

City of Redmond

Facility Condition Assessment



Facility Details Report



Prepared by MENG Analysis - March 6, 2024

Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Size - Gross S.F.	21,271
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



Weighted Avg Condition Score	3.1		Total Project Cost	Total Project Cost Present Value
Facility Condition Index (FCI)	0.19	Observed Deficiencies 2023 - 2028	\$2,246,000	\$2,341,000
Current Replacement Value (CRV)	\$14,741,000	Predicted Renewal Budget 2029 - 2042	\$7,033,000	\$8,183,000
Beginning Budget Year	2023	Opportunities	\$2,574,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

Headquarters fire station in downtown Redmond includes administration, living, apparatus bays, training addition to east with mezzanine, generator yard to southeast, and patio to west. Single-story building with two separate mezzanines. Roofing is at end of life. 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 storefront with hollow metal doors and frames. Steel stairs to mezzanine levels. Wood beam and truss roof structure. 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 quarry tile at kitchen. Most interior doors are wood in hollow metal frames. Various built-in casework, movable storage, and gear storage throughout. Building has a 208V three-phase power system, served by Puget Sound Energy 150-kVA pad-mounted transformer, feeding outdoor automatic transfer switch to the main panel in the building with 600A main breaker. The building also has a 300-kW, 208V, three-phase outdoor diesel generator feeding the emergency side of the outdoor automatic transfer switch, providing backup power to the main panel. Interior lighting is a mix of T8 fluorescent and LED, with all manual control. All branch wiring is in conduits. Devices are 15A and 20A grounding type. The building has a fire alarm system with recently replaced fire alarm control panel. The building has no electronic security alarm system. Telecom and locution tone alarm systems are installed per city standard. HVAC in administration, living, and training are rooftop 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 systems for apparatus bay. Fire sprinkled throughout. The HVAC system, especially the rooftop units, are at end of life and due for renewal. The plumbing waste system is failing, with temporary repair recently completed at significant expense, with a permanent fix needed within five years.

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Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				3.0			
A10 Foundations							
A1010	Standard Foundations	1981	1981	3	TRB	11/21/23	Standard concrete. Some settlement cracks telegraphing to brick on south elevation. Continue to monitor.
A1030	Slab On Grade	1981	1981	3	TRB	11/21/23	Slab on grade. Office and dorm areas appear fine. Excessive cracking at apparatus bay with slab cupping and lifting in some places, Joint patches have been attempted.
B Shell				3.3			
B10 Superstructure							
B1010	Floor Construction	1981	1981	3	TRB	11/21/23	Wood deck on open wood joist and glulam frame structure at both mezzanine and office areas.
B1020	Roof Construction	1981	1981	3	TRB	11/21/23	Wood deck on wood trusses throughout. Assumed minimal rigid insulation above deck that met code minimum in 1981.
B20 Exterior Closure							
B2010	Exterior Walls	1981	1981	3	TRB	11/21/23	Wood framed walls with brick veneer. Based on age, it is assumed that the insulation met the code minimum for the day. Most exterior walls are in good condition, except lintels at exterior window openings and offset walls where thin brick has cracked.
B2020	Exterior Windows	1981	2002	3	TRB	11/21/23	Dual-glazed aluminum windows. No head flashing with drip flashing. No roof overhang. Some moss growing in window sill frames, minor maintenance to clean.

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Facility Components						
Systems						
		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date
						Comments
B Shell		3.3				
B20 Exterior Closure						
B2030	Exterior Doors	1981	2002	3	TRB	11/21/23
Hollow metal frames and steel doors. Some storefront doors at administration. Electronic key pads at most locations. Front entry hardware upgraded with electronic keypad and electric strike access at entry and vestibule doors. Overhead apparatus doors have minor dents and some peeling paint, but functional. One door with two glass units with failed seals.						
B30 Roofing						
B3010	Roof Coverings	1981	1981	5	TRB	11/21/23
Single-ply membrane roofing past expected useful life, snow coat was applied and is now past its end of expected life, recent preventative patchwork just occurred to thwart this winter's weather. No roof maintenance walk pads. No fall restraint system present.						
B3020	Roof Openings	1981	1981	4	TRB	11/21/23
Two roof access hatches. Metal ladders are too short, no safety handle extension at either hatch, and no safety fall protection guard and gates at hatches. Access hatches do not have insulated frames.						
B3030	Projections	1981	2002	3	TRB	11/21/23
Mechanical screen, metal; located on roof. Paint is worn and fading at metal equipment screen.						
C Interiors		2.9				
C10 Interior Construction						
C1010	Partitions	1981	2002	3	TRB	11/21/23
Wood framed interior partition walls; gypsum wall board.						
C1020	Interior Doors	1981	2002	3	TRB	11/21/23
Hollow metal frames, wood doors, some hollow metal doors at painted assemblies. Few doors with relites. Lever-style hardware is worn, but functional.						

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C Interiors			2.9			
C10 Interior Construction						
C1030 Fittings	1981	2002	3	TRB	11/21/23	Counters at several locations including restrooms, kitchen, workspaces, dorm rooms, reception counter, laundry, and radio counter. Stainless steel grab bars at toilet and shower areas, but no vertical grab bar per current ADA Code. See ADA Report for accessible counters and grab bars, etc. Minor maintenance to install 3x3 stainless steel corner guards at each outside wall corner and earthquake straps at tall freestanding shelving units and cabinets.
C20 Staircases						
C2010 Stair Construction	1981	2002	2	TRB	11/21/23	Metal stairs at mezzanine (west). Metal stairs with poured-in-place concrete treads to offices (east).
C30 Interior Finishes						
C3010 Wall Finishes	1981	2002	3	TRB	11/21/23	Paint at most interior walls. Ceramic tile wainscot at restrooms. Some minor areas needing patching and repainting (especially where past wall mounted elements have been removed). Ceramic tile is in good condition.
C3020 Floor Finishes	1981	2002	3	TRB	11/21/23	Dorm rooms and administration spaces are carpet. Weight room is rubber flooring. Wall base throughout. Quarry tile at kitchen and a third of the break room. Ceramic tile at restrooms, locker room, and showers. Carpet is stained, worn, and at end of aesthetic life.
C3030 Ceiling Finishes	1981	2002	3	TRB	11/21/23	Mixture of acoustic tile and gypsum wall board ceilings. Gypsum wall board hard lid in restrooms, dorm rooms, mechanical/electrical, and storage rooms. Acoustic ceiling tile is worn and has minor locations where stained.

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D Services			3.1			
D10 Vertical Transportation						
D1010 Elevators and Lifts	2001	2001	3	DCS	11/21/23	Genesis 750-lb lift serving the east mezzanine, recently repaired with no current issues. No lift to west mezzanine, but this is for storage and utility use only.
D1090 Other Conveying Systems	1981	2000	3	DCS	11/21/23	Hose hoist rack in the combination hose and training tower with no issues reported.
D20 Plumbing						
D2010 Plumbing Fixtures	1981	2000	3	DCS	11/21/23	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.
D2020 Domestic Water Distribution	1981	2001	3	DCS	11/21/23	City water from 1.5-inch service via 1.5-inch and 1-inch pressure-reducing valves with bypass; 90-psig inlet and 90-psig outlet - pressure is too high for some fixtures, causing excessive flushing and spray action, and excessive wear and tear on fixture trim. Minor maintenance to adjust to 60 psig. Copper distribution piping. Three newer gas-fired domestic hot water heaters, one storage tank, and one recirculation pump.
D2030 Sanitary Waste	1981	2020	4	DCS	11/21/23	Cast iron drain, waste, and vent. Floor drains in men's and women's restrooms. Floor drains in some utility areas. Catch basins in apparatus bay draining to an oil/water separator in apparatus bay west. After near complete failure of the waste piping, a \$100K relining project to west was recently completed, but only to extend life five years. Additionally, portions of the piping to east were not able to be relined and could fail at any time.

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Systems							
D Services				3.1			
D20 Plumbing							
D2040	Rain Water Drainage	1981	1981	3	DCS	11/21/23	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. Despite some recent work to improve drainage near several roof drains, there is still significant ponding, especially to east of the admin office area.
D2090	Other Plumbing Systems	1981	2000	3	DCS	11/21/23	Compressed air system in apparatus bay with 3-hp compressor and tank and distribution piping to hose reels. Bunker gear extractor system. SCBA charging station. Oxygen fill station with multiple full-size bottles inside the apparatus bay - confirm below code exempt amounts as minor maintenance. While the site fuel island has been demolished, vent piping remains at the south end of the admin area roof, creating a roof leak pathway, minor maintenance to fully demolish.
D30 HVAC							
D3010	Energy Supply	1981	2000	3	DCS	11/21/23	Natural gas piping to nine rooftop gas-pack units, multiple domestic hot water heaters, four apparatus bay infrared heater burners, and kitchen range. While corroded piping was recently replaced in the apparatus bay, the rooftop piping to the gas-pack units is significantly rusted. Apparent propane tank BBQ at station house patio to west - minor maintenance to install gas connection and place on station alerting system automatic shut-down control.
D3020	Heat Generating Systems	1981	2000	3	DCS	11/21/23	Roberts Gordon overhead low-intensity gas-fired radiant apparatus bay heating system with four burners on one flue exhaust fan with no issues reported - aging but functional with five to ten years remaining life with good maintenance.

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D Services			3.1			
D30 HVAC						
D3030 Cooling Generating Systems	1981	2000	3	DCS	11/21/23	Ventilation cooling only for the main telecom room, with the room noticeably warm, but no issues reported - however this does not meet requirements for modern telecommunications room environmental conditions. Exhaust ventilation cooling only in the apparatus bays.
D3040 HVAC Distribution Systems	1981	2000	3	DCS	11/21/23	Forced-air heating and cooling throughout the station house and office area from rooftop gas-pack units with sheet metal and flexible ductwork to conventional overhead supply air diffusers and return air grilles. Zoning is poor in some areas due to tenant improvements to move walls without reconfiguring zoning. Observed ductwork is dirty, especially return air grilles and ducts. Apparatus bay ventilation is by two roof outside air inlet hoods and one general exhaust fan; apparatus bay ventilation is problematic due to no coordination with the Nederman vehicle engine exhaust system - minor maintenance to coordinate. General exhaust fans serve office and living areas, restrooms, and other miscellaneous areas.
D3050 Terminal and Package Units	1981	2000	4	DCS	11/21/23	Nine Trane office, living, and training area rooftop gas-pack units, ranging from 1.5-ton to 4-ton cooling capacity and 40 to 80 mbh heating. All units are failing and at end-of life. While larger units have economizer (free cooling) air intake hoods, internally there is no economizer mechanism. These hoods provide code minimum ventilation air only, with the exception of the largest unit serving the SW admin office area - current code typically requires full economizer for replacement units.
D3060 Controls and Instrumentation	1981	2023	2	DCS	11/21/23	All new Alerton DDC control system for station house and office areas, but not the apparatus bay which still has standalone controls for the infrared and general exhaust systems. Reportedly, there are apparatus bay pressure control issues due to uncoordinated general and vehicle engine exhaust system operation - minor maintenance to coordinate. Energy use intensity (EUI) is 112, which is 173% of the WA State Clean Buildings target of 65 for fire stations.

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D Services				3.1			
D30	HVAC						
D3090	Other HVAC Systems and Equipment	1981	2000	4	DCS	11/21/23	Nederman vehicle engine exhaust system for four high-bay apparatus bays - each one standalone with separate exhaust fan discharging up through roof. While currently functional, except for need to coordinate controls with general exhaust, this system is increasingly aged and obsolete. Kitchen Type 2 heat and moisture hood over twin gas-fired ranges needing Type 1 grease hood.
D40	Fire Protection						
D4010	Fire Protection Sprinkler Systems	1981	2001	3	DCS	11/21/23	Six-inch fire service to four-inch backflow preventer to three-inch wet-pipe riser and distribution, with four-inch fire department connection; 90-psig city service entry pressure. A separate dry-pipe system is located in the hose and training tower. The wet-pipe system appears to be 2001 and the dry-pipe system is original. 5-year confidence tests are reportedly up to date.
D4020	Stand-Pipe and Hose Systems	1981	1981	3	DCS	11/21/23	Dedicated standpipe system for hose and drill tower with no issues reported.
D4030	Fire Protection Specialties	1981	2000	3	DCS	11/21/23	Fire extinguishers in cabinets and automatic external defibrillators (AEDs) - no issues reported.

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D Services			3.1			
D50 Electrical						
D5010 Electrical Service and Distribution	1981	2000	3	DCS	11/21/23	Original Square D main switchboard in electrical room at SW corner of apparatus bay. The service is 208V, three-phase with certain service entry equipment appearing rated for 1,200A, but the main breaker rated at 600A. At 208V, three-phase, 600A, and 0.85 power factor, this equates to 216 kVA and 184 kW power load. The generator is rated at 300 kW, but the whole-building transfer switch is rated at 600A continuous, suggesting the generator has nearly double the capacity at the transfer switch and building main breaker. The city sustainability plan calls for electric vehicles - see site infrastructure for details, noting site and building power systems should be coordinated as a whole, including the annex building, located on the same site. Smaller distribution panels are a mix of original and 2000 panels with no significant issues reported; noting the original switchboard and panels are aging, with five to ten years life remaining with good maintenance, which should include infrared thermography, phase load balance check, ground test, and lug-nut torque check collectively as minor maintenance.
D5020 Lighting and Branch Wiring	1981	2000	3	DCS	11/21/23	Lighting is a mix of mostly older T8 fluorescent in station house and office areas and newer LED in the apparatus bays, all with manual controls. All branch wiring is in conduits with 15A and 20A devices. Rooftop unit disconnects are aging with surface rust and should be inspected, corrosion protected, or replaced as needed when the rooftop units are replaced. Past reports of kitchen and apparatus bay circuits tripping have been resolved, mostly through simple operational changes.
D5032 Low Voltage Communication	1981	2010	2	DCS	11/21/23	Modern VoIP telephone system. Public address system. Audio/video in open office, meeting, day, and fitness rooms.

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D Services				3.1			
D50 Electrical							
D5037	Low Voltage Fire Alarm	1981	2022	2	DCS	11/21/23	Building has a fire alarm system with control panel in fire alarm and sprinkler room, and a fire alarm annunciator in the hallway outside the day room. The fire alarm control panel circuit board with power supply was replaced in 2022. While the system is currently yellow-tagged for overdue testing, this is minor maintenance to complete. Older oversized carbon monoxide detectors in hallways - minor maintenance to replace with modern compact type.
D5038	Low Voltage Security	1981	2000	3	DCS	11/21/23	Proximity cards and cipher locks; aged but functional.
D5039	Low Voltage Data	1981	2000	3	DCS	11/21/23	High-speed data including WiFi with no issues reported.
D5090	Other Electrical Systems	1981	2001	3	DCS	11/21/23	Mix of older and newer exit signs with few egress lights given entire station has diesel generator power available - minor maintenance to update any aged exit signs and/or add modern battery-backed LED egress pathway fixtures.
E Equipment and Furnishings				2.9			
E10 Equipment							
E1010	Commercial Equipment	1981	2000	3	DCS	11/21/23	Mix of older and new kitchen appliances, laundry machines, and office equipment.
E1020	Institutional Equipment	1981	2000	2	DCS	11/21/23	SCBA charging system, oxygen tank charging system, gym equipment, training fixtures, and other fire department institutional equipment, all with no significant issues reported.
E1030	Vehicular Equipment	1981	2000	3	DCS	11/21/23	Mix of 2000 and newer apparatus vehicle bay garage door openers with no issues reported.

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E Equipment and Furnishings			2.9			
E20 Furnishings						
E2010 Fixed Furnishings	1981	2002	3	TRB	11/21/23	Window treatments (blinds). At least one blackout curtain missing. Casework cabinets.
F Special Construction						
F10 Special Construction						
F1010 Special Structures	1981	1981	3	DCS	11/21/23	Hose and drill tower with metal stairs up and drill doors on each floor with unclear seismic integrity - minor maintenance to assess this specific risk. Mezzanine at west apparatus bay, eliminating the use of this bay for larger fire apparatus.
F1050 Special Controls and Instrumentation	1981	2000	3	DCS	11/21/23	Station locution (tone alarm) system with no issues reported.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Building							Discount Rate 1.5%

A1030	Slab On Grade	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	5,460	\$24.50	SF	\$133,770	\$262,000

Deficient Material: Concrete Slab on Grade
Apparatus bay slab on grade has several wide cracks. Slab on grade has cupping/lifting at center joint. No control joints originally provided.

Remedial Action:
Remove/replace slab on grade with 8-inch-thick concrete slab with concrete joints at 30 feet on center or at each apparatus bay and at drainage wells.

Action Type:
Other



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B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	26	\$930.00	EA	\$24,180	\$47,000

Deficient Material: **Masonry Lintel**
Lintels at exterior window openings and offset walls. Thin brick has cracked.

Remedial Action:
In the short term, caulk cracks to thwart moisture intrusion into window frame and interiors and continue monitoring. Longer term, remove thin brick over lintels and install alternative cladding material (like prefinished metal cladding with drip).

Action Type:
Other



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B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$8,000.00	LS	\$8,000	\$16,000

Deficient Material: Soffits
Plaster soffit at east door at administration area (adjacent to hose tower). Underside finish shows signs of water damage.

Remedial Action:
Repair parapet cap and install counter flashing with robust drip flashing to divert rain water and condensate away from face of wall. Remove affected materials, replace with new plaster, paint to match existing.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

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Facility: Fire Station 11 Building

Escalation 3%
Discount Rate 1.5%

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	17,350	\$9.00	SF	\$156,150	\$306,000

Deficient Material: Membrane Roofing

Single-ply membrane roofing past expected useful life, a life-extending snow coat was applied and now past its end of expected life. Parapet cap and flashings aged and drip water down face of building. No roof maintenance walk pads. No fall restraint system present.

Remedial Action:

Remove existing roofing to deck and any damaged decking materials, remove flashings and parapet coping systems. Install fall restraint system. (See B1020 Roof Construction to increase rigid Insulation value beyond code.) Replace roofing, flashings, counter flashings, and parapet caps with new. Install walk pads to all maintainable equipment, scuppers, and drains.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

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B3020	Roof Openings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2	\$3,000.00	EA	\$6,000	\$12,000

Deficient Material: **Roof Hatch**
Ladder length is short, no safety handle extension at either hatch, and no safety fall protection guard or gate.

Remedial Action:
Extend steel ladder and provide collapsible safety handle extension. Install rooftop fall protection guard and gate around access hatches.

Action Type:
Other



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B3030	Projections	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	3	\$3,500.00	EA	\$10,500	\$21,000

Deficient Material: Mechanical Screen
Metal mechanical screen paint finish is worn and fading.

Remedial Action:
Sand areas, prime, and paint.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Fire Station 11 Site				Discount Rate 1.5%	
Facility: Fire Station 11 Building					

C3020	Floor Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2026	8,600	\$8.00	SF	\$68,800	\$135,000

Deficient Material: Carpet
Broadloom carpeting is worn, dated, and soiled in most areas.

Remedial Action:
Replace carpet with new carpet tile.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

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Facility: Fire Station 11 Building					

D2010	Plumbing Fixtures	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	6	\$2,500.00	EA	\$15,000	\$29,000

Deficient Material: Showers
Aging showers with one recently renewed with one-piece surround.

Remedial Action:
Renew all other showers prior to failure.

Action Type:
Other



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D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	21,271	\$8.00	SF	\$170,168	\$333,000

Deficient Material: Drain, Waste, and Vent

After near complete failure of the waste piping, a \$100K relining project to west was recently completed, but only to extend life five years. Additionally, portions of the piping to east were not able to be relined and could fail at any time.

Remedial Action:

Fully inspect all drain, waste, and vent piping and replace aged piping.

Action Type:

Other



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D2040	Rain Water Drainage	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	4	\$3,100.00	EA	\$12,400	\$24,000

Deficient Material: Roof Drains
Several roof drain bodies missing. Several companion overflow roof drains missing. Some roof drain piping insulation missing. Significant ponding on roof, especially to east of office area to SW.

Remedial Action:
Install approximately four roof drain assemblies including four overflow roof drains, and insulate approximately six 50-foot runs of roof drain piping at each location.

Action Type:
Other



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		Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
D3010 Energy Supply		4	2023	2025	9	\$1,100.00	EA	\$9,900	\$19,000

Deficient Material: Gas Piping
Rooftop gas piping to nine rooftop gas-pack units is rusting and corroding.

Remedial Action:
Replace rooftop gas piping in conjunction with needed gas-pack unit replacement.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

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Facility: Fire Station 11 Building		Discount Rate 1.5%							

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$8,000.00	LS	\$8,000	\$16,000

Deficient Material: Communications Cooling
No dedicated cooling for the main telecom room.

Remedial Action:
Install ductless split cooling for main telecom room, nominally 1.5-ton system.

Action Type:
Other



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Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	15,000	\$2.00	SF	\$30,000	\$59,000

Deficient Material: **Air Flow Balance**
Unclear air flow balance throughout, except apparatus bays.

Remedial Action:
Conduct re-TAB (test, adjust, and balance) throughout, ideally in conjunction with other work such as new rooftop units, duct cleaning, and/or rezoning.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Building

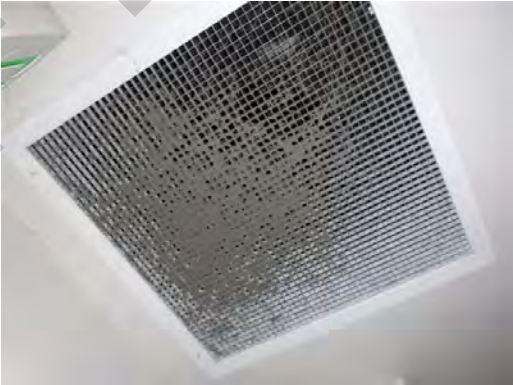
Escalation 3%
Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	15,000	\$1.85	SF	\$27,750	\$54,000

Deficient Material: Ductwork
Dirty HVAC ductwork, especially return air grilles and duct. Dirty, damaged, or missing outside air intake screens at rooftop unit, and dirty rooftop unit mixed-air plenums.

Remedial Action:
Clean ductwork. Clean and repair or replace dirty, damaged, or missing rooftop unit outside air intake screen. Clean rooftop unit mixed-air plenums including cleaning grilles, registers, diffusers, and exhaust fan housings.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	3,000	\$10.00	SF	\$30,000	\$59,000

Deficient Material: HVAC Zoning

Poor zoning in the office area to SW, with multiple occupant complaints and excessive use of portable heaters and fans; appears due to both minimal original system zone and subsequent tenant improvement to move walls without reconfiguring zoning.

Remedial Action:

Re-engineer the office area HVAC system to include at least one all new zone (new rooftop unit) and reconfiguring of distribution ductwork.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 11 Site								Escalation	3%
Facility: Fire Station 11 Building								Discount Rate	1.5%

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	9	\$22,700.00	EA	\$204,300	\$400,000

Deficient Material: Roof Top Units
All rooftop units at end of life, with multiple and increasing failures, and no economizer (free cooling), except for the largest unit.

Remedial Action:
Replace rooftop gas-pack units with new high-efficiency type including full economizer.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Building							Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	18,574	\$1.00	SF	\$18,574	\$36,000

Deficient Material: Energy Efficiency
Energy use intensity (EUI) is 112 which 173% of the WA State Clean Buildings target of 65 for fire stations.

Remedial Action:
Conduct an energy audit to reduce EUI in support of city sustainability programs. Budget for audit and tune-up only; capital improvements depend on energy audit results.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Building							Discount Rate 1.5%

D3090	Other HVAC Systems and Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$19,500.00	LS	\$19,500	\$38,000

Deficient Material: Kitchen Hood
Type 2 heat and moisture only hood at station house kitchen serving two gas-fired ranges.

Remedial Action:
Replace with Type 1 grease hood, including fire suppression and make-up air system.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Building							Discount Rate 1.5%

D3090	Other HVAC Systems and Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	4	\$48,500.00	EA	\$194,000	\$380,000

Deficient Material: **Vehicle Engine Exhaust**
Existing Nederman system is increasingly aged and obsolete, with separate exhaust fans for each served bay, and with electrical disconnect height exceeding code limit.

Remedial Action:
Replace the Nederman vehicle engine exhaust system with a modern type, including a single exhaust fan interlocked with the general ventilation system and with disconnect height per code.

Action Type:
Other



Facility Summary

City of Redmond

Fire Station 11 Site

Fire Station 11 Annex Building

8450 161st Avenue NE
Redmond, WA 98052

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



Weighted Avg Condition Score		Total Project Cost		Total Project Cost Present Value
Facility Condition Index (FCI)	0.21	Observed Deficiencies 2023 - 2028		\$362,000
Current Replacement Value (CRV)	\$632,000	Predicted Renewal Budget 2029 - 2042		\$371,000
Beginning Budget Year	2023	Opportunities		\$168,000
Escalation	3%			\$175,000
Discount Rate	1.5%			N/A

Facility Condition Summary

The main part of the building is a modular on a concrete foundation. The apparatus bay is stick-built on a slab foundation. The building is old and could use maintenance and repair. The building is a worn but solid building whose life can be extended through a small investment and regular maintenance.

Building electrical service is 120/208V, underground power from Puget Sound Energy pad-mounted 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 older and newer fixtures and lamp types. Branch wiring and devices are original. Building has no automatic lighting controls, fire alarm system and monitoring, or battery backup lights for egress.

The building consists of original 1985 modular building set on concrete foundation with crawlspace, 2001 single apparatus bay, small interconnecting hallway between modular and apparatus bay structures, and covered entry. The 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 electric unit heater and one 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 building is now used for Emergency Preparedness and Emergency Medical Services (EMS) storage. The building is commonly called the "Rat Shack" due to a past heavy rat infestation.

Facility Summary

City of Redmond	8450 161st Avenue NE
Fire Station 11 Site	Redmond, WA 98052
Fire Station 11 Annex Building	

Facility Components		Original System Date	Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
A Substructure				3.0			
A10 Foundations							
A1010	Standard Foundations	1985	2001	3	TRB	11/21/23	Concrete foundation under modular. Slab at apparatus bay. Most foundation vents are filled with bark, needing constant removal.
A1030	Slab On Grade	2001	2001	3	TRB	11/21/23	Slab on grade in apparatus bay.
B Shell				3.4			
B10 Superstructure							
B1010	Floor Construction	1985	1985	3	TRB	11/21/23	Wood frame floor over crawlspace, some minor deflection observed. Estimated 2012 vapor barrier and insulation on underside of deck. Past rodent infestation (and human habitation).
B1020	Roof Construction	1985	2001	3	TRB	11/21/23	Wood deck on wood frame on modular. Attic reinsulated in 2021 with batt insulation (est. R-28) with plastic baffles under deck. Recent roof leak has damaged a small area of insulation over the IT equipment.
B20 Exterior Closure							
B2010	Exterior Walls	1985	2001	3	TRB	11/21/23	T1-11 siding needs cleaning, ongoing minor repair, and paint.
B2020	Exterior Windows	1985	1985	3	TRB	11/21/23	Operable slider, double-glazed, black anodized aluminum frames with insect screens.
B2030	Exterior Doors	1985	2001	3	TRB	11/21/23	Hollow metal doors in wood frames. Overhead door in storage supply garage bay.

Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Annex Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Last Date	Score	Surveyor	Survey Date	Comments
Systems							
B Shell				3.4			
B30 Roofing							
B3010	Roof Coverings	1985	2001	5	TRB	11/21/23	Corrugated metal low-slope roofing with exposed fasteners at end of useful life with consistent leaks. No drip edge flashing and moisture damaging wood deck where exposed.
B3030	Projections	1985	2001	4	TRB	11/21/23	Front porch at end of life with rotting plywood, wood roof extension, perimeter low wall, deck, and stair.
C Interiors				3.0			
C10 Interior Construction							
C1010	Partitions	1985	2001	3	TRB	11/21/23	Wood frame with hard board.
C1020	Interior Doors	1985	2001	3	TRB	11/21/23	Hollow core wood doors and wood frames. Lever-style hardware.
C1030	Fittings	1985	2001	3	TRB	11/21/23	Whiteboard.
C20 Staircases							
C2010	Stair Construction	1985	2001	3	TRB	11/21/23	Wood stair at entry and to apparatus bay.
C2020	Stair Finishes	1985	2001	3	TRB	11/21/23	Painted wood steps into garage/storage.
C30 Interior Finishes							
C3010	Wall Finishes	1985	2001	3	TRB	11/21/23	Vinyl-covered wall board.
C3020	Floor Finishes	1985	2001	3	TRB	11/21/23	Carpet and sheet vinyl. Dated, but functional and clean.
C3030	Ceiling Finishes	1985	2001	3	TRB	11/21/23	Suspended acoustical tile and painted gypsum wall board. Replace broken and stained tiles.

Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Annex Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
D Services				3.1			
D20 Plumbing							
D2010	Plumbing Fixtures	1985	1985	4	DCS/JM	11/21/23	One bathroom with water closet, lavatory, and shower. One kitchen sink, one deep sink at apparatus bay, one laundry hookup in apparatus bay. All dated and worn.
D2020	Domestic Water Distribution	1985	2001	3	DCS/JM	11/21/23	City water and copper piping. Electric A.O. Smith domestic hot water heater, 50 gallons, replaced in 2007, but not to code; missing seismic straps, expansion tank, and pipe insulation - minor maintenance to complete installation. Discolored water upon initial operation of apparatus bay sink, but clears quickly - minor maintenance to regularly operate this fixture and/or replace any non-compliant piping serving this specific fixture.
D2030	Sanitary Waste	1985	2001	3	DCS/JM	11/21/23	City sewer; non-metallic ABS drain, waste, and vent piping with tested fixtures flushing and draining well, except the apparatus bay deep sink, which drains slowly - minor maintenance to clean waste piping.
D2040	Rain Water Drainage	1985	2001	4	DCS/JM	11/21/23	Gutter and downspout from metal roof to site storm drain system with plugging and drainage issues related to heavy tree canopy directly above the building. Minor maintenance to trim landscaping (trees) away from building, clean and repair gutters and downspouts, clean and test storm connections, and install gutter guards and/or downspout diverters.
D30 HVAC							
D3010	Energy Supply	1985	2001	3	DCS/JM	11/21/23	Propane tank for standby generator.
D3020	Heat Generating Systems	1985	2018	2	DCS/JM	11/21/23	2018 estimated 5-kW Qmark electric resistance unit heater in apparatus bay.

Facility Summary

City of Redmond	
Fire Station 11 Site	
Fire Station 11 Annex Building	8450 161st Avenue NE Redmond, WA 98052

Facility Components		Original System Date	Renewal Last Date	Score	Surveyor	Survey Date	Comments
Systems							
D Services				3.1			
D30 HVAC							
D3030	Cooling Generating Systems	1985	2005	3	DCS	11/21/23	One split direct expansion (Dx) condensing unit serving inside heat pump furnace, at end of life, with intermittent failure reported. Unclear cooling for communications room, further investigation suggested - minor maintenance to add a 0.5-ton ductless split cooling system if needed.
D3040	HVAC Distribution Systems	1985	2001	4	DCS	11/21/23	Forced-air split direct expansion (Dx) heat pump serving the modular wing to north, with supply air duct in crawlspace, floor diffusers, and one return air grille near inside unit. System is poorly installed with no apparent outside air and little or no return air path from some spaces. Side wall exhaust fan and outside air intake louver intake serving the apparatus bay, with no outside air damper - minor maintenance to install damper and interlock with exhaust fan. Bathrooms have ceiling exhaust fans, one good, one failing - minor maintenance to replace.
D3050	Terminal and Package Units	2001	2005	3	DCS/JM	11/21/23	Heat pump split-Dx furnace with R-22 refrigerant; system is failing and leaking refrigerant.
D3060	Controls and Instrumentation	1985	2001	3	DCS/JM	11/21/23	Programmable thermostat for heat pump system. Newer manual thermostat for newer apparatus bay unit heater. Heat pump thermostat is ok, but would be better located near return air grille - minor maintenance to relocate and replace heat pump thermostat when the heat pump is replaced. Energy use intensity (EUI) is 33, which is 51% of the WA State Clean Buildings target of 65 for fire stations. This low EUI is expected as the Annex is no longer occupied full time. If full-time use were to resume, energy performance should be checked and action taken as needed if EUI increases over the target.
D40 Fire Protection							
D4030	Fire Protection Specialties	1985	2001	3	DCS	11/21/23	Fire extinguishers on hooks.

Facility Summary

City of Redmond

Fire Station 11 Site

Fire Station 11 Annex Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				3.1			
D50 Electrical							
D5010	Electrical Service and Distribution	1985	1985	3	DCS/JM	11/21/23	Westinghouse 120/240V, single-phase distribution panel inside with 200A capacity and all spaces taken, with many twinned. Some panel wiring to breakers is irregular - minor maintenance to reconfigure. A standby generator panel is located outside, appearing to primarily serve the apparatus bay, now used for storage - minor maintenance to reconfigure the standby panel to be more functional for current facility use.
D5020	Lighting and Branch Wiring	1985	1985	3	DCS/JM	11/21/23	Mostly T8 fluorescent fixtures with manual control; other miscellaneous fixtures and lamps. Original residential-grade wiring at modular and commercial in conduit at apparatus bay.
D5032	Low Voltage Communication	1985	2001	3	DCS/JM	11/21/23	Telephone and miscellaneous communications with no issues reported.
D5037	Low Voltage Fire Alarm	1985	2001	4	DCS/JM	11/21/23	Battery-operated smoke detectors, but no fire alarm system.
D5039	Low Voltage Data	1985	2001	3	DCS/JM	11/21/23	Building has voice/data Cat-5 wiring system, including newer WiFi wireless access point.
D5090	Other Electrical Systems	1985	2001	3	DCS/JM	11/21/23	Building power is backed up by an outdoor propane generator located at the back of the building, supplying power to lighting circuits and apparatus bay. The generator is 8-kW Generac with transfer switch supplying a dedicated standby powered circuit panel; both the transfer switch and panel are located on the exterior, with no issues reported.
E Equipment and Furnishings				4.0			
E10 Equipment							
E1010	Commercial Equipment	1985	2001	3	DCS/JM	11/21/23	Residential washer, dryer, and kitchen appliances with no issues reported.

Facility Summary

City of Redmond
Fire Station 11 Site
Fire Station 11 Annex Building

8450 161st Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
E Equipment and Furnishings				4.0			
E10 Equipment							
E1020	Institutional Equipment	1985	2001	4	DCS/JM	11/21/23	Flammable liquid storage cabinet in apparatus bay, but not vented to outside - minor maintenance to vent.
E1030	Vehicular Equipment	1985	2001	3	DCS/JM	11/21/23	Motorized garage door opener with no issues reported. The original vehicle engine exhaust system appears to have been removed, but reportedly no longer any need.
E20 Furnishings							
E2010	Fixed Furnishings	1985	2001	4	TRB	11/21/23	Built-in kitchen cabinets are dated and worn.
F Special Construction				4.0			
F10 Special Construction							
F1050	Special Controls and Instrumentation	1985	2001	4	DCS/JM	11/21/23	Signs of abandoned locution (tone alarm) system, but reportedly no longer needed - minor maintenance to fully demolish.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Annex Building

Escalation 3%
Discount Rate 1.5%

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2,300	\$39.00	SF	\$89,700	\$176,000

Deficient Material: Metal Roof
Roof at end of life and leaking.

Remedial Action:
Remove roofing, repair water-damaged deck where occurs, install ice and water shield and synthetic under roofing, and install new low-slope rated metal roofing with proper flashings and new gutters and downspouts.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Annex Building

Escalation 3%
Discount Rate 1.5%

B3030	Projections	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	1	\$10,000.00	LS	\$10,000	\$20,000

Deficient Material: Covered Walk
Front porch at end of life with rotting plywood, wood roof extension, perimeter low wall, deck, and stair.

Remedial Action:
Demo and rebuild porch, deck, and stair.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Annex Building

Escalation 3%
Discount Rate 1.5%

D2010	Plumbing Fixtures	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	6	\$3,500.00	EA	\$21,000	\$41,000

Deficient Material: Plumbing Fixtures
Water closet, lavatory, shower, sink, deep sink, and wall box are all aged, some minor damage; approaching end of life.

Remedial Action:
Replace plumbing fixtures.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Annex Building

Escalation 3%
Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$7,000.00	EA	\$7,000	\$14,000

Deficient Material: Communications Room Cooling
Heat pump condensing unit at end of life with intermittent failure reported.

Remedial Action:
Replace upon complete failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Annex Building

Escalation 3%
Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1,350	\$8.50	SF	\$11,475	\$22,000

Deficient Material: Heat Pump System
Modular wing heat pump system does not meet code with no outside air, restricted return air path, blocked diffusers, and other issues.

Remedial Action:
Renew modular HVAC system to meet current code.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Annex Building

Escalation 3%
Discount Rate 1.5%

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$9,500.00	LS	\$9,500	\$19,000

Deficient Material: Apparatus Bay HVAC
Aging heat pump furnace with increasingly obsolete R-22 refrigerant; system is leaking.

Remedial Action:
Replace prior to complete failure in conjunction with replacement of outside condensing unit and upgrade to high-efficiency modern refrigerant (R-410A) working fluid.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Annex Building

Escalation 3%
Discount Rate 1.5%

D4010	Fire Protection Sprinkler Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1,916	\$8.00	SF	\$15,328	\$30,000

Deficient Material: Fire Sprinkler System
No fire sprinkler installed.

Remedial Action:
Install fire sprinkler system.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Annex Building							Discount Rate 1.5%

		Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
D5037 Low Voltage Fire Alarm		4	2023	2024	1,916	\$4.40	SF	\$8,430	\$17,000

Deficient Material: Fire Alarm
No fire alarm system.

Remedial Action:
Install fire alarm system.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Annex Building

Escalation 3%
Discount Rate 1.5%

E2010	Fixed Furnishings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	20	\$575.00	LF	\$11,500	\$23,000

Deficient Material: Kitchen Cabinets
Worn and dated wood cabinets and plastic laminate countertop.

Remedial Action:
Replace kitchen casework and include ADA compliance.

Action Type:
Other



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 annex building are on a rectangular lot. There is a concrete drive apron for the four vehicle bays off of NE 85th Street. There are asphalt parking lots on the west and east sides of the fire station building, with two access drives from 161st Avenue NE. At the southeast corner of the site is the annex building. The original fuel island to south has been demolished. The site has mature trees throughout and is served by City of Redmond utilities including water, sewer, and storm; both power and natural gas are from Puget Sound Energy, with telecom by local purveyors. At the northwest corner of the site is a plaza with a memorial bench and sculpture. Site storm water drainage is a significant issue and overdue for renewal.

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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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework							
G20 Site Improvements							
G2010	Roadways	1981	1981	4	TRB	11/21/23	Access roads include the asphalt lane on the south side of the site between 161st Avenue NE and the Annex. Concrete apron at the front of the apparatus bays. Extruded concrete curbs. Concrete apparatus curb cut has significant cracking. Drive entrance off parking lot with significant ponding.
G2020	Parking Lots	1981	1981	4	TRB	11/21/23	Parking lots on east and west sides of fire station building. Two ADA accessible stalls at front of building. Extruded concrete curbs and concrete curb stops. Asphalt lots are at end of life with significant grade/drainage issues with standing water, uplift from tree roots, patches, and alligatoring surfaces. Approximately one-third of the parking lots have newer pavement repairs.
G2030	Pedestrian Paving	1981	1981	3	TRB	11/21/23	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. Brick plaza cracked and reported as slippery. Plaza curb cut not to ADA standards, no tactile warning on site (see ADA report). Walk from public right-of-way uplifted and trip hazards present.
G2040	Site Development	1981	2004	3	TRB	11/21/23	At the northwest corner of the site is a circular plaza with a memorial bench and sculpture. Flagpole at front entry. CMU waste enclosure and other chain link and wood security fencing.
G2050	Landscaping	1981	1981	3	TRB	11/21/23	Mature trees and landscaping throughout the site. Some tree limbs overhanging building and some along the front of building are getting too large. Ongoing Issues with leaves clogging roof drains. Continue annual pruning of trees away from facade and roof.

Facility Summary

City of Redmond	
Fire Station 11 Site	
Fire Station 11 Infrastructure	8450 161st Avenue NE Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G30 Site Civil / Mechanical Utilities							
G3010	Water Supply	1981	1981	3	DCS	11/21/23	Domestic water service (1-1/2") and irrigation service (2-inch estimated) from city. Fire service is from west including post indicator valve and fire department connection, also from city. No observed domestic water backflow prevention, but reduced-pressure backflow preventer is installed for irrigation outside in hand vault to west. Fire service detector check valve assembly is located in the main building riser room. A second fire department connection is present at the outside base of the hose tower for apparent drill purposes, but reportedly no longer used as such. A modern irrigation controller is present in secure panel on the west side of the main building. Water service to annex also from city system. Water service pressure at 90 psig. No issues reported.
G3020	Sanitary Sewer	1981	1981	3	DCS	11/21/23	Sanitary sewer service to buildings from the City of Redmond system; side sewer reported to be PVC. While no current issues are reported, there is no grease interceptor for the kitchen. The apparatus bay includes an oil/water separator located inside the SW-most bay.
G3030	Storm Sewer	1981	1981	4	DCS	11/21/23	Catch basin and pipe system in roadway and parking areas, plus roof drains piped to storm, collectively leading to an underground detention vault to west. Trench drain at edge of drive apron at apparatus bays. The mostly original site storm drain system is failing throughout with flooding in multiple locations and reportedly non-functional detention vault.
G3050	Cooling Distribution	1985	2000	4	DCS	11/21/23	Annex outside condensing unit with unclear housekeeping pad and landscape bark up to bottom of unit - minor maintenance to provide a concrete housekeeping pad and clear landscape materials away from unit.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3060 Fuel Distribution	1981	2001	3	DCS	11/21/23	Puget Sound Energy natural gas service diaphragm meter No. 920737 with 425 cfh capacity and seismic shut-off valve (reportedly standard for City of Redmond public safety buildings). While the gas service seems undersized for the connected load, no issues are reported. The original fuel island has been demolished, however it is unclear if the underground fuel oil storage tank was decommissioned or removed. Regardless, certain fuel island infrastructure remains abandoned in place, causing problems or raising concerns, including tank vents to the main building roof which have leaked rainwater into the building and power panel conduit with junction box cover missing and wires exposed - minor maintenance to fully complete demolition of the former fuel island supporting infrastructure. Propane tanks in use at the station house patio for BBQ operation. The fire station diesel generator has an integral belly tank with estimated 500-gallon capacity and unclear tank emergency venting - minor maintenance to properly configure to vent to outside the enclosure and away from electrical sources of ignition. The annex includes a propane-fired standby generator with estimated 200-lb propane tank in fenced generator enclosure at the NE corner of the annex. The service line from the tank to the generator appears sub-standard or failing - minor maintenance to replace soon, as this is a safety concern.

Facility Summary

City of Redmond	
Fire Station 11 Site	8450 161st Avenue NE
Fire Station 11 Infrastructure	Redmond, WA 98052

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G40 Site Electrical utilities							
G4010	Electrical Distribution	1981	1981	3	DCS	11/21/23	A utility switch is at the NE corner of the site, with assumed medium voltage feeder underground to the apparent original utility 208V transformer with marked 150 kVA capacity - seemingly undersized and insufficient for city-planned electric vehicles to be deployed in the near future. Power is from Puget Sound Energy with meter No. P157270394 to the main building. A separate residential 120/240V, single-phase service is provided to the annex with meter No. X157729889. The main building is fed from a 2018 whole-building automatic transfer switch with 800A maximum capacity (600A continuous), which in turn is alternately fed from the Generac 300-kW diesel generator. The generator is exercised regularly and load-bank tested annually, with no issues reported. The annex includes an 8-kW emergency generator (propane) with makeshift manual transfer panel at the NW corner of the building - minor maintenance to install an engineered transfer panel. The annex generator and propane tank housekeeping pad is unclear, and seismic anchoring thereto - minor maintenance to provide housekeeping pad(s), anchorage, and clear away landscape debris. No onsite renewable energy.
G4020	Site Lighting	1981	2018	3	DCS	11/21/23	Original pole lights throughout the site with 2018 LED lamps; same for building exterior wall packs and memorial park bollard lamps. Only main building perimeter soffit recessed can lights remain with non-LED (CFL) lamps - minor maintenance to replace with LED. Site lighting is reportedly on photocell control with no issues reported.
G4030	Site Communications and Security	1981	2001	3	DCS	11/21/23	Local telecom purveyors provide underground services to both buildings with no issues reported. No observed street traffic signal control, but no issues reported. No site electronic security with modest concern - reportedly, a city-wide security study is under development.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Infrastructure							Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	800	\$15.00	SF	\$12,000	\$24,000

Deficient Material: Asphalt Paving
Grading at front drive is unsatisfactory with no positive drainage and deep standing water.

Remedial Action:
Demo and regrade parking lot drive entrance.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1,200	\$18.00	SF	\$21,600	\$42,000

Deficient Material: Concrete Pavement
Concrete apparatus apron at sidewalk cracked and degrading.

Remedial Action:
Demo existing, compact sub-grade, and repour high-strength curb cut.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 11 Site							Escalation 3%
Facility:		Fire Station 11 Infrastructure							Discount Rate 1.5%

G2020	Parking Lots	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	30,000	\$7.70	SF	\$231,000	\$452,000

Deficient Material: Asphalt Parking Lots
Asphalt parking lots are nearing end of life with positive drainage issues, cracking, alligating, root uplift, and past patchwork.

Remedial Action:
Remove and replace existing asphalt with full depth section, provide heavy-duty section at apparatus access drive path areas.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2030	Pedestrian Paving	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	500	\$18.00	SF	\$9,000	\$18,000

Deficient Material: Concrete Sidewalk
Trip hazard uplift at sidewalk entry from public right of way (past asphalt patch and other areas with root uplift).

Remedial Action:
Demo, cut roots, regrade, and replace walk to street sidewalk. Consider replacing plaza.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3020	Sanitary Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$22,500.00	LS	\$22,500	\$44,000

Deficient Material: Grease interceptor
No grease interceptor for the station house kitchen.

Remedial Action:
Install grease interceptor.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 11 Site

Facility: Fire Station 11 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3030	Storm Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	81,991	\$2.40	SF	\$196,778	\$385,000

Deficient Material: Storm

The mostly original site storm drain system is failing throughout with flooding in multiple locations and reportedly non-functional detention vault.

Remedial Action:

Renew the site storm drain system, including reconfiguring the detection vault to function per code.

Action Type:

Code Issue



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: Fire Station 11 Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 11 Building	A10 Foundations	\$133,770	\$26,754	\$32,105	\$69,346	\$262,000	\$282,000
	B20 Exterior Closure	\$32,180	\$6,436	\$7,723	\$16,682	\$63,000	\$65,000
	B30 Roofing	\$172,650	\$34,530	\$41,436	\$89,502	\$339,000	\$340,000
	C30 Interior Finishes	\$68,800	\$13,760	\$16,512	\$35,666	\$135,000	\$141,000
	D20 Plumbing	\$197,568	\$39,514	\$47,416	\$102,419	\$386,000	\$415,000
	D30 HVAC	\$542,024	\$108,405	\$130,086	\$280,985	\$1,061,000	\$1,098,000
	Facility Total	\$1,146,992	\$229,398	\$275,278	\$594,601	\$2,246,000	\$2,341,000
Fire Station 11 Annex Building	B30 Roofing	\$99,700	\$19,940	\$23,928	\$51,684	\$196,000	\$201,000
	D20 Plumbing	\$21,000	\$4,200	\$5,040	\$10,886	\$41,000	\$44,000
	D30 HVAC	\$27,975	\$5,595	\$6,714	\$14,502	\$55,000	\$56,000
	D40 Fire Protection	\$15,328	\$3,066	\$3,679	\$7,946	\$30,000	\$30,000
	D50 Electrical	\$8,430	\$1,686	\$2,023	\$4,370	\$17,000	\$17,000
	E20 Furnishings	\$11,500	\$2,300	\$2,760	\$5,962	\$23,000	\$23,000
	Facility Total	\$183,933	\$36,787	\$44,144	\$95,351	\$362,000	\$371,000
Fire Station 11 Infrastructure	G20 Site Improvements	\$273,600	\$54,720	\$65,664	\$141,834	\$536,000	\$566,000
	G30 Site Civil / Mechanical Utilities	\$219,278	\$43,856	\$52,627	\$113,674	\$429,000	\$442,000
	Facility Total	\$492,878	\$98,576	\$118,291	\$255,508	\$965,000	\$1,008,000
Site Total		\$1,823,804	\$364,761	\$437,713	\$945,460	\$3,573,000	\$3,720,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 11 Site

Total Site Opportunity Cost: \$3,884,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 11 Annex Building							
System: Exterior Closure							\$83,000
B2010 Exterior Walls	T1-11 is a low-grade cladding and subject to maintenance issues and deterioration. Insulation values are assumed to be minimal.	Remove T1-11 cladding, install new weather-restive barrier and continuous rigid exterior insulation (to improve thermal efficiency and support decarbonization efforts and improved thermal comfort) and install robust rain screen cladding system. Excavate and clear foundation vent screens.	1,916.00	\$22.00	SF	\$42,152	\$83,000
Facility: Fire Station 11 Annex Building							
System: HVAC							\$32,000
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. Convert generator from propane to natural gas with propane as back-up. Subject to city sustainability policy acceptability.	Install gas service when HVAC system is renewed. Convert generator to dual gaseous fuel, presuming allowed by the city decarbonization plan.	1.00	\$8,500.00	LS	\$8,500	\$17,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 11 Site

Total Site Opportunity Cost: \$3,884,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3020	Heat Generating Systems	Inefficient electric resistance heat at apparatus bay.	Replace with high-efficiency gas-fired unit heater subject to city sustainability guidelines.	1.00	\$7,500.00	LS	\$7,500	\$15,000
Facility:	Fire Station 11 Annex Building							\$60,000
System:	Electrical							
D5010	Electrical Service and Distribution							
		The main electrical panel as at maximum capacity and is residential 120/240V, single-phase.	Upgrade service to 208V, three-phase and provide a new commercial 225A panel with separate spaces for each circuit.	1.00	\$11,000.00	LS	\$11,000	\$22,000
D5020	Lighting and Branch Wiring							
		Fluorescent lighting with manual control.	Upgrade to LED with automatic control.	1,916.00	\$7.00	SF	\$13,412	\$26,000
D5090	Other Electrical Systems							
		Building has no battery-backed emergency lighting, hence lights are out until generator starts and power is transferred.	Provide battery-backed emergency lighting to maintain continuous emergency lighting.	8.00	\$750.00	EA	\$6,000	\$12,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 11 Site

Total Site Opportunity Cost: \$3,884,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 11 Building							
System: Superstructure							\$340,000
B1020 Roof Construction	Assumed minimal rigid insulation above deck that met code minimum in 1981, but does not come close to current code minimums, let alone carbon reduction goals.	With any reroof, include adding new rigid insulation to meet or exceed current energy code. Modify parapet heights, penetration curbs, and flashings to accommodate the thicker roof profile. Additionally, include areas of tapered insulation to address positive drainage issues and prevent ponding.	17,350.00	\$10.00	SF	\$173,500	\$340,000
Facility: Fire Station 11 Building							
System: Exterior Closure							\$103,000
B2010 Exterior Walls	It is assumed that the insulation met the code minimum for the day, which is far below current code standards.	To support carbon reduction, energy efficiency, and thermal comfort, increase the thermal performance of existing walls. Blow in expanding foam in stud cavities. In the event of recladding in the future, add exterior rigid insulation at that time.	7,500.00	\$6.00	SF	\$45,000	\$88,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 11 Site

Total Site Opportunity Cost: \$3,884,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
B2020	Exterior Windows	Exterior aluminum windows, recessed 0.5 inches 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	\$300.00	EA	\$7,800	\$15,000
Facility: Fire Station 11 Building								\$16,000
System: Roofing								
B3020	Roof Openings	Access hatches do not have insulated frames and are energy inefficient.	Replace access hatches with modern insulated hatches and curbs.	2.00	\$4,000.00	EA	\$8,000	\$16,000
Facility: Fire Station 11 Building								\$117,000
System: Plumbing								
D2030	Sanitary Waste	Fire apparatus (vehicles) washed inside overloading apparatus bay catch basins, drains, piping, and oil/water separator.	Replace catch basins with trench drains in conjunction with slab on grade replacement.	300.00	\$50.00	LF	\$15,000	\$29,000
D2040	Rain Water Drainage	With large roof area and regular apparatus washing, 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	\$45,000.00	LS	\$45,000	\$88,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 11 Site

Total Site Opportunity Cost: \$3,884,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 11 Building							
System: HVAC							\$1,156,000
D3030	Cooling Generating Systems						
	No cooling in the apparatus bay other than ventilation cooling from exhaust system.	Install ceiling fans in the apparatus bays.	4.00	\$2,450.00	EA	\$9,800	\$19,000
D3050	Terminal and Package Units						
	Existing office, living, and training areas HVAC rooftop 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. This system is increasing the standard for modern northwest fire stations.	Replace HVAC rooftop unit system with VRF and HRV system. A potentially more economical approach would be to replace the existing failing rooftop gas-pack units with high-efficiency all-electric heat pumps, provided the electrical service can support the added electrical load.	15,000.00	\$38.00	SF	\$570,000	\$1,116,000
D3060	Controls and Instrumentation						
	City sustainability policy, but no energy or water submetering system.	Install energy submetering system to support city sustainability and decarbonization programs.	21,271.00	\$0.50	SF	\$10,636	\$21,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 11 Site

Total Site Opportunity Cost: \$3,884,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Fire Station 11 Building							
System:	Electrical							\$842,000
D5010	Electrical Service and Distribution							
		Electrical service, distribution, branch panels, and transfer switch are over 30 years old, with portions insufficient for new loads, including electric vehicle charging.	Upgrade electrical service and transfer switch to larger capacity. Replace aged branch panels.	21,271.00	\$5.00	SF	\$106,355	\$208,000
D5020	Lighting and Branch Wiring							
		Aging T8 fluorescent lighting in most office and station house areas, and manual control throughout.	Upgrade to all LED throughout with automatic controls where appropriate.	21,000.00	\$12.00	SF	\$252,000	\$494,000
D5038	Low Voltage Security							
		Increasingly obsolete standalone proximity card and cipher locks.	Upgrade to modern networked electronic security including card-key access, intrusion detection, and CCTV monitoring, all coordinated with a site crime prevention through environmental design (CPTED) plan.	21,000.00	\$3.40	SF	\$71,400	\$140,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 11 Site

Total Site Opportunity Cost: \$3,884,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Fire Station 11 Infrastructure							\$41,000
System:	Site Improvements							
G2030	Pedestrian Paving	Brick plaza cracked and reported as slippery. Plaza curb cut not to ADA standards. No tactile warning on site (see ADA report).	Demo and replace plaza and include current ADA-compliant curb cut and tactile warning.	600.00	\$35.00	SF	\$21,000	\$41,000
Facility:	Fire Station 11 Infrastructure							\$1,094,000
System:	Site Electrical utilities							
G4010	Electrical Distribution	Electrical service reportedly undersized for increasing station load needs, plus plans for electric vehicles. Planed to be an all-electric facility as part of the city decarbonization plan.	Double electrical service capacity from 150 kVA to 300 kVA.	1.00	\$150,000.00	LS	\$150,000	\$294,000
		City plan to purchase electric vehicles (EVs) for city fleet, including fire department, but no EV charging on-site.	Install EV charging stations; assume two double-cable, with rough-in for two more. See separate opportunity to upgrade the site electrical service to support new EV changing stations.	2.00	\$7,000.00	EA	\$14,000	\$27,000
		Flat roof with modest solar exposure, no current on-site renewable energy and city plan for decarbonization.	Install 50-kW photovoltaic power system on main building roof.	50.00	\$7,500.00	EA	\$375,000	\$734,000

Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 11 Site

Total Site Opportunity Cost: \$3,884,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
G4030	Site Communications and Security	No site electronic security.	Budget for electronic security, such as CCTV to monitor site perimeter.	1.00	\$20,000.00	LS	\$20,000	\$39,000

Facility Summary

City of Redmond
Fire Station 12 Site
Fire Station 12 Building

4211 148th Avenue NE
Redmond, WA 98007

Facility Size - Gross S.F.	6,637
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	3.1			
Facility Condition Index (FCI)	0.18	Observed Deficiencies 2023 - 2028	\$1,342,000	\$1,385,000
Current Replacement Value (CRV)	\$4,599,000	Predicted Renewal Budget 2029 - 2042	\$1,683,000	\$1,960,000
Beginning Budget Year	2023	Opportunities	\$1,080,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

Fire Station 12 is a single-story building with a mezzanine. Foundation is footing stem wall with slab on grade. Exterior is a mix of load-bearing masonry with some framed 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 at end of life with two skylights. Interior walls are a combination masonry and wood/steel frames. Stud walls are gypsum wall board with some ceramic tile in restrooms. Flooring is a mix of quarry tile, sealed concrete, ceramic, carpet, and sheet flooring. Built-in casework. Kitchen has standard appliances and laundry has residential appliances. Building electrical service is 600A, 120/240V, single-phase, three-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, single-phase, three-wire outdoor diesel generator. Generator feeds underground to the transfer switch inside building apparatus bay. Apparatus bay lighting is older fluorescent fixtures upgraded with drop-in replacement LED tube lamps, most station house fixtures appear to be older lay-in fluorescent, all with manual control. Outdoor lighting is limited, but with newer LED lamps where observed. All branch wiring is in conduits. Devices are 15A and 20A grounding type. Past insufficient apparatus bay power has reportedly been resolved. Building has a fire alarm system, but no electronic security, other than cipher lock entry doors. HVAC is two aged and failing rooftop gas-pack units for station house and one forced-air gas-fired furnace with under floor distribution for apparatus bay. There is no ventilation for the apparatus bay, other than indirect via vehicle engine exhaust. Plumbing is city water and sewer, copper piping, cast iron drain, waste, and vent, and gas-fired domestic hot water heaters. Wet-pipe fire sprinkler throughout.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				2.5			
A10	Foundations						
A1010	Standard Foundations	1980	1980	2	TRB	12/20/23	Concrete foundation and stem walls.
A1030	Slab On Grade	1980	1999	3	TRB	12/20/23	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				3.0			
B10	Superstructure						
B1010	Floor Construction	1980	1980	3	TRB	12/20/23	Mezzanine floor, plywood on wood joists.
B1020	Roof Construction	1980	1980	3	TRB	12/20/23	Wood deck on wood joists and beams. No fall restraint. Roof access is challenging with no safe access ladder to door. No seismic upgrade has occurred.
B20	Exterior Closure						
B2010	Exterior Walls	1980	1999	3	TRB	12/20/23	Mostly load-bearing masonry, east wall is stud framed with metal siding. 90% of exterior walls had 1999 interior face of masonry walls furred with R-11 interior insulation added. Other wood stud walls with R-11 batt cavity insulation. Apparatus bay walls not insulated. No seismic upgrade has occurred.
B2020	Exterior Windows	1980	1999	2	TRB	12/20/23	Aluminum dual-glazed windows. Some bent insect screens at dorm operable units. Noticed unoccupied dorm windows left unsecured and in open position in winter (consider evaluating ventilation and adding security sensors to windows).

Facility Summary

City of Redmond
Fire Station 12 Site
Fire Station 12 Building

4211 148th Avenue NE
Redmond, WA 98007

Facility Components

Facility Components									
Systems				Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
B Shell							3.0		
B20 Exterior Closure									
B2030	Exterior Doors			1980	1999	3	TRB	12/20/23	Hollow metal doors and frames. Old overhead sectional doors at apparatus bay. Storefront door and window unit at main entrance and patio. Door hardware includes keypad lockset. Hollow metal frames show rust at north side.
B30 Roofing									
B3010	Roof Coverings			1980	1999	4	TRB	12/20/23	Composite asphalt sheet roofing, glued down. Roofing is aged and is in need of replacement. Roof material is aged and worn on both upper and lower roof. Temporary leak repair recently done at south edge, but ongoing leak reported over center apparatus bay on east end. Limited rigid insulation assumed below roofing material on deck.
B3020	Roof Openings			1980	1999	4	TRB	12/20/23	Square acrylic dome single-glazed skylights.
B3030	Projections			1980	1999	2	TRB	12/20/23	Steel canopy at east entrance, standing seam roofing. Needs cleaning on roofing. Brick masonry hose tower. Unclear if seismic analysis of stair tower has occurred.
C Interiors							3.4		
C10 Interior Construction									
C1010	Partitions			1980	1999	3	TRB	12/20/23	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. Non-ADA-compliant restroom/shower (see other city ADA report).
C1020	Interior Doors			1980	1999	4	TRB	12/20/23	Interior doors are a mix of wood and hollow metal doors with hollow metal frames. Wood frames at dorm rooms. Older hardware push pads stick. Missing hollow metal door at apparatus bay storage room, not code compliant.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
C Interiors			3.4			
C10 Interior Construction						
C1030 Fittings	1980	1999	3	TRB	12/20/23	Day room marker boards. Room signs. Identifying signs.
C20 Staircases						
C2010 Stair Construction	1980	1980	2	TRB	12/20/23	Steel stairs at hose tower, grated landing and risers.
C30 Interior Finishes						
C3010 Wall Finishes	1980	1999	3	TRB	12/20/23	Gypsum wall board and paint in dorm rooms, administration, kitchen, and corridors. Gypsum wall board, paint, and ceramic tile at apparatus bay restroom and men's restroom. Fiber reinforced plastic at women's restrooms and workout with painted gypsum above.
C3020 Floor Finishes	1980	1999	4	TRB	12/20/23	Sealed concrete in apparatus bay. Carpet in dorms, administration, and corridors. Quarry tile at men's restroom. Ceramic tile at kitchen. Sheet vinyl at women's restroom. Carpet is worn at all traffic areas.
C3030 Ceiling Finishes	1980	1999	4	TRB	12/20/23	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 stained in several locations.
D Services			3.1			
D20 Plumbing						
D2010 Plumbing Fixtures	1980	1999	3	DCS	12/20/23	Porcelain water closets, urinals, lavatories, and stainless steel sinks. Tile showers, but with recent men's fiberglass upgrade. Stainless steel decontamination sink. Laundry wall box. No custodial closet or mop sink - the hose tower decontamination sink appears to be used for this purpose.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D20 Plumbing						
D2020 Domestic Water Distribution	1980	1999	3	DCS	12/20/23	City water to copper distribution piping. 2015 Rheem gas-fired standard-efficiency (80%) 75-gallon, 75 mbh domestic hot water heater with expansion tank and temperature mixing valve, but no recirculation pump - minor maintenance to add pump. Apparatus bay hose connections with vehicle wash hoses on custom hooks - minor maintenance to upgrade to hose reels. Hose bibs outside.
D2030 Sanitary Waste	1980	1980	3	DCS	12/20/23	City sewer with cast iron drain, waste, and vent. Catch basins in each apparatus bay with drain to oil/water separator (inside apparatus bay at southeast corner). Apparatus bay heat from underground supply air ducts to catch basin sides, which is problematic when vehicles are washed inside. Kitchen sink backs up periodically; one men's water closet backs up regularly. Makeshift drain for bunker gear extractor using trench drain form, but oddly above the floor under the hose tower decontamination sink.
D2040 Rain Water Drainage	1980	1999	3	DCS	12/20/23	All internal roof drains and overflow roof drains, except at west entry canopy which has gutter and downspouts to storm. Low roof has three sets of roof drains and overflow roof drains; high roof has two sets. Roof drains and overflow roof drains are uninsulated at drain bodies and first few feet of pipe, resulting in condensation on piping and reports of roof leaks.
D2090 Other Plumbing Systems	1980	1999	3	DCS	12/20/23	Oil/water separator for apparatus bay. Oxygen tank fill station for medical response. SCBA bottle storage only (refilled at other fire station). Portable air compressor in shop. Confirm oxygen storage meets code requirements as minor maintenance.
D30 HVAC						
D3010 Energy Supply	1980	1999	3	DCS	12/20/23	Unclear station locution system shut off for BBQ, but a local manual timer is installed. Exposed gas piping on roof is rusty - minor maintenance to clean and preserve.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				3.1			
D30	HVAC						
D3020	Heat Generating Systems	1980	1999	4	DCS	12/20/23	Forced-air gas furnace for apparatus bay heating near end of life.
D3030	Cooling Generating Systems	1980	1999	3	DCS	12/20/23	Two aging ceiling fans in apparatus bay - no issues reported.
D3040	HVAC Distribution Systems	1980	1999	3	DCS	12/20/23	Apparatus bay gas furnace to underground supply air duct to five grated drain pits with no apparent ventilation of the apparatus bays. The forced-air heating system is recirculation only. Ducted forced-air heating and cooling of the station house from two rooftop gas-pack units (one for the day room and common area, one for the dormitory area).
D3050	Terminal and Package Units	1980	1999	4	DCS	12/20/23	Two York rooftop gas-pack units with 4-ton on-board R-22 Dx cooling, 75 mbh gas furnace heat, and economizer with powered exhaust. These units are at end of life.
D3060	Controls and Instrumentation	1980	1999	3	DCS	12/20/23	Mix of older and newer controls with newer programmable thermostats for the two rooftop units. Due to dormitory room discomfort, remote temperature sensor averaging has been added, but still results in discomfort for some staff, as evidenced by at least one taped-over diffuser. Minor maintenance to replace programmable thermostats upon replacement of station house rooftop units and apparatus bay furnace. Fire Station 12 is the second highest energy using station in the city, with an energy use intensity (EUI) of 214, which is 328% of the WA State target for fire stations. This high energy use is attributed to older thermal envelope, inefficient forced-air apparatus bay heating system, aged and failing station house HVAC rooftop units, and mostly older light fixtures and controls. An energy audit is suggested.
D3090	Other HVAC Systems and Equipment	1999	2015	3	DCS	12/20/23	Three separate Nederman vehicle engine exhaust systems with apparent renewal about 2015 and no issues reported.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D40 Fire Protection						
D4010 Fire Protection Sprinkler Systems	1999	1999	3	DCS	12/20/23	Fire service to four-inch riser direct to wet-pipe distribution throughout with flow sensor. No apparent alarm valve, but post indicator valve is present immediately outside the apparatus bay. Riser pressure is 58 psig.
D4030 Fire Protection Specialties	1980	1999	3	DCS	12/20/23	Fire extinguishers in various locations, some loose - minor maintenance to secure all on hooks or in cabinets.
D50 Electrical						
D5010 Electrical Service and Distribution	1980	1999	3	DCS	12/20/23	1980 GE light-commercial 120/240V, single-phase 600A main distribution panel A, with two sections (1 & 2), with combined 600A capacity. Separate Panel B fed by the 1999 Generac automatic transfer switch. While the aging GE single-phase service has five to ten years life remaining with good maintenance, it will not support major improvements, such as all-electric building under the city's decarbonization plan, or to power electric fire trucks and other apparatus.
D5020 Lighting and Branch Wiring	1980	1999	3	DCS	12/20/23	Lighting is fluorescent with mostly T8 lamps in the office and dorm areas, with all manual control. 1999 apparatus bay fluorescent tube-light fixtures have been upgraded to LED lamps, with all manual control. A few 1980 HID fixtures are abandoned in place, minor maintenance to demolish. Branch wiring and devices are 15A and 20A grounding type, with no issues reported. Prior reports of insufficient power at the apparatus bays have been resolved, including installation of modern drop cord reels for vehicle shore power service.
D5032 Low Voltage Communication	1980	1999	3	DCS	12/20/23	City standard telephone system. Several flat screens for training and day room use. No issues reported.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D50 Electrical						
D5037 Low Voltage Fire Alarm	1980	2019	2	DCS	12/20/23	2019 Honeywell Notifier NFS-320 fire alarm control panel in laundry and mechanical room, but with older annunciator in station house office area. Minor maintenance to upgrade annunciator. Devices include smoke detectors, horn strobes, and pull stations.
D5038 Low Voltage Security	1980	1999	3	DCS	12/20/23	Cipher locks at exterior doors; no city standard card-key access or CCTV.
D5039 Low Voltage Data	1980	1999	3	DCS	12/20/23	Data rack in laundry and mechanical room. Newer WiFi antennas with no issues reported.
D5090 Other Electrical Systems	1976	1999	3	DCS	12/20/23	Building has an outdoor 35-kW generator with diesel base tank feeding inside automatic transfer switch, in turn serving essential load Panel B with 120/240V, single-phase, 225A capacity, noting generator capacity is just 150A. Egress pathway battery-backed wall-packs and lighted exits signs. Tested units work - minor ongoing maintenance to regularly test emergency lighting and replace failing batteries.
E Equipment and Furnishings			3.0			
E10 Equipment						
E1010 Commercial Equipment	1980	1999	3	DCS	12/20/23	Residential kitchen and laundry equipment, with some reportedly at end of life.
E1020 Institutional Equipment	1980	1999	3	DCS	12/20/23	Fire department equipment, including hose washer and bunker gear drying racks in apparatus bay.
E1030 Vehicular Equipment	1980	1999	3	DCS	12/20/23	Older doors with aging, but functional motor operators.
E1090 Other Equipment	1980	1999	3	DCS	12/20/23	Fitness room equipment with no issues reported.

Facility Summary

City of Redmond	
Fire Station 12 Site	4211 148th Avenue NE
Fire Station 12 Building	Redmond, WA 98007

Facility Components

Systems	Original System Date	Renewal Last Date	Score	Surveyor	Survey Date	Comments
E Equipment and Furnishings			3.0			
E20 Furnishings						
E2010 Fixed Furnishings	1980	1999	3	TRB	12/20/23	Window blinds. Casework and countertops. Casework has signs of wear and tear. Window blinds are bent in some locations and pull strings need maintenance.
F Special Construction						
F10 Special Construction						
F1050 Special Controls and Instrumentation	1980	1999	3	DCS	12/20/23	Station locution system, aging but functional with no issues reported.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$150,000.00	LS	\$150,000	\$294,000

Deficient Material: Lateral Resistance
No seismic analysis known, no seismic upgrade apparent.

Remedial Action:
Conduct seismic analysis and upgrade.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$50,000.00	LS	\$50,000	\$98,000

Deficient Material: **Roof Access**
No fall restraint. Roof access is challenging with no safe access ladder at hatch door (steep and narrow wood step/ladder provided is unsafe and inadequate). No transfer ladder to high roof provided. No access to hose tower roof.

Remedial Action:
Add roof fall restraint system, provide OSHA-compliant access ladder to rooftop door access, and add rooftop exterior transfer ladder to high roof. Install ladder and roof hatch at stair tower top level.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	7,000	\$28.00	SF	\$196,000	\$384,000

Deficient Material: Built-Up Roof

Roofing is aged and is in need of replacement. Roof material is aged and worn on both upper and lower roof. Temporary leak repair recently done at south edge, but ongoing leak reported over center apparatus bay on east end. Flashings and wall-to-roof joint sealants have dried, cracked, and puled away. Parapet caps aged.

Remedial Action:

Remove roofing and flashings. Install rigid insulation to meet or exceed current code including tapered as needed to avoid standing water. Modify curbs, fascia, and flashings accordingly. Install new roofing and parapet caps.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

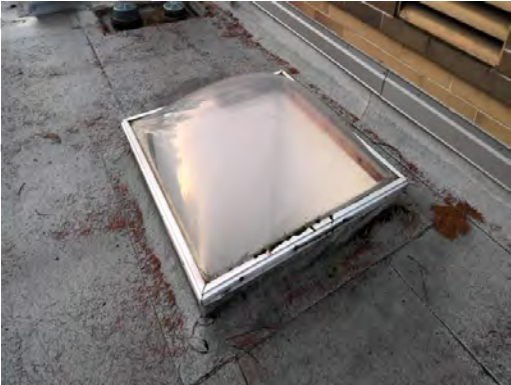
City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

B3020	Roof Openings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2023	2	\$2,600.00	EA	\$5,200	\$10,000

Deficient Material: Skylights
Skylights are single-glazed.

Remedial Action:
Remove and replace skylights with insulated panel skylights. Provide new insulated curbs.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 12 Site

Facility: Fire Station 12 Building

Escalation 3%
Discount Rate 1.5%

C1020	Interior Doors	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	20	\$1,000.00	EA	\$20,000	\$39,000

Deficient Material: Doors
Hardware is sticking and not functioning. Some hollow metal doors and frames show wear and tear. Door paint is worn and chipped.

Remedial Action:
Bondo, sand, prep, prime, and paint hollow metal doors and frames. Replace door at mezzanine. Replace outdated non-functioning hardware with new code-compliant hardware. Approximately 20 doors.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

C3010	Wall Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	2,000	\$8.00	SF	\$16,000	\$31,000

Deficient Material: Gypsum Wall Board and Paint
Gypsum wall board and paint worn, dented, and damaged in several locations.

Remedial Action:
Patch, repair, and repaint gypsum wall board interiors. Add corner guards.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

C3020	Floor Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	3,000	\$8.50	SF	\$25,500	\$50,000

Deficient Material: Carpet
Carpet is worn and end of life. Sheet goods in women's restroom is uneven.

Remedial Action:
Replace old carpet with carpet tile. Replace sheet goods with new.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

C3030	Ceiling Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	2,000	\$9.00	SF	\$18,000	\$35,000

Deficient Material: Ceiling Finishes
Acoustic ceiling tile is stained, old, and brittle. Suspension system is not up to current seismic code.

Remedial Action:
Remove and replace suspended acoustic ceiling and grid with current seismically rated system.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	6,637	\$1.50	SF	\$9,956	\$19,000

Deficient Material: Drain, Waste, and Vent (DW&V)
Aging drain, waste, and vent piping with reports of increasing back-ups at kitchen sink and men's restroom.

Remedial Action:
Clean, inspect, and repair or replace aged cast iron waste piping.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 12 Site		Escalation 3%							
Facility: Fire Station 12 Building		Discount Rate 1.5%							

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Extractor drain
Makeshift extractor drain system may not meet plumbing code. It is also difficult to access for clean up directly under the decontamination sink.

Remedial Action:
Install code-compliant and readily cleaned out extractor drain service, and coordinate with hose tower decontamination sink drains.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

D2040	Rain Water Drainage	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	10	\$900.00	EA	\$9,000	\$18,000

Deficient Material: Rood drain insulation

Roof drain, overflow roof drain, and first few feet of rain leader piping are uninsulated, resulting in condensation and dripping onto ceiling and other surfaces below.

Remedial Action:

Insulate roof drain bodies and rain leaders where not already insulated; repair moisture damage from past condensate dripping.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 12 Site		Escalation 3%							
Facility: Fire Station 12 Building		Discount Rate 1.5%							

D3020	Heat Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: Furnaces
Aging apparatus bay gas-fired forced-air furnace nearing end of life, with increasing failures.

Remedial Action:
Budget to replace promptly upon failure; replace with high-efficiency (condensing) furnace.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	3,000	\$8.00	SF	\$24,000	\$47,000

Deficient Material: Apparatus Bay HVAC
No ventilation (outside air and exhaust) for the apparatus bays.

Remedial Action:
Install apparatus bay ventilation per code, including CO and NOx control.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

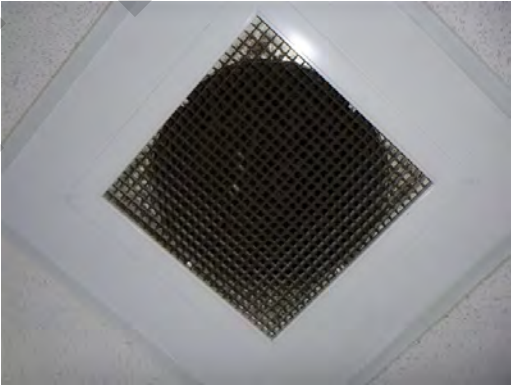
City of Redmond				Escalation 3%	
Site: Fire Station 12 Site				Discount Rate 1.5%	
Facility: Fire Station 12 Building					

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	3	\$5,000.00	EA	\$15,000	\$29,000

Deficient Material: Ductwork
Observed ductwork is dirty, with unclear air flow balance.

Remedial Action:
Clean, test, and adjust ductwork and air flow upon replacement of associated station house rooftop units and apparatus bay furnace.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2	\$27,000.00	EA	\$54,000	\$106,000

Deficient Material: Rooftop Units
Station house rooftop gas-pack units at end of life with rust and corrosion. Repair parts are becoming increasingly difficult to obtain.

Remedial Action:
Replace rooftop units with modern high-efficiency type.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	6,637	\$1.25	SF	\$8,296	\$16,000

Deficient Material: **Energy Efficiency**

Fire Station 12 is the second highest energy using station in the city, with an energy use intensity (EUI) of 214, which is 328% of the WA State target for fire stations. This high energy use is attributed to: 1) Older thermal envelope, 2) Inefficient forced-air apparatus bay heating system, 3) Aged and failing station house HVAC rooftop units, and 4) Mostly older light fixtures and controls.

Remedial Action:

Conduct an energy audit including thermal envelope infrared thermography. This cost estimate is for audit and tune-up, not capital project work.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 12 Site								Escalation	3%
Facility: Fire Station 12 Building								Discount Rate	1.5%

D5039	Low Voltage Data	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$20,000.00	LS	\$20,000	\$39,000

Deficient Material: Data System
Potentially mission critical data equipment located in dusty, damp, and potentially hot laundry and mechanical room.

Remedial Action:
Relocate data equipment to a proper data closet or room with cooling per city standard.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Building							Discount Rate 1.5%

E1020	Institutional Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$45,000.00	LS	\$45,000	\$88,000

Deficient Material: Bunker gear drying
Bunker gear is dried on racks along apparatus bay walls, but the apparatus bay has no outside air ventilation.

Remedial Action:
Form a new bunker gear drying room to include both heat and ventilation to remove humidity as the gear dries.

Action Type:
Energy Efficiency



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 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 two larger apparatus bays. There are some parking areas along the asphalt access drive. The site has mature landscaping with shrubs along the rear lot.

City water, sewer, fire, and storm. Puget Sound Energy power and natural gas. Power is increasingly obsolete 120/240V, single-phase, limiting decarbonization and electric vehicle opportunities. An upgrade to modern three-phase power should be considered in conjunction with reported plan to place the city's first all-electric fire truck at this station.

DRAFT

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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework							
G20 Site Improvements							
G2010	Roadways	1980	1980	4	TRB	12/20/23	Approximately half of the site pavement is concrete and half is asphalt. Concrete pavement drive apron at front of building and at rear of apparatus bays, exposed aggregate chipping. Asphalt access drive alligating and settling.
G2020	Parking Lots	1980	1999	4	TRB	12/20/23	Parking stalls along south side of building. Asphalt parking lots on east and west sides of fire station have pavement cracking, alligating, and wear in some places. See G2010 Roadways for all site asphalt deficiency costs.
G2030	Pedestrian Paving	1980	1980	3	TRB	12/20/23	Exposed aggregate concrete walk at front entry, weed growth, and dated appearance. Concrete patio at south side of building. Consider replacing for aesthetics.
G2040	Site Development	1980	1980	2	TRB	12/20/23	Fire station monument sign, flagpole, prefinished security fencing around back, vehicular rolling security gate. No waste containment enclosure.
G2050	Landscaping	1980	1980	3	TRB	12/20/23	Mature landscaping and grass. Ivy encroachment into drive/parking area. Tree and bush limbs against building. Minor maintenance to limb trees and trim shrubs 24" away from building face and remove invasive ivy.
G30 Site Civil / Mechanical Utilities							
G3010	Water Supply	1980	1999	3	DCS	12/20/23	City of Bellevue domestic water service and 6-inch fire sprinkler supply lines to fire station. The fire service enters via a vault at NE corner of building with backflow preventer, post indicator valve, fire department connection, and sump pump. Water pressure is at 60 psig. No observed irrigation.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3020 Sanitary Sewer	1980	1999	3	DCS	12/20/23	Side sewer to city sewer service at street with no issues reported. Two oil/water separators, one outside to SW, one inside the apparatus bay to SE with no issues reported. No kitchen grease waste systems.
G3030 Storm Sewer	1980	1999	3	DCS	12/20/23	Catch basin and pipe system in paved areas assumed piped to city storm at street. The east apparatus bay apron sheet flows to 148th Avenue NE - no trench drain, no issues reported. Roof drains appear piped to the storm system as well. The City of Bellevue requires the City of Redmond to clean out the storm water system manholes periodically as ongoing minor maintenance.
G3060 Fuel Distribution	1980	1999	3	DCS	12/20/23	Natural gas meter at northeast corner of the building with Puget Sound Energy meter No. 1163358 with 425 cfh capacity and no seismic shut-off valve - minor maintenance to add. A manual timer shut-off valve device is installed at the BBQ point of connection. The diesel generator package includes an estimated 200-gallon belly tank, which is missing tank emergency vent piping and discharge protection device - minor maintenance to install per code. No vehicle fueling system at this station.
G40 Site Electrical utilities						
G4010 Electrical Distribution	1980	1980	3	DCS	12/20/23	Underground electric service to building with Puget Sound Energy meter No. X149252343 delivered at 120/240V, single-phase, with a 600A service entry capacity. A 35-kW Generac diesel generator with 200-gallon (estimated) capacity is located to the rear of the building. The single-phase power system is increasingly obsolete and may not support the city's decarbonization plan. Additionally this fire station is reportedly to get the city's first electric fire truck, which will require more charging power then can be provided by the existing service.
G4020 Site Lighting	1980	1999	3	DCS	12/20/23	Wall lights on building exterior; mostly LED where observed - minor maintenance to replace any remaining HID with LED.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
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G Sitework

G40	Site Electrical utilities						
G4030	Site Communications and Security	1980	1999	3	DCS	12/20/23	Telecom services from local purveyors with no issues reported. Aging (2000) Hy-Security motorized gate operator - reportedly failing. No other site electronic security, but no issues reported.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 12 Site							Escalation 3%
Facility:		Fire Station 12 Infrastructure							Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	3,000	\$30.00	SF	\$90,000	\$176,000

Deficient Material: Concrete Pavement

Concrete pavement drive apron at front of building and at rear of apparatus bays, exposed aggregate chipping, settlement cracking at drive curb cut. Trucks appear to have difficulty making the turn and run off into landscaping.

Remedial Action:

Demo existing concrete, excavate, and install heavy load sub base and new high-strength concrete. Consider flaring curb cut to avoid issues with long apparatus turning.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 12 Site

Facility: Fire Station 12 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	6,500	\$9.00	SF	\$58,500	\$115,000

Deficient Material: Roadways
Asphalt drive degraded, concrete curbs broken.

Remedial Action:
Demo curbs. Install new curbs (consider cast-in-place vs extruded for durability). Cut and structurally fill settlement areas near vault. Grind and top coat all asphalt. Repaint parking stripes.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 12 Site		Escalation 3%							
Facility: Fire Station 12 Infrastructure		Discount Rate 1.5%							

G4030	Site Communications and Security	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$6,500.00	EA	\$6,500	\$13,000

Deficient Material: Gate operator
Motorized gate operator failing with increasingly erratic control behavior.

Remedial Action:
Replace gate motor operator.

Action Type:
Other



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: Fire Station 12 Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 12 Building	B10 Superstructure	\$200,000	\$40,000	\$48,000	\$103,680	\$392,000	\$397,000
	B30 Roofing	\$201,200	\$40,240	\$48,288	\$104,302	\$394,000	\$411,000
	C10 Interior Construction	\$20,000	\$4,000	\$4,800	\$10,368	\$39,000	\$42,000
	C30 Interior Finishes	\$59,500	\$11,900	\$14,280	\$30,845	\$116,000	\$124,000
	D20 Plumbing	\$23,956	\$4,791	\$5,749	\$12,419	\$47,000	\$48,000
	D30 HVAC	\$116,296	\$23,259	\$27,911	\$60,288	\$227,000	\$232,000
	D50 Electrical	\$20,000	\$4,000	\$4,800	\$10,368	\$39,000	\$40,000
	E10 Equipment	\$45,000	\$9,000	\$10,800	\$23,328	\$88,000	\$91,000
Facility Total		\$685,952	\$137,190	\$164,628	\$355,597	\$1,342,000	\$1,385,000
Fire Station 12 Infrastructure	G20 Site Improvements	\$148,500	\$29,700	\$35,640	\$76,982	\$291,000	\$308,000
	G40 Site Electrical utilities	\$6,500	\$1,300	\$1,560	\$3,370	\$13,000	\$13,000
	Facility Total	\$155,000	\$31,000	\$37,200	\$80,352	\$304,000	\$321,000
Site Total		\$840,952	\$168,190	\$201,828	\$435,949	\$1,646,000	\$1,706,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 12 Site

Total Site Opportunity Cost: \$2,102,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 12 Building							
System: Exterior Closure							\$441,000
B2030 Exterior Doors							
	Old overhead sectional doors at apparatus bay.	Replace with modern fast-acting doors.	5.00	\$45,000.00	EA	\$225,000	\$441,000
Facility: Fire Station 12 Building							
System: Plumbing							\$196,000
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	\$30,000.00	LS	\$30,000	\$59,000
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	\$49,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 12 Site

Total Site Opportunity Cost: \$2,102,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D2040	Rain Water Drainage	Fire apparatus are reportedly washed on site. The roof drains are piped to an Interior roof drain system. Hence there is opportunity to collect water from roof drains for apparatus wash water to reduce use of city water.	Install 5,000-gallon rain water harvesting system to provide apparatus wash water and/or plumbing fixture flushing water.	1.00	\$25,000.00	LS	\$25,000	\$49,000
D2090	Other Plumbing Systems	Compressed air is helpful in ensuring apparatus tires are at proper pressure.	Install permanent compressed air system with hose reels.	1.00	\$20,000.00	LS	\$20,000	\$39,000
Facility:	Fire Station 12 Building							\$331,000
System:	HVAC							
D3020	Heat Generating Systems	Inefficient forced-air gas furnace heat for apparatus bays.	Replace with gas-fired low-intensity overhead radiant infrared heaters.	3,000.00	\$12.00	SF	\$36,000	\$71,000
D3050	Terminal and Package Units	Rooftop units deliver poor comfort and marginal indoor air quality.	Replace with modern variable refrigerant flow and heat recovery ventilator technology.	6,637.00	\$12.00	SF	\$79,644	\$156,000
D3060	Controls and Instrumentation	No networked controls.	Install networked controls in conjunction with new HVAC rooftop units and furnace with support from city IT department.	6,637.00	\$8.00	SF	\$53,096	\$104,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 12 Site

Total Site Opportunity Cost: \$2,102,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 12 Building							
System: Electrical							\$112,000
D5020	Lighting and Branch Wiring						
	Aging fluorescent lighting in station house, with manual control throughout.	Upgrade all lighting to LED with automatic control where appropriate.	4,000.00	\$11.00	SF	\$44,000	\$86,000
D5038	Low Voltage Security						
	No city standard card-key access, no CCTV, and no intrusion detection.	Upgrade from existing non-standard exterior door cipher locks to city standard card-key access control. Install rough-in for future upgrade to CCTV and intrusion detection.	6,637.00	\$2.00	SF	\$13,274	\$26,000
Facility: Fire Station 12 Infrastructure							
System: Site Electrical utilities							\$1,022,000
G4010	Electrical Distribution						
	Increasingly obsolete single-phase power to building does not support the city's building decarbonization plan. Additionally, the city plans to place an electric fire truck at this station.	Replace the existing undersized single-phase power service with modern three-phase power, including support for the city's building decarbonization plan and electrical vehicle charging. Install Type 2 electric vehicle charging stations for smaller vehicles and Type 3 DC charger for the new electric fire truck.	1.00	\$250,000.00	LS	\$250,000	\$490,000

Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 12 Site

Total Site Opportunity Cost: \$2,102,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
G4010	Electrical Distribution	Small emergency load only generator.	Upgrade to full capacity generator, say 100 kW, excluding future electric fire truck charging.	1.00	\$100,000.00	LS	\$100,000	\$196,000
		No electric vehicle charging stations.	Install one double-cable electric vehicle charging station, with rough-in for one more.	1.00	\$9,000.00	LS	\$9,000	\$18,000
		No on-site renewable energy and north apparatus bay flat roof with good solar access.	Install 25-kW photovoltaic power array on apparatus bay roof.	25.00	\$6,500.00	EA	\$162,500	\$318,000

Note: Cost estimates shown include project markups, but exclude escalation.

Print Date: 02/20/24

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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 Size - Gross S.F.	6,548
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)	0.18	Observed Deficiencies 2023 - 2028		\$1,147,000
Current Replacement Value (CRV)	\$4,538,000	Predicted Renewal Budget 2029 - 2042		\$1,213,000
Beginning Budget Year	2023	Opportunities		\$2,324,000
Escalation	3%			\$2,676,000
Discount Rate	1.5%			\$905,000
				N/A

Facility Condition Summary

City indicates the facility is owned by King County but maintained and managed by the City of Redmond (County Assessor data indicates purchased by the city on 1986 with warranty deed for \$0). Single-story building with partial-height mezzanine accessed by ceiling telescoping ladder. Original building apparatus bay and day room/administration and kitchen. Dorm rooms and an exercise room were added in 1993. Exterior is load-bearing masonry with north wall stud framed. Standard foundations and slab on grade. Aluminum windows with thermal glazing and hollow metal doors and frames on exterior. Apparatus bay includes pass-through configuration and four 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.

Building electrical service is single-phase 120/240V with 400A capacity, served by Puget Sound Energy underground service with current transformer and meter on outside wall at rear of building. Building has a 25-kW outdoor diesel generator; generator feeds underground to the transfer switch inside building apparatus bay. Interior lighting is a mix of fluorescent and LED, with all apparatus bay fixtures retrofitted with LED. Outdoor lighting is a mix of HID and LED. All branch wiring is in conduits. Devices are 15A and 20A grounding type. Obsolete zoned fire alarm system. Building has data/voice Ethernet wiring and devices, plus newer WiFi. Building has no security alarm system. Fire Station 13 was built in 1973 as an unmanned fire station. The 2009 partial renovation of station house was to remediate heavy rat infestation. HVAC is two rooftop gas-pack units for the station house and two Reznor gas-fired unit heaters for apparatus bay. Plumbing is city water and on-site septic system. Storm to adjacent wetland. Wet-pipe fire sprinkler throughout.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				3.0			
A10 Foundations							
A1010	Standard Foundations	1973	1973	3	TRB	12/11/23	Standard footings. Stem wall footings.
A1030	Slab On Grade	1973	1973	3	TRB	12/11/23	Slab on grade at apparatus bay and building.
B Shell				3.1			
B10 Superstructure							
B1010	Floor Construction	1973	1973	2	TRB	12/11/23	Mezzanine floor is wood construction.
B1020	Roof Construction	1973	1973	4	TRB	12/11/23	At apparatus bay, glulam beams and wood tongue and groove deck (no apparent insulation). Access over apparatus bay is restricted due to concerns with past water damage and soft springy deck. Some signs of previous water penetration. Plywood on wood joists at firehouse addition with unfaced batt insulation on underside of deck (no vapor barrier, unclear how airspace provided, and no evidence of airspace ventilation provided). Roof deck has elevation differences and angled edges; some places are up to 3/4-inch difference. Deck is not smooth or flush. No fall restraint. No fixed access transfer to high apparatus bay roof. No seismic upgrade has occurred.
B20 Exterior Closure							
B2010	Exterior Walls	1973	1993	3	TRB	12/11/23	Masonry walls with stud framed north side. Upper wall wood framed above masonry with metal siding. Cavity insulation value assumed to be code minimum in 1973. Front of the apparatus bay has exterior insulated finish system (EIFS) which needs cleaning and repainting. Metal cladding with algae growth and faded paint. Areas of moss on brick.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
B Shell			3.1			
B20 Exterior Closure						
B2020 Exterior Windows	1973	1993	3	TRB	12/11/23	Aluminum sliding/operable windows with screens and thermally insulated glazing.
B2030 Exterior Doors	1973	1993	3	TRB	12/11/23	Hollow metal doors and frames. Aluminum sectional doors at apparatus bay. Doors and frames need maintenance touch-up paint and there is some corrosion on some hinges.
B30 Roofing						
B3010 Roof Coverings	1993	2009	3	TRB	12/11/23	Ponding issues due to drains not located in low spots. 2020 snow coat over the prior 2009 reroof (which consisted of single layer, partial adhered membrane roof). Evergreen tree pollen, dirt, and algae growth make the surface very slippery - minor maintenance to clean (consider addition of walk pads to equipment and drains to improve safety and access).
B3030 Projections	1973	1973	3	TRB	12/11/23	Front entry canopy, metal roof, metal siding, and soffit. Minor paint peeling at soffit at main entry.
C Interiors			2.7			
C10 Interior Construction						
C1010 Partitions	1973	2009	2	TRB	12/11/23	Gypsum on wood framed walls, painted metal toilet partitions.
C1020 Interior Doors	1973	2009	3	TRB	12/11/23	Wood doors in a mix of hollow metal and wood frames. Lever-style hardware. No panic bars at some exit doors. Wood doors have various wear (stains, dents, scratches, and chipped paint). Day room exit door missing panic hardware; minor maintenance to add.
C1030 Fittings	1973	1973	3	TRB	12/11/23	Marker boards, lockers, storage shelving, and built-in cabinets.

Facility Summary

City of Redmond
Fire Station 13 Site
Fire Station 13 Building

8701 208th Avenue NE
Redmond, WA 98053

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
C Interiors				2.7			
C20	Staircases						
C2010	Stair Construction	1973	2009	2	TRB	12/11/23	Mezzanine accessed by ceiling telescoping aluminum precision attic access ladder from hallway below.
C30	Interior Finishes						
C3010	Wall Finishes	1973	2022	2	TRB	12/11/23	Gypsum wall board, paint, wall tile in restrooms; showers have ceramic tile enclosures.
C3020	Floor Finishes	1973	2009	4	TRB	12/11/23	Carpet in most administration and dorm room areas, sealed concrete in apparatus bay, quarry tile in showers and restrooms, sheet vinyl in laundry area. Carpet is worn and stained throughout, some seam unraveling. Vinyl flooring in laundry is worn and has seam failure.
C3030	Ceiling Finishes	2009	2009	3	TRB	12/11/23	Acoustic tile in most administration areas, gypsum wall board painted ceilings in restrooms, dorm rooms, storage rooms, and kitchen. Some water staining.
D Services				3.2			
D10	Vertical Transportation						
D1090	Other Conveying Systems	1973	1993	4	DCS	12/11/23	Pull-down stair to mezzanine.
D20	Plumbing						
D2010	Plumbing Fixtures	1973	1993	3	DCS	12/11/23	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. Tank-type water closets. While fixtures and trim are aging, no issues are reported.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.2			
D20 Plumbing						
D2020 Domestic Water Distribution	1973	1993	3	DCS	12/11/23	City water with no observed backflow prevention. Water pressure is above 100 psig. Copper distribution pipe observed in most locations. Two gas-fired 1995 domestic hot water heaters, 74 gallons and 75 mbh capacity each, with expansion tank, but no recirculation pump or pipe insulation - minor maintenance to add to shorten hot water delivery time and reduce energy use. Hose bibs outside.
D2030 Sanitary Waste	1973	1973	3	DCS	12/11/23	On-site septic system. Cast iron drain, waste, and vent. Floor drains in restrooms and utility areas/rooms. Catch basins in apparatus bay draining to inside oil/water separator. Catch basins reportedly incorporated apparatus bay ventilation, but this could not be confirmed. No drain, waste, and vent issues are reported inside the building; several slow draining lavatories appear due to P-traps needing cleaning.
D2040 Rain Water Drainage	1973	1993	3	DCS	12/11/23	Roof drains and overflow roof drains at middle and south roofs. Scuppers, scupper boxes, and downspouts at north addition roof. Some roof drain improvements appear made in recent years, but ponding is still present - minor maintenance to install one or two additional drains at the worst locations.
D2090 Other Plumbing Systems	1973	1993	3	DCS	12/11/23	Portable air compressor on mezzanine piped via hose to fixed hose reel with no issues reported.
D30 HVAC						
D3010 Energy Supply	1973	1993	3	DCS	12/11/23	Natural gas from Puget Sound Energy via meter number 953557 with 1,000-cfh capacity, with no seismic valve, supplying two rooftop unit gas-packs, two apparatus bay unit heaters, and two domestic hot water heaters. Black iron distribution pipe, painted for corrosion protection where exposed at the roof.
D3020 Heat Generating Systems	1973	1993	3	DCS	12/11/23	Two Reznor gas-fired standard-efficiency (80%) unit heaters in apparatus bay, aging, but functional.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.2			
D30 HVAC						
D3030 Cooling Generating Systems	1993	1993	4	DCS	12/11/23	One high roof condensing unit serving one ductless split-Dx fan coil unit in training room; aged and barely functional. No cooling for communications equipment on apparatus bay mezzanine. No cooling for apparatus bay.
D3040 HVAC Distribution Systems	1973	1993	3	DCS	12/11/23	Forced-air heating and cooling for station house from two rooftop gas-pack units and mix of sheet metal and factory-insulated ductwork. Original apparatus bay under floor distribution (through catch basins) was reportedly abandoned in place during the 1993 renovation, with no apparent replacement other than the Nederman vehicle engine exhaust system. Minor maintenance to inspect the under-slab ductwork every five years to confirm structural integrity.
D3050 Terminal and Package Units	1973	1993	4	DCS	12/11/23	Station house rooftop unit gas-packs, one Payne 2.5-ton and one Payne 3-ton R-22 refrigerant unit, both 1993. Several electric wall heaters.
D3060 Controls and Instrumentation	1973	1993	3	DCS	12/11/23	Mix of older manual and newer programmable thermostats and on/off controls. No station house ventilation when no call for heating or cooling from rooftop units - this should be addressed when the rooftop units are replaced, if not sooner, as minor maintenance.
D3090 Other HVAC Systems and Equipment	1973	1993	4	DCS	12/11/23	Nederman engine exhaust system with two rails and one exhaust fan - system is aged but reportedly functional.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.2			
D40 Fire Protection						
D4010 Fire Protection Sprinkler Systems	1993	1993	3	DCS	12/11/23	Four-inch fire sprinkler service to riser closet at southeast corner of the apparatus bay; riser closet with electric resistance heat. Four-inch service to backflow preventer to four-inch wet-pipe distribution throughout, with four-inch fire department connection for backup. Water pressure is 110 psig at riser. Perimeter soffits appear protected from inside, but not at underside - further investigation suggested. If needed, minor maintenance to install several dry-pipe heads.
D4030 Fire Protection Specialties	1973	1993	3	DCS	12/11/23	Fire extinguishers throughout.
D50 Electrical						
D5010 Electrical Service and Distribution	1973	1993	3	DCS	12/11/23	1993 GE main distribution Panel A is 120/240V, single-phase with 400A capacity, sub-feeding 1973 obsolete FPE 200A Panel B. 1993 Panel E for emergency loads supplied from the generator via the automatic transfer switch.
D5020 Lighting and Branch Wiring	1973	1994	3	DCS	12/11/23	Interior lighting is a mix of T8 fluorescent and LED lamps in the station house, but upgraded to all LED in the two apparatus bays, all with manual control.
D5032 Low Voltage Communication	1994	2009	3	DCS	12/11/23	City standard VoIP telephone. A/V in day room, training room, and office with no issues reported.
D5037 Low Voltage Fire Alarm	1973	2009	4	DCS	12/11/23	Obsolete zoned fire alarm system. Plug-in carbon monoxide alarms.
D5038 Low Voltage Security	1973	1993	3	DCS	12/11/23	Cipher locks at exterior entry doors; no card-key access or intrusion detection.
D5039 Low Voltage Data	1973	2009	3	DCS	12/11/23	Data cabinet at mezzanine with older Ethernet cable to drops and newer WiFi antennas.

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	Renewal Date	Score Last	Surveyor	Survey Date	Comments
D Services				3.2			
D50	Electrical						
D5090	Other Electrical Systems	1994	1994	3	DCS	12/11/23	Exterior 25 kW generator to inside automatic transfer switch to dedicated emergency distribution panel to designated loads. Lighted exit signs. No egress pathway lighting.
E Equipment and Furnishings				3.0			
E10	Equipment						
E1010	Commercial Equipment	2009	2009	3	DCS	12/11/23	Residential kitchen and laundry appliances and light office equipment with no issues reported.
E1020	Institutional Equipment	1973	2009	3	DCS	12/11/23	Fire department specialty equipment. SCBA bottle storage rack is blocking access to the generator automatic transfer switch panel - minor maintenance to relocate bottle storage.
E1030	Vehicular Equipment	1973	1973	3	DCS	12/11/23	Apparatus bay doors with three original door openers and one new.
E20	Furnishings						
E2010	Fixed Furnishings	1993	1993	3	TRB	12/11/23	Plastic laminate casework and counters in kitchen, laundry, and office. Lockers and wardrobes in dorm rooms. Several chips at kitchen and laundry, minor maintenance to repair.
F Special Construction							
F10	Special Construction						
F1050	Special Controls and Instrumentation	1973	2009	3	DCS	12/11/23	Station tone alarm locution system with no issues reported.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	6,548	\$48.00	SF	\$314,304	\$616,000

Deficient Material: Wood Decking

Past water damage concerns and soft springy deck. Plywood on wood joists at firehouse addition with unfaced batt insulation on underside of deck (no vapor barrier, unclear how airspace provided, and no evidence of airspace ventilation provided). Roof deck has elevation differences and angled edges; some places are up to 3/4-inch difference. Deck is not smooth or flush. No fall restraint. No fixed access transfer to high apparatus bay roof. No seismic upgrade has occurred.

Remedial Action:

Install fall restraint and access system. With diaphragm repairs, include seismic upgrade and add plywood decking to strengthen. Add rigid insulation below roof membrane to meet or exceed energy code and move dew point to outside of roof diaphragm.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	4,000	\$5.50	SF	\$22,000	\$43,000

Deficient Material: Exterior Siding
EIFS needs cleaning and repainting. Metal cladding with algae growth and faded paint. Moss areas on brick.

Remedial Action:
Clean entire facade. Repaint metal with industrial exterior metal paint. Repaint EIFS with compatible paint system.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

C3020	Floor Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	3,000	\$8.50	SF	\$25,500	\$50,000

Deficient Material: Floor Finishes
Carpeting is worn and stained in most areas. Sheet vinyl in laundry area is worn and stained with seams failing.

Remedial Action:
Remove carpet and replace with new carpet. Remove vinyl flooring and replace with commercial-grade vinyl flooring.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Fire Station 13 Site				Discount Rate 1.5%	
Facility: Fire Station 13 Building					

D1090	Other Conveying Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Access
Mezzanine pull-down access ladder blocks hallway, is bent and sticking, and provides inconvenient mezzanine access.

Remedial Action:
Provide permanent fixed access to mezzanine, low roof, and high roof.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

D2020	Domestic Water Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	2	\$11,500.00	EA	\$23,000	\$45,000

Deficient Material: Domestic Hot Water Heater
Domestic hot water heaters are approaching end of life.

Remedial Action:
Replace domestic hot water heaters with high-efficiency type upon failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$25,000.00	LS	\$25,000	\$49,000

Deficient Material: **Communications Cooling**
Hot mezzanine location for mission-critical communication and station tone alarm locution system.

Remedial Action:
Create cooled mission-critical communications room.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$7,500.00	EA	\$7,500	\$15,000

Deficient Material: Ductless Split
Aged ductless split system serving training room is at end of life and barely functional.

Remedial Action:
Replace ductless split.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

		Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
D3040 HVAC Distribution Systems		5	2023	2023	2,600	\$8.00	SF	\$20,800	\$41,000

Deficient Material: Apparatus Bay Ventilation
No general ventilation system for apparatus bay.

Remedial Action:
Install general ventilation for apparatus bay.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond		
Site:	Fire Station 13 Site	Escalation 3%
Facility:	Fire Station 13 Building	Discount Rate 1.5%

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2	\$27,000.00	EA	\$54,000	\$106,000

Deficient Material: **Roof Top Units**
Rooftop units are old, inefficient, and barely functioning.

Remedial Action:
Replace with modern rooftop units before complete failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	6,548	\$1.25	SF	\$8,185	\$16,000

Deficient Material: Energy Efficiency
Energy use intensity (EUI) is 164, which is 252% of the WA State Clean Buildings target for fire stations.

Remedial Action:
Conduct an energy audit; this cost estimate for audit and tune-up only, not capital improvements.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Fire Station 13 Site				Discount Rate 1.5%	
Facility: Fire Station 13 Building					

D3090	Other HVAC Systems and Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	2	\$11,000.00	EA	\$22,000	\$43,000

Deficient Material: Engine Exhaust
Nederman engine exhaust is aging.

Remedial Action:
Refurbish engine exhaust system prior to failure.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

D5010 Electrical Service and Distribution		Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$9,500.00	LS	\$9,500	\$19,000

Deficient Material: Electrical Panel
Original FPE Panel B is aged and obsolete.

Remedial Action:
Replace Panel B with modern panel.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 13 Site								Escalation	3%
Facility: Fire Station 13 Building								Discount Rate	1.5%

		Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
D5037 Low Voltage Fire Alarm		4	2023	2025	6,538	\$3.70	SF	\$24,191	\$47,000

Deficient Material: Fire Alarm
Obsolete zoned fire alarm system.

Remedial Action:
Upgrade to modern addressable system.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Building							Discount Rate 1.5%

E1030	Vehicular Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	3	\$8,000.00	EA	\$24,000	\$47,000

Deficient Material: Garage door openers
Three of four garage door openers are original.

Remedial Action:
Budget to replace immediately upon failure.

Action Type:
Other



Facility Summary

City of Redmond

Fire Station 13 Site

Fire Station 13 Infrastructure

8701 208th Avenue NE
Redmond, WA 98053

Facility Condition Summary

The site houses Fire Station 13 and is located outside of the city limits in a rural area. There is a concrete drive apron for the two 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 is likely discharged on-site.

City water and fire service, with no observed irrigation. On-site septic system needing redevelopment. Storm water to wetland with no observed on-site treatment other than oil/water separator for apparatus bay drains. Puget Sound Energy single-phase power and natural gas. On-site diesel generator. Limited site lighting and no site electronic security. Telecom from local purveyors.

DRAFT

Facility Summary

City of Redmond	8701 208th Avenue NE
Fire Station 13 Site	Redmond, WA 98053
Fire Station 13 Infrastructure	

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G20	Site Improvements						
G2010	Roadways	1973	2009	3	TRB	12/11/23	Approximately 25% of site pavement is concrete and 75% is 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.
G2020	Parking Lots	1973	2009	3	TRB	12/11/23	Asphalt parking areas in front, along side, and in rear. No ADA designated stalls (see other city ADA report).
G2030	Pedestrian Paving	1973	1973	3	TRB	12/11/23	Concrete walk at front entry. Concrete patio at northwest corner of building.
G2040	Site Development	1973	1973	3	TRB	12/11/23	Monument sign with rotting wood. Fire danger sign. Aluminum flagpole. Wood storage shed. Covered shed canopy over generator (composition shingle on wood deck on wood post and beams).
G2050	Landscaping	1973	1973	3	TRB	12/11/23	Mature landscaping with perimeter evergreen trees. Vegetated buffer of native plants along wetland edge. Lawn areas are in fair condition. Trees and shrubs are in good condition. No known issues.
G30	Site Civil / Mechanical Utilities						
G3010	Water Supply	1973	1993	3	DCS	12/11/23	City domestic water service estimated at 1.5-inch; four-inch fire service to building with post indicator valve and fire department connection to SE, serving the 1993 addition sprinkler riser room outside the SE corner of the apparatus bay. No observed backflow prevention for domestic water, but fire has a backflow preventer in the riser room. Water pressure is near 100 psig.

Facility Summary

City of Redmond
Fire Station 13 Site
Fire Station 13 Infrastructure

8701 208th Avenue NE
Redmond, WA 98053

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G30 Site Civil / Mechanical Utilities							
G3020	Sanitary Sewer	1973	1993	3	DCS	12/11/23	Aging on-site septic system with somewhat newer Orenco control panel located at northeast corner of the building. Reportedly, the system is at end of life and is currently under design for renewal. Reportedly, the King County system at the street has no capacity to serve the fire station. Currently, no on-site vehicle washing is allowed.
G3030	Storm Sewer	1973	1993	3	DCS	12/11/23	Catch basin and pipe system at paved areas at front to east. Paved areas at rear to west sheet flow to the adjacent wetland. Fire station downspout lines connect to an underground system, assumed to discharge to the wetland. No flooding issues reported.
G3060	Fuel Distribution	1973	1973	3	DCS	12/11/23	Puget Sound Energy natural gas meter No. 953557 with 1,000 cfh capacity and no seismic shut-off valve, minor maintenance to install. Propane tanks for BBQ. Diesel generator belly tank with 240-gallon capacity.
G40 Site Electrical utilities							
G4010	Electrical Distribution	1973	1993	3	DCS	12/11/23	Power from pole-mounted single-phase utility pot transformer down and underground to service entry at back of station to west with Puget Sound Energy meter No. X155949660 delivered at 120/240V, Generac 25-kW diesel generator outside under shed roof with 240-gallon belly tank; feeds Generac automatic transfer switch inside the apparatus bay, in turn powering the emergency load panel. No renewable energy; no electric vehicle charging.
G4020	Site Lighting	1973	1973	3	DCS	12/11/23	Pole lights around building exterior are a mix of LED and HID - minor maintenance to replace remaining HID with LED as lamps fail.
G4030	Site Communications and Security	1973	2009	3	DCS	12/11/23	Telecom from local purveyors with no issues reported. No site electronic security.

Facility Summary

City of Redmond	
Fire Station 13 Site	
Fire Station 13 Infrastructure	8701 208th Avenue NE Redmond, WA 98053

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G90	Other Site Construction						
G9090	Other Site Systems	1973	1973	4	DCS	12/11/23	Concrete pumper truck drafting and flow test vault at rear of building, approximately 12 feet by 25 feet, currently abandoned in place and deteriorating - minor maintenance to fully decommission and lay-up for possible future use.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 13 Site							Escalation 3%
Facility:		Fire Station 13 Infrastructure							Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	1,000	\$25.00	SY	\$25,000	\$49,000

Deficient Material: Roadways
Asphalt drive pavement aging, standing waves starting, pitting, rough patches, alligating, and wear in some places.

Remedial Action:
Remove and replace existing asphalt where deteriorated near building with full depth section, suitable for fire truck loading. Seal other cracks.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 13 Site

Facility: Fire Station 13 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2040	Site Development	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$18,000.00	EA	\$18,000	\$35,000

Deficient Material: Monument Sign
Monument sign with rotting wood.

Remedial Action:
Remove and replace (recommend creating city standard monument signage or use most recent monument sign as the new standard).

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 13 Site

Facility: Fire Station 13 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3020	Sanitary Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	1	\$58,000.00	LS	\$58,000	\$114,000

Deficient Material: Septic System
Aging septic system with design for replacement currently underway.

Remedial Action:
Renew septic system prior to failure.

Action Type:
Code Issue



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: Fire Station 13 Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 13 Building	B10 Superstructure	\$314,304	\$62,861	\$75,433	\$162,935	\$616,000	\$662,000
	B20 Exterior Closure	\$22,000	\$4,400	\$5,280	\$11,405	\$43,000	\$46,000
	C30 Interior Finishes	\$25,500	\$5,100	\$6,120	\$13,219	\$50,000	\$53,000
	D10 Vertical Transportation	\$5,000	\$1,000	\$1,200	\$2,592	\$10,000	\$10,000
	D20 Plumbing	\$23,000	\$4,600	\$5,520	\$11,923	\$45,000	\$48,000
	D30 HVAC	\$137,485	\$27,497	\$32,996	\$71,272	\$270,000	\$278,000
	D50 Electrical	\$33,691	\$6,738	\$8,086	\$17,465	\$66,000	\$68,000
	E10 Equipment	\$24,000	\$4,800	\$5,760	\$12,442	\$47,000	\$48,000
	Facility Total	\$584,980	\$116,996	\$140,395	\$303,253	\$1,147,000	\$1,213,000
Fire Station 13 Infrastructure	G20 Site Improvements	\$43,000	\$8,600	\$10,320	\$22,291	\$84,000	\$88,000
	G30 Site Civil / Mechanical Utilities	\$58,000	\$11,600	\$13,920	\$30,067	\$114,000	\$119,000
	Facility Total	\$101,000	\$20,200	\$24,240	\$52,358	\$198,000	\$207,000
Site Total		\$685,980	\$137,196	\$164,635	\$355,612	\$1,345,000	\$1,420,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 13 Site

Total Site Opportunity Cost: \$1,535,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 13 Building							
System: Exterior Closure							\$63,000
B2010 Exterior Walls							
	Stud cavity insulation value assumed to be code minimum (from 1973).	Blow in foam-in-place insulation in existing stud cavities to increase thermal value, energy efficiency, thermal comfort, and support city carbon reduction goals.	4,000.00	\$8.00	SF	\$32,000	\$63,000
Facility: Fire Station 13 Building							
System: Plumbing							\$157,000
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	\$10,000
	Limited decontamination in laundry room.	Add separate decontamination space per codes and standards.	100.00	\$350.00	SF	\$35,000	\$69,000
D2030 Sanitary Waste							
	Apparatus wash inside places additional load on catch basins and oil/water separator. Oil/water separator 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	\$5,000.00	EA	\$20,000	\$39,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 13 Site

Total Site Opportunity Cost: \$1,535,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
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 and reduce city water use.	Install 5,000-gallon rain water harvesting system.	1.00	\$20,000.00	LS	\$20,000	\$39,000
Facility: Fire Station 13 Building								\$554,000
System: HVAC								
D3020	Heat Generating Systems	Aging standard-efficiency (80%) gas-fired unit heaters in apparatus bay.	Upon replacement, upgrade to high-efficiency (90%) condensing unit heaters.	2.00	\$22,000.00	EA	\$44,000	\$86,000
D3050	Terminal and Package Units	Existing two-zone rooftop unit system provides marginal comfort, indoor air quality, and energy efficiency.	Replace current system with modern variable refrigerant flow and heat recovery ventilator technology.	3,900.00	\$52.00	SF	\$202,800	\$397,000
D3060	Controls and Instrumentation	Standalone controls with no remote monitoring or alarm.	Upgrade to city standard networked controls.	6,548.00	\$5.50	SF	\$36,014	\$71,000
Facility: Fire Station 13 Building								\$131,000
System: Electrical								
D5020	Lighting and Branch Wiring	Some remaining fluorescent lighting with mostly manual control.	Complete upgrade to all LED, plus automatic control.	3,500.00	\$11.00	SF	\$38,500	\$75,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Fire Station 13 Site						
Total Site Opportunity Cost:						\$1,535,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D5038	Low Voltage Security	No card-key access or intrusion detection.	Install city standard card-key access, plus intrusion detection.	6,548.00	\$3.00	SF	\$19,644	\$38,000
D5090	Other Electrical Systems	Building has no battery backup emergency egress pathway lighting (only exit signs).	Provide battery backup emergency lights at interior and exterior egress.	18.00	\$500.00	EA	\$9,000	\$18,000
Facility:	Fire Station 13 Infrastructure							\$49,000
System:	Site Civil / Mechanical Utilities							
G3020	Sanitary Sewer	No on-site vehicle washing allowed by current sanitary and storm system; vehicles are washed off-site.	Modify or expand sanitary and/or storm water systems to accommodate on-site vehicle washing.	1.00	\$25,000.00	LS	\$25,000	\$49,000
Facility:	Fire Station 13 Infrastructure							\$581,000
System:	Site Electrical utilities							
G4010	Electrical Distribution	Generator and automatic transfer switch (ATS) limited to emergency loads only.	Upgrade generator and ATS for whole-building backup. Assume 100 kW.	1.00	\$125,000.00	LS	\$125,000	\$245,000
		No electric vehicle (EV) charging stations.	Install one double-cable EV charging station, with rough-in for one more.	1.00	\$11,500.00	EA	\$11,500	\$23,000

Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 13 Site

Total Site Opportunity Cost: \$1,535,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
G4010	Electrical Distribution	Thirty-year-old main and fifty-year-old secondary electrical distribution panels with residential-type single-phase power service.	In conjunction with major renovation, including whole-building generator, upgrade electrical service to modern three-phase power.	1.00	\$75,000.00	LS	\$75,000	\$147,000
		No renewable energy.	Install 10-kW photovoltaic system on flat roof.	10.00	\$6,500.00	EA	\$65,000	\$127,000
G4030	Site Communications and Security	No site electronic security. Station is unmanned with no surveillance when crew is out.	Install city standard CCTV system.	1.00	\$20,000.00	LS	\$20,000	\$39,000

Note: Cost estimates shown include project markups, but exclude escalation.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
Redmond, WA 98053

Facility Size - Gross S.F.	9,530
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	2.6			
Facility Condition Index (FCI)	0.12	Observed Deficiencies 2023 - 2028	\$553,000	\$571,000
Current Replacement Value (CRV)	\$6,604,000	Predicted Renewal Budget 2029 - 2042	\$2,203,000	\$2,577,000
Beginning Budget Year	2023	Opportunities	\$736,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

Fire Station 14 was purpose built in 1991 as a single-story wood framed structure on standard foundation and slab on grade. Seismic upgrade in 2022. Roof is wood framed sloped roof with composite shingles. Building is situated with three-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 painted cement board siding. Exterior windows are aluminum dual-glazed. Apparatus bay doors are 2022 fast-acting thermally-insulated aluminum overhead doors. 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, acoustical ceiling tile, and carpet in most spaces. Sheet goods in restroom and kitchen. Various tall cabinets and furniture.

Building electrical service is 600A, 208/120V, four-wire, three-phase served by Tanner Electric, underground service, with current transformer and meter on outside wall of building. Building has 175-kW diesel generator with automatic transfer switch for whole-building back-up. Interior lighting is a mix of T12 and LED lamps, with all LED in the apparatus bay. All branch wiring in conduits. Devices are 15A and 20A grounding type. Building has a modern addressable fire alarm system. Building has a security alarm system. Most exterior skin was replaced in 2009 due to extensive water damage related to the original EIFS system, 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. HVAC is five 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 mezzanine storage areas. Packaged terminal air conditioners were added to two dorm rooms, not originally designed as dorm rooms. Plumbing is city water and on-site septic sewer with gas domestic hot water heat. Fire sprinkler is wet-pipe in heated space and dry-pipe to protect unheated canopy areas.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
Redmond, WA 98053

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				2.5			
A10	Foundations						
A1010	Standard Foundations	1991	1991	2	TRB	12/11/23	Standard stem wall and continuous footings. Recommend cleaning dirt, debris, leaves, and moss from joint between footing and site paving and filling with sealant as minor maintenance.
A1030	Slab On Grade	1991	1991	3	TRB	12/11/23	Slab on grade. Some minor cracks at apparatus bay.
B Shell				2.7			
B10	Superstructure						
B1010	Floor Construction	1991	1991	2	TRB	12/11/23	Wood deck on wood joists at mezzanine floors.
B1020	Roof Construction	1991	1991	3	TRB	12/11/23	Pre-engineered roof truss system throughout. Seismic upgrade included steel and beams, and 2022 batt insulation and vapor barrier around the perimeter of the apparatus bay where impacted by upgrade work, however vapor barrier sealant tape is failing, the existing face-stapled vapor barrier seams are not sealed, and areas of batt insulation are falling through.
B20	Exterior Closure						
B2010	Exterior Walls	1991	2009	3	TRB	12/11/23	Wood framed walls. At apparatus bay, walls are concrete to 48" high and wood frame above. Cladding is a mix of two types of cement board siding. Lap siding but joint seams have unsealed gaps, board and batten grey paint oxidized and discolored, some joints not sealed, other battens broken. Areas of moss and lichen growth. Metal flashing.
B2020	Exterior Windows	2009	2009	2	TRB	12/11/23	Aluminum operable windows with screens. Thermally glazed.

Facility Summary

City of Redmond	
Fire Station 14 Site	5021 264th Avenue NE
Fire Station 14 Building	Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
B Shell			2.7			
B20 Exterior Closure						
B2030 Exterior Doors	1991	2022	2	TRB	12/11/23	Apparatus bay doors are 2022 fast-acting thermally-insulated aluminum overhead doors. Main entrance door is wood door and frame. Remaining are hollow metal doors and frames with operable hardware and keypad entry. Aluminum sliders at day room. Oxidized paint on exterior and interior of door scratches need touch-up paint as minor maintenance.
B30 Roofing						
B3010 Roof Coverings	2009	2009	3	TRB	12/11/23	Composite shingle roof, with small area of built-up roof between gable roofs from access door. Some moss growth.
B3030 Projections	1991	2009	2	TRB	12/11/23	Entrance and patio canopy, wood framed, cement board soffit, vented.
C Interiors			1.6			
C10 Interior Construction						
C1010 Partitions	1991	1991	2	TRB	12/11/23	Gypsum on wood framed interior partitions. Powder-coated toilet partitions.
C1020 Interior Doors	1991	2022	2	TRB	12/11/23	Hollow metal frames, wood doors, some non-ADA-compliant hardware (door knobs).
C1030 Fittings	1991	1991	2	TRB	12/11/23	Marker boards, shelving, and gear storage.
C20 Staircases						
C2010 Stair Construction	1991	1991	2	TRB	12/11/23	Steel stairs and grate landing to mezzanine level.
C2020 Stair Finishes	1991	2009	2	TRB	12/11/23	Painted steel.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
C Interiors			1.6			
C30 Interior Finishes						
C3010 Wall Finishes	1991	2022	1	TRB	12/11/23	Gypsum wall board and new paint in most areas, ceramic tile wainscot in restrooms. Painted gypsum wall board in apparatus bay at east/west walls.
C3020 Floor Finishes	1991	2022	1	TRB	12/11/23	Sealed concrete in apparatus bay. Mostly 2022 LVL plank resilient flooring throughout most areas (halls, offices, community/meeting room, kitchen, and day room). 2022 carpet in sleeping quarters. Sheet vinyl in laundry area and restrooms. Painted wood at mezzanine. 2022 interlocking floating rubber flooring in weight room (installed over the old 1991 carpet).
C3030 Ceiling Finishes	1991	2022	1	TRB	12/11/23	Painted drywall in storage, kitchen, day room, community/meeting, and restrooms. Acoustical tile in office, corridors, exercise, and sleeping rooms.
D Services			3.1			
D20 Plumbing						
D2010 Plumbing Fixtures	1991	1991	3	DCS	12/11/23	Porcelain water closets, urinals, and lavatories. Fiberglass showers. Stainless steel sinks. Non-metallic janitor sink. Laundry wall box. No issues reported.
D2020 Domestic Water Distribution	1991	1991	3	DCS	12/11/23	Two-inch city water service with pressure at 60 psig, but no pressure issues reported. Copper piping. 2009 A.O. Smith gas-fired domestic hot water heater, 99 gallons, 250-mbh with expansion tank at northwest mechanical mezzanine, but missing recirculation pump and hot water pipe insulation. Reported pinhole leaks in plumbing piping were not confirmed on-site.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Renewal Last Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D20 Plumbing						
D2030 Sanitary Waste	1991	1991	3	DCS	12/11/23	On-site septic. Non-metallic ABS drain, waste, and vent. Floor drains in restrooms and utility rooms. Trap primers not observed, but no issues reported. Short narrow trench drains in apparatus bays reportedly leading to exterior oil/water separator - reportedly prior (2013) concerns regarding inadequacy of the minimal trench drain system have been resolved, and no longer a concern.
D2040 Rain Water Drainage	1991	1991	3	DCS	12/11/23	Gutter and downspout with double-downspouts to storm leaking, minor maintenance to reseal gutter joint seams and continue monitoring. Several internal roof drains and overflow roof drain sets for flat roof area(s). Storm to on-site detention pond. Problematic area in the flat roof between the two north peaked roofs requiring minor ongoing maintenance to keep these drains clear and flowing given the heavily treed site.
D2090 Other Plumbing Systems	1991	1991	3	DCS	12/11/23	SCBA storage rack at north end of apparatus bay is partially blocking the apparatus bay low point exhaust grille - minor maintenance to relocate the SCBA rack to allow free exhaust air flow to low point exhaust grille.
D30 HVAC						
D3010 Energy Supply	1991	1991	3	DCS	12/11/23	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 heaters, shop and mezzanine storage unit heaters, kitchen range, barbecue, and laundry dryer.
D3020 Heat Generating Systems	1991	2022	2	DCS	12/11/23	Three 2021 Space-Ray overhead low-intensity gas-fired radiant heaters, separately vented up through roof. Two 2015 gas-fired unit heaters for shop and mezzanine storage.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D30 HVAC						
D3030 Cooling Generating Systems	1991	1991	4	DCS	12/11/23	Five Carrier condensing units to west outside at grade. Condensing units 1, 2, 3, and 4 are 3.5-ton, serving dorms, kitchen, weight room, and office areas. Condensing unit 5 is 3-ton serving the conference room. Ventilation cooling only for main electrical room, but no issues reported.
D3040 HVAC Distribution Systems	1991	1991	4	DCS	12/11/23	Five standard-efficiency (80%) forced-air gas furnace systems with split direct expansion (Dx) cooling serving five station house zones. Fixed outside air with no economizer (free cooling). Apparatus bay general exhaust system with low exhaust inlet and high outside air entry via gravity dampers at east-facing dormers.
D3050 Terminal and Package Units	2008	2008	3	DCS	12/11/23	Two packaged terminal air conditioning units (PTACs) installed to convert storage space to dormitory sleeping rooms. The PTACs have an outside air adjustment setting; one was found open, the other mostly closed. Both should probably be full open - minor maintenance to adjust. The PTACs have electric resistance heat and on-board Dx cooling.
D3060 Controls and Instrumentation	1991	1991	3	DCS	12/11/23	Mix of original and newer programmable and manual thermostats and on/off controls; no networked controls. Energy use intensity (EUI) is 90, which is 138% of the WA State Clean Buildings target for fire stations; minor maintenance to tune up this building to reduce EUI. This fire station has recently had thermal envelope improvements that should further lower EUI, provided controls are working properly and the building is operated with energy efficiency in mind, for example, closing apparatus bay doors when the heat is on.
D3090 Other HVAC Systems and Equipment	1991	2022	2	DCS	12/11/23	Three Nederman apparatus bay vehicle engine exhaust rails; renewed in 2022, except for aged and rusty rooftop shared exhaust fan.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D40 Fire Protection						
D4010 Fire Protection Sprinkler Systems	1991	1991	3	DCS	12/11/23	City fire service via post indicator valve and fire department connection, with 8-inch service entry at south shop, reducing to 6-inch reduced pressure backflow preventer and 6-inch wet-pipe main to heated spaces, and recently upgraded 3-inch dry-pipe system to unheated spaces. Pressure near 60 psig for wet-pipe system; 40 psig for dry-pipe system. The dry-pipe system was recently modified to better function in unconditioned spaces and voids. No issues reported, but appears five-year confidence testing may be soon due as minor maintenance.
D4030 Fire Protection Specialties	1991	1991	3	DCS	12/11/23	Fire extinguishers throughout.
D50 Electrical						
D5010 Electrical Service and Distribution	1991	1991	3	DCS	12/11/23	Building electrical system is 600A, 208/120V, three-phase, four-wire, and main panel located inside building electrical room. Main panel, main lugs only, with four branch breaker, feed to four separate panels. Main panel is Cutler Hammer, type PH panel. No surge suppression, but no issues reported.
D5020 Lighting and Branch Wiring	1991	1991	3	DCS	12/11/23	Many interior light fixtures upgraded to LED, but still some original T12 lamps in the station house; mostly newer low-voltage controls.
D5032 Low Voltage Communication	1991	2009	3	DCS	12/11/23	Telephone and A/V, no issues reported.
D5037 Low Voltage Fire Alarm	1991	2016	2	DCS	12/11/23	Fire alarm control panel replaced in 2016 with no issues reported, other than difficult to access heat detectors in apparatus bay truss space.
D5038 Low Voltage Security	1991	2009	3	DCS	12/11/23	Somewhat newer cipher locks with card readers at selected doors with no issues reported. Radionics intrusion detection system is present.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Building

5021 264th Avenue NE
Redmond, WA 98053

Facility Components

Facility Components							
Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				3.1			
D50	Electrical						
D5039	Low Voltage Data	1991	2009	3	DCS	12/11/23	Building has a voice/data system, Cat-6 wiring and devices, intermediate distribution frame in electrical room.
D5090	Other Electrical Systems	1991	2022	3	DCS	12/11/23	2022 whole-building generator and automatic transfer switch. Several lighted exit signs.
E Equipment and Furnishings				2.2			
E10	Equipment						
E1010	Commercial Equipment	1991	2015	3	DCS	12/11/23	Mix of older and newer appliances with no current issues reported.
E1020	Institutional Equipment	1991	2009	3	DCS	12/11/23	Fire department equipment - no issues reported.
E1030	Vehicular Equipment	1991	2022	2	DCS	12/11/23	New high-speed apparatus bay doors to east, under warranty. Older but fully functional traditional motor-operated doors to west. Collectively with no issues reported.
E20	Furnishings						
E2010	Fixed Furnishings	1991	1991	2	TRB	12/11/23	Plastic laminate casework and counters at laundry area, kitchen, sleeping wardrobe, hall lockers, reception counter, and desk.
F Special Construction							
F10	Special Construction						
F1050	Special Controls and Instrumentation	1991	2009	3	DCS	12/11/23	Tone alarm locution system with no issues reported.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 14 Site							Escalation 3%
Facility:		Fire Station 14 Building							Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	9,530	\$3.20	SF	\$30,496	\$60,000

Deficient Material: Fall Protection
No fall protection, with no safe access to peaked roof sections and no access to apparatus bay high roof.

Remedial Action:
Install fall protection and access ladder to high roof.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 14 Site

Facility: Fire Station 14 Building

Escalation 3%
Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	9,530	\$6.00	SF	\$57,180	\$112,000

Deficient Material: Insulation

The perimeter sections of the 2022 vapor barrier with sealant tape are failing. The remaining existing face-stapled vapor barrier seams are not sealed, and areas of batt insulation are exposed and in several instances falling through.

Remedial Action:

Affix failed seams and seal all vapor barrier joints and penetrations to protect insulation and roof from interior moisture vapor intrusion.

Action Type:

Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 14 Site							Escalation 3%
Facility:		Fire Station 14 Building							Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	8,000	\$6.75	SF	\$54,000	\$106,000

Deficient Material: Exterior Siding
Lap siding but joint seams have unsealed gaps, board and batten grey paint oxidized and discolored, some joints not sealed, and other battens broken. Areas of moss and lichen growth.

Remedial Action:
Clean walls, repair broken battens, seal seams, and repaint.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 14 Site							Escalation 3%
Facility:		Fire Station 14 Building							Discount Rate 1.5%

C1020	Interior Doors	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	11	\$500.00	EA	\$5,500	\$11,000

Deficient Material: Interior Doors
Knob-style hardware.

Remedial Action:
Replace with lever-style ADA-compliant hardware.

Action Type:
ADA



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 14 Site

Facility: Fire Station 14 Building

Escalation 3%
Discount Rate 1.5%

D2020	Domestic Water Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	9,530	\$1.40	SF	\$13,342	\$26,000

Deficient Material: Hot water piping
No hot water piping insulation and no recirculation pump, resulting in long hot water wait times, wasted water, added septic system load, and increased energy use.

Remedial Action:
Add recirculation piping and pump and insulate hot water piping.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Fire Station 14 Site				Discount Rate 1.5%	
Facility: Fire Station 14 Building					

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	5	\$8,000.00	EA	\$40,000	\$78,000

Deficient Material: Condensing Units
Condensing units are aged, rusted, and nearing end of life.

Remedial Action:
Replace condensing units upon failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 14 Site							Escalation 3%
Facility:		Fire Station 14 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$18,000.00	LS	\$18,000	\$35,000

Deficient Material: Apparatus Bay Exhaust
Half of the apparatus bay exhaust system was demolished and not replaced during the 2009 skin replacement.

Remedial Action:
Reinstall the missing half of the apparatus bay general exhaust system.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 14 Site							Escalation 3%
Facility:		Fire Station 14 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	5	\$10,500.00	EA	\$52,500	\$103,000

Deficient Material: Furnaces
Gas furnaces are approaching end of life.

Remedial Action:
Replace gas furnaces promptly upon failure. Consider upgrade to high-efficiency condensing type.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 14 Site							Escalation 3%
Facility:		Fire Station 14 Building							Discount Rate 1.5%

		Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
D3090	Other HVAC Systems and Equipment	4	2023	2027	1	\$11,000.00	LS	\$11,000	\$22,000

Deficient Material: Engine Exhaust
Aged and rusty vehicle engine exhaust fan on roof.

Remedial Action:
Budget to replace promptly upon failure.

Action Type:
Other



Facility Summary

City of Redmond	
Fire Station 14 Site	5021 264th Avenue NE
Fire Station 14 Infrastructure	Redmond, WA 98053

Facility Condition Summary

The site houses Fire Station 14, a three-bay fire station in a rural area. City water and fire; irrigation is present, but water source is unknown. On-site pumped septic system and wetland for storm water. Power from Tanner Electric and natural gas from Puget Sound Energy. Telecom from local purveyors. Cell phone antenna on-site leased by others. Concrete access drives and asphalt parking areas.

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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 Components		System Date	Original Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G20	Site Improvements						
G2010	Roadways	1991	1991	3	TRB	12/11/23	Concrete drive aprons are in poor condition with pitting, damage, and cracking. Temporarily sack-patched. Adjacent asphalt driveway. Asphalt appears to have been seal coated more recently.
G2020	Parking Lots	1991	2022	2	TRB	12/11/23	Asphalt parking lot on the north side of station. Extruded concrete curbs. Asphalt appears to have been seal coated more recently. Tree root uplift buckling near center island.
G2030	Pedestrian Paving	1991	1991	3	TRB	12/11/23	Concrete walkways at the perimeter of the building. Concrete patio area at rear of the building. The sidewalk from the right-of-way has sections of root uplift and settlement of the concrete walk in numerous panels, creating growing trip hazards (temporarily patched with asphalt in the worst transition areas).
G2040	Site Development	1991	1991	3	TRB	12/11/23	Fire danger sign. Monument sign removed (consider replacement with standard based on most recent fire station). Flagpole. Picnic bench.
G2050	Landscaping	1991	1991	3	TRB	12/11/23	Much of the area around the station is lawn and ornamental plantings. West of the station is a wooded area with a fenced-in storm water pond. Pond is generally covered in grass. Irrigation system present. Dead tree should be removed as it is a hazard to parking area and may impact adjacent cell tower. Other areas with shrubs against face of building causing premature degradation and presenting hiding spaces and pest vector pathway to building.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Infrastructure

5021 264th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3010 Water Supply	1991	1991	3	DCS	12/11/23	Domestic water supply (1-1/2") and fire sprinkler service provided from public system in NE 50th Street. Signs of irrigation with some damage - minor maintenance to repair in spring.
G3020 Sanitary Sewer	1991	1991	3	DCS	12/11/23	On-site septic system with septic tank, pump, and large mound is located just northwest of the building. Zurn brand oil/water separator (600 gallons) is located on the south side of the shop driveway. This is presumed to serve apparatus bay floor drains.
G3030 Storm Sewer	1991	1991	3	DCS	12/11/23	Catch basins throughout the paved areas. Building downspouts connect to an underground pipe system. Storm is assumed routed to an open detention pond located NW of the building. Pond is approximately 220 feet by 50 feet and is fenced, but with damaged gate - minor maintenance to correct.
G3050 Cooling Distribution	1991	1991	3	DCS	12/11/23	Condenser yard to west with deteriorating refrigerant lines - minor maintenance to replace in conjunction with condenser unit replacement.
G3060 Fuel Distribution	1991	1991	3	DCS	12/11/23	Natural gas meter to SE with Puget Sound Energy meter No. 528159 and 1,000 cfh capacity; no seismic shut-off valve but minor maintenance to install. Natural gas BBQ on patio. Diesel generator belly tank with estimated 750-gallon capacity. No vehicle fuel island.
G40 Site Electrical utilities						
G4010 Electrical Distribution	1991	1991	3	DCS	12/11/23	Underground electric service to the site with Tanner Electric meter No. 12397934 and power delivered at 120/208V, three-phase. A 2022 full-size 175-kW diesel generator in installed outside to SW in fenced enclosure, with disconnect on SE exterior of apparatus bay, and full-size automatic transfer switch inside the SE corner of the apparatus bay feeding the main distribution panel in the electrical room toward the center of the building.

Facility Summary

City of Redmond
Fire Station 14 Site
Fire Station 14 Infrastructure

5021 264th Avenue NE
Redmond, WA 98053

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G40 Site Electrical utilities						
G4020 Site Lighting	1991	1991	3	DCS	12/11/23	Pole lights are located throughout the site with mix of LED and HID lamps - minor maintenance to replace HID with LED as they fail.
G4030 Site Communications and Security	1991	2009	3	DCS	12/11/23	Telecom services by local purveyors; no site electronic security and no issues reported.
G90 Other Site Construction						
G9090 Other Site Systems	1991	1991	3	DCS	12/11/23	Just west of the station building, at the center of the site, is a cell phone tower and associated equipment with presumed ground-lease by wireless carrier(s) - no issues reported.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 14 Site

Facility: Fire Station 14 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	3,000	\$25.00	SF	\$75,000	\$147,000

Deficient Material: Concrete Pavement
Concrete drive aprons are in poor condition with pitting, damage, and cracking.

Remedial Action:
Demo, regrade, and new base course and slab to support heavy fire apparatus vehicular traffic.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 14 Site

Facility: Fire Station 14 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2020	Parking Lots	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	300	\$25.00	SF	\$7,500	\$15,000

Deficient Material: Asphalt Parking
Tree root uplift buckling of two stalls near center island.

Remedial Action:
Cut asphalt and trim roots. Repair and patch asphalt.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 14 Site							Escalation 3%
Facility:		Fire Station 14 Infrastructure							Discount Rate 1.5%

G2030	Pedestrian Paving	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	350	\$25.00	SF	\$8,750	\$17,000

Deficient Material: Concrete Sidewalk
The sidewalk from the right-of-way has sections of root uplift and settlement of the concrete walk in numerous panels, presenting growing trip hazards.

Remedial Action:
Demo sidewalk, trim tree roots, regrade, and repour concrete walk to public right-of-way.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 14 Site							Escalation 3%
Facility:		Fire Station 14 Infrastructure							Discount Rate 1.5%

G2050	Landscaping	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2023	1	\$11,000.00	LS	\$11,000	\$22,000

Deficient Material: Landscaping
Dead tree is a hazard to parking area and may impact adjacent cell tower. Other areas with shrubs against face of building causing premature degradation and presenting hiding spaces and pest vector pathway to building.

Remedial Action:
Remove dead tree, prune landscaping a minimum of 2 feet from face of building.

Action Type:
Life Safety



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: Fire Station 14 Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 14 Building	B10 Superstructure	\$87,676	\$17,535	\$21,042	\$45,451	\$172,000	\$172,000
	B20 Exterior Closure	\$54,000	\$10,800	\$12,960	\$27,994	\$106,000	\$114,000
	C10 Interior Construction	\$5,500	\$1,100	\$1,320	\$2,851	\$11,000	\$12,000
	D20 Plumbing	\$13,342	\$2,668	\$3,202	\$6,916	\$26,000	\$27,000
	D30 HVAC	\$121,500	\$24,300	\$29,160	\$62,986	\$238,000	\$246,000
	Facility Total	\$282,018	\$56,404	\$67,684	\$146,198	\$553,000	\$571,000
Fire Station 14 Infrastructure	G20 Site Improvements	\$102,250	\$20,450	\$24,540	\$53,006	\$201,000	\$214,000
	Facility Total	\$102,250	\$20,450	\$24,540	\$53,006	\$201,000	\$214,000
Site Total		\$384,268	\$76,854	\$92,224	\$199,205	\$754,000	\$785,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 14 Site

Total Site Opportunity Cost: \$867,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Fire Station 14 Building							\$118,000
System:	Plumbing							
D2030	Sanitary Waste	Code minimum (standard-efficiency) plumbing fixtures place unneeded load on septic system.	Retrofit high-efficiency fixtures and appliances to reduce septic system load.	12.00	\$2,500.00	EA	\$30,000	\$59,000
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	\$30,000.00	LS	\$30,000	\$59,000
Facility:	Fire Station 14 Building							\$480,000
System:	HVAC							
D3030	Cooling Generating Systems	Communications room is currently cooled by general HVAC. The 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	\$9,000.00	LS	\$9,000	\$18,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 14 Site

Total Site Opportunity Cost: \$867,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3040	HVAC Distribution Systems	Current forced-air furnace with split direct expansion (Dx) station house system provides marginal comfort, has no economizer, and is near end of life.	Upgrade to variable refrigerant flow and heat recovery ventilator technology in lieu of replacement in kind gas furnace with split-Dx cooling.	5.00	\$29,000.00	EA	\$145,000	\$284,000
D3050	Terminal and Package Units	Two aging packaged terminal air conditioning units with electric resistance heat.	Upgrade to high-efficiency heat pump packaged terminal air conditioning units upon failure.	2.00	\$7,500.00	EA	\$15,000	\$29,000
D3060	Controls and Instrumentation	No networked (DDC) controls.	Install networked controls.	9,500.00	\$8.00	SF	\$76,000	\$149,000
Facility:	Fire Station 14 Building							\$138,000
System:	Electrical							
D5010	Electrical Service and Distribution	Panel E circuit capacity is at maximum.	Replace existing panel. Provide new 64-circuit electrical panel with 42 circuits to match existing and 22 circuits for future use.	1.00	\$9,000.00	LS	\$9,000	\$18,000
D5020	Lighting and Branch Wiring	Increasingly obsolete and inefficient T12 lighting in some station house spaces.	Complete upgrade to LED throughout, including automatic controls where not already.	4,000.00	\$11.00	SF	\$44,000	\$86,000

Opportunity Summary By Subsystem

City of Redmond									
Site: Fire Station 14 Site									
Total Site Opportunity Cost:									\$867,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D5037	Low Voltage Fire Alarm	Difficult access to apparatus bay truss space heat detectors.	Construct cat-walk to facilitate access to apparatus bay truss space heat detectors.	1.00	\$5,000.00	LS	\$5,000	\$10,000
D5090	Other Electrical Systems	No observed emergency lighting, except for several exit signs.	Provide battery-backed emergency egress pathway lighting at interior and exterior egress.	24.00	\$500.00	EA	\$12,000	\$24,000
Facility:	Fire Station 14 Infrastructure							\$69,000
System:	Site Civil / Mechanical Utilities							
G3060	Fuel Distribution	No vehicle fueling.	Install packaged vehicle fueling system.	1.00	\$35,000.00	LS	\$35,000	\$69,000
Facility:	Fire Station 14 Infrastructure							\$62,000
System:	Site Electrical utilities							
G4010	Electrical Distribution	No electric vehicle (EV) charging stations.	Install one double-cable EV charging station, with rough-in for one more in the future.	1.00	\$11,500.00	LS	\$11,500	\$23,000
G4030	Site Communications and Security	No site CCTV system; station is not monitored when crew is out.	Install CCTV perimeter monitoring system.	1.00	\$20,000.00	LS	\$20,000	\$39,000

Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Building

6502 185th Avenue NE
Redmond, WA 98052

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	2.6			
Facility Condition Index (FCI)	0.12	Observed Deficiencies 2023 - 2028	\$329,000	\$336,000
Current Replacement Value (CRV)	\$6,827,000	Predicted Renewal Budget 2029 - 2042	\$2,778,000	\$3,237,000
Beginning Budget Year	2023	Opportunities	\$842,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

Single-story, wood framed administration and apparatus bay, and concrete masonry unit (CMU) hose tower. Metal siding exterior and composite torch down roofing. Wood roof truss structure. Two metal aprons, north side contains storage and south side includes some storage and a mechanical area. Main entrance has an open atrium extending past the roof line with clerestory. Steel entrance canopy to exterior. Interior includes lobby area, offices, 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, carpet, and LVL. Separate public restroom at lobby and medium office used as a workspace by police. Building electrical service is 400A, 208/120V, three-phase, four-wire, served by Puget Sound Energy underground service from a 150-kVA pad-mounted transformer, to NE of building, with current transformer and meter on outside wall of building. This Puget Sound Energy transformer also feeds the adjacent shop building. Fire Station 16 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 upgraded to LED throughout in the 2021 improvement, but still mostly manual control. Exterior lighting is mostly upgraded to LED. All branch wiring are in conduits. Devices are 15A and 20A grounding type outlets. Building has a fire alarm system. Building has no security alarm and no card-key access system, but there are exterior door cipher locks. HVAC includes four recently replaced rooftop gas-pack units, gas-fired infrared heat for apparatus bay, apparatus bay general exhaust with make-up air louver (non-functional at time of site visit, but later repaired), apparatus bay engine exhaust system, and miscellaneous exhaust fans and gas-fired unit heaters. Plumbing is city water and sewer with copper pipe and two gas-fired tankless domestic hot water heaters (one failed). Fire sprinkled throughout. High-speed data.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				2.0			
A10 Foundations							
A1010	Standard Foundations	1996	2006	2	TRB	12/20/23	Continuous concrete footings and stem walls.
A1030	Slab On Grade	1996	1996	2	TRB	12/20/23	Concrete slab on grade. Minor cracking at apparatus bay.
B Shell				2.6			
B10 Superstructure							
B1010	Floor Construction	1996	1996	2	TRB	12/20/23	Mezzanine floor, plywood in wood joists.
B1020	Roof Construction	1996	1996	3	TRB	12/20/23	Low slope and pitched roof form. Wood deck on wood truss and I-joist systems. Rigid insulation over deck, drawings seem to indicate about 2". No fall protection on roof, no fixed ladder access to high roof, and no maintenance access to canopy roofing. 2022 seismic upgrade tied roof framing to walls with connectors and seismic strapping.
B20 Exterior Closure							
B2010	Exterior Walls	1996	2006	2	TRB	12/20/23	Wood frame (2x6 walls with 4x4 posts) with batt insulation, some cast-in-place concrete at low walls at apparatus bay. Exterior vertical and horizontal metal siding replaced in 2006. Some minor dents observed.
B2020	Exterior Windows	1996	2006	3	TRB	12/20/23	Aging aluminum dual-glazed windows.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
B Shell			2.6			
B20 Exterior Closure						
B2030 Exterior Doors	1996	1996	3	TRB	12/20/23	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 weatherstripping, several chips and dents. 2022 high-speed apparatus doors on front.
B30 Roofing						
B3010 Roof Coverings	1996	2006	3	TRB	12/20/23	Composite torch down asphalt roofing, metal flashings, and soffits. Leaks into dorms occur if scuppers back up and there is likely scupper seal failure. Sloped roof is standing seam metal roofing.
B3030 Projections	1996	1996	2	TRB	12/20/23	Steel canopy at entrance. 1996 aluminum cutout facade art sculpture piece by Hai Ying Wu mounted on front elevation over apparatus bays, held off wall with metal rods.
C Interiors			1.6			
C10 Interior Construction						
C1010 Partitions	1996	2022	1	TRB	12/20/23	Painted gypsum wall board on wood studs. 2022 seismic upgrade included new plywood sheathing and new gypsum in interior walls. Crew toilet rooms not ADA compliant (see other city ADA report).
C1020 Interior Doors	1996	1996	3	TRB	12/20/23	Wood doors and hollow metal frames. Lever-style hardware.
C1030 Fittings	1996	2022	3	TRB	12/20/23	Office area whiteboards. Rubber base.
C20 Staircases						
C2010 Stair Construction	1996	1996	2	TRB	12/20/23	Metal stairs at both mezzanine areas.
C2020 Stair Finishes	1996	1996	2	TRB	12/20/23	Rubber treads at south stair.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
C Interiors			1.6			
C30 Interior Finishes						
C3010 Wall Finishes	1996	2022	1	TRB	12/20/23	Interior paint. Restrooms have ceramic tile.
C3020 Floor Finishes	1996	2022	1	TRB	12/20/23	Sealed concrete, ceramic tile, new 2022 LVL typical in fire house, and 2022 carpet in dorm rooms. Rubber flooring in workout room.
C3030 Ceiling Finishes	1996	2022	1	TRB	12/20/23	Mix of hard lid gypsum wall board and T-bar acoustic ceiling tile in station house. Exposed painted structure in apparatus bay.
D Services			2.9			
D10 Vertical Transportation						
D1090 Other Conveying Systems	1996	1996	3	DCS	12/20/23	Manual hoist at hose tower loft.
D20 Plumbing						
D2010 Plumbing Fixtures	1996	1996	3	DCS	12/20/23	Porcelain water closets, urinals, and lavatories in men's and women's restrooms. Stainless steel decontamination, kitchen, and other sinks. Janitor mop sink in janitor closet. Tiled showers with one-piece basins. Some fixtures have newer trim (faucets and flush valves); all observed trim is manual.
D2020 Domestic Water Distribution	1996	1996	3	DCS	12/20/23	City water from 1.5-inch meter outside to 2-inch service line inside to reduced pressure backflow preventer in apparatus bay, then to copper distribution piping throughout. Two apparatus bay vehicle wash hose sets - one on wall hook, the other on a cart. Two Navien tankless gas-fired domestic hot water heaters - one from 2018 replaced under warranty, the other failed. The heaters have on-board recirculation pumps. Outside perimeter hose bibs in wall boxes.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.9			
D20 Plumbing						
D2030 Sanitary Waste	1996	1996	3	DCS	12/20/23	Cast iron drain, waste, and vent where observed. Tested fixtures flush and drain well. At urinals, minor ongoing monthly maintenance to apply descaling treatment. Floor drains in bathrooms. Full size apparatus bay trench drains draining to inside oil/water separator, which needs service and inspection. This oil/water separator has a strong odor, suggesting possible sanitary drain connection - further investigation suggested as minor maintenance.
D2040 Rain Water Drainage	1996	1996	3	DCS	12/20/23	Trench drains at south station house patio door. Mostly scupper and downspout to site storm. Several internal roof and overflow roof drains - minor ongoing maintenance to keep these drains clear and flowing. When it isn't clean, roof leaks reportedly occur as rain water ponds on the roof.
D2090 Other Plumbing Systems	1996	1996	3	DCS	12/20/23	Portable air compressor in shop space.
D30 HVAC						
D3010 Energy Supply	1996	1996	3	DCS	12/20/23	Natural gas black iron pipe distribution serving four rooftop gas-pack units, apparatus bay infrared heaters, shop and storage space unit heaters, hose tower unit heater, patio BBQs, kitchen range, and two tankless domestic hot water heaters. The 1,000 cfh meter is barely adequate for the many loads, any additional load may required upgrade. Exposed gas piping to rooftop units is heavily rusted - minor maintenance to clean and preserve. Locution system gas-interrupt solenoid reportedly operates as required.
D3020 Heat Generating Systems	1996	1996	4	DCS	12/20/23	1996 Re-verber-ray gas-fired overhead low-intensity infrared apparatus bay heaters approaching end of life. Life has been shortened by ventilation system issues (see D3040 HVAC Distribution Systems).

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.9			
D30	HVAC						
D3030	Cooling Generating Systems	1996	1996	4	DCS	12/20/23	Transfer air and exhaust fan cooling for main electrical and telecom closet. Both rooftop unit direct expansion (Dx) and economizer cooling for station house.
D3040	HVAC Distribution Systems	1996	1996	3	DCS	12/20/23	Apparatus bay general exhaust; high only, with currently failed make-up air system. Multiple exhaust fans for station house areas. Gas-fired unit heaters at both mezzanines, but with no ventilation - assume acceptable as storage-only areas. No apparent HVAC service to the shop space, other than indirect from apparatus bay. Station house ventilation via the outside air intakes at the four rooftop gas-pack units, but with unclear economizer (free cooling) relief. The rooftop units have relief hoods, but much smaller than outside air intake hoods. Dorm room comfort complaints resulted in 2022 retrofit of the dormitory area rooftop unit variable volume and temperature system with new electric duct heaters for each dorm room. While this retrofit was unsafe immediately following installation, it appears safety improvements have now been made; independent third-party commissioning of the system is suggested to confirm. Portable heaters and fans in use. The hose tower high relief louver is stuck open with its control system actuator disconnected and the hose tower unit heater disconnect switch is off. The hose tower ground level door left open apparently to allow indirect make-up air to the apparatus bay and/or to prevent freezing the decontamination plumbing work - minor maintenance to restore hose tower HVAC to its design conditions after the apparatus bay ventilation issue is corrected.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.9			
D30 HVAC						
D3050 Terminal and Package Units	1996	2021	3	DCS	12/20/23	Four 2021 Trane rooftop gas-pack units serving the station house: 1) RTU-1 reportedly serving the dormitory is 4-ton, 80 mbh with variable volume and temperature bypass damper, 2) RTU-2 is 5-ton, 80 mbh, 3) RTU-3 is 5-ton, 80 mbh, and 4) RTU-4 is 3-ton, 80 mbh. All four have full-size economizer air intake, but apparent partial economizer relief. The roof well in the rooftop unit area is dirty with excessive mold and some standing water, potentially adversely impacting air quality at outside air intake hoods - minor ongoing maintenance to keep this roof area clean. The RTU-1 variable volume and temperature system includes electric duct heaters for each dorm room.
D3060 Controls and Instrumentation	1996	2021	3	DCS	12/20/23	Mix of old and newer local controls; mostly newer Trane VariTrac and Honeywell Spyder for station house, mostly older elsewhere. Fire Station 16 has the highest energy use intensity (EUI) of any fire station in the city, with an EUI of 240, which is 369% of the WA State Clean Buildings target for fire stations. Part of this unusually high energy use is suspected from improper design, construction, and/or operation of the apparatus bay ventilation system. Other causes may include damaged, wet, or missing insulation, uncommissioned new HVAC work for the station house, and high surface-to-volume ratio.
D3090 Other HVAC Systems and Equipment	1996	2021	3	DCS	12/20/23	Nederman vehicle engine exhaust system with unclear make-up air. The rooftop ductwork and exhaust fan are aging and failing. While carbon monoxide controls are present in the apparatus bay, NOx was not - minor maintenance to install to improve safety for station staff.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.9			
D40 Fire Protection						
D4010 Fire Protection Sprinkler Systems	1996	1996	3	DCS	12/20/23	Six-inch service from backflow prevention vault outside with fire department connection, underground to a single four-inch dry-pipe riser just inside the apparatus bay back door. The four-inch riser splits to two mains, four-inch to station house and three-inch to apparatus bays. Pressure is 66 psig for the wet-pipe system and 33 psig for the dry-pipe system. The riser includes a recently replaced duplex air compressor.
D4030 Fire Protection Specialties	1996	2021	2	DCS	12/20/23	Fire extinguishers throughout.
D50 Electrical						
D5010 Electrical Service and Distribution	1996	1996	3	DCS	12/20/23	Service from utility transformer to NE underground to generator room at NW corner of apparatus bays to whole-building Generac automatic transfer switch via 400A disconnect. Then conduits under slab to main electrical room between the station house and apparatus bays, with three Challenger distribution panels A, B, and C, each 208V, three-phase rated at 400A each, but only panel A has a main breaker, reportedly feeding the other two panels, so assume just 400A overall system capacity. Panel A is full, Panel B is 90% full, and Panel C is 75% full. No observed surge suppression, but no issues reported.
D5020 Lighting and Branch Wiring	1996	2021	2	DCS	12/20/23	All 2021 LED in station house, with 2021 GE lighting control panel which does not appear programmed - minor maintenance to complete programming and commission the new lighting control system. Older light fixtures in apparatus bay, but appear to have drop-in replacement LED lamps, but still original manual control - minor maintenance to retrofit simple automatic control.
D5032 Low Voltage Communication	1996	2021	2	DCS	12/20/23	City standard Yealink VoIP telephone system. wall-mounted flat-screen displays and other audio/video equipment for training and day rooms with no issues reported.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.9			
D50	Electrical						
D5037	Low Voltage Fire Alarm	1996	2020	2	DCS	12/20/23	Fire alarm control panel replaced in 2020; new panel is Honeywell 53, including new AES wireless alarm transmitter. The system includes horn strobes, smoke detectors, and pull stations. Plug-in CO detectors in hallway.
D5038	Low Voltage Security	1996	2006	3	DCS	12/20/23	Cipher locks at doors with standalone card readers for fire department use only. No city standard card-key access or CCTV.
D5039	Low Voltage Data	1996	2021	2	DCS	12/20/23	High-speed fiber-optic data from Frontier, with 2021 WiFi antennas. Lighted exit signs, but egress pathway lighting is via general lighting on generator back-up - minor maintenance to install several bug-eye battery wall-packs at key locations.
D5090	Other Electrical Systems	1996	1996	3	DCS	12/20/23	Inside Generac 125-kW diesel generator with estimated 500-gallon base tank in generator room. The tank is not properly vented to outside, see G3060 Fuel Distribution for detail. The generator engine block heater is on a manual light switch, easily confused with the room light switch, minor maintenance to make this clear so block heater is not inadvertently shut off. No emergency egress pathway lighting.
E Equipment and Furnishings				3.0			
E10	Equipment						
E1010	Commercial Equipment	1996	2021	3	DCS	12/20/23	Residential-grade kitchen and laundry appliances. The kitchen hoods appear somewhat older, both are full of grease and need to be cleaned to prevent kitchen exhaust fire.
E1020	Institutional Equipment	1996	2006	3	DCS	12/20/23	Fire department equipment including training props, bunker gear extractor, SCBA bottle filler with cascading high-pressure bottle bank, shop tools, fitness, and other specialized equipment, all with no issues reported.

Facility Summary

City of Redmond	
Fire Station 16 Site	6502 185th Avenue NE
Fire Station 16 Building	Redmond, WA 98052

Facility Components

Facility Components							
Systems		Original System Date	Renewal Date	Last Score	Surveyor	Survey Date	Comments
E Equipment and Furnishings				3.0			
E10	Equipment						
E1030	Vehicular Equipment	1996	2021	3	DCS	12/20/23	Three 2021 high-speed doors at apparatus bay front doors. Older standard door operators to rear.
E20	Furnishings						
E2010	Fixed Furnishings	1996	1996	3	TRB	12/20/23	Window blinds, some with bends. Casework including station house staff lockers with some chips.
F Special Construction							
F10	Special Construction						
F1050	Special Controls and Instrumentation	1996	2006	4	DCS	12/20/23	Locution system, reportedly the worst in the city.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Building							Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$40,000.00	LS	\$40,000	\$78,000

Deficient Material: **Roof Access**
No fall protection on roof or canopies for safe maintenance and no fixed ladder access to high roof.

Remedial Action:
Install fall protection for maintenance. Install permanent ladder to access high roof from lower roof (or cut in door/hatch from hose tower onto high roof).

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Building

Escalation 3%
Discount Rate 1.5%

D2020	Domestic Water Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$11,500.00	EA	\$11,500	\$23,000

Deficient Material: Domestic Hot Water Heaters
One of the two tankless gas-fired domestic hot water heaters is failed.

Remedial Action:
Replace failed water heater.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Building							Discount Rate 1.5%

D3020	Heat Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	3	\$10,000.00	EA	\$30,000	\$59,000

Deficient Material: Radiant heaters

1996 gas-fired infrared heaters for apparatus bays approaching end of life, with apparent excessive run-time due to ventilation issues in apparatus bay.

Remedial Action:

Budget to replace upon failure or complete obsolesce (unable to obtain parts). Ideally, correct apparatus bay ventilation issue (no engineered make-up air system) prior to replacing heaters.

Action Type:

Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Building							Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$9,000.00	LS	\$9,000	\$18,000

Deficient Material: Communications Cooling
No dedicated cooling for the main electrical and telecom room.

Remedial Action:
Install 1-ton dedicated ductless split-Dx cooling system for the telecom room, leaving the existing transfer and exhaust air ventilation system in place as back-up.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Apparatus bay ventilation

Apparatus bay exhaust with failed make-up air system. Station staff leave the hose tower door open to the apparatus bay to allow outside air into the apparatus bay via the hose tower high exhaust louver, which is failed open. This workaround appears to continually allow cold air into the apparatus bay, in turn driving excessive infrared heater operation.

Remedial Action:

Repair both apparatus bay make-up and hose tower relief air louver motor operators and associated controls.

Action Type:

Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2	\$9,000.00	LS	\$18,000	\$35,000

Deficient Material: HVAC
No HVAC service to several shop and utility spaces.

Remedial Action:
Provide HVAC service to shop and utility spaces, including small unit heaters and exhaust fans.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 16 Site		Escalation 3%							
Facility: Fire Station 16 Building		Discount Rate 1.5%							

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	4	\$2,500.00	EA	\$10,000	\$20,000

Deficient Material: Commissioning
All four station house rooftop units were replaced in 2021 and duct heaters added to the dormitory system in 2022, with reported safety issues, and unclear programming and safety.

Remedial Action:
Complete independent third-party commissioning of the four new rooftop units, including control system programming, the dormitory variable volume and temperature system, and the new electric duct heaters.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Building							Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	9,852	\$1.25	SF	\$12,315	\$24,000

Deficient Material: Energy use
High energy use, which suggests both issues to resolve and opportunities to improve.

Remedial Action:
Conduct an energy audit, including infrared thermography of the thermal envelope and implement corrective action to reduce energy use.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Building							Discount Rate 1.5%

E1010	Commercial Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: Grease hood
Significant grease build-up on residential-grade range hoods, increasing risk of kitchen fire.

Remedial Action:
If grease cooking is to continue, replace one range hood with a Type 1 grease hood and associated make-up air and fire suppression.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Building							Discount Rate 1.5%

F1050	Special Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$17,000.00	LS	\$17,000	\$33,000

Deficient Material: Location
Aged and poorly wired locution system.

Remedial Action:
Renew.

Action Type:
Other



Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Shop Building

6502 185th Avenue NE
Redmond, WA 98052

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	2.6			
Facility Condition Index (FCI)	0.11	Observed Deficiencies 2023 - 2028		\$292,000
Current Replacement Value (CRV)	\$1,856,000	Predicted Renewal Budget 2029 - 2042		\$302,000
Beginning Budget Year	2023	Opportunities		\$872,000
Escalation	3%			\$999,000
Discount Rate	1.5%			\$518,000
				N/A

Facility Condition Summary

Single-story building includes 2.5 apparatus bays with a mezzanine area. The building consists of storage rooms, main shop floor, perimeter work areas, office, restroom, and lunch room. Roof construction is a truss system with plywood deck with asphalt built-up roofing, and membrane roof above canopy areas. Seismic upgrade work recently completed. Exterior walls are wood frame with gypsum wall board interior and metal siding/metal panel exterior. Apparatus bay contains five sectional aluminum overhead doors, all motor-operated. Exterior hollow metal doors and aluminum windows. Interior walls are wood frame. Wood frame mezzanine floor. Restroom has tile but all other walls are painted gypsum wall board. Hard-lid ceilings except acoustical ceiling tile in office. Interior wood and hollow metal doors in hollow metal frames. Flooring is concrete except restroom tile. Building electrical service is 208/120V, three-phase, four-wire, 400A, served by Puget Sound Energy underground service from a 150-kVA transformer with meter on outside wall of building to NE. 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 all new LED with manual control. Exterior lighting is building wall packs, soffit recessed lights, and pole lights. All branch wiring is in conduits. Devices are 15A and 20A grounding type; mostly original, but with some newer cord reel drops. Building has a fire alarm system, but no security alarm system, and no card-key access system, but exterior doors do have cipher locks. HVAC is overhead gas infrared for shop with high/low general exhaust, vehicle engine exhaust, and forced-air heat pump heating and cooling for office and break rooms. Plumbing is city water and sewer with copper pipe, cast iron drain, waste, and vent, and gas-fired domestic hot water heater. Dry-pipe fire sprinkled throughout. Shop fluids system, one fixed vehicle lift, six mobile vehicle lifts, overhead 2-ton powered trolley hoist, compressed air, waste oil, and other specialty shop systems. Major issues include failing heat pump system, no weld shop exhaust, insufficient vehicle charging support at service yard, no fire hydrant at yard, and flooding at yard.

Facility Summary

City of Redmond	
Fire Station 16 Site	
Fire Station 16 Shop Building	6502 185th Avenue NE Redmond, WA 98052

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
A Substructure				3.0			
A10	Foundations						
A1010	Standard Foundations	1996	1996	3	TRB	12/20/23	Standard concrete. West side of building is concrete low stem wall, cast-in-place concrete 48 inches high at apparatus bay doors. East side cast-in-place concrete wall grade separation.
A1030	Slab On Grade	1996	1996	3	TRB	12/20/23	Slab on grade, some cracking but functional.
B Shell				2.3			
B10	Superstructure						
B1010	Floor Construction	1996	1996	2	TRB	12/20/23	Mezzanine, plywood on wood joists.
B1020	Roof Construction	1996	2022	2	TRB	12/20/23	Wood truss system. 2022 seismic upgrade included seismic ties and strapping. Rigid insulation over deck (drawings seem to indicate about 2").
B20	Exterior Closure						
B2010	Exterior Walls	1996	2006	2	TRB	12/20/23	Wood frame walls with batt insulation. Mixture of metal panel and metal exterior cladding, and gypsum interior. All exterior finishes replaced in 2006. Some dents, areas of dirt and algae. Recommend minor maintenance washing of exterior.
B2020	Exterior Windows	2006	2006	3	TRB	12/20/23	Aluminum dual-glazed windows.
B2030	Exterior Doors	1996	2006	3	TRB	12/20/23	Hollow metal doors and frames; some keypad locks. Aluminum sectional doors with face scrape damage (touch-up and repaint recommended to thwart oxidation).

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
B Shell			2.3			
B30 Roofing						
B3010 Roof Coverings	2006	2006	3	TRB	01/10/24	Asphalt built-up roofing, areas in need of cleaning especially at the base of the south parapet with thick moss growth developing and needing treatment to thwart further growth, scuppers collecting moss. Parapet caps beginning to experience paint failure. Membrane roofing on lower canopies over vehicle bay doors in need of cleaning.
B3020 Roof Openings	1996	2006	3	TRB	12/20/23	Three square acrylic dome skylights.
B3030 Projections	1996	1996	2	TRB	12/20/23	Metal canopies at apparatus bay doors on both sides of building.
C Interiors			2.5			
C10 Interior Construction						
C1010 Partitions	1996	2006	2	TRB	12/20/23	Wood framed gypsum wall board partitions; assume acoustic batt insulation between studs where appropriate. Some walls upgraded where 2022 seismic upgrade occurred.
C1020 Interior Doors	1996	2006	2	TRB	12/20/23	Mixture of hollow metal and wood doors in hollow metal frames. Door hardware replaced with lever-style hardware.
C1030 Fittings	1996	2006	3	TRB	12/20/23	Vehicular parts storage shelving does not appear to have seismic strapping/restraint/bracing to structure, and should be added (especially adjacent to air compressor/pressure vessel). Mezzanine railing gate needs permanent safety latching solution, still currently being held closed with loose tied vehicle seat belt. Some metal shelving and battery storage placed in front of electrical panels and should be relocated away from required panel access clearance zones. Restroom countertops. Marker boards.

Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Shop Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
C Interiors				2.5			
C20 Staircases							
C2010	Stair Construction	1996	1996	3	TRB	12/20/23	Wood stairs to mezzanine.
C2020	Stair Finishes	1996	2006	3	TRB	12/20/23	Rubber stair safety treads and risers. Treads are showing wear and are dirty, but still functional. Minor maintenance to adhere riser rubber where loose, and seal landing sheet-good floor to rubber stair tread intersection.
C30 Interior Finishes							
C3010	Wall Finishes	1996	2022	2	TRB	12/20/23	Painted walls. Tile wainscot in restroom.
C3020	Floor Finishes	1996	1996	3	TRB	12/20/23	Sealed concrete. Tile at restroom.
C3030	Ceiling Finishes	1996	1996	3	TRB	12/20/23	Acoustic tile in office. Gypsum wall board painted in storage and restrooms.
D Services				2.8			
D10 Vertical Transportation							
D1090	Other Conveying Systems	1996	1996	3	DCS	01/10/24	One 2-ton monorail trolley hoist running overhead from mezzanine to north drive-through bays.
D20 Plumbing							
D2010	Plumbing Fixtures	1996	1996	3	DCS	01/10/24	One unisex bathroom with water closet, lavatory, and tiled shower. One kitchenette in break room. Utility sink in shop. Eyewash and safety shower in main shop, but not at current battery service area in parts room. Several hose racks on walls.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.8			
D20 Plumbing						
D2020 Domestic Water Distribution	1996	1996	3	DCS	01/10/24	City water via 1.5-inch reduced-pressure backflow preventer (RPBP) to copper distribution piping. The main line branches to several shop service lines but with no apparent backflow prevention; minor maintenance to install per code. The RPBP does not have a funnel to floor drain under it; minor maintenance to install. 1996 A.O. Smith domestic gas-fired hot water heater, 89-gallon, 154-mbh with seismic straps, expansion tank, and circulation pump, but unclear combustion air; minor maintenance to confirm adequate per code. The water heater relief valve is leaking; minor maintenance to replace. Hose bibs with hose on racks in shop. Hose bibs in boxes outside.
D2030 Sanitary Waste	1996	1996	3	DCS	01/10/24	Cast iron drain, waste, and vent and trench drains at shop bay entries draining to oil/water separator inside shop. The oil/water separator appears to need service as minor maintenance. Tested fixtures flush and drain ok, but there are some odors, such as at the kitchen sink, and the urinal requires regular treatment to keep flowing.
D2040 Rain Water Drainage	1996	1996	3	DCS	01/10/24	Flat roof with scupper boxes at parapet; high-roof drains to lower roof. Some scupper box wells need cleaning as minor maintenance. Scupper boxes have relatively small overflow holes, minor maintenance to enlarge.
D2090 Other Plumbing Systems	1996	1996	3	DCS	01/10/24	Air compressor (160-psig, 20-hp) with receiver tank auto-drain, Kaeser refrigerated air dryer, copper distribution piping, with drops including quick disconnects throughout the shop. Five fluids pumping and distribution system with hose reels including 15W40 oil, 5W30 oil, transmission fluid, grease, and water. A waste oil system is also installed with pneumatic diaphragm pump to outside estimated 500-gallon double-contained waste oil storage tank.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.8			
D30 HVAC						
D3010 Energy Supply	1996	1996	3	DCS	01/10/24	Natural gas from Puget Sound Energy via meter number 399835 (confirm) with 425-cfh capacity (confirm); gas loads include high-bay shop infrared heaters and domestic hot water heater.
D3020 Heat Generating Systems	1996	2006	3	DCS	01/10/24	Reverberay gas-fired low-intensity overhead infrared heaters with no issues reported, with five to ten years remaining life with good maintenance. Waste oil tank on-site with waste oil removed from site by service provider.
D3030 Cooling Generating Systems	1996	1996	4	DCS	01/10/24	One 2.5-ton R-22 condensing unit serving the office/break room area air handling unit - unit reportedly failed. One wall-mounted fan, but no ceiling fans.
D3040 HVAC Distribution Systems	1996	1996	3	DCS	01/10/24	Split direct expansion (Dx) heat pump serving offices and break room areas. Both heat pump and back-up electric resistance heat is failed, portable heaters are in use. General high/low exhaust serving shop with outside air from interlocked shop overhead (ceiling/roof) hood with motor-operated damper. Dedicated exhausts for shop room to west (battery room), bathroom, and shop fluids room; no exhaust for kitchen, minor maintenance to add. All rooftop exhaust fans appear to be from 1996, except apparently 2006 main shop exhaust fan. No HVAC service for the parts storage room, which is currently used for battery charging. The battery room is currently used for tools. The current battery charging station is directly in front of the main electrical service entry and generator automatic transfer switch, placing the shop at risk of explosion - minor maintenance to relocate battery charging from parts storage to the battery charging room, and maintain clear access to electrical panels.
D3050 Terminal and Package Units	1996	1996	3	DCS	01/10/24	Low-bay electric overhead infrared heaters at the machine shop and weld shop areas, and electric wall heaters in several smaller spaces, such as the riser room. These heaters are aging, but functional.

Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Shop Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Last Date	Score	Surveyor	Survey Date	Comments
Systems							
D Services				2.8			
D30 HVAC							
D3060	Controls and Instrumentation	1996	1996	3	DCS	01/10/24	Standalone controls, minor maintenance to replace upon failure or upon replacement of each associated controlled equipment. Energy use intensity (EUI) is 157, which is 261% of the WA State target for shop facilities.
D3090	Other HVAC Systems and Equipment	1996	1996	5	DCS	01/10/24	Three Nederman vehicle engine exhaust system overhead hose reels with hose, and one rooftop exhaust fan, aged and rusting. The weld shop area to SW has no exhaust.
D40 Fire Protection							
D4010	Fire Protection Sprinkler Systems	1996	1996	3	DCS	01/10/24	Six-inch fire service and fire department connection entering riser room, then up to four-inch riser, with four-inch dry-pipe valve, to dry-pipe sprinkler protection throughout. Water pressure at 60 psig wet and 33 psig dry. The fire service backflow preventer is in the riser room. Newer dry-pipe valve and dry-pipe system air compressor.
D4030	Fire Protection Specialties	1996	1996	3	DCS	01/10/24	Fire extinguishers in cabinets. AED on floor, minor maintenance to install cabinet. First aid kit appears missing from under first aid sign, minor maintenance to restore first aid kit.
D50 Electrical							
D5010	Electrical Service and Distribution	1996	1996	3	DCS	01/10/24	Service is 208V, three-phase, four-wire, 400A disconnect to Generac automatic transfer switch, to three Challenger distribution panels M1, M2, and M3, each 208V, 400A capacity, but appears limited by one 400A main breaker at panel M1 (confirm). No issues reported with electrical panels. While in recent years new vehicle charging and service drop reels have been added inside the shop, older, smaller capacity reels are outside for service yard use - insufficient for need.

Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Shop Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
D Services				2.8			
D50 Electrical							
D5020	Lighting and Branch Wiring	1996	2022	2	DCS	01/10/24	All interior lighting upgraded to LED, but still with manual control, except a few smaller spaces with specialty lighting, such as the shop fluids room. Reportedly, some soffit lighting has been upgraded; while others remain to be completed. While most past concerns regarding adequate receptacle and circuit support for shop equipment have been addressed, a few remain, especially for vehicle shore power charging.
D5032	Low Voltage Communication	1996	1996	3	DCS	01/10/24	City standard VoIP phone system. Original public address system with unclear functionality, minor maintenance to test and service or upgrade as needed. Fire call system radio monitor.
D5037	Low Voltage Fire Alarm	1996	2022	3	DCS	01/10/24	Honeywell Gamewell fire alarm control panel installed 2022, along with at least two new smoke detectors (riser room and parts storage). Other devices include horn strobes and pull stations.
D5038	Low Voltage Security	1996	2006	3	DCS	01/10/24	No electronic security, other than exterior door cipher locks, but no issues reported.
D5039	Low Voltage Data	1996	2006	3	DCS	01/10/24	High-speed fiber-optic data service.
D5090	Other Electrical Systems	1996	1996	3	DCS	01/10/24	Building has an outdoor Generac 125-kW, 208V, three-phase, 433A, generator to SE, with estimated 500-gallon diesel base tank located in the service yard to south. Generator tank venting may not meet code, minor maintenance to improve as needed. Generator feeds underground to transfer switch inside building, next to main service disconnect switch at parts storage room to NE. The generator and automatic transfer switch system serves the entire building, so full operations may continue during utility power outages.

Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Shop Building

6502 185th Avenue NE
Redmond, WA 98052

Facility Components

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
E Equipment and Furnishings				3.0			
E10 Equipment							
E1010	Commercial Equipment	1996	2006	3	DCS	01/10/24	Office equipment and kitchenette appliances.
E1020	Institutional Equipment	1996	2006	3	DCS	01/10/24	Wide variety of vehicle maintenance shop tools and equipment.
E1030	Vehicular Equipment	1996	1996	3	DCS	01/10/24	Vehicle lifts, one pair of fixed and six mobile, all 2008 Koni, each with 18,000-lb capacity. The original in-slab hydraulic lift appears to have been fully removed in 2008. Tire machines. While the five motorized vehicle bay doors were reportedly problematic in 2013, there are no current issues reported.
E20 Furnishings							
E2010	Fixed Furnishings	1996	1996	3	TRB	12/20/23	Plastic laminate casework in break room, plastic laminate counters in break room and restroom. Metal lockers.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	6,118	\$3.20	SF	\$19,578	\$38,000

Deficient Material: Fall Protection
There is no fall protection on the roof to facilitate safe maintenance.

Remedial Action:
Install fall protection system. (See also System B3020 - Roof Openings opportunity to provide roof access.)

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D2020	Domestic Water Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2024	2028	1	\$13,000.00	LS	\$13,000	\$25,000

Deficient Material: Domestic Hot Water Heater
Original standard-efficiency (80%) hot water heater nearing end of life.

Remedial Action:
Budget to replace upon failure with modern high-efficiency type.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2024	2026	5,625	\$2.00	SF	\$11,250	\$22,000

Deficient Material: Water piping
The waste piping is aged and corroding, with need to treat piping regularly to keep flowing.

Remedial Action:
Clean, test, inspect. reconfigure, and selectively renew waste piping.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D2090	Other Plumbing Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2024	2025	150	\$50.00	SF	\$7,500	\$15,000

Deficient Material: Shop Fluids Room

Shop fluids room is minimally ventilated with unclear hazardous occupancy (H-occupancy) rating. The combustible fluid storage tanks are vented direct to the space and emergency venting is missing from the two larger engine oil tanks. The transmission fluid tank includes emergency venting devices, but no vent to roof. While the light fixtures are explosion resistant, the light switches are not, and there is a non-rated motor disconnect in the space, plus vehicle battery operated pump is present on one of portable pump packages in this room. While fire sprinkler is present, there is no smoke or heat detection. The fluids room walls appear to be of non-rated construction, and there is no apparent fluids spill containment other than the tanks themselves.

Remedial Action:

Conduct code evaluation of the shop fluids room and upgrade as appropriate to reduce risk of spill, fire, or explosion.

Action Type:

Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D2090	Other Plumbing Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2024	2027	1	\$35,000.00	LS	\$35,000	\$69,000

Deficient Material: Waste Oil Tank
Waste oil tank is rusted and corroded with standing water on top.

Remedial Action:
Schedule replacement including protective canopy.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2024	2024	1	\$7,500.00	EA	\$7,500	\$15,000

Deficient Material: Condensing Unit
Condensing unit reportedly failed.

Remedial Action:
Replace condensing unit.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2024	2025	1	\$13,500.00	LS	\$13,500	\$26,000

Deficient Material: Heat pump furnace
The office and break room heat pump furnace appears failed, with no heat delivered and portable heaters in use.

Remedial Action:
Replace the failed heat pump furnace.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D3090	Other HVAC Systems and Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2024	2027	1	\$11,000.00	LS	\$11,000	\$22,000

Deficient Material: Vehicle engine exhaust
Aged and rusting rooftop vehicle engine exhaust fan.

Remedial Action:
Replace exhaust fan promptly upon failure.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D3090	Other HVAC Systems and Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2024	2024	1	\$17,000.00	LS	\$17,000	\$33,000

Deficient Material: Welding Exhaust
No welding exhaust system.

Remedial Action:
Install welding exhaust system.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 16 Site							Escalation 3%
Facility:		Fire Station 16 Shop Building							Discount Rate 1.5%

D5010	Electrical Service and Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2024	2026	2	\$2,500.00	EA	\$5,000	\$10,000

Deficient Material: Yard drop reels
Yard drop reels are of insufficient capacity for vehicle needs.

Remedial Action:
Upgrade circuiting and reels as needed to fully support vehicle charging needs in yard.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Shop Building

Escalation 3%
Discount Rate 1.5%

D5020	Lighting and Branch Wiring	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2024	2026	10	\$850.00	EA	\$8,500	\$17,000

Deficient Material: Lighting
Exterior wall lights and apparatus bay door soffit lights are insufficient and difficult to relamp. Reportedly, some have been relamped since 2013, but more remain.

Remedial Action:
Complete upgrade of exterior soffit and other exterior lighting to all LED.

Action Type:
Other



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 sides, 185th Avenue NE, NE 65th Street, and NE 66th Court. Both the fire station and shop have 3 apparatus bays (only 2 that are pull-through at the fire station). 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 shop building that contains the pump test pit and emergency generator. City water, sewer, fire, and storm. Puget Sound Energy power and natural gas. Local telecom purveyor services with high-speed data. While Fire Station 16 has an inside generator, the shop building has an exterior generator package. All observed utilities are separately metered to the two buildings, except only one shared site-wide irrigation meter is observed adjacent to the shop water meter, and both the fire station and shop appear to share a single fire flow backflow preventer in vault.

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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		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G20	Site Improvements						
G2010	Roadways	1996	1996	3	TRB	12/20/23	Concrete drive aprons at front and rear of the fire station, and at the front of the shop. The rear yard of the shop is mostly concrete pavement with asphalt along one side. Some cracking of apron, minor maintenance to clean and seal to thwart accelerated degradation. Cracking and alligatoring of asphalt drive. Concrete curbs broken. Asphalt settlement along leading edge of rear concrete fire station apparatus bay apron.
G2020	Parking Lots	1996	1996	3	TRB	12/20/23	Asphalt parking off access drive with six parking stalls, one designated as ADA but no van accessible sign, and no access isle and striping to public entry (see other separate city report on ADA). Six additional parking stalls off the apparatus drive.
G2030	Pedestrian Paving	1996	1996	3	TRB	12/20/23	Concrete walks along south access road and at fire station entry. Concrete stairs, walks, landings, and dumpster pad in the area between the two buildings. Concrete patio for crew off day room.
G2040	Site Development	1996	1996	3	TRB	12/20/23	Fixed seating bench and flagpole near fire station entry. Security chain link fence with razor wire and rolling vehicular gate at access to shop building lot (see section G4030 Site Communications and Security for operator replacement). Pedestrian gate between buildings had hinges welded solid in the past which causes maintenance issues with no ability to adjust hinges now (minor maintenance to cut, grind, and replace or modify hinges). Waste containment with rotten and broken gate doors (minor maintenance to replace panels and paint).
G2050	Landscaping	1996	1996	2	TRB	12/20/23	A variety of landscaping throughout the site including lawn, shrubs, groundcover, and mature trees.

Facility Summary

City of Redmond
Fire Station 16 Site
Fire Station 16 Infrastructure

6502 185th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G30 Site Civil / Mechanical Utilities							
G3010	Water Supply	1996	1996	3	DCS	12/20/23	Separate 1.5-inch domestic water meters to Fire Station 16 and shop buildings. One observed estimated 1.5-inch irrigation meter with backflow preventer by the shop building domestic water meter, and separate fire sprinkler services to both buildings (to fire station from backflow preventer in below grade vault, and to shop with backflow preventer in the riser room). Both buildings have separate post indicator valves and fire department connections. Water pressure is near 60 psig with no issues reported. No fire hydrant for shop yard, complicating both testing and training.
G3020	Sanitary Sewer	1996	1996	3	DCS	12/20/23	City sewer service to both buildings with no issues reported.
G3030	Storm Sewer	1996	1996	3	DCS	12/20/23	Catch basins throughout paved areas of the site, collecting surface water and roof drain downspouts. No storm water detention is reported, with assumed uncontrolled flow to city storm service at street. No ponding reported or observed, except during fire truck pump testing at the shop building yard - reported due to deliberate shut-off for fire foam test and training.
G3050	Cooling Distribution	1996	1996	3	DCS	12/20/23	Condensing unit north of shop building on concrete pad.
G3060	Fuel Distribution	1996	1996	3	DCS	12/20/23	Puget Sound Energy natural gas service to both buildings, fire station meter No. 430933 with 1,000 cfh capacity, and shop meter No. 399835 (confirm) with estimated 425 cfh capacity. Neither meter has a seismic shut-off valve - minor maintenance to install. Fire Station 16 has a natural gas line to the patio BBQ, with a manual timer valve. Both building generators have diesel fuel storage belly tanks - neither with proper emergency tank venting. Waste oil storage tank at the shop service yard, but no vehicle defueling or fueling tanks.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G40 Site Electrical utilities						
G4010 Electrical Distribution	1996	1996	3	DCS	12/20/23	Underground electric service to the site to utility 150-kVA transformer at NE of Fire Station 16 serving both the fire station and shop buildings with 208V, three-phase power. Fire station Puget Sound Energy meter No. P152755225, and shop Puget Sound Energy meter No. P155439733. Exterior emergency generator with base tank in the rear yard of the shop building; interior generator at fire station.
G4020 Site Lighting	1996	2018	2	DCS	12/20/23	Pole lighting throughout site; mostly upgraded to LED. Site lighting photocell control works with no issues reported. Minor maintenance to upgrade any remaining HID or CFL lamps to LED.
G4030 Site Communications and Security	1996	1996	3	DCS	12/20/23	High-speed data with no issues reported. Security access gate at the rear lot of the shop yard; gate appears to be newer than original, but motorized unit is failing.
G90 Other Site Construction						
G9090 Other Site Systems	1996	1996	3	DCS	12/20/23	Underground pump test pit and associated above ground piping is located in shop yard to SE. Wood storage shed (8'x12') is located at SE corner of shop yard, along with a low-level L-shape lean-to running between the shed and generator. Both the shed and lean-to is used mostly for tire storage, which may be a fire hazard concern. One Conex metal storage container is located east of the shop building. Various other temporary structures and stored materials in and around the shop yard.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2,000	\$20.00	SF	\$40,000	\$78,000

Deficient Material: Asphalt Road
Cracking and alligatoring of asphalt drive. Concrete curbs broken. Asphalt settlement along leading edge of rear concrete fire station apparatus bay.

Remedial Action:
At rear asphalt drive abutting fire station concrete apron, cut, regrade, add heavy base over geotech fabric, compact, and lay new heavy-duty asphalt at leading edge of apparatus concrete apron. Patch other cracks and add topcoat lift. Replace broken concrete curbs.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3010	Water Supply	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$8,500.00	LS	\$8,500	\$17,000

Deficient Material: Fire hydrant
No fire hydrant at shop service yard, hampering fire truck testing and fire department training.

Remedial Action:
Install full-capacity fire hydrant in shop service yard.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3030	Storm Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$17,500.00	CY	\$17,500	\$34,000

Deficient Material: Storm Drain

Shop south fenced service yard all drains to one catch basin, in turn draining to storm. This catch basin is reportedly deliberately plugged during fire foam testing and training, but often the plug is not removed, resulting in flooding the NW portion of the service yard.

Remedial Action:

Install motor-operated storm drain control valve, detention vault and oil/water separator to treat contaminated test water with foam.

Action Type:

Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3060	Fuel Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	2	\$3,500.00	EA	\$7,000	\$14,000

Deficient Material: Generator fuel tanks

Neither generator fuel tank emergency vents directed to outside. This is especially a concern for Fire Station 16 as the generator and tank are inside, subjecting the station to fire or explosion hazard. There is an additional concern at the shop because the shop generator is immediately adjacent to the waste oil storage tank.

Remedial Action:

Install diesel generator tank emergency venting per code.

Action Type:

Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 16 Site

Facility: Fire Station 16 Infrastructure

Escalation 3%
Discount Rate 1.5%

G4030	Site Communications and Security	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$6,500.00	EA	\$6,500	\$13,000

Deficient Material: Gate operator
Aged and failing gate operator.

Remedial Action:
Replace failing gate operator.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 16 Site		Escalation 3%							
Facility: Fire Station 16 Infrastructure		Discount Rate 1.5%							

G9090	Other Site Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$35,000.00	LS	\$35,000	\$69,000

Deficient Material: Tire storage

Truck tire storage at wood shed and L-shaped lean-to along the SE portion of the service yard. Tire storage can be a fire hazard without fire detection or suppression. The lean-to is near the emergency generator and waste oil storage tank on the east side of the service yard.

Remedial Action:

Design and construct a permanent tire storage structure, including fire detection and suppression per code.

Action Type:

Code Issue



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: Fire Station 16 Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 16 Building	B10 Superstructure	\$40,000	\$8,000	\$9,600	\$20,736	\$78,000	\$78,000
	D20 Plumbing	\$11,500	\$2,300	\$2,760	\$5,962	\$23,000	\$23,000
	D30 HVAC	\$84,315	\$16,863	\$20,236	\$43,709	\$166,000	\$171,000
	E10 Equipment	\$15,000	\$3,000	\$3,600	\$7,776	\$29,000	\$30,000
	F10 Special Construction	\$17,000	\$3,400	\$4,080	\$8,813	\$33,000	\$34,000
	Facility Total	\$167,815	\$33,563	\$40,276	\$86,995	\$329,000	\$336,000
Fire Station 16 Shop Building	B10 Superstructure	\$19,578	\$3,916	\$4,699	\$10,149	\$38,000	\$38,000
	D20 Plumbing	\$66,750	\$13,350	\$16,020	\$34,603	\$131,000	\$138,000
	D30 HVAC	\$49,000	\$9,800	\$11,760	\$25,402	\$96,000	\$99,000
	D50 Electrical	\$13,500	\$2,700	\$3,240	\$6,998	\$27,000	\$27,000
	Facility Total	\$148,828	\$29,766	\$35,719	\$77,152	\$292,000	\$302,000
Fire Station 16 Infrastructure	G20 Site Improvements	\$40,000	\$8,000	\$9,600	\$20,736	\$78,000	\$81,000
	G30 Site Civil / Mechanical Utilities	\$33,000	\$6,600	\$7,920	\$17,107	\$65,000	\$65,000
	G40 Site Electrical utilities	\$6,500	\$1,300	\$1,560	\$3,370	\$13,000	\$13,000
	G90 Other Site Construction	\$35,000	\$7,000	\$8,400	\$18,144	\$69,000	\$71,000
	Facility Total	\$114,500	\$22,900	\$27,480	\$59,357	\$225,000	\$230,000
Site Total		\$431,143	\$86,229	\$103,474	\$223,504	\$846,000	\$868,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 16 Site

Total Site Opportunity Cost: \$2,061,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Fire Station 16 Building							\$100,000
System:	Plumbing							
D2020	Domestic Water Distribution							
		Two apparatus bay vehicle wash hose sets - one on wall hook, the other on a cart.	Install two apparatus bay vehicle hose wash reels.	2.00	\$3,000.00	EA	\$6,000	\$12,000
D2030	Sanitary Waste							
		While monthly urinal waste line descaling treatment are reportedly keeping the urinals operating more reliably than in years past, this is still an ongoing maintenance expense, with likely ongoing deterioration of the cast iron waste piping.	At the next building modernization, reconfigure plumbing fixture drain and waste piping to place the urinals downstream of other flushing and draining fixtures to assist in continually cleaning the waste lines.	1.00	\$25,000.00	LS	\$25,000	\$49,000
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	\$20,000.00	LS	\$20,000	\$39,000
Facility:	Fire Station 16 Building							\$684,000
System:	HVAC							
D3030	Cooling Generating Systems							
		No cooling for apparatus bays.	Install ceiling fans at apparatus bays.	3.00	\$3,500.00	EA	\$10,500	\$21,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 16 Site

Total Site Opportunity Cost: \$2,061,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3050	Terminal and Package Units	Packaged rooftop gas-pack units provide marginal occupant comfort.	Upgrade to variable refrigerant flow (VRF) with heat recovery ventilation (HRV).	5,000.00	\$52.00	SF	\$260,000	\$509,000
D3060	Controls and Instrumentation	Mix of standalone and local proprietary controls with partial networking.	Fully network controls and coordinate with IT to provide substantial remote monitoring and control.	9,852.00	\$8.00	SF	\$78,816	\$154,000
Facility:	Fire Station 16 Building							\$58,000
System:	Electrical							
D5038	Low Voltage Security	No security card access control system.	Install city standard card-key access system.	9,852.00	\$1.50	SF	\$14,778	\$29,000
D5090	Other Electrical Systems	No battery-backed egress pathway emergency lighting.	Provide battery-backed emergency egress pathway fixtures at interior and exterior egress.	30.00	\$500.00	EA	\$15,000	\$29,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 16 Site

Total Site Opportunity Cost: \$2,061,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 16 Infrastructure							
System: Site Civil / Mechanical Utilities							\$20,000
G3010 Water Supply							
	Underground fire truck drafting tank; on-site irrigation system.	Use drafting tank to collect roof rainwater and use for rain water harvesting including irrigation at a minimum.	1.00	\$10,000.00	LS	\$10,000	\$20,000
Facility: Fire Station 16 Infrastructure							
System: Site Electrical utilities							\$681,000
G4010 Electrical Distribution							
	No electric vehicle (EV) charging at either building parking area.	Install two double EV chargers, one at each building's parking area. Rough-in for one additional charger at each.	2.00	\$11,500.00	EA	\$23,000	\$45,000
	High-bay flat roofs with good solar exposure and mostly open (free of equipment). City sustainability program calling for decarbonization of city building facilities.	Install 25-kW photovoltaic systems on each of the two buildings.	50.00	\$6,500.00	EA	\$325,000	\$636,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Fire Station 16 Site						
Total Site Opportunity Cost:						\$2,061,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 16 Shop Building								
System: Roofing								\$63,000
B3020	Roof Openings							
		There is no roof access to accommodate maintenance of roofing or equipment.	Install roof access hatches and related ladders and safety equipment, include fixed exterior transfer ladders to access all roof levels.	4.00	\$8,000.00	EA	\$32,000	\$63,000
Facility: Fire Station 16 Shop Building								
System: Interior Finishes								\$59,000
C3010	Wall Finishes							
		Stairwell receives heavy wear. Additional protection needed for heavy use. Wall damage at lunch room and tool areas, both sides of apparatus bay.	Recommend installing medium-density fiberboard plywood over wall covering up and down stairs. Recommend fiberglass reinforced panel installed to 10 feet above the floor in all work areas.	1.00	\$30,000.00	LS	\$30,000	\$59,000
Facility: Fire Station 16 Shop Building								
System: Plumbing								\$12,000
D2020	Domestic Water Distribution							
		Shop water is from hose bibs and hoses on racks.	Install heavy-duty water hose reels and hose at each end of the shop.	2.00	\$3,000.00	EA	\$6,000	\$12,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 16 Site

Total Site Opportunity Cost: \$2,061,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Fire Station 16 Shop Building							\$259,000
System:	HVAC							
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	\$8,500.00	LS	\$17,000	\$33,000
D3020	Heat Generating Systems	Waste oil from vehicle service collected in on-site waste oil storage tank. Natural gas is used to heat the shop space.	Install waste-oil-fired furnace to heat the shop for free.	1.00	\$30,000.00	LS	\$30,000	\$59,000
D3030	Cooling Generating Systems	No air conditioning for shop. One side-wall fan is installed, but only cools a portion of the shop.	Install two ceiling fans to improve air circulation on the west side of the shop.	2.00	\$3,500.00	EA	\$7,000	\$14,000
D3040	HVAC Distribution Systems	Fixed outside air for office and break room heat pump furnace system. The furnace is near an outside wall.	Install an economizer for free cooling of the office and break room areas, ideally in conjunction with replacement of the furnace.	1.00	\$16,000.00	LS	\$16,000	\$31,000
		No HVAC service for parts/tool room.	Provide HVAC for parts/tool room, including unit heaters and ventilation.	200.00	\$30.00	SF	\$6,000	\$12,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 16 Site

Total Site Opportunity Cost: \$2,061,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3060	Controls and Instrumentation	Energy use intensity (EUI) of the shop is 157, which is 261% of the WA State target for shop facilities.	Conduct energy audit and tune up energy-using systems. Costs included for this opportunity are for energy audit and tune up, not possible capital improvements (new equipment or systems).	5,625.00	\$2.00	SF	\$11,250	\$22,000
		No networked control system (DDC).	Upgrade to networked control system to facilitate maintenance and improved energy efficiency.	5,625.00	\$8.00	SF	\$45,000	\$88,000
Facility: Fire Station 16 Shop Building								
System: Electrical		\$125,000						
D5020	Lighting and Branch Wiring	While lighting has been mostly upgraded to LED, lighting control is still manual.	Upgrade remaining fluorescent lamps LED, and automatic lighting control throughout.	5,625.00	\$2.00	SF	\$11,250	\$22,000
		Insufficient power for vehicle shore power.	Provide new circuit wiring and devices for modern vehicle shore power needs.	5,625.00	\$1.50	SF	\$8,438	\$17,000
D5037	Low Voltage Fire Alarm	No smoke detection for shop and most other areas; only observed at riser room and back portion of the parts room.	Upgrade to full smoke detection for improved risk management.	5,625.00	\$3.00	SF	\$16,875	\$33,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 16 Site

Total Site Opportunity Cost: \$2,061,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D5038	Low Voltage Security							
		No security card access control system.	Provide card access control system with door controls.	5,625.00	\$3.00	SF	\$16,875	\$33,000
D5090	Other Electrical Systems							
		No observed emergency lighting system - shop goes dark during power outage until generator starts and power transfers.	Install combination egress pathway and exit sign bug-eye, battery-backed emergency light fixtures.	20.00	\$500.00	EA	\$10,000	\$20,000

Facility Summary

City of Redmond
Fire Station 17 Site
Fire Station 17 Building

16917 NE 116th Street
Redmond, WA 98052

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	Electric
Year Of Last Renovation	2012
Historic Register	No



		Total Project Cost		Total Project Cost Present Value
Weighted Avg Condition Score	2.6			
Facility Condition Index (FCI)	0.13	Observed Deficiencies 2023 - 2028		\$1,760,000
Current Replacement Value (CRV)	\$13,442,000	Predicted Renewal Budget 2029 - 2042		\$1,839,000
Beginning Budget Year	2023	Opportunities		\$4,916,000
Escalation	3%			\$5,995,000
Discount Rate	1.5%			\$420,000
				N/A

Facility Condition Summary

Fire Station 17 is two stories tall. The facility contains a 2.5 apparatus bays, dorms, day room, kitchen, office, weight room, restrooms, storage, and specialty areas on lower level. Upstairs has storage, restrooms, and multi-use space. Building is concrete masonry unit walls to 12 feet above finished floor, wood framed second floor, and wood framed floor and roof construction. Exterior wall finish includes cement board in several colors. Hose and drill tower is concrete masonry unit with concrete pan steel stairs, landings, and catwalks. Roofing is standing seam metal roof. Exterior doors are aluminum storefront and hollow metal openings. There are three steel bi-fold apparatus doors and two 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 electrical service is 800A, 208/120V, 3-phase, 4-wire, served by Puget Sound Energy, underground service from outdoor pad-mount 300-kVA transformer. Electrical meter is on outside building wall. Building has a diesel generator, 150-kW, 208/120V, three-phase, four-wire, located in dedicated generator room at NE corner of apparatus bay wing. Generator feeds underground power to main panel via the transfer switch located at the mezzanine electrical room. Interior lighting is mostly T8 fluorescent troffers, linear fixtures, and compact fluorescent down lights and wall sconces, with a few reported LED lamp replacements. All branch wiring is in conduits. All devices are 15A and 20A grounding type. Building has a fire alarm system, non-standard card-key access system, CCTV security camera system, and Cat-6 data/voice system. Building has no security alarm system. HVAC includes variable refrigerant flow with heat recovery ventilator for station house and gas-fired infrared with gas make-up air unit for apparatus bays. There are several other exhaust fans and make-up air units. Plumbing is city water and sewer with two gas-fired domestic hot water heaters. Fire sprinkled throughout.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				2.0			
A10 Foundations							
A1010	Standard Foundations	2012	2012	2	TRB	12/13/23	Continuous concrete footings and stem walls.
A1030	Slab On Grade	2012	2012	2	TRB	12/13/23	Slab on grade. Minor cracking at apparatus bay.
B Shell				3.3			
B10 Superstructure							
B1010	Floor Construction	2012	2012	2	TRB	12/13/23	Wood frame floor construction. Plywood deck on open-web joists.
B1020	Roof Construction	2012	2012	3	TRB	12/13/23	5.5" rigid insulation on wood deck on wood trusses. Limited and ineffective fall restraint on upper roof only, no fall restraint on lower and gable roof areas.
B20 Exterior Closure							
B2010	Exterior Walls	2012	2012	4	TRB	12/13/23	Mix of concrete masonry units and cement board rain screen clad wood frame walls with R-25 batt insulation. Cladding material assembly is failing. Improper attachment with panels popping loose and reported moisture intrusion, suspect weather-resistive barrier and drainage plane issues including concerns raised about reversed drainage plane and flashings (reported by maintenance staff), splash-back algae growth at roof intersections, and oxidized finishes (faded paint).
B2020	Exterior Windows	2012	2012	4	TRB	12/13/23	Dual-glazed aluminum. Windows installed improperly with gaps between frames and lack of sealant. No head flash, improper and ineffective jamb seal and flashing.

Facility Summary

City of Redmond
Fire Station 17 Site
Fire Station 17 Building

16917 NE 116th Street
Redmond, WA 98052

Facility Components

Facility Components							
Systems		Original System Date	Renewal Date	Last Score	Surveyor	Survey Date	Comments
B Shell					3.3		
B20 Exterior Closure							
B2030	Exterior Doors	2012	2012	3	TRB	12/13/23	Aluminum storefront system at entry and workout area. Hollow metal doors and frames at other utility and hose tower doors. South apparatus doors are aluminum sectional doors. North apparatus doors are heavy steel fast-opening bi-fold doors with repeated issues; bad operator on east back door (see E1030 Vehicular Equipment). Hose tower door sills are not watertight (cannot conduct water training in tower, water goes under sills and into dorms and electrical room).
B30 Roofing							
B3010	Roof Coverings	2012	2021	2	TRB	12/13/23	Standing seem metal roofing (prior replaced due to warranty failure). Heavy tree debris already causing algae and lichen growth - minor maintenance to clean.
B3030	Projections	2012	2012	3	TRB	12/13/23	Entrance canopy. Apparatus bay steel facade awning C-channel projection on front and back causing drip deterioration, concrete pitting, and slick algae on concrete apparatus apron due to lack of gutter.
C Interiors					2.4		
C10 Interior Construction							
C1010	Partitions	2012	2012	3	TRB	12/13/23	Wood stud wall framing. Walls were not constructed plumb, which caused past racking issues with door operations; currently adjusted, but cause for ongoing maintenance adjustments.
C1020	Interior Doors	2012	2012	2	TRB	12/13/23	Wood doors in hollow metal frames, some with relites. Lever-style hardware.
C1030	Fittings	2012	2012	2	TRB	12/13/23	Marker boards, identifying signage, display, tack surfaces, mix of rubber base and MDF base.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
C Interiors			2.4			
C20 Staircases						
C2010 Stair Construction	2012	2012	2	TRB	12/13/23	Wood framed stairs at administration building, concrete/steel stairs at hose tower.
C2020 Stair Finishes	2012	2012	2	TRB	12/13/23	Rubber stair treads.
C30 Interior Finishes						
C3010 Wall Finishes	2012	2012	3	TRB	12/13/23	Painted gypsum wall board (some areas of touch-up at patches needed), ceramic tile, and fiberglass reinforced plastic panel.
C3020 Floor Finishes	2012	2012	2	TRB	12/13/23	Sealed polished concrete, rubber flooring at workout area, ceramic tile in lockers/shower and toilet rooms.
C3030 Ceiling Finishes	2012	2012	2	TRB	12/13/23	Acoustic tile. Painted gypsum wall board.
D Services			2.2			
D10 Vertical Transportation						
D1010 Elevators and Lifts	2012	2012	2	DCS	12/13/23	Two-stop Thyssen Krupp 15-hp hydraulic 2,500-lb passenger elevator with fully finished cab.
D1090 Other Conveying Systems	2012	2021	3	DCS	12/13/23	One manual hose hoist at hose tower. Poor roof access via hose tower - see B1020 Roof Construction for details.
D20 Plumbing						
D2010 Plumbing Fixtures	2012	2012	2	DCS	12/13/23	Porcelain water closets, urinals, and lavatories with chrome trim. Stainless steel decontamination, kitchen, and other sinks. Showers in restrooms and decontamination.

Facility Summary

City of Redmond
Fire Station 17 Site
Fire Station 17 Building

16917 NE 116th Street
Redmond, WA 98052

Facility Components

Systems		Original System Date	Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.2			
D20 Plumbing							
D2020	Domestic Water Distribution	2012	2012	2	DCS	12/13/23	1.5-inch city water meter at street to 2.5-inch service entry at riser room with reduced pressure backflow preventer and delivering 44 psig water pressure to all copper distribution tubing where observed, no issues reported and tested fixtures work well on both main and upper levels. Two 2018 gas-fired domestic hot water heaters, A.O. Smith 100-gallon, 199 mbh, with pipe insulation, recirculation pump, and expansion tank. Hose bibs outside in wall boxes. Non-potable pump house with well for irrigation.
D2030	Sanitary Waste	2012	2012	2	DCS	12/13/23	City sewer. Cast iron drain, waste, and vent. Apparatus bay trench drains. Floor drains in bathrooms, bunker gear drying, and other utility rooms. Floor drains have hydraulic trap primers. Tested fixtures flush and drain well with no issues reported.
D2040	Rain Water Drainage	2012	2012	3	DCS	12/13/23	Gutter and downspout to storm. Original gutter screens have been removed in favor of in-line downspout screens. Due to the heavily-treed site, there is no relief from the near continuously falling fir needles and other tree debris. A more robust solution is suggested, with investigation as minor maintenance.
D2090	Other Plumbing Systems	2012	2012	3	DCS	12/13/23	Portable air compressor in apparatus bay shop.
D30 HVAC							
D3010	Energy Supply	2012	2012	2	DCS	12/13/23	Black iron piping from natural gas service entry to apparatus bay infrared heaters, apparatus bay and station house make-up air units, domestic hot water heaters, kitchen appliances, and patio BBQ. Exposed piping at roof is rusting - minor maintenance to clean and preserve before rust progresses to corrosion and gas leakage.
D3020	Heat Generating Systems	2012	2012	2	DCS	12/13/23	Four apparatus bay overhead low-intensity gas-fired infrared heaters with standalone thermostat control and no issues reported.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.2			
D30 HVAC						
D3030 Cooling Generating Systems	2012	2012	3	DCS	12/13/23	Four rooftop variable refrigerant flow system condensing units in screened enclosure adjacent to hose tower, but difficult to access, reportedly with some failures in recent years hampered by difficult access. Two rooftop ductless split condensing units not screened or enclosed; one serving the main data room, the other the elevator machinery room.
D3040 HVAC Distribution Systems	2012	2012	2	DCS	12/13/23	Modern variable refrigerant flow with heat recovery ventilator system serving station house, police, and meeting room areas. Gas-fired make-up air units for apparatus bay and certain station house areas, coupled with exhaust fans, such as at kitchen area. One heat and vent system for the shop and storage wing east of the apparatus bay, with gas furnace heat. While the variable refrigerant flow system is working fairly well, ventilation system operability is unclear throughout, other than several exhaust fans which operate with simple manual timer control. Lower level unfinished storage area being used as dormitory room.
D3050 Terminal and Package Units	2012	2012	2	DCS	12/13/23	Several 5-kW 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 upon TI.
D3060 Controls and Instrumentation	2012	2012	4	DCS	12/13/23	Proprietary DDC for variable refrigerant flow (VRF) system has been problematic since installation and still appears to have suboptimal performance, such as simultaneous heating and cooling of the upper level training room. No interface between proprietary VRF and the multiple other standalone control systems. No networked controls. Moderately high energy use with an energy use intensity (EUI) of 91.4, which is 141% of WA State Clean Buildings fire station EUI target of 65 - tune-up suggested as minor maintenance to reduce EUI.
D3090 Other HVAC Systems and Equipment	2012	2012	2	DCS	12/13/23	Four Nederman vehicle engine exhaust system rails in the apparatus bays, leading to one shared exhaust fan.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.2			
D40 Fire Protection						
D4010 Fire Protection Sprinkler Systems	2012	2012	2	DCS	12/13/23	City water with 6-inch service to 4-inch riser in riser room with backflow preventer, leading to several smaller wet-pipe distribution lines. Fire department connection and post indicator valve in north yard. Riser pressure is indicated near 70 psig, which conflicts with domestic water pressure of 44 psig - minor maintenance to check gauge calibration. A special dry-pipe system is provided to protect the hose tower - this system appeared failed at time of site visit, with staff notified.
D4020 Stand-Pipe and Hose Systems	2012	2012	2	DCS	12/13/23	Hose tower stand-pipe system for training purposes with no issues reported.
D4030 Fire Protection Specialties	2012	2012	2	DCS	12/13/23	Fire extinguishers in cabinets, AED, and first aid kit.
D50 Electrical						
D5010 Electrical Service and Distribution	2012	2012	2	DCS	12/13/23	Most electrical equipment is located in the upper level mechanical room including: 1) Square D main distribution panel 208V, three-phase, 800A, serving 2) Panel D via 400A beaker, 3) Panel N via 200A breaker, and 4) Elevator via 150A breaker. Panel D sub-feeds distribution panels 1 to 4, plus TAC (elevator) panel and is rated for up to 600A. Panel N is rated up to 225A.
D5020 Lighting and Branch Wiring	2012	2012	2	DCS	12/13/23	Interior lighting is mostly fluorescent with some CFL, and a few replacement LED lamps. Lutron lighting control panel, which includes scene lighting for several spaces, including the upper level training rooms. Occupancy sensors for some spaces.
D5032 Low Voltage Communication	2012	2012	2	DCS	12/13/23	Telephone VoIP. Newer Crestron A/V system at upper level training rooms.

Facility Summary

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.2			
D50 Electrical							
D5037	Low Voltage Fire Alarm	2012	2012	3	DCS	12/13/23	Building has an addressable fire alarm system, with main panel located in the riser room. Devices include limited smoke detectors, horn strobes, and pull stations. Fire alarm control panel is Honeywell MS-9200. Battery operated smoke alarms in dorm rooms - minor ongoing maintenance to test and replace smoke detector batteries.
D5038	Low Voltage Security	2012	2012	3	DCS	12/13/23	Building has aging CCTV camera system outside with no intrusion detection inside - minor maintenance to replace aging cameras. Card key access is limited.
D5039	Low Voltage Data	2012	2012	2	DCS	12/13/23	High-speed fiber-optic data; upper level data room with Cat-6 wiring to original data drops and newer WiFi antennas. Lack of N+1 features if Fire Station 17 is to be reused at the back-up city emergency operations center in the future.
D5090	Other Electrical Systems	2012	2012	2	DCS	12/13/23	Building has 150-kW generator with 570-gallon diesel base tank in enclosure to NE of apparatus bay. Generator feeds underground to GE Zenith automatic transfer switch at mezzanine electrical room. Generator supplies standby power to equipment and lighting load. Emergency lighting at the hose tower is improperly wired - when general lighting is turned off, emergency lights come on, batteries discharge, and lights go out - minor maintenance to rewire per code.
E Equipment and Furnishings				2.1			
E10 Equipment							
E1010	Commercial Equipment	2012	2012	3	DCS	12/13/23	Kitchen and laundry equipment; aging but functional. Station staff report insufficient appliances to support increased load during recruit training periods.
E1020	Institutional Equipment	2012	2012	2	DCS	12/13/23	Fire department equipment with no issues reported.

Facility Summary

City of Redmond	
Fire Station 17 Site	16917 NE 116th Street
Fire Station 17 Building	Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
E Equipment and Furnishings				2.1			
E10	Equipment						
E1030	Vehicular Equipment	2012	2012	3	DCS	12/13/23	Three fast-acting doors to north, two aluminum sectional doors to south. Reports of problematic fast-acting door mechanism.
E20	Furnishings						
E2010	Fixed Furnishings	2012	2012	2	TRB	12/13/23	Casework. Window coverings.
F Special Construction							
F10	Special Construction						
F1050	Special Controls and Instrumentation	2012	2012	2	DCS	12/13/23	Station tone alarm locution system.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	4,000	\$3.20	SF	\$12,800	\$25,000

Deficient Material: Fall Restraint
No fall restraint on lower gable roof areas and lack of easy and safe access to mechanical units on high roof (unrestrained slip-fall has already caused two staff injuries).

Remedial Action:
Improve safety access to all roof areas. Install fall restraint on lower and gable roof areas for safe maintenance access and activities. Install fall restraint tie off equipment and rack at top of stair tower door access to roof.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2027	9,000	\$53.00	SF	\$477,000	\$934,000

Deficient Material: Exterior Siding

Cladding materials installed improperly and failing. Drainage plane and base flashing reportedly installed backwards with cladding material assembly failing. Panels popping loose, moisture intrusion reported, suspected weather-resistive barrier and drainage plane issues including concerns raised about reversed drainage plane and flashings (reported as observed on past work by maintenance staff), splash-back algae growth at roof intersections, and oxidized finishes (faded paint). See also related B2020 Exterior Windows deficiency.

Remedial Action:

Demo existing cladding, flashings, and weather-resistive barrier. Verify appropriate sheathing used per contract documents. Install new rain screen cladding system over properly detailed and installed weather-resistive barrier, flashings, and vented airspace. Install with manufacturer's approved fastening system (verify fasteners have positive attachment into furring system). Repaint cladding if not factory finished.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Building

Escalation 3%
Discount Rate 1.5%

B2020	Exterior Windows	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	39	\$2,650.00	EA	\$103,350	\$202,000

Deficient Material: Windows

Custom aluminum windows (masonry frames, not proper flange-type at rain screen cladding) installed improperly with air gaps and even daylight visible between frame and jamb, and lack sealant. Jambs reportedly improperly shimmed. No proper head and jamb flashing. No low expanding foam around frames, no interior air barrier sealant.

Remedial Action:

With cladding project (see B1010 Exterior Walls deficiency), remove all existing fenestrations and flashings. Properly reframe and install integrated sill pan, jamb flashings, windows, and properly flash head and integrate with weather-resistive barrier. Seal frames (interior and exterior). Repair interior drywall and sills and repaint.

Action Type:

Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

B2030	Exterior Doors	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	4	\$4,000.00	EA	\$16,000	\$31,000

Deficient Material: **Hollow Metal Doors**
Hose tower door sills checked, cracked, and not watertight. Improper assembly for wet intensive use (cannot conduct water training in tower, water goes under sills and into dorms and electrical room).

Remedial Action:
Remove doors and frames to hose tower and install watertight rated doors, frames, hardware, and sill assemblies (cut-in and install water stop at thresholds).

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

B3030	Projections	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	100	\$80.00	LF	\$8,000	\$16,000

Deficient Material: Projections
Apparatus bay steel facade awning C-channel projection on front and back causing drip deterioration and concrete pitting and slick algae on concrete apparatus apron due to lack of gutter on steel.

Remedial Action:
Install gutter system below channel and roof edge to collect and divert rain and condensate runoff.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	4	\$25,000.00	EA	\$100,000	\$196,000

Deficient Material: **Condensing Unit (CU)**
Reported premature failures of variable refrigerant flow system condensing units due to difficult maintenance access, 24x7x365 operation, and poor controls.

Remedial Action:
Budget to replace variable refrigerant flow system rooftop condensing units upon failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	500	\$30.00	SF	\$15,000	\$29,000

Deficient Material: **Dormitory HVAC**
Unfinished lower level storage room being used as a three-bunk dormitory space without HVAC service other than freeze-protection heat.

Remedial Action:
Provide HVAC service to unfinished storage room being used as a dormitory.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$25,000.00	LS	\$25,000	\$49,000

Deficient Material: Heat Recovery Ventilation

The station house heat recovery ventilation (HRV) system does not appear to have any outside air or exhaust air intake filters to protect the heat recovery core. The HRV has no engineered system for HRV core access for core cleaning. The HRV bottom drains are not connected to the plumbing system, with condensate falling directly on the undrained mezzanine floor directly below the drain openings. HRV controls are unclear.

Remedial Action:

Re-engineer and modify the HRV system for maintainability and operability, including controls.

Action Type:

Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

D3040 HVAC Distribution Systems		Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	3	\$3,000.00	EA	\$9,000	\$18,000

Deficient Material: Make-up Air Units
Unclear make-up air unit operability, with control panels blank.

Remedial Action:
Fully service, test, and restore operability to the three make-up air units.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	12,998	\$7.00	SF	\$90,986	\$178,000

Deficient Material: DDC
Proprietary variable refrigerant flow and multiple standalone programmable controls with unclear and suboptimal programming, collectively with unclear ventilation and moderately high energy use.

Remedial Action:
Install fully networked controls with remote access by facilities to proactively manage the building.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Building

Escalation 3%
Discount Rate 1.5%

D4010	Fire Protection Sprinkler Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$14,000.00	LS	\$14,000	\$27,000

Deficient Material: Dry-pipe Sprinkler
Failed hose tower proprietary dry-pipe fire sprinkler system.

Remedial Action:
Replace with non-proprietary system and restore protection ASAP.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

D4090	Other Fire Protection Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: Grease Hood
Grease dripping at kitchen range grease hood, without fire suppression system.

Remedial Action:
Install kitchen grease hood fire suppression system.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 17 Site							Escalation 3%
Facility:		Fire Station 17 Building							Discount Rate 1.5%

E1030	Vehicular Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	3	\$4,500.00	EA	\$13,500	\$26,000

Deficient Material: Fast-acting door
Fast-acting door mechanical single-point-of-failure pin.

Remedial Action:
Improve door mechanism.

Action Type:
Other



Facility Summary

City of Redmond
Fire Station 17 Site
Fire Station 17 Infrastructure

16917 NE 116th Street
Redmond, WA 98052

Facility Condition Summary

The 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 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 storm water vault beneath it. The site is served by City of Redmond utilities.

City water, fire, and sewer. On-site well water system for irrigation. Puget Sound Energy power and natural gas. High-speed data and cable TV from regional purveyors. Building perimeter CCTV with a single powered access gate to the secure parking area. Storm water to underground detention vault under secure parking lot.

DRAFT

Facility Summary

City of Redmond	16917 NE 116th Street
Fire Station 17 Site	Redmond, WA 98052
Fire Station 17 Infrastructure	

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G20	Site Improvements						
G2010	Roadways	2012	2012	3	TRB	12/13/23	Concrete drive aprons at front and rear of apparatus bay (pitting below eave). Asphalt access drive. Vertical concrete curbing. Add grate capacity to existing "Weight Capacity" sign.
G2020	Parking Lots	2012	2012	3	TRB	12/13/23	Asphalt parking stalls extend along the west side and rear of the building. One ADA stall at the front of the building.
G2030	Pedestrian Paving	2012	2012	3	TRB	12/13/23	Concrete paver plaza at the front of the building. Concrete patio for staff use and concrete entry walkways. Concrete sidewalks at rear of building. Only a gravel path to adjacent lot to east does not have ADA access (see improvement opportunity listed under G2020 Parking Lots).
G2040	Site Development	2012	2012	3	TRB	12/13/23	Rolling vehicular security gate, fixed bike rack, flagpole, and masonry seating areas near the front of the building. Cable fence system at adjacent lot in disarray, minor maintenance to readjust or demolish.
G2050	Landscaping	2012	2012	3	TRB	12/13/23	Ornamental shrub plantings around the perimeter of the building and adjacent to pavement areas. Native vegetation, including mature trees along the south side of the lot, in good condition.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3010 Water Supply	2012	2012	2	DCS	12/13/23	Domestic water (1-1/2") and six-inch fire sprinkler supply from the City of Redmond system, plus on-site fire department connection. City water pressure is at 44 psig, but no operational issues are reported. Several fire hydrants on site. Older well-water system in newer pump house for irrigation, reportedly not operable for several years or more. Both front and back irrigation systems have failed. The back system appears to have been a temporary establishment period system by design and assumed ok as is, whereas the front system is permanent, but also failed.
G3020 Sanitary Sewer	2012	2012	2	DCS	12/13/23	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. Internal coalescing plates appear missing, minor maintenance to replace.
G3030 Storm Sewer	2012	2012	2	DCS	12/13/23	Catch basins throughout paved areas of the site. Roof drains connect into underground pipe system. A detention vault with two grated entry points are present at the secure parking lot. Reportedly, the vault has never been serviced.
G3060 Fuel Distribution	2012	2012	2	DCS	12/13/23	Puget Sound Energy natural gas meter No. 950144 with 1,000-cfh capacity located on east side of the building, with no seismic shut-off valve - minor maintenance to install. The diesel generator includes a 570-gallon belly tank. Natural gas to patio BBQ, reportedly with auto-shut-off upon tone alarm. No on-site vehicle fueling system.
G40 Site Electrical utilities						
G4010 Electrical Distribution	2012	2012	2	DCS	12/13/23	Underground electric service to the site, with utility pad-mounted 208V, three-phase, 300-kVA transformer at the front of the building, with power underground to building with Puget Sound Energy meter No. P159381656. A generator is located in dedicated generator space attached to the NE corner of the apparatus bay.

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	Renewal Date	Score Last	Surveyor	Survey Date	Comments
G Sitework							
G40 Site Electrical utilities							
G4020	Site Lighting	2012	2012	3	DCS	12/13/23	Pole lights throughout the site with mix of older HID and newer LED lamps. Reportedly, fixtures are incorrectly wired, requiring special transformers. Most in-ground up-light fixtures have leaky seals with water inside the fixture, and several have failed lamps.
G4030	Site Communications and Security	2012	2012	2	DCS	12/13/23	High-speed fiber-optic data from local purveyor. Hy-Security brand security gate with from-vehicle accessed keypad - aging but functional with no current issues reported. CCTV at building perimeter with no issues reported.
G90 Other Site Construction							
G9090	Other Site Systems	2012	2012	2	DCS	12/13/23	There is an approximately 10-foot by 15-foot CMU block well house with metal roof on site that houses the irrigation well and pumps.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2040	Site Development	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	400	\$15.00	LF	\$6,000	\$12,000

Deficient Material: Chain Link Fencing
Fallen trees have damaged perimeter powder-coated chain link fencing in numerous locations.

Remedial Action:
Remove limbs and vegetation. Repair damaged sections.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Infrastructure

Escalation 3%
Discount Rate 1.5%

G2050	Landscaping	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Landscaping

Trees and landscape encroaching building and causing maintenance issues and degradation to building, also providing pest vector into building.

Remedial Action:

Remove adjacent encroaching tree, limb away other trees, prune back other landscape away from facade. Recommend retaining a minimum of 24 inches clear.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3010	Water Supply	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Irrigation
Failed front permanent irrigation system resulting in dead and dying landscape plantings.

Remedial Action:
Renew front irrigation system.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3010	Water Supply	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$12,000.00	LS	\$12,000	\$24,000

Deficient Material: Well water system
Failed irrigation well-water system.

Remedial Action:
Service and renew well-water system.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3030	Storm Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$8,000.00	LS	\$8,000	\$16,000

Deficient Material: Detention Vault
Reportedly, the storm water detention vault has never been serviced. From a limited view, it appears organic matter is building up in the bottom of the vault.

Remedial Action:
Clean and service detention vault.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Infrastructure

Escalation 3%
Discount Rate 1.5%

G4020	Site Lighting	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	7	\$930.00	EA	\$6,510	\$13,000

Deficient Material: In-ground Fixtures
Multiple in-ground up-light fixtures have leaking seals with water intrusion; several have failed lamps.

Remedial Action:
Renew in-ground fixtures including waterproof seals and modern LED lamps.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 17 Site

Facility: Fire Station 17 Infrastructure

Escalation 3%
Discount Rate 1.5%

G4020	Site Lighting	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	5	\$2,300.00	EA	\$11,500	\$23,000

Deficient Material: Pole Lighting
Reportedly, pole lights are incorrectly wired, requiring special transformers. Aging HID lamps are still installed at some fixtures.

Remedial Action:
Correctly wire all pole light fixtures and upgrade all to hardwired LED.

Action Type:
Energy Efficiency



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: Fire Station 17 Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 17 Building	B10 Superstructure	\$12,800	\$2,560	\$3,072	\$6,636	\$25,000	\$25,000
	B20 Exterior Closure	\$596,350	\$119,270	\$143,124	\$309,148	\$1,167,000	\$1,226,000
	B30 Roofing	\$8,000	\$1,600	\$1,920	\$4,147	\$16,000	\$16,000
	D30 HVAC	\$239,986	\$47,997	\$57,597	\$124,409	\$470,000	\$489,000
	D40 Fire Protection	\$29,000	\$5,800	\$6,960	\$15,034	\$56,000	\$56,000
	E10 Equipment	\$13,500	\$2,700	\$3,240	\$6,998	\$26,000	\$27,000
	Facility Total	\$899,636	\$179,927	\$215,913	\$466,371	\$1,760,000	\$1,839,000
Fire Station 17 Infrastructure	G20 Site Improvements	\$11,000	\$2,200	\$2,640	\$5,702	\$22,000	\$23,000
	G30 Site Civil / Mechanical Utilities	\$25,000	\$5,000	\$6,000	\$12,960	\$50,000	\$50,000
	G40 Site Electrical utilities	\$18,010	\$3,602	\$4,322	\$9,336	\$36,000	\$37,000
	Facility Total	\$54,010	\$10,802	\$12,962	\$27,999	\$108,000	\$110,000
Site Total		\$953,646	\$190,729	\$228,875	\$494,370	\$1,868,000	\$1,949,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 17 Site

Total Site Opportunity Cost: \$584,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 17 Building								
System: Plumbing								
D2020 Domestic Water Distribution								
		Non-potable water system can be used for rainwater harvesting from 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	\$25,000.00	LS	\$25,000	\$49,000
		Apparatus bay hoses on racks.	Install hose reels between full bays.	2.00	\$3,000.00	EA	\$6,000	\$12,000
D2090 Other Plumbing Systems								
		Current compressed air system is portable.	Install permanent compressed air system with two hose reels between full apparatus bays.	1.00	\$20,000.00	LS	\$20,000	\$39,000
Facility: Fire Station 17 Building								
System: Electrical								
D5020 Lighting and Branch Wiring								
		Mostly original fluorescent lighting.	Upgrade to all LED.	17,000.00	\$8.00	SF	\$136,000	\$266,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Fire Station 17 Site						
Total Site Opportunity Cost:						\$584,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D5039	Low Voltage Data	No N+1 redundancy for mission critical data systems needed to support the fire station when in use as the back-up city emergency operations center.	Provide N+1 redundancy for data system cooling and power.	1.00	\$10,000.00	LS	\$10,000	\$20,000
Facility:	Fire Station 17 Building							
System:	Equipment							\$34,000
E1010	Commercial Equipment	Kitchen and laundry rough-in for future additional appliances to support additional staff; these additional staff are at the station during recruit training periods.	Double the number of kitchen and laundry appliances.	5.00	\$3,500.00	EA	\$17,500	\$34,000
Facility:	Fire Station 17 Infrastructure							
System:	Site Improvements							\$141,000
G2020	Parking Lots	Adjacent property is a gravel lot, but is used as parking for the public during meetings, and is used for firefighter training.	Pave lot. Consider painting striping for parking and providing ADA-compliant pedestrian connection to adjacent building with any paving.	9,000.00	\$8.00	SF	\$72,000	\$141,000
Facility:	Fire Station 17 Infrastructure							
System:	Site Electrical utilities							\$23,000
G4010	Electrical Distribution	No electric vehicle (EV) charging stations.	Install one double-cable EV charging station with rough-in for one additional in the future.	1.00	\$11,500.00	EA	\$11,500	\$23,000

Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Size - Gross S.F.	8,014
Year Of Original Construction	2002
Facility Use Type	Fire Station
Construction Type	Medium
# of Floors	1
Energy Source	Gas
Year Of Last Renovation	2021
Historic Register	No



		Total Project Cost		Total Project Cost Present Value
Weighted Avg Condition Score	2.6			
Facility Condition Index (FCI)	0.11	Observed Deficiencies 2023 - 2028		\$721,000
Current Replacement Value (CRV)	\$5,554,000	Predicted Renewal Budget 2029 - 2042		\$1,625,000
Beginning Budget Year	2023	Opportunities		\$1,589,000
Escalation	3%			N/A
Discount Rate	1.5%			

Facility Condition Summary

Fire Station 18 (King County Fire District 34) is a county building, but maintained by the city. It is a single-story building with mezzanine and 2.5 apparatus bays. The building's open bay area and administrative space consists of crew dorms, day room/kitchen, fitness, shower, restrooms, office, laundry areas, and police department work area. Construction is wood frame walls, including hose tower, sloped roof system with 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 dorms, offices, and fitness with gypsum wall board hard lid in restrooms, laundry, and storage spaces. Building electrical service is 600A, 208/120V, three-phase, four-wire, served by Puget Sound Energy, underground service from 200-kVA (estimated) pad-mount transformer. Current transformer, electrical meter, and main disconnect are located on outside building wall. Building has a 200-kW, 208/120V, three-phase, four-wire outdoor diesel generator, feeds underground to building main panel through transfer switch. Transfer switch located inside building hallway closet. Interior and exterior building lighting is all upgraded LED with original manual control inside and new automatic control outside. All branch wiring is installed in conduits. Devices are 15A and 20A grounding type. Building has a modern addressable fire alarm system. Building has no security alarm system and no card access system. 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, and gas-fired domestic hot water heater. Fire sprinkled throughout.

Facility Summary

City of Redmond	22710 NE Aldercrest Drive
Fire Station 18 Site	Redmond, WA 98053
Fire Station 18 Building	

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure			2.0			
A10 Foundations						
A1010 Standard Foundations	2002	2002	2	TRB	12/19/23	Concrete stem footing and stem wall. Storage addition in 2021.
A1030 Slab On Grade	2002	2002	2	TRB	12/19/23	Concrete slab on grade.
B Shell			2.6			
B10 Superstructure						
B1010 Floor Construction	2002	2002	2	TRB	12/19/23	Wood deck on wood joists at mezzanine.
B1020 Roof Construction	2002	2021	2	TRB	12/19/23	Wood truss structure. 2021 seismic retrofit strengthened connections from roof to walls. 2021 batt insulation and vapor barrier replaced in apparatus bay with seismic work including new vented airspace above. Vapor barrier seams only face stapled and not fully sealed with vapor barrier tape.
B20 Exterior Closure						
B2010 Exterior Walls	2002	2012	3	TRB	12/19/23	Wood framed walls with wood siding. Panels attached with staples (improper attachment method) and are pulling loose. Hose tower siding replaced in 2022.
B2020 Exterior Windows	2002	2002	2	TRB	12/19/23	Vinyl windows, dual-glazed, operable with insect screens.
B2030 Exterior Doors	2002	2022	2	TRB	12/19/23	Storefront, wood doors, hollow metal doors and frames, overhead apparatus bay doors. Front apparatus bay doors replaced in 2021 with high-speed doors.

Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
B Shell				2.6			
B30 Roofing							
B3010	Roof Coverings	2002	2002	4	TRB	12/19/23	Composite architectural asphalt shingle roofing nearing end of life. Metal gutters with downspouts, rain chains at front entrance (plastic). Rain chain failing. No roof leaks, but bare tar is exposed and loose granules. No fall restraint except for untested and non-certified D-rings on high-bay peak. Gutters sealed in 2022, plastic rain chains are reported as inadequate and conversion to actual downspouts is desired.
B3030	Projections	2002	2002	3	TRB	12/19/23	Wood entrance canopy, wood framed soffit at patio. Ornamental wood knee braces not flashed on top, weathering and suspected rot based on detail and exposure. Hose tower with new siding.
C Interiors				2.3			
C10 Interior Construction							
C1010	Partitions	2002	2021	2	TRB	12/19/23	Wood framed partitions. New shear wall plywood sheathing added in 2021 seismic retrofit and all new drywall. Added new bunker gear storage room below mezzanine. See city ADA report. Men's and women's toilet and shower signs indicate ADA, but not ADA compliant. One unisex ADA toilet provided near front entry.
C1020	Interior Doors	2002	2002	3	TRB	12/19/23	Hollow metal and wood doors in hollow metal frames.
C1030	Fittings	2002	2002	2	TRB	12/19/23	Marker boards, railing at mezzanine, metal ladder at hose tower. Interior identifying signage.
C20 Staircases							
C2010	Stair Construction	2002	2021	2	TRB	12/19/23	Steel stair.
C2020	Stair Finishes	2002	2021	2	TRB	12/19/23	Rubber safety treads.

Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components		Original System Date		Last Renewal Date		Score	Surveyor	Survey Date	Comments
Systems									
C Interiors						2.3			
C30	Interior Finishes								
C3010	Wall Finishes	2002	2021	2	TRB	12/19/23	Painted gypsum wall board typical, ceramic tile in restrooms. Paint above fiber reinforced plastic at apparatus bay, custodian room, and workout room.		
C3020	Floor Finishes	2002	2021	3	TRB	12/19/23	Sealed concrete at apparatus bay. Fire house floor finishes mostly replaced in 2021 seismic upgrade. LVL resilient flooring at offices, halls, and day room. New carpet in dorm/sleeping rooms. Ceramic tile at entry, restroom, showers, and kitchen. Seam welded sheet goods at laundry, custodial, and ADA restroom. Rubber resilient flooring at workout room. Wood floor at mechanical mezzanine subject to water damage; minor maintenance to install watertight floor and slope to drain.		
C3030	Ceiling Finishes	2002	2021	2	TRB	12/19/23	Open ceiling at apparatus bay. Fire house ceilings replaced in 2021 with seismic retrofit. Acoustic ceiling tile in corridors, dorm rooms, fitness, and offices. Gypsum wall board hard lid in restrooms, storage, and partial day room/kitchen.		
D Services						2.7			
D20	Plumbing								
D2010	Plumbing Fixtures	2002	2002	3	DCS	12/19/23	Porcelain water closets, urinals, and lavatories. Chrome trim with manual faucets and flush valves. One-piece fiberglass showers. Stainless steel decontamination and kitchen sinks. Janitor mop sink. Water closet flush valve drops fitted with floor drain trap primer lines.		
D2020	Domestic Water Distribution	2002	2002	3	DCS	12/19/23	City water via 1.5-inch meter with 2-inch service line to reduced-pressure backflow prevention at mechanical mezzanine room. 2018 A.O. Smith 74-gallon, 75 mbh gas-fired standard efficiency (80%) domestic heater including seismic straps, expansion tank, and recirculation pump, with system temperature maintained at 140 to 160 deg F. Reportedly, recurring pinhole leaks in copper piping, due to light-duty Type M copper tubing, and unusually high temperature.		

Facility Summary

City of Redmond
Fire Station 18 Site
Fire Station 18 Building

22710 NE Aldercrest Drive
Redmond, WA 98053

Facility Components		Original System Date	Renewal Last Date	Score	Surveyor	Survey Date	Comments
Systems							
D Services				2.7			
D20 Plumbing							
D2030	Sanitary Waste	2002	2002	2	DCS	12/19/23	City sewer. Cast iron drain, waste, and vent. Full length and narrow trench drains in apparatus bay. Floor drains with fixture-driven trap primers in restrooms. No grease waste for kitchen, but no issues reported.
D2090	Other Plumbing Systems	2005	2005	3	DCS	12/19/23	Air compressor in low-bay shop.
D30 HVAC							
D3010	Energy Supply	2005	2005	2	DCS	12/08/23	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 barbecue. Gas service is approximately double the capacity needed. New locution system gas valves working well.
D3020	Heat Generating Systems	2005	2015	3	DCS	12/19/23	Two high-efficiency (90%) condensing gas furnaces at mechanical mezzanine, with 2015 Carrier 80 mbh unit serving the fire station house, and 2005 Carrier 60 mbh unit serving the police precinct.
D3030	Cooling Generating Systems	2005	2005	4	DCS	12/19/23	Two condensing units outside to north. The 3-ton estimated unit serves the fire station house, and the 1-ton estimated unit serves the police precinct. The smaller unit has completely failed and is being replaced. Two inside split-Dx cooling coils downstream of the gas-fired furnaces. Ventilation cooling only for telecom closets, but no issues reported. Natural and ventilation cooling only for apparatus bays.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.7			
D30	HVAC						
D3040	HVAC Distribution Systems	2005	2005	3	DCS	12/19/23	Forced-air heating and cooling with galvanized and factory-insulated flexible ductwork in attic space serving the station house and police precinct areas with two separate systems. Both systems have fixed outside air, but no economizer (for free cooling and supplemental ventilation). Shared general exhaust for bathroom, laundry room, and utility room, with make-up air transferred from adjacent station house and police precinct spaces. Overall, marginal comfort with multiple spaces sharing just one temperature control zone. Apparatus bay with low side-wall exhaust duct up to exhaust fan in roof truss work, and side-wall unconditioned make-up louver. Both toxic gas and manual timer control of the system. Both hose tower and new storage roof addition have dedicated exhaust fans.
D3050	Terminal and Package Units	2005	2005	3	DCS	12/19/23	Three gas-fired Reznor unit heaters in apparatus bay with damage from 2021 construction work dust. Reznor unit in hose tower in good working order. 2021 Reznor unit in the new storage room addition. No HVAC service to apparatus bay shop room.
D3060	Controls and Instrumentation	2002	2002	3	DCS	12/19/23	Standalone controls with mix of manual and automatic. Energy use intensity is 160 kbtu/sf-yr, which is 247% of the WA State Clean Buildings target of 65.
D3090	Other HVAC Systems and Equipment	2002	2002	3	DCS	12/08/23	Three drop Nederman vehicle exhaust system. Reportedly, the control interface between the vehicle engine control and the Nederman system is dysfunctional, wasting significant energy - minor maintenance to correct. New bunker gear drying room added in 2021 under new stair to mezzanine.
D40	Fire Protection						
D4010	Fire Protection Sprinkler Systems	2002	2002	3	DCS	12/19/23	City 6-inch service to riser room to 4-inch backflow preventer to 3-inch wet-pipe riser to distribution throughout. Fire department connection line is 6-inch to 4-inch to tie-in to riser. Station pressure is near 70 psig.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.7			
D40 Fire Protection						
D4030 Fire Protection Specialties	2005	2005	2	DCS	12/19/23	Fire extinguishers in stainless steel cabinets.
D50 Electrical						
D5010 Electrical Service and Distribution	2005	2005	2	DCS	12/19/23	Square D main distribution panel (MDP) is 600A, 208/120V, three-phase, four-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. The MDP feeds distribution panels R1 & LM in station house corridor, and R2 in apparatus bay. No surge suppression observed.
D5020 Lighting and Branch Wiring	2002	2021	2	DCS	12/19/23	Interior lighting is all LED, with manual wall switches - no automatic control.
D5032 Low Voltage Communication	2005	2005	2	DCS	12/19/23	City standard Yealink VoIP telephone system. Flat panel TV screens in conference room and training areas.
D5037 Low Voltage Fire Alarm	2002	2021	3	DCS	12/19/23	Building has a fire alarm system. 2005 Silent Knight #5808 addressable fire alarm control panel is located in the front lobby. Devices consist of smoke detectors, horn strobes, and pull stations, with many devices replaced in 2021. Problematic apparatus bay detectors in hard to reach truss ceiling space, minor maintenance to devise a solution.
D5038 Low Voltage Security	2002	2002	3	DCS	12/19/23	Cipher lock on doors with card readers.
D5039 Low Voltage Data	2005	2005	3	DCS	12/19/23	Server in closet with newer WiFi antennas throughout.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.7			
D50	Electrical						
D5090	Other Electrical Systems	2005	2005	3	DCS	12/19/23	Whole-building 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 with 200 kW capacity and estimated 1,000-gallon tank. Separate lighted exits signs and battery-backed egress light fixtures. Half of the batteries tested are failed, minor maintenance to test and replace.
E Equipment and Furnishings				2.2			
E10	Equipment						
E1010	Commercial Equipment	2005	2005	3	DCS	12/19/23	Residential kitchen and laundry appliances.
E1020	Institutional Equipment	2005	2005	3	DCS	12/19/23	Fire station equipment - hose washer works ok, operated outside with hose-wash water to storm.
E1030	Vehicular Equipment	2005	2021	2	DCS	12/19/23	Apparatus bay motorized doors reportedly completed in 2005 as tenant improvement work. 2021 high-speed doors at front; rear doors and operators original (2005).
E20	Furnishings						
E2010	Fixed Furnishings	2002	2021	2	TRB	12/19/23	Wood veneer faced base and upper casework (including lockers and dorm wardrobe units) and plastic laminate countertops. Horizontal Venetian blinds. Blackout curtains at dorm rooms.
F Special Construction							
F10	Special Construction						
F1050	Special Controls and Instrumentation	2005	2005	2	DCS	12/19/23	Station tone alarm locution system.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 18 Site							Escalation 3%
Facility:		Fire Station 18 Building							Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	6,200	\$4.00	SF	\$24,800	\$49,000

Deficient Material: Vapor Barrier
Insulation vapor barrier seams only face stapled and not fully sealed, areas with significant gaps and sags.

Remedial Action:
Seal all seams and penetrations of vapor barrier with vapor barrier tape to prevent latent interior moisture from reaching insulation and condensing on underside of wood sheathing. Inspect conditions in attic space above ceilings and conduct the same sealing.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 18 Site								Escalation	3%
Facility: Fire Station 18 Building								Discount Rate	1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	5,000	\$2.00	SF	\$10,000	\$20,000

Deficient Material: Wood Siding
Wood lap siding improperly attached with roofing face staples, staples are popping out and panels are loose.

Remedial Action:
Screw panels into sheathing, paint heads to match siding.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 18 Site							Escalation 3%
Facility:		Fire Station 18 Building							Discount Rate 1.5%

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	9,500	\$24.00	SF	\$228,000	\$447,000

Deficient Material: Asphalt Shingles
Composite architectural asphalt shingle roofing nearing end of life. Bare tar exposed and loose granules. No fall restraint except for untested and non-certified D-rings on high-bay peak. No roof access provided.

Remedial Action:
Remove roofing, install certified fall restraint system and new roofing, including new ice and water shield flashings if not present or of expected quality, and synthetic subroofing. Investigate opportunity to provide permanent roof access.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 18 Site							Escalation 3%
Facility:		Fire Station 18 Building							Discount Rate 1.5%

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2024	400	\$50.00	LF	\$20,000	\$39,000

Deficient Material: Rain Chains
Gutter seams require constant resealing. Undersized drain holes cause backups with debris.
Plastic rain chains reported as causing recurring maintenance issues.

Remedial Action:
With a reroof, remove gutter opening and plastic chains, provide new gutters, eliminate rain chains, and provide downspouts to manage storm runoff to storm sewer.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 18 Site							Escalation 3%
Facility:		Fire Station 18 Building							Discount Rate 1.5%

B3030	Projections	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	12	\$900.00	EA	\$10,800	\$21,000

Deficient Material: Projections
Ornamental wood knee/kick outrigger braces not flashed on top and suspect rot based on detail and exposure.

Remedial Action:
Inspect and repair or replace. Add metal top cap flashing.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 18 Site

Facility: Fire Station 18 Building

Escalation 3%
Discount Rate 1.5%

D2020	Domestic Water Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	8,000	\$1.30	SF	\$10,400	\$20,000

Deficient Material: Hot water piping
Hot water pipe leaks due to unusually high system temperature and light-duty residential Type M copper tubing.

Remedial Action:
Replace light-duty copper tubing with medium-duty copper and/or PEX tubing and reduce system hot water temperature to 120 to 130 deg F.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 18 Site								Escalation	3%
Facility: Fire Station 18 Building								Discount Rate	1.5%

D3020	Heat Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: **Furnaces**
2005 police precinct furnace F-1 approaching end of life with failing controls.

Remedial Action:
Budget to replace police precinct furnace F-1 upon complete failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 18 Site							Escalation 3%
Facility:		Fire Station 18 Building							Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2	\$8,500.00	EA	\$17,000	\$33,000

Deficient Material: Condensing Unit (CU)
Police precinct air conditioning outside condensing unit has failed and is being replaced. Station house condensing unit is aged and could fail at any time.

Remedial Action:
Complete replacement of police precinct condensing unit, and budget to replace the station house condensing unit upon failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Fire Station 18 Site								Escalation	3%
Facility: Fire Station 18 Building								Discount Rate	1.5%

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	3	\$5,000.00	EA	\$15,000	\$29,000

Deficient Material: Unit Heaters
Apparatus bay gas-fired unit heaters damaged by uncontrolled construction dust from 2021 tenant improvement work.

Remedial Action:
Fully service all three unit heaters.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 18 Site							Escalation 3%
Facility:		Fire Station 18 Building							Discount Rate 1.5%

D3060 Controls and Instrumentation		Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	8,000	\$1.25	SF	\$10,000	\$20,000

Deficient Material: Energy Efficiency

High energy use for a relatively new fire station, which includes 2021 improvements, increasing the city's operating and maintenance cost for this station. Some suspects are thermal envelope, gas-fired unit heaters instead of radiant for apparatus bays, dysfunctional interlock between apparatus and vehicle engine exhaust system, and marginal station house HVAC system zoning.

Remedial Action:

Conduct an energy audit, including thermal envelope infrared thermography and implement energy efficiency and conservation measures to reduce energy use.

Action Type:

Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 18 Site

Facility: Fire Station 18 Building

Escalation 3%
Discount Rate 1.5%

D5037	Low Voltage Fire Alarm	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	1	\$7,000.00	EA	\$7,000	\$14,000

Deficient Material: Fire alarm control panel
Aging fire alarm control panel, with obsolete landline alarm call.

Remedial Action:
Budget to replace upon failure or obsolescence and upgrade to modern wireless alarm transmission.

Action Type:
Life Safety



Facility Summary

City of Redmond	
Fire Station 18 Site	22710 NE Aldercrest Drive
Fire Station 18 Infrastructure	Redmond, WA 98053

Facility Condition Summary

The site houses Fire Station 18 and has concrete drive aprons at the front and back of the building providing through access to 2.5 apparatus bays. An asphalt access drive with parking stalls extends around the east and north sides of the building. The station sign at the front is labeled King County Fire District #34.

City water, sewer, and fire; unclear storm service. Puget Sound Energy power and natural gas. High-speed fiber-optic data with no site electronic security, but no issues reported.

DRAFT

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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework							
G20 Site Improvements							
G2010	Roadways	2002	2002	2	TRB	12/19/23	Concrete drive aprons at front and back of the apparatus bays, minor cracks. Asphalt access drive alligating and cracking. Extruded and vertical concrete curbs.
G2020	Parking Lots	2002	2002	3	TRB	12/19/23	Asphalt parking with 13 parking stalls, including one ADA stall, extends around the east and north sides of the building.
G2030	Pedestrian Paving	2002	2002	2	TRB	12/19/23	Concrete entry walks and patio at the east side of the building.
G2040	Site Development	2002	2002	2	TRB	12/19/23	Fixed bike rack, flagpole, picnic bench. Waste enclosure with 2021 siding and paint. Fire danger sign and wood King County Fire District sign.
G2050	Landscaping	2002	2002	2	TRB	12/19/23	Ornamental landscaping at building perimeter, and grass and natural areas beyond the building. At the back of the building is an open grass area. No irrigation system observed, except for in the planting strip.
G30 Site Civil / Mechanical Utilities							
G3010	Water Supply	2002	2002	2	DCS	12/19/23	Domestic water supply (1-1/2") with no observed backflow prevention, minor maintenance to install. Fire service provided from public system in NE Alder Crest Drive, including hydrant, post-indicator valve, and fire department connection. Pressure is near 75 psig. While the planter strip along the street is irrigated, this appears to be a city system. There is no irrigation system on-site.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3020 Sanitary Sewer	2002	2002	2	DCS	12/19/23	City sewer with no issues reported. Oil/water separator with three manholes in front of building reportedly serving the apparatus bay trench drains; unclear if the effluent is to sewer or storm.
G3030 Storm Sewer	2002	2002	2	DCS	12/19/23	Catch basins and trench drain throughout paved areas. Building downspouts connect to the underground pipe system. An off-site pond is located to NE.
G3050 Cooling Distribution	2005	2005	2	DCS	12/19/23	Two condensing units outside at grade to NE, with no issues reported.
G3060 Fuel Distribution	2002	2005	2	DCS	12/19/23	Natural gas meter at the rear of the building with Puget Sound Energy meter No. 35540 and 1,000 cfh capacity. This capacity is near double that needed for normal station operation. Estimated 1,000-gallon diesel generator belly tank, which includes a diesel fuel dispensing station for fire department vehicles, with 0.75-hp pump. Reportedly, this capability is not made available to the fire department due to inability to maintain the fuel tank at adequate level for emergency power generation requirement.
G40 Site Electrical utilities						
G4010 Electrical Distribution	2002	2002	2	DCS	12/19/23	Utility power underground to estimated 200-kVA 208V pad-mounted utility transformer, then underground to main electrical closet via service energy with Puget Sound Energy meter No. P158622438. Power is delivered at 208V three-phase to the 600A main distribution panel. Emergency diesel generator is 200-kW MTU on belly fuel oil storage tank.
G4020 Site Lighting	2002	2022	2	DCS	12/19/23	Pole lighting throughout the site. Wall-packs on building exterior walls, with all observed lamps modern LED, and with 2022 outside lighting control system.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
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G Sitework

G40 Site Electrical utilities

G4030	Site Communications and Security	2005	2005	4	DCS	12/19/23	Newer high-speed fiber-optic service, frequently slowed or interrupted. No site electronic security, but no issues reported.
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Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Fire Station 18 Site							Escalation 3%
Facility:		Fire Station 18 Infrastructure							Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	400	\$15.00	LF	\$6,000	\$12,000

Deficient Material: Asphalt Paving
Asphalt access drive alligating and cracking.

Remedial Action:
Clean and seal cracks, continue monitoring.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 18 Site

Facility: Fire Station 18 Infrastructure

Escalation 3%
Discount Rate 1.5%

G3060	Fuel Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Fuel oil tank controls
Diesel generator fuel tank vehicle fill pump is locked out due to lack of fuel conservation control.

Remedial Action:
Install fuel conservation system to lock out the vehicle fill pump when the minimum safe diesel tank level is reached.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Fire Station 18 Site

Facility: Fire Station 18 Infrastructure

Escalation 3%
Discount Rate 1.5%

G4030	Site Communications and Security	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$14,000.00	LS	\$14,000	\$27,000

Deficient Material: High-speed data
Inconsistent and unreliable data service.

Remedial Action:
Modernize telecom services.

Action Type:
Other



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: Fire Station 18 Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Fire Station 18 Building	B10 Superstructure	\$24,800	\$4,960	\$5,952	\$12,856	\$49,000	\$49,000
	B20 Exterior Closure	\$10,000	\$2,000	\$2,400	\$5,184	\$20,000	\$21,000
	B30 Roofing	\$258,800	\$51,760	\$62,112	\$134,162	\$507,000	\$529,000
	D20 Plumbing	\$10,400	\$2,080	\$2,496	\$5,391	\$20,000	\$21,000
	D30 HVAC	\$57,000	\$11,400	\$13,680	\$29,549	\$111,000	\$114,000
	D50 Electrical	\$7,000	\$1,400	\$1,680	\$3,629	\$14,000	\$15,000
	Facility Total	\$368,000	\$73,600	\$88,320	\$190,771	\$721,000	\$749,000
Fire Station 18 Infrastructure	G20 Site Improvements	\$6,000	\$1,200	\$1,440	\$3,110	\$12,000	\$12,000
	G30 Site Civil / Mechanical Utilities	\$5,000	\$1,000	\$1,200	\$2,592	\$10,000	\$10,000
	G40 Site Electrical utilities	\$14,000	\$2,800	\$3,360	\$7,258	\$27,000	\$28,000
	Facility Total	\$25,000	\$5,000	\$6,000	\$12,960	\$49,000	\$50,000
Site Total		\$393,000	\$78,600	\$94,320	\$203,731	\$770,000	\$799,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 18 Site

Total Site Opportunity Cost: \$2,077,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Fire Station 18 Building							
System: Roofing							\$707,000
B3010 Roof Coverings							
	Composite asphalt roofing at end of life.	Rather than replacing with more composite shingles, consider a standing seam metal roof. Include walk grate with railings to and around rooftop mechanical units for safe maintenance access.	9,500.00	\$38.00	SF	\$361,000	\$707,000
Facility: Fire Station 18 Building							
System: Plumbing							\$10,000
D2090 Other Plumbing Systems							
	Existing compressed air system is missing distribution.	Install copper distribution to apparatus bay including two hose reels at each end of apparatus bay.	2.00	\$2,500.00	EA	\$5,000	\$10,000
Facility: Fire Station 18 Building							
System: HVAC							\$801,000
D3030 Cooling Generating Systems							
	No air conditioning for apparatus bay, with relatively high ceiling. Heat collects in winter in the apparatus bay ceiling space.	Install reversible ceiling fans at apparatus bays, for use in both summer and winter.	4.00	\$3,500.00	EA	\$14,000	\$27,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 18 Site

Total Site Opportunity Cost: \$2,077,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3040	HVAC Distribution Systems	No economizer for free cooling and supplemental ventilation for station house and police precinct.	Install economizer with controls for both station house and police precinct HVAC systems.	2.00	\$16,000.00	EA	\$32,000	\$63,000
		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	\$7.00	SF	\$21,000	\$41,000
		Aging station house and police precinct HVAC systems with poor thermal comfort throughout. City sustainability plan calling for decarbonization.	Upgrade to all-electric variable refrigerant flow heating and cooling throughout the station house and police precinct, and repurpose the exiting forced-air system as heat recovery dedicated outside air systems.	5,000.00	\$40.00	SF	\$200,000	\$392,000
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	\$5,000.00	LS	\$5,000	\$10,000
		Aging and damaged apparatus bay unit heaters with high station energy use.	Replace gas-fired unit heaters with gas-fired overhead low-intensity infrared heat to improve comfort, lower energy cost, and reduce maintenance.	3.00	\$25,000.00	EA	\$75,000	\$147,000

Opportunity Summary By Subsystem

City of Redmond
Site: Fire Station 18 Site

Total Site Opportunity Cost: \$2,077,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3060	Controls and Instrumentation	No networked control system (DDC).	Upgrade to networked controls with next HVAC and/or control system renewal.	7,714.00	\$8.00	SF	\$61,712	\$121,000
Facility:	Fire Station 18 Building							\$71,000
System:	Electrical							
D5020	Lighting and Branch Wiring	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	\$400.00	EA	\$12,000	\$24,000
D5038	Low Voltage Security	Non-standard card-key access system.	Replace with city standard card-key access.	8,000.00	\$3.00	SF	\$24,000	\$47,000
Facility:	Fire Station 18 Infrastructure							\$147,000
System:	Site Improvements							
G2040	Site Development	No site security fencing.	Add perimeter security fencing and vehicular security gate to rear lot.	500.00	\$150.00	LF	\$75,000	\$147,000

Opportunity Summary By Subsystem

City of Redmond

Site: Fire Station 18 Site

Total Site Opportunity Cost: \$2,077,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Fire Station 18 Infrastructure							\$341,000
System:	Site Electrical utilities							
G4010	Electrical Distribution							
		No electric vehicle (EV) charging stations.	Install one double-cable EV charging station, with rough-in for one more.	1.00	\$11,500.00	EA	\$11,500	\$23,000
		Moderately good southern exposure for several roof areas.	Install 25-kW photovoltaic power generation system.	25.00	\$6,500.00	EA	\$162,500	\$318,000

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Size - Gross S.F.	113,068
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	2.4			
Facility Condition Index (FCI)	0.09	Observed Deficiencies 2023 - 2028	\$1,310,000	\$1,354,000
Current Replacement Value (CRV)	\$62,866,000	Predicted Renewal Budget 2029 - 2042	\$23,211,000	\$27,572,000
Beginning Budget Year	2023	Opportunities	\$3,323,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

Four-story administration building on auger cast piles and standard foundation. Nine-inch slab on grade with no basement. Structure consists of steel frame and composite metal deck. Roofing is a PVC system. Exterior walls are a combination of aluminum curtain wall, metal stud with stone veneer, and aluminum panels. See infrared report of 2012 for two past identified problems (unclear if addressed). Concrete column support floor and canopies. Canopies are metal frame with wood deck. Steel sunshades 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, VCT, and sheet vinyl. Passenger and freight elevators 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. Power from Puget Sound Energy 750-kVA pad-mounted transformer at southwest corner of site supplying 480V three-phase power to main electrical room at southwest first floor area. Main switchboard is 480V, three-phase, and 2,000A. Standby dual-fuel (diesel and natural gas) generator is also at southwest corner of site, adjacent to Puget Sound Energy transformer. Site lighting includes pole-mounted and building-mounted fixtures. Several additional transformers and all-weather enclosures were recently installed, reportedly for use by Parks Department for municipal campus outdoor events. Inside lighting is mostly T8 fixtures with some compact fluorescent lamp (CFL) recessed can lights in several public and community areas, with LED lamps in a few locations. Low voltage includes communications, access control, CCTV, and special systems. 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 by Wright Runstad (developer) from 2005 to September 2013, when the city exercised an option to buy City Hall and the associated detached parking garage at the northeast quadrant of the site, from Wright Runstad. Since purchase, the city has contracted with CBRE to manage the City Hall and parking garage facilities, including most maintenance. The HVAC system is four-pipe variable air volume (VAV), penthouse gas-fired boilers and electric chillers, rooftop cooling tower, two rooftop VAV air handling units, hydronic hot water terminal VAV reheat units, open plenum return, multiple dedicated split direct expansion (Dx) cooling systems for telecom and other specialty rooms, dedicated council chamber four-pipe air handling unit, and DDC controls throughout. 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 outside canopy covered areas, and a wet heat-traced standpipe in the unheated southeast glass stair well tower.

Facility Summary

City of Redmond	8701 160th Avenue NE
Municipal Campus Site	Redmond, WA 98052
Redmond City Hall	

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure			2.0			
A10 Foundations						
A1010 Standard Foundations	2005	2005	2	TRB	12/06/23	Standard concrete foundations.
A1020 Special Foundations	2005	2013	2	TRB	12/06/23	Auger cast piles. Epoxy injection repairs had been reported in the past.
A1030 Slab On Grade	2005	2005	2	TRB	12/06/23	Nine-inch slab on grade.
B Shell			2.4			
B10 Superstructure						
B1010 Floor Construction	2005	2005	2	TRB	12/06/23	Concrete on metal deck, steel frame.
B1020 Roof Construction	2005	2005	2	TRB	12/06/23	Steel frame, concrete on composite deck.
B20 Exterior Closure						
B2010 Exterior Walls	2005	2005	2	TRB	12/06/23	Steel frame, insulation, stone veneer/metal panel. Areas of flashings dripping down face of stone. Stone veneer cladding panels in need of cleaning.
B2020 Exterior Windows	2005	2005	3	TRB	12/06/23	Curtain wall system. 2023 weather seal. One second floor window is broken.
B2030 Exterior Doors	2005	2005	3	TRB	12/06/23	Glass and storefront entry doors, some hollow metal doors, and overhead utility dock door.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Facility Components							
Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
B Shell		2.4					
B30 Roofing							
B3010	Roof Coverings	2005	2005	3	TRB	12/06/23	PVC roofing, metal parapet caps, and flashing (half of parapet cap seams resealed in 2023 with butyl type tape). Membrane roofing aging and with areas of algae and moss (especially below PV array areas). Concrete roof deck areas with some cracking, regular maintenance to verify sealants retain integrity.
B3030	Projections	2005	2005	3	TRB	12/06/23	Steel frame canopies with stained wood tongue and groove deck. Steel sunshades.
C Interiors		2.1					
C10 Interior Construction							
C1010	Partitions	2005	2005	2	TRB	12/06/23	Gypsum on steel stud frames.
C1020	Interior Doors	2005	2005	3	TRB	12/06/23	Hollow metal and aluminum frames, wood doors, ADA-compliant hardware, relites in some locations. Overhead coiling doors at some counters. Only a couple doors with occasional operations issues like sagging. Egress stair door vision panels with wire glass (now considered a safety issue). Minor maintenance to remove wire glass and replace with rated safety glazing.
C1030	Fittings	2005	2005	2	TRB	12/06/23	Various marker boards, tack surfaces, signs, artwork, and shelving.
C20 Staircases							
C2010	Stair Construction	2005	2005	2	TRB	12/06/23	Emergency stairs are cast concrete with steel handrails. Front lobby stairs are steel frame. Other miscellaneous stairs are precast concrete, like council chambers.
C2020	Stair Finishes	2005	2005	2	TRB	12/06/23	Tile on main entry stairs, carpet at council chambers.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
C Interiors				2.1			
C30	Interior Finishes						
C3010	Wall Finishes	2005	2005	2	TRB	12/06/23	Gypsum wall board, paint, some stone at fireplace, wood panels, fabric at acoustic applications.
C3020	Floor Finishes	2005	2005	2	TRB	12/06/23	Combination of carpet (some areas of newer), tile, stone, and vinyl flooring.
C3030	Ceiling Finishes	2005	2005	2	TRB	12/06/23	Combination of gypsum wall board and acoustic ceiling tile.
D Services				2.5			
D10	Vertical Transportation						
D1010	Elevators and Lifts	2005	2005	2	DCS	12/06/23	Two Thyssen Krupp TAC50 overhead traction elevators with both ventilation and split direct expansion (Dx) cooling at elevator machinery room. One Thyssen Krupp Continental 50 TAC20 hydraulic freight elevator with 60-hp motor. All elevator cabs fully finished, four-stop.
D20	Plumbing						
D2010	Plumbing Fixtures	2005	2005	3	DCS	12/06/23	Dual flush Caroma water closets and waterless urinals on upper floors, main floor flushing fixtures have been replaced with standard fixtures; 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 ongoing issues with Caroma water closets, and especially the waterless urinals due to salt build-up.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
D Services				2.5			
D20 Plumbing							
D2020	Domestic Water Distribution	2005	2005	2	DCS	12/06/23	Two-inch domestic water service with two reduced-pressure backflow preventers at southeast riser room to insulated copper distribution piping. Pressure at 80 psig with no observed pressure-reducing valve, but no issues reported. Two 119-gallon electric water heaters with temperature mixing valve and recirculation pump at the first floor custodial room, one 30-gallon electric hot water heater and recirculation pump at the penthouse, and approximately three newer 10-gallon electric hot water heaters at selected kitchenettes.
D2030	Sanitary Waste	2005	2005	3	DCS	12/06/23	Cast iron hubless drain, waste, and vent piping. Floor drains with trap primers. Report that cast iron waste piping life is being shortened by waterless urinals - see D2010 Plumbing Fixtures for detail. Past reports of sewer gas odors from floor drains, suspected due to insufficient trap priming; minor maintenance to upgrade to automatic electric trap primers.
D2040	Rain Water Drainage	2005	2005	2	DCS	12/06/23	Roof drain and overflow roof drain system with internal building piping to storm.
D30 HVAC							
D3010	Energy Supply	2005	2005	2	DCS	12/06/23	Natural gas service from Puget Sound Energy via a 7,000-cfh rotary meter with seismic shut-off valve delivered at 2 psig, with Puget Sound Energy meter No. 1277941. Loads include two boilers, dual-fuel standby generator, and lobby fireplace. Gas service is oversized for loads.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.5			
D30 HVAC						
D3020 Heat Generating Systems	2005	2018	2	DCS	12/06/23	Two 2018 high-efficiency 2-million btu/hr heating hot water boilers at penthouse mechanical room in good working order. Two original heating hot water pumps each 240 gpm @ 105 ft with 10-hp VFD-driven motors. Heating hot water distribution to building including three air handling units, over one hundred terminal units, and several sets for hydronic radiant heaters in main lobby and council chambers. Heating hot water was observed set to 175 deg F during mild conditions, which is too high - see D3060 Controls and Instrumentation for details.
D3030 Cooling Generating Systems	2005	2005	3	DCS	12/06/23	One 220-ton Carrier water-cooled chiller with one BAC 171-ton horizontal forced draft open loop cooling tower. The cooling tower was rebuilt in 2023 including new water chemistry control system, two condenser water pumps 390 gpm @ 97 ft and 15-hp, and two chilled water pumps 500 gpm @ 61 ft and 15-hp. Both condenser water and chilled water pumps with variable frequency drives. The chilled water system includes an estimated 500-gallon insulated thermal storage tank in the mechanical penthouse. The chilled water system reportedly operates at 55 deg F during cooling season (early spring to late fall), but this should be confirmed. The chilled water setpoint should be dynamically reset per code. Six Carrier split direct expansion (Dx) rooftop condensing units, 2 to 3 tons each. Ventilation cooling for most electrical rooms, but dedicated split-Dx cooling for most telecom rooms, plus traction elevator machine room.
D3040 HVAC Distribution Systems	2005	2005	2	DCS	12/06/23	Forced-air variable air volume (VAV) system with two four-pipe Aeon RL155 VAV air handling units at roof, Nailor terminal hydronic fan-powered VAV reheat units at each zone, and open plenum return. Dedicated four-pipe air handling unit for council chambers. Rooftop air handling units are located in enclosure with movable panels to facilitate maintenance. Variable frequency drives (VFDs) are failing on the Aeon air handling units, currently with one supply fan VFD failed. Air handling unit final filters are reportedly MERV-13. Trash management at the fully-enclosed loading dock without ventilation.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.5			
D30	HVAC						
D3050	Terminal and Package Units	2005	2005	3	DCS	12/06/23	Five split direct expansion (Dx) systems for main distribution frame, TV studio, traffic, penthouse elevator machine room, and other heavy/special cooling load spaces. Runtal baseboard heat at council chambers outside perimeter window wall. Electric unit heaters and wall heaters in utility rooms. Approximately 110 fan-powered variable air volume terminal units with hot water reheat and no issues reported.
D3060	Controls and Instrumentation	2005	2013	3	DCS	12/06/23	Full DDC with distributed controllers and central software upgraded to Reliable controls in 2013, but with apparent suboptimal programming or settings. For example, with mild weather (about 50 deg F outside), the lead boiler was maintaining about 175 deg F hydronic water temperature. City Hall energy use intensity (EUI) is 67, which just slightly over the WA State Clean Buildings target of 66 for government office buildings - a control systems tune-up should readily reduce the City Hall EUI to meet the target.
D3090	Other HVAC Systems and Equipment	2005	2005	3	DCS	12/06/23	Gas fireplace in main lobby with flue draft inducer at roof.
D40	Fire Protection						
D4010	Fire Protection Sprinkler Systems	2005	2005	2	DCS	12/06/23	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 connection leading to sprinkler manifold and wet standpipe below. Five-year confidence test completed in 2023.
D4020	Stand-Pipe and Hose Systems	2005	2005	2	DCS	12/06/23	Wet standpipe in unconditioned southeast stairwell standpipe is heat-traced and insulated.
D4030	Fire Protection Specialties	2005	2005	2	DCS	12/06/23	Fire extinguishers, automatic external defibrillators (AED), and first aid kits throughout. Most fire extinguishers in cabinets.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.5			
D50 Electrical						
D5010 Electrical Service and Distribution	2005	2005	2	DCS	12/06/23	Power from Puget Sound Energy 750-kVA transformer to 480V, with net meter No. P157452116, and photovoltaic (PV) production meter No. P158314722. Service is three-phase, 60-Hz to 2,000A Cutler Hammer main switchboard in the main electrical room to SW. Distributed secondary switchboards in the satellite electrical room to NW and at the mechanical penthouse for large mechanical equipment. From the main and satellite switchboards, up to six stacked electrical rooms above, one north, one south, one each floor with 480V and 208V distribution panels. Most 480/208V transformers are located in the main and satellite electrical rooms. Aging lighting controls have caused circuit trips, but not recently. Surge protection is only provided at a limited number of panels, supporting designated sensitive load panels. Most of these panels are also on standby power, including telecom and data loads. The main switchboard does have a surge protection device, but it may be failed - further investigation suggested. The utility net and production meters at the SW corner of the building are almost completely blocked by and entangled with overgrown landscape - minor maintenance to cut back landscape and maintain access to the meters. Reportedly no real time energy metering and no sub-metering. While all feeder conductors are in metal conduit, circuiting is via flexible metal-clad cable. The building includes two newer ballasted 36-panel PV power arrays on the roof, with each panel rated at 290 watts for a total capacity of 21-kW. PV array power is down through the SW stacked electrical rooms to the first floor main electrical room with three inverters in working order. The roof under the PV panels is dirty with heavy mold forming - this should be cleaned out at least annually as minor maintenance, in addition to keeping the panel surfaces clean.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.5			
D50 Electrical						
D5020 Lighting and Branch Wiring	2005	2005	3	DCS	12/06/23	Original fluorescent lay-in light fixtures with T8 lamps in most office areas, with portions of first floor upgraded to LED during 2017 tenant improvement project. Fluorescent recessed can lights in hard lid and common areas. Receptacles in office areas, including powered furniture in multiple office areas. Recessed can lights under exterior canopies, plus theatrical lighting for the glass reed art piece in the water feature ponds outside the council chambers. Blue Box lighting control panels in each stacked electrical room, serving the north and south wings. The master controller network interface is an obsolete slow modem - minor maintenance to upgrade to high-speed.
D5032 Low Voltage Communication	2005	2005	3	DCS	12/06/23	Hardwired telephones at front desks and service counters only. A/V systems at most conference rooms.
D5037 Low Voltage Fire Alarm	2005	2005	3	DCS	12/06/23	Notifier fire alarm system with main fire alarm control panel in sprinkler riser room and subpanels in electrical rooms. Annual test recently completed with no issues identified.
D5038 Low Voltage Security	2005	2005	3	DCS	12/06/23	Card-key access system with recent power failure issue. Outside perimeter CCTV system with no issues reported.
D5039 Low Voltage Data	2005	2015	2	DCS	12/06/23	Multiple communications and data carrier service entries at main distribution frame, including high-speed fiber-optic data. All main and intermediate distribution frames have dedicated, but aging split-Dx cooling. Newer WiFi antennas throughout.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
D Services			2.5			
D50 Electrical						
D5090 Other Electrical Systems	2005	2005	3	DCS	12/06/23	Dual-fuel (diesel and natural gas) 375-kW generator at southwest corner of site with 600A main disconnect serving three automatic transfer switches inside the building, two in main electrical room and one at mechanical penthouse. Generator load bank test reported completed in 2023. No dedicated emergency lighting system, house lights are simply powered back on by generator power after an outage - minor maintenance to install egress pathway bug-eye battery-backed wall-packs to provide lights for key area for the seconds between the outage and when generator starts. Bird deterrent system at decks is destroyed, minor maintenance to repair or replace, noting this system does not seem to work well.
E Equipment and Furnishings			2.4			
E10 Equipment						
E1010 Commercial Equipment	2005	2005	3	DCS	12/07/23	Aging kitchenette appliances and newer office equipment.
E1020 Institutional Equipment	2005	2005	3	TRB	12/06/23	Special audio-visual equipment at council chambers and broadcast room - aging but functional with few issues reported. Minor ongoing maintenance to keep these systems operational and updated as existing equipment becomes obsolete.
E1030 Vehicular Equipment	2005	2005	4	DCS	12/06/23	Loading dock with powered overhead door and powered dock leveler used primarily for trash service dumpster management. The loading dock was not designed for solid waste management.
E20 Furnishings						
E2010 Fixed Furnishings	2005	2005	2	TRB	12/06/23	Casework at work areas, copier rooms, counters at reception areas, window coverings, artwork at elevator lobby at second floor, main lobby art, and seating at council chambers.

Facility Summary

City of Redmond
Municipal Campus Site
Redmond City Hall

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
F Special Construction							
F10	Special Construction						
F1020	Integrated Construction	2005	2005	2	TRB	12/06/23	Gas fireplace.
F1050	Special Controls and Instrumentation	2005	2005	3	DCS	12/06/23	Radio equipment with multiple rooftop antennas. The low-frequency wire antenna is a safety hazard on the roof - minor maintenance to reconfigure.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Redmond City Hall							Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	5,000	\$8.00	SF	\$40,000	\$78,000

Deficient Material: Exterior Siding
Areas of flashings dripping down face of stone. Stone veneer cladding panels in need of cleaning.

Remedial Action:
Clean and reseal cladding, inspect flashings, and make necessary repairs.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Redmond City Hall							Discount Rate 1.5%

B2020	Exterior Windows	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$15,000.00	EA	\$15,000	\$29,000

Deficient Material: Exterior Glazing
One large second floor window noted broken with projectile damage.

Remedial Action:
Remove and replace glazing unit.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond			
Site:	Municipal Campus Site	Escalation	3%
Facility:	Redmond City Hall	Discount Rate	1.5%

D1010	Elevators and Lifts	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Elevator Machine Room Cooling
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.

Remedial Action:
Relocate to more appropriate location upon replacement.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond			
Site:	Municipal Campus Site	Escalation	3%
Facility:	Redmond City Hall	Discount Rate	1.5%

D2010	Plumbing Fixtures	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	6	\$4,100.00	EA	\$24,600	\$48,000

Deficient Material: Waterless Urinals
Increasing waterless urinal waste line back-ups requiring semi-annual flush-outs.

Remedial Action:
Replace waterless urinals with ultra low flow pint-per-flush urinals, prior to complete failure of the urinal waste piping system and further damage to downstream waste piping.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond					Escalation 3%	
Site: Municipal Campus Site					Discount Rate 1.5%	
Facility: Redmond City Hall						

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	3	\$9,000.00	EA	\$27,000	\$53,000

Deficient Material: Condensing Unit (CU)
Several of the split-Dx condensing units are from 2005 with increasingly obsolete R-22 refrigerant.

Remedial Action:
Budget to replace older condensing units upon failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Redmond City Hall							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	6	\$3,850.00	EA	\$23,100	\$45,000

Deficient Material: VFDs
One failed variable frequency drive (VFD) on variable air volume air handling unit supply fan; other likely to fail in the next few years.

Remedial Action:
Obtain spares and budget to replace VFDs immediately upon failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Redmond City Hall							Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	113,068	\$0.25	SF	\$28,267	\$55,000

Deficient Material: Control System
Suboptimal control system programming.

Remedial Action:
Tune up the control system, including heating hot water and chilled water temperature reset schedules.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Redmond City Hall							Discount Rate 1.5%

D5037	Low Voltage Fire Alarm	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	113,068	\$2.40	SF	\$271,363	\$531,000

Deficient Material: Fire Alarm
Aging fire alarm system; while the system is currently fully operable, the electronic hardware is aging and will become obsolete (no longer supported by factory) in the mid-term future.

Remedial Action:
Budget to renew the fire alarm system upon full obsolescence.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Redmond City Hall							Discount Rate 1.5%

D5038	Low Voltage Security	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	20	\$500.00	EA	\$10,000	\$20,000

Deficient Material: Access control
Power issue at several access control points.

Remedial Action:
Troubleshoot and repair failed access points. Fully test and service all other access points.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Redmond City Hall							Discount Rate 1.5%

E1030	Vehicular Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$225,000.00	LS	\$225,000	\$441,000

Deficient Material: Waste management

The loading dock is not designed for waste management. Both garbage and recyclable materials are stored and managed in the loading dock, which has no ventilation and is not sanitary for solid waste service.

Remedial Action:

Develop a building solid waste management system and repair damage to loading dock to return to safe and sanitary conditions. Alternately if unable to construct a proper solid waste management system, install a loading dock exhaust fan to expel odors to an approved location.

Action Type:

Code Issue



Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

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	2.9			
Facility Condition Index (FCI)	0.16	Observed Deficiencies 2023 - 2028		\$5,819,000
Current Replacement Value (CRV)	\$61,734,000	Predicted Renewal Budget 2029 - 2042		\$5,973,000
Beginning Budget Year	2023	Opportunities		\$24,365,000
Escalation	3%			\$27,941,000
Discount Rate	1.5%			\$10,599,000
				N/A

Facility Condition Summary

Public Safety Building has significant sub-slab groundwater intrusion in the basement, roof leaking on the green roof area, and other significant structural and fire protection damage from moisture intrusion under upper deck drive. 480V, three-phase service, underground service from Puget Sound Energy pad-mount transformer. Main switchboard in main electrical room on first floor to SE is 480V, 1200A, with breaker distribution section. 208/120 V step-down transformer to provide 208V/3P and 120V/1P power. The main switchboard appears fed from a whole-building automatic transfer switch, located outside. Building lighting is mostly upgraded to LED, but primarily with original manual control. Two diesel generators, original 250-kW, plus newer 400-kW; both 480V, three-phase. The building has fire alarm system protection, CCTV monitoring, card-key access, voice/data system with city-wide data center, 911 call center data room, and main distribution frame, plus newer under development Norcom data room and call center, and east mezzanine center secure radio room. Overall, electrical systems are aging but functional, except for excessive and disorganized cable plant in the ceiling plenum and attic space, hampering maintenance of multiple other systems. The primary HVAC system is a water-source heat pump (WSHP) system with two 2018 gas-fired boilers, two condenser water circulation pumps, one evaporative-cooled closed loop fluid cooler (cooling tower), and over sixty WSHPs distributed throughout the mechanical mezzanines and open plenum attic ceiling space. One air handling unit (AHU-1) serves the bulk of the building to the east with ventilation air, and is a dedicated make-up air unit, not an air handling unit as labeled. This unit only partially conditions the make-up air using condenser water, which is problematic during winter. Multiple split-Dx cooling systems serve mission critical areas including city-wide data center, 911 call center, and intermediate distribution frame. The evidence garage to the northwest is served by two aging rooftop gas-packs. Building plumbing is city water with newer gas-fired domestic hot water heaters. Fire sprinklers include wet-pipe, dry-pipe, and pre-action systems, plus gaseous fire suppression for the city data center and building intermediate distribution frame rooms. The ground floor is only a few feet above the Sammamish Slough to west. The Public Safety Building has a below grade basement and parking garage, below winter water table level, resulting in seasonal flooding of the basement and parking garage, damaging systems and equipment, deteriorating building structure, and hampering law enforcement operation. The site slopes north and south down into the garage, providing direct path for storm and flood water flow into the garage. The current configuration of site, basement, and storm water management may be inconsistent with use of this facility as the city's primary public safety building.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				3.2			
A10 Foundations							
A1010	Standard Foundations	1990	1990	3	TRB	12/07/23	Poured-in-place concrete with some masonry walls. Water table intrusion issues and sand infiltrating into building has caused concern for potential undermining, but no observable issue noted.
A1030	Slab On Grade	1990	1990	4	TRB	12/07/23	Reinforced slab on grade. Any existing sub-slab waterproof membrane has failed to prevent ground water intrusion through cracks in slab. Sand infiltrating into the building has caused concern of potential undermining of slabs (but no observable settlement issue). Past attempt to reduce groundwater pressure by drilling into slab in areas leads to added water on surface. Elevator pits fill with water. Garage floods with a couple inches of standing water through the duration of the wet season.
A20 Basements							
A2020	Basement Walls	1990	1990	3	TRB	12/07/23	Poured-in-place concrete. West end water intrusion through wall. Efflorescence and water intrusion.
B Shell				2.6			
B10 Superstructure							
B1010	Floor Construction	1990	1990	2	TRB	12/07/23	Concrete floors on steel deck. Significant sally port deflection and cracking (concrete on pan deck) and corrosion of steel structure at areas below drive to sally port (see B1020 Roof Construction for deficiency).
B1020	Roof Construction	1990	1990	2	TRB	12/07/23	Rigid insulation on steel deck on heavy steel girder and beam frame. Roof structure below grade/ground covered roof areas is significantly damaged with moisture intrusion, causing corrosion and destruction of fire protection coating.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
B Shell			2.6			
B20 Exterior Closure						
B2010 Exterior Walls	1990	2019	3	TRB	12/07/23	Stucco over metal frame, some sloped surface. Tile walls and soffits. 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	TRB	12/07/23	Anodized aluminum frame double-pane windows. All fixed units.
B2030 Exterior Doors	1990	1990	3	TRB	12/07/23	Aluminum storefront at main entry doors. Metal doors and metal overhead doors. Hollow metal doors and frames are in generally good condition. Some rust and finish issues needing protective maintenance.
B30 Roofing						
B3010 Roof Coverings	1990	2015	3	TRB	12/07/23	Standing seam metal roof replaced in 2015 with seismic upgrade. Torch down asphalt roof also 2015. At grade roof, plaza and green roof leaking over the garage and gun range. Leaks causing significant corrosion, blistering fire coating, and damaging structure.
B3020 Roof Openings	1990	1990	3	TRB	12/07/23	Two peaked roof access hatches are non-functional. Few roof penetrations. New roof ladders installed and fall restraint provided, however fall restraint cable is inaccessible.
B3030 Projections	1990	1990	3	TRB	12/07/23	Steel covered entry canopy at north entry. Projected glass at south entry. Balcony rails and metal clad colonnade projection along south elevation. Concrete topping slab sill at south projection cracked and leaking.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
C Interiors				2.8			
C10	Interior Construction						
C1010	Partitions	1990	1990	3	TRB	12/07/23	Interior partition light-gauge metal with gypsum wall board on each side. Ongoing minor maintenance to patch and repair as needed. Interior relite windows with wire glass.
C1020	Interior Doors	1990	1990	3	TRB	12/07/23	Solid core wood doors and hollow metal frames. 85% of hardware was replaced in 2022.
C1030	Fittings	1990	1990	3	TRB	12/07/23	Shelving, lockers, public art, display cases, and built-in counters.
C20	Staircases						
C2010	Stair Construction	1990	1990	2	TRB	12/07/23	Steel stairs.
C2020	Stair Finishes	1990	2019	2	TRB	12/07/23	Carpeted stairs with painted rails.
C30	Interior Finishes						
C3010	Wall Finishes	1990	2004	3	TRB	12/07/23	Painted walls. Regular repairs ongoing as needed.
C3020	Floor Finishes	1990	2012	2	TRB	12/07/23	Carpet tile, ceramic tile, and vinyl composition tile. Carpet and vinyl composition tile installed in 2012. Carpeting in upper hall installed in 2021. Other tile in good condition. Sheet goods in some areas break. Rubber flooring in workout/exercise room.
C3030	Ceiling Finishes	1990	1990	3	TRB	12/07/23	Suspended acoustical tile, painted gypsum wall board. Minor areas of damaged and stained tile. Ceiling grid predates current seismic code for suspended ceilings.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date		Last Renewal Date		Score	Surveyor	Survey Date	Comments
Systems									
D Services						3.1			
D10 Vertical Transportation									
D1010	Elevators and Lifts	1990	1990	4	DCS	12/07/23	One passenger 2,500-lb capacity elevator to west; Dover 25-hp. One freight 5,000-lb capacity elevator to mid-building; Dover 30-hp. Both elevators are hydraulic with three stops. Fully finished cab interiors in both. Dedicated water-source heat pump cooling for both elevator machine rooms. Heat relief vents at top of both elevator hoistways. Both elevators are nearing end of life, accelerated by moisture damage from basement water intrusion rusting and corroding elevator components.		
D1090	Other Conveying Systems	1990	2015	3	DCS	12/07/23	Roof access improved to most, but not all roof areas, especially to service gutter to south.		
D20 Plumbing									
D2010	Plumbing Fixtures	1990	2015	2	DCS	12/07/23	Porcelain water closets, urinals, and lavatories with chrome trim (faucets and flush valves). Showers, drinking fountains, housekeeping mop sinks, and kitchenette stainless steel sinks and trim. Some fixtures need trim adjustment as ongoing minor maintenance.		
D2020	Domestic Water Distribution	1990	1990	3	DCS	12/07/23	Two-inch city water service to copper piping, with pressure-reducing valve (PRV) station at northwest basement mechanical room, including 2-inch and 1.25-inch PRVs - past pressure control issues have been resolved. Two 2020 high-efficiency gas-fired 119-gallon, 300-mbh domestic hot water heaters at level 1 west mechanical room with one whole-building recirculation pump. Significant portions of the domestic hot water piping remain uninsulated, wasting energy and increasing wait times for hot water.		

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date		Last Renewal Date		Score	Surveyor	Survey Date	Comments
Systems									
D Services						3.1			
D20 Plumbing									
D2030	Sanitary Waste	1990	1990	4	DCS	12/07/23	Cast iron drain, waste, and vent (DW&V) piping with side sewer connection to campus sanitary sewer service. While rust is present on parking garage level exposed DW&V piping, the greater concern is increasing corrosion inside the lines. In some cases, especially urinals, flush time is long, resulting in double-flush overflows to floor. Multiple waste lines are minimally sloped in garage overhead to maintain vehicle clearance, but result in accelerated line deterioration. No trap primers for floor drains, however custodial staff routinely fill drains manually to reduce sewer gas in occupied space. The parking garage drain collection system is insufficient to keep up with both ground and surface water intrusion, resulting in flooding during wet weather, especially the west half toward the river.		
D2040	Rain Water Drainage	1990	2015	3	DCS	12/07/23	Sloped roofs are gutter and downspout. Flat roofs are interior drain to parking garage lift station, noting some standing water directly under rooftop unit outside air intakes. There are two stormwater sumps, each with duplex rail-type submerged sump pumps; one to NW, the other to SE, reportedly discharging to the river to west. Multiple weather deck and drive ramp trench drains. While roof rainwater drainage is much improved by the 2015 seismic upgrade and reroof project, there is still extensive flooding of the basement and parking level, with water flooding from multiple directions, including direct from sloped landscape areas NW and south of the garage. While perimeter foundation drains are reported, these appear overwhelmed by heavy rain, with ground water pressure forming small geysers in the parking garage floor, at times carrying sub-surface soil up into the garage, and suspected to be undermining underlying soil support for the concrete slab-on-grade garage and basement floor - see A1030 Slab On Grade for corrective action. Reportedly, previous concerns regarding support for police vehicle washing have been resolved, with the police now washing vehicles at the off-site public works facility.		

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D20 Plumbing						
D2090 Other Plumbing Systems	1990	2015	3	DCS	12/07/23	Stainless steel jail area detention fixtures with remote pneumatic trim at approximately six holding cells. The pneumatic trim was replaced about 2015 with tested fixtures working well; minor rust on some detention fixtures. Several portable air compressors at garage, gun range, and serving dry-pipe sprinkler risers.
D30 HVAC						
D3010 Energy Supply	1990	1990	4	DCS	12/07/23	Natural gas service from Puget Sound Energy with meter number 404758 located to the northeast above gun range control room; capacity is 1,400 cfh delivered at 2 psig and includes a seismic shut-off valve. The meter for this facility appears insufficient for the load, especially following the upgrade to LED lighting, increasing the need for gas heat. Current major gas loads including two 400 mbh boilers, two 300 mbh water heaters, one 1 million btuh gun range make-up air unit, and two SWAT building unit heaters, with need to add preheat to the building make-up air system (AHU-1).
D3020 Heat Generating Systems	1990	2018	2	DCS	12/07/23	Two 2018 Lochinvar high-efficiency condensing 400 mbh gas-fired boilers at east mechanical mezzanine, each with variable speed boiler recirculation pump. These boilers inject heat into the water-source heat pump condenser water loop to maintain approximately 70 deg F during heating season. Boiler control is marginal due to obsolete building automation system.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D30 HVAC						
D3030 Cooling Generating Systems	1990	1990	3	DCS	12/07/23	Condenser water loop piping. Two water-source heat pump condenser water loop pumps - one newer 550-gpm @ 130-ft tdh with 30-hp motor on variable frequency drive, and older 550-gpm @ 110-ft tdh with 25-hp constant-speed motor. One Baltimore Aircoil Company F1343-N cooling tower (evaporated cooled closed loop fluid cooler), rebuilt in 2019. The cooling tower includes a spray water pump and multi-agent water chemistry control system. Condenser water piping is a mix of insulated and uninsulated runs, which is fine, given typical ambient condenser water loop temperature in the 70-deg F range. Several split-Dx systems for dedicated cooling of 911 call center, city data center, and building intermediate distribution frame. Newly formed Norcom 911 call center and data room without dedicated cooling.
D3040 HVAC Distribution Systems	1990	1990	4	DCS	12/07/23	65 water-source heat pumps (WSHP) serve most of the main building levels 1 and 2, plus mezzanine areas. 25 have been replaced in recent years, all others are original, at end of life, and inefficient. Ducted supply air with open plenum return to recirculation WSHPs. Air handling unit (AHU-1) supplies slightly conditioned outside air to WSHPs at east end. Unconditioned outside air plenum to WSHPs at west mezzanine. The outside air intake is dirty. The AHU-1 companion whole-building exhaust fan drive EF-1 is failing. Both AHU-1 and EF-1 have obsolete inlet guide vane capacity control, without building pressure control, resulting in multiple building and space pressurization issues. Various other exhaust fans, both new and old, not coordinated with make-up air or space pressure control, especially at the locker rooms where a dedicated locker exhaust fan system has been retrofit, but uncoordinated with the whole-building ventilation system. Aged, dirty, leaking, and failing supply air duct and dirty open return air plenum, collectively with uncoordinated tenant improvements resulting in poor zone space temperature controls and poor ventilation. Maintenance access to many WSHPs and other HVAC system equipment and components is hampered or impossible due to uncoordinated cable and conduit routing in ceiling plenum spaces, in most cases related to low voltage systems.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.1			
D30 HVAC						
D3050 Terminal and Package Units	1990	2006	3	DCS	12/07/23	Two Trane rooftop gas-pack units (RTU) serve the 2006 north evidence storage garage addition, approaching end of life. Electric resistant unit heaters serve many of the smaller storage rooms and mechanical, electrical, and plumbing rooms, especially at the parking garage level. Two additional 2017 Climate Master heat pump units on low roof to north service space below.
D3060 Controls and Instrumentation	1990	2005	4	DCS	12/07/23	Piecemeal control systems with a variety of manual and programmable standalone controls, and with several types of partial DDC systems. High energy use with an energy use intensity (EUI) of 97, which is 50% higher than WA State Clean Buildings target of 65 for public safety buildings. The EUI may be skewed high by the two separate freestanding SWAT buildings, if their areas are not included in the Public Safety Building area, as power and gas for these two buildings appears extended from the Public Safety Building systems. Poor indoor air quality with no ventilation to most areas during time of survey and no observed operable windows. Poor indoor air quality and control has led to several incidents, including a recent high-VOC condition placing occupants at unusually high risk.
D3090 Other HVAC Systems and Equipment	1990	2006	3	DCS	12/07/23	Gun range gas-fired make-up air unit is aging, but functional, needing minor ongoing maintenance to keep in operation for five to ten years, and 2016 end-of-range backstop exhaust fan with bag-out lead filtering system. The semi-open parking garage may not meet code requirements for a naturally ventilated garage. Snow melt system at vehicle ramp with unclear controls - minor maintenance to tune-up. Both diesel generators have Strobic lab-type exhaust plume booster fans due to past complaints of diesel fumes inside the building. The whole-building ventilation system (AHU-1) outside air intake is to east, in the vicinity of the two diesel generator exhausts. Reportedly, the plume boosters have solved the problem, but at considerable cost and complexity, including need for additional ongoing maintenance.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
D Services				3.1			
D40 Fire Protection							
D4010	Fire Protection Sprinkler Systems	1990	1990	3	DCS	12/07/23	Eight-inch city water fire service entry to the basement (garage) main riser room, with four-inch wet-pipe riser, four-inch dry-pipe riser to parking garage, three four-inch floor control valves, and pre-action system for holding cells, noting this appears tagged as a deluge system in the main custodial room. A 2015 pre-action system has been installed to protect the 911 call center. A newer FM-200 gaseous fire protection system has been installed to protect the city data center. Dry-pipe sprinkler piping in the parking garage is rusting in some areas, and has been selectively replaced in recent years. Garage sprinkler pipe deterioration has been accelerated by rainwater leaking down from above and from high humidity from garage flooding and standing water - see other systems which address structure water leakage and basement flooding.
D4020	Stand-Pipe and Hose Systems	1990	1990	3	DCS	12/07/23	Hose system is abandoned in place - assume this is approved by the fire marshal.
D4030	Fire Protection Specialties	1990	1990	3	DCS	12/07/23	Fire extinguishers in cabinets throughout. Automated external defibrillators (AED) and other rescue gear throughout.
D4090	Other Fire Protection Systems	1990	1990	5	DCS	12/07/23	Rated egress corridor along spine of building on levels 1 and 2. Past reports of rated assembly damaged at multiple locations along level 2 corridor.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date		Last Renewal Date		Score	Surveyor	Survey Date	Comments
Systems									
D Services						3.1			
D50 Electrical									
D5010	Electrical Service and Distribution	1990	1990	3	DCS	12/07/23	Puget Sound Energy pad-mounted transformer in fenced yard to SE, 500-kVA, 480/277V, to outside all-weather Eaton Cutler-Hammer switchboard also in the fenced yard. The outside switchboard includes a whole-building automatic transfer switch, in turn feeding the inside GE 480V, 1,200A main switchboard, which in turn feeds multiple other distribution panels and 480/208V transformer(s). The service yard and outside switchboard includes at least two Puget Sound Energy utility meters, one at freestanding cabinet No. P160429000, and another inside all-weather switchboard No. P157452115. City staff report they are not sure how all the fenced yard equipment interfaces with the Public Safety Building, two generators, and two SWAT buildings, but no issues are reported. Staff report maintenance on this system is outsourced. The main issue reported throughout the building is individual distribution panel circuit trips from excessive use of portable heaters due to the failing HVAC system.		
D5020	Lighting and Branch Wiring	1990	2019	3	DCS	12/07/23	Lighting wiring and device wiring are installed in a raceway system. Interior lighting was upgraded in 2019 to LED in most areas, but with older manual control. Some occupants complain lighting is too bright, but have little or no control. 2019 parking garage LED lighting, but unacceptably dim in multiple areas. Newer sally port and evidence areas were not upgraded, as they have still moderately efficient T5 lighting. Firing range has original open-type (not sealed) fixtures. Insufficient utility receptacles in parking garage.		
D5032	Low Voltage Communication	1990	1990	4	DCS	12/07/23	Telephone, radio, call center, and other special communications systems, over the years resulting in excessive plenum wiring without a cable management system, complicating facility maintenance.		

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
D Services				3.1			
D50 Electrical							
D5037	Low Voltage Fire Alarm	1990	2023	2	DCS	12/07/23	Building has full fire alarm system. Fire alarm panel is Honeywell Silent Knight IntelliKnight with separate AES radio alarm transmitter, and is located in the main electrical room. Special controls for data and call center pre-action and gaseous fire suppression systems with no issues reported.
D5038	Low Voltage Security	1990	2006	3	DCS	12/07/23	The building has full CCTV system with aging cameras. Card-key access appears recently updated, with fewer issues reported. Suspects are breaking into the garage vehicle evidence storage area and stealing evidence, due to low fence and aged electronic security.
D5039	Low Voltage Data	1990	2015	3	DCS	12/07/23	City-wide data center, 911 call center, 2023 Norcom call center, building intermediate distribution frame, and cable plant, with variety of older and newer equipment and cable.
D5090	Other Electrical Systems	1990	2012	3	DCS	12/07/23	Building has two diesel generators, one 1990 Onan 250-kW and one newer Cat 400-kW. Two automatic transfer switches (ATSS), an older Onan inside the main electrical room, and a newer Eaton Cutler-Hammer outside in the SE electrical yard. Staff report the Onan is a back-up to the Cat generator, but this is not clear from the two ATSS - see D5010 Electrical Service and Distribution for recommendation to better document the as-built configuration of the electrical system. Emergency lighting includes battery ballasts for many fixtures throughout, and some wall-mounted bug-eye wall packs. At time of site visit, the diesel fuel tank monitor (under the Cat generator) was in alarm indicating a fuel oil storage tank leak; city facilities staff were notified, assume minor maintenance to correct.

Facility Summary

City of Redmond
Municipal Campus Site
Public Safety Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
E Equipment and Furnishings				3.0			
E10 Equipment							
E1010	Commercial Equipment	1990	1990	3	DCS	12/07/23	Kitchenette appliances and office equipment - no issues reported.
E1020	Institutional Equipment	1990	1990	3	DCS/TRB	12/07/23	Detention, security, gun range, evidence storage, training fixtures, and other law enforcement organizational equipment; no issues reported. Washer and ventless dryer were added to the former dog wash area during the pandemic. Without proper ventilation, the latent moisture from the dryer can damage storage of adjacent sensitive and expensive police equipment. Minor maintenance to add moisture-sensing exhaust venting.
E1030	Vehicular Equipment	1990	1990	3	TRB	12/07/23	Four rolling vehicular gates (red, yellow, white, and green) with track design issues, easily damaged from heavy traffic, all power-operated. Currently functioning, but will continue to need monitoring and regular maintenance.
E20 Furnishings							
E2010	Fixed Furnishings	1990	1990	3	TRB	12/07/23	Fixed counters and desks are dated but functional.
F Special Construction							
F10 Special Construction							
F1010	Special Structures	1990	1990	3	DCS	12/07/23	Sally port, detention facilities. Gun (shooting) range, dated and low-tech but functional.
F1040	Special Facilities	2006	2006	3	DCS	12/07/23	Dedicated generator building - steel frame. Structural components and roof grilles rusting - minor ongoing maintenance to clean and preserve.
F1050	Special Controls and Instrumentation	1990	1990	3	DCS	12/07/23	Extensive antennas and communication equipment and weather instruments on roof, no issues reported, other than poor cable routing interfering with other building systems.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site								Escalation	3%
Facility: Public Safety Building								Discount Rate	1.5%

A1030	Slab On Grade	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2025	1	\$50,000.00	LS	\$50,000	\$98,000

Deficient Material: Sub-Grade Waterproofing

Any existing sub-slab waterproof membrane has failed to prevent ground water intrusion through cracks in slab. Garage floods with up to two inches of standing water through the duration of the wet season. High ground water table and hydrostatic pressure causes significant water intrusion through cracks in the slab. Sand infiltrating into the building has caused concern of potential undermining of the slab. Elevator pits fill with water up to elevator threshold. Past attempt to reduce groundwater pressure by drilling into slab in areas leads to added water on surface.

Remedial Action:

Reseal slab holes and crack leaks with a pressure injection concrete waterproof sealer like an acrylate injection waterstop resin as demolition of sub-grade and all new construction with new waterproof sub-grade systems would be cost prohibitive and disruptive.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

A2020	Basement Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	50	\$400.00	LF	\$20,000	\$39,000

Deficient Material: Waterproofing
West end water intrusion through wall. Efflorescence and water intrusion.

Remedial Action:
Excavate and install waterproofing with drainage mat/capillary break, drained to footing drain.
Clean and paint interiors.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond								Escalation	3%
Site: Municipal Campus Site								Discount Rate	1.5%
Facility: Public Safety Building									

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	2,000	\$40.00	SF	\$80,000	\$157,000

Deficient Material: Steel Frame
Roof structure below ground covered roof areas is significantly damaged with moisture intrusion, causing corrosion and destruction of fire protection coating.

Remedial Action:
Repair intrusion issues per B3010 Roof Coverings, strip fire protection from area to extent of damage and corrosion, sandblast corroded steel, repair and reinforce corroded steel as necessary, prime and coat steel with industrial exterior steel coating system to thwart future exposure corrosion, reapply fire protection.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond								Escalation	3%
Site: Municipal Campus Site								Discount Rate	1.5%
Facility: Public Safety Building									

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1,000	\$53.00	SF	\$53,000	\$104,000

Deficient Material: Cement Plaster
Moisture intrusion is causing cement plaster paint bubbling.

Remedial Action:
Investigate moisture intrusion sources (likely panel joints and flashing interfaces). Strip paint. Adjust flashings and panel joint sealants. Alternatively, recommend considering installing alternative prefinished metal cladding in lieu of stucco plaster.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1,500	\$100.00	SF	\$150,000	\$294,000

Deficient Material: Below Grade Roof Membrane
Torch down asphalt roof. At grade roof, plaza and green roof leaking over the garage and gun range. Leaks are causing significant corrosion, blistering fire coating, and damaging structure. There may be no membrane below plaza concrete.

Remedial Action:
Demo landscape. Install new waterproof membrane and capillary break with drains and filter fabric. Construct new green roof above. At plaza concrete, sandblast, prep, and install waterproof traffic coating integrated with refreshed area drains.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site								Escalation	3%
Facility: Public Safety Building								Discount Rate	1.5%

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	500	\$65.00	LF	\$32,500	\$64,000

Deficient Material: Metal Gutters and Roof
Ongoing leaking from gutter lengths and poor joint design. Metal-to-metal seams with joint sealant on long runs fail every summer with heat expansion and contraction movement.

Remedial Action:
Remove and replace gutters and gutter support with proper application and joint detailing to accommodate thermal movement.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site								Escalation	3%
Facility: Public Safety Building								Discount Rate	1.5%

B3020	Roof Openings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$30,000.00	LS	\$30,000	\$59,000

Deficient Material: Roof Access

Gutters on sloped roofs are inaccessible for maintenance. While there is a fall restraint cable near the ridge of the steep and slick standing seam roof, it is neither reasonably nor readily accessible. As a result, gutters cannot be safely or regularly cleaned and now have significant plant growth. Recent renovations removed parapet fall protection pathway to access scuppers over the north roof section over the training room, making it unsafe to access for maintenance and drain cleaning.

Remedial Action:

Install gable end ladder off built-up accessible roof, and catwalk over to access first fall restraint cable connection or install catwalk and railing along entire gutter roof edge. Install fall protection anchors along gable end path to access scuppers on west end passage past gable over training room.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

B3030	Projections	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	800	\$38.00	SF	\$30,400	\$60,000

Deficient Material: Concrete Deck
Concrete topping slab sill at south projection cracked and leaking, degrading systems below.

Remedial Action:
Demo topping slab, install membrane and flashing, pour new with slope to drain away, top with waterproof traffic coating.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

C1010	Partitions	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	24	\$1,000.00	EA	\$24,000	\$47,000

Deficient Material: Interior Windows
Interior relite windows with wire glass (now considered a safety hazard). Does not appear to be ballistic glazing at public-facing windows.

Remedial Action:
Remove and replace wire glass with properly rated laminated safety glass.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

D1010	Elevators and Lifts	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	2	\$340,000.00	EA	\$680,000	\$1,332,000

Deficient Material: Elevator
Aging elevators nearing end of useful life, with aged controls and mechanisms, accelerated by basement flooding water intrusion into elevator hoistway pits.

Remedial Action:
Renew elevators, including addition of pumped elevator sump pumps.

Action Type:
ADA



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D1090	Other Conveying Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	200	\$150.00	LF	\$30,000	\$59,000

Deficient Material: Gutter Access
Dangerous gutter access to clean south gutter, hence plants are growing in this gutter, reducing its function and shortening gutter life.

Remedial Action:
Provide engineered access to the south gutter.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D1090	Other Conveying Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	3	\$5,000.00	EA	\$15,000	\$29,000

Deficient Material: Roof Access
No roof access to mid-level west end roofs and 2006 addition roofs.

Remedial Action:
Provide permanent roof access to all areas with equipment requiring regular maintenance.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D2020	Domestic Water Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	500	\$10.00	LF	\$5,000	\$10,000

Deficient Material: Piping Insulation
Damaged or missing domestic hot water pipe insulation in some areas, wasting energy and water, as hot water wait times are higher to some fixtures.

Remedial Action:
Repair or replace pipe insulation.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	94,975	\$0.80	SF	\$75,980	\$149,000

Deficient Material: Drain, Waste, and Vent Piping
Drain, waste, and vent (DW&V) piping is low-sloped and deteriorating throughout, but especially at parking garage level.

Remedial Action:
Clean, inspect, test, and repair or replace DW&V piping; increase slope to improve drainage where possible.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	750	\$30.00	LF	\$22,500	\$44,000

Deficient Material: Piping Insulation
No drain, waste, and vent piping insulation and heat trace system in the unconditioned parking garage.

Remedial Action:
Heat trace and insulate parking garage exposed waste piping.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D2040	Rain Water Drainage	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$5,000.00	EA	\$5,000	\$10,000

Deficient Material: Floor Drains
Dumpster storage area missing floor drains to sewer; currently drains to storm.

Remedial Action:
Provide floor drains to sewer.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D3010	Energy Supply	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$22,000.00	LS	\$22,000	\$43,000

Deficient Material: Gas Service
Insufficient gas meter capacity subsequent to LED lighting upgrade, increasing load on boiler plant.

Remedial Action:
Upgrade to modern 3,000 cfh rotary meter and increase gas line size where needed.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$30,000.00	LS	\$30,000	\$59,000

Deficient Material: Communications Cooling
The 911 data room load has significantly decreased from more efficient equipment loads inside, resulting in equipment short-cycling and failures.

Remedial Action:
Engineer and install a right-sized 911 data center cooling system.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	3	\$12,500.00	EA	\$37,500	\$73,000

Deficient Material: Condensing Unit
Several older condensing units and inside units for mission-critical spaces, including for intermediate distribution frame and back-up to other systems (N+X).

Remedial Action:
Replace aging mission-critical space split-Dx cooling systems prior to failure.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$30,000.00	LS	\$30,000	\$59,000

Deficient Material: Norcom 911 cooling
Newly formed Norcom 911 call center and data room do not have dedicated cooling.

Remedial Action:
Provide dedicated cooling for the new Norcom 911 center.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	1	\$7,500.00	EA	\$7,500	\$15,000

Deficient Material: Pumps
One of two condenser water pumps is original and aged.

Remedial Action:
Renew condenser water pump.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	60,000	\$1.00	SF	\$60,000	\$118,000

Deficient Material: Ductwork
Damaged, leaking, dirty, and unbalanced ductwork.

Remedial Action:
Clean, repair, seal, and leak test ducts. Conduct test, adjust, and balance (TAB) on entire HVAC system.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	6	\$2,500.00	EA	\$15,000	\$29,000

Deficient Material: Exhaust
No apparent exhaust for kitchenette, break room, and copy center.

Remedial Action:
Install exhaust per code.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	60,000	\$1.00	SF	\$60,000	\$118,000

Deficient Material: Outside Air
Little or no outside air to some water-source heat pumps. Dirty, non-code-compliant outside air intake plenums.

Remedial Action:
Bring outside air plenum up to code and provide minimum outside air to all spaces per code.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$20,000.00	LS	\$20,000	\$39,000

Deficient Material: Outside air pre-heat
Insufficient outside air preheat for AHU-1 (which is a 100% outside air unit), made worse by upgrade from fluorescent to LED lighting throughout, resulting in increasing too cold complaints.

Remedial Action:
Install preheat piping and controls for AHU-1.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	60,000	\$0.75	SF	\$45,000	\$88,000

Deficient Material: Return Air Plenum
Air handling and ceiling return air plenum is dirty.

Remedial Action:
Clean air handling and ceiling return air plenum.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2	\$15,000.00	EA	\$30,000	\$59,000

Deficient Material: Ventilation Air Balance
Obsolete inlet guide vane whole-building supply and exhaust air control, plus missing building air pressure control.

Remedial Action:
Replace AHU-1 and EF-1 inlet guide vane control with variable frequency drive control and provide active building pressure control, coordinated with other exhaust and outside air intake systems.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	40	\$9,700.00	EA	\$388,000	\$760,000

Deficient Material: Water Source Heat Pumps
Water-source heat pumps at end of life.

Remedial Action:
Schedule replacement of all water-source heat pumps not already replaced.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond								Escalation	3%
Site: Municipal Campus Site								Discount Rate	1.5%
Facility: Public Safety Building									

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	2	\$25,000.00	EA	\$50,000	\$98,000

Deficient Material: Rooftop Units
Evidence storage rooftop gas-pack units approaching end of life.

Remedial Action:
Budget to replace upon failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	70,000	\$7.00	SF	\$490,000	\$960,000

Deficient Material: Controls

At least three different control systems, collectively with no remote monitoring or control and dysfunctional performance throughout, leading for occupant thermal discomfort, poor indoor air quality, high energy use, and safety issues.

Remedial Action:

Replace the control system with new fully-integrated controls per city standard.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Public Safety Building					

D3090	Other HVAC Systems and Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	10,000	\$3.00	SF	\$30,000	\$59,000

Deficient Material: Garage Exhaust
Portions of parking garage may not meet code ventilation requirements.

Remedial Action:
Install code minimum ventilation in parking garage.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D4010	Fire Protection Sprinkler Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	30,000	\$1.00	SF	\$30,000	\$59,000

Deficient Material: Fire sprinkler piping
With continued structure water leakage from above and basement flooding form below, dry-pipe fire sprinkler piping continues to rust and corrode.

Remedial Action:
Continue to proactively monitor and test basement (parking garage) fire sprinkler piping integrity and replace where at risk. In the long run, see other systems to correct excessive moisture at basement level; alternately consider corrosion-resistant fire sprinkler piping or special coatings.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond			
Site:	Municipal Campus Site	Escalation	3%
Facility:	Public Safety Building	Discount Rate	1.5%

D4090	Other Fire Protection Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	2,000	\$5.00	SF	\$10,000	\$20,000

Deficient Material: Rated Ceiling Assemblies
Past reported level 2 fire rated corridor ceiling assemblies damaged.

Remedial Action:
Inspect level 2 fire rated corridor assemblies and correct any deficiencies.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond								Escalation	3%
Site: Municipal Campus Site								Discount Rate	1.5%
Facility: Public Safety Building									

D5010	Electrical Service and Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: Electrical Distribution

Contract maintenance of Public Safety Building electrical service equipment with no current one-line diagram, making operations and maintenance by city staff and other service providers needlessly complicated and less responsive.

Remedial Action:

Prepare accurate one-line diagram and panel schedules. Post one-line diagram and panel schedules in appropriate locations inside and out. Train city staff on overall system operation.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D5020	Lighting and Branch Wiring	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	12	\$500.00	EA	\$6,000	\$12,000

Deficient Material: Lighting & Branch Wiring Devices
Insufficient electrical outlets in parking garage.

Remedial Action:
Add ground fault interrupter (GFI) electrical outlets, circuits in parking garage.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site						Escalation	3%
Facility:		Public Safety Building						Discount Rate	1.5%

D5020	Lighting and Branch Wiring	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	12	\$750.00	EA	\$9,000	\$18,000

Deficient Material: **Lighting & Branch Wiring Devices**
Insufficient lighting, poor lighting level in parking garage driving lanes.

Remedial Action:
Add lighting fixtures and controls over driving lanes.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

D5032	Low Voltage Communication	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	60,000	\$3.00	SF	\$180,000	\$353,000

Deficient Material: Cable plant

Excessive communications, data, security, and other cable plant wiring in ceiling space without a cable management system, resulting in difficult maintenance to access to HVAC and other equipment and systems located in the plenum.

Remedial Action:

Design and install a cable plant management system including wire baskets, j-hooks, nodes, and hubs, in coordination with access to other building systems.

Action Type:

Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Public Safety Building							Discount Rate 1.5%

D5038	Low Voltage Security	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	90,000	\$0.50	SF	\$45,000	\$88,000

Deficient Material: CCTV
Aged CCTV cameras with apparent poor coverage in vehicle evidence storage area.

Remedial Action:
Replace aged CCTV cameras. Upgrade cable and head-end as needed to current city standards.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

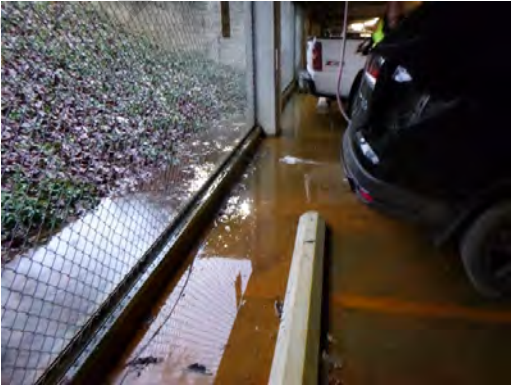
City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: Public Safety Building		Discount Rate 1.5%							

D5038	Low Voltage Security	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$55,000.00	LS	\$55,000	\$108,000

Deficient Material: Vehicle evidence storage
Crime suspects are breaking into the garage vehicle evidence storage area and stealing evidence, due to low fence and aged electronic security.

Remedial Action:
Design and construct secure vehicle evidence storage area with appropriate physical security and enhanced electronic security.

Action Type:
Other



Facility Summary

City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Size - Gross S.F.	125,959
Year Of Original Construction	2005
Facility Use Type	Parking Garage
Construction Type	Heavy
# of Floors	4
Energy Source	Electric
Year Of Last Renovation	2005
Historic Register	No



			Total Project Cost	Total Project Cost Present Value
Weighted Avg Condition Score	2.9			
Facility Condition Index (FCI)	0.12	Observed Deficiencies 2023 - 2028	\$1,078,000	\$1,105,000
Current Replacement Value (CRV)	\$17,130,000	Predicted Renewal Budget 2029 - 2042	\$2,663,000	\$3,155,000
Beginning Budget Year	2023	Opportunities	\$703,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

Three-story concrete parking garage. Slab on grade with concrete columns and beams supporting concrete deck. Rooftop 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, 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. Sunshades and steel canopies provide architectural feature. Exterior doors include storefront at entrance area, 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. Areas of cracked concrete columns are a cause of concern and warrant attention. Electrical service from Puget Sound Energy pad-mounted transformers to north. Electrical room includes one 480V panel, 480/240/120V transformers, and one 240/120V panel. Fluorescent T8 fixtures throughout with approximately 50% on during daytime hours, and remainder on at night. Limited low voltage systems including fire alarm control panel. Naturally ventilated (open) parking garage with one elevator lobby at the southwest corner, and includes mobile TV station truck bay and support space to the northwest, two shop storage spaces under the middle portions of the first floor, electrical and riser room to center north, and two motor-operated access control doors to the west, adjacent to a 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. Plumbing includes city water and storm drain with oil/water separator. Fire protection includes dry-pipe fire sprinklers throughout plus elevator/stair tower standpipe.

Facility Summary

City of Redmond	8701 160th Avenue NE
Municipal Campus Site	Redmond, WA 98052
Municipal Campus Parking Garage Building	

Facility Components		Original System Date	Renewal Date	Last Date	Score	Surveyor	Survey Date	Comments
Systems								
A Substructure		2.0						
A10	Foundations							
A1010	Standard Foundations	2005	2005	2	TRB	12/06/23	Reinforced concrete, no signs of settlement.	
A1030	Slab On Grade	2005	2005	2	TRB	12/06/23	Concrete slab on grade at grade level.	
B Shell		3.0						
B10	Superstructure							
B1010	Floor Construction	2005	2005	3	TRB	12/06/23	Concrete vehicle deck spanning between concrete beams and rectangular columns. Perimeter exterior facing columns have been experiencing significant horizontal cracking in regular patterns on sides facing exterior. Minor areas of diagonal shear cracking at beams at exterior column connections.	
B1020	Roof Construction	2005	2005	3	TRB	12/06/23	Upper vehicle deck is concrete supported by concrete beams.	
B20	Exterior Closure							
B2010	Exterior Walls	2005	2005	3	TRB	12/06/23	Concrete tilt-up panel. Concrete columns, exterior facing sides with significant horizontal face cracking (see B1010 Floor Construction). Cast-in-place at mechanical and elevator. Steel mesh panels. Steel wire mesh. Corrosion spotting on exposed structural steel connectors.	
B2020	Exterior Windows	2005	2005	2	TRB	12/06/23	Storefront system at southwest stair, fixed, frosted glazing at east vehicle entrance.	

Facility Summary

City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date		Renewal Last Date		Score	Surveyor	Survey Date	Comments
Systems									
B Shell						3.0			
B20 Exterior Closure									
B2030	Exterior Doors	2005	2005	3	TRB	12/06/23	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.		
B30 Roofing									
B3010	Roof Coverings	2005	2005	3	TRB	12/06/23	Roofing at elevator/stair shaft (not accessible for condition assessment). No issues reported.		
B3030	Projections	2005	2005	3	TRB	12/06/23	Steel canopies (frame only and no rain protection). Steel sunshades. Heavy algae and dirt. Cleaning and painting is needed.		
C Interiors						3.0			
C10 Interior Construction									
C1010	Partitions	2005	2005	3	TRB	12/06/23	Cast-in-place concrete at elevator. Some concrete masonry unit (CMU). Wire mesh panels. Steel wire mesh panels. Isolation joint sealant at top of CMU wall below concrete structure cracked and failed, reseal. Chain link security zones including secured bicycle parking.		
C1020	Interior Doors	2005	2005	3	TRB	12/06/23	Painted hollow metal doors and frames.		
C20 Staircases									
C2010	Stair Construction	2005	2005	3	TRB	12/06/23	Steel frames and precast stair sections.		
C30 Interior Finishes									
C3010	Wall Finishes	2005	2005	3	TRB	12/06/23	Paint at interior walls.		
C3030	Ceiling Finishes	2005	2005	3	TRB	12/06/23	Painted underside of concrete structure, one area of peeling.		

Facility Summary

City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
D Services				2.7			
D10 Vertical Transportation							
D1010	Elevators and Lifts	2005	2023	2	DCS	12/06/23	One four-stop Thyssen Krupp 3,500-lb capacity TAC20 hydraulic passenger elevator with fully finished cab and 2023 MEI hydraulic power pack with radiator. Ventilation cooling for elevator machinery room. Cab is slow to align at each floor, but steady - minor maintenance to tune-up.
D20 Plumbing							
D2020	Domestic Water Distribution	2005	2005	3	DCS	12/06/23	One-inch city water service with reduced-pressure backflow preventer and 80 psig pressure to copper piping to several garage hose bibs for housekeeping, uninsulated and shut off for winter. No water heater. Piping is exposed and unprotected in garage, but no damage observed; reportedly fully operable during warmer months - minor maintenance to heat-trace and insulate this line if helpful to facilitate maintenance during the winter months.
D2030	Sanitary Waste	2005	2005	3	DCS	12/06/23	Floor drains, hubless cast iron drain, waste, and vent piping, leading to oil/water separator located immediately west of garage. During heavy rain, dirt and debris clog floor drains, then storm water overflows to structure and surfaces below. Water stands at low points in the floor surface until they evaporate. Standing water may accelerate structure deterioration - minor maintenance to squeegee the worst of the ponding after heavy rain.
D2040	Rain Water Drainage	2005	2005	3	DCS	12/06/23	Top level floor drains, cast iron drain piping, appears to lead to same drain system as sanitary waste system, including oil/water separator. Covered stairwell roof drains directed to garage floor drains. Special "River and Rain" rainwater feature at east facade with no issues reported.
D30 HVAC							
D3030	Cooling Generating Systems	2005	2005	3	DCS	12/06/23	Ventilation cooling system for elevator machinery room.

Facility Summary

City of Redmond
Municipal Campus Site
Municipal Campus Parking Garage Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
D Services				2.7			
D30 HVAC							
D3050	Terminal and Package Units	2005	2005	3	DCS	12/06/23	Electric wall and unit heaters for shop and storage areas - minor maintenance to replace upon failure.
D3060	Controls and Instrumentation	2005	2005	3	DCS	12/06/23	Standalone controls for unit heaters, wall heaters, and elevator machinery room cooling. Parking garage energy use intensity (EUI) is just 3, which is very low, and far below the WA State Clean Buildings target of 36, as expected with no parking garage exhaust fans or amenity services. This EUI seems almost too low, given there is an elevator and several shop-type spaces with unit heaters - minor maintenance to further investigate metering accuracy and confirm EUI.
D40 Fire Protection							
D4010	Fire Protection Sprinkler Systems	2005	2005	3	DCS	12/06/23	Six-inch city fire service with post indicator valve and fire department connection to northwest. Three 4-inch dry-pipe sprinkler risers, one for each level.
D4020	Stand-Pipe and Hose Systems	2005	2005	3	DCS	12/06/23	Dry stand-pipe in each of the two stair towers.
D4030	Fire Protection Specialties	2005	2005	3	DCS	12/06/23	Fire extinguishers on hooks - minor maintenance to provide non-metallic cabinets.
D50 Electrical							
D5010	Electrical Service and Distribution	2005	2005	3	DCS	12/06/23	Service from north 300 kV Puget Sound Energy pad-mounted transformer with meter No. P157270805, to Eaton 480V main distribution panel with 100A capacity, with primary load 277V lighting. 30 kVA 480 to 208V Cutler-Hammer transformer serving Eaton 208V, 225A panel. Several proper electric vehicle (EV) charging stations; at least one makeshift EV charging station.

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	Renewal Date	Score Last	Surveyor	Survey Date	Comments
D Services				2.7			
D50	Electrical						
D5020	Lighting and Branch Wiring	2005	2005	3	DCS	12/06/23	Mix of older and newer light fixtures in turn with mix of mostly older T8 fluorescent, but some newer LED lamps. Many interior fixtures have battery ballast, but many are suspected to have failed batteries. Interior lighting is on 24x7. A Blue Box lighting control panel is in the main electrical room.
D5037	Low Voltage Fire Alarm	2005	2005	3	DCS	12/06/23	Fire alarm system with Notifier AFP-200 fire alarm control panel in riser room, including wireless AES alarm transmitter.
D5038	Low Voltage Security	2005	2015	2	DCS	12/06/23	City standard card-key access system. Several CCTV cameras.
D5039	Low Voltage Data	2005	2015	2	DCS	12/06/23	IDF in main electrical room, primarily to service the security system.
D5090	Other Electrical Systems	2005	2005	4	DCS	12/06/23	Aged and failing battery ballasts for egress pathway lighting and for lighted exit signs.
E Equipment and Furnishings							
E10	Equipment						
E1030	Vehicular Equipment	2005	2005	3	DCS	12/06/23	Overhead roll-up door motorized operators. Pipe bollards. Vehicle wire fencing. Motor-operated gates reportedly abandoned in place - minor maintenance to clean, test, and adjust and return to service.
F Special Construction							
F10	Special Construction						
F1020	Integrated Construction	2005	2005	2	DCS	12/06/23	Exterior artwork, east side of building, specialty rain chain - no issues reported.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Parking Garage Building							Discount Rate 1.5%

B1010	Floor Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$30,000.00	LS	\$30,000	\$59,000

Deficient Material: Concrete Column

It appears there may have been a shift in the structure in the NW corner to the right over the overhead coiling door. Column appears out of plumb in relation to the beam and structure above with a 1/4" crack at the intersection.

Remedial Action:

Have a structural engineer evaluate the structure and provide any recommend structural repairs if deemed needed. Continue monitoring.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Parking Garage Building							Discount Rate 1.5%

B1010	Floor Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2023	5,000	\$10.00	LF	\$50,000	\$98,000

Deficient Material: Concrete Deck
Areas of moisture intrusion causing stalactites and damage to underside of deck, appears to be failed cold joint sealants.

Remedial Action:
Strip and seal cold joints on deck slabs. Continue monitoring.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site								Escalation	3%
Facility: Municipal Campus Parking Garage Building								Discount Rate	1.5%

B1010	Floor Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$50,000.00	LS	\$50,000	\$98,000

Deficient Material: Concrete Structure

Perimeter exterior facing columns have been experiencing significant horizontal cracking in regular patterns on sides facing exterior. Minor areas of diagonal shear cracking at beams at exterior column connections.

Remedial Action:

Conduct structural evaluation to investigate and record depth of cracking and if reinforcing steel has been impacted. Repair as recommend. Otherwise, deep clean, strip, and seal cracks to thwart moisture intrusion. Continue monitoring.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Parking Garage Building							Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$275,000.00	LS	\$275,000	\$539,000

Deficient Material: Concrete Paint
Paint is fading, chipped, and shows some damage. (See also B1010 Floor Construction for stress cracking issues.)

Remedial Action:
Strip paint. Seal cracks to thwart moisture intrusion per B1010 Floor Construction. Prep and repaint exterior.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Parking Garage Building							Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	1	\$10,000.00	LS	\$10,000	\$20,000

Deficient Material: Steel
Steel shows rust in several locations.

Remedial Action:
Clean rust off areas. Treat, prime, and paint with exterior industrial metal coating system.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Parking Garage Building							Discount Rate 1.5%

B3030	Projections	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	2	\$5,500.00	EA	\$11,000	\$22,000

Deficient Material: Steel Canopy and Sun Shades
Steel canopies and steel sunshades. Heavy algae and dirt.

Remedial Action:
Remove and treat any rust, clean, prep, and paint.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site								Escalation	3%
Facility: Municipal Campus Parking Garage Building								Discount Rate	1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	500	\$10.00	SF	\$5,000	\$10,000

Deficient Material: Ventilation
Semi-heated workshop area in former storage area under ramp at first floor with no ventilation.

Remedial Action:
Provide code minimum ventilation for shop area.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site								Escalation	3%
Facility: Municipal Campus Parking Garage Building								Discount Rate	1.5%

D4010	Fire Protection Sprinkler Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	3,000	\$1.75	SF	\$5,250	\$10,000

Deficient Material: Fire Sprinkler Density
Shop/storage room combustible material may exceed sprinkler density capacity.

Remedial Action:
Assess and upgrade sprinkler as needed.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Parking Garage Building							Discount Rate 1.5%

D4010	Fire Protection Sprinkler Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	90,000	\$0.70	SF	\$63,000	\$123,000

Deficient Material: Fire Sprinkler Piping
Unprimed/unpainted, exposed fire sprinkler piping is rusting and corroding.

Remedial Action:
Clean, prime, and paint fire sprinkler piping.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Parking Garage Building							Discount Rate 1.5%

D5010	Electrical Service and Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$8,000.00	EA	\$8,000	\$16,000

Deficient Material: Electric vehicle charging
At least one makeshift electric vehicle (EV) charging station.

Remedial Action:
Replace with proper EV charging station.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: Municipal Campus Parking Garage Building					

D5020	Lighting and Branch Wiring	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	50	\$750.00	EA	\$37,500	\$73,000

Deficient Material: **Lighting Fixtures**
Original fluorescent lamps and ballasts are failing.

Remedial Action:
Replace older lamps and ballasts.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

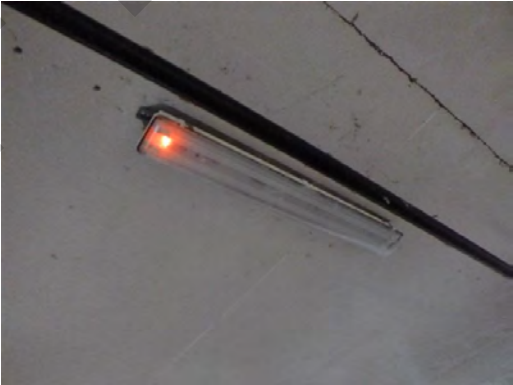
City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Parking Garage Building							Discount Rate 1.5%

D5090	Other Electrical Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	50	\$100.00	EA	\$5,000	\$10,000

Deficient Material: Emergency lighting
Failed batteries for most tested emergency light fixtures.

Remedial Action:
Replace batteries.

Action Type:
Code Issue



Facility Summary

City of Redmond
Municipal Campus Site
North SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

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



Weighted Avg Condition Score		2.6		Total Project Cost	Total Project Cost Present Value
Facility Condition Index (FCI)	0.04		Observed Deficiencies 2023 - 2028	\$481,000	\$487,000
Current Replacement Value (CRV)	\$170,000		Predicted Renewal Budget 2029 - 2042	\$21,000	\$25,000
Beginning Budget Year	2023		Opportunities	\$61,000	N/A
Escalation	3%				
Discount Rate	1.5%				

Facility Condition Summary

The North SWAT Building is located on the far northeast corner of the Public Safety Building sub-site, and houses the Redmond Police Emergency Response Team (SWAT) vehicles and bicycles. It is a two-bay garage with overhead doors. There is a covered and fully enclosed trash container storage area with overhead door to the public right-of-way (inoperable and stuck in the open position), and the person door accessing the yard is heavily corroded. Power includes a 120/240V, single-phase 50A panel serving lighting, receptacles, and miscellaneous equipment loads. Lighting includes exterior wall packs and interior sealed T8 fluorescent fixtures (two converted to LED). Low voltage systems are minimal but includes fire alarm. HVAC includes gas-fired overhead unit heater that is non-functional, 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 and a wall-mounted fire extinguisher. The building is reported as too small for other police vehicles.

Facility Summary

City of Redmond
Municipal Campus Site
North SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				2.0			
A10 Foundations							
A1010	Standard Foundations	2008	2008	2	TRB	12/14/23	Continuous concrete footings with concrete stem walls assumed.
A1030	Slab On Grade	2008	2008	2	TRB	12/14/23	Concrete slab on grade.
B Shell				2.9			
B10 Superstructure							
B1020	Roof Construction	2008	2008	3	TRB	12/14/23	Steel framed building with steel roof deck supported directly by steel building frame. No roof access, no fall restraint system.
B20 Exterior Closure							
B2010	Exterior Walls	2008	2008	3	TRB	12/14/23	Steel framed building. Assume steel girts with batt insulation between frames. Skin is heavy stucco. With no eaves at roof, stucco will require regular cleaning to minimize dirt, mold, and mildew. Significant moisture intrusion issues with stucco cladding details leading to paint blistering and peeling off stucco siding.
B2020	Exterior Windows	2008	2008	2	TRB	12/14/23	Minimal glazing (high-bay clerestory) including internal steel painted security bars.
B2030	Exterior Doors	2008	2008	3	TRB	12/14/23	Hollow metal man doors and frames. Two powered steel overhead doors at vehicle bays. Trash bay key-operated overhead door appears to be non-functional and represents a security risk. Door and frame at trash enclosure are highly corroded and may soon present a security risk with further deterioration.

Facility Summary

City of Redmond
Municipal Campus Site
North SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date		Renewal Last Date		Score	Surveyor	Survey Date	Comments
Systems									
B Shell						2.9			
B30 Roofing									
B3010	Roof Coverings	2008	2015	3	TRB	12/14/23	White membrane roof. Several areas that may not be well sloped to roof drains (minor issue).		
B3030	Projections	2008	2008	2	TRB	12/14/23	Steel canopy over garage doors to south.		
C Interiors						2.0			
C10 Interior Construction									
C1010	Partitions	2008	2008	2	TRB	12/14/23	Partition between garage and trash storage area.		
C30 Interior Finishes									
C3010	Wall Finishes	2008	2008	2	TRB	12/14/23	8' high FRP panel low and painted gypsum wall board above.		
C3030	Ceiling Finishes	2008	2008	2	TRB	12/14/23	White painted exposed ceiling structure.		
D Services						2.5			
D20 Plumbing									
D2020	Domestic Water Distribution	2008	2008	2	TRB	12/14/23	City water to hose bibs, replaced.		
D2030	Sanitary Waste	2008	2008	2	TRB	12/14/23	Floor drain(s) in garage. Need to install floor drains to sewer at trash enclosure per code.		
D2040	Rain Water Drainage	2008	2008	2	TRB	12/14/23	Roof drains to perimeter scupper boxes with downspouts to site storm drain system.		
D30 HVAC									
D3010	Energy Supply	2008	2008	2	DCS	12/14/23	Natural gas from adjacent Public Safety Building.		

Facility Summary

City of Redmond
Municipal Campus Site
North SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.5			
D30 HVAC						
D3020 Heat Generating Systems	2008	2008	3	TRB	12/14/23	Single gas-fired Reznor unit heater, non-functional, space not being heated.
D3040 HVAC Distribution Systems	2008	2008	2	TRB	12/14/23	General garage exhaust with rooftop exhaust fan and side wall air intake louver; no issues reported.
D3060 Controls and Instrumentation	2008	2008	3	TRB	12/14/23	Standalone unit heater and exhaust control - minor maintenance to replace along with associated controlled equipment. Wall-mounted carbon monoxide sensor/control.
D3090 Other HVAC Systems and Equipment	2008	2008	3	TRB	12/14/23	One vehicle engine exhaust system; ensure periodic maintenance is performed; no issues reported.
D40 Fire Protection						
D4010 Fire Protection Sprinkler Systems	2008	2008	2	TRB	12/14/23	Fire sprinkled garage with fire service extended from adjacent Public Safety Building, with no issues reported.
D4030 Fire Protection Specialties	2008	2008	2	TRB	12/14/23	Wall-mounted fire extinguishers.
D50 Electrical						
D5010 Electrical Service and Distribution	2008	2008	2	TRB/DCS	12/14/23	Power assumed from adjacent Public Safety Building at 480V to Eaton single-phase 10-kVA dry transformer to Eaton 120/240V, single-phase, 250A distribution panel SVN, configured with 50A main breaker, with many spare spaces. No observed surge protection, but no issues reported. Observed conductors in a mix of rigid and flexible metal conduit.
D5020 Lighting and Branch Wiring	2008	2008	3	TRB/DCS	12/14/23	Miscellaneous receptacles for plug loads. Inside sealed (moisture-resistant) T8 ceiling fixtures with two re-lamped to LED. Wall switch devices with integral occupancy sensors. Exterior halogen wall packs. Upgrade all to LED suggested as minor maintenance. Fixed drop cord for vehicle charging.

Facility Summary

City of Redmond
Municipal Campus Site
North SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
D Services				2.5			
D50 Electrical							
D5037	Low Voltage Fire Alarm	2008	2008	3	TRB	12/14/23	Fire alarm system with ceiling-mounted detectors and Silent Knight wall-mounted pull box and notification devices; assume extended from the main Public Safety Building.
D5038	Low Voltage Security	2008	2008	2	TRB	12/14/23	Keypad access, CCTV cameras, and intrusion detection assumed - no issues reported.
E Equipment and Furnishings							
E10 Equipment							
E1020	Institutional Equipment	2008	2008	2	TRB	12/14/23	Miscellaneous shelving for police equipment storage.
E1030	Vehicular Equipment	2008	2008	3	TRB	12/14/23	LiftMaster motorized overhead door operators for both police vehicle and trash bays. See B2030 Exterior Doors for inoperable trash door deficiency.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site: Municipal Campus Site		Escalation 3%							
Facility: North SWAT Building		Discount Rate 1.5%							

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$8,500.00	LS	\$8,500	\$17,000

Deficient Material: Roof Access
No roof access, no fall restraint system.

Remedial Action:
Install internal ladder and roof hatch (with modern OSHA safety system), install fall restraint to support safe access for maintenance.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		North SWAT Building							Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2024	4,000	\$53.00	SF	\$212,000	\$415,000

Deficient Material: Cement plaster siding
Significant moisture intrusion issues with stucco cladding details leading to paint blistering and peeling off stucco siding.

Remedial Action:
Investigate flashings and joint detailing, strip finishes and seal joints, add head flashings as needed, prime, and coat with compatible elastomeric paint system. Alternatively, clad with metal rain screen cladding to match recent work on main building (adding drip flashing details).

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		North SWAT Building							Discount Rate 1.5%

B2030	Exterior Doors	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$8,000.00	LS	\$8,000	\$16,000

Deficient Material: Coiling Door

Trash bay key-operated overhead door appears to be non-functional and represents a security risk. Police station waste and recycling bins are open to the public, and opening presents a hiding opportunity.

Remedial Action:

Investigate cause of door inoperability and replace components as needed.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond								Escalation	3%
Site: Municipal Campus Site								Discount Rate	1.5%
Facility: North SWAT Building									

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	2	\$5,300.00	EA	\$10,600	\$21,000

Deficient Material: Sanitary Floor Drain
No floor drain for trash storage area.

Remedial Action:
Install two floor drains leading to sanitary sewer as required by code.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Municipal Campus Site				Discount Rate 1.5%	
Facility: North SWAT Building					

D3020	Heat Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$6,000.00	EA	\$6,000	\$12,000

Deficient Material: Unit Heater
Single gas-fired Reznor unit heater, non-functional, space not being heated.

Remedial Action:
Replace failed unit heater.

Action Type:
Energy Efficiency



Facility Summary

City of Redmond
Municipal Campus Site
South SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

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



Weighted Avg Condition Score	2.7		Total Project Cost	Total Project Cost Present Value
Facility Condition Index (FCI)	0.04	Observed Deficiencies 2023 - 2028	\$455,000	\$460,000
Current Replacement Value (CRV)	\$170,000	Predicted Renewal Budget 2029 - 2042	\$24,000	\$29,000
Beginning Budget Year	2023	Opportunities	\$57,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

The South SWAT Building is located on the far southeast corner of the Public Safety Building sub-site. The space has been converted into a live simulation training facility with movable and reconfigurable simulation interior panels. Nearly identical in building construction to the North SWAT Building without the waste enclosure area, and storage lockers and benches at the rear. Cement plaster siding is also failing. Power includes a 120/240V, 250A single-phase panel with 50A main breaker serving lighting, receptacles, and miscellaneous equipment loads. Lighting includes exterior wall packs and interior sealed T8 fluorescent fixtures. Low voltage systems are minimal but include fire alarm and security. HVAC includes a gas-fired overhead unit heater and exhaust system, not suitable for new use as a training simulator (instead of vehicle storage). City water for hose bibs, garage floor drains, perimeter scupper box, and downspout roof drains. Fire protection includes wet-pipe fire sprinkler and a wall-mounted fire extinguisher.

Facility Summary

City of Redmond	8701 160th Avenue NE
Municipal Campus Site	Redmond, WA 98052
South SWAT Building	

Facility Components		System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
A Substructure				2.0			
A10	Foundations						
A1010	Standard Foundations	2008	2008	2	TRB	12/14/23	Continuous concrete footings with concrete stem walls that extend to the grade below (accommodating site topography that drops away on the east and drive to the south around the building).
A1030	Slab On Grade	2008	2008	2	TRB	12/14/23	Concrete slab on grade.
B Shell				2.9			
B10	Superstructure						
B1020	Roof Construction	2008	2008	3	TRB	12/14/23	Steel framed building with steel roof deck supported directly by steel building frame. No roof access, no fall restraint system.
B20	Exterior Closure						
B2010	Exterior Walls	2008	2008	3	TRB	12/14/23	Steel framed building. Assume steel girts with batt insulation between frames. Skin is heavy stucco. With no eaves at roof, stucco will require regular cleaning to minimize dirt, mold, and mildew. Significant moisture intrusion issues with stucco cladding details leading to paint blistering and peeling off stucco siding.
B2020	Exterior Windows	2008	2008	2	TRB	12/14/23	Minimal glazing (high-bay clerestory).
B2030	Exterior Doors	2008	2008	2	TRB	12/14/23	Hollow metal man door. Two powered steel overhead doors at vehicle bays.
B30	Roofing						
B3010	Roof Coverings	2008	2015	3	TRB	12/14/23	White membrane roof.

Facility Summary

City of Redmond
Municipal Campus Site
South SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
B Shell				2.9			
B30	Roofing						
B3030	Projections	2008	2008	2	TRB	12/14/23	Steel canopy over garage doors to north.
C Interiors				2.0			
C30	Interior Finishes						
C3010	Wall Finishes	2008	2008	2	TRB	12/14/23	8' high FRP panel low and painted gypsum wall board above.
C3030	Ceiling Finishes	2008	2008	2	TRB	12/14/23	White painted exposed ceiling structure.
D Services				2.9			
D20	Plumbing						
D2040	Rain Water Drainage	2008	2008	3	TRB	12/14/23	Roof drains to perimeter scupper boxes with new downspout day-lighted to site storm catch basin drain system installed to accommodate east canopy drain that is apparently plugged or slow draining - minor maintenance to correct.
D30	HVAC						
D3010	Energy Supply	2008	2008	2	TRB	12/14/23	Natural gas assumed from adjacent Public Safety Building service.
D3020	Heat Generating Systems	2008	2008	3	TRB	12/14/23	Single gas-fired Reznor unit heater with no issues reported.
D3040	HVAC Distribution Systems	2008	2008	5	DCS	12/14/23	General garage exhaust with rooftop exhaust fan and side wall air intake louver. This system is for vehicle storage, not police training as a human-occupied simulator.

Facility Summary

City of Redmond
Municipal Campus Site
South SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.9			
D30 HVAC						
D3060 Controls and Instrumentation	2008	2008	3	TRB/DCS	12/14/23	Standalone unit heater and exhaust control. Carbon monoxide sensor/control. Minor maintenance to replace standalone controls along with associated controlled equipment.
D40 Fire Protection						
D4010 Fire Protection Sprinkler Systems	2008	2008	2	TRB	12/14/23	Fire sprinkled with service from adjacent Public Safety Building system.
D4030 Fire Protection Specialties	2008	2008	2	TRB	12/14/23	Wall-mounted fire extinguishers.
D50 Electrical						
D5010 Electrical Service and Distribution	2008	2008	3	TRB/DCS	12/14/23	Power assumed from adjacent Public Service Building at 480V to Eaton single-phase 10-kVA dry transformer to Eaton 120/240V, single-phase, 250A distribution panel SVS, configured with 50A main breaker, with many spare spaces. No observed surge protection, but no issues reported. Observed conductors in a mix of rigid and flexible metal conduit. Training simulation movable panels appear to be encroaching on code minimum 3-foot clearance in front of electrical service equipment; recommend fully evaluating code-required clearance and safe access to electrical panels as minor maintenance.
D5020 Lighting and Branch Wiring	2008	2008	3	TRB/DCS	12/14/23	Miscellaneous receptacles for plug loads. Inside sealed (moisture-resistant) T8 ceiling fixtures. Exterior halogen wall packs. Opportunity to upgrade all lighting to LED as minor maintenance.
D5032 Low Voltage Communication	2008	2008	3	DCS	12/14/23	Line-of-sight antenna at SE corner of building.
D5037 Low Voltage Fire Alarm	2008	2008	3	TRB	12/14/23	Fire alarm system with ceiling-mounted detectors, Single wall-mounted manual Silent Knight alarm pull station and notification device(s); assume alarm system is extended from the main Public Safety Building.

Facility Summary

City of Redmond
Municipal Campus Site
South SWAT Building

8701 160th Avenue NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
D Services				2.9			
D50 Electrical							
D5038	Low Voltage Security	2008	2008	2	TRB	12/14/23	Keypad access, CCTV cameras, and intrusion detection assumed - no issues reported.
E Equipment and Furnishings							
E10 Equipment							
E1020	Institutional Equipment	2008	2018	2	DCS	12/14/23	Police training equipment for simulator.
E1030	Vehicular Equipment	2008	2008	3	DCS	12/14/23	Two LiftMaster overhead door motor operators with no issues reported. 2008 outside vehicle yard Hy-Security motorized gate operator with no issues reported.
E20 Furnishings							
E2010	Fixed Furnishings	2008	2008	2	TRB	12/14/23	Prefinished steel storage lockers and wood benches at back (south) in the facility.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site						Escalation	3%
Facility:		South SWAT Building						Discount Rate	1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$8,500.00	LS	\$8,500	\$17,000

Deficient Material: Roof Access
No roof access, no fall restraint system.

Remedial Action:
Install internal ladder and roof hatch (with modern OSHA safety system), install fall restraint to support safe access for maintenance.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		South SWAT Building							Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2024	3,000	\$53.00	SF	\$159,000	\$311,000

Deficient Material: Cement plaster siding
Significant moisture intrusion issues with stucco cladding details leading to paint blistering and peeling off stucco siding.

Remedial Action:
Investigate flashings and joint detailing. Strip finishes and reseal joints, add head flashings as needed, prime, and coat with compatible elastomeric paint system. Alternatively, clad with metal rain screen cladding to match recent work on main building (adding drip flashing details).

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		South SWAT Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1,250	\$52.00	SF	\$65,000	\$127,000

Deficient Material: HVAC System

The South SWAT Building has been converted from police vehicle storage to a human-occupied training facility, but without HVAC system change to support the change in occupancy and/or use.

Remedial Action:

Design and install an HVAC system suitable for police simulator training, including heating, cooling, and ventilation for human occupancy. For example, a rooftop gas-pack unit supplying distribution ductwork inside the occupied space. This may also require a thermal envelope upgrade per energy code for fully heated, instead of semi-heated space as additional cost.

Action Type:

Code Issue



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 Public Safety Building, community center (being constructed), City Hall, a parking garage, and additional smaller buildings. The four major buildings are on an open campus, just east of the Sammamish River Trail. There are 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 community center, and east of City Hall. The City Hall lot is shared with the Redmond Regional Library. The site is accessed by vehicles via the main entry drive off of 160th Avenue NE, and by the City Hall entry drive off of NE 85th Street. The Redmond Regional Library and King County District Court are not part of the campus. Utilities include city water, fire, and sewer. Puget Sound Energy power and natural gas. High-speed fiber-optic data and legacy telecom services. CCTV monitoring and site lighting (mostly LED). Storm drainage assumed to river via swales and sheet flow.

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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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework							
G20 Site Improvements							
G2010	Roadways	1990	2005	3	TRB	12/06/23	Asphalt drives and concrete curbs.
G2020	Parking Lots	1990	2005	3	TRB	12/06/23	Campus asphalt parking lots.
G2030	Pedestrian Paving	1990	2005	3	TRB	12/06/23	Asphalt and concrete pedestrian walks, and plaza/patio areas of concrete pavement throughout the site. Trex-type composite decking in courtyard. Walkways and plaza/patio areas are generally in good condition, but there are areas with significant root upheaval and damage, causing trip hazards. Many have had maintenance trimming.
G2040	Site Development	1990	2005	2	TRB	12/06/23	Fixed bike racks, waste bins, and seating benches throughout. Two metal sun canopies. Two pickleball courts (currently closed due to adjacent construction). Flagpoles at front of City Hall.
G2050	Landscaping	1990	2005	2	TRB	12/06/23	Ornamental landscaping throughout site and in raised planters and parking lot islands, supplemented with grass lawns and areas of groundcover and bark. Some trees causing upwelling of pavement in areas (continue monitoring and trim roots if causing continued trip hazards).
G30 Site Civil / Mechanical Utilities							
G3010	Water Supply	1990	2005	3	DCS	12/06/23	Domestic, fire, and irrigation services to buildings from city water utility. Water pressure is ranging from 70 to 90 psig. Systems observed have backflow prevention. No issues reported.
G3020	Sanitary Sewer	1990	2005	3	DCS	12/06/23	City sewer for all buildings with no issues reported, except failing at Public Safety Building - see building section for details.

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 Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3030 Storm Sewer	1990	2005	3	DCS	12/06/23	Storm water collected and reportedly drains to the Sammamish Slough to west with no issues reported, except at the Public Safety Building, where flooding is occurring. Public Safety Building runoff from roof and slab areas appears piped by internal downspouts to three sump pump systems at the basement garage level. There are two sumps in fenced enclosure to west and one in utility room to SE; all three sumps have duplex sump pumps on rail system. No reported or observed treatment or detention systems. There is long-term concern regarding climate change, increasing wet weather, and rising Sammamish Slough water levels, potentially causing flooding.
G3060 Fuel Distribution	1990	2005	3	DCS	12/06/23	Natural gas meters with seismic shut-off valves are located at southeast corner of Public Safety Building and the west side of City Hall. Reportedly, the two SWAT buildings are subfed from the Public Safety Building system. The new community center to NW and pump house to east are excluded from this survey.
G40 Site Electrical utilities						
G4010 Electrical Distribution	1990	2005	3	DCS	12/06/23	Underground electrical service from Puget Sound Energy to all major buildings with utility transformers as follows: 500 kVA to SE of the Public Safety Building, 300 kVA to north of parking garage, 750 kVA at SW side of City Hall, unknown to new community center under construction at NW portion of site, and unknown to existing pump house. Reportedly, the two SWAT buildings are subfed from the Public Safety Building. One newer service at north side of City Hall, assumed for outside special events. Other services may be present but not readily observed.
G4020 Site Lighting	1990	2005	3	DCS	12/06/23	Several types of pole lights and bollard lights are located throughout the site, with all parking lots lit with pole lights. Most pole light lamps are upgraded to LED. Exterior lighting across the site is inconsistently controlled, with many on in the middle of the day.

Facility Summary

City of Redmond	
Municipal Campus Site	
Municipal Campus Infrastructure	8701 160th Avenue NE Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
G Sitework							
G40	Site Electrical utilities						
G4030	Site Communications and Security	1990	2005	2	DCS	12/06/23	High-speed fiber-optic service to most buildings. Legacy plain old telephone service to some buildings. CCTV on building exteriors monitoring site security. No site vehicular electronic security.
G90	Other Site Construction						
G9090	Other Site Systems	2005	2005	3	DCS	12/06/23	Water feature at front of City Hall with pool of water that surrounds the council chambers, including underground vault with four pumps for water feature fountain and filtration; one or more pumps have been failed for years, with the fountain not working correctly for some time.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Infrastructure							Discount Rate 1.5%

G2020	Parking Lots	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	800	\$15.00	LF	\$12,000	\$24,000

Deficient Material: Asphalt Parking
Some cracking and areas of settlement and cracking in City Hall SE lot. Potholes between the parking garage and Public Safety Building.

Remedial Action:
Clean and seal cracks to thwart weed and moisture intrusion and prolong system life. Monitor settlement areas. Repair and patch potholes.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Infrastructure							Discount Rate 1.5%

G2030	Pedestrian Paving	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	2,000	\$20.00	SF	\$40,000	\$78,000

Deficient Material: Concrete Pavement

Areas with significant root upheaval and damage, causing trip hazards. Many have had maintenance trimming.

Remedial Action:

Saw cut and demolish areas of plaza and NE 85th Street sidewalks that are experiencing upheaval and settlement trip hazards. Trim roots, compact, and repour concrete.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Infrastructure							Discount Rate 1.5%

G2050	Landscaping	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2023	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Landscaping
Areas of plant materials growing against the buildings (creating maintenance/degradation issues to facade) providing security hiding spaces, and potential pest vector pathways.

Remedial Action:
Prune/trim and remove vegetative material away from face of buildings, and prune to remove hiding spaces.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Infrastructure							Discount Rate 1.5%

G3030	Storm Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	2	\$25,000.00	EA	\$50,000	\$98,000

Deficient Material: Storm Service

Adjacent to the Public Safety Building, the grade slopes down to the garage level and into perimeter drainage ditches. Sheet flow storm water overwhelms the limited storm drainage and floods over the curbs and into the garage.

Remedial Action:

Supplement drainage of ditches with additional overflow sump and pumps to extract excess storm water away from building in high-flow conditions.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Infrastructure							Discount Rate 1.5%

G4020	Site Lighting	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Exterior lighting
Many exterior lights on during daytime hours.

Remedial Action:
Clean, service, and program fixtures and controls to work properly such that exterior lighting is on at night and off during the day.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Municipal Campus Site							Escalation 3%
Facility:		Municipal Campus Infrastructure							Discount Rate 1.5%

G9090	Other Site Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: Water feature
Aged City Hall water feature pump system, with at least one pump failed and signs of rust, corrosion, and other deterioration in the pump vault.

Remedial Action:
Renew the water feature pump system, including replacement of failed pump(s).

Action Type:
Other



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond								Escalation	3%
Site: Municipal Campus Site								Discount Rate	1.5%
Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)		
Redmond City Hall	B20 Exterior Closure	\$55,000	\$11,000	\$13,200	\$28,512	\$107,000	\$112,000		
	D10 Vertical Transportation	\$5,000	\$1,000	\$1,200	\$2,592	\$10,000	\$11,000		
	D20 Plumbing	\$24,600	\$4,920	\$5,904	\$12,753	\$48,000	\$50,000		
	D30 HVAC	\$78,367	\$15,673	\$18,808	\$40,625	\$153,000	\$159,000		
	D50 Electrical	\$281,363	\$56,273	\$67,527	\$145,859	\$551,000	\$575,000		
	E10 Equipment	\$225,000	\$45,000	\$54,000	\$116,640	\$441,000	\$447,000		
	Facility Total	\$669,330	\$133,866	\$160,639	\$346,981	\$1,310,000	\$1,354,000		
Public Safety Building	A10 Foundations	\$50,000	\$10,000	\$12,000	\$25,920	\$98,000	\$101,000		
	A20 Basements	\$20,000	\$4,000	\$4,800	\$10,368	\$39,000	\$42,000		
	B10 Superstructure	\$80,000	\$16,000	\$19,200	\$41,472	\$157,000	\$157,000		
	B20 Exterior Closure	\$53,000	\$10,600	\$12,720	\$27,475	\$104,000	\$107,000		
	B30 Roofing	\$242,900	\$48,580	\$58,296	\$125,919	\$477,000	\$482,000		
	C10 Interior Construction	\$24,000	\$4,800	\$5,760	\$12,442	\$47,000	\$47,000		
	D10 Vertical Transportation	\$725,000	\$145,000	\$174,000	\$375,840	\$1,420,000	\$1,482,000		
	D20 Plumbing	\$108,480	\$21,696	\$26,035	\$56,236	\$213,000	\$218,000		
	D30 HVAC	\$1,315,000	\$263,000	\$315,600	\$681,696	\$2,577,000	\$2,633,000		
	D40 Fire Protection	\$40,000	\$8,000	\$9,600	\$20,736	\$79,000	\$81,000		
	D50 Electrical	\$310,000	\$62,000	\$74,400	\$160,704	\$608,000	\$623,000		
	Facility Total	\$2,968,380	\$593,676	\$712,411	\$1,538,808	\$5,819,000	\$5,973,000		
Municipal Campus Parking Garage Building	B10 Superstructure	\$130,000	\$26,000	\$31,200	\$67,392	\$255,000	\$258,000		
	B20 Exterior Closure	\$285,000	\$57,000	\$68,400	\$147,744	\$559,000	\$576,000		
	B30 Roofing	\$11,000	\$2,200	\$2,640	\$5,702	\$22,000	\$23,000		
	D30 HVAC	\$5,000	\$1,000	\$1,200	\$2,592	\$10,000	\$10,000		
	D40 Fire Protection	\$68,250	\$13,650	\$16,380	\$35,381	\$133,000	\$137,000		
	D50 Electrical	\$50,500	\$10,100	\$12,120	\$26,179	\$99,000	\$101,000		
	Facility Total	\$549,750	\$109,950	\$131,940	\$284,990	\$1,078,000	\$1,105,000		
North SWAT Building	B10 Superstructure	\$8,500	\$1,700	\$2,040	\$4,406	\$17,000	\$17,000		
	B20 Exterior Closure	\$220,000	\$44,000	\$52,800	\$114,048	\$431,000	\$437,000		
	D20 Plumbing	\$10,600	\$2,120	\$2,544	\$5,495	\$21,000	\$21,000		

Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond								Escalation	3%
Site: Municipal Campus Site								Discount Rate	1.5%
Facility	System		Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)	
North SWAT Building	D30 HVAC		\$6,000	\$1,200	\$1,440	\$3,110	\$12,000	\$12,000	
		Facility Total	\$245,100	\$49,020	\$58,824	\$127,060	\$481,000	\$487,000	
South SWAT Building	B10 Superstructure		\$8,500	\$1,700	\$2,040	\$4,406	\$17,000	\$17,000	
	B20 Exterior Closure		\$159,000	\$31,800	\$38,160	\$82,426	\$311,000	\$316,000	
	D30 HVAC		\$65,000	\$13,000	\$15,600	\$33,696	\$127,000	\$127,000	
		Facility Total	\$232,500	\$46,500	\$55,800	\$120,528	\$455,000	\$460,000	
Municipal Campus Infrastructure	G20 Site Improvements		\$57,000	\$11,400	\$13,680	\$29,549	\$112,000	\$113,000	
	G30 Site Civil / Mechanical Utilities		\$50,000	\$10,000	\$12,000	\$25,920	\$98,000	\$98,000	
	G40 Site Electrical utilities		\$5,000	\$1,000	\$1,200	\$2,592	\$10,000	\$10,000	
	G90 Other Site Construction		\$15,000	\$3,000	\$3,600	\$7,776	\$29,000	\$30,000	
		Facility Total	\$127,000	\$25,400	\$30,480	\$65,837	\$249,000	\$251,000	
Site Total			\$4,792,060	\$958,412	\$1,150,094	\$2,484,204	\$9,392,000	\$9,630,000	

Opportunity Summary By Subsystem

City of Redmond							
Site: Municipal Campus Site		Total Site Opportunity Cost: \$39,591,000					

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Municipal Campus Infrastructure								
System: Site Civil / Mechanical Utilities								\$18,311,000
G3030	Storm Sewer							
		No reported or observed site storm water quality treatment or flow detention system, except an artistic bioswale system to SW of City Hall, with storm water reportedly discharged directly to the Sammamish Slough to west.	Install site water quality and detention system per King County storm water management manual.	1.00	\$150,000.00	LS	\$150,000	\$294,000
		Long-term concern regarding climate change, increasing wet weather and rising Sammamish Slough water levels, potentially causing flooding.	Conduct a comprehensive city campus resiliency study, with emphasis on flood risk and mitigate if cost-effective. If not cost-effective, plan long-term to relocate mission-critical facilities to higher ground. This opportunity budget includes the study and modest mitigation at the current site (a flood wall and diesel-engine-powered high-capacity flood pumps).	1.00	\$5,000,000.00	LS	\$5,000,000	\$9,792,000
G3060	Fuel Distribution							
		No on-site vehicle fueling for the many fleet vehicles. Reportedly, vehicles must be driven across town to the public works center to fuel, wasting significant fuel, adding wear and tear to vehicles, and increasing carbon footprint.	Install vehicle fuel island.	1.00	\$1,000,000.00	LS	\$1,000,000	\$1,958,000

Opportunity Summary By Subsystem

City of Redmond							
Site: Municipal Campus Site							
Total Site Opportunity Cost:							\$39,591,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
G3060	Fuel Distribution	Multiple buildings with large open space in between, plus location with high ground-water, and city goal to reduce carbon footprint - specifically to reduce or eliminate use of natural gas for buildings.	Install large ground source heat pump system to provide condenser water for high-efficiency heat pumps to heat and cool all campus conditioned buildings. Assume 500-ton capacity and 200 500-foot deep bores yielding 2.5-tons per bore. This opportunity cost is for the ground exchanger system only; each building would incur additional cost to utilize the ground-source condenser water. Investigate development of a district energy system with other nearby public and private facilities to realize economy of scale and work toward community-wide sustainability.	200.00	\$16,000.00	EA	\$3,200,000	\$6,267,000
Facility: Municipal Campus Infrastructure								
System: Site Electrical utilities								\$3,795,000
G4010	Electrical Distribution	Only a few electric vehicle (EV) charging stations on campus; some are makeshift with inefficient and somewhat hazardous Level 1 chargers running on 110V convenience receptacles.	Replace all Level 1 EV chargers with Level 2, and install ten new Level 2 dual-cable charging stations, with rough-in for ten more.	15.00	\$11,500.00	EA	\$172,500	\$338,000

Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site

Total Site Opportunity Cost: \$39,591,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
G4010	Electrical Distribution	Modest renewable energy photovoltaic (PV) systems at roof of City Hall and new community center, but none at the Public Safety Building, parking garage, or smaller buildings.	Add significant PV capacity across the campus, say 250 kW.	250.00	\$6,500.00	EA	\$1,625,000	\$3,182,000
G4020	Site Lighting	Moderately uncoordinated site lighting, excepting pathway between City Hall and the parking garage. Inconsistent architecture between the older and newer buildings. Periodic special events at the campus. New lighting technology readily available.	Fully integrate site lighting to better tie older and newer buildings and site improvements together, enhance security, and generate interest and special event excitement by "painting with light."	1.00	\$100,000.00	LS	\$100,000	\$196,000
G4030	Site Communications and Security	Overgrown landscaping with limited opportunity for site electronic security and increasing concerns regarding transients and potential vandalism.	Conduct crime prevention through environmental design (CPTED) study and implement low-cost recommendations, such as a vegetation management plan to improve public surveillance and supervisory lines of sight.	1.00	\$10,000.00	LS	\$10,000	\$20,000
		No observed blue-light system for patron and staff security.	Install blue-light system, say five stations across the campus.	5.00	\$6,000.00	EA	\$30,000	\$59,000

Note: Cost estimates shown include project markups, but exclude escalation.

Opportunity Summary By Subsystem

City of Redmond							
Site: Municipal Campus Site							
						Total Site Opportunity Cost:	
						\$39,591,000	

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Municipal Campus Infrastructure								
System: Other Site Construction								
G9010 Service and Pedestrian Tunnels								
		Uncovered walkways between the larger campus buildings.	Construct a covered walkway system between the major buildings on campus.	2,000.00	\$700.00	LF	\$1,400,000	\$2,742,000
Facility: Municipal Campus Parking Garage Building								
System: Plumbing								
D2010 Plumbing Fixtures								
		City staff reportedly working at least part time in the building, with no restroom facility.	Develop one unisex restroom for staff use at the parking garage.	1.00	\$45,000.00	LS	\$45,000	\$88,000
D2030 Sanitary Waste								
		Periodic flooding of the parking garage ground level during heavy rain.	Install improved floor and storm drain system to reduce parking garage flooding during heavy rain.	30,000.00	\$1.75	SF	\$52,500	\$103,000
Facility: Municipal Campus Parking Garage Building								
System: HVAC								
D3060 Controls and Instrumentation								
		No DDC controls.	Upgrade to DDC controls to improve remote monitoring and energy control.	90,000.00	\$0.30	SF	\$27,000	\$53,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Municipal Campus Site						
Total Site Opportunity Cost: \$39,591,000						

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Municipal Campus Parking Garage Building						
System:	Electrical						\$432,000
D5020	Lighting and Branch Wiring						
	Mostly fluorescent fixtures with interior zones on 24x7.	Replace with LED lamps and automate lighting.	125,959.00	\$1.75	SF	\$220,428	\$432,000
Facility:	Municipal Campus Parking Garage Building						
System:	Equipment						\$27,000
E1030	Vehicular Equipment						
	With increased campus development, including imminent opening of the new and larger community center, there may be increased demand for parking garage use, which currently has no parking control system.	Install infrastructure for future parking control system and phase in as needed to serve staff and patrons. Include entry/exit control and open-space indication system. This budget for preliminary design and rough-in for infrastructure only.	1.00	\$14,000.00	LS	\$14,000	\$27,000
Facility:	North SWAT Building						
System:	HVAC						\$14,000
D3030	Cooling Generating Systems						
	No cooling, other than ventilation cooling.	Install two ceiling fans.	2.00	\$3,500.00	EA	\$7,000	\$14,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Municipal Campus Site						
Total Site Opportunity Cost: \$39,591,000						

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	North SWAT Building							\$31,000
System:	Electrical							
D5010	Electrical Service and Distribution							
		Service currently limited to 50A to a 250A capacity distribution panel.	The 50A service provides minimal flexibility for future use; a future upgrade to at least 100A should be planned.	1.00	\$16,000.00	EA	\$16,000	\$31,000
Facility:	North SWAT Building							\$16,000
System:	Equipment							
E1020	Institutional Equipment							
		Excessive police equipment and materials are piled on the floor or haphazardly stored.	Install shelving or lockers.	1.00	\$8,000.00	LS	\$8,000	\$16,000
Facility:	Public Safety Building							\$147,000
System:	Foundations							
A1030	Slab On Grade							
		High ground water table pressure and intrusion.	Consider an addition alternative to slab sealing, and also install a high-capacity ground dewatering well and pump system by drilling perimeter dewatering wells to eliminate or reduce ground water pressure and intrusion.	1.00	\$75,000.00	LS	\$75,000	\$147,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Municipal Campus Site						
Total Site Opportunity Cost: \$39,591,000						

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Public Safety Building								
System: Interior Construction								
C1010 Partitions								
		Interior relite windows with wire glass (now considered a safety hazard). It does not appear to be ballistic glazing along public-facing windows.	Consider replacing all public-facing glazing with ballistic glazing.	24.00	\$9,000.00	EA	\$216,000	\$423,000
Facility: Public Safety Building								
System: Interior Finishes								
C3030 Ceiling Finishes								
		Ceiling grid predates current seismic code for suspended ceilings.	Considering essential operations, replace ceiling grids and ceilings with modern seismic compliant system (conduct along with removal of excessive abandoned-in-place overhead low voltage wiring).	80,000.00	\$8.00	SF	\$640,000	\$1,253,000
Facility: Public Safety Building								
System: Plumbing								
D2040 Rain Water Drainage								
		In the past, police vehicle were often washed on-site, but this was discontinued due to improper drainage to storm instead of sewer.	Provide support for on-site police vehicle washing, including wash water to sewer instead of storm.	1.00	\$5,000.00	LS	\$5,000	\$10,000

Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site

Total Site Opportunity Cost: \$39,591,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Public Safety Building							
System:	HVAC							\$8,060,000
D3030	Cooling Generating Systems							
		Only one of the condenser water pumps is variable speed, and less than half the water-source heat pumps have on/off control valves.	Provide all water-source heat pumps with condenser water flow control valves (two-way), and upgrade second condenser water pump to variable frequency drive speed control.	1.00	\$15,000.00	LS	\$15,000	\$29,000
		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.	Install ground water heat recovery system.	1.00	\$50,000.00	LS	\$50,000	\$98,000
		The cooling tower fan has two motors, one low-speed and one high-speed.	Upgrade to variable frequency drive cooling tower fan speed control.	1.00	\$16,000.00	LS	\$16,000	\$31,000
D3040	HVAC Distribution Systems							
		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 for city data center, 911 call center, and building intermediate distribution frame spaces.	3.00	\$15,000.00	EA	\$45,000	\$88,000

Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site

Total Site Opportunity Cost: \$39,591,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3040	HVAC Distribution Systems	Aged and failing HVAC system with poor efficiency, ventilation, and pressure control and difficult access to terminal equipment. Peaked roof with largely open volume of space.	Completely replace the HVAC system with modern technology, such as all-electric variable refrigerant flow with heat recovery dedicated outside air system. Use attic space at peaked roof for HVAC equipment platform and catwalk access system.	60,000.00	\$52.00	SF	\$3,120,000	\$6,110,000
		No economizer for free cooling, and minimal outside air to occupied spaces.	Retrofit economizer per current energy code for free cooling and improved ventilation.	60,000.00	\$8.00	SF	\$480,000	\$940,000

Note: Cost estimates shown include project markups, but exclude escalation.

Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site

Total Site Opportunity Cost: \$39,591,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3060	Controls and Instrumentation	In conjunction with this assessment, an energy audit is being performed on the Public Safety Building.	Upon completion of the energy audit, implement life cycle cost-effective energy conservation and efficiency measures (ECMs & EEMs) to reduce energy use and cost, and improve comfort and indoor air quality. This is budget primarily for energy efficiency measures (EEMs) beyond those already included in opportunities elsewhere in this FCA, to be identified in detail in the separate, but related Energy Audit. Operations and maintenance oriented energy conservation measures (ECMs) are typically completed to be minor maintenance.	90,000.00	\$3.00	SF	\$270,000	\$529,000

Note: Cost estimates shown include project markups, but exclude escalation.

Opportunity Summary By Subsystem

City of Redmond								
Site: Municipal Campus Site		Total Site Opportunity Cost: \$39,591,000						

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3090	Other HVAC Systems and Equipment	Public Safety Building AHU-1 outside air intake in vicinity of two diesel generators with complex Strobic diesel exhaust plume booster fans; aging HVAC system with poor performance needing modernization.	In conjunction with HVAC system modernization, relocate the building outside air intake away from diesel generator and other sources of air pollution, such as boiler and hot water heater exhaust, gun range exhaust, parking garage, and vehicle engine idling areas; for example, in vicinity of flat roof to west, in lieu of east. After relocation, demolish the two generator Strobic fans to simplify maintenance and operations.	1.00	\$120,000.00	EA	\$120,000	\$235,000

Facility:	Public Safety Building	
System:	Electrical	\$412,000

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	\$850.00	EA	\$20,400	\$40,000
		Aging T5 lighting at sally port and evidence storage areas.	As T5 lamps and especially ballasts and controls begin to fail, replace with modern LED fixtures.	5,000.00	\$8.00	SF	\$40,000	\$78,000

Opportunity Summary By Subsystem

City of Redmond							
Site: Municipal Campus Site							
Total Site Opportunity Cost:							\$39,591,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D5020	Lighting and Branch Wiring	Mostly manual lighting controls throughout with too bright complaints in several areas.	Upgrade to modern automatic lighting controls, including occupant dimming in spaces reported as too bright.	60,000.00	\$2.50	SF	\$150,000	\$294,000
Facility:	Public Safety Building							\$294,000
System:	Special Construction							
F1010	Special Structures							
		Shooting range with few modern features and no apparent armory.	Renew shooting range with proper armory, full range control booth, automatic targets, improved lighting, and similar.	1.00	\$150,000.00	LS	\$150,000	\$294,000
Facility:	Redmond City Hall							\$564,000
System:	Roofing							
B3010	Roof Coverings							
		Original roof insulation is assumed to have met code minimum at time of permitting, but would not meet the current energy code.	To improve energy efficiency, thermal comfort, and city carbon reduction goals, with any future reroof, upgrade existing roof insulation to meet or exceed current code.	36,000.00	\$8.00	SF	\$288,000	\$564,000

Opportunity Summary By Subsystem

City of Redmond

Site: Municipal Campus Site

Total Site Opportunity Cost: \$39,591,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Redmond City Hall							\$27,000
System:	Vertical Transportation							
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	\$14,000.00	LS	\$14,000	\$27,000
Facility:	Redmond City Hall							\$131,000
System:	Plumbing							
D2020	Domestic Water Distribution							
		All electric domestic hot water heat. Puget Sound Energy natural gas service has excess capacity.	Upon scheduled renewal of domestic hot water heaters, upgrade the two primary water heaters to high-efficiency gas-fired units.	2.00	\$11,000.00	EA	\$22,000	\$43,000
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	\$45,000.00	LS	\$45,000	\$88,000
Facility:	Redmond City Hall							\$94,000
System:	HVAC							
D3010	Energy Supply							
		Oversized natural gas service and electric hot water heaters.	Upon failure, replace electric water heaters with gas-fired water heaters.	3.00	\$11,000.00	EA	\$33,000	\$65,000

Note: Cost estimates shown include project markups, but exclude escalation.

Print Date: 02/20/24

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Opportunity Summary By Subsystem

City of Redmond							
Site: Municipal Campus Site				Total Site Opportunity Cost: \$39,591,000			

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3030	Cooling Generating Systems	Opportunity for free cooling using water-side economizer.	Install plate and frame water-side economizer.	1.00	\$15,000.00	EA	\$15,000	\$29,000
Facility: Redmond City Hall								\$2,164,000
System: Electrical								
D5010	Electrical Service and Distribution							
		Reportedly, no real time energy metering or submetering.	Coordinate with utilities to monitor energy use in real time via DDC system; additionally, install submetering of major loads to support more proactive energy management.	1.00	\$10,000.00	LS	\$10,000	\$20,000
D5020	Lighting and Branch Wiring							
		Mostly increasingly obsolete T8 fluorescent lighting, many areas without automatic control.	Upgrade to all LED with fully automatic lighting control throughout, where not already (at the first floor 2017 TI spaces).	100,000.00	\$9.00	SF	\$900,000	\$1,763,000
D5032	Low Voltage Communication							
		No observed wireless signal boost antenna system.	Install cellular wireless signal boost antenna system throughout.	113,068.00	\$1.50	SF	\$169,602	\$332,000
D5090	Other Electrical Systems							
		No emergency lighting system; selected circuits powered by generator. Building is dark until generator starts and automatic transfer switch transfers power.	Install battery pack emergency lighting in corridors, open offices, and other large areas.	50.00	\$500.00	EA	\$25,000	\$49,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Municipal Campus Site						
Total Site Opportunity Cost: \$39,591,000						

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Redmond City Hall							
System:	Equipment							\$343,000
E1010	Commercial Equipment							
		No coffee stand or light commercial kitchen. Break room at first floor south.	Develop a light commercial kitchen and/or coffee stand as building amenity at first floor south break room.	1,000.00	\$175.00	SF	\$175,000	\$343,000
Facility:	South SWAT Building							
System:	HVAC							\$14,000
D3030	Cooling Generating Systems							
		Ventilation cooling only.	Install two ceiling fans.	2.00	\$3,500.00	EA	\$7,000	\$14,000
Facility:	South SWAT Building							
System:	Electrical							\$27,000
D5010	Electrical Service and Distribution							
		50A service to 250A distribution panel, limiting future flexibility.	Upgrade to at least 100A service.	1.00	\$14,000.00	LS	\$14,000	\$27,000
Facility:	South SWAT Building							
System:	Equipment							\$16,000
E1020	Institutional Equipment							
		Excessive police equipment and materials are piled on the floor.	Install shelving or lockers.	1.00	\$8,000.00	LS	\$8,000	\$16,000

Facility Summary

City of Redmond
RCCMV Site
RCCMV

6505 176th Ave. NE
Redmond, WA 98052

Facility Size - Gross S.F.	20,491
Year Of Original Construction	2006
Facility Use Type	Community Center
Construction Type	Medium
# of Floors	2
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)	0.10	Observed Deficiencies 2023 - 2028	\$1,689,000	\$1,735,000
Current Replacement Value (CRV)	\$8,811,000	Predicted Renewal Budget 2029 - 2042	\$3,377,000	\$3,970,000
Beginning Budget Year	2023	Opportunities	\$3,906,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

Community Center building leased by the city since 2019 and maintained by the city. The building is LEED-NC Silver Certified. Two-story steel-framed, complex formed facility with a combination of low-slope EPDM roofing and standing seam metal roofing, masonry, metal cladding, and thermally-broken aluminum storefront. The building includes offices and community activity spaces including classrooms and meeting rooms, and is rented for community and private events (weddings and receptions). Some classroom spaces have been adapted to other activities, for example, even with resilient flooring added, HVAC was not designed to support exercise uses and is suspected to have inadvertently resulted in damage to the building roof membrane at the air handler roof curb. One passenger elevator. HVAC is a penthouse gas-fired boiler plant with heating hot water to two rooftop VAV air handling units, supplying fan-powered variable air volume (VAV) boxes with hot water reheat throughout the two-story building; no support for special community center programs, such as exercise rooms. Plumbing is standard academic building with no support for special community center programs such as commercial kitchen and art; however a warming kitchen is present. Fire sprinkler and alarm throughout. Electrical is 480V, three-phase power and rough-in for future standby and emergency generator power, plus electric vehicle charging stations; however no renewable energy. Low voltage systems include high-speed fiber-optic data, audio and video (A/V), and light electronic security. The site has poor utility electrical power reliability and quality, with brownouts four to eight times per year, blackouts, and power spikes, repeatedly damaging building systems and equipment, and disrupting community center operations.

Facility Summary

City of Redmond	6505 176th Ave. NE
RCCMV Site	Redmond, WA 98052
RCCMV	

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure			2.0			
A10 Foundations						
A1010 Standard Foundations	2006	2006	2	TRB	12/14/23	Concrete footings and stem wall.
A1030 Slab On Grade	2006	2006	2	TRB	12/14/23	Standard concrete.
B Shell			2.5			
B10 Superstructure						
B1010 Floor Construction	2006	2006	2	TRB	12/14/23	Concrete on pan deck on metal structure.
B1020 Roof Construction	2006	2006	2	TRB	12/14/23	R-30 minimum with additional tapered rigid insulation, on steel deck, on steel structure. No access or fall restraint to lower membrane and standing seam roof areas.
B20 Exterior Closure						
B2010 Exterior Walls	2006	2006	3	TRB	12/14/23	A combination of masonry and steel cladding on weather-resistive barrier on R-8 continuous rigid insulation on glass mat sheathing on steel studs with R-19 batt insulation. Brick now stained with runoff and algae.
B2020 Exterior Windows	2006	2006	3	TRB	12/14/23	Aluminum storefront and thermally-glazed units.
B2030 Exterior Doors	2006	2006	2	TRB	12/14/23	Aluminum and thermally insulated glazing storefront doors (sliding pair at main entry, other single swinging doors).

Facility Summary

City of Redmond	
RCCMV Site	6505 176th Ave. NE
RCCMV	Redmond, WA 98052

Facility Components		Original System Date	Renewal Last Date	Score	Surveyor	Survey Date	Comments
Systems							
B Shell				2.5			
B30 Roofing							
B3010	Roof Coverings	2006	2006	3	TRB	12/14/23	EPDM roofing at high roof, sloped standing seam metal roofing. Roofing slick with dirt (full maintenance washing recommended). Positive pressure at one mechanical unit is billowing up membrane. Lower leading edge gutters leak at each intersecting node.
B3020	Roof Openings	2006	2006	2	TRB	12/14/23	Roof hatch above electrical.
B3030	Projections	2006	2006	3	TRB	12/14/23	Steel extended roof canopies, sunshades on steel with steel grate, entry canopies are steel plate on pipe steel frames (collecting pine needles in joints and need removal).
C Interiors				2.2			
C10 Interior Construction							
C1010	Partitions	2006	2006	2	TRB	12/14/23	Gypsum on steel studs, high-density polyethylene (HDPE) toilet partitions.
C1020	Interior Doors	2006	2006	3	TRB	12/14/23	A mix of hollow metal and wood doors in hollow metal frames. Stainless overhead fire door at lobby to warming kitchen. Wire glass relites and door leaf vision glass at rated corridor openings (wire glass is now considered a hazard).
C1030	Fittings	2006	2006	2	TRB	12/14/23	Tack surfaces, whiteboards, LEED plaque, display case, stainless coat hooks, and rubber base. Wood cap stair guard on painted metal guard and handrails.
C20 Staircases							
C2010	Stair Construction	2006	2006	2	TRB	12/14/23	Precast concrete on steel.

Facility Summary

City of Redmond	
RCCMV Site	6505 176th Ave. NE
RCCMV	Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
C Interiors			2.2			
C30 Interior Finishes						
C3010 Wall Finishes	2006	2006	2	TRB	12/14/23	Paint. Minor ongoing maintenance to touch up and paint especially where chairs in areas like conference rooms have scraped walls. Ceramic mosaic tile in restrooms.
C3020 Floor Finishes	2006	2006	2	TRB	12/14/23	Carpet tile, 12x12 porcelain tile in lobby, and ceramic mosaic tile in restrooms.
C3030 Ceiling Finishes	2006	2006	2	TRB	12/14/23	Painted structure, suspended acoustic tile.
D Services			2.7			
D10 Vertical Transportation						
D1010 Elevators and Lifts	2006	2006	2	DCS	12/14/23	One Thyssen-Krupp three-stop, 2,500-lb, single-door, 20-hp, hydraulic elevator in good working order, with service to both program floors, plus mechanical penthouse on same level as the high roof. The elevator machine room has ventilation cooling with no issues reported.
D20 Plumbing						
D2010 Plumbing Fixtures	2006	2006	3	DCS	12/14/23	Sink faucets battery-operated, failing and leaking, which is problematic, but minor maintenance to repair or replace. Water closets and urinals with battery-operated flush valves. Two showers. Two janitor closet floor sinks. Two newer filtered-water single-height (non-ADA-compliant) hydration stations, with both drinking fountain and bottle-filler. Kitchen sink at warming kitchen.
D2020 Domestic Water Distribution	2006	2006	2	DCS	12/14/23	Three-inch water service entry via two-inch meter, with three-inch reduced-pressure backflow preventer (RPBP). Pressure is 90 psig upstream and 80 psig downstream of RPBP with no pressure-reducing valve observed - minor maintenance to add as needed. Copper piping. 2016 A.O. Smith standard-efficiency (80%) gas-fired 100-gallon, 199-mbh hot water heater at penthouse, with recirculation pump.

Facility Summary

City of Redmond
RCCMV Site
RCCMV

6505 176th Ave. NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.7			
D20 Plumbing						
D2030 Sanitary Waste	2006	2006	2	DCS	12/14/23	Cast iron drain, waste, and vent piping where observed, tested fixtures flush and drain well. Non-cooking kitchen (no grease interceptor). No art sinks. Restroom floor drain hydraulic trap primer recently replaced. Mostly inaccessible plumbing walls, but with small hand access panels to specific devices, such as trap primer. The plumbing wall cavity acoustic insulation is not secured by line, wire, or board and about half has fallen off, reducing privacy and building acoustic performance. Additionally, the plumbing wall cavity is under high negative pressure.
D2040 Rain Water Drainage	2006	2006	3	DCS	12/14/23	Roof drains and overflow roof drains at high roof. Metal gutter and downspout serving sloped low metal roof. Ongoing issues with tree debris fouling roof drains and gutters; continual ongoing maintenance to keep roof drains and gutters clear.
D30 HVAC						
D3010 Energy Supply	2006	2006	2	DCS	12/14/23	Natural gas piping to two boilers and one water heater. The boilers are 300 mbh each, and water heater 200 mbh, totaling 800 mbh, with 1,000 mbh capacity from gas service, so capacity for additional community center features, such as small kitchen gas range, lobby fireplace, or patio BBQ.
D3020 Heat Generating Systems	2006	2006	3	DCS	12/14/23	Two Fulton 300 mbh pulse combustion heating hot water boilers, which are a known problematic technology and product. For example, both boilers have combustion air intake and flue exhaust mufflers to reduce noise impact on both occupants and neighbors. Boiler life has been shortened by the poor control systems (see D3060 Controls and Instrumentation). The system runs at relatively high temperature, hence little opportunity for change to heat pump without significant changes in air-side equipment. Two 100-gpm @ 50 ft tdh, 3-hp heating hot water pumps with constant-speed motors.

Facility Summary

City of Redmond	
RCCMV Site	6505 176th Ave. NE
RCCMV	Redmond, WA 98052

Facility Components		Original System Date		Renewal Date		Score	Surveyor	Survey Date	Comments
Systems									
D Services						2.7			
D30 HVAC									
D3030	Cooling Generating Systems	2006	2006	3	DCS	12/14/23	Two split-Dx cooling systems, one at the lecture hall control booth, and the other in the telecom room, both approaching end of life, accelerated by site power quality issues. Failing cooling tower integrated with rooftop ACU-1.		
D3040	HVAC Distribution Systems	2006	2006	3	DCS	12/14/23	Two Scott Springfield of Canada rooftop variable air volume (VAV) air handling units, tagged ACU-1 serving first floor and ACU-2 serving second floor. Both units have variable frequency drive supply and return fans, ACU-1 with 10-hp and 5-hp respectively, and ACU-2 with 7.5-hp and 3-hp respectively, both with full economizer but with just one set of observed air filters. Both units have hot water heating coils. Both units have on-board Dx cooling; ACU-1 has four compressors, ACU-2 has two compressors. ACU-1 has an evaporative cooling tower for refrigerant condensing, whereas ACU-2 has traditional air-cooled condensing. The two air handling units supply a network of sheet metal and factory-insulated ductwork, supplying primary air to nineteen VAV boxes in the open return air plenum ceiling space of both floors. The system is designed for support of sedentary academic activity throughout, and does not support current use of many spaces for fitness activity. This elevated level of use appears to be driving the air handling units into full-capacity operation in an attempt to maintain this LEED-certified building's CO2 indoor air quality target. This appears to have led to failure of the roof membrane at the ACU-1 roof curb and may lead to further equipment and building damage if this continues. A substantial HVAC upgrade is suggested if this facility is to continue being used for activities other than it was designed and permitted for. With fixed windows throughout, fitness program staff have brought in multiple portable fans, which may temporarily improve patron thermal comfort, but does not address poor indoor air quality. A general exhaust system serves the restrooms and penthouse areas. A 5,000 cfm shaft pressurization fan protects the elevator hoistway.		

Facility Summary

City of Redmond	
RCCMV Site	6505 176th Ave. NE
RCCMV	Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.7			
D30	HVAC						
D3050	Terminal and Package Units	2006	2006	3	DCS	12/14/23	Fan-powered variable air volume boxes with motors beginning to fail; some control valve actuators failing. Entry hydronic cabinet unit heaters. Several electric unit heaters for utility spaces in good condition.
D3060	Controls and Instrumentation	2006	2006	4	DCS	12/14/23	2021 Alerton global controller, but communication issues with original obsolete field controls. Need to replace the entire system. It's overly sensitive to power surges. Poor remote access by third-party control system service provider. Suboptimized controls, especially for fitness program spaces, with signs of increased wear and tear on HVAC systems and possible damage to building roof membrane from overpressurization. Energy use intensity (EUI) is unknown, but based on observations, including problematic control, moderately high energy use is suspected.
D40	Fire Protection						
D4010	Fire Protection Sprinkler Systems	2006	2006	2	DCS	12/14/23	Four-inch service to riser room, with backflow preventer to four-inch alarm valve, with four-inch fire department connection, then splitting to two four-inch flow-alarmed risers, one for each of the two floors. Pressure at 90 psig, with no issues reported.
D4030	Fire Protection Specialties	2006	2006	2	DCS	12/14/23	Fire extinguishers, AED, and first aid kit.

Facility Summary

City of Redmond	
RCCMV Site	6505 176th Ave. NE
RCCMV	Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
Systems							
D Services				2.7			
D50 Electrical							
D5010	Electrical Service and Distribution	2006	2006	2	DCS	12/14/23	Eaton Cutler-Hammer 480V, three-phase, 1,200A main switchboard with 1,000A main breaker feeding other panels and two 75 kVA 480/208V transformers, with multiple 208V distribution panels. Rough-in for future standby and emergency power, plus electric vehicle charging. The switchboard has an apparent failed power quality monitor, and an on-board transient voltage surge suppression (TVSS) device, but apparently insufficient to protect downstream equipment from utility brownouts, blackouts, and surges. Reportedly, four to eight annual events result in damaged parts, staff repair time, and lost community center service to patrons. The building automation sequence calls for energy metering, assumed per LEED requirements, but electrical submetering was not observed.
D5020	Lighting and Branch Wiring	2006	2006	3	DCS	12/14/23	NexLight lighting control with no direct factory support, but maybe indirectly from underlying component manufacturers, such as Honeywell. Multiple lighting control sensors not working; wall control devices are beginning to fail and are costly to replace. A special programming tool is provided, but staff have not been trained in its use. The main NexLight lighting control panel appears to interface with the building HVAC system direct digital control (DDC) system, but with unclear sequencing. All T8 fluorescent lighting due to lighting control limitations - might be able to upgrade to LED, but needs research. Indirect hallway lighting which originally included battery ballasts, but provided poor egress pathway lighting, have been converted to LED, and new dedicated egress pathway bug-eye wall packs installed at upper and lower level egress corridors. Costly architectural lighting in former library, now fitness equipment room, beginning to fail.
D5032	Low Voltage Communication	2006	2006	3	DCS	12/14/23	Classroom mostly ceiling-mounted video projectors are problematic. The audio/video system is not user-friendly, many trouble calls are due to operator error. More specialized A/V equipment at lecture hall with the control booth mostly used for storage.

Facility Summary

City of Redmond
RCCMV Site
RCCMV

6505 176th Ave. NE
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.7			
D50 Electrical							
D5037	Low Voltage Fire Alarm	2006	2006	2	DCS	12/14/23	Modern addressable fire alarm control panel (FACP) and devices throughout, with FACP replaced about 2020.
D5038	Low Voltage Security	2006	2006	3	DCS	12/14/23	Burglar alarm with perimeter monitoring and limited motion detection, card-key access system abandoned in place, no CCTV. Increasing security concerns.
D5039	Low Voltage Data	2006	2006	2	DCS	12/14/23	High-speed fiber-optic data service with server in telecom room with dedicated cooling. Newer WiFi antennas throughout. Older Ethernet cabling to drops throughout.
D5090	Other Electrical Systems	2006	2006	3	DCS	12/14/23	Older battery ballasts at selected fixtures in classrooms and offices, but newer wall-pack bug-eyes at egress corridors.
E Equipment and Furnishings				2.6			
E10 Equipment							
E1010	Commercial Equipment	2006	2006	3	DCS	12/14/23	One warming kitchen with commercial dishwasher, refrigerated display case, popcorn maker, and other specialties, but no apparent exhaust or support for cooking.
E1020	Institutional Equipment	2006	2006	2	DCS	12/14/23	Exercise and other fitness program equipment, mostly newer.
E1030	Vehicular Equipment	2006	2006	3	DCS	12/14/23	Trash storage in fenced area with loading dock operations passing through the single-leaf door at the lecture hall; no direct service to kitchen area.
E20 Furnishings							
E2010	Fixed Furnishings	2006	2006	2	TRB	12/14/23	Plastic laminate and wood veneer casework. Minor damage to face wood at reception counter.

Facility Summary

City of Redmond	
RCCMV Site	6505 176th Ave. NE
RCCMV	Redmond, WA 98052

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
F Special Construction							
F10	Special Construction						
F1040	Special Facilities	2006	2006	2	DCS	12/14/23	High roof overhang to west, facing the park, with multiple smaller overhangs partially protecting a concrete deck area, currently with multiple picnic tables.
F1050	Special Controls and Instrumentation	2004	2019	3	DCS	12/14/23	Penthouse roof located direct line-of-sight microwave antenna reportedly communicates with another city facility in the vicinity. Operation limits safe access to roof, but does not appear properly posted - minor maintenance to post safety warning signs and roof access contact information.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: RCCMV Site				Discount Rate 1.5%	
Facility: RCCMV					

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$45,000.00	LS	\$45,000	\$88,000

Deficient Material: Fall Protection
No access or fall restraint to lower membrane and standing seam roof areas.

Remedial Action:
Modify roofing to provide access and fall restraint to all roof areas for safe maintenance.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: RCCMV Site

Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	9,000	\$5.50	SF	\$49,500	\$97,000

Deficient Material: Brick Veneer
Brick now stained with runoff and algae.

Remedial Action:
Clean all brick and provide sealant to prolong life.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		RCCMV Site							Escalation 3%
Facility:		RCCMV							Discount Rate 1.5%

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	4	\$3,000.00	EA	\$12,000	\$24,000

Deficient Material: Gutters

Lower leading edge gutters leak at each intersecting node where hub sealed with foam (a failed detail). Creates ongoing issues with plant growth in gutters. Leaks are eroding splash ponds in landscape and splashing back on building.

Remedial Action:

Reseal to bypass steel hub box connections to thwart leaks. Alternatively, consider coring new downspouts to storm, or install rain chains to new drain rock-filled concrete receivers connecting to storm.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: RCCMV Site

Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

C1020	Interior Doors	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	13	\$800.00	EA	\$10,400	\$20,000

Deficient Material: Wire Glass
Wire glass relites and door leaf vision glass at rated corridor openings (wire glass is now considered a hazard).

Remedial Action:
Remove and replace wire glass with modern rated safety glazing.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: RCCMV Site

Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2	\$6,500.00	EA	\$13,000	\$25,000

Deficient Material: Plumbing wall

The plumbing wall cavity acoustic insulation is not secured by line, wire, or board and about half has fallen off, reducing privacy and building acoustic performance. Additionally, the plumbing wall cavity is under high negative pressure.

Remedial Action:

Open plumbing wall cavities and restore and secure acoustic insulation. Troubleshoot and correct source of excessive plumbing wall negative pressure.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: RCCMV Site

Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D3020	Heat Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2	\$115,000.00	EA	\$230,000	\$450,000

Deficient Material: Boilers
Pulse combustion boilers with inherently short life, further shortened by poor controls, which have led to years of short-cycling.

Remedial Action:
Replace boilers with modern high-efficiency, proven technology boilers.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond
Site: RCCMV Site
Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$38,000.00	LS	\$38,000	\$74,000

Deficient Material: Cooling Tower
Rooftop ACU-1 variable air volume air handling unit on-board cooling tower at end of life.

Remedial Action:
Rebuild cooling tower, including water chemistry system update.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond								Escalation	3%
Site: RCCMV Site								Discount Rate	1.5%
Facility: RCCMV									

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2	\$13,500.00	EA	\$27,000	\$53,000

Deficient Material: Split-Dx Cooling
Two aging split-Dx cooling units damaged by poor site power quality.

Remedial Action:
Budget to replace split-Dx equipment upon complete failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: RCCMV Site

Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2	\$35,000.00	EA	\$70,000	\$137,000

Deficient Material: Air Handling Units

Two rooftop air handing units with multiple issues, including excessive rust in the ACU-1 supply air plenum downstream of the cooling coil, control and electrical component damage from poor site power quality, increasing vibration at ACU-2 supply fan, damage to fins at ACU-2 coil, unidentified past refrigerant leak at ACU-2, light rust and corrosion on some housing and internal package surfaces, and other concerns.

Remedial Action:

Fully service and update aged components. Restore all to design specifications to extend service life 10 to 15 years. See D3030 Cooling Generating Systems deficiency for ACU-1 cooling tower.

Action Type:

Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond
Site: RCCMV Site
Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	19	\$2,100.00	EA	\$39,900	\$78,000

Deficient Material: Terminal Units
Fan-powered variable air volume (VAV) and other VAV terminal units with failing fans, control valves, and air flow dampers.

Remedial Action:
Renew VAV boxes.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond
Site: RCCMV Site
Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	20,491	\$9.00	SF	\$184,419	\$361,000

Deficient Material: Control System
Dysfunctional and suboptimized control system.

Remedial Action:
Renew control system, ideally in conjunction with other significant HVAC system renewal and life extension work.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond
Site: RCCMV Site
Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D5010	Electrical Service and Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$16,000.00	LS	\$16,000	\$31,000

Deficient Material: Energy monitoring
Main switchboard power quality monitoring appears failed. Plans call for energy submetering, but power submetering devices and displays were not observed.

Remedial Action:
Repair or replace power quality monitoring, and install energy submetering per LEED plan.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond
Site: RCCMV Site
Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D5020	Lighting and Branch Wiring	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	24	\$750.00	EA	\$18,000	\$35,000

Deficient Material: Light fixtures
Costly architectural lighting in former library, now fitness equipment room, beginning to fail.

Remedial Action:
Replace failing costly architectural lighting with city standard LED fixtures.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: RCCMV Site

Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D5020	Lighting and Branch Wiring	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	20,491	\$4.00	SF	\$81,964	\$161,000

Deficient Material: Lighting control
No direct factory support for lighting control system, with costly-to-replace devices.

Remedial Action:
Replace lighting control system with a factory-supported system.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: RCCMV Site

Facility: RCCMV

Escalation 3%
Discount Rate 1.5%

D5032	Low Voltage Communication	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	8	\$3,500.00	EA	\$28,000	\$55,000

Deficient Material: Audio/video
A/V projectors are failing and A/V equipment is not user-friendly.

Remedial Action:
Replace failing A/V projectors and simplify A/V equipment configuration to be more user-friendly.

Action Type:
Other



Facility Summary

City of Redmond
RCCMV Site
RCCMV Infrastructure

6505 176th Ave. NE
Redmond, WA 98052

Facility Condition Summary

Site houses the community center building, asphalt parking and driveway, lawn, shrubs, and trees. The site includes an additional undeveloped dirt lot. A city wastewater lift station is also located in the property. City water, sewer, fire, and storm. Puget Sound Energy power and natural gas. High-speed data. Puget Sound Energy power is highly unreliable at this location - substantial mitigation is suggested.

DRAFT

Facility Summary

City of Redmond	6505 176th Ave. NE
RCCMV Site	Redmond, WA 98052
RCCMV Infrastructure	

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework							
G20 Site Improvements							
G2010	Roadways	2006	2006	3	TRB	12/14/23	Asphalt drive, painted concrete curbs. Some cracks in asphalt should be sealed to prolong system as minor maintenance.
G2020	Parking Lots	2006	2006	3	TRB	12/14/23	Asphalt. Other adjacent property visitors occasionally use the community center parking which conflicts with facility use.
G2030	Pedestrian Paving	2006	2006	3	TRB	12/14/23	Concrete sidewalks. One area crossing parking lot does not have ADA curb cuts, recommended even if not directly associated with ADA parking.
G2040	Site Development	2006	2006	3	TRB	12/14/23	Monument signs, flagpole, powder-coated bike racks, benches, and waste receptacles.
G2050	Landscaping	2006	2006	3	TRB	12/14/23	Lawn, ornamental landscaping, new and some retained mature trees, and some shrubs encroaching the face of the building and should be trimmed away to thwart building damage and pest vector intrusion pathway as minor maintenance.

Facility Summary

City of Redmond
RCCMV Site
RCCMV Infrastructure

6505 176th Ave. NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3010 Water Supply	2006	2006	2	DCS	12/14/23	City domestic water with 2-inch meter to 3-inch service line. 1.5-inch irrigation service without meter; reportedly, City of Redmond no longer meters irrigation services. 4-inch city fire service via post-indicator valve to north, adjacent to 4-inch fire department connection. City water pressure is at 90 psig. The irrigation service is turned off and reportedly winterized by the parks department. The irrigation system controller in the electrical room is in disarray - minor maintenance to improve irrigation control wire management in the electrical room. Per plans and likely LEED certification, water metering is specified by the building automation system, but does not appear currently installed or operable - minor maintenance to connect and monitor per plans. While the building has an evaporative cooling tower, there is no deduct meter; reportedly, City facilities and/or city utilities do not have a policy regarding deduct meters - further investigation is suggested. If the City has a deduct meter policy, installing a deduct meter is minor maintenance, noting slight complication from cooling tower water chemistry blow-down water being discharged to the building upper floor janitor mop sink.
G3020 Sanitary Sewer	2006	2006	2	DCS	12/14/23	City sewer with no issues reported. City Public Works owns and operates a substantial municipal waste water system lift station on-site, including a modern, dedicated freestanding building.
G3030 Storm Sewer	2006	2006	2	DCS	12/14/23	Paved areas and piped roof drains to network of developed site storm water catch basins and piping, reportedly discharging to the city storm water service at the street - no on-site storm water management. Reportedly, the lower gravel parking lot floods during heavy rain - minor maintenance to install one catch basin and underground pipe to existing storm network.

Facility Summary

City of Redmond
RCCMV Site
RCCMV Infrastructure

6505 176th Ave. NE
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3060 Fuel Distribution	2006	2006	3	DCS	12/14/23	Puget Sound Energy natural gas meter No. 1222987 with 1,000 cfh capacity, and including seismic shut-off valve, but with disconnected energy metering to the building automation system - minor maintenance to connect and ensure monitoring per energy management plan. The meter capacity is sufficient for original design academic classroom use, but may not support more intensive community center use (e.g., increased fitness programs, commercial kitchen, or art studio with ceramics program) - further study suggested if RCCMV is to continue as a community center and undergo further development.
G40 Site Electrical utilities						
G4010 Electrical Distribution	2006	2006	4	DCS	12/14/23	Multiple brownouts, blackouts, and power spikes, averaging four to eight times per year, resulting in damage to equipment, facilities staff time to repair, and lost community center service time to patrons. Rough-in for electric vehicle charging stations, but no renewable energy.
G4020 Site Lighting	2006	2006	3	DCS	12/14/23	Mix of mostly LED at existing fixtures. Pole-mounted, wall-mounted, and in-ground lighting, with a few HID fixtures remaining - minor maintenance to complete conversion of remaining HID to LED. Minor maintenance to repair flagpole and roof mechanical screen wall lighting controls so outside lighting is all off during daylight hours and on at night where intended. One pole near flagpole has suffered an apparent vehicle strike - minor maintenance to reset this pole so it is vertical (not leaning).
G4030 Site Communications and Security	2006	2006	3	DCS	12/14/23	Verizon high-speed fiber-optic data appears served underground from node across the street. The node is damaged with no apparent utility work in progress - recommend contacting Verizon to report.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		RCCMV Site							Escalation 3%
Facility:		RCCMV Infrastructure							Discount Rate 1.5%

G4010	Electrical Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	20,491	\$15.00	SF	\$307,365	\$602,000

Deficient Material: Power Quality

Poor power quality and reliability with multiple brownouts, blackouts, and power spikes annually, damaging building systems/equipment and disrupting community center programs. The building is already designed and built with roughed-in electrical infrastructure for standby and emergency power.

Remedial Action:

Complete existing electrical service standby and emergency power system rough-in by installing full-capacity standby diesel generator, plus whole-building 20-minute uninterruptible power supply.

Action Type:

Life Safety



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: RCCMV Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
RCCMV	B10 Superstructure	\$45,000	\$9,000	\$10,800	\$23,328	\$88,000	\$88,000
	B20 Exterior Closure	\$49,500	\$9,900	\$11,880	\$25,661	\$97,000	\$100,000
	B30 Roofing	\$12,000	\$2,400	\$2,880	\$6,221	\$24,000	\$24,000
	C10 Interior Construction	\$10,400	\$2,080	\$2,496	\$5,391	\$20,000	\$20,000
	D20 Plumbing	\$13,000	\$2,600	\$3,120	\$6,739	\$25,000	\$26,000
	D30 HVAC	\$589,319	\$117,864	\$141,437	\$305,503	\$1,153,000	\$1,188,000
	D50 Electrical	\$143,964	\$28,793	\$34,551	\$74,631	\$282,000	\$289,000
	Facility Total	\$863,183	\$172,637	\$207,164	\$447,474	\$1,689,000	\$1,735,000
RCCMV Infrastructure	G40 Site Electrical utilities	\$307,365	\$61,473	\$73,768	\$159,338	\$602,000	\$620,000
	Facility Total	\$307,365	\$61,473	\$73,768	\$159,338	\$602,000	\$620,000
Site Total		\$1,170,548	\$234,110	\$280,932	\$606,812	\$2,291,000	\$2,355,000

Opportunity Summary By Subsystem

City of Redmond
Site: RCCMV Site

Total Site Opportunity Cost: \$4,304,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: RCCMV							
System: Plumbing							\$52,000
D2010 Plumbing Fixtures							
	Battery-operated flush valves and lavatory faucets.	Upgrade to hardwired flush valves and faucets to reduce maintenance and battery waste.	24.00	\$1,100.00	EA	\$26,400	\$52,000
Facility: RCCMV							
System: HVAC							\$2,443,000
D3040 HVAC Distribution Systems							
	No support for fitness programs which would require more outside air.	Upgrade HVAC system to support fitness programs. It appears to apply to about half of the overall community center space. As an alternate to the costly mechanical solution, consider adding operable windows and ceiling fans to fitness spaces, which might reduce the cost of this upgrade by 50%.	10,000.00	\$25.00	SF	\$250,000	\$490,000
	Aging HVAC system with poor support for community center fitness and potentially other desired programs. Natural gas heat from hot water boilers. City sustainability program with climate action plan call for city-wide decarbonization.	Completely replace the HVAC system with an all-electric heat-pump-based system, including full support for community center programs, specifically including fitness.	20,491.00	\$45.00	SF	\$922,095	\$1,806,000

Opportunity Summary By Subsystem

City of Redmond
Site: RCCMV Site

Total Site Opportunity Cost: \$4,304,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D3050	Terminal and Package Units	Atrium with artwork not being maintained. Dust, dirt, and paper airplanes are collecting on the top surfaces of the art work. No ceiling fans in this space. Surplus natural gas and no existing fireplace.	Remove ceiling-hung artwork and add one large ceiling fan. Add fireplace to lobby.	1.00	\$15,000.00	LS	\$15,000	\$29,000
		Main entry with seasonal temperature control issues during frequent door operation, with ready-made area for vestibule.	Construct vestibule at main entry.	1.00	\$40,000.00	LS	\$40,000	\$78,000
D3060	Controls and Instrumentation	Energy use intensity (EUI) is unknown. Based on observations including problematic control, moderately high energy use is suspected.	Conduct an energy audit to guide capital improvements.	20,491.00	\$1.00	SF	\$20,491	\$40,000
Facility:		RCCMV						
System:		Electrical						\$441,000
D5020	Lighting and Branch Wiring	Mostly fluorescent lighting throughout, except at egress corridors. Failing and costly to replace former library (now fitness equipment room) specialty light fixtures.	Replace with modern LED, ideally in conjunction with lighting control system renewal, including replacement of specialty architectural fixtures with standard fixtures.	20,491.00	\$8.00	SF	\$163,928	\$321,000

Opportunity Summary By Subsystem

City of Redmond
Site: RCCMV Site

Total Site Opportunity Cost: \$4,304,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D5038	Low Voltage Security	Minimal electronic security with anticipated increased risk in the near future.	Upgrade to city standard, including CCTV and card-key access control.	20,491.00	\$3.00	SF	\$61,473	\$120,000
Facility: RCCMV								\$676,000
System: Equipment								
E1010	Commercial Equipment	Warming kitchen with no cooking capability for community center; no laundry.	Upgrade kitchen to non-grease cooking kitchen with Type 2 hoods for oven and dish-wash areas. Includes stacked light-commercial laundry washer and dryer.	1.00	\$90,000.00	LS	\$90,000	\$176,000
E1020	Institutional Equipment	No apparent support for typical community center programs, such as arts and crafts, children's programs, games, and similar.	Conduct community center program study and make shell and core and tenant improvements as needed to better support the community center program. Assume three program spaces needing significant modification to support.	3.00	\$75,000.00	EA	\$225,000	\$441,000
E1030	Vehicular Equipment	No proper loading dock or shipping and receiving area for program and especially kitchen support.	Construct loading dock with shipping and receiving area, including support for segregated food and waste handling.	1.00	\$30,000.00	LS	\$30,000	\$59,000

Opportunity Summary By Subsystem

City of Redmond
Site: RCCMV Site

Total Site Opportunity Cost: \$4,304,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: RCCMV							
System: Special Construction							\$294,000
F1040 Special Facilities							
	High roof overhang to west, facing the park, with multiple smaller overhangs partially protecting a concrete deck area, currently with multiple picnic tables and temporary party light strings, but no other amenities. This area is just outside the kitchen area, but with no direct service from kitchen to this outside amenity area - opportunity to further develop.	Fully develop the west deck amenity area facing the park, including food service window from kitchen, rough-in for portable seasonal gas BBQ, with additional electrical receptacles and permanent lighting to further support activity in this area.	1.00	\$150,000.00	LS	\$150,000	\$294,000
Facility: RCCMV Infrastructure							
System: Site Electrical utilities							\$398,000
G4010 Electrical Distribution							
	Building electrical service with rough-in for approximately six electric vehicle (EV) charging stations, but none currently installed.	Install half the roughed-in EV charging stations (3 of 6).	3.00	\$7,000.00	EA	\$21,000	\$41,000
	LEED Silver building, with mostly open high flat roof, with modest southern exposure, and no current renewable energy.	Install 25-kW photovoltaic power system on roof area with best solar exposure.	25.00	\$6,500.00	EA	\$162,500	\$318,000

Opportunity Summary By Subsystem

City of Redmond
Site: RCCMV Site

Total Site Opportunity Cost: \$4,304,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
G4030	Site Communications and Security	New light rail station opening nearby with no site electronic security.	Conduct crime prevention through environmental design (CPTED) study and implement security measures as recommended, plus install a CCTV perimeter monitoring system.	1.00	\$20,000.00	LS	\$20,000	\$39,000

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Building

17535 NE 104th Street
Redmond, WA 98052

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	2.7			
Facility Condition Index (FCI)	0.11	Observed Deficiencies 2023 - 2028	\$1,020,000	\$1,030,000
Current Replacement Value (CRV)	\$11,550,000	Predicted Renewal Budget 2029 - 2042	\$4,734,000	\$5,510,000
Beginning Budget Year	2023	Opportunities	\$3,712,000	N/A
Escalation	3%			
Discount Rate	1.5%			

Facility Condition Summary

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 precast concrete roof. A lobby and men's and women's changing rooms serve the facility with a 2018 renovation. The building has a 600A service, 208/120V 4-wire underground from Puget Sound Energy. Building lighting inside is all new LED with new lighting control system. All wiring 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 a fire alarm system, but no electronic security. Data includes WiFi. HVAC includes two gas-fired hot water boilers serving pool and pool room heating. Two separate gas-fired domestic hot water heaters. Pool room HVAC includes one new heat recovery 100% outside air handling unit, supplying all new overhead fabric duct, supplemented by jet fans for improved air circulation; all pool room return air is to one set of low side wall return air grilles to east. The original underground perimeter pool deck supply air duct is abandoned in place, with signs of continued collapse, placing the pool and building structure at risk. Two new rooftop gas-pack heat and vent units serve the lobby, office, and locker room areas. There is no mechanical cooling at this facility. Plumbing is city water and sewer with full locker room water closets, urinals, lavatories, and tiled showers. No fire sprinkler.

ACTION NEEDED SOON. While relatively new, the HVAC system has multiple significant issues including: 1) Rusted internal furnace components at two Aeon rooftop units serving the west entry, office and locker room areas, plus at least one unit with collapsed air filter, 2) Pool main HVAC unit AHU-1 with both supply and exhaust fans running at excessively high speeds over 70-Hz, 3) AHU-1 failed outside air flow sensor, 4) AHU-1 possible failed return air duct smoke detector, 5) AHU-1 one collapsed return air filter, 6) Pool return air grilles approaching 50% blocked (may be related to high exhaust fan speed), 7) Failed pool water UV sterilization lamp, 8) Noisy pool water side-stream injection pump, 9) Signs of continued collapse of below pool deck original HVAC supply air duct (behind surge tank), and 10) Partially collapsed pool mechanical room main drain (bottom of catch basin). Noting this system is a heat recovery system without active dehumidification - this may drive excessive air flows by control system in attempt to reduce humidity by additional ventilation. However, during mild weather with near 100% humidity on rainy days, this may be counter-productive. Additionally, there are no overflow roof drains at the west entry, office, and locker room wing; potentially the cause of reported roof leaks along inside walls during heavy rain.

Facility Summary

City of Redmond	17535 NE 104th Street
Redmond Pool Site	Redmond, WA 98052
Redmond Pool Building	

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure			3.0			
A10 Foundations						
A1010 Standard Foundations	1970	1970	3	TRB	12/13/23	Concrete stem walls.
A1030 Slab On Grade	1970	2010	3	TRB	12/13/23	The interior slabs are exposed aggregate, reported fixed and sealed in 2010, and again in 2022. There are signs of settling in several areas. 2020 lobby and locker rooms all new. Pool deck settlement of sub-grade in areas including abandoned under grade duct system. Past pool overfilling has lead to sub-grade erosion of slab.
A20 Basements						
A2020 Basement Walls	1970	1970	3	TRB	12/13/23	Basement for this building is related to the below grade pool mechanical space. Water intrusion in heavy rain events (minor issue).
B Shell			2.8			
B10 Superstructure						
B1020 Roof Construction	1970	1970	3	TRB	12/13/23	Roof is mostly concrete precast spans; signs of leakage at joints. Beams at skylight area show water staining at underside. Wood decking at skylight over pool. The wood shows signs of water staining from past leaks. 2018 all new rigid insulation meeting code. Ongoing leaks between main roof and lobby when scuppers plug.
B20 Exterior Closure						
B2010 Exterior Walls	1970	1970	3	TRB	12/13/23	Walls are hollow brick between concrete pilasters in need of cleaning. Reported that a 2018 investigation noted no structural issues. Areas of high standing seam cladding with paint finish peeling and failing.

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
B Shell		2.8					
B20	Exterior Closure						
B2020	Exterior Windows	1970	2018	2	TRB	12/13/23	Aluminum storefront window system with thermally-glazed units.
B2030	Exterior Doors	1970	2018	2	TRB	12/13/23	All new 2018 storefront doors.
B30	Roofing						
B3010	Roof Coverings	1970	2018	2	TRB	12/13/23	New TPO installed in 2018, dirty and slick. Based on proximity of trees, this roof will need more intensive regular maintenance to keep up with tree debris which will be necessary to thwart damage to systems.
B3020	Roof Openings	1970	2018	3	TRB	12/13/23	Two long, thin skylights at locker rooms. Array of nine pyramid skylights with fall safety arched wire cages over the deep end of the pool. An active leak over the diving board has been reported.
B3030	Projections	1970	1995	3	TRB	12/13/23	Roof parapets are built-up with metal caps and counter flashing. Metal mechanical roof screens.
C Interiors		2.8					
C10	Interior Construction						
C1010	Partitions	1970	2020	2	TRB	12/13/23	The interior walls are hollow brick masonry. All new 2020 interior walls at lobby and locker room remodel.
C1020	Interior Doors	1970	2020	2	TRB	12/13/23	A mix of aluminum storefront and hollow metal. Most office and locker access interior doors replaced in the 2020 remodel.
C1030	Fittings	1970	2020	3	TRB	12/13/23	Lockers in each changing room appear in good condition but are reported as high maintenance (lock system parts no longer available). Wall-mounted mirrors in changing rooms. Staff/lifeguard station.

Facility Summary

City of Redmond	
Redmond Pool Site	
Redmond Pool Building	17535 NE 104th Street Redmond, WA 98052

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
C Interiors				2.8			
C20	Staircases						
C2010	Stair Construction	1970	1970	2	TRB	12/13/23	Metal stairs at mechanical room basement. Some signs of wear and deterioration.
C30	Interior Finishes						
C3010	Wall Finishes	1970	2020	2	TRB	12/13/23	Tile over brick in changing rooms.
C3020	Floor Finishes	1970	2020	3	TRB	12/13/23	2020 epoxy floor surfacing installed improperly. Epoxy replaced and also improperly reinstalled with porous in areas, creating non-uniform discoloration, making the floors look dirty.
C3030	Ceiling Finishes	1970	2020	3	TRB	12/13/23	Painted concrete and exposed wood decking at pool skylights. The wood ceiling, purlins, and concrete beams at the pool skylights are heavily stained.
D Services				2.3			
D10	Vertical Transportation						
D1010	Elevators and Lifts	1970	2020	2	DCS	12/13/23	2020 pool ADA lift.
D1090	Other Conveying Systems	1970	2018	2	DCS	12/13/23	2018 one-ton manual trolley hoist in pool mechanical room. While the trolley was observed on the rail, the hoist was not - assume stored on-site. If not, minor maintenance to install prior to need. 2018 permanent roof access to both low and high roofs.

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.3			
D20 Plumbing						
D2010 Plumbing Fixtures	1970	2020	2	DCS	12/13/23	Most plumbing fixtures replaced in 2020. Porcelain water closets, urinals, and lavatories with chrome trim, mostly automatic infrared. Tiled showers. One dual-height (ADA) hydration station in lobby with drinking fountains and bottle-filler. There are separate men's and women's locker rooms, two private family restrooms, and one staff locker room, but the staff bathroom is used for storage, including both cleaning chemicals and certain food products. Food should not be stored with cleaning chemicals - minor maintenance to provide a designated safe location for food storage.
D2020 Domestic Water Distribution	1970	2019	2	DCS	12/13/23	Two three-inch city water services at basement mechanical room with backflow preventers, no pressure-reducing valve, supplying pool make-up, and domestic water, with copper piping where observed. Two 2019 A.O. Smith gas-fired domestic hot water heaters with 100-gallon and 250 mbh capacity. The system includes a recirculating pump and temperature mixing valve supplying a tempered hot water loop.
D2030 Sanitary Waste	1970	2019	2	DCS	12/13/23	Cast iron drain, waste, and vent (DW&V), pool deck drains, and floor drains in locker room and other spaces. During the recent phased modernization, all the below slab DW&V piping was replaced at the locker rooms and 60% of the pool deck drains were replaced. Floor and sump drains in the pool mechanical room were not renewed and are failing. Tested fixtures flush and drain well with no issues reported.
D2040 Rain Water Drainage	1970	1996	4	DCS	12/13/23	Mostly flat roof draining to perimeter scupper boxes with makeshift PVC leader piping and downspouts to grade and to site storm drain system, resulting in flooding at the SW patio. Lobby and locker room area flat roof to internal roof drains, but missing overflow roof drains, leading to ponding and water intrusion into occupied space below. Heavy tree debris blocks scuppers, leaders, downspouts, and roof drains nearly as fast as facilities maintenance staff can clean.

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.3			
D20 Plumbing						
D2090 Other Plumbing Systems	1970	2019	2	DCS	12/13/23	The entire pool mechanical system was renewed in 2019 including an approximately 5,000-gallon clear well, main pool pump (705 gpm @ 75 ft, 20-hp with variable frequency drive), two KN10 low-NOx gas-fired boilers (1 million btu/hr each providing pool water and space heat with dedicated constant-speed hot water recirculation pumps), two space heating hot water pumps with on-board variable speed control estimated at 3-hp each, one Neptune-Benson Defender SP-33 pool water filter with IR 2-hp air compressor, one Neptune-Benson NB ultraviolet (UV) sterilizer, chlorine tablet based sterilization, CO2 treatment cylinder (estimated 250-gallon, fixed with exterior fill connection), BECSys 5 pool water chemistry control system, water chemistry dosing pump (1.25-hp, constant speed), and CO2 leak detection system. The pool heating system maintains pool water at approximately 80 deg F. The pool water chemistry system is maintained by the contract pool management company (Wave-Aquatics). The UV treatment module was in fault mode during the site visit and appears offline (not sterilizing pool water). The dosing pump was unusually loud for a relatively small pump, and one hot water pump was failed - assume minor maintenance to correct these issues.
D30 HVAC						
D3010 Energy Supply	1970	2019	2	DCS	12/13/23	Natural gas piping to pool mechanical room supplying two boilers and two hot water heaters, plus two rooftop gas-pack units serving the lobby and lockers room areas to west.

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
D Services			2.3			
D30 HVAC						
D3020 Heat Generating Systems	1970	2019	2	DCS	12/13/23	Two KN10 gas-fired hot water boilers, 1-million btu/hr each, each with dedicated constant-speed boiler recirculation pump. The distribution system includes two variable-speed circulation pumps. The two boilers provide heat for both the pool water and pool HVAC systems. One of the hot water system pumps was reported as failed, minor maintenance to repair. The boiler system was operating with supply temperature of 161 deg F and return at 143 deg F with the rooftop AHU-1 coil supply and return temperatures of 120 and 90 deg F respectively; outside air temperature was in the 45 to 50 deg F range.
D3030 Cooling Generating Systems	1970	2019	3	DCS	12/13/23	Cooling is currently ventilation cooling only, no air conditioning. Humidity control is similarly ventilation only. Humidity control by ventilation only is marginal, resulting in apparent condensation on interior surfaces. Multiple staff and patron complaints regarding too hot in pool and locker rooms during warm weather.

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.3			
D30 HVAC						
D3040 HVAC Distribution Systems	1970	2019	3	DCS	12/13/23	Natatorium all new HVAC system in 2019 including Scott rooftop heat recovery 100% outside air ventilation unit with heating hot water coils, but no cooling or dehumidification, with 15-hp each variable speed supply and return/exhaust fans. Pool room overhead perimeter flexible fabric duct. Single return air grille near center east of pool room and about 24 air jet cannons around pool perimeter to improve air circulation and reduce window condensation. The original underground supply air duct system at the pool deck perimeter has been capped off above, but remains in place below with ongoing risk to building and pool structure. Two new heat and vent HVAC systems for the west lobby, office, and locker room wing, with rooftop ductwork. Multiple signs of possible design, installation, operations and maintenance, and use issues including extremely high energy use, apparent retrofits such as air cannons, plugged return air grilles and collapsed air filters, failed AHU-1 Ebtron air flow device, and pool air handling unit fans at excessively high speed (over 70 Hz). One large exhaust fan ventilating the pool mechanical room. It appears most or all the original locker room area exhaust fans have been replaced by the two new heat recovery heat and vent units, RTU-1 and -2.
D3050 Terminal and Package Units	1970	2019	3	DCS	12/13/23	Two 2019 Aaon gas furnace heat and vent rooftop units RTU-1 and -2, with heat wheel heat recovery serving lobby, office, and locker room area. These two units were reportedly installed, then sat unused and unprotected for one to two years, resulting in moisture damage to controls and other internal components; one of the units has a collapsed filter - minor maintenance to replace. One 2019 electric unit heater in the pool mechanical room. One old potentially failed electric cabinet unit heater in the electrical room - minor maintenance to replace if failed.

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			2.3			
D30 HVAC						
D3060 Controls and Instrumentation	1970	2019	3	DCS	12/13/23	All new Alerton networked control system, reportedly communicating with city facilities office. Despite all new controls, suboptimal operation is indicated by extremely high energy use, and excessively high pool HVAC AHU-1 fan speeds (over 70-Hz). Current energy use intensity (EUI) is 350, which is 479% of the WA State Clean Buildings target.
D3090 Other HVAC Systems and Equipment	2020	2020	2	DCS	12/13/23	Jet fans at pool room perimeter ceiling area to improve air circulation and reduce condensation at windows.
D40 Fire Protection						
D4030 Fire Protection Specialties	1970	2020	2	DCS	12/13/23	Fire extinguishers, first aid kit, and AED.
D50 Electrical						
D5010 Electrical Service and Distribution	1970	2019	2	DCS	12/13/23	All new electrical system in 2019 with Eaton Pow-R-Line 208V, three-phase, 600A main distribution panel with surge suppressor and feeding distribution panels (DPs) A, B, C, plus pool room HVAC AHU-1 and pool pump PMP-1. DP-A & -C are 208V, 225A, both in the main electrical room. DP-B is 208V, 100A, located in the office. DP-A & -C have significant spare capacity, whereas DP-B is mostly full. No issues reported.
D5020 Lighting and Branch Wiring	1970	2020	2	DCS	12/13/23	All new LED lighting throughout with new Precision Electric Group lighting control panel located in the pool staff office. Prior (2013) lack of circuits and circuits tripping, all reportedly resolved by the 2020 modernization.
D5032 Low Voltage Communication	1970	2018	2	DCS	12/13/23	Telephone, public address with music, and pool program scoreboards.

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Building

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				2.3			
D50	Electrical						
D5037	Low Voltage Fire Alarm	1970	2019	2	DCS	12/13/23	Building fire alarm system is new with Honeywell Gamewell S3 fire alarm control panel located in the office. Beam detection in spectator area has been problematic due to high humidity, but has reportedly been adjusted and working well now. The pool HVAC AHU-1 return air duct smoke detector appears failed (no pilot), and has reportedly been problematic since installation in 2019.
D5039	Low Voltage Data	1970	2020	3	DCS	12/13/23	Data service with WiFi and no issues reported.
D5090	Other Electrical Systems	1970	2021	2	DCS	12/13/23	Central OnLine emergency lighting inverter rated at 6 kVA with 90 minutes back-up time. Batteries are CSB HRL 12330W-FR sealed lead-acid, reportedly with code compliance concerns regarding hydrogen venting and/or spill control, given electric resistance heat immediately adjacent to the inverter and no apparent ventilation for the electrical room - minor maintenance to fully investigate code requirements and improve the electrical room as needed to comply, such as a hydrogen detector interlocked with spark-proof exhaust fan. Under normal conditions, sealed batteries should not release hydrogen. Limited spill containment appears built in to the OnLine battery rack trays, same as ventilation, minor maintenance to investigate code requirements and modify installation as needed. Lighted exit signs are provided.
E Equipment and Furnishings				3.0			
E10	Equipment						
E1010	Commercial Equipment	1995	2020	4	DCS	12/13/23	While laundry hook-up is provided in the staff locker room, the washer and dryer are missing - minor maintenance to install. Three newer vending machines in lobby. Makeshift staff kitchenette in staff locker room adjacent to cleaning chemicals.
E1020	Institutional Equipment	2010	2020	3	DCS	12/13/23	Pool equipment with no issues reported except for problematic floating pool divider platform.

Facility Summary

City of Redmond	
Redmond Pool Site	17535 NE 104th Street
Redmond Pool Building	Redmond, WA 98052

Facility Components		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
Systems							
E Equipment and Furnishings				3.0			
E10	Equipment						
E1090	Other Equipment	1970	2020	3	DCS	12/13/23	Limited pool program equipment storage, with significant storage around the pool deck.
E20	Furnishings						
E2010	Fixed Furnishings	1970	2020	2	TRB	12/13/23	Guard station office casework and solid surface reception counter. Fixed wood locker room benches.
F Special Construction							
F10	Special Construction						
F1040	Special Facilities	1970	2010	2	DCS	12/13/23	In-ground indoor swimming pool. Six lanes. Gutter is all around perimeter of pool set up with a 25-yard lap swimming at deep end. A movable bulkhead separates a shallow end. One-meter diving board appears shut down. Reportedly, most or all other previous (2013) pool safety report issues were resolved during the 2020 modernization - minor maintenance to confirm all addressed. Reportedly, the pool was completely drained and fully replastered during the 2020 modernization.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

A1030	Slab On Grade	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	2,500	\$10.00	SF	\$25,000	\$49,000

Deficient Material: Slab on Grade

Concern reported about pool deck settlement of sub-grade erosion in areas including abandoned under grade duct system. Past pool overfilling has lead to sub-grade erosion below slab that filled gravel and earth into mechanical basement.

Remedial Action:

Investigate and locate voids with ground-penetrating radar or other technology. Core and injection fill with structural fill foam to stabilize systems where voids are identified.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Redmond Pool Site				Discount Rate 1.5%	
Facility: Redmond Pool Building					

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1,000	\$6.50	SF	\$6,500	\$13,000

Deficient Material: Metal Siding
Areas of high standing seam cladding with paint finish peeling and failing.

Remedial Action:
Strip, prime, and repaint with exterior rated metal industrial paint coating.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

C3020	Floor Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2,000	\$10.50	SF	\$21,000	\$41,000

Deficient Material: Floor Finishes
Epoxy floors are porous in areas, creating non-uniform discoloration and are hard to clean, making the floors look dirty.

Remedial Action:
In lieu of stripping and reinstalling existing flooring, investigate possibility of coating with new non-slip pool deck traffic coating over existing.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Redmond Pool Site				Discount Rate 1.5%	
Facility: Redmond Pool Building					

C3030	Ceiling Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1,500	\$12.00	SF	\$18,000	\$35,000

Deficient Material: Wood
The wood purlins and ceiling at the pool skylights, in addition to the concrete beams are heavily stained.

Remedial Action:
Clean stains from materials. Prime and paint or stain exposed decking and wood purlins.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Redmond Pool Site				Discount Rate 1.5%	
Facility: Redmond Pool Building					

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2	\$5,600.00	EA	\$11,200	\$22,000

Deficient Material: Floor Drains
Pool mechanical room floor drain is plugged and backs-up. The sump pit is damaged with collapsing main drain line.

Remedial Action:
Renew pool mechanical room floor and sump drains.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

D2040	Rain Water Drainage	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: Downspouts
PVC roof drain leaders and downspouts are makeshift, failing, and readily plugged by tree debris. Scupper box overflows are undersized and quickly blocked by tree debris.

Remedial Action:
Design and install a robust engineered scupper, leader, and downspout system to include high-capacity debris screens; coordinate with pool and facility maintenance staff to ensure maintainability of the roof drain system.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

D2040	Rain Water Drainage	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	2	\$4,000.00	EA	\$8,000	\$16,000

Deficient Material: **Overflow Roof Drains**
No overflow roof drains for lobby and locker room roof area, resulting in water intrusion into occupied space below.

Remedial Action:
Install overflow roof drains per code. This is in addition to separate deficiency on overall roof drain system.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	200	\$1,000.00	LF	\$200,000	\$392,000

Deficient Material: Ductwork
Underground duct has corroded, collapsed, and failed, potentially leading to ongoing building and pool system structural damage.

Remedial Action:
Fill duct with solid material to prevent further collapse and structural failure of the building or pool.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: Pool HVAC

Pool room HVAC system return air grille partially blocked by lint on screen. Pool room HVAC AHU-1 unit on roof has collapsed outside air filter, contaminating the heat recovery core with dirt and debris. Both AHU-1 exhaust and supply fans running at excessive speed (over 70-Hz) with little or no pool room activity. Use of air cannons for supplemental air circulation and unclear ventilation at pool surface.

Remedial Action:

Clean and maintain pool room HVAC system, including cleaning AHU-1 heat recovery core where contaminated from failed filters. Correct AHU-1 fan controls to operate fans within safe limits. Investigate air quality at pool surface. Check flexible duct for proper air distribution and adjust air cannon use accordingly.

Action Type:

Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

D3040	HVAC Distribution Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2	\$4,100.00	EA	\$8,200	\$16,000

Deficient Material: Rooftop Ductwork
Rooftop ductwork for lobby, office, and locker room areas, blocking access to rooftop units for maintenance. Climbing over ductwork is damaging the ductwork and is a safety risk for maintenance staff.

Remedial Action:
Install several fixed duct bridges to facilitate safe access to equipment (RTU-1 and -2).

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Redmond Pool Site				Discount Rate 1.5%	
Facility: Redmond Pool Building					

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2	\$7,000.00	EA	\$14,000	\$27,000

Deficient Material: Make-Up Air Unit

The two lobby, office, and locker room rooftop units were installed, then reportedly left in place without being laid-up for one to two years, and have had controls and other internal component failures since.

Remedial Action:

Fully factory service RTU-1 and -2 and restore to like-new condition.

Action Type:

Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

D3060	Controls and Instrumentation	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	12,554	\$1.25	SF	\$15,693	\$31,000

Deficient Material: Controls

High energy use intensity (EUI) of 350, which is 479% of State target for pool buildings, with signs of suboptimal control, including extremely high AHU-1 exhaust and return fan speeds, suspected in part to attempt to maintain inside humidity by increasing outside air flow, but outside air is 100% rH due to wet weather. The high speed of AHU-1 fans creates excessive noise in the park and surrounding community. Additionally, there appears to be little or no insulation at walls and roof.

Remedial Action:

Conduct energy audit and tune-up the control system to sharply reduce energy use, and wear and tear on equipment, plus excessive noise to the surrounding community. Implement cost-effective energy conservation and efficiency measures (ECMs & EEMs). This deficiency budget for audit and controls tune up only. ECMs might be on the order of \$150K to improve envelope, retrofit pool room heat recovery dehumidification, or similar.

Action Type:

Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Redmond Pool Site				Discount Rate 1.5%	
Facility: Redmond Pool Building					

D4010	Fire Protection Sprinkler Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	12,554	\$6.00	SF	\$75,324	\$148,000

Deficient Material: Fire Sprinkler System
No fire sprinkler.

Remedial Action:
Install fire sprinkler.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

D5037	Low Voltage Fire Alarm	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$5,000.00	EA	\$5,000	\$10,000

Deficient Material: Duct smoke detector
Failed main air handling unit return air duct smoke detector. Reportedly, this issue has persisted through nearly one dozen repairs and/or replacements.

Remedial Action:
Fully investigate the root cause of duct smoke detector failure and replace with a more robust detection system considering pool room HVAC service environment with high humidity and trace airborne chemical contaminants.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

E1020	Institutional Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$15,000.00	LS	\$15,000	\$29,000

Deficient Material: Pool divider
Aging pool divider increasingly difficult to float and move.

Remedial Action:
Renew pool divider.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

E1090	Other Equipment	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$60,000.00	LS	\$60,000	\$118,000

Deficient Material: Pool Equipment Storage
Limited pool program equipment storage.

Remedial Action:
Provide convenient, safe, and secure pool program equipment storage, such as a small modular building directly connected to the pool building.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Building							Discount Rate 1.5%

F1040	Special Facilities	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$7,500.00	LS	\$7,500	\$15,000

Deficient Material: **Diving Board**
The existing one-meter diving board was previously reported as corroded and appears still closed to use.

Remedial Action:
Analyze if the pool diving profile meets current code and replace the diving board.

Action Type:
Code Issue



Facility Summary

City of Redmond	
Redmond Pool Site	17535 NE 104th Street
Redmond Pool Infrastructure	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, wood storage, two parking lots, a playground, and pedestrian paths. The asphalt parking lots are small, with stalls intermingled between trees. One is accessed off of NE 104th Street, and the other from 176th Avenue NE. Utilities include city water and sewer, but no fire. Storm appears managed by the Parks department. Puget Sound Energy power and natural gas. Telecom from local purveyors. No site electronic security.

DRAFT

Facility Summary

City of Redmond
Redmond Pool Site
Redmond Pool Infrastructure

17535 NE 104th Street
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework							
G20 Site Improvements							
G2010	Roadways	1970	1996	4	TRB	12/13/23	Asphalt drive and concrete curbs. Pitted with root uplift, potholes, and heavy alligating at entry. Settlement around catch basins.
G2020	Parking Lots	1970	1970	4	TRB	12/13/23	Upper and lower asphalt parking lots. Tree root intrusion and uplift issues and deterioration.
G2030	Pedestrian Paving	1970	1970	3	TRB	12/13/23	There are two 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 drive loops. Drainage issues reported on both areas, panel settlement beginning. 2018 paved concrete entry plaza.
G2040	Site Development	2000	2000	3	TRB	12/13/23	Monument sign, waste bins. Old non-functional concrete bike rack abandoned in place with new powder-coated steel bike rack at entry.
G2050	Landscaping	1970	1970	3	TRB	12/13/23	Site is mostly wooded with mature evergreen trees and native plant understory. Ground cover is bark or grass. There is newer ornamental landscaping near the front entry. Plants are in good condition. Trees adjacent to pool building cause constant maintenance issues and degrade structures.
G30 Site Civil / Mechanical Utilities							
G3010	Water Supply	1970	1970	3	DCS	12/13/23	Two apparent separate water services to the building for domestic water and the pool, each with separate backflow preventors in the pool mechanical room. No observed site specific irrigation - this is assumed provided by the parks department, if any. No fire service to the building observed.

Facility Summary

City of Redmond	
Redmond Pool Site	
Redmond Pool Infrastructure	17535 NE 104th Street Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3020 Sanitary Sewer	1970	2010	4	DCS	12/13/23	Sanitary sewer service to building provided from City of Redmond system. While day-to-day operations report no issues, periodic pool draining reportedly overwhelms the city system and floods neighboring properties.
G3030 Storm Sewer	1970	1970	3	DCS	12/13/23	Site storm water runoff is collected in an underground pipe and catch basin system. Roof drains generally connect to underground piping. The overall site storm drainage system is assumed managed by the parks department. Flooding is reported at the SW patio area, and near some downspouts. Flooding near downspouts is assumed due excessive tree debris blocking flow - minor ongoing maintenance to keep all roof and roof drains clear of tree debris.
G3040 Heating Distribution	1970	1970	4	DCS	12/13/23	Past reported 1970 underground fuel storage tank to east, north of boiler room; past reports suggest abandoned in place. Investigate and decommission per applicable regulations if not already - minor maintenance to investigate.
G3060 Fuel Distribution	1970	2018	2	DCS	12/13/23	Natural gas meter high-capacity rotary meter at south side of pool mechanical room with Puget Sound Energy meter difficult to read inside fenced enclosure but approximately No. 137XX22, with 3,000 cfh capacity delivered at 2 psig via seismic shut-off valve.
G40 Site Electrical utilities						
G4010 Electrical Distribution	1970	2018	2	DCS	12/13/23	Electrical upgrade in 2018 but did not observe the utility transformer. Power from transformer is underground to 2018 service entry to NE with Puget Sound Energy meter No. P152754397, delivered at 208V, three-phase.

Facility Summary

City of Redmond	
Redmond Pool Site	
Redmond Pool Infrastructure	17535 NE 104th Street Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G40 Site Electrical utilities						
G4020 Site Lighting	1970	2011	3	DCS	12/13/23	Approximately one dozen newer building exterior wall-packs with newer lamps. Half of the wall-packs are on during daylight hours - minor maintenance to tune-up the control system so lights are on at night and off during the day. Older pole lights in the parking areas with some failed or failing, and reportedly unable to get new power to old poles.
G4030 Site Communications and Security	1970	2018	3	DCS	12/13/23	Telecom services from regional purveyors; no site electric security.
G90 Other Site Construction						
G9090 Other Site Systems	2000	2000	4	DCS	12/13/23	Approximately 8-foot by 10-foot wood storage shed on pier blocks at northeast corner of the building in deteriorating condition - roof is covered in tree debris and moss. Minor maintenance to clean the shed and roof.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Infrastructure							Discount Rate 1.5%

G2010	Roadways	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1,000	\$25.00	SF	\$25,000	\$49,000

Deficient Material: Asphalt Road
Asphalt drive pitted with root uplift, potholes, and heavy alligating at entry. Settlement areas including around catch basin.

Remedial Action:
Saw cut, trim roots, recompact base for heavier loads, and repave.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Infrastructure							Discount Rate 1.5%

G2020	Parking Lots	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	1,500	\$10.00	SF	\$15,000	\$29,000

Deficient Material: Parking Lots

Pavement is deteriorating with root uplift, alligating, cracking, and wear. Wood curb is nearing end of life. Curbs are cracking and displaced in some locations. Pavement markings are faded. Asphalt drive and concrete curbs.

Remedial Action:

Cut out worst areas, trim roots, and recompact granular fill. Add top coat to upper lot and repaint parking stall stripes. Replace deteriorated curbs.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond				Escalation 3%	
Site: Redmond Pool Site				Discount Rate 1.5%	
Facility: Redmond Pool Infrastructure					

G2050	Landscaping	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	10	\$1,000.00	EA	\$10,000	\$20,000

Deficient Material: Trees
Large trees drop excessive material on roof, leading to regularly clogged roof drains and scuppers and interior leaks.

Remedial Action:
Limb trees adjacent to building to the maximum extent possible.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

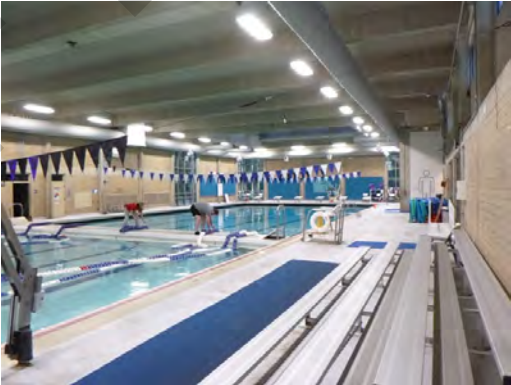
City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Infrastructure							Discount Rate 1.5%

G3020	Sanitary Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	1	\$28,000.00	LS	\$28,000	\$55,000

Deficient Material: Sanitary Sewer
Pool draining overwhelms the city street sewer system, resulting in sewer back-up flooding into neighboring downstream homes.

Remedial Action:
Coordinate with utility department to improve vicinity sewer system and/or provide pool drainage flow limited device to prevent flooding neighboring homes.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Infrastructure							Discount Rate 1.5%

G3030	Storm Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	3	\$4,800.00	EA	\$14,400	\$28,000

Deficient Material: **Patio storm drain**
Minimal SW patio storm drain service resulting in flooding during rainy weather, exacerbated by tree debris.

Remedial Action:
Install additional storm drain catch basins in the SW patio area. This will still require ongoing minor maintenance to keep these drains clear given the heavily-treed site.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Redmond Pool Site							Escalation 3%
Facility:		Redmond Pool Infrastructure							Discount Rate 1.5%

G4020	Site Lighting	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	8	\$3,000.00	EA	\$24,000	\$47,000

Deficient Material: Lighting
Failed and failing parking lot pole-mounted light fixtures; reportedly unable to renew conductors to the poles.

Remedial Action:
Redevelop parking lot lighting in coordination with the parks department, which may require new underground conduit from the pool building electrical room on east side of building, around building to parking area to west.

Action Type:
Other



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond
Site: Redmond Pool Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Redmond Pool Building	A10 Foundations	\$25,000	\$5,000	\$6,000	\$12,960	\$49,000	\$51,000
	B20 Exterior Closure	\$6,500	\$1,300	\$1,560	\$3,370	\$13,000	\$13,000
	C30 Interior Finishes	\$39,000	\$7,800	\$9,360	\$20,218	\$76,000	\$78,000
	D20 Plumbing	\$34,200	\$6,840	\$8,208	\$17,729	\$67,000	\$68,000
	D30 HVAC	\$252,893	\$50,579	\$60,694	\$131,099	\$495,000	\$496,000
	D40 Fire Protection	\$75,324	\$15,065	\$18,078	\$39,048	\$148,000	\$148,000
	D50 Electrical	\$5,000	\$1,000	\$1,200	\$2,592	\$10,000	\$10,000
	E10 Equipment	\$75,000	\$15,000	\$18,000	\$38,880	\$147,000	\$151,000
	F10 Special Construction	\$7,500	\$1,500	\$1,800	\$3,888	\$15,000	\$15,000
	Facility Total	\$520,417	\$104,083	\$124,900	\$269,784	\$1,020,000	\$1,030,000
Redmond Pool Infrastructure	G20 Site Improvements	\$50,000	\$10,000	\$12,000	\$25,920	\$98,000	\$101,000
	G30 Site Civil / Mechanical Utilities	\$42,400	\$8,480	\$10,176	\$21,980	\$83,000	\$85,000
	G40 Site Electrical utilities	\$24,000	\$4,800	\$5,760	\$12,442	\$47,000	\$48,000
	Facility Total	\$116,400	\$23,280	\$27,936	\$60,342	\$228,000	\$234,000
Site Total		\$636,817	\$127,363	\$152,836	\$330,126	\$1,248,000	\$1,264,000

Opportunity Summary By Subsystem

City of Redmond
Site: Redmond Pool Site

Total Site Opportunity Cost: \$3,774,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Redmond Pool Building							
System: Exterior Closure							\$627,000
B2010 Exterior Walls	Limited thermal insulation in existing exterior masonry walls.	Add continuous insulation to exterior walls for increased user comfort and energy savings, and clad with low-maintenance rain screen cladding. This would also alter/update the look of the building.	8,000.00	\$40.00	SF	\$320,000	\$627,000
Facility: Redmond Pool Building							
System: Interior Finishes							\$59,000
C3030 Ceiling Finishes	The wood purlins and ceiling at the pool skylights are heavily stained.	In addition to obscuring staining (see deficiency), consider installing suspended vented prefinished metal or wood ceilings between beams and skylights with mineral fiber acoustic insulation above to further enhance the finished appearance and control acoustics.	1,500.00	\$20.00	SF	\$30,000	\$59,000

Opportunity Summary By Subsystem

City of Redmond
Site: Redmond Pool Site

Total Site Opportunity Cost: \$3,774,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility:	Redmond Pool Building							\$2,222,000
System:	Plumbing							
D2010	Plumbing Fixtures							
		No custodial mop or utility sink.	Develop a custodial space with mop or utility sink and for storage of cleaning supplies and consumables.	1.00	\$30,000.00	LS	\$30,000	\$59,000
		Staff locker room includes lockers, water closet, shower, laundry hook-ups, and shower, but is used primarily for storage. Underutilized electrical room.	Reconfigure electrical room to provide storage area for supplies currently in the staff locker room.	1.00	\$20,000.00	LS	\$20,000	\$39,000
D2030	Sanitary Waste							
		Pool filter backwash 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. The reportedly abandoned underground fuel oil storage tank might be refurbished for this purpose at lower cost.	1.00	\$50,000.00	LS	\$50,000	\$98,000
D2040	Rain Water Drainage							
		Rain water is collected from roof and discharged to site storm system. This water can be filtered and used as pool water make-up, flushing fixtures, or lavatory use.	Install 10,000-gallon rain water harvesting system with pre-filter and make-up to pool water. Investigate use of the reportedly abandoned underground former fuel oil storage tank as the rain water harvesting system cistern.	1.00	\$30,000.00	LS	\$30,000	\$59,000

Opportunity Summary By Subsystem

City of Redmond
Site: Redmond Pool Site

Total Site Opportunity Cost: \$3,774,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
D2040	Rain Water Drainage	Ongoing near impossible maintenance issue with heavy tree debris continually falling on the mostly flat roof, plugging nearly all roof drain paths on a frequent recurring basis.	Assuming the parks department does not want to cut down trees near the pool building, construct a roof-over above the existing roof, covered with metal roofing and engineered roof drainage system requiring minimal maintenance.	12,554.00	\$80.00	SF	\$1,004,320	\$1,967,000
Facility: Redmond Pool Building								
System: HVAC								
D3030	Cooling Generating Systems							\$695,000
		Current cooling and humidity control is ventilation only for pool room, with excessively high energy use, signs of condensation on windows, and staff and patron too hot complaints during warm weather.	Upgrade to a modern pool room dehumidification and cooling system with heat recovery.	1.00	\$310,000.00	LS	\$310,000	\$607,000
		No air conditioning for lobby, office, and locker room areas.	Retrofit with ductless split-Dx heat pump units for lobby, office, and locker room spaces.	5.00	\$9,000.00	EA	\$45,000	\$88,000
Facility: Redmond Pool Building								
System: Electrical								
D5038	Low Voltage Security	No reported building electronic security.	Add city standard electronic security, including card-key access, lobby CCTV, and intrusion detection.	12,554.00	\$3.00	SF	\$37,662	\$74,000

Opportunity Summary By Subsystem

City of Redmond
Site: Redmond Pool Site

Total Site Opportunity Cost: \$3,774,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Redmond Pool Building							
System: Equipment							\$35,000
E1010 Commercial Equipment							
	Makeshift kitchenette in staff locker room adjacent to cleaning chemicals.	Develop proper staff break room, including sink, separate from locker room and custodial room.	1.00	\$18,000.00	LS	\$18,000	\$35,000
Facility: Redmond Pool Infrastructure							
System: Site Electrical utilities							\$62,000
G4010 Electrical Distribution							
	No electric vehicle (EV) charging, with several parking stalls relatively close to the pool building.	Add one double-cable EV charging station, with rough-in for one additional in the future, all at the parking stalls nearest the pool building.	1.00	\$11,500.00	LS	\$11,500	\$23,000
G4030 Site Communications and Security							
	No site electronic security with relatively poor community surveillance. The building is somewhat hidden from the street.	Install city standard CCTV system at building perimeter.	1.00	\$20,000.00	LS	\$20,000	\$39,000

Facility Summary

City of Redmond
Teen Center Site
Teen Center

16510 NE 79th Street
Redmond, WA 98052

Facility Size - Gross S.F.	8,600
Year Of Original Construction	1952
Facility Use Type	Teen 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)	0.23	Observed Deficiencies 2023 - 2028		\$1,931,000
Current Replacement Value (CRV)	\$4,076,000	Predicted Renewal Budget 2029 - 2042		\$1,992,000
Beginning Budget Year	2023	Opportunities		\$944,000
Escalation	3%			\$1,075,000
Discount Rate	1.5%			N/A

Facility Condition Summary

The Teen Center building has previously served as City Hall, fire and police station, and YMCA. Roofing and flashings are approaching end of life with leaks. Windows are inefficient original aluminum single-pane glazing. There is also a large amount of hazardous materials (per 2016 Amec Foster Wheeler hazardous materials survey report), including in the sealed-off basement, reportedly containing abandoned equipment. HVAC is four gas-fired unit heaters, one rooftop gas-pack unit, several electric wall heaters, natural ventilation via operable windows and doors, and exhaust fans for toilet rooms. Plumbing is city water and sewer with one gas-fired domestic hot water heater. Fire sprinkler is dry-pipe throughout. Power is 120/240V, single-phase with newer 400A panel subfeeding two other newer and several older panels. Lighting is mostly older fluorescent with manual control. Building fire alarm system and security alarm system are outdated with minimal capacity, but are working. Building has battery pack emergency wall lights. No diesel generator, no renewable energy, and no electric vehicle charging.

Facility Summary

City of Redmond	16510 NE 79th Street
Teen Center Site	Redmond, WA 98052
Teen Center	

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
A Substructure				3.0			
A10	Foundations						
A1010	Standard Foundations	1952	1952	3	TRB	12/08/23	Poured in place concrete. Some cracks and leaks caused by tree root intrusion.
A1030	Slab On Grade	1952	1952	3	TRB	12/08/23	Concrete slab floor.
A20	Basements						
A2020	Basement Walls	1952	1952	3	TRB	12/08/23	Very small basement area under hose tower with 2-foot wide by 3-foot high tunnel to kitchen area. Closed and abandoned due to hazardous materials including asbestos dust contamination (see 2016 Amec Foster Wheeler Hazardous materials survey report).
B Shell				3.7			
B10	Superstructure						
B1010	Floor Construction	1952	2000	3	TRB	12/08/23	Limited area of raised wood platform at sound studio. Concrete decks inside former hose tower.
B1020	Roof Construction	1952	1952	3	TRB	12/08/23	Wood deck on wood and steel beams on steel columns. Roof deck over multipurpose / showroom has been damaged by earlier leaks and paint peeling. Based on age, likely contains lead.

Facility Summary

City of Redmond
Teen Center Site
Teen Center

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
B Shell			3.7			
B20 Exterior Closure						
B2010 Exterior Walls	1952	1952	4	TRB	12/08/23	Exterior stucco with rock aggregate on concrete block masonry (assumed based on age to be unreinforced). Stucco peeling off all around hose tower, temporary protective cement board cover bolted over to hide failing stucco is now water damaged with bubbling paint. Interior of walls with white skim coating on plaster and CMU also contain asbestos (per 2016 Amec Foster Wheeler hazardous materials survey report). Other areas of cracks and damage to stone stucco finish (minor maintenance to clean, repair, seal, and repaint).
B2020 Exterior Windows	1952	1952	5	TRB	12/08/23	Original aluminum frames (warped and some daylight visible), single-pane windows some broken panes, some replaced with plastic. Windows contain hazardous materials (per 2016 Amec Foster Wheeler hazardous materials survey report): lead-based paint and asbestos window putty. Windows are allowing air infiltration and some water which produces condensation (silicon caulk holding Plexiglas panes in some frames).
B2030 Exterior Doors	1952	2022	3	TRB	12/08/23	Hollow metal doors. Aged overhead doors to patio.
B30 Roofing						
B3010 Roof Coverings	1952	2004	4	TRB	12/08/23	Torch down roof and flashings nearing end of life with patches, bubbling, four areas of roof leaks at flashings. The area around the hose tower is particularly concerning. Areas of ponding.
B3030 Projections	1952	1952	4	TRB	12/08/23	Fabric awnings on steel frames (fabric recently replaced). Original hose tower appears to be constructed of unreinforced masonry with poor mortar bed construction. Mechanical screens constructed with white plastic lattice screwed into wood posts and frame. Lattice material broken away and loose on areas and dirty (minor maintenance to clean and resecure).

Facility Summary

City of Redmond
Teen Center Site
Teen Center

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
C Interiors			3.2			
C10 Interior Construction						
C1010 Partitions	1952	1952	3	TRB	12/08/23	Partitions on frame or masonry with lath and plaster.
C1020 Interior Doors	1952	1952	3	TRB	12/08/23	Interior wood doors and frames. Paint damage and wear especially on restroom doors. Lead-based paint is likely present, so any maintenance touch up should follow safety regulations.
C1030 Fittings	1952	1952	3	TRB	12/08/23	Rubber base with asbestos mastic (per 2016 Amec Foster Wheeler hazardous materials survey report). Some minor graffiti on toilet partitions.
C20 Staircases						
C2010 Stair Construction	1952	1952	3	TRB	12/08/23	Hose tower metal ladder, wood stair at recording studio.
C2020 Stair Finishes	1952	2000	3	TRB	12/08/23	Carpet at recording studio.
C30 Interior Finishes						
C3010 Wall Finishes	1952	2018	3	TRB	12/08/23	Paint appears in good condition with minor areas of touch-up recommended. However, interior wall surfaces contain asbestos (per 2016 Amec Foster Wheeler hazardous materials survey report). Lead-based paint also assumed.
C3020 Floor Finishes	1952	2000	3	TRB	12/08/23	Vinyl composition tile (VCT), carpet, and rubber tile. Broadloom carpets with runs/tears, wear, and stains. Mastic and flooring materials below current flooring contain asbestos (per 2016 Amec Foster Wheeler hazardous materials survey report).
C3030 Ceiling Finishes	1952	1980	4	TRB	12/08/23	Open ceilings, suspended acoustical ceiling tile dated, (does not meet current seismic code and minor areas of broken tiles). Original glue-up fiberboard panel ceiling tiles. Ceilings contain asbestos (per 2016 Amec Foster Wheeler hazardous materials survey report).

Facility Summary

City of Redmond
Teen Center Site
Teen Center

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.3			
D20 Plumbing						
D2010 Plumbing Fixtures	1952	1980	3	DCS	12/08/23	Porcelain, fiberglass, and stainless steel plumbing fixtures with chrome trim, with tank-type water closets, urinal in men's room, and several showers no longer in use. One newer single-height (non-ADA) drinking fountain. Plumbing fixtures are aged and worn, with some slow-draining, but still mostly functional. Back-ups are due to waste piping, not fixtures. While there are relatively few fixtures, staff report the fixture quantities are adequate for most needs.
D2020 Domestic Water Distribution	1952	1980	4	DCS	12/08/23	City water with mix of older galvanized and newer copper distribution piping. 2013 Rheem gas domestic hot water heater with 50-gallon and 38 mbh capacity. Observed domestic hot water piping is missing insulation - minor maintenance to install where accessible. No hot water recirculation pump, but not necessary. Irrigation system with reduced pressure backflow prevention from domestic cold water at service entry at base of hose tower.
D2030 Sanitary Waste	1952	1952	4	DCS	12/08/23	Drain, waste, and vent piping is a mix of cast iron and ABS. Several floor drains in toilet rooms. Several plumbing fixtures are slow draining and flushing.
D2040 Rain Water Drainage	1952	1980	4	DCS	12/08/23	Entire multi-level roof sheet flows to north to two sets of gutters; one east and one west, each with downspouts to grade. Gutters and downspouts are damaged. Ponding on roof in several locations with leakage - see B3010 Roof Coverings.

Facility Summary

City of Redmond
Teen Center Site
Teen Center

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.3			
D30 HVAC						
D3010 Energy Supply	1952	1980	3	DCS	12/08/23	Natural gas from Puget Sound Energy via meter number 804499 with 425-cfh capacity; gas distribution to four unit heaters, one rooftop gas-pack unit, and one domestic hot water heater. No seismic valve at gas service entry - minor maintenance to install. Gas service entry piping appears to pass through the inaccessible (due to asbestos contamination) basement. Short run of gas piping through roof to rooftop unit is rusted and corroding - minor maintenance to clean and preserve. No gas pressure issues reported.
D3020 Heat Generating Systems	1952	1952	4	DCS	12/08/23	Reportedly abandoned original boiler in sealed-off basement due to asbestos contamination. The boiler chimney is integrated into the hose tower, and still in use by gas-fired water heater flue exhaust, but the condition of the flue is unclear.
D3030 Cooling Generating Systems	1952	1952	4	DCS	12/08/23	No permanent cooling systems, except for rooftop unit serving the sound studio. Portable Dx cooling is used for office and support area cooling during summer months. Large portable fans are used for event space cooling.
D3040 HVAC Distribution Systems	1952	1980	4	DCS	12/08/23	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. Space-by-space exhaust fans for restrooms and several other spaces, but not the kitchen.
D3050 Terminal and Package Units	1952	2004	3	DCS	12/08/23	Four 2004 gas-fired vented ceiling-mounted unit heaters serving larger spaces (multipurpose, activity, and game room). One aging 2004 rooftop gas-pack unit with rooftop internally insulated galvanized sheet metal ductwork. Mix of 1980 and 2000 electric resistance wall heaters for smaller spaces - minor maintenance to replace wall heaters individually as they fail.

Facility Summary

City of Redmond
Teen Center Site
Teen Center

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services			3.3			
D30 HVAC						
D3060 Controls and Instrumentation	1952	2004	3	DCS	12/08/23	Programmable thermostats for rooftop unit and gas-fired unit heaters, with manual thermostats for wall heaters. Reverse acting manual thermostat for former computer room transfer air fan. Thermostats are aging, but minor maintenance to replace when associated equipment is replaced.
D40 Fire Protection						
D4010 Fire Protection Sprinkler Systems	1990	1990	3	DCS	12/08/23	Four-inch fire service from city with post indicator valve and fire department connection in yard to southwest underground to inside riser room to west, with backflow preventer, supplying one 2.5-inch dry-pipe riser serving entire building, including outside sprinkler head under multipurpose room garage door.
D4030 Fire Protection Specialties	1990	2015	3	DCS	12/08/23	Fire extinguishers in cabinets. AED in cabinet. First aid kit in administration area.
D50 Electrical						
D5010 Electrical Service and Distribution	1952	2000	3	DCS	12/08/23	Electrical panel main distribution panel (MDP) in custodial room at the base of the hose tower. MDP is Square D, 120/240V, single-phase, 400A, in turn subfeeding two newer Square D branch panels and other small older Square D load centers in the building. All panels are beaker-type, grounded but with no surge protection. No issues reported other than circuit trips due to overloading with excessive portable HVAC equipment.
D5020 Lighting and Branch Wiring	1952	2000	3	DCS	12/08/23	Interior lighting is fluorescent with manual control; fixtures are 2x4 troffer, fluorescent industrial, recessed down-lights, and 1x4 wrap around. Lamps are T8 fluorescent.
D5032 Low Voltage Communication	1952	1990	3	DCS	12/08/23	Several abandoned plain old telephone service panels, newer VoIP phone handsets for staff, several wall-mounted TVs - minor maintenance to demolish abandoned communications cabling, equipment, and devices.

Facility Summary

City of Redmond
Teen Center Site
Teen Center

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems		Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
D Services				3.3			
D50	Electrical						
D5037	Low Voltage Fire Alarm	1952	2004	4	DCS	12/08/23	The building has an obsolete zoned fire alarm system, Fire-Lite #5012, four zones, hardwired system; but with newer AED wireless alarm transmitter. Fire alarm device consists of horn strobes, pull stations, and old heat detectors. Fire alarm system is outdated but reportedly operable.
D5038	Low Voltage Security	1952	2004	3	DCS	12/08/23	The building has a simple burglar alarm type security system including perimeter monitoring, motion detectors, and keypad. No card-key access. No CCTV. Security alarm system is outdated but working.
D5039	Low Voltage Data	1952	2000	3	DCS	12/08/23	Building has a Cat-6 data/voice system with intermediate distribution frame in custodial space at base of hose tower, and includes several newer WiFi antennas. Staff report existing system is adequate for current needs.
D5090	Other Electrical Systems	1952	1990	3	DCS	12/08/23	Building has no standby or emergency power. Emergency lighting includes battery-backed egress pathway wall-mounted fixture and lighted exit signs, but with poor coverage in some areas - minor maintenance to add where missing.
E Equipment and Furnishings				3.0			
E10	Equipment						
E1010	Commercial Equipment	1952	2000	3	DCS	12/08/23	Kitchen appliances.
E1020	Institutional Equipment	1952	2004	3	DCS	12/08/23	Limited game and art program equipment; more extensive music event equipment.
E1030	Vehicular Equipment	1952	2000	3	DCS	12/08/23	Sectional doors with aging motor operators, but no issues reported.

Facility Summary

City of Redmond	
Teen Center Site	16510 NE 79th Street
Teen Center	Redmond, WA 98052

Facility Components

Systems	Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments
E Equipment and Furnishings			3.0			
E20 Furnishings						
E2010 Fixed Furnishings	1952	2000	3	TRB	12/08/23	Horizontal blinds, some discolored. Plastic laminate on wood counter and vanity aged and delaminating.
F Special Construction						
F10 Special Construction						
F1030 Special Construction Systems	2000	2000	3	DCS	12/08/23	Sound room with recording studio equipment.

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

A2020	Basement Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	40	\$500.00	SF	\$20,000	\$39,000

Deficient Material: Basement
Tunnel contains hazardous materials including asbestos dust contamination.

Remedial Action:
Abate hazardous materials prior to demolition. In the meantime, install warning signage to prevent unintended access and exposure.

Action Type:
Life Safety

Old Fire Station – Basement	Hard mudded piping manifold insulation (white, hard)	10 LF	Potential for damage	Good
Old Fire Station – basement / piping tunnels, in walls and ceilings	Hard mudded water piping fittings, elbows	350 Each	Potential for damage	Good
Old Fire Station – Basement / piping tunnels, in walls and ceilings	Aircell piping insulation (fabric tagging on cardboard layers)	2,500 LF	Potential for damage	Good
Old Fire Station – basement boiler	Assumed ACM Boiler breach gasket	2 Each	Limit potential for fiber release	Good
Old Fire Station – basement boiler	PACM Boiler breach insulation	10 SF	Potential for damage	Good
Old Fire Station – basement boiler	Assumed ACM Boiler refractory brick	50 SF	Limit potential for fiber release	Good

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

B1020	Roof Construction	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	3,500	\$15.00	SF	\$52,500	\$103,000

Deficient Material: Wood Deck
Roof deck over multipurpose / showroom has been damaged by earlier leaks and paint peeling. Based on age, likely contains lead.

Remedial Action:
Test for lead and abate if present. Otherwise, strip paint, repair damaged boards, prime, and repaint.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	3,000	\$38.00	SF	\$114,000	\$223,000

Deficient Material: Cement Board Siding
Stone/stucco plaster at hose tower failing, temporary cement board siding near main entry now water damaged with peeling paint.

Remedial Action:
Remove hose tower siding and flashings, install new flashing and cladding system on entire hose tower. (Consider modern system with weather drainage plane behind vented rain screen cladding and all new weather and cap flashings.)

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

B2010	Exterior Walls	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$60,000.00	LS	\$60,000	\$118,000

Deficient Material: Plaster

Although in good condition and painted, interior surfaces of exterior walls with white skim coating on plaster and CMU contain asbestos and likely lead-based paint.

Remedial Action:

Do no work impacting interior wall surfaces. Abate interior wall surfaces prior to any work or demolition.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

B2020	Exterior Windows	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2024	28	\$2,000.00	EA	\$56,000	\$110,000

Deficient Material: Windows

Original aluminum frames (warped and some daylight visible), single-pane windows, some broken panes, some replaced with plastic. Windows contain hazardous materials (per 2016 Amec Foster Wheeler hazardous materials survey report), lead-based paint and asbestos window putty. Windows are allowing air infiltration and some water which produces condensation.

Remedial Action:

Abate and remove and replace frames and windows with high-efficiency windows and frames. Properly dispose of hazardous materials.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

B3010	Roof Coverings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	8,600	\$32.00	SF	\$275,200	\$539,000

Deficient Material: Torch Down Roof

Torch down roof and flashings nearing end of life with patches, bubbling, and four areas of roof leaks at flashings. The area around the hose tower is particularly concerning. Assume limited to code minimum insulation from time of past reroof (would not meet current code). Gutters and downspouts failing.

Remedial Action:

Remove flashing and roofing. Provide rigid insulation to meet or exceed code and tapered to provide positive drainage. Install new flashing systems, roofing, downspouts, and gutters. See also opportunity described under B1020 Roof Construction to add rigid insulation at time of roofing replacement.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

B3030	Projections	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$80,000.00	LS	\$80,000	\$157,000

Deficient Material: Hose Tower

Original hose tower appears to be constructed of unreinforced masonry with poor mortar bed construction (broken CMU and gaps in mortar bed visible from interior of shaft). No seismic upgrade evident.

Remedial Action:

Conduct a seismic investigation and analysis and conduct reinforcing to tower (perhaps attaching a steel frame on interior) as recommended by engineers to reduce risk of collapse in a seismic event.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

C1030	Fittings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$7,000.00	LS	\$7,000	\$14,000

Deficient Material: Rubber Base
Rubber base with asbestos mastic (per 2016 Amec Foster Wheeler hazardous materials survey report).

Remedial Action:
Do no work impacting interior wall systems unless abatement occurs. Abate base and replace with new.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

C3010	Wall Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	1	\$25,000.00	LS	\$25,000	\$49,000

Deficient Material: Paint

Paint appears in good condition with minor areas of touch-up recommended. However, interior wall surfaces contain asbestos (per 2016 Amec Foster Wheeler hazardous materials survey report). Lead-based paint also assumed.

Remedial Action:

Do no work impacting interior wall surfaces. Abate interior wall surfaces prior to any work or demolition.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

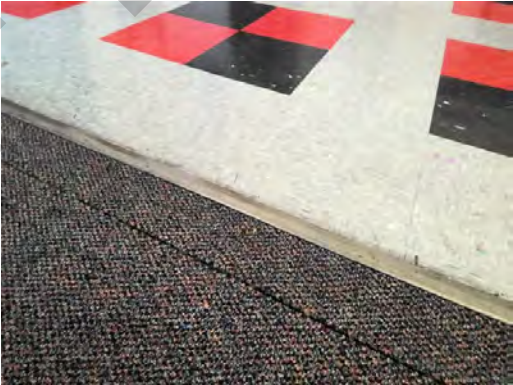
Escalation 3%
Discount Rate 1.5%

C3020	Floor Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2028	3,000	\$7.50	SF	\$22,500	\$44,000

Deficient Material: Carpet
Broadloom carpets with runs/tears, wear, and stains. Mastic and flooring materials below current flooring contain asbestos (per 2016 Amec Foster Wheeler hazardous materials survey report).

Remedial Action:
Replace carpet with carpet tile. Use caution and proper procedures to not disrupt asbestos-containing materials.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

C3030	Ceiling Finishes	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2024	4,000	\$10.00	SF	\$40,000	\$78,000

Deficient Material: Ceiling Finishes

Suspended acoustical ceiling tile dated and grid does not meet current seismic code and minor areas of broken tiles. Original glue-up fiberboard panel ceiling tiles. Ceilings contain asbestos (per 2016 Amec Foster Wheeler hazardous materials survey report).

Remedial Action:

Abate hazardous materials, demo remaining ceilings. Install new grids (to current code) and install new ceiling tiles.

Action Type:

Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D1090	Other Conveying Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		5	2023	2023	1	\$5,000.00	EA	\$5,000	\$10,000

Deficient Material: Roof Access
No roof access to maintain roof and rooftop equipment.

Remedial Action:
Provide roof access to facilitate maintenance, including rooftop HVAC unit service. Install access door from existing hose tower to roof.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D2010	Plumbing Fixtures	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	5	\$3,500.00	EA	\$17,500	\$34,000

Deficient Material: Plumbing Fixtures
Some fixtures aged and worn.

Remedial Action:
Replace aged and worn fixtures.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D2020	Domestic Water Distribution	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	8,600	\$1.55	SF	\$13,330	\$26,000

Deficient Material: Drain, Waste, and Vent
Suspected segments of original galvanized piping in concealed spaces.

Remedial Action:
Replace with copper and/or PEX.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D2030	Sanitary Waste	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	8,000	\$3.85	SF	\$30,800	\$60,000

Deficient Material: Waste piping
Aged waste piping with several slow draining and flushing fixtures and reports of failing waste piping under the floor slab.

Remedial Action:
Renew drain, waste, and vent piping system.

Action Type:
Code Issue



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D2040	Rain Water Drainage	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	100	\$50.00	LF	\$5,000	\$10,000

Deficient Material: Gutter and Downspout
Damaged gutters and downspouts.

Remedial Action:
Replace gutters and downspouts.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D3020	Heat Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2026	1	\$5,000.00	LS	\$5,000	\$10,000

Deficient Material: Boiler

Original boiler reportedly abandoned-in-place in the basement boiler room; unclear condition of the boiler flue still in use by the water heater flue.

Remedial Action:

Following basement asbestos removal, demolish and remove the boiler and accessories; inspect and service the remaining flue as needed to support flue gas venting of served gas appliances, specifically the water heater.

Action Type:

Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	3,000	\$15.00	SF	\$45,000	\$88,000

Deficient Material: Cooling
No permanent cooling or ventilation for the high-bay event space; large portable fans used, creating safety and trip hazards.

Remedial Action:
Install ceiling fans and ventilation cooling system, for example with natural ventilation exhaust up through hose tower.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D3030	Cooling Generating Systems	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2024	2,000	\$16.50	SF	\$33,000	\$65,000

Deficient Material: Cooling
No permanent cooling for administration, support, and activity areas; portable cooling in use during summer months.

Remedial Action:
Install permanent cooling system for office, support, and activity area spaces; for example, ductless split-Dx.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D3050	Terminal and Package Units	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	1	\$19,800.00	EA	\$19,800	\$39,000

Deficient Material: Rooftop Units
Aging rooftop unit serving studio space.

Remedial Action:
Budget to replace upon failure.

Action Type:
Energy Efficiency



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D5037	Low Voltage Fire Alarm	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	8,000	\$3.75	SF	\$30,000	\$59,000

Deficient Material: Fire Alarm
Obsolete zoned fire alarm system.

Remedial Action:
Upgrade to modern addressable system.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

D5038	Low Voltage Security	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	8,000	\$2.65	SF	\$21,200	\$42,000

Deficient Material: Electronic security
Aged burglar alarm system with no card-key access or CCTV.

Remedial Action:
Upgrade to city standard electronic security system with access control, intrusion detection, and CCTV monitoring.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond

Site: Teen Center Site

Facility: Teen Center

Escalation 3%
Discount Rate 1.5%

E2010	Fixed Furnishings	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	2	\$3,500.00	EA	\$7,000	\$14,000

Deficient Material: Casework
Plastic laminate on wood counter and vanity aged and delaminating.

Remedial Action:
Demo and replace vanities.

Action Type:
Other



Facility Summary

City of Redmond	
Teen Center Site	
Teen Center Infrastructure	16510 NE 79th Street Redmond, WA 98052

Facility Condition Summary

The site extends between NE 79th and NE 80th Streets. It includes two asphalt parking lots and a 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.

City of Redmond water, fire, sewer, and storm. Puget Sound Energy power and natural gas. Local purveyors for telecom services. No site electronic security. The side sewer is aged and failing. No on-site renewable energy or electric vehicle charging stations.

DRAFT

Facility Summary

City of Redmond	16510 NE 79th Street
Teen Center Site	Redmond, WA 98052
Teen Center Infrastructure	

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G20 Site Improvements						
G2020 Parking Lots	1952	1980	3	TRB	12/08/23	Asphalt parking lot at north side of building for approximately 25 vehicles. Portion of the lot is an old concrete slab. Pitting of north parking lot and some potholes. Paint striping has faded.
G2030 Pedestrian Paving	1952	1980	3	TRB	12/08/23	Concrete patio at front of building. Asphalt walkways at rear of building. Concrete slab settlement and trip hazards near front entry and outdoor yard.
G2040 Site Development	1952	2000	2	TRB	12/08/23	Picnic tables throughout. Bike racks. Monument sign. Basketball court at rear of building. Chain link fencing.
G2050 Landscaping	1952	2000	3	TRB	12/08/23	Limited site landscaping, primarily grass and mature trees. Small raised vegetable gardens actively used.
G30 Site Civil / Mechanical Utilities						
G3010 Water Supply	1952	1980	3	DCS	12/08/23	One-inch domestic water and four-inch fire sprinkler supply with post-indicator valve to SW from the City of Redmond water system. While irrigation is observed on-site, a separate meter was not observed. A four-inch fire department connection is also located to SW. Water pressure is near 90 psig. The building water service entry is via the original basement window well under the hose tower with failing makeshift block vault - minor maintenance to make this service entrance more permanent and bypass the asbestos-contaminated basement.
G3020 Sanitary Sewer	1952	1980	4	DCS	12/08/23	Building sanitary sewer connects to City of Redmond system with circuitous and failing side sewer.

Facility Summary

City of Redmond
Teen Center Site
Teen Center Infrastructure

16510 NE 79th Street
Redmond, WA 98052

Facility Components

Systems	Original System Date	Last Renewal Date	Score	Surveyor	Survey Date	Comments
G Sitework						
G30 Site Civil / Mechanical Utilities						
G3030 Storm Sewer	1952	1980	3	DCS	12/08/23	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. Minor maintenance to connect downspouts to storm that currently discharge at grade. There appears to be a gravel infiltration area at the rear of the building.
G3060 Fuel Distribution	1952	1980	3	DCS	12/08/23	Puget Sound Energy natural gas diaphragm meter No. 804499 with 425 cfh capacity and no seismic shut-off valve - minor maintenance to install. Meter appears to be of adequate capacity to meet current loads including four units heaters, one rooftop gas-pack unit, and one water heater, but not any future commercial kitchen. No observed or reported fuel oil systems, however there is reportedly an old abandoned boiler in the basement, which was not accessible due to asbestos, and potentially was fuel-oil fired - further investigation is suggested.
G40 Site Electrical utilities						
G4010 Electrical Distribution	1952	2000	3	DCS	12/08/23	Overhead power from pole at street to weather head at hose tower, with Puget Sound Energy meter No. X144383839 delivered at 120/240V, single-phase to main electrical panel inside the base of hose tower. No standby generator, no renewable energy, and no electric vehicle charging.
G4020 Site Lighting	1952	2004	3	DCS	12/08/23	Wall lights on all sides of the building, including newer LED at fenced activity yard to SE. Pole lights at paved activity and both parking areas. Minor maintenance to upgrade remaining non-LED lamps to LED as they fail. Some outside lights on during daylight hours - minor maintenance to adjust controls.
G4030 Site Communications and Security	1952	2000	3	DCS	12/08/23	No site electric security, but no issues reported - minor maintenance to add two wireless CCTV cameras to minimally monitor the site.

Facility Summary

City of Redmond	
Teen Center Site	
Teen Center Infrastructure	16510 NE 79th Street Redmond, WA 98052

Facility Components		Original System Date	Renewal Date	Score Last	Surveyor	Survey Date	Comments						
Systems													
G Sitework													
G90	Other Site Construction												
G9010	Service and Pedestrian Tunnels	1952	1952	4	DCS	12/08/23	Reportedly, a tunnel exists under the building and/or site, but is condemned from entry due to asbestos contamination.						

Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Teen Center Site							Escalation 3%
Facility:		Teen Center Infrastructure							Discount Rate 1.5%

G2020	Parking Lots	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2027	7,000	\$4.00	SF	\$28,000	\$55,000

Deficient Material: Parking Lot
Pitting of north parking lot and some potholes. Paint striping has faded.

Remedial Action:
Fill potholes, top coat, and repaint stripes in lot.

Action Type:
Other



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Teen Center Site							Escalation 3%
Facility:		Teen Center Infrastructure							Discount Rate 1.5%

G2030	Pedestrian Paving	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	400	\$20.00	SF	\$8,000	\$16,000

Deficient Material: Concrete Sidewalk
Concrete slab settlement and trip hazards near front entry and outdoor yard.

Remedial Action:
Saw cut, demo, and repave entry plaza.

Action Type:
Life Safety



Detailed Assessment - Observed Deficiencies 2023 - 2028

City of Redmond									
Site:		Teen Center Site							Escalation 3%
Facility:		Teen Center Infrastructure							Discount Rate 1.5%

G3020	Sanitary Sewer	Score	Survey Year	Budget Year	Qty	Unit Cost	Unit	Direct Cost	Marked Up Cost
		4	2023	2025	200	\$60.00	LF	\$12,000	\$24,000

Deficient Material: Sanitary Sewer
Sanitary side sewer reportedly failing with dirt and debris in partially collapsed line.

Remedial Action:
Replace side sewer.

Action Type:
Other



Deficiency Repair Cost Markups By System

2023 - 2028

City of Redmond

Site: Teen Center Site

Escalation 3%
Discount Rate 1.5%

Facility	System	Direct Construction Cost	Contingency 20%	Contractor's OH & P 20%	Project Soft Cost 36%	Total Project Cost	Total Project Cost (Present Value)
Teen Center	A20 Basements	\$20,000	\$4,000	\$4,800	\$10,368	\$39,000	\$39,000
	B10 Superstructure	\$52,500	\$10,500	\$12,600	\$27,216	\$103,000	\$109,000
	B20 Exterior Closure	\$230,000	\$46,000	\$55,200	\$119,232	\$451,000	\$456,000
	B30 Roofing	\$355,200	\$71,040	\$85,248	\$184,136	\$696,000	\$729,000
	C10 Interior Construction	\$7,000	\$1,400	\$1,680	\$3,629	\$14,000	\$14,000
	C30 Interior Finishes	\$87,500	\$17,500	\$21,000	\$45,360	\$171,000	\$176,000
	D10 Vertical Transportation	\$5,000	\$1,000	\$1,200	\$2,592	\$10,000	\$10,000
	D20 Plumbing	\$66,630	\$13,326	\$15,991	\$34,541	\$130,000	\$135,000
	D30 HVAC	\$102,800	\$20,560	\$24,672	\$53,292	\$202,000	\$206,000
	D50 Electrical	\$51,200	\$10,240	\$12,288	\$26,542	\$101,000	\$104,000
	E20 Furnishings	\$7,000	\$1,400	\$1,680	\$3,629	\$14,000	\$14,000
	Facility Total	\$984,830	\$196,966	\$236,359	\$510,536	\$1,931,000	\$1,992,000
Teen Center Infrastructure	G20 Site Improvements	\$36,000	\$7,200	\$8,640	\$18,662	\$71,000	\$74,000
	G30 Site Civil / Mechanical Utilities	\$12,000	\$2,400	\$2,880	\$6,221	\$24,000	\$24,000
	Facility Total	\$48,000	\$9,600	\$11,520	\$24,883	\$95,000	\$98,000
Site Total		\$1,032,830	\$206,566	\$247,879	\$535,419	\$2,026,000	\$2,090,000

Opportunity Summary By Subsystem

City of Redmond
Site: Teen Center Site

Total Site Opportunity Cost: \$1,677,000

Subsystem	Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Teen Center							
System: Superstructure							\$101,000
B1020	Roof Construction						
	Building does not appear to include roof insulation (or minimal).	Insulate to improve thermal energy efficiency, meet city decarbonization goals, and improve thermal comfort. Insulate under roof or add rigid insulation when reroof occurs to meet or exceed current energy code.	8,600.00	\$6.00	SF	\$51,600	\$101,000
Facility: Teen Center							
System: Exterior Closure							\$97,000
B2010	Exterior Walls						
	Building exterior walls are uninsulated.	Add insulation to exterior walls to improve energy efficiency, carbon reduction, and thermal comfort. Furr out and insulate from interior with 2x and minimum R-21 batt insulation and new painted gypsum wall board interior. Alternatively, consider adding exterior rigid insulation as a means to insulate and include a new rain screen cladding.	3,400.00	\$14.50	SF	\$49,300	\$97,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Teen Center Site						
Total Site Opportunity Cost:						\$1,677,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Teen Center								
System: Plumbing								
D2040 Rain Water Drainage								
		Interior roof drains, crawlspace, and lightly-used basement.	Install 5,000-gallon rain water harvesting system to supply flushing water to toilets and urinals.	1.00	\$25,000.00	LS	\$25,000	\$49,000
Facility: Teen Center								
System: HVAC								
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.	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	\$20,000
D3040 HVAC Distribution Systems								
		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. For example, variable refrigerant flow system with heat recovery dedicated outside air system.	7,000.00	\$46.00	SF	\$322,000	\$631,000
D3060 Controls and Instrumentation								
		Opportunity to install new DDC control system in conjunction with new HVAC for current use suggested in D3040 HVAC Distribution Systems opportunity.	Install new DDC controls in conjunction with new HVAC system.	8,600.00	\$7.50	SF	\$64,500	\$126,000

Opportunity Summary By Subsystem

City of Redmond						
Site: Teen Center Site						
Total Site Opportunity Cost:						\$1,677,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
Facility: Teen Center								
System: Electrical								
								\$211,000
D5020	Lighting and Branch Wiring							
		Aging fluorescent lighting with manual control.	Replace with LED and automatic control.	8,600.00	\$11.50	SF	\$98,900	\$194,000
D5039	Low Voltage Data							
		Apparent aged cable data service.	Upgrade to high-speed fiber-optic per city standard.	1.00	\$8,500.00	LS	\$8,500	\$17,000
Facility: Teen Center								
System: Equipment								
								\$123,000
E1010	Commercial Equipment							
		Very small kitchen area, with minimal appliances. Reported food insecurity among some teen center patrons.	Upgrade to small commercial kitchen.	1.00	\$38,000.00	LS	\$38,000	\$74,000
E1020	Institutional Equipment							
		Limited art and game equipment.	Expand program support equipment.	1.00	\$25,000.00	LS	\$25,000	\$49,000
Facility: Teen Center Infrastructure								
System: Site Electrical utilities								
								\$319,000
G4010	Electrical Distribution							
		No electric vehicle (EV) charging stations.	Install one double-cable EV charging station with rough-in for one more.	1.00	\$10,000.00	EA	\$10,000	\$20,000

Opportunity Summary By Subsystem

City of Redmond

Site: Teen Center Site

Total Site Opportunity Cost: \$1,677,000

Subsystem		Opportunity	Action	Qty	Unit Cost	Unit	Direct Cost	Total Project Cost
G4010	Electrical Distribution	Overhead single-phase power service is increasingly obsolete and may not support decarbonization.	Replace overhead single-phase 120/240V power with modern underground three-phase 208V power service; includes cost to upgrade building electrical distribution.	1.00	\$75,000.00	LS	\$75,000	\$147,000
		No standby power.	Install disconnect and manual transfer switch to allow essential loads to operate during power outage, so patrons can shelter-in-place for short periods, with 10-kW economy portable generator.	10.00	\$1,750.00	EA	\$17,500	\$34,000
		Portions of flat roof with modest southern exposure.	Install 10-kW photovoltaic power system on roof to SE.	10.00	\$6,000.00	EA	\$60,000	\$118,000

Note: Cost estimates shown include project markups, but exclude escalation.