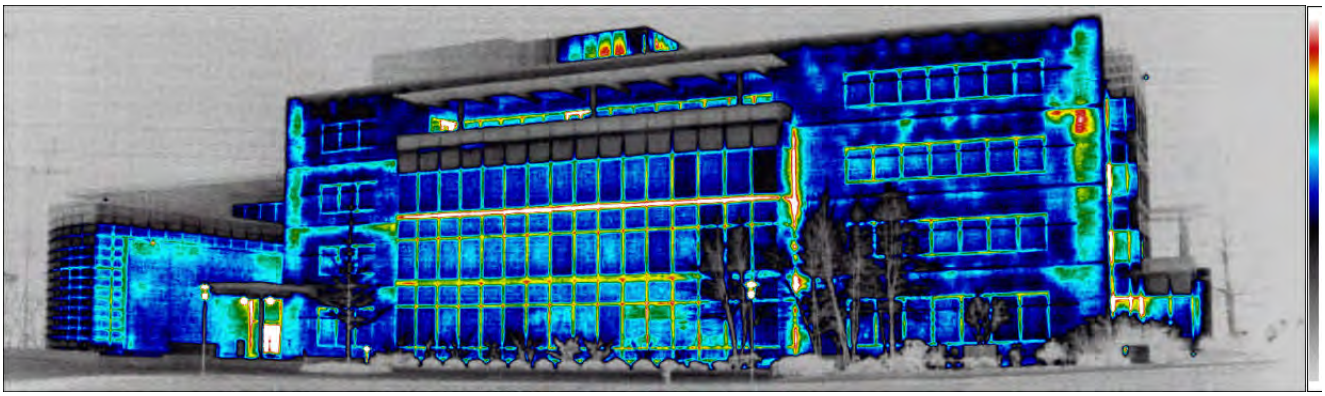
North side, exterior.



View of the north side elevation of the building showing overall view of the building envelope.

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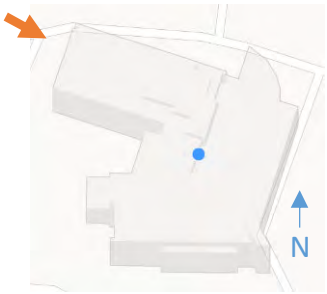
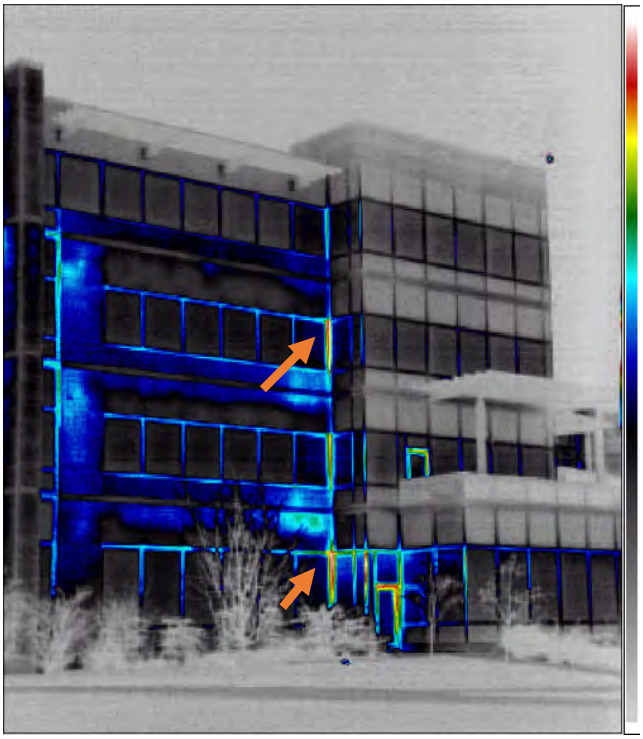


West side, North wing building exterior.



1st and 3rd floor heat loss around the window flashing at the intersection of the south wall and the glass exterior.

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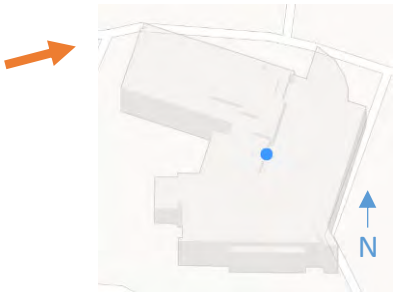
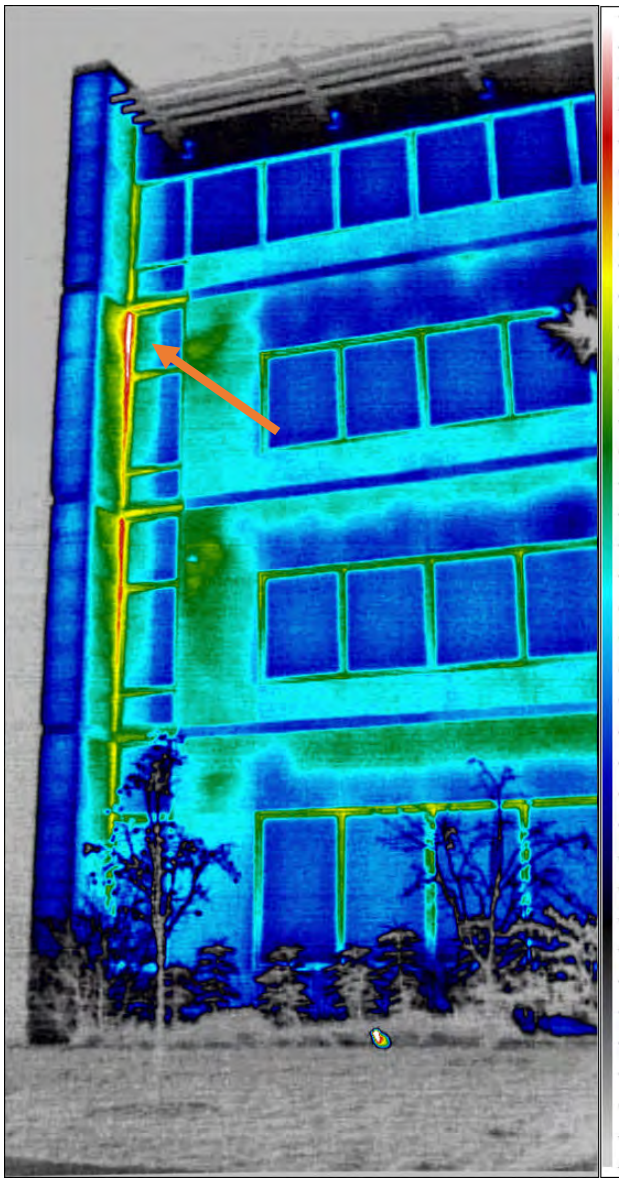


Redmond: City of, Town Hall Building



The red arrow shows the region of the most concentrated thermal bridging occurring between the wing wall and the 3rd floor windows.

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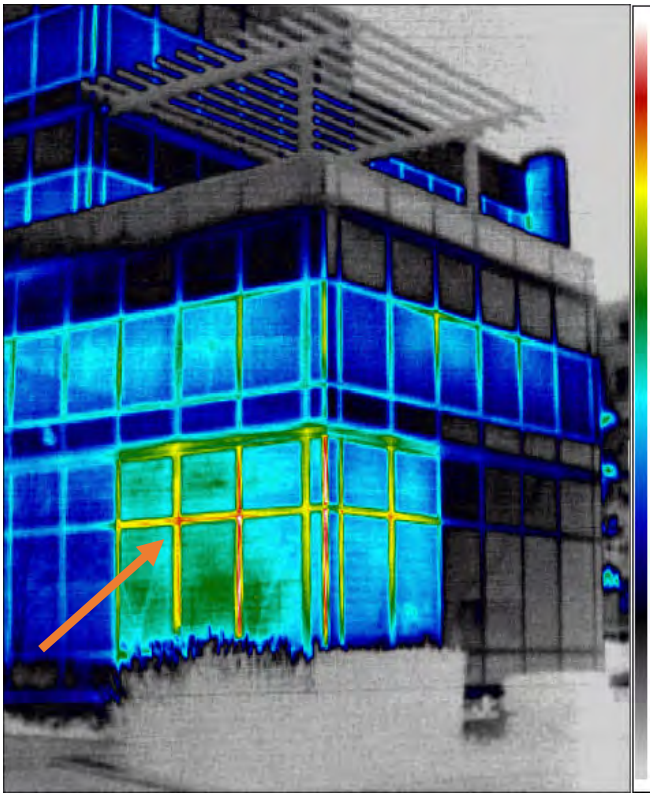
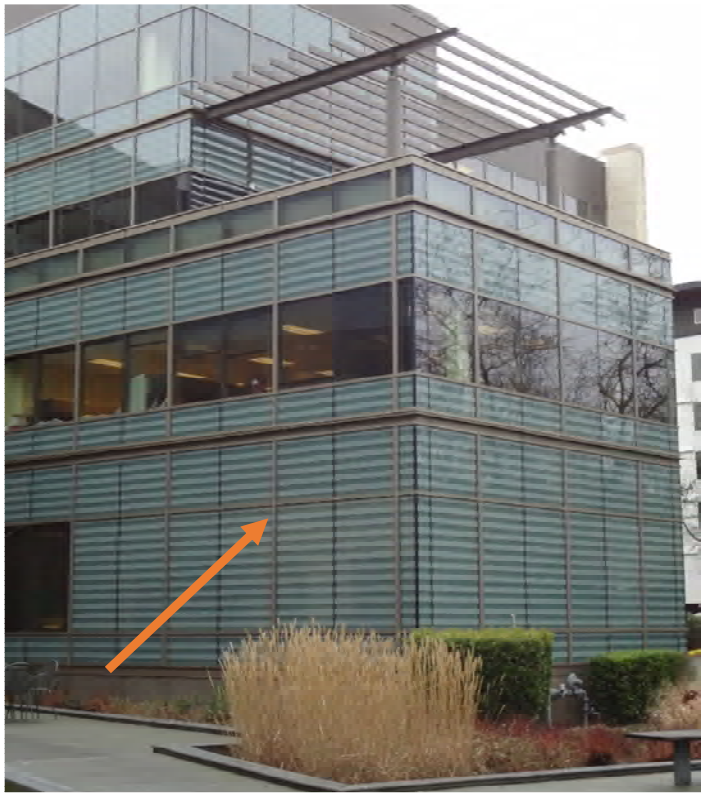
West side, north window wall exterior.





1st floor loading dock northwest corner of the building.

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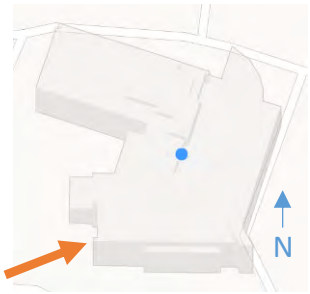
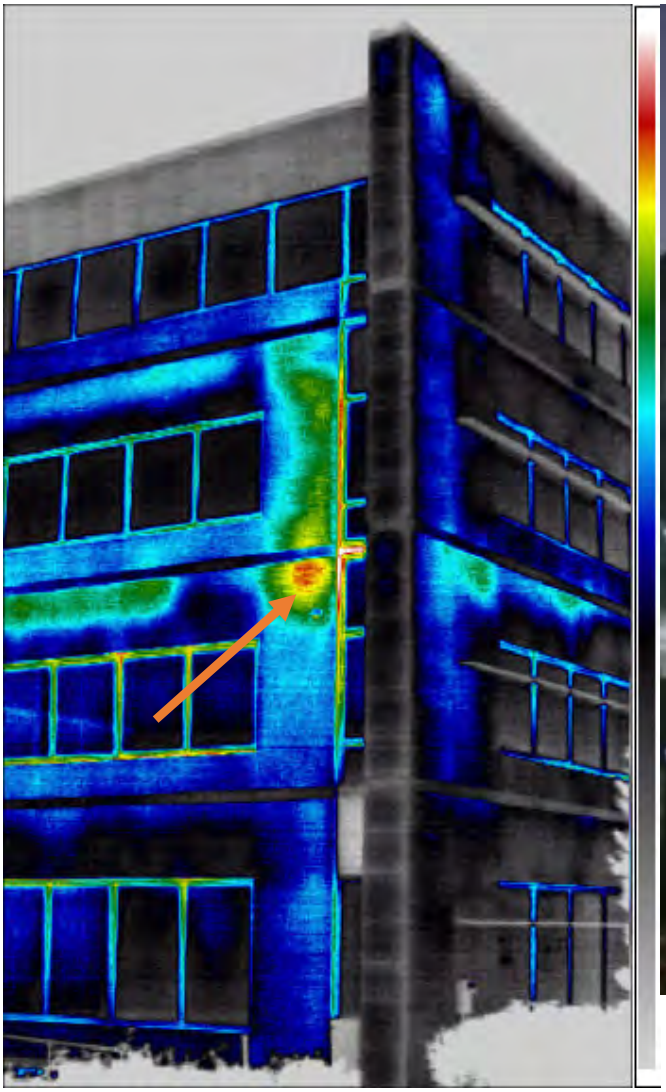
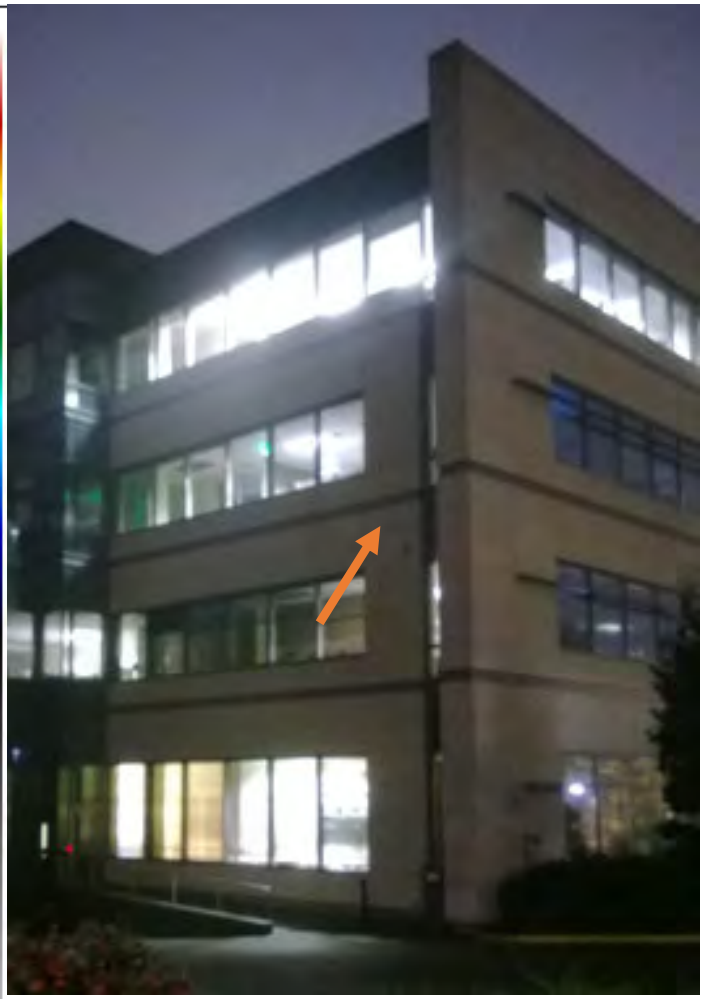
Infrared Services



West side, southwest building exterior.





Thermal bridging at the intersection of the second and third floors and the wing wall.

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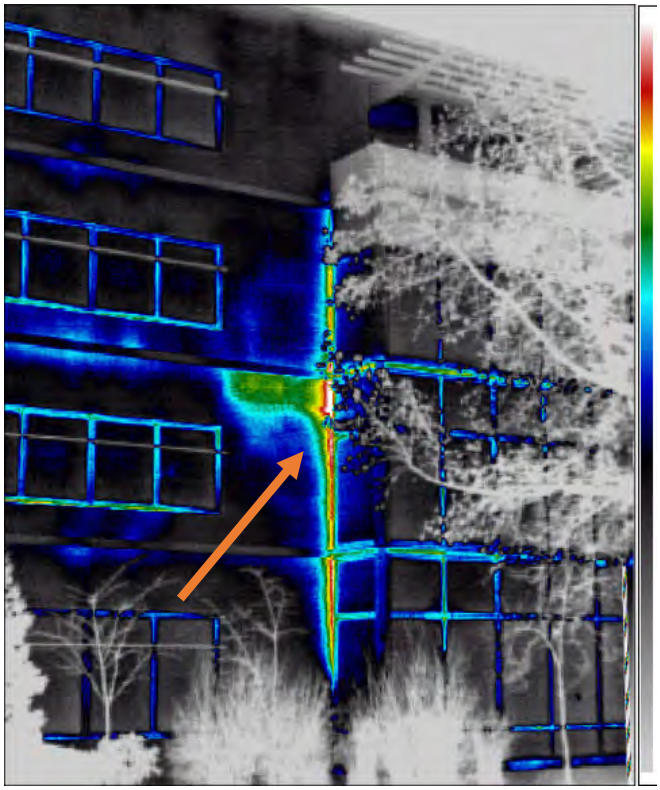
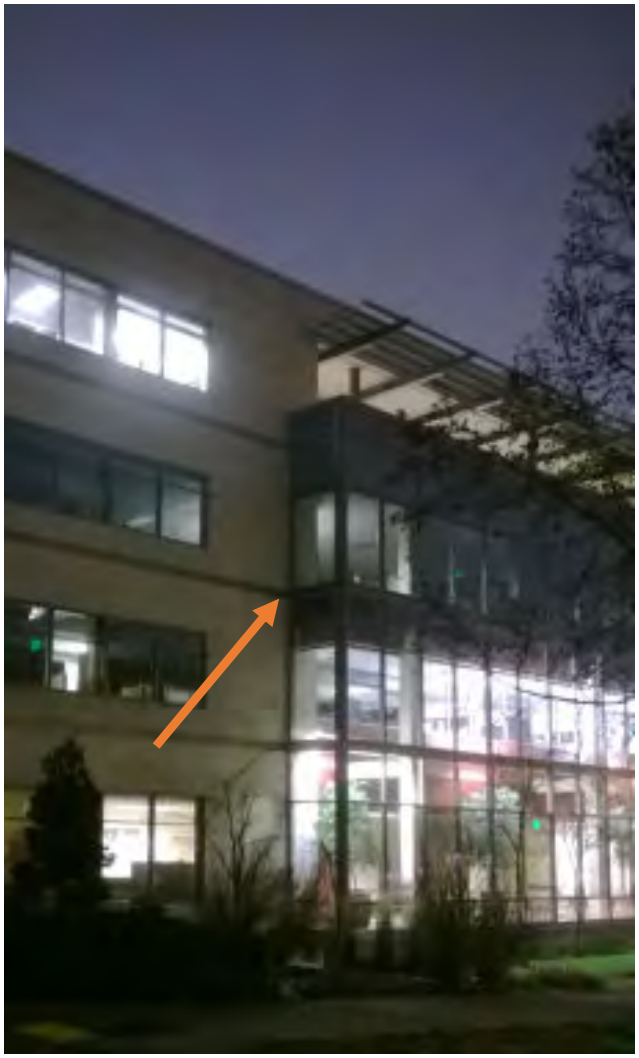
Infrared Services

South side, West wall seam.





Thermal bridging at the intersection of the 2nd and 3rd floor where it meets the glass.

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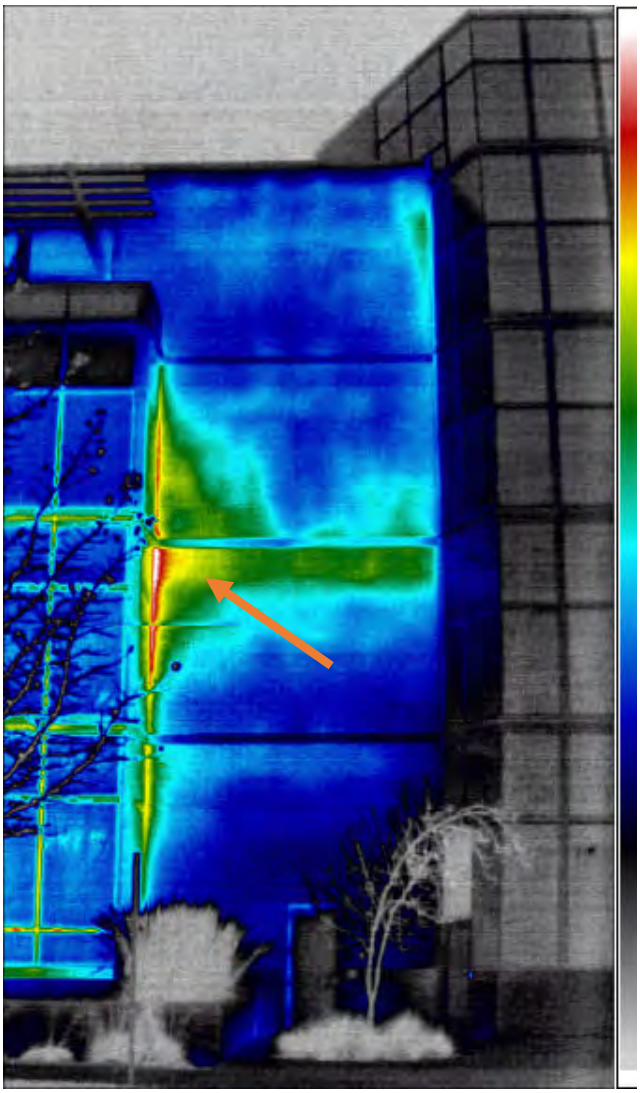
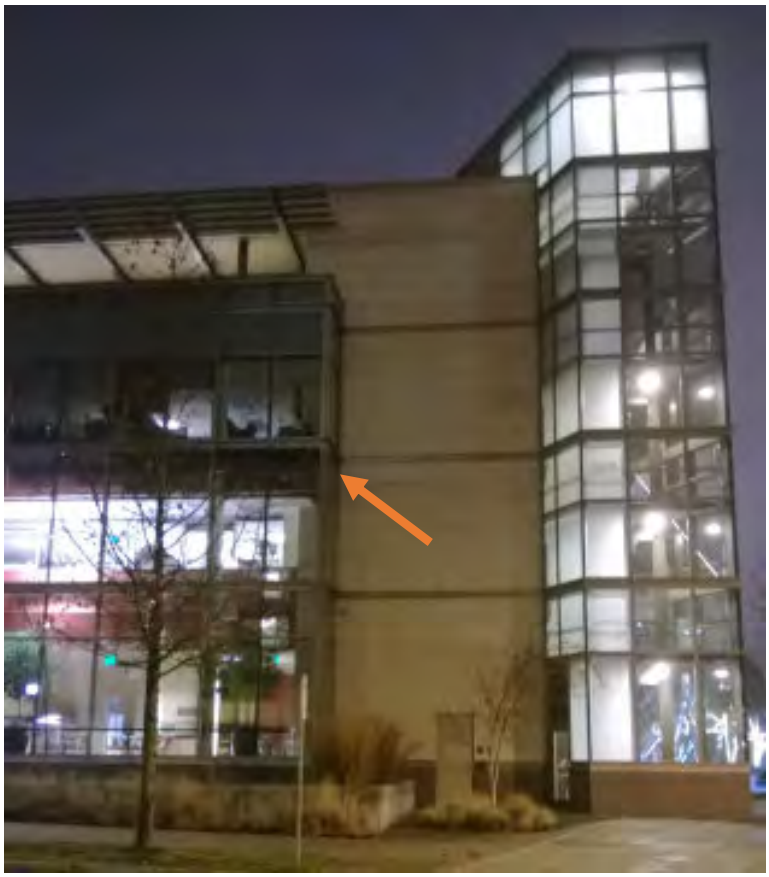
Infrared Services

South side, East wall seam.





Thermal bridging at the intersection of the 2nd and 3rd floor where it meets the glass.

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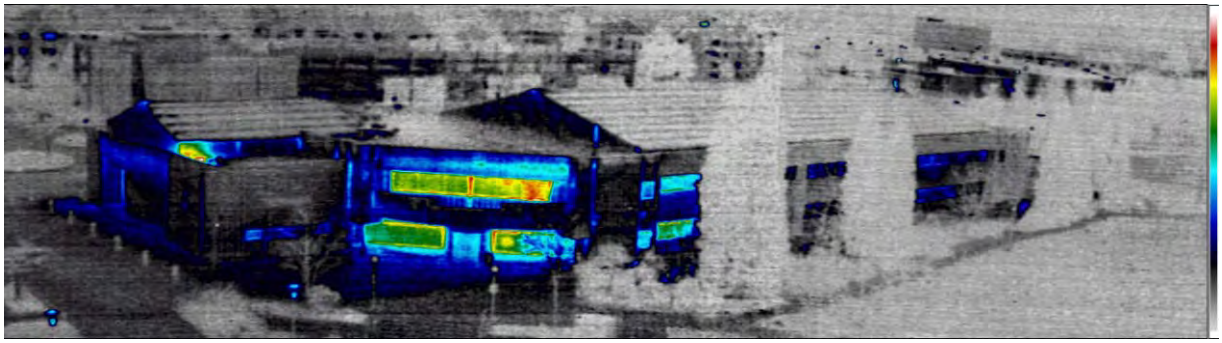
Redmond, City of: Public Safety Building

Infrared Building Envelope Survey

December 16th 2013



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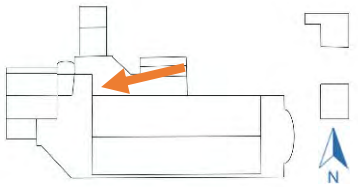
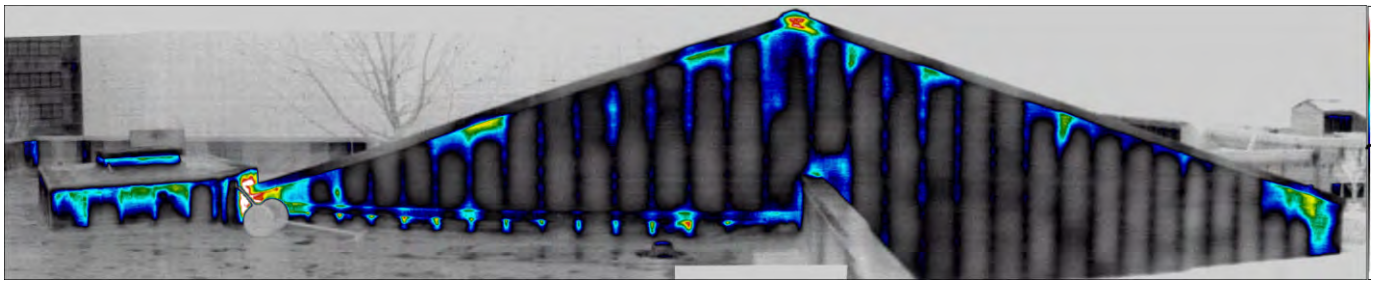
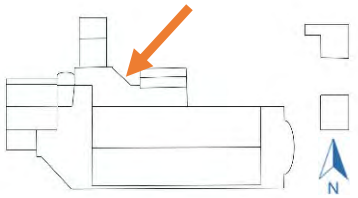


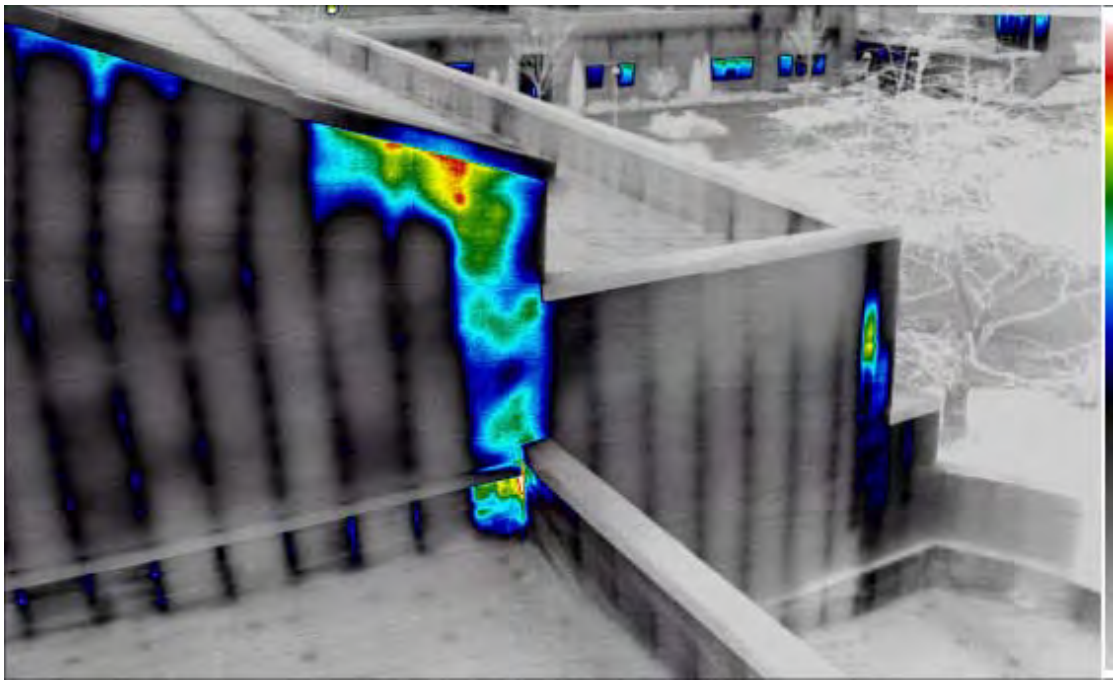
West end over entrance.



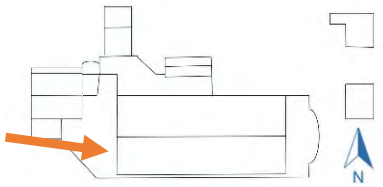
Thermal bridging spanning over various points the metal peaked roof.



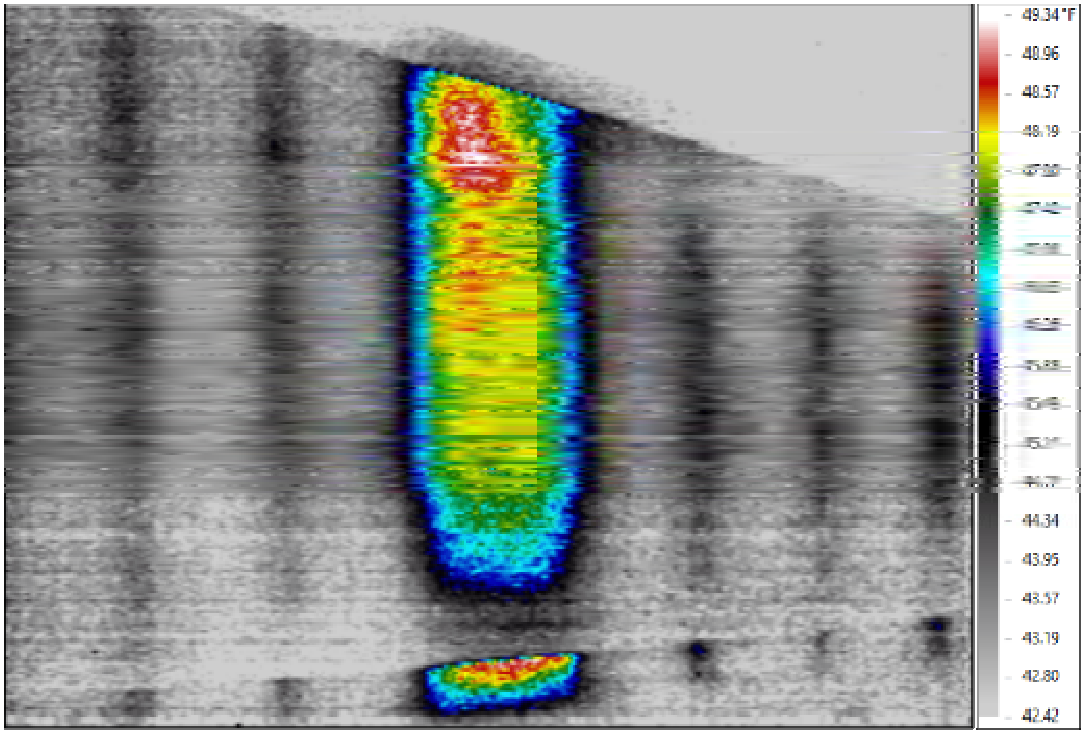
West end over front entrance.



Thermal bridging on the north end, east side of the peaked metal roof section.



West end over front entrance.



Thermal bridging located on the west end of the wall.

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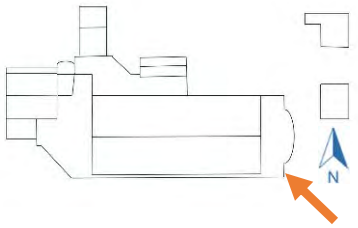
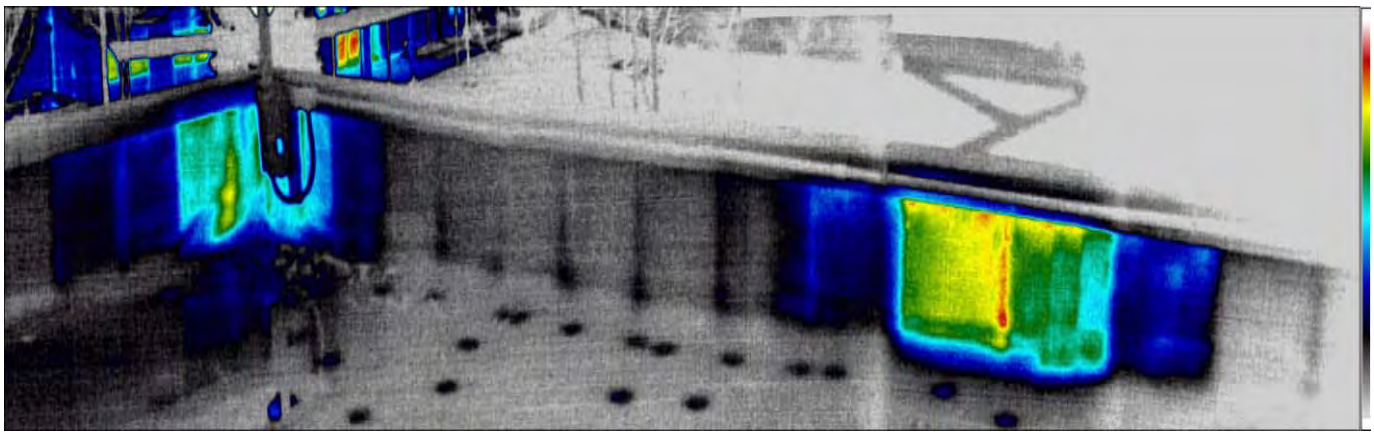


East end of the building rooftop.



Thermal briding found along the southeast corner of the roof parapet.

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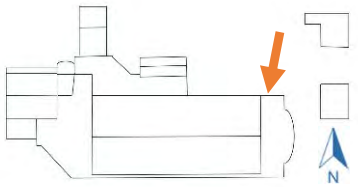
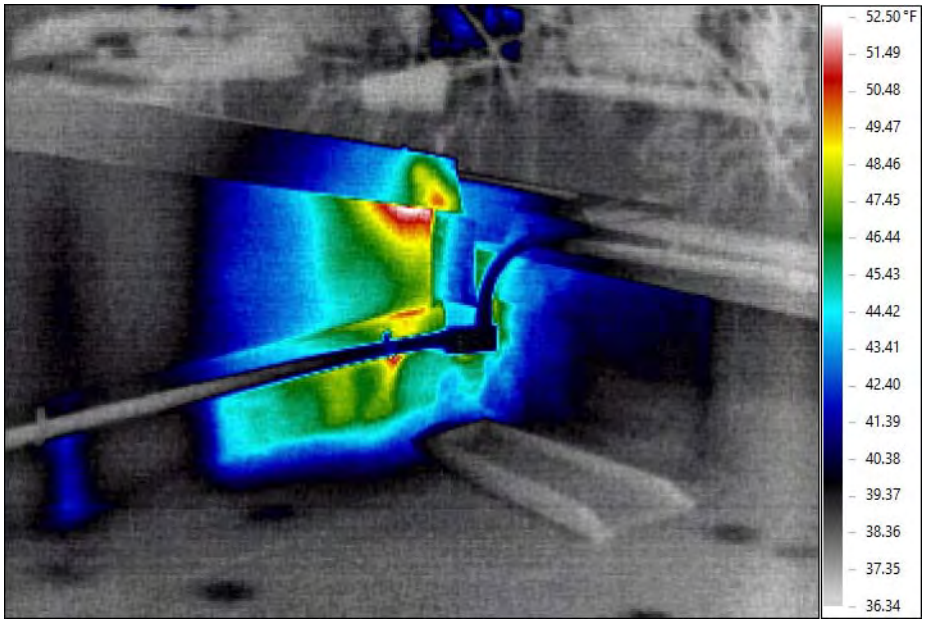


East end of the building rooftop.



Northeast corner of the roof, where the metal roof intersects with the gutter.

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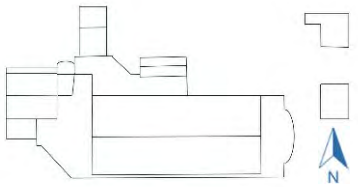
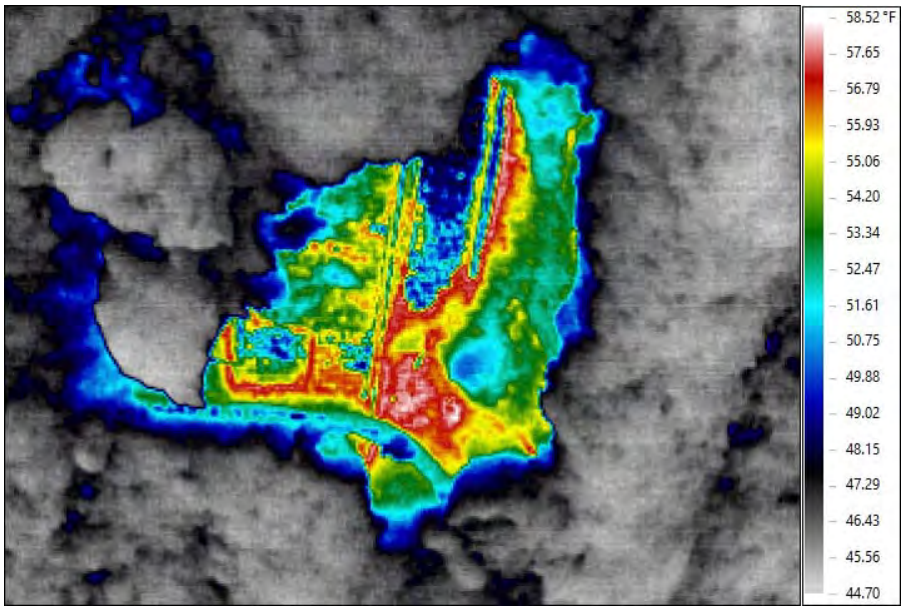


Underground parking garage, the ceiling near the white gate.



Numerous thermal observations in locations where the insulation is missing from the ceiling.

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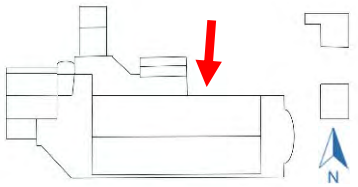

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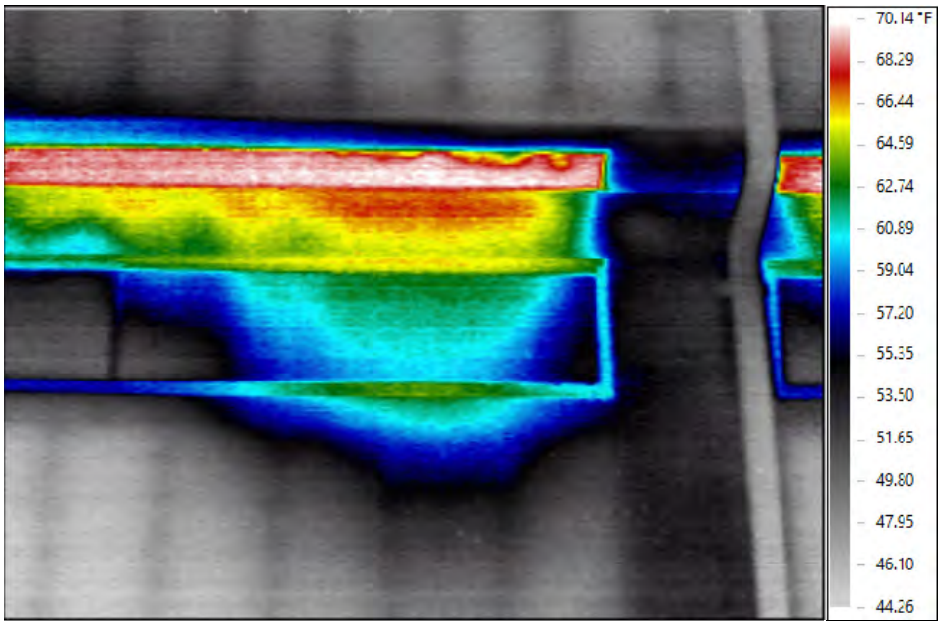
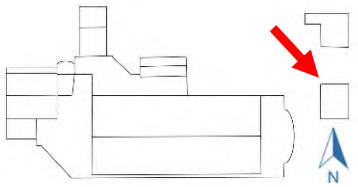
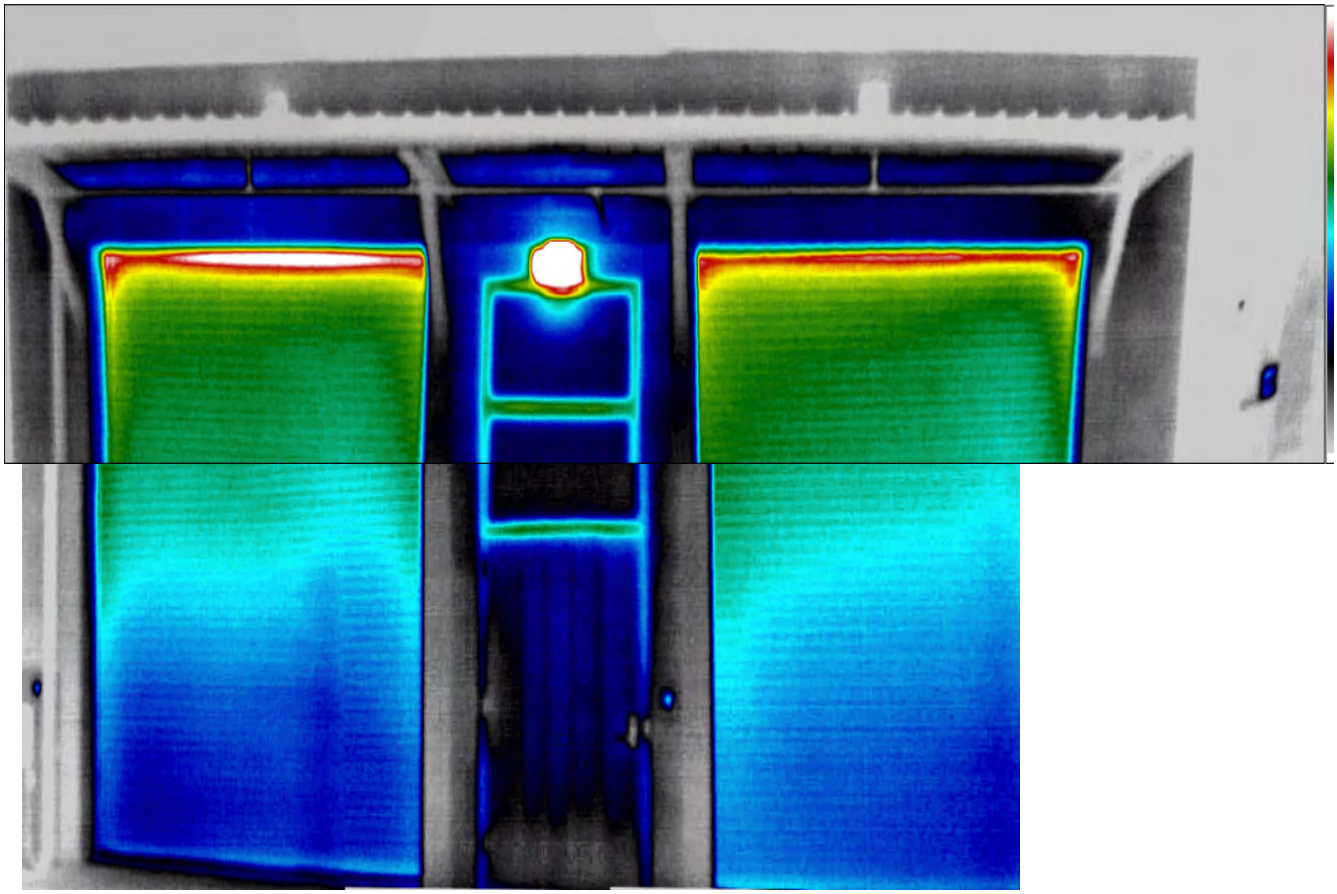
Building exterior on the north wall of the 911 Call Center.



Example of heating coming from beneath the soffit.



Northeast storage building by red gate.



Front entrance and rollup doors profile.

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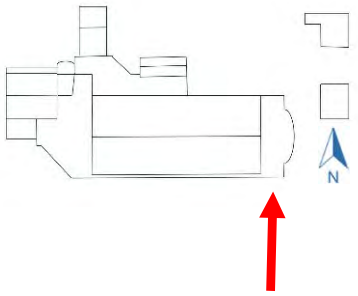
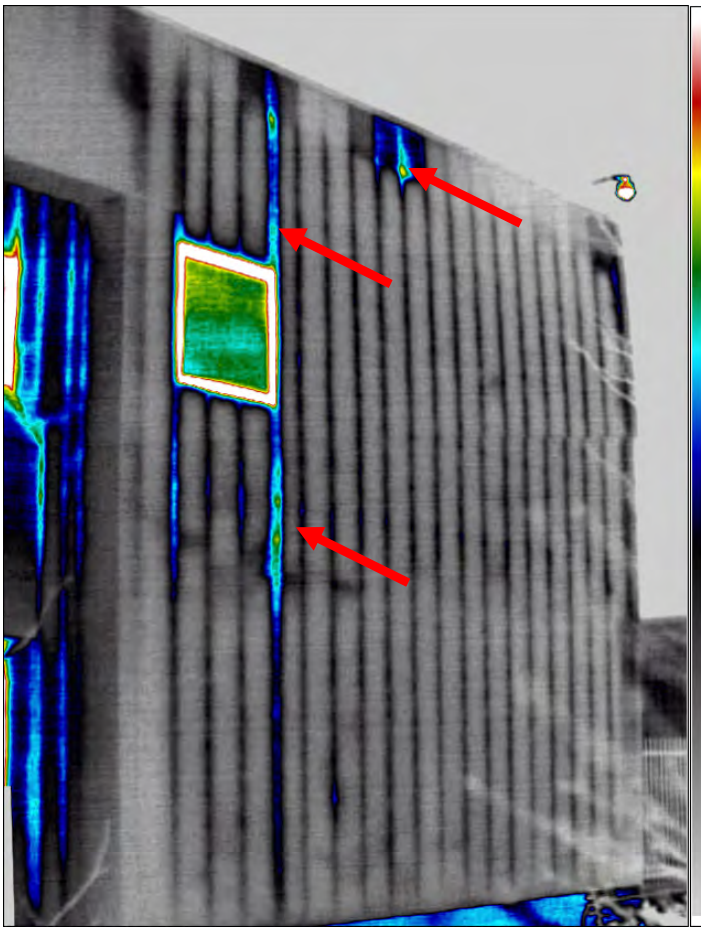


South wall exterior at the Southeast corner.



Thermal bridging above and below the window and along the parapet.

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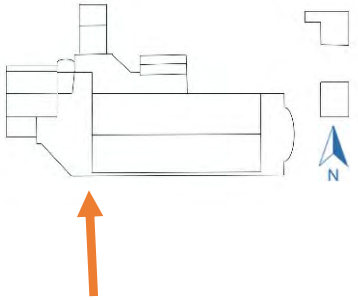
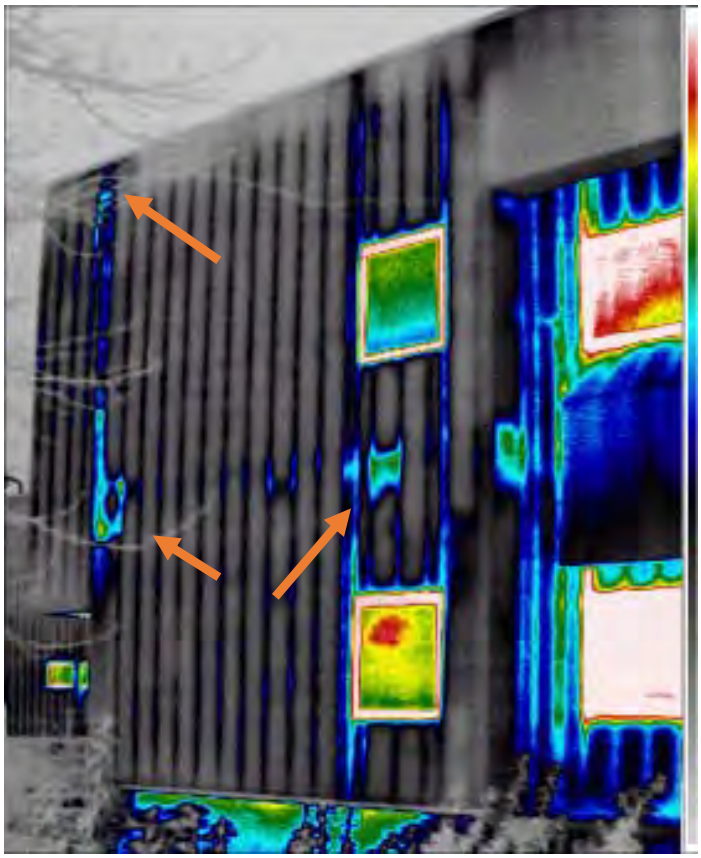


South wall exterior at the Southwest corner.



Thermal bridging above and below the window and along the parapet, and the corner of the building overhang for the entrance.

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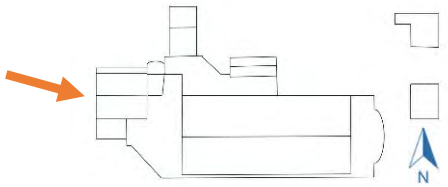
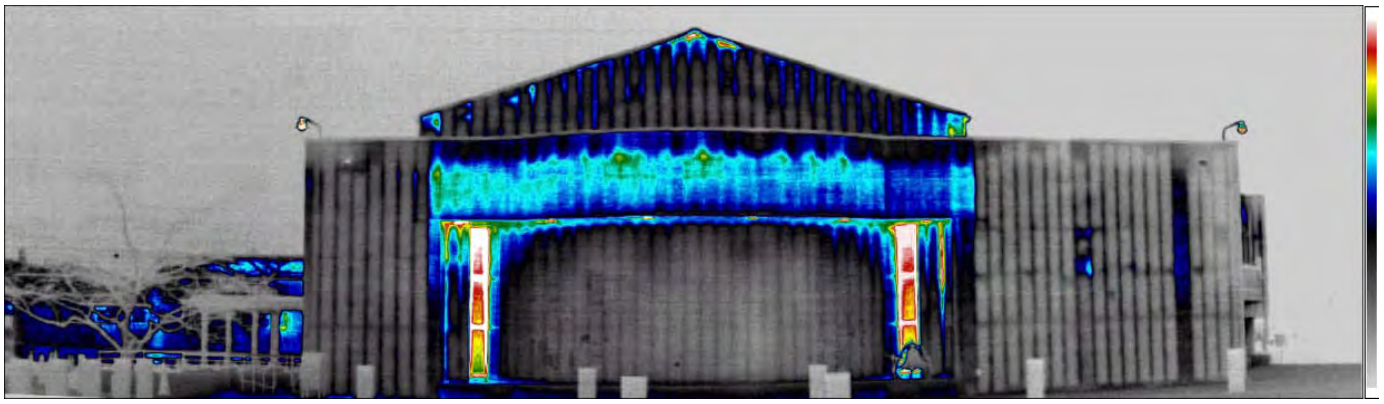


West end exterior of the building.



Thermal bridging in the overhead wall section on the far west side of the building.

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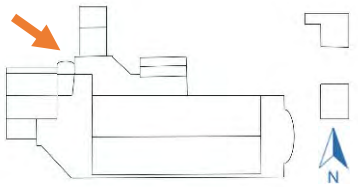
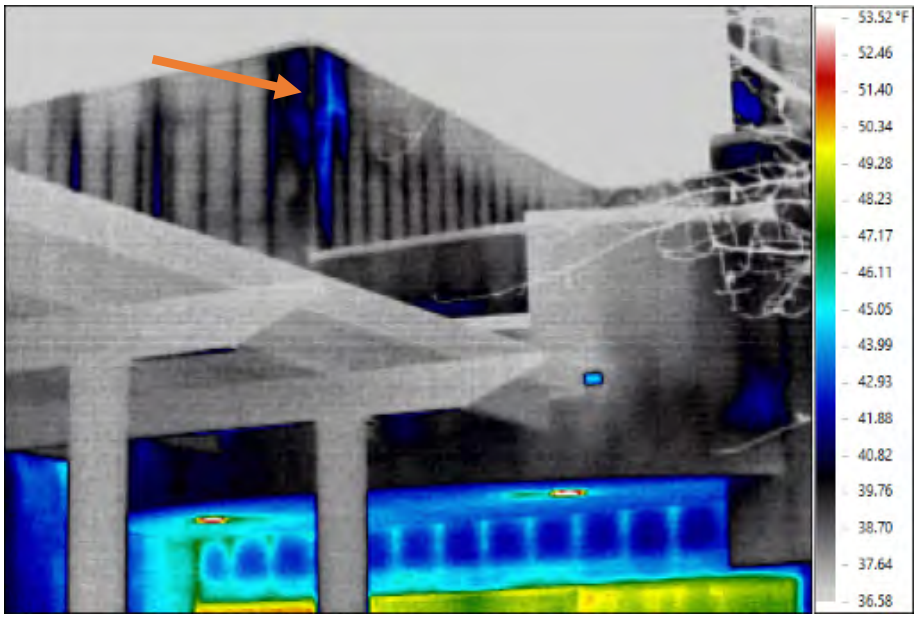


North entrance, building exterior.



Thermal bridging in northwest corner above the north entrance.

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Redmond, City of: Senior Center
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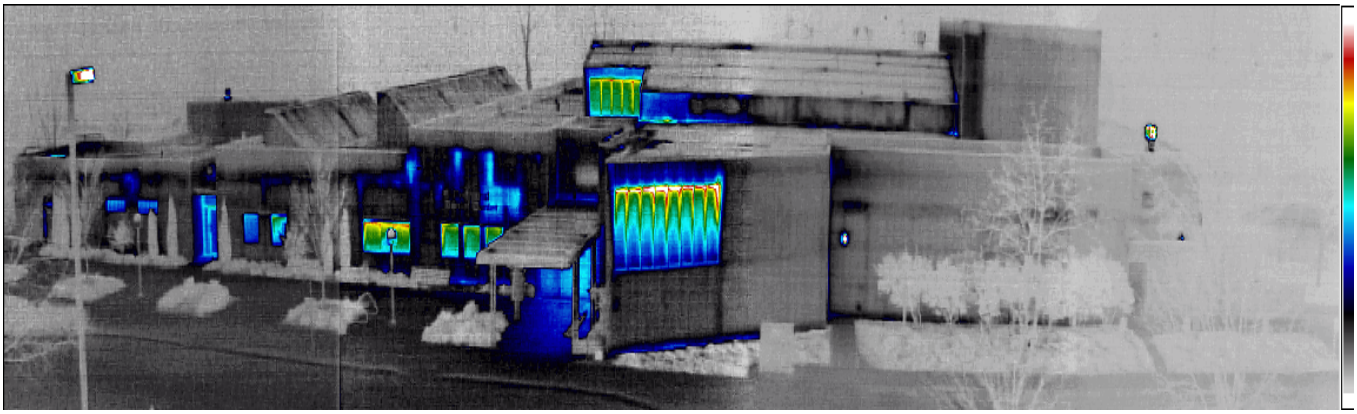

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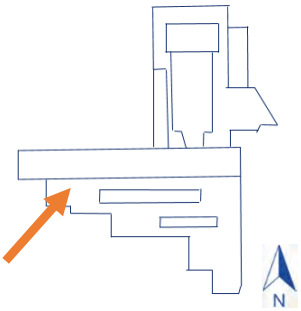
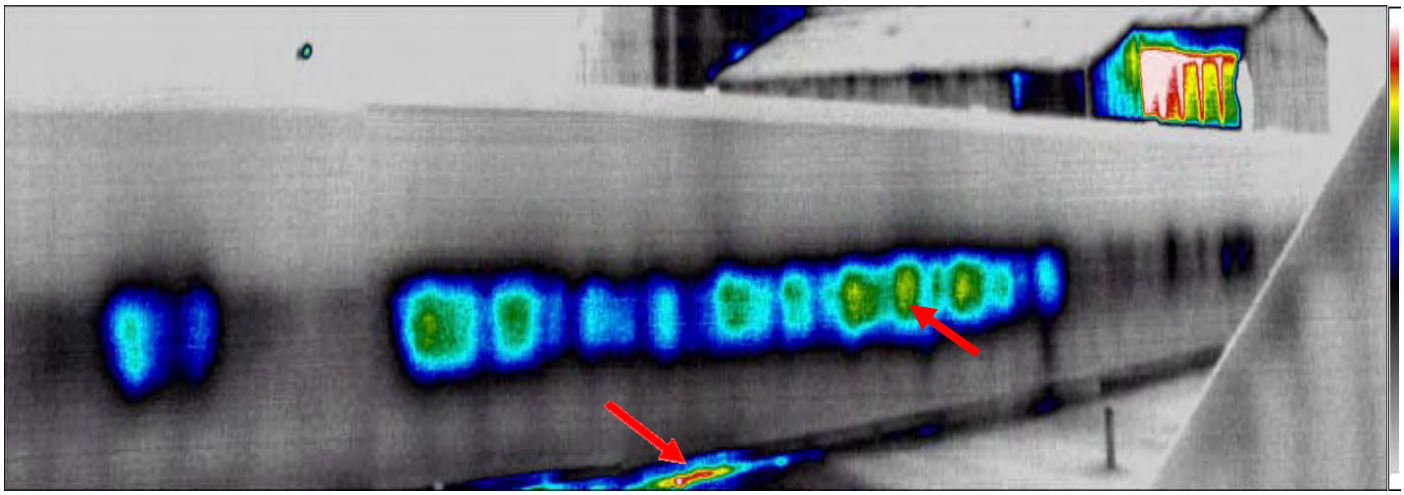


South rooftop, North wall of parapet to roof level.



Thermal bridging along center and base of the upper roof parapet/wall (south facing side).

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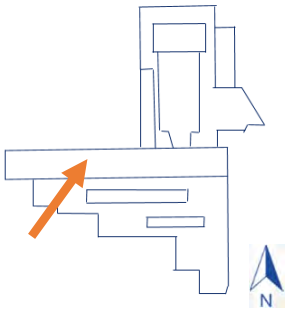
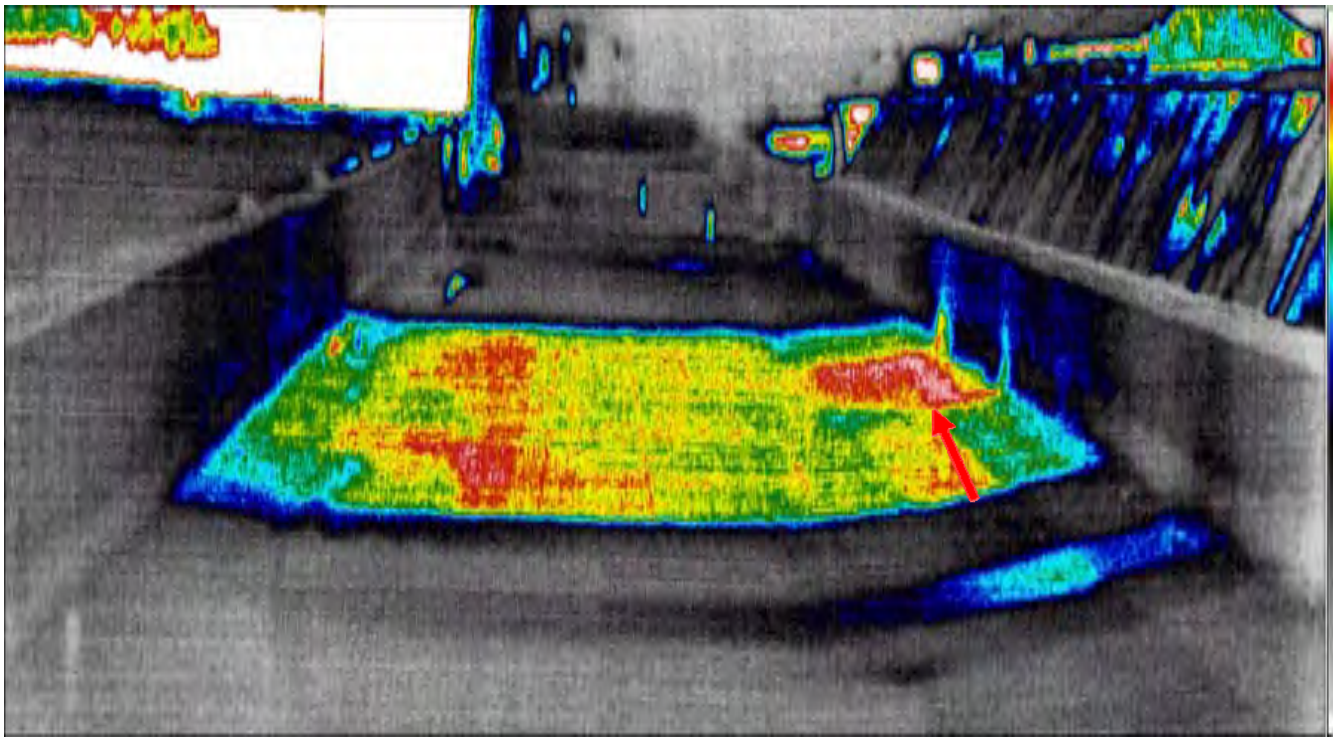
Infrared Services



West side, mid-level rooftop.



Typical thermal signature of wet insulation within the built up roof system. This image is looking east from the edge of the roof.

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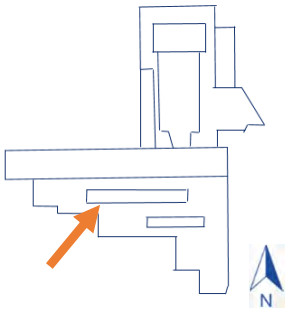
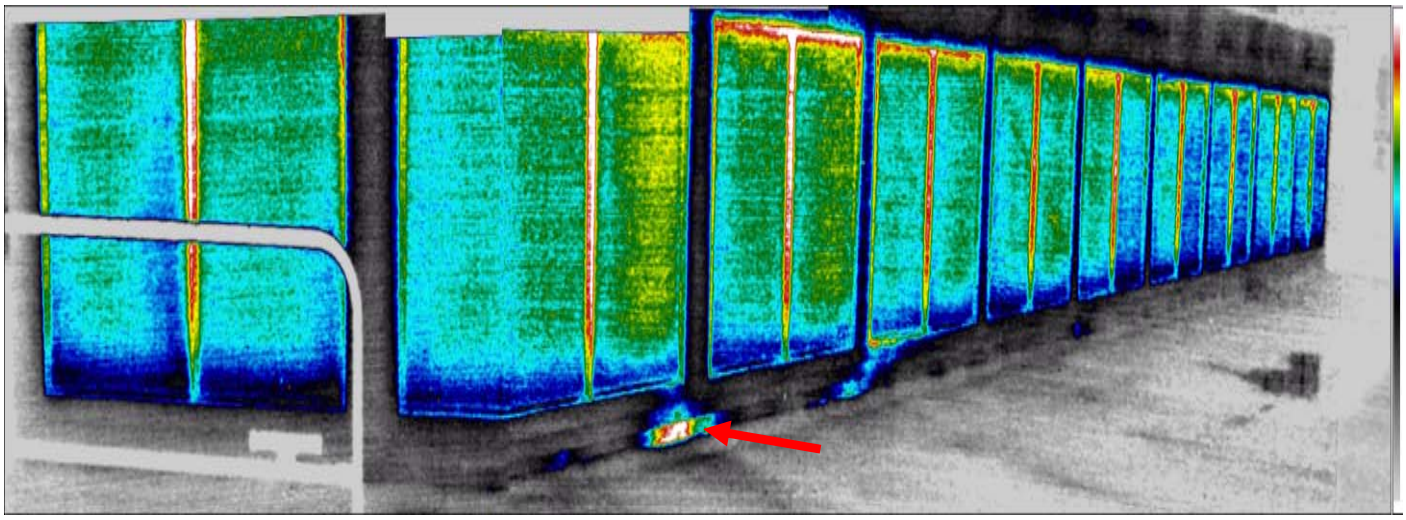


West side, mid-level roof, base of skylight windows.



Heating occasionally along the base of the skylight windows.

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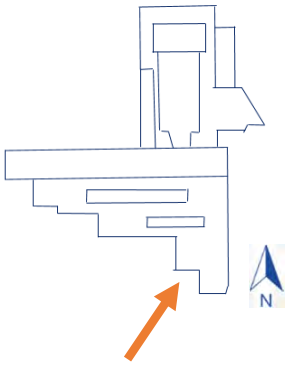
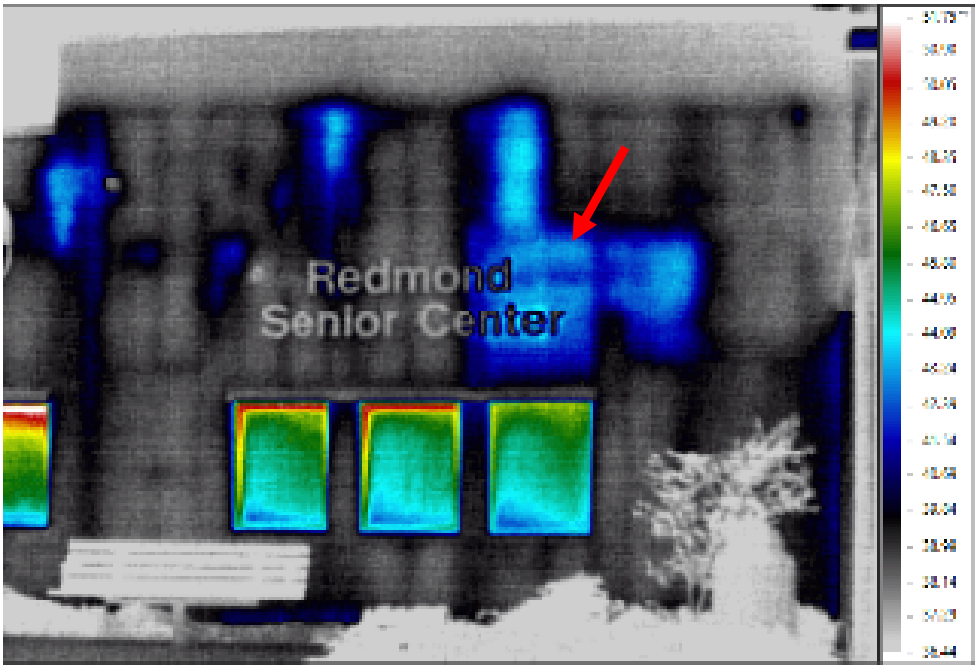


South exterior, front sign.



Thermal bridging through the east wall shows a random pattern above the windows.

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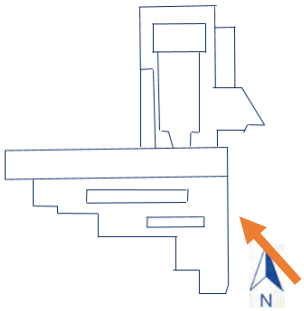
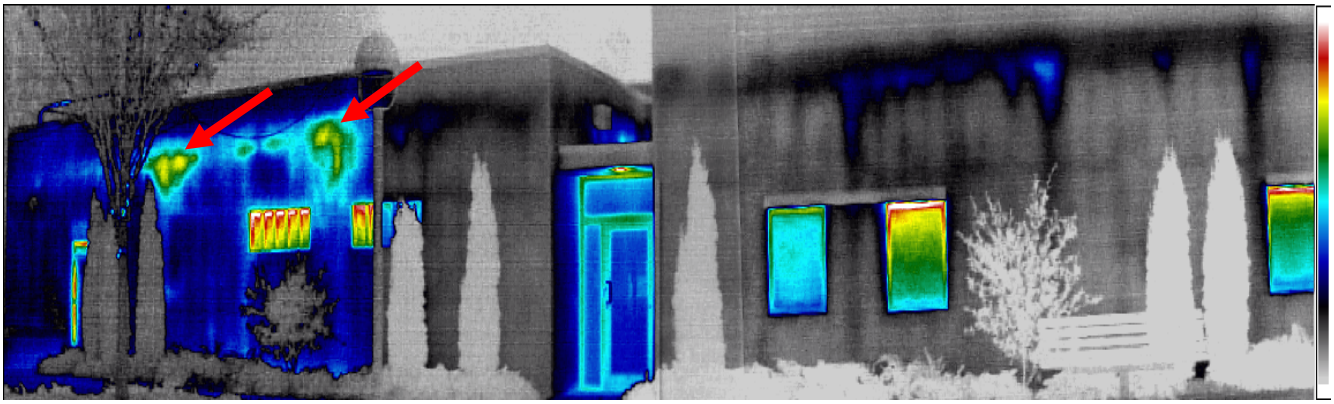
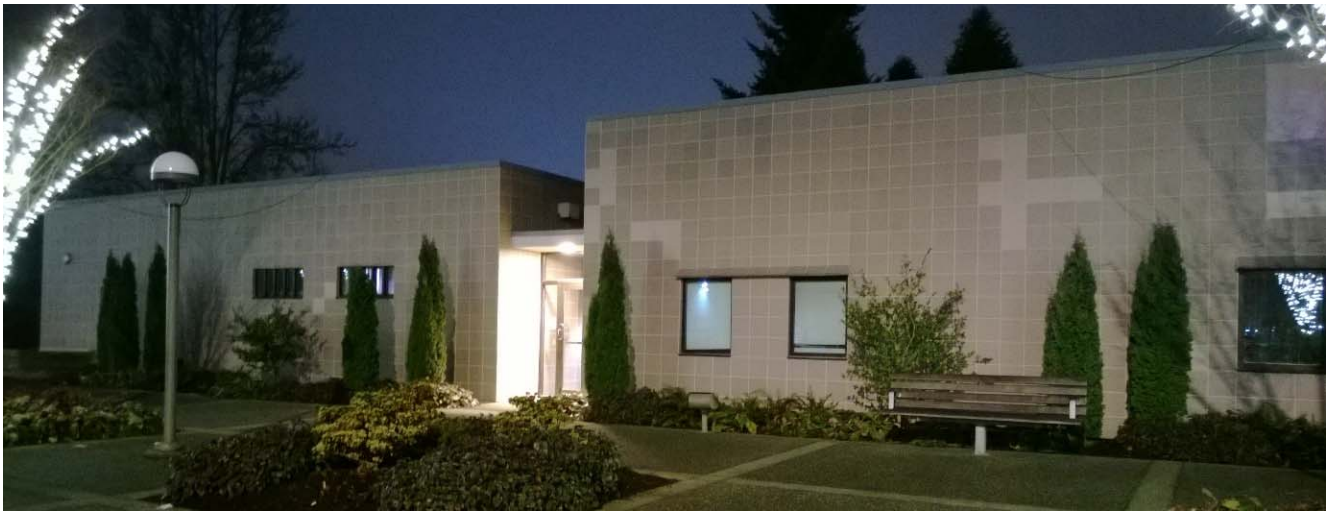


East wall, South end exterior.





Thermal bridging just below the region of the roof line, involving the base of the parapet wall on the reverse side.

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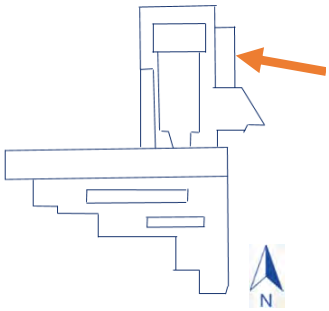
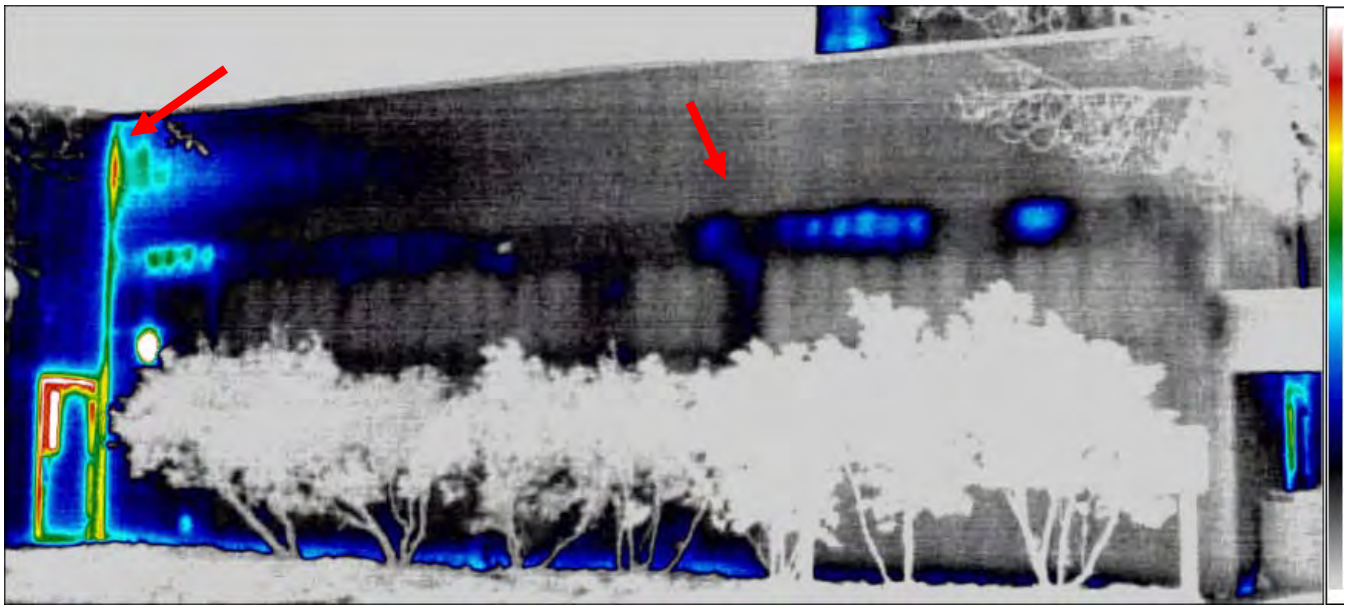
Infrared Services



East wall, North end exterior.



Thermal bridging along the seam of the two walls intersecting above the doorway.

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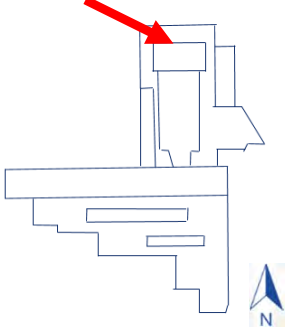
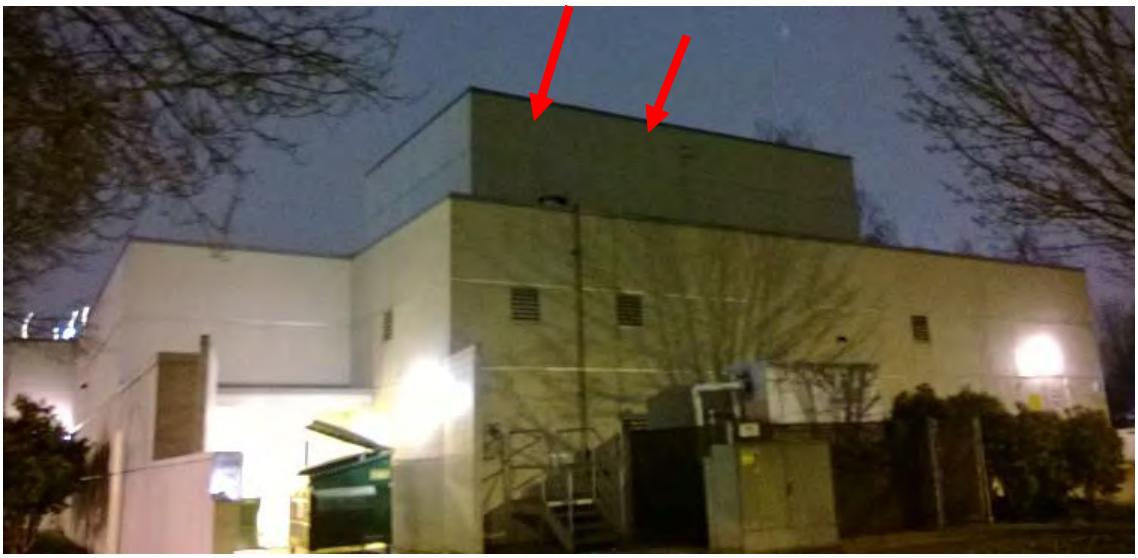
Infrared Services

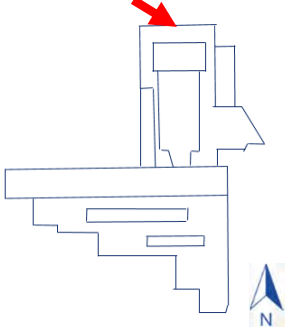


North end, penthouse exterior.

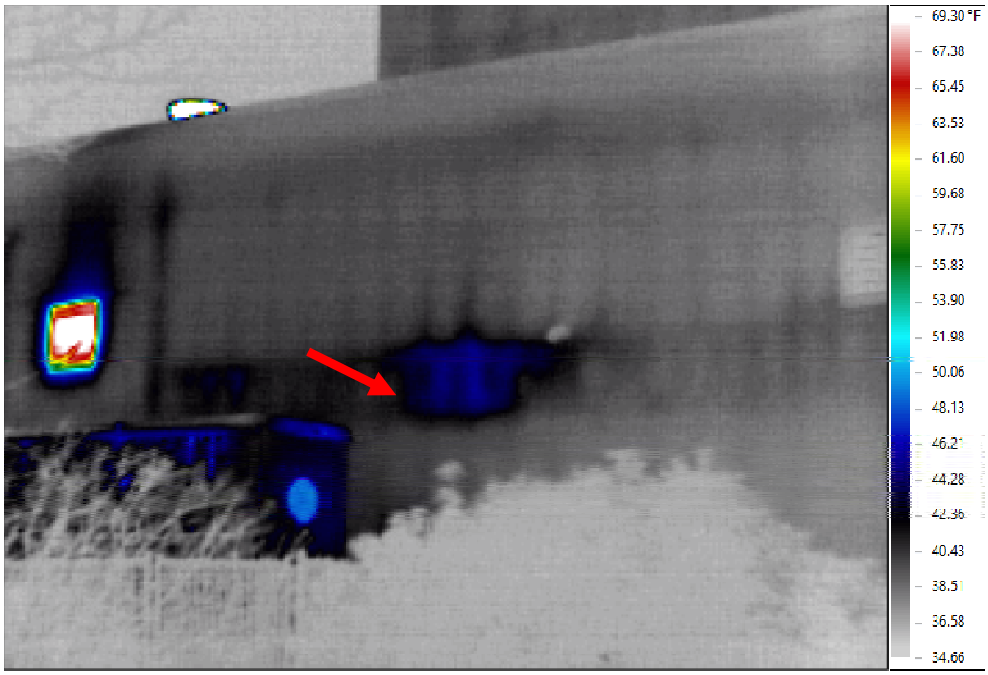


Thermal bridging just below the region of the roof line, involving the base of the parapet wall on the reverse side.

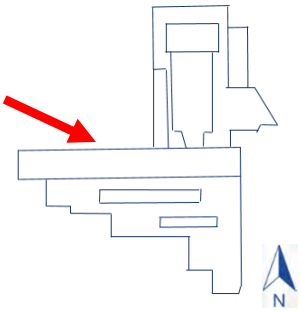
Colbert
Infrared Services



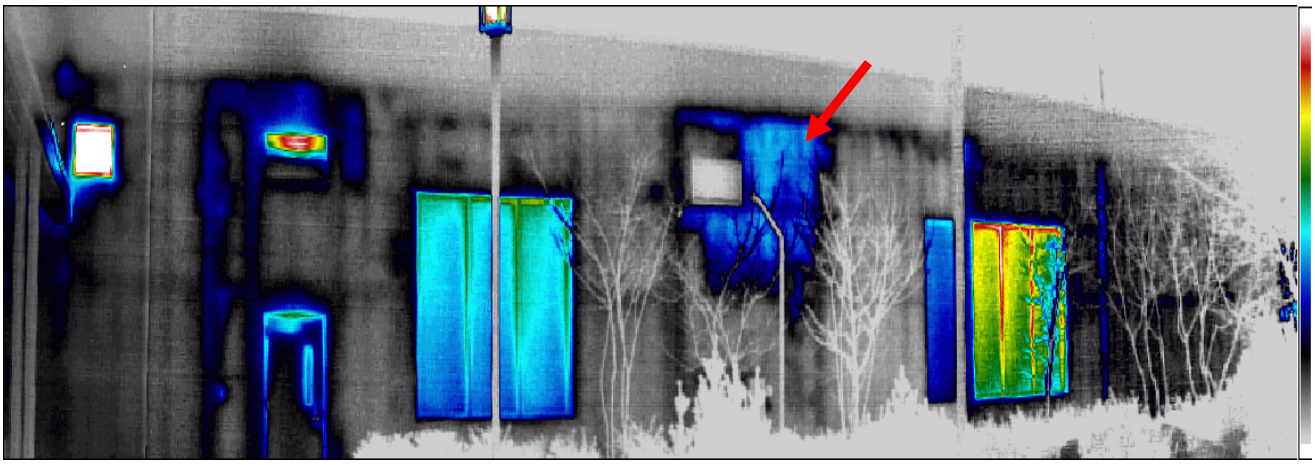
North end, mechanical area exterior.



Thermal bridging through the north wall next to the water tower/evaporator.

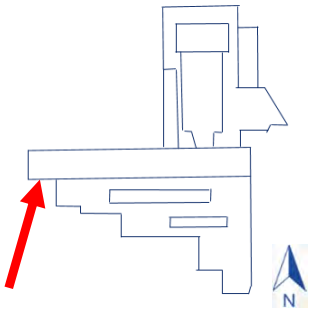


West wall, North face at east end, building exterior.

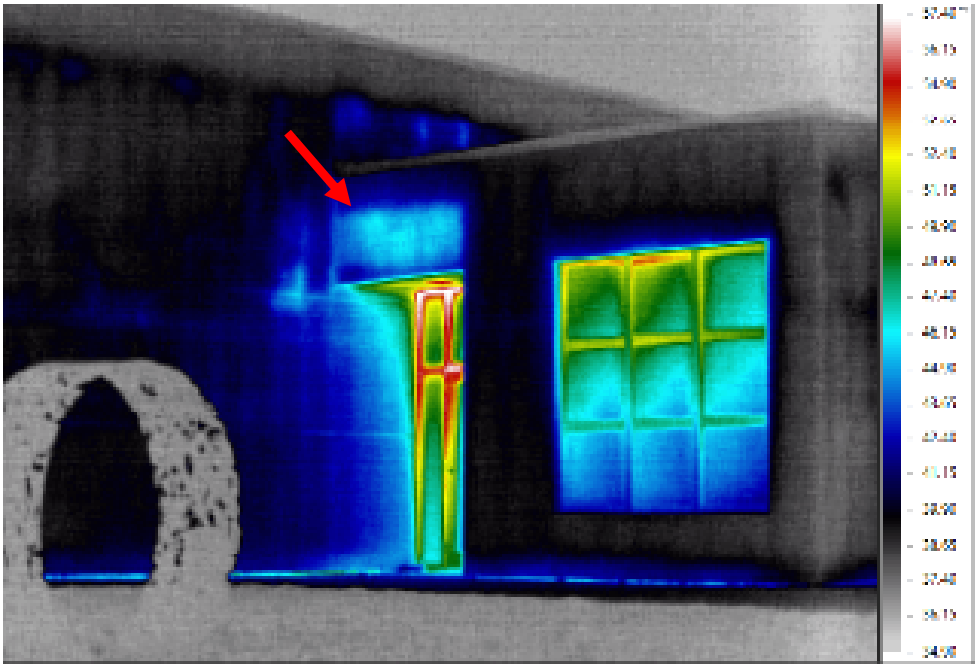


Thermal bridging in the wall section that is below the roof section that is showing wet insulation.

Colbert
Infrared Services



West wing, entrance exterior.



Area above entrance is showing thermal bridging in the entry way and around the door.

City Facilities

City of Redmond, Washington
11/21/2013

1	**Senior Center** 8703 160TH AVE NE	14	**Samm. River Business Park #1** 15503 NE 90TH ST
2	**Municipal Campus Parking Garage** 8711 160TH AVE NE	15	**Samm. River Business Park #2** 15523 NE 90TH ST
3	**Public Safety Building** 8701 160TH AVE NE	16	**Fire Station 17** 16917 NE 116th ST
4	**PSB North Parking Garage**	17	**Redmond Pool** 17535 NE 104TH ST
5	**PSB South Parking Garage**	18	**Fire Station 18** 22710 NE Alder Crest DR
6	**City Hall** 15670 NE 85TH ST	19	**Fire Station 13** 8701 208th AVE NE
7	**Maintenance Operations Center** 18080 NE 76TH ST	20	**Fire Station 14** 5021 264th AVE NE
8	**Trinity Building** 18104 NE 76TH ST	21	**Fire Station 16** 6502 185th AVE NE
9	**Decant Facility Office** 18100 NE 76TH ST	22	**Fire Station Shop** 6502 185th AVE NE
10	**Central Stores Warehouse**	23	**Teen Center** 16510 NE 79TH ST
11	**Streets Dept. Modular**	24	**Community Center** 16600 NE 80TH ST
12	**Park Operations** 18120 NE 76TH ST	25	**Fire Station 11** 8450 161st AVE NE
13	**Fire Station 12** 4211 148th AVE NE	26	**Old Medic One** 8440 161ST AVE NE

Disclaimer: This map is created and maintained by GIS Services Group,Finance and Information Services, City of Redmond, Washington, for reference purposes only.

The City makes no guarantee as to the accuracy of the features shown on this map.

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Last updated by: smyers on 11/21/2013 at 10:10:05 AM

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