Component A Report

REDMOND, WASHINGTON

February 22, 2024

matrix consulting group

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1. Executive Summary

Matrix Consulting Group was selected to assess Redmond's current fleet operations, facilities, and processes and provide recommendations and a road map for future fleet operations. The study is divided into Component A and B as follows:

A. Analysis of existing fleet operations, policies, procedures, organization, and facilities and recommended changes.

B. Analysis of existing fleet size, makeup, and utilization; recommendations for fleet right-sizing, electrification and/or transition to other alternate fuels.

This Component A Report covers the research, analysis, findings, and recommendations developed between August 2023 and January 2024. Component B was completed by end-May 2024.

1.1 Introduction and Methodology

The City of Redmond has a fleet consisting of 375 assets managed and maintained by two different organizations. The Fire Department is responsible for the fleet and maintenance management of their 65 assets while the Public Works fleet department, known as "Fleet", manages the remaining assets.

Matrix was asked to assist the City in answering five core questions:

- What changes to Fleet staffing, operations, procedures, and/or policies are needed to align with industry best practices?
- How should the City transition the fleet to alternative fuels to meet City goals and state regulations?
- What are the industry trends which will assist in fleet transformation?
- What infrastructure is needed City-wide to support fleet transformation?
- What changes and processes would be needed to combine the Fire and PW Fleet?

The methodology employed in this study involved a concentration on data and information provided by Fleet, extensive interviews with stakeholders, comparison with industry best practices and analysis of options for facility and organizational change.

Our study approach followed these steps:

- Collection of basic data on the City's fleet including asset type, assigned department, acquisition date, meter reading, and maintenance and replacement costs.
- Development of statistics on fleet operations such as historical utilization for vehicles in the fleet, average age, replacement funding, compliance with maintenance inspections, downtime, etc.
- Assessment of fleet service practices and comparison to industry best management practices in the areas of governance, staffing, procurement, maintenance, technology, motor pool, performance measurement, and disposal.
- Conduct of a Gap Analysis from the last fleet study in 2011.
- Conduct of a comprehensive facility assessment.
- Development of a cost allocation plan.
- Creation of a series of recommendation regarding fleet centralization.

Our recommendations are supported by an implementation plan.

1.2 Key Findings and Recommendations

Over the course of this study, many strengths in fleet operations were observed as well as areas for improvement. A summary of our findings for each functional area follows below.

1.2.1 Best Practices

Redmond's fleet operations were compared with industry best practices in seven operational areas with the following results.

Governance. The City provides some policy direction in the form of a vehicle use policy and green purchasing policy. Other areas of governance such as the use of a Steering Committee, Operator's Handbook, Service Level Agreements, and annual customer service surveys need to be introduced or strengthened.

Staffing. Based on calculations detailed in Chapter 7, the City does not currently have the adequate number of staff to perform the maintenance needed on this size and complexity of fleet. The City also does not have a data analyst position that would support the operations and efficiency of fleet operations. The City does keep updated job descriptions, has the correct span of control, and does conduct staff training, although it could be enhanced.

Procurement. The City has a very strong acquisition and procurement program for its fleet. They meet industry best practices in almost every area, including the specification process, the development of agreements, life cycle planning, and proper funding. The City does lack in its ability to acquire non-technical aspects during the acquisition process, such as training.

Maintenance. The City is currently meeting most of the best practices under maintenance. They focus on their customers, outsource the correct amount of work, and collect the proper reports. Maintenance could be enhanced by focusing on a formal training program for mechanics and improving the preventative maintenance program to meet best practices.

Technology. Overall technology is being utilized appropriately within the City. The staff are well trained in technology, has access to the system (although not on shop floor), and are pulling reports from the system. The City can improve its technology use by fully implementing Asset Work's Fleet Anywhere FMIS across Fire. The City can also expand the use of telematics systems once its initial test pilot has concluded in order to better understand routes and scheduling of fleet assets.

Motor Pool. The city's needs regarding the motor pool are being met when it comes to availability of vehicles, stocking assets that are in high demand, keeping accountability of those vehicles, and pricing the rent of those vehicles appropriately. The City does need to standardize the process for signing motor pool vehicles out to better meet the best practices in this area.

Performance Measurement. The City is meeting several best practices in performance measurement. Currently, the City is meeting standards when it comes to keeping a certain number of vehicles readily available, low repair times, and is performing the right amount of preventative work to non-scheduled work. The City could improve by more appropriately utilizing the reports that are produced from the FMIS and creating a reporting matrix so that the information is sent to the correct staff.

1.2.2 Gap Analysis

A fleet review, conducted in 2011, was reviewed to determine which outstanding issues are still actionable. Fleet should complete revised policies, performance measures and an updated cost allocation system.

1.2.3 Space Plan

The project team conducted an analysis of space needs for a consolidated City and Fire shop. The requirements were shared with the Maintenance Operations Center (MOC) planning team.

1.2.4 Cost Allocation

The current cost allocation methodology was reviewed with important recommendations made to improve the process. First, replacement funding should be planned based on needs and not covered by funds remaining after operating costs are paid. Second, realistic estimates of replacement values, especially when the type of vehicle changes, should be used.

1.2.5 Maintenance Staffing

Fire has a fleet of 65 assets equivalent to 209 VEUs and requiring 1.5 technicians. The City has a fleet of 310 assets equivalent to 595 VEUs and requiring 4.2 technicians. Overall, one additional technician is required.

1.2.6 Centralization

Our assessment of maintenance efficiency in terms of personnel and monetary resources supports the centralization of the City and Fire shops. These results represent the work accomplished in Component A.

2. Fleet Overview

2.1 Introduction

This chapter summarizes the organizational structure and primary operations of the fleet. It includes an overview of the current fleet makeup, the operating and capital budgets, a summary of staffing, an overview of the policy framework and an inventory of the primary technological tools utilized to manage the fleet.

This overview provides an overview of the current state that frames the context and current state for the recommendations of the study. It shows how specific recommendations impact the organization's approach – whether in organizational structure, operational practices, or in the makeup and management of the fleet.

2.2 Fleet Composition

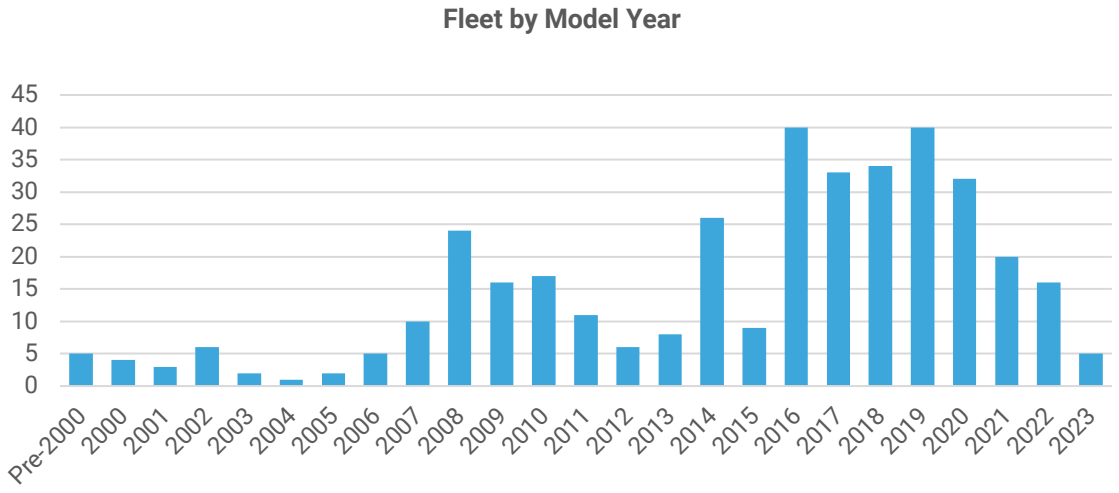
The fleet organization, known as "Fleet", manages 375 assets. The following table shows the number of assets assigned to each Department as well as the average age of those assets. The main customers that Fleet serves are Police, Public Works, and Parks. While shown in the charts below, Fire has a separate organization and maintains their own assets.

Department	Count	Avg. Age
Fire	65	10.6
IT	1	15.0
Parks & Recreation	81	6.7
Planning & Comm Dev	28	7.8
Police	60	6.3
Public Works	127	9.1
Shared Assets	13	9.0
Total	**375**	**8.3**

The vehicle and equipment assets are those commonly seen in support of the operations of a city. The next table shows the number of assets by classification as well as the average age for each class.

Classification	Count	Avg. Age
Ambulance	13	9.8
Attachment	4	5.8
Cart/ATV	5	3.0
Equipment MD	9	8.1
Equipment HD	15	7.6
Fire Apparatus	10	14.2
Mobile Command	1	22.0
Motor/Pump/Generator	12	12.5
Motorcycle	3	4.0
Mower	7	6.1
Police Interceptor	33	3.8
Sedan	20	8.4
SUV	79	9.4
Tank/Sprayer/Spreader	8	11.8
Trailer	25	7.6
Truck LD	49	8.2
Truck MD	44	7.6
Truck HD	14	9.5
Van	24	8.3
Total	**375**	**8.3**

The fleet is also categorized by model year in graphical form. This graph demonstrates the number of assets in the active fleet by year of acquisition. The peaks and valleys in the graph reflect fluctuations in budget allocated to fleet acquisition and will impact our recommendations for the replacement plan later in the study.



2.4 Facilities Overview

The Public Works facility has four bays assigned as follows:

- Two for medium to heavy duty vehicles.
- One for light-duty, police vehicles.
- One shared between other light duty vehicles and small equipment.

The Fire Shop is located at Station 16 and has three bays assigned to the two dedicated mechanics.

2.5 Budget

The City of Redmond fiscal year (FY) follows the calendar year. Budgets are prepared every two years. Vehicle and equipment replacements are funded using the department's annual contributions to the fleet fund. The following table shows budget figures for the 2023-24 year as well as the 2021-22 budget years.

Fund	21-22	23-24
Personnel Services		
Regular Salaries	$1,357,443	$1,651,086
Overtime Salaries	$4,000	$4,000
Mebt	$84,628	$98,701
PERS 1 And 2	$149,500	$166,034
Medicare	$19,683	$23,083
Other Insurance	$4,035	$1,534
Interfund Insurance	$95,764	$209,052
Interfund Medical	$261,199	$331,778
Interfund Workers Comp	$43,044	$58,200
WA State Paid Family & Medical Leave	$0	$2,547
	$2,019,296	$2,546,016
Supplies and Materials		
Operating Supplies	$53,000	$53,000
R&M Supplies	$330,000	$330,000
Inventory	$40,000	$40,000
Office Supplies	$4,000	$4,000
	$427,000	$427,000

Fund	21-22	23-24
Contracted Repairs		
Outside Repairs & Maint (Non Software)	$160,000	$160,000
Meal/Phone/Tool/Mileage Allowance	$11,580	$1,923
Uniforms	$5,500	$8,000
Uniform Cleaning Services	$0	$1,600
Fuel	$580,000	$1,029,552
Professional Service	$50,000	$290,000
Travel	$8,000	$8,000
Intergovernmental Professional Services	$502	$500
Advertising Services	$1,000	$1,000
Contaminated Waste Collection Services	$2,500	$2,620
	$819,082	$1,503,195
Capital Fleet Equipment Purchases		
Machinery & Equipment (Capital)	$2,117,337	$4,500,339
Miscellaneous		
Miscellaneous Services	$42,000	$41,660
Phones & Internet Services	$10,740	$10,740
Printing Services	$500	$500
Rental or Lease of Equip or Property	$1,000	$1,000
Shipping & Postage Services	$1,560	$1,560
Small Tools <$10K	$41,000	$41,000
Tuition, Training & Registrations	$12,000	$19,000
Wireless Phone Services	$3,000	$11,270
Misc-Memberships Dues Subscriptions	0	$0
Software License/Transaction Fees	0	$0
Waste Collection Services	0	$0
Meals	0	$0
	$111,800	$126,730
Grand Total	**$5,494,515**	**$9,103,280**

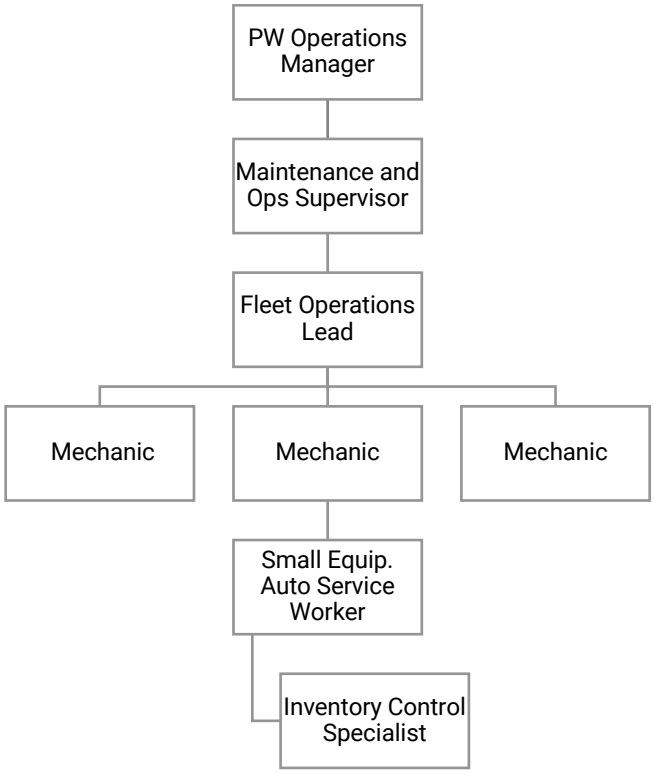
The annual budget summary provided the following pertinent information:

- Capital vehicle/equipment planned expenditures doubled because of COVID related supply chain/delivery issues.
- Fuel budget doubled because of rapidly increasing energy costs.

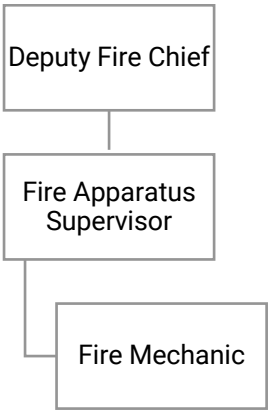
2.6 Organization

The organizational charts of the City's fleet operations appear below. Fleet maintenance is not centralized and both Public Works and Fire operate a shop.

Public Works Fleet Organization



Fire Fleet Organization



2.7 Policies

The City has a strong policy foundation with a Strategic Plan, Environmental Sustainability Action Plan (ESAP) and the City's Vehicle Personal Use Policy. A summary of the content found in each document is included in the table below.

Policy	Description
Strategic Plan	• The City has an overall strategic plan and is working on an Asset Management Plan. An Asset Manager was just hired to develop and implement the AM Plan
Green Fleet Purchasing Policy	• The policy was approved by the City's Chief Operating Officer on 11/1/2022. • The Redmond City Council adopted the Environmental Sustainability Action Plan (ESAP) on September 15, 2020, affirming the City's commitment to reduce GHG emissions and preserve Redmond's natural resources. • The ESAP includes a series of strategies to reduce GHG from City operations, including the implementation of a green fleet policy to guide the transition to a low carbon fleet vehicle fleet. • The Redmond City Council adopted the City of Redmond Operations Zero Carbon Strategy, establishing a target to replace 43% of the City's passenger vehicle fleet with EV's by 2030.
Vehicle Personal Use Policy	• The Policy covers: – Defining official use of City vehicles – Personal use of City vehicles. – Restrictions that apply. – Marked and unmarked vehicle descriptions. – Requirements for "on call" personnel. – Rideshare program definitions. – Personal vehicle uses and reimbursement. – City vehicle use agreement.

The Fleet Services Division does not have an Operator's Handbook to summarize information that vehicle and equipment operators need to have readily available. Some of this information, such as how to get fuel, green policies and what to do in case of an accident, appears on a fleet SharePoint page.

They also do not use Service Level Agreements (SLAs) with fleet customers.

2.8 Technology

The following table provides a summary of the technology utilized in fleet operations. Each tool or application is accompanied by a description of its functionality and the primary ways it is used. Telematics, which includes mobile tracking and communication

of vehicle operating status, fuel levels, location, and acceleration/deceleration with a fleet management system are not used.

Technology	Description
Assetworks FA	• Fleet management information system used to create work orders, PM scheduling, labor tracking, and parts and inventory tracking. • Contains parts inventory function for tracking the purchase and use of parts to work orders. • IT representative and Fleet Operations Manager have attended Asset Work Academy.
Fuel Focus	• Fuel Focus is used to monitor all fuel dispensing activities at the City's fuel location. • Each vehicle is assigned a fuel card that is swiped at the kiosk to authorize the dispersing of fuel. The fuel yard kiosk requires the driver to input an employee pin number, mileage, and fuel type before dispensing is authorized.
Asset Works – Fuel Focus Cards	• The City currently uses cards provided by Asset Woks to turn on the fuel controller at their in-house sites. The City is considering moving to a commercial fuel card for external fuel purchases.
Dynamics 365	• New Finance system used for invoices and parts.
Telematics	• The City is currently conducting a "pilot Program" to test telematics.

In terms of pursuing advanced fuel technologies, the City has six pure electric vehicles (EV) and six plug-in hybrid electric vehicles (PHEV). Ford Lightnings are on order.

The current charging network has four Level 2 chargers, two at City Hall and two at the MOC. They have issued a tender to procure 22 additional charging stations.

3. Best Practices Checklist

In compliance with the Request for Proposal, data analysis and staff interviews were conducted to make recommendations in the following areas:

- Governance
- Staffing
- Procurement
- Maintenance
- Technology
- Motor Pool
- Performance Measurement

The best practice in each area is stated in the first column and assessed in the middle column. The right column describes the practice in the City. A ✓ indicates that the City complies with best practice and a ~ indicates partial compliance with room for improvement. An X in the column means that the practice is not met. Any criteria that do not receive a ✓ are discussed further and recommendations are made to bring current practices in line with best practices.

3.1 Governance

Fleet governance includes the fleet organization, reporting structures, and policy framework. Fleet operations are normally more efficient when they are centralized as management functions do not have to be replicated for separate organizations. A common fleet system can ensure that there is a single repository for all fleet data. Best practice fleets communicate regularly with their customers and have a robust policy framework to facilitate decision making.

The following table shows how City operations compare to best practices in the area of fleet governance.

1. Governance		
1.1 – The fleet program is centralized to capture economies of scale.	X	The fleet program is not centralized. There is a City shop run by Public Works as well as a Fire shop.

1.2 – There is a Fleet Steering Committee with representatives from all customers who meet regularly to discuss fleet issues including vehicle replacement and safety.	~	There is a Fleet Steering Committee that provides input to the Fleet. However, only the largest customer departments participate.
1.3 – A Fleet Policy Manual is in place that defines program objectives, responsibilities, and service standards.	✓	There is a Fleet Policy Manual that continues to be refined and built upon.
1.4 – A Driver's Handbook outlines key driver responsibilities and drivers sign to acknowledge compliance annually.	X	There is no driver's handbook
1.5 – Service level agreements (SLAs) are in place to ensure that the fleet organization and its customers are working in a collaborative manner.	X	There are no formal written SLAs with customers.
1.6 – Annual surveys are conducted to assess customer satisfaction.	~	Surveys have been conducted in the past but have not been used in the past several years.

The following points discuss areas for improvement in fleet governance.

3.1.1 Centralization (BMP 1.1)

Fleet operations are typically more efficient when governance and oversight is centralized within a single organization such as a Fleet Division. This allows for oversight by a qualified fleet expert, synchronized purchasing efforts, consistent enforcement of maintenance intervals and fuel dispensing, and more strategic replacement spending on a more efficient scale.

Centralized fleet management is only possible when a designated position has the authority, systems, and resources to manage the fleet. In this model all fleet assets of the organization are placed under the management responsibility of that position, and that position has the Fleet Management Information System (FMIS), parts, and fuel software oversight needed to properly ensure vehicle support. The organization also needs a shop with sufficient capacity, staffing, and budget to serve all customer departments. The involvement of Departments outside fleet to support purchasing, finances, and Information Technology (IT) also contributes to the success of a centralized model.

The City's fleet is currently decentralized with both Public Works and Fire operating separate shops and managing their own fleet management and replacement. Both organizations are supported by purchasing, finance and IT in managing the fleets.

3.1.2 Fleet Steering Committee (FSC) (BMP 1.2)

An FSC is a valuable tool to ensure that fleet customers are heard, and the fleet organization's priorities and plans are communicated. Specific functions include:

- **Replacement planning.** Review the annual replacement plan and discuss any changes.
- **Sustainable conversion.** Discuss opportunities for Electric Vehicle transition.
- **Safety.** Review collision statistics and primary causes.
- **Maintenance concerns.** Discuss issues of concern to all customers.

Most importantly, the use of an FSC ensures that customers designate a representative who can talk knowledgeably about fleet. That fleet liaison should be familiar with the inventory, vehicle utilization, condition, safety concerns, budget, and sustainable goals. In the conduct of the utilization interviews, it was clear that several divisions did not have someone with this focus on fleet.

According to the Fleet Governance Structure (April 2023), Redmond currently has a Fleet Advisory Board, Steering Committee, Core Implementation Team, Fleet User Group, and a group of Subject Matter Experts. Each of these groups have different roles and authority levels, as well as different discussion topics when they meet.

These groups should be streamlined to form a Fleet Steering Committee with the responsibilities outlined above. Attendees should include a representative of every user department/group who has a working knowledge of their fleet assets. The fleet liaisons should be the principal points of contact between the user group and Fleet and be able to answer questions on a wide range of fleet topics.

3.1.3 Fleet Management Policies (BMP 1.3, 1.4, and 1.5)

Municipal organizations benefit from a robust fleet policy framework comprised of a Fleet Policy Manual, a Driver's Handbook and Service Level Agreements with all customers.

The Policy Manual provides a reference for managers and staff to refer to as different situations arise and serves as a baseline for all employees to understand the mission, requirements, and constraints of the fleet management program. Without a policy manual, departments are left to exercise their own judgment on a range of important fleet issues such as the type of vehicles that will be purchased, when vehicles will be replaced, and whether replaced vehicles are sold or kept in service to meet other program needs. This situation inevitably leads to wide variations in fleet practices among end users and limits the ability of the fleet manager to implement best management practices.

A Driver's Handbook is a supporting document that contains the information that needs to be readily available to drivers. It should include a signatory page indicating that a driver is aware of and will comply with its contents. Drivers should be required to review and sign the document annually, and their signature should also allow management to access their Motor Vehicle Record (MVR). Information in this document should include detailed instructions and requirements for pre- and post-trip inspections, service and fuel procedures, actions in case of collision and driver obligations to report all driving infractions on a timely basis.

SLAs are written agreements between fleet and each of their customers that specify the responsibilities of each party. In a typical SLA, fleet may be responsible to ensure a specific availability of vehicles, accomplish repairs in a specified timeframe and have final sign-off on vehicle acquisitions. Each fleet customer, on the other hand, will be responsible to make vehicles available for scheduled preventative maintenance (PM), keep vehicles in a clean state, and pay for at-fault vehicle collision repair or abuse.

The City has fleet policies covering personal use and green purchasing. The Policy Manual could be strengthened by discussion of the following:

- Require the Divisions to designate fleet liaisons for fleet-related matters.
- Require each designee to review utilization with the Fleet Manager on an annual basis.
- Define timely communication between the shop and other divisions regarding PMs and repairs.
- Track vehicle availability rate and PM/repair timeliness.
- Review vehicle incidents and other safety-related matters.
- Provide a process for end users to make complaints.
- Ensure DOT inspection and reporting standards are adhered to.

The City should also benefit from creating an Operator's Handbook to summarize information that vehicle and equipment operators need to have readily available. Some of this information, such as how to get fuel, green policies and what to do in case of a collision, appears on a fleet SharePoint page.

Finally, Fleet should create SLAs with user Departments outlining the responsibilities of all organizations.

3.1.4 Customer Service Surveys (BMP 1.6)

An annual customer survey is an efficient way to gather information that can improve fleet service levels. A simple five-point scale can be used to gauge satisfaction with key fleet functions. The results can be used to measure progress over time. An example of the results of a customer survey for a previous client is shown in the following table:

Criteria/Customer	A	B	C	D	E	F	G	H	I	J	K	L	Avg.
Cust Service	4	4	3	4	4	4	4	3	4	4	5	4	4.00
Facility	5	3	4	4	4	4	4	2	4	4	3	3.5	3.75
Quality	3.5	3	3.5	2	4	4	4	4	4	4	5	3	3.66
Communication	4	2	2.5	2.5	4	4	4	3	4	3.5	5	4	3.61
PM	4	3	5	3	2.5	3	4	4	2.5	3.5	5	2	3.57
Parts	4.5	3	2.5	3	4.5	3	4	3	4.5	3	4	3	3.50
Fuel	4	5	2	4	1	5	4	1	1	4	5	4	3.54
Availability	5	3	1	2	4.5	4	4	3	4.5	3	3.5	2	3.34
Acquisition	4.5	4	3	3	N/A	5	4	3	N/A	4	3	N/A	3.70
Time to repair	5	3	1.5	1	4	4	3	1	4	4	4	2	3.09
Technicians	5	3	1	2	2	3	3	3	2	4	4	3	2.93
Overall Average	4.4	3.3	2.6	2.8	3.5	3.9	3.8	2.7	3.5	3.7	4.2	3.1	**3.5**

Once the governing boards are consolidated into a single Fleet Steering Committee, it would be advantageous to conduct a customer satisfaction survey with the fleet liaisons taking the lead.

Recommendations:

1. **Explore synergies that can result from centralizing the fleet maintenance and management of the City and Fire fleets (this is discussed further in the Centralization Chapter of the report).**
2. **Consolidate the current governing boards into a single Fleet Steering Committee with regular meetings on fleet topics.**
3. **Develop a Driver Handbook with information specific to the driver. Copies of the Handbook should be kept in every vehicle.**
4. **Draft Service Level Agreements with all fleet customers.**
5. **Use annual customer service surveys to identify and act on areas of improvement.**

3.2 Staffing

The staffing requirements for fleet operations are primarily determined by the fleet size and the diversity of vehicles and equipment it maintains. Since fleet operations typically handle a broad range of vehicles and equipment, it's essential to develop a comparative metric for assessing and comparing staffing necessities and expenses. Additionally, this section will encompass general staffing best practices, serving as a foundation for further discussion on effective staffing operations management.

2. Staffing		
2.1 – Staffing levels are consistent with the size and type of vehicles in the fleet.	X	Staffing levels fall below what is needed based on the staffing analysis.
2.2 – There are an adequate number of heavy duty and light duty mechanics.	X	As staffing requirements are adjusted, existing staffing will need to be adjusted to increase capacity for the heavy-duty fleet.
2.3 – Ratio of supervisory and support positions to technicians is reasonable.	✓	Based on current structure, the ratio is correct.
2.4 – There is a position assigned to analyze fleet data and seek improvement.	X	Fleet currently does not have a data analyst. These functions are performed by the management team.
2.5 – There are detailed and up to date job descriptions for all positions.	✓	Job descriptions are thorough and detailed.
2.6 – Staff receives regular training and stays current on emerging trends and technology.	~	More training is desired, but the ability to train is limited by available mechanic hours.

The following points discuss areas for improvement in fleet staffing.

3.2.1 Mechanic Staffing (BMP 2.1 and 2.2)

Maintenance staff make up the majority of a fleet's staff and are the one's conducting the physical work needed to maintain a fleet. Based on the calculations made in a later chapter of this document, the City does not have enough staff to properly maintain the fleet. We split the City fleet and Fire fleet apart to make the calculations. According to industry best practices, there are not enough maintenance staff to care for the fire fleet or the City fleet less the fire assets. A further staffing analysis is conducted in Chapter 7.

3.2.2 Data Analyst (BMP 2.4)

Proper fleet staffing is comprised of more than just mechanics. Data Analysts play a pivotal role in the long-term success of a well-maintained fleet. A dedicated analyst position that is trained to utilize data and find trends will not only free up management's time but provide a more thorough analysis than current staff can. Identifying issues that are only visible from compiled data will allow the fleet to identify cost savings and engage in long-term planning based on statistics.

The City does not currently have an individual dedicated to this function.

3.2.3 Training (BMP 2.6)

Lack of sufficient staffing can directly affect the level of training staff receive. Mechanics make up the largest portion of staff in fleet teams. Their ability to be available and working correlates to how effective a fleet's operations are. As important is the mechanic's ability to train on new equipment, technology, and processes. When mechanics and other technical staff are unable to train due to a lack of backfills, the overall integrity of the fleet is damaged. A well-trained staff can lead to new innovations, quicker repairs, less down time, and overall cost savings. Best practices indicate that mechanics and other technical staff should spend 40 hours of their time annually on training and development. Fleet management should be taking this into account when forecasting work and schedules for the year.

The City does not currently have a formal training plan for mechanics and the amount of training received is not tracked.

Recommendations:

6. **Increase maintenance staff to meet best practices.**
7. **Establish a Data Analyst position and utilize the analysis developed from their work.**
8. **Develop a formal training plan for all mechanics.**

3.3 Procurement

Establishing optimal lifecycles and a corresponding multi-year replacement plan are fundamentals of fleet management. The theory of effective capital asset management is well established in the fleet industry and is based on these principles.

- The failure to replace vehicles on time costs an organization more money, both in hard dollars and indirect costs, than replacing them according to schedule.
- An old fleet has a negative impact on staff productivity, as unreliable vehicles are frequently in the shop and not available for work.
- If a fleet is old, departments seek to keep extra vehicles to act as backups and spares, so they can survive the increased unreliability of front-line vehicles. As a result, there are often more vehicles in service than are needed.
- The older vehicles in a fleet use more fuel and emit more pollution than newer vehicle, because standards for emissions and fuel economy were lower in the past than they are now.
- Older vehicles are not as safe as new ones as they lack many of the advanced safety features that are standard with new cars (such as cameras, sensors, lane departure warning, collision avoidance systems, side curtain air bags, etc.).

The following table shows how the city compares best practices in the area of fleet replacement.

3. Procurement		
3.1 – Vehicles are procured to meet specific customer job requirements and customers are given ample input into the specification process.	✓	The Fleet Steering Committee provides specification input and guides the purchase decision.
3.2 – Non-technical requirements such as parts lists, repair manuals, diagnostic tools, and training are included in vehicle specifications.	X	Attempts to incorporate any non-technical requirements into the purchasing agreement have been met with resistance from the OEM. The city does not have volume leverage to require this.
3.3 – Cooperative agreements are used in order to take advantage of volume pricing.	✓	Purchases are made primarily from the State of Washington contract. Other cooperatives are used as well.
3.4 – Vehicle upfitting processes minimize the use of in-house resources and put newly acquired vehicles into service as quickly as possible.	✓	Most of the equipment is upfitted prior to delivery by outside vendors. Specialty equipment remounts are performed in-house
3.5 – Replacement cycles have been determined for all vehicle classes.	✓	Replacement cycles have been established to guide the evaluation process.
3.6 – Replacement is based on Total Cost of Ownership (TCO) which includes the capital and operating costs of assets.	✓	Data from Assetworks is used to guide the analysis and decision-making process.

3. Procurement		
3.7 – Purchase decisions are based on cost as well as other important factors such as standardization, dealer support and warranties.	✓	Standardization is a consideration but not the driving factor. Historical performance as well as dealer support and warranty play a role in the process.
3.8 – A ten-year replacement plan exists and is updated regularly.	~	The Finance Department performs an analysis which extends out seven years.
3.9 – Funding adequately supports the ten-year replacement plan.	✓	The two-year budget cycle is adjusted to ensure there is adequate funding for the replacement plan.
3.10 – Sustainability (efficiency or alternative fuel) is considered in the replacement decision.	✓	Fleet aligns purchases with the Green Fleet Purchasing Policy.

The following points discuss areas for improvement in fleet procurement.

3.2.1 Non-technical requirements (BMP 3.2)

Tenders for vehicles should contain non-technical aspects such as parts lists, manuals, and training. These items enhance the value of the purchase and ensure that the procured vehicles are supported for immediate introduction to the fleet.

In Redmond's experience, suppliers have been reluctant to supply these items. Since this is a standard practice across the country, local dealers should be required to add these items.

3.2.2 Replacement Plan (BMP 3.8)

Each vehicle in a city fleet should have an anticipated replacement lifecycle in order to allow projections for future acquisition and capital investment needs. Vehicles should be replaced at the point which will minimize the Total Cost of Ownership (TCO) to the City. This is usually just before the maintenance costs associated with an older vehicle start to spike due to rising repair costs and decreasing liability. TCO includes acquisition cost, maintenance and operating costs, and any gain from vehicle disposal at the end of its life, all adjusted for inflation.

In addition to replacement cycles, the city needs a multi-year replacement plan which allows a consistent level of funding from year to year. This plan can be developed by using the replacement cycles recommended in the Component B report to project the anticipated replacement year of each unit. This will allow the City to see all the units which would be up for replacement in a given year.

For planning purposes, the cost of replacement can be estimated by using current replacement cost and adjusting for inflation. For example, a $50,000 vehicle due for replacement in 4 years would be projected to cost $56,275 assuming an inflation rate of 3%. By applying this approach to all vehicles in the fleet, the total need for fleet replacement funding can be projected for each future year.

Component B includes a ten-year replacement plan which should be used as the basis for the fleet replacement fund. The plan should be reviewed annually along with the condition of fleet vehicles in order to adjust as needed for vehicle mileage, condition, and repair history.

Recommendations:

9. **Include non-technical requirements with all vehicle tenders.**

10. **Use the ten-year replacement plan created in Component B as a basis for future planning.**

3.4 Maintenance

Fleet maintenance and repair processes have a significant impact on vehicle availability, reliability, safety, economy, and environmental integrity. The principal components of fleet maintenance are technician labor, facilities and equipment, parts, and commercial (i.e., sublet, or outsourced) services. The objective of fleet maintenance managers is to integrate these components to maximize operating performance while minimizing costs.

The indirect costs of fleet maintenance activities are also important and can far exceed the direct costs. For example, mechanical failures that idle employees or disrupt service activities can result in productivity losses or more severe problems whose costs can often be much higher than those of repairing a vehicle.

The following table shows how the City compares to best practices in fleet maintenance and outsourcing.

4. Maintenance		
4.1 – A comprehensive Preventive Maintenance (PM) program is in place that complies with manufacturer recommendations. Customers receive notification of scheduled service dates and compliance levels are 90% or better.	~	A formal PM program is in place which follows the guidelines suggested by the OEM's. Customers receive notice of scheduled PM's and notifications of work completed. PM compliance rates are not at 90% due to staffing and shop limitations.

4.2 – Outsourcing versus insourcing processes determine the best option (capability, cost, downtime, etc.) for undertaking a repair. Fleet uses outsourcing to manage peak workloads.	✓	Fleet analyzes options for outsourcing and attempts to make the most cost-effective decision where possible. Staffing shortages during COVID limited options for external repairs.
4.3 – Shop business hours have been set for customer convenience.	✓	Shop hours are set to maximize customer convenience. Vehicle availability should improve when customers begin 4-day work week.
4.4 – Customers are always contacted when repairs are complete.	✓	Customers are notified via e-mail when repairs are complete.
4.5 – Field service is available for roadside breakdowns and construction equipment.	✓	Fleet has a mobile service truck available for field repairs as needed.
4.6 – A formal skills assessment and training plan has been developed to keep employees current with changes in the fleet industry.	X	Mechanics are trained when possible and are limited by available hours for dedicated training. There is no formal structure to the training program.
4.7 – Technicians are encouraged to keep skill levels current through financial incentives to obtain ASE and/or EV certification.	✓	Most mechanics are ASE Certified. Fleet encourages mechanics to stay current.
4.8 – Trip inspections are completed before and after each use of a vehicle.	~	Drivers perform pre-trip and post-trip inspections daily on commercial vehicles. Checks on non-commercial vehicles are encouraged.
4.9 – Completed trip inspection reports are kept on hand as legislated.	✓	Inspection reports are filed and stored in the immediate supervisors' office.
4.10 – Where defects are noted on the trip inspection report, they are signed off by a mechanic prior to the vehicle being used.	✓	Defect repairs are signed off by the Lead Mechanic or the Fleet Supervisor.
4.11 – Staff vacancies are minimal, and efforts are being made to fill them.	✓	Fleet works to keep staffing at the approved level. Turnover is low and open positions are filled quickly.

The following points discuss areas for improvement in fleet Maintenance.

3.4.1 Preventative Maintenance (BMP 4.1)

A well-designed and executed preventive maintenance (PM) program is the cornerstone of effective fleet maintenance. The objective of a PM program is to minimize equipment

failure by maintaining a constant awareness of the condition of equipment and correcting defects before they become serious problems. A PM program minimizes unscheduled repairs by causing most maintenance and repair activities to occur through scheduled inspections. An effective PM program pays dividends not only in improved equipment safety and reliability, but also financially by extending the life of equipment, minimizing the high cost of breakdowns, and reducing lost employee productivity resulting from equipment downtime.

A preventative maintenance program is in place and is being executed. Best practices state that compliance rates of a PM program should be at 90%. Redmond is not currently meeting that target. This is not due to a lack of policy, but a lack of staffing to be able to execute the PM. Staffing will be covered later in the document and has been addressed in other areas as well. Lack of staffing will affect several areas of fleet operations and limit the City's ability to comply with most best practices.

3.4.2 Training Plan (BMP 4.6)

Fleet organizations are increasingly recognizing that well trained and technically expert technicians are a business necessity. Vehicles and fleet equipment are becoming more complicated and increasingly expensive. Training and professional certification provide an organization with assurance that equipment will be properly maintained and, therefore, that the value of the organization's equipment investments will be preserved. Training can also act as a retention tool in areas where technicians are in high demand.

In the past, fleet organizations relied almost entirely on training that was provided by vehicle and equipment manufacturers free of charge. While these programs are still available, organizations can no longer make them the centerpiece of their training efforts. This is due to the increasing demand for these programs from dealerships and private fleets, which has severely reduced the number of seats available to municipal technicians. Moreover, manufacturer-training programs have become increasingly complex with strict prerequisites that make it nearly impossible for an organization to rely on these programs to provide technicians with well-rounded training.

Consequently, municipal fleet organizations today are having to develop training programs that tap a variety of sources to provide technicians with the technical knowledge and updated skill sets that are required to maintain modern fleet equipment. Investing in technician training should be a high priority for the City.

Redmond does not currently have a training or professional development program for fleet staff. Mechanics can be reimbursed for obtaining ASE certifications, but there are no stipends or other incentives for obtaining them. The City should consider these as first

steps to developing and maintaining a highly skilled and continuously improving workforce. A target of 40 training hours per year is the industry standard. Training may be delivered by manufacturers, through professional organizations such as ASE, or through third-party programs (either online or in person).

3.4.3 Trip Inspections (BMP 4.8)

Trip inspections should be completed by all vehicle and equipment operators prior to the use of any vehicles. These inspections help ensure that the vehicle is in a safe operating condition and that no worker is endangered during the operation of the vehicle. Visual inspections of the vehicle and surrounding areas should be conducted prior to operating the vehicle. A checklist tailored for each vehicle class should be used. Areas of inspection include, but are not limited to:

- Tire pressure shall be consistent with pounds stated in the owner's manual.
- Tire condition.
- Proper functioning of lights and direction indicators.
- Brakes (pedal function check).
- Adjustment of mirrors and driving position.
- Instruments and gauges.
- Any internal or external damage.

While drivers are responsible for the actual conduct of the inspection, supervisors should ensure that inspections are completed to a satisfactory standard. When defects are noted on the daily inspection, the driver, aided by the supervisor, must determine if it is a safety-related (major) defect that impacts the ability to use the vehicle in a safe manner. If so, the defect should be noted, and the vehicle must immediately be referred to maintenance and cannot be operated until the vehicle is fixed and the defect is signed off on the work order as being resolved. Non-safety related (minor) defects should be noted on the trip inspection and addressed as shop time and vehicle availability permit. Work orders noting defects and the sign-off by mechanics should be retained by fleet staff.

Trip inspections are currently enforced on all commercial vehicles but are only encouraged for non-commercial vehicles in Redmond. To fully comply with best practice standards, pre- and post-trip inspections should be performed and documented on all vehicles.

Recommendations:

11. **Increase the preventative maintenance compliance rate to 90%.**

12. **Ensure training of 40 hours per years is provided to technicians.**

13. **Enforce trip inspections for all fleet assets.**

3.5 Technology

Comprehensive, accurate, and readily accessible records regarding fleet operations are essential to optimize performance and manage costs. Fleet maintenance shops have evolved to use management information systems to document operations and produce management reports. Having all maintenance and other data available in a computerized system and accessible by all fleet program stakeholders is effective in managing shop operations and provides an efficient way to retrieve and report key information.

The following table shows how city operations compare to best practices in the areas of fleet technology and information management.

5. Technology		
5.1 – A Fleet Information Management System (FIMS) is in place that uses modern technology and provides up to date functionality for asset management, maintenance management, and cost reporting.	~	The City of Redmond is currently using Assetworks Fleet Anywhere (FA) as their Fleet Management Information System. Fleet uses most of the available modules and is considering adding additional modules. Fire's assets have been entered but the Department is not using the system for fleet and maintenance management.
5.2 – Access to the fleet system is readily available to all staff, including parts clerks and technicians.	✓	All mechanics and the Inventory Control Specialist have been trained and have access to the applicable FA modules.
5.3 – All members of staff have been appropriately trained in the use of the fleet system.	✓	Staff members have been trained and are competent in the modules of FA that they use.
5.4 – The fuel system tracks both the vehicle being fueled and the driver.	✓	The current fuel system tracks fuel usage through a fuel card assigned to the vehicle and a driver-specific PIN number.
5.5 – A telematics system is in place to improve routing and scheduling of services, identify driver training issues, and provide timely fleet data.	X	Telematics are not currently being used City-wide. A pilot program is currently being conducted on 52 units.

5. Technology		
5.6 – Information produced by systems are routinely used to make management decisions and reports are provided to customer departments.	~	The Fleet team uses the management reports in FA to guide business decisions and to modify/adjust programs and practices. Reports are provided to customers on request.

The following points discuss areas for improvement in fleet information management.

3.5.1 FMIS (BMP 5.1)

The most essential information tool for a municipal fleet operation is a functional fleet management information system (FMIS). The primary benefit of a fully integrated FMIS is the ability to manage all aspects of a fleet operation through a single interface and toolkit. Having all pertinent transactional and management data consolidated in a single system and available to all fleet users provides an effective tool for day-to-day operational management, a basis for timely management decisions, and an efficient information retrieval and reporting platform.

An FMIS should, at a minimum, contain an inventory of all fleet assets which can be filled out with all asset information and updated as age and mileage increase for each unit, along with a work order system which allows the organization to track maintenance, repairs, and the associated costs for each asset. Some systems also have features which allow the programming of maintenance schedules, the tracking of parts inventory, integrations with financial modules for tracking internal and outsourced labor costs, and additional features such as fuel management, telematics, and more.

The City has one of the best FMIS options available and has made continual improvements to enhance its usability for fleet staff and customers. Space on the shop floor has prevented mechanics from accessing the system from their workstation.

The Fire Department's assets are recorded in FMIS but they do not use the system for fleet and maintenance management. Fire staff is not trained on the tool.

3.5.2 Telematics (BMP 5.5)

Many of the recommendations in this document, such as tracking utilization and generating high quality data for decision-making, can be facilitated with the use of a telematics system that can collect information on vehicles and operations. Some of the data that can be collected includes:

- Location

- Odometer readings
- Maintenance issues
- Fuel consumption
- Idling time
- Driver behavior (speeding, fast accelerations, etc.)

This data can be used for a variety of decision-making and other purposes, including the identification of lightly used assets, justification for vehicle replacement, recommendations for electrification, opportunities for driver training and protection in the case of accusations against innocent drivers.

The City has begun piloting a telematics system, with a test group of 50 vehicles. Once this test pilot has concluded and the City has determined the appropriate system, they should acquire a telematics system for all City vehicles to support data gathering and improve fleet efficiency. Most telematics providers will demonstrate that the introduction of this technology will result in efficiency savings totaling more than the cost of the product.

3.5.3 Management Decisions (BMP 5.6)

Assetworks is capable of generating data and information to feed decisions on fleet replacement, outsourcing, repair or replace, utilization and much more.

Currently, the City does not have a strategy to ensure all available information is tracked and used for decisions. A carefully developed reporting matrix is an excellent tool to demonstrate what information should be collected and reported to what level of management and at what frequency. An example appears below:

Information	From	To	Time	Means
Preventive Maintenance	Fleet Manager	Divisions	Monthly	FMIS alert
Compliance	Fleet Manager	City Manager	Quarterly	Fleet Report
Downtime	Fleet Manager	Divisions	Monthly	FMIS alert
Fuel Usage	Fleet Manager	Divisions	Monthly	Email

This would enhance the ability at all levels to make timely and informed decision.

Recommendations:

14. **Make Assetworks available at mechanic workstations and implement and use it to manage the Fire fleet.**

15. **Implement telematics on all fleet assets to track utilization and candidates for electric transition.**

16. **Develop a reporting matrix for use in making decisions about fleet maintenance, utilization, and replacement.**

3.6 Motor Pool

The definition of a motor pool is a group or fleet of motor vehicles whose use is shared on a short-term basis by the personnel of an organization. Ideally, having an efficiently run, self-service motor pool comprising well utilized vehicles assures the organization can achieve its mission in the most cost-effective and efficient way.

Motor pools provide employees who need commonly used vehicles with the asset they need, in a convenient location, at the time needed by the driver. These four principles should be respected:

Right vehicles Right quantities Right locations Right times

Right vehicles. The vehicle type of the shared asset is aligned to the purpose needed by users.

Right quantities. Each location is tailored with the right number of vehicles to meet needs.

Right Place. The location of the pool(s) will dictate how often they are used. Employees will drive their own vehicles or call a rideshare if it is inconvenient to access a pool vehicle. Secure storage and adequate well-lit parking are required for the pool vehicles as well as the driver's vehicle (if left on site).

Right time. Some travel can be planned, whereas other travel may be required at the last minute. Employees can be confident that safe, reliable vehicles will be there when needed,

or they will not even check pool availability. Vehicles should be accessible 24 hours a day and drivers will be able to schedule reservations online from their phone or desk.

6. Motor Pool		
6.1 – Motor Pool vehicles are available for occasional transportation needs.	✓	Motor Pool vehicles are available at both MOC and City Hall.
6.2 – The composition of the pools includes a variety of vehicles that are in high demand.	✓	Each of the pools has three sedans and an SUV or pickup. Most of the pool vehicles are alternative fueled.
6.3 – The check-in and out processes for pooled vehicles are efficient and easy to use.	X	The process for checking out vehicles varies by site. The Motor Pool option in FA is not being used.
6.4 – Positive controls are in place to ensure that pool users causing damage to vehicles are held accountable for the damage.	✓	Vehicles must be checked in and out so that vehicle condition can be assessed.
6.5 – Daily rental rates for pooled vehicles are reasonable to cover capital and operating costs of the pooled asset.	✓	Replacement, maintenance, fuel, and insurance costs for pool vehicles are allocated by the Financial Planning group to using departments/divisions based on usage history.

The following points discuss areas for improvement in fleet information management.

3.6.1 Vehicle check-out (BMP 6.3)

Motor pools are only successful if they have a desirable mix of vehicles at the right locations and booking is user-friendly. If not, employees will either want a dedicated City vehicle or use their own vehicles.

The management of pool assets should be centralized with a digital reservation system. The utilization of the Assetworks fleet management system motor pool module will aid planning/scheduling pool assignments. This model will allow the pool to managed centrally but dispersed locally and would realize the benefits of centralization while remaining convenient for users.

Pooled vehicles in Redmond consist of light-duty vehicles available to meet occasional transportation needs. One pool is located at the MOC, and the other is located at City Hall. There are a few spare vehicles retained by the individual departments to ensure that they are not idle while their frontline vehicles are undergoing repairs.

Recommendations:

17. **Use Assetworks or other pool management software to plan/schedule pool vehicle assignments.**

3.7 Performance Measurement

In the realm of municipal fleet operations, the implementation of a rigorous performance measurement system is crucial for ensuring service effectiveness and efficiency. This system, benchmarked against industry standards, encompasses several key practices. Firstly, a formalized tracking system is established to monitor service outcomes, ensuring they align well with industry benchmarks. Additionally, a clear reporting matrix is in place, detailing the flow of information regarding frequency, recipients, and format. Critical metrics such as vehicle availability, and adherence to repair times are meticulously monitored. These best practices collectively contribute to the high-performance and sustainability of municipal fleet operations, demonstrating a commitment to excellence and continuous improvement in public service delivery.

7. Performance Measurement		
7.1 – A formal performance measurement system is in place to track the effectiveness of service outcomes, and performance levels compare reasonably well to industry benchmarks.	~	Quarterly reports are extracted from FA to monitor the performance of Fleet Operations and to guide decision-making for the team. Fleet metrics are not compared to industry standards or best practices.
7.2 – Fleet has a reporting matrix defining what information needs to go to who, with what frequency, and in what format.	X	The organization has not formally defined reporting requirements.
7.3 – Vehicle Availability averages 95%.	✓	This benchmark is met.
7.4 – Time of repair adheres to industry standard of 48 hours for a minor repair and one week for a major repair.	✓	The timeliness of in-house repairs meets this standard.
7.5 – The ratio of scheduled to unscheduled work is at least 2:1.	✓	PMs and the work that flows immediately from PMs make up 2/3 of the work in the shop.

The following points discuss areas for improvement in fleet information management.

3.7.1 Performance Measurement System and Reporting (BMP 7.1 and 7.2)

Performance measurement systems are a valuable management tool that can be used to increase efficiency and accountability within an organization. The use of year-to-year historical data and industry benchmarks to measure performance can provide management with the data necessary to recognize and diagnose potential problem areas as well as opportunities for improvement. KPIs also provide the organization with the information necessary to communicate the value of the services it provides. Concrete, measurable, and challenging goals are crucial tools for optimizing organizational performance.

With the use of Fleet Anywhere, Redmond is currently reporting on many of the data points suggested as best practice. The City can improve in its comparison to industry standards, which can be found below and should be implemented.

- **Average Fleet Age:** This measure tracks the average age of the fleet in comparison to average replacement cycles. Major classes of vehicles should be tracked separately. Trends should be presented for multiple years and associated with other Key Performance Indicators (KPIs) as the age of the fleet has a fundamental impact on program performance.
- **Fleet Availability**: This measure tracks the percentage of the fleet that is available for work each day. The calculation is simply the total number of vehicles and pieces of equipment in the fleet divided by the number of vehicles out of service for repair (i.e., in the shop, waiting in the deadline to come into the shop, or at a vendor). The target performance for this KPI is 95%.
- **Service Turnaround Time**: This measure tracks the percentage of repairs that are completed within 24 and 48 hours. A good target of performance for this KPI is 70% of repairs and services completed in 24 hours and 90% in 48 hours.
- **Scheduled Repairs:** This measure tracks the percentage of workorders resulting from scheduled activities (such as preventative maintenance (PM), inspections, work discovered during PMs and inspections, recalls, etc.) versus unscheduled activities (such as breakdowns and road calls). The standard of performance for this KPI is at least 60% scheduled.
- **Downtime:** This measure tracks segments of downtime while vehicles are down for repair. The entire lifecycle of a work order should be tracked including waiting for a mechanic or shop bay, waiting for customer approval, under repair, waiting for parts, at a vendor, waiting for validation and closure, waiting for pickup, etc.

Tracking of this measure enables a fleet organization to understand what activities are causing downtime and delays so they can be managed.

- **PM Compliance**: This KPI measures the percentage of PMs and scheduled inspections that are completed before they are overdue. The target performance for this KPI is 90%.
- **Billable Hours:** This KPI tracks how productive mechanics are in terms of the annual number of hours billed to work orders. The target for this KPI is 70% of annual regular payroll hours (1,456 of 2,080 hours per year).

Having a formal process for reporting this information is just as important as tracking it. Without proper reporting structures, the information is collected for naught.

Recommendations:

18. Track and report on the performance metrics described.

3.8 Disposal

The vehicle/equipment disposal process is an important yet often undervalued aspect of vehicle ownership. Maximizing the organization's return on their investment is a critical component of the total cost of ownership (TCO) equation. Understanding seasonal fluctuations in markets, market size and other variables can impact the fleet decision on disposition method, location, and final auction partner.

8. Disposal		
8.1 – Vehicles are disposed of in the most efficient and cost-effective manner possible.	✓	Vehicles are sold at a local auction that combines other local fleets in an effort to maximize customer draw and increase sales revenue.
8.2 – Funds from vehicle disposal are returned to the equipment replacement fund.	~	Funds from vehicle disposal are returned to the Fleet General fund but are not specifically earmarked for capital purchases.
8.3 – Vehicles determined to no longer be needed are immediately removed from service to control fleet size.	✓	Fleet requires a vehicle to be turned in to receive a new vehicle. A key exchange is performed to control fleet size.
8.4 – There is a formal decommissioning process in place whereby logos and sensitive equipment (police) are removed from the vehicle being disposed of.	✓	All equipment is removed in the decommissioning process and transferred to the new asset. Equipment which does not fit the new asset or needs of the user will be disposed of or recycled.

8. Disposal		
8.5 – The formal decommissioning process includes removal of the asset from FA and the fuel system.	✓	Assets are tagged "out of service" in FA and the fuel cards are returned to the Fleet supervisor and reassigned to the replacement vehicle. After auction proceeds are received, the asset is put in a "sold" or "traded-in" status and removed from all reports.

The following points discuss areas for improvement in fleet information management.

3.6.1 Funds (BMP 8.2)

When vehicles are disposed of (either auctioned or sold for scrap), the proceeds from these sales should be cycled back into the fund, earmarked for fleet replacement. This will incentivize the Department to quickly dispose of old vehicles, and it will reinforce the linkage between vehicle disposal and the total cost of ownership.

Presently, the funds are returned to the fleet general fund.

Recommendations:

19. Return proceeds from vehicle remarketing to the fleet replacement fund.

4. Gap Analysis

4.1 Introduction

In 2011, the City contracted with Fleet Counselor Services Inc. (FCS) to perform a review of the General and Fire fleet operations. This review included an analysis of whether fleet maintenance and management should be centralized. In addition, FCS examined these areas:

- A comparison to industry Best Practices in 20 fleet functional practices.
- A site visit and facility review.
- A customer service and performance study.
- A maintenance staffing analysis.
- A utilization assessment.

The 2011 report noted the difficulty in making recommendations for the Fire fleet due to the lack of data. FCS's recommendations were summarized, reviewed by the Director's Team and City staff, and preliminary responses were developed in 2016, addressing only the recommendations impacting Public Works.

4.2 2011 Recommendations

There is no comprehensive list of the FCS recommendations, rather they are scattered throughout the report. A list of top priority recommendations includes the following actions:

1. Hire a Service Worker.
2. Implement Fleet Anywhere fleet management software as soon as possible.
3. Create Utilization Management Committee and establish utilization by class.
4. Complete a facility renovation or build a new one.
5. Create motor pools for shared vehicle access.
6. Have diagnostic software installed on technician's laptops.
7. Implement Preventive and Predictive Maintenance programs.
8. Finish and get approval for the Policies and Procedures Manual.

9. Develop a standard of communication with customers regarding repair status,
10. PM scheduling, and new equipment delivery
11. Create a policy that states old vehicles and equipment must be turned in to
12. Fleet Services prior to new vehicles and equipment being issued.
13. Create Charge Back billing, labor rates, parts, and fuel markups.
14. Increase the amount of direct labor charged to work orders.
15. Institute Performance Measures for Fleet Manager.
16. Create Performance Contracts with each customer.
17. Develop an E85 vehicle program.
18. Refine vehicle and equipment Job Assessment forms.
19. Revise current replacement policy.

In addition to these priorities, there are dozens of other recommendations throughout the report. Some of the more significant ones include:

20. Provide formal training plans and certification opportunities to all staff.
21. Improve small equipment maintenance management.
22. Continue to improve Assetworks functionality.
23. Enter Fire assets in Assetworks.
24. Make Assetworks FA available to Departments.
25. Conduct a utilization review.
26. Create fleet performance dashboards.
27. Consolidate fleet organizations and repair location and reclassify staff.

4.3 Status of 2011 Recommendations

The consolidated list of 25 recommendations has been reviewed. First, the 2022 update from the City was used to identify progress. Next, interviews with stakeholder confirmed any remaining actions taken. The next table shows all recommendations and progress to date. Items in **bold** are deemed **complete**.

2011 Recommendation	Updates
1. Hire a Service Worker.	The City has not pursued this due to lack of shop/bay space and budget restrictions on new FTEs. Fleet supports this addition as a budget request with the new shop.
2. Implement Fleet Anywhere fleet management software as soon as possible.	**Implemented Assetworks Fleet Anywhere and Fuel Focus systems.**
3. Create Utilization Management Committee and establish utilization by class.	**Created governance structure for Fleet including Core Implementation Team, Steering Committee, Fleet Advisory Board and Users Group.**
4. Complete a facility renovation or build a new one.	In Progress.
5. Create motor pools for shared vehicle access.	**Motor pools are now available at City Hall and MOC. Fleet is working on check in/out module within Assetworks for digital reservations.**
6. Have diagnostic software installed on technician's laptops.	**Provided all mechanics with rugged laptops with access to Assetworks to log time, request parts, look up repair histories, etc.**
7. Implement Preventive and Predictive Maintenance programs.	**Created Preventive Maintenance (PM) schedules based on vehicle classes and PM SOPs.**
8. Finish and get approval for the Policies and Procedures Manual.	In Progress.
9. Develop a standard of communication with customers regarding repair status, PM scheduling, and new equipment delivery.	In progress. Yearly meetings are now held with users as well as quarterly fleet meetings, but no written standard procedure yet exists. Fleet is working to automate the scheduling of these meetings.

2011 Recommendation	Updates
10. Create a policy that states old vehicles and equipment must be turned in to Fleet Services prior to new vehicles and equipment being issued.	See #8
11. Create Charge Back billing, labor rates, parts, and fuel markups.	An updated Fleet rates development process was used in the 2023-24 budget process. Further review is part of the 2023 project scope.
12. Increase the amount of direct labor charged to work orders.	**Established an annual Fleet Division workplan to report on labor hours per task, develop accurate estimates, and analyze deviations. Direct time has significantly increased (vs indirect) since 2011 study and is meeting established targets.**
13. Institute Performance Measures for Fleet Manager.	**Fleet has KPIs for shop operations.**
14. Create Performance Contracts with each customer.	**Established annual meetings with each Division's fleet representative to discuss vehicle replacements and other fleet needs**
15. Develop an E85 vehicle program.	**The City has decided not to invest in an E85 vehicle program.**
16. Refine vehicle and equipment Job Assessment forms.	See #9 This is part of quarterly and yearly check-ins but needs additional work.
17. Revise current replacement policy.	See #8 and #11
18. Improve Staff Training	**Fleet offers training and certifications to all mechanics, including ASE cert and classes on new technologies**
19. Improve small equipment maintenance.	**Created a Small Equipment Auto Services Worker position and incorporated small equipment in Assetworks.**
20. Update Assetworks.	**Implemented the Service Request module of Assetworks, allowing customers to request service and look up equipment information**
21. Enter Fire assets in Assetworks	**The assets now appear in Assetworks but the Fire Department does not track maintenance or fuel in the system.**

2011 Recommendation	Updates
22. Give customers access to Assetworks	**Customers have been given access to Assetworks at the Supervisor level and above to submit service requests since the study was completed. Additional access will be granted for motor pool reservations.**
23. Conduct a utilization review	In progress as part of the 2023 project.
24. Create fleet dashboards	There is an existing workplan item to create KPI dashboards for all Public Works Operations divisions, including Fleet (see #13).
25. Consolidate fleet organizations and repair locations and reclassify staff.	This is the intended outcome of the MOC Master Plan and reconstruction project (see #4).

4.4 Next Steps

In order to close out outstanding issues from the 2011 fleet review, a few areas require attention and several of these are being addressed by the 2023 study.

Facilities and Staffing (#1,4,25)

The 2011 review called for facility modifications as well as some consolidation of fleet responsibilities and the necessary staffing changes. The construction of a new facility is under review as part of a separate study and the 2023 fleet study has proposed a space plan to meet fleet needs.

Policies and Procedures (#7,8,10,16,17)

A Fleet Policy and Procedures Manual has been drafted and includes the areas identified in the 2011 review such as Fleet and user Department responsibilities, remarketing, and fleet replacement.

Chargeback and Rates (#11)

The 2023 study includes a cost allocation and rate review and will result in a recommended methodology for the City.

Performance Measurement (#13,24)

The 2011 review recommended that performance measures and a dashboard be established. This is one of the next priorities for the City but was not part of the 2023 study.

Utilization Review (#23)

The 2011 review recommended that the City conduct a utilization study which has been conducted as part of the 2023 fleet study. The recommendations from this detailed utilization study should be implemented.

Recommendations

20. **Discontinue tracking of issues from the 2011 report that have been completed or dismissed.**

21. **Share this study's Space Plan with the team working on options for the new facility.**

22. **Complete and publish the fleet Policies and Procedures Manual.**

23. **Implement the cost allocation methodology recommended in this report.**

24. **Continue to develop a Performance Measurement dashboard with the metrics needed by decision-makers.**

25. **Implement the recommendations of the Utilization Review conducted in Component B of this study.**

5. Facility Assessment

As part of the fleet study for the City of Redmond, the project team was tasked with reviewing the current fleet maintenance facilities as well as future space needs. This task was moved to the beginning of the project to align with the Municipal Operations Center (MOC) master planning efforts that were under way during the summer of 2023 and to be completed by the end of 2023.

The Matrix project team was on site in July 2023 to tour the existing fleet maintenance shops and storage areas at the Municipal Operations Center and the Fire Fleet Maintenance shop. Conversations were held with fleet maintenance staff at both shops to discuss their facility needs. As a result of these conversations and tours, the project team developed a current assessment of the facilities and an architectural space plan outlining the space needs for a consolidated fleet maintenance operations for the City. The architectural space plan was shared with both Fleet teams and the MOC master planning team for their review and feedback. This feedback was reviewed and incorporated into the architectural space program where appropriate.

This document will describe the current state as well as outline the approach to developing the space program and present the space needs for a consolidated fleet maintenance operation and discuss the space needs if Fire Fleet Maintenance was to remain a separate entity.

5.1 Current State of Facilities

In terms of the general condition of the Fleet Maintenance and Fire fleet facilities, our initial observations are shown below.

Checklist	Fleet Maintenance	Fire Maintenance
Shop Organization	The main shop is well organized. The spaces in the shop are well defined. The small engine area is in a separate location and due to layout restrictions, it is not well organized.	The shop is well organized. The catch all spaces for large, shared equipment may be organized more cohesively.
Cleanliness	The shop is very clean.	The shop is very clean.
Lighting	The lighting is fair and in good working order.	The lightening is good and very bright.

Checklist	Fleet Maintenance	Fire Maintenance
Floors	Floors are clean and in fair condition given the age.	Floors are clean and in excellent shape for their age.
Tools	Shared tools are stored where space is available, and some are located away from the primary shop.	Tools are readily accessible to staff and in a central location.
Parts room	Well organized but parts are disbursed based on available space.	Well organized.
Workstations	Technicians have access to workstations adjacent to the primary work bay. Small engine workstation is in the small engine repair bay.	Technicians have access to workstations adjacent to the primary work bay.
Lead Mechanic / Supervisor Office	Located adjacent to the staff work area and repair bays. It is a private office.	Adjacent to the repair bays and in the same area as technician.
Lube dispensing	Frequently used lubes are accessible from drop hoses in repair bays. Water and DEF are not included.	Frequently used lubes are accessible from drop hoses in repair bays.

In addition to this checklist, we looked at the main service areas of both shops with the following observations.

(1) Number and Configuration of Bays.

The Public Works facility has four bays assigned to the four mechanics as follows:

- Two for medium to heavy duty vehicles. Each bay is approximately 45 feet long and 12 feet wide. The length includes the storage for the mechanics toolbox.
- Two for light-duty and police vehicles. Each bay is approximately 45 feet long and 12 feet wide. The length includes the storage for the mechanics toolbox.
- The small equipment bay is located in another building in the yard. The bay is approximately 18 feet long and 12 feet wide. This includes the mechanics workstation and intake area.

The Fire Shop is located at Station 16 and has two large apparatus/heavy duty bays and one light duty bay.

(2) Tools and Equipment.

The majority of tools and equipment are located within the primary workshop area, the adjacent storage area, or located immediately adjacent to the exterior of the building. The tire storage area is located elsewhere on the site and is approximately 200 yards away.

For Fire Fleet all of their equipment and tools are located in the primary maintenance bays.

(3) Hazardous Waste Disposal.

Hazardous waste disposal is located within the maintenance bays or is immediately adjacent (e.g., collection areas for used oil).

(4) Parts Room.

The parts area of the main fleet shop is disbursed throughout the building. For example, bolt storage is located in the technician's office area.

The fire fleet maintenance parts room is adjacent to the maintenance bays and is approximately 350 square feet.

(5) Yard Layout.

At the MOC, there are eight parking spaces designated for vehicle drop off and pick up. This area is within the secure perimeter of the site. The staging area for large vehicles may be located throughout the yard, depending on other parking constraints on the site.

At the Fire facility, there is sufficient staging area within the secure and non-secure portion of the site for both light and heavy-duty vehicles and apparatus.

(5) Fuel Facility and Operation

The fuel facility is located at MOC. The fueling station is accessible to City staff and has decent circulation around the fuel island. Fuel deliveries are difficult due to the tight area within the secure perimeter of the site. This poses some operational and accessibility challenges.

5.2 Approach to Development of the Space Program

The project team analyzed the future space needs to properly and efficiently maintain the City of Redmon's fleet and equipment. A shop should be adequately sized to handle the agency's largest equipment that is maintained internally and there should be enough maintenance bays so that vehicles may be disassembled for a few days while awaiting parts or undergoing repair. The current primary facility is inadequately sized in terms of both square footage and the number of bays for current staff. Therefore, the project team started from scratch to develop a space program to address future needs.

A facility space program was developed to outline the future space needs to adequately accommodate future facility and space needs for Fleet Maintenance. There are several steps in order to develop the total space needs associated with a new facility. First, the project team projected the number of staff that eventually will occupy a maintenance facility (this analysis will be explained in the final report for the study). Second, the project team developed space standards for the most common space types. Third, a list of space types is developed with the related quantity required. Fourth, the total square footage needs by space type is determined. Finally, a building grossing factor is added to account for circulation, exterior walls, mechanical spaces, etc. and added to the total useable square footage.

(1) Space Standards

In order to develop a space program, the project team developed space standards to ensure consistency in space sizes. In the absence of agency adopted space standards, the project team utilized general space standards based on their previous work for high performing fleet organizations. The following space standards were developed and utilized for determining future space needs.

Space Standards

Space Type	Space Standard Per Unit
Manager Office	126
Supervisor Office	100
Technician Workstation	48
Light / Medium Vehicle Bay	720
Heavy Duty / Fire Apparatus Bay	1,500
Mechanics Tool Storage	80
Misc. Equipment Storage	50

Space standards identify the square feet that should be assigned specifically to that functions. For example, it would not include tool or equipment storage in a light vehicle bay space standard.

(2) Developing the Space Program

To ensure all readers of this report have the same understanding of what an architectural space program (or space program) is, it is important to outline the purpose and definitions used throughout this chapter.

An architectural space program outlines all applicable spaces that should be incorporated into a new facility. A space program details the individual spaces and subsequent square footage for each respective space. This listing of spaces and square footages include notes regarding operational adjacencies, along with other considerations that are beneficial to the architect during the design phase of the project. The space program will essentially guide an architect's understanding of the final design of the facility.

In order to better understand the components of a space program, the following five items are included in the space program tables:

1. Space name is the nomenclature used to identify individual spaces or the user of a particular space.
2. Number of Space identifies the total number of spaces for the space type or the number of individuals who are in a shared space.
3. Space Standard refers to the standard size associated with that space. The space standard is exclusive of the surrounding walls or circulation areas, etc. This is the internal area of an individual space (e.g., the internal dimension inside of an office). This is also classified as the Useable Square Footage (USF)
4. Total USF refers to the total space needs dedicated to that space type. (Number of Space multiplied by the Space Standard). This calculation provides the total useable square footage needed for the respective space type.
5. The Notes column is utilized to provide pertinent details about the individual space, it may include dimensions, furnishings, adjacencies, etc.

Additional terms that will be used throughout this chapter include several expressions that are related to spatial area and size.

- The first term used is "useable square footage" as discussed previously. Useable square footage (USF) refers to the internal area of a space. This is the internal area inside the walls of a specific space. Square footage does not include wall thickness, circulation space, mechanical chases, etc.
- Circulation factor is a percentage that is applied to the Useable Square footage that identifies the space needs for movement and circulation. The circulation factor is used to identify space needs associated with hallways within an individual space group (e.g., administration). Circulation factors range between 10% and 50% depending on the type of space.
- Departmental Square Feet is the combination of the useable square feet and circulation factor square footage. Departmental square feet refer to the total space needs of a particular subset of a building (e.g., administration office space, staff support areas, maintenance areas, etc.).
- The final space term presented in the space program is building square feet. Building Square Feet (BSF) incorporates the building's envelope, mechanical spaces, and chases, etc. Also, this includes the circulation factor between areas and accounts for areas for staff to move between individual spaces. The building grossing factor is a percentage calculation based on the total useable square footage. BSF grossing factors typically range between 20 and 45%, and is primarily dependent on the use, construction material, and number of stories, if applicable. For example, warehouse buildings will have a lower building grossing factor than a smaller multi-room building. As storage buildings have thinner exterior walls and less mechanical support spaces when compared to a multi-room office building, which has more walls and mechanical needs.

The project team developed a space program based on the current operational philosophy. Individual spaces were identified, and a corresponding square footage was determined. The notes column was completed with appropriate information when required. After the total useable square footage was determined the circulation factor was applied to determine the departmental space needs. A building grossing factor was calculated and added to the total departmental square footage to determine the total building gross square footage requirement.

The calculated building gross square footage is used by the architect to develop schematic designs of a new facility. This space program only analyzed the space needs for the facility and does not consider site needs (e.g., parking spaces, land area, etc.). Overall, a space program is developed to provide an estimated square footage for a fleet

maintenance facility and to specify parameters for an architect to begin developing schematic design and site plan options.

5.3 Space Program

The following tables outline the space needs for a new consolidated Fleet Maintenance Shop, which would include maintenance areas for the Fire Department fleet personnel to operate from. The space program was divided between Administration and Support and Shop Area.

Administration and Support Space Program

Space Name	Number of Spaces	Space Standard	Total Useable SF	Notes
Manager	1	125	125	Private office, with seating for two guest.
Supervisor	2	100	200	Private office, with seating for two guest.
Technician Workstation	10	48	480	Open workstations.
Workroom	1	100	100	Work room that includes printers, work counter.
Office Supply Storage	1	80	80	Secure storage adjacent to office area.
Break Area	1	275	275	Includes counter, sink, cabinets, refrigerator, coffee maker, table, and chairs. Will also serve as a meeting space for Fleet Maintenance staff.
Locker Room	15	10	150	Full size lockers and bench.
Shower / Changing Area	3	50	150	Unisex changing area (2) and 1 shower. Adjacent to locker room.
Restroom	2	50	100	Two unisex restrooms.
Janitor's Closet	1	35	35	Includes mop sink and storage shelves.
Customer Counter	2	48	96	Workstation for vehicle drop off / pickup
Customer Waiting	1	80	80	Waiting area for customers to drop off and pickup.

Space Name	Number of Spaces	Space Standard	Total Useable SF	Notes
		Total Useable Square Feet:	**1,871**	
		Circulation Factor:	*35%*	*655*
		Total Departmental Square Feet:	**2,526**	

A total of 2,526 departmental square feet is needed for administration and support space for consolidated fleet operations.

The following table summarizes the space needs for the Maintenance Shop.

Maintenance Shop Space Program

Space Name	Number of Spaces	Space Standard	Total Useable SF	Notes
Fire Apparatus Bay	2	1,500	3,000	Minimum of 20 feet wide and 75 feet long. Should be drive through bay.
Heavy Duty Bay	10	1,000	10,000	Minimum of 20 feet wide and 50 feet long.
Light / Medium Duty Bay	4	720	2,880	Minimum of 18 feet wide and 40 feet long.
Mechanic Tool Storage	12	80	960	Storage area adjacent to vehicle bay.
Shop Tool Storage	1	400	400	Storage area adjacent to bays for City owned shop tools.
Misc. Equipment Storage	1	400	400	Secure equipment storage, adjacent to bays.
Eye Wash Station / Decontamination	1	36	36	Centrally located in bays. Include combination eye wash station, shower.
Small Engine Bay	1	480	480	Minimum of 16 feet wide and 30 feet long. Includes two large work benches.
Small Engine Storage	1	100	100	Storage for small engine parts and supply.
Small Engine Queue	1	100	100	Area for the intake and return of small equipment. Separate from work area and secure.

Space Name	Number of Spaces	Space Standard	Total Useable SF	Notes
Parts Workstation	1	1	80	Open workstation outside of parts room.
Parts Storage	1	600	600	Secure storage of parts and supplies.
Tire Storage	1	500	500	Tire storage, that includes space saver moveable racks.
Tire Mounting	1	150	150	Separate room with tire mounting equipment. Located in close proximity to tire storage and bays.
Fabrication Room	1	300	300	Adjacent to bays.
Public Safety Vehicle Commissioning Storage	1	150	150	Secure storage for public safety storage (e.g., back seats, light bars, secure boxes, etc.)
Electronics Room	1	125	125	Secure, located near office area for enhanced HVAC.
Liquid Storage - New	1	300	300	Bulk storage area, located near building exterior.
Liquid Disposal Storage	1	250	250	Above ground storage for liquids. Includes multiple tanks for different liquids. Near building exterior.
		Total Useable Square Feet:	**20,811**	
		Circulation Factor: *25%*	*5,203*	
		Total Departmental Square Feet:	**26,014**	

A total of 26,014 departmental square feet is needed for the maintenance shop area which includes maintenance bays, parts and supply storage, tool storage, and other spaces needed for fleet maintenance operations.

The following tables summarize the building gross square footage needs for the consolidated fleet maintenance operations.

Building Gross Square Footage

	Useable SF	Departmental SF
Administration & Support	1,871	2,526
Maintenance Shop	20,811	26,014
Building Grossing Factor:	*15%*	*4,281*
Total Building Gross SF		**32,821**

A total of 32,821 building square feet is needed for a new consolidated fleet maintenance building.

5.4 Additional Fleet Facility Maintenance Needs

Conversations with Redmond staff indicated the desire to have an automatic car wash and large equipment washes onsite. These are typically standalone facilities that are accessible on the site to all applicable users. These two components were not included in the previously presented space program.

For site planning purposes the following parameters should be noted for the sizes of an automated carwash and large vehicle/equipment wash bay.

Automatic car washes can range between 1,200 and 2,000 square feet depending on the size and complexity of the wash system.

Large vehicle/equipment wash bays (non-automated) can range from 1,250 (25’ x 50’) to 2,400 (30’ x 80’) square feet.

5.5 Space Needs for a Non-Consolidated Fleet Maintenance Operation

It is recommended to consolidate the Fleet Maintenance and Fire Fleet Maintenance operations into a single facility. In the unlikely event that consolidation was not to occur, the space needed for this Fleet Maintenance Shop would be less. The following tables summarize the space needs if Fire fleet maintenance operations were not incorporated in the new facility.

Fleet Maintenance Space Program (Minus Fire)

Space Name	Number of Spaces	Space Standard	Total Useable SF	Notes
Administration and Support				
Manager	1	125	125	Private office, with seating for two guest.
Supervisor	1	100	100	Private office, with seating for two guest.
Technician Workstation	9	48	432	Open workstations.
Workroom	1	100	100	Work room that includes printers, work counter.
Office Supply Storage	1	80	80	Secure storage adjacent to office area.
Break Area	1	250	250	Includes counter, sink, cabinets, refrigerator, coffee maker, table, and chairs. Will also serve as a meeting space for Fleet Maintenance staff.
Locker Room	13	10	130	Full size lockers and bench.
Shower / Changing Area	3	50	150	Unisex changing area (2) and 1 shower. Adjacent to locker room.
Restroom	2	50	100	Two unisex restrooms.
Janitor's Closet	1	35	35	Includes mop sink and storage shelves.
Customer Counter	2	48	96	Workstation for vehicle drop off / pickup
Customer Waiting	1	80	80	Waiting area for customers to drop off and pickup.
		Total Useable Square Feet:	**1,678**	
		Circulation Factor:	*587*	
		Total Departmental Square Feet:	**2,265**	
Maintenance Shop				
Heavy Duty Bay	10	1,000	10,000	Minimum of 20 feet wide and 50 feet long.
Light / Medium Duty Bay	4	720	2,880	Minimum of 18 feet wide and 40 feet long.

Space Name	Number of Spaces	Space Standard	Total Useable SF	Notes
Mechanic Tool Storage	12	80	960	Storage area adjacent to vehicle bay.
Shop Tool Storage	1	400	400	Storage area adjacent to bays for City owned shop tools.
Misc. Equipment Storage	1	400	400	Secure equipment storage, adjacent to bays.
Eye Wash Station / Decontamination	1	36	36	Centrally located in bays. Include combination eye wash station, shower.
Small Engine Bay	1	480	480	Minimum of 16 feet wide and 30 feet long. Includes two large work benches.
Small Engine Storage	1	100	100	Storage for small engine parts and supply.
Small Engine Queue	1	100	100	Area for the intake and return of small equipment. Separate from work area and secure.
Parts Workstation	1	1	80	Open workstation outside of parts room.
Parts Storage	1	500	500	Secure storage of parts and supplies.
Tire Storage	1	400	400	Tire storage, that includes space saver moveable racks.
Tire Mounting	1	150	150	Separate room with tire mounting equipment. Located in close proximity to tire storage and bays.
Fabrication Room	1	300	300	Adjacent to bays.
Public Safety Vehicle Commissioning Storage	1	150	150	Secure storage for public safety storage (e.g. back seats, light bars, secure boxes, etc.)
Electronics Room	1	125	125	Secure, located near office area for enhanced HVAC.

Space Name	Number of Spaces	Space Standard	Total Useable SF	Notes
Liquid Storage - New	1	300	300	Bulk storage area, located near building exterior.
Liquid Disposal Storage	1	250	250	Above ground storage for liquids. Includes multiple tanks for different liquids. Near building exterior.
		Total Useable Square Feet:	**17,611**	
		Circulation Factor: *25%*	*4,403*	
		Total Departmental Square Feet:	**22,014**	
		Total Departmental Square Feet	**24,279**	
		Building Grossing Factor: *15%*	*3,642*	
		Total Building Gross Square Feet	**27,921**	

A total of 27,921 building square feet would be needed for fleet maintenance operations if Fire fleet maintenance operations were excluded. This is a decrease of 4,900 building square feet. The current fire fleet maintenance shop, however, is approximately 5,800 building square feet, meaning a surplus of 900 sq ft is required if there are two separate buildings.

Recommendations

26. Build a new facility with the functionality described.

6. Cost Allocation

A key component of the study was a review of the current allocation methodologies for City fleet maintenance and replacement (less Fire). As a guiding principle, rates must be fair, equitable and defensible. The Fleet Division is currently an Internal Service Fund. This means that the fund is self-sufficient and funded through annual chargebacks to different City funds and departments that it supports.

The following table shows how the City compares to best practices in Fleet Allocation and Rates:

Criteria	Meets	Comments
1. A cost charge-back system is in place that promotes fairness, equity and transparency and incentivizes fleet users to reduce ownership and operating costs.	~	There is a chargeback system with information disseminated to departments on the use of that system, but it is not set up to incentivize users to reduce their ownership or operating costs.
2. An Internal Service Fund (ISF) is in place to fund maintenance and replacement.	✓	There is a Fleet ISF in place.
3. Rates have a capital equipment replacement as well as an operating component.	✓	The current rates include a replacement component.
4. There are separate funds or accounts for capital replacement and operating costs.	✓	Operating and capital costs are tracked in two separate funds.
5. Mark-up percentages are reasonable.	✓	The mark-up percentages are appropriate.
6. Overhead costs are recovered in the rates.	~	Overhead costs for Fleet staff are captured in the rate, but overhead from Finance and other internal support functions citywide are not built into the fleet rates.
7. Reserves are created for emergency requirements.	~	There are reserves that exist, but those are only for replacement, there are no reserves set aside for emergency needs.
8. Staff assigned and budgeted within the ISF are reviewed annually to ensure that staff are allocated appropriately.	✓	All staff included in Fleet funds are fleet-related and as such have been accounted for appropriately.

Criteria	Meets	Comments
9. Allocation methodology for chargeback is reviewed regularly to ensure that it appropriately captures the support.	✓	The chargebacks are updated every year based upon the methodology components and the methodology is reviewed at that time to ensure that it is still appropriate.
10. Allocation methodology for chargeback is updated annually or biennially to capture updated vehicle inventory, costs, and labor hours.	✓	Regular updates are made.
11. Allocation methodology is replicable and matches operating expenditures.	✓	Allocation is aligned with operations.
12. There are clear policies and procedures regarding the current chargeback methodology, amounts, and update process.	~	There is some information regarding the methodology and chargeback, but more detailed policies and procedures for internal Fleet and Finance staff use can be developed as well as for external customers.

Although the City generally meets fleet allocation rate best practices, there are some opportunities for improvement in incentivization for reducing fleet utilization and developing more detailed policies and procedures. The remainder of this chapter provides an overview of the current process and methodology and provides recommendations on opportunities for improvement.

6.1 Current Fleet Allocation Methodology

Fleet is responsible for fleet replacement and maintenance so City departments (less Fire) can effectively provide services and respond to emergencies within the community. To fund these service areas, there are four different fleet-related chargebacks currently assessed to City funds and departments:

1. **Fleet Replacement** – this chargeback is associated with eventual replacement of fleet vehicles and equipment.

2. **Maintenance and Operations** – a chargeback to cover the preventive and reactive maintenance costs associated with the City's fleet.

3. **Insurance** – chargeback associated to cover the costs of vehicle / equipment insurance.

4. **Fuel** – chargeback for recovering the expenses associated with purchasing fuel.

As part of the budgeting process, the City first determines the appropriate amount of funding that is needed for all fleet services and then backs out the amounts needed for fleet operations, fuel, insurance, and the remainder is considered the amount available for fleet replacement.

The current methodology for allocating costs varies depending on the service area. It is important to understand the current methodology to provide potential recommendations or opportunities for improvement as it relates to capturing the full cost of services. The following subsections discuss the chargeback methodology for each chargeback type:

6.1.1 Fleet Replacement Chargeback Current Methodology:

For Fleet Replacement, the methodology involves determining the original cost (purchase price), adding a 1% compounded inflation factor until its next replacement to determine the expected purchase price. The next step is to calculate the estimated salvage value (10% of the original purchase price) and reduce the projected purchase price by that salvage value. This new value (expected purchase price minus expected salvage value) becomes the new expected replacement value. This expected replacement value is divided by the expected lifecycle of the vehicle / equipment to calculate the annual replacement chargeback.

However, once the annual replacement chargeback is calculated an estimated 40-year replacement plan is developed identifying the years in which vehicles / equipment will be purchased. The total amount for each vehicle / equipment over the 40-year span, is added together to calculate the estimated percentage of replacement support for each type of vehicle or equipment. That percentage of support is summarized by department and multiplied against the estimated total dollar values set aside for replacement in a particular year to determine the individual chargeback amount.

6.1.2 Maintenance and Operations Current Methodology:

For Vehicle Maintenance and Operations, this includes taking the total staff and operating services and supplies costs (excluding Fuel and Insurance) to calculate the total expenses to be allocated through this chargeback code.

The methodology for maintenance and operations is to take the total maintenance cost (in-house and outsourced) for the vehicle or equipment over its entire life. The total cost is divided by the number of years in service to calculate the average annual cost. The annual cost is divided by the overall annual cost of all vehicles and equipment to determine the proportionate support for each individual vehicle or equipment. This percentage is multiplied by the total maintenance and operations budget to calculate the maintenance and operations chargeback.

6.1.3 Insurance Current Methodology:

Insurance refers to recovering the costs associated with vehicle / equipment insurance that the City must carry on behalf of city departments. This does not include claim costs, as those costs are charged back directly to departments. The insurance costs are allocated back to city funds and departments based upon the proportion of expected replacement costs (excluding any salvage value). This means that more expensive pieces of equipment / vehicles get a higher percentage of insurance allocation than the cheaper pieces of equipment or vehicles.

6.1.4 Fuel Chargeback Current Methodology:

The last component of the chargeback is the fuel chargeback. The fuel chargeback is based upon the prior year's estimated total fuel costs utilized. The total fuel costs are calculated as percentages and applied to the expected fuel expenditures for the current budget cycle.

6.1.5 Chargeback Current Methodology Summary

The City utilizes a comprehensive methodology for each type of service area to ensure that the chargeback amount is tied back specifically to the service being provided. The goal of the chargebacks is to cover the expected operating expenses as well as a portion of replacement.

6.2 Fleet Chargeback Allocation Methodology Recommendations

Overall, based on the review of the City's current methodology for fleet maintenance, operations, and replacement, there are no major changes recommended to the methodology. Each of the chargeback methodologies is directly tied to the service being provided. The following subsections discuss the current methodology's ability to meet the industry standard and opportunities for refinement and improvements.

6.2.1 Fleet Replacement Chargeback Methodology Recommendation:

The City's current practice of calculating an annual replacement value and projecting it out over 40 years does meet industry standards. However, there are three major components that require improvement in this methodology.

The first area of improvement is calculating the annual replacement chargeback based upon a backend calculation of the funds available for replacement for that year. For example, if the City determines that $3.5 million should be collected in chargebacks for Fleet services, the $3.5 million is spread over Maintenance and Operations, Fuel, and

Insurance based upon actual budgeted expenditures, and the remaining amount is the amount that is considered the Replacement cost. However, the City has created a 40-year replacement plan, which identifies for each fiscal year the estimated replacement costs that need to be incurred. As such, the replacement chargeback inaccurately represents the actual vehicles and equipment that need to be replaced in that particular year. It also results in the City setting aside insufficient reserves for the future to help fund those vehicles. The City should set its annual replacement chargeback based upon the expected vehicles and equipment to be replaced in that fiscal year.

If there are fluctuations or volatility in charges, the City should use a smoothed replacement plan. A smooth plan will help spread out capital expenses to allow for more stability on an annual basis. In that situation, capital costs will still be based upon the resources that are needed, rather than resources that are available.

The second component is the salvage value. The Fleet Fund has a separate revenue line item for salvage value revenue. This represents the estimated revenue that the division might receive from disposing / selling of vehicles / equipment that are being replaced. The danger with utilizing salvage value in the calculation is that it assumes that all vehicles and equipment, regardless of their level of use and circumstances of replacement, would result in monies coming into the fleet fund. As there is no guarantee, the best practice is to keep salvage value as a separate revenue line item in the fleet fund, which can help offset all fleet-related expenditures, rather than being given as an upfront discount to city funds and departments. As the City already calculates it as separate revenue, there is no need for the City to factor that into the overall replacement plan.

The third component is inflation. There is only a 1% compounded inflationary factor built into the expected replacement price. While that does help ensure some expected increases, there have been much higher inflation increases historically, and as such it might be better to calculate the expected replacement price, based upon the most recent purchase price of a similar type of equipment or vehicle, rather than add inflation to values from 5-10 years ago. This will ensure that it is more reflective of the current economic environment.

An area that the City does not currently consider in its replacement methodology is the specifications associated with the equipment or vehicle to be replaced. Currently, the assumption that each vehicle or equipment will be replaced with the same type; however, many funds / departments may want to transition to greener vehicles or upgrade their vehicle / equipment to a different piece of equipment or replacement, or they may not need to replace that equipment. Therefore, a component of the methodology should consider whether there needs to be additional factors built in for that type of equipment,

but it will ensure that departments' have sufficient funding when it comes time to buy the new piece of equipment or vehicle.

6.2.2 Maintenance and Operations Recommended Methodology:

The City's current methodology for maintenance and operations is based upon the total costs incurred over the entire lifespan of the vehicle divided by the years of service. This results in an annual cost that considers any spikes or dips in maintenance for any particular vehicle or equipment. The only recommendation would be if this is a difficult data set to obtain, the City doesn't have to use all the years, it can use the last 5 years, and it can still get similar information in stabilizing the work order support. However, if this is a simple report from the Fleet Management system, there are no concerns with the current methodology.

6.2.3 Insurance Recommended Methodology:

The Insurance chargeback methodology is based on the expected purchase price to replace each vehicle or equipment. While a premium may be influenced by how expensive the piece of equipment or vehicle is, generally, a premium is more of a baseline charge based on having vehicles or equipment. Therefore, it is recommended that the City consider altering this metric based upon the quantity of vehicles / equipment per Fund / Department. This will be a more equitable way to capture the cost and support associated with paying the premium costs for insurance. As noted, claim costs are directly passed on, in which case the departments that are incurring those costs are already paying directly for those costs.

6.2.4 Fuel Recommended Methodology:

The last methodology that is utilized by Redmond is to recover the costs of fuel, and these costs are allocated based on the prior years' utilization. The City tracks both based on the quantity consumed and the quantity of cost incurred in fuel charges. The allocation is based on the cost of fuel charges incurred as that more closely captures the different types of fuels being used by funds / departments. This cost is then used to calculate the proportional support, which is multiplied by the total fuel costs budgeted. This is the most defensible methodology for calculating this support, as it is directly based on historical consumption. There are no changes recommended to the methodology for fuel chargeback.

6.3 Policies / Procedures

The City of Redmond has recently revamped their Fleet chargeback methodology to be more reflective of the different cost components. There are spreadsheets that show the details behind the calculation, but other than staff being trained on the use of the spreadsheets, there is no procedure manual to follow and implement the development of rates. Developing such a detailed procedure manual will help the City in clearly defining not only the steps needed to calculate the rates, but the philosophy behind the steps. This detailed manual would be for internal Finance and Fleet staff only.

In addition to the internal procedure manual, a customer-facing document should be developed. This customer-facing document should be separate for each chargeback rate – one for maintenance, one for licenses, one for replacement, and one for compliance and training. This should be a one to two-page document that shows the general process flow of calculating the rate and a sample rate calculation. This will provide greater transparency to the departments regarding their rate calculation and also mitigate questions that may arise as there is staff turnover in city departments.

6.4 Fleet Program Funding

Overall, the City is recovering the full cost of its fleet maintenance and operations through a combination of chargebacks, salvage value, and interest. The area where there is insufficient funding is the fleet replacement component. The reason for this deficiency is the City's decision to calculate the annual replacement amount based on the "remaining amount' to be funded, rather than the full cost of the replacement needed in that year.

As discussed, the City should consider setting the chargeback rate based upon the expected total replacement value of vehicles / equipment that need to be replaced that year. If that can create volatility ($10 million in 1 year and $2 million in the next), the City should consider developing a smoothed plan, which will help stabilize those chargebacks. It is important to make this change so the City is ensuring that it is setting itself up for appropriate replacement funding in the future when that vehicles / equipment are due for replacement.

Recommendations:

27. **Change replacement methodology to chargeback funds and departments based on the actual fleet replacement plan for that fiscal year and / or utilize a smoothed fleet replacement plan to help smooth any volatility with exact replacement.**

28. **Remove salvage value as a factor from the replacement value, as that should be factored in as an overall revenue offset to Fleet services.**

29. **Utilize the most recent purchase price or current purchase price of a similar type of equipment or vehicle instead of inflation to better capture the current economic environment.**

30. **Consider the type of equipment or vehicle that will replace the current vehicle or equipment to better capture the expected purchase price, for example, if replacing a sedan with a hybrid or complete EV, the expected replacement price will be very different than a simple sedan.**

31. **Simplify the methodology by only utilizing five years of work order history, rather than the full life of the vehicle or equipment.**

32. **Alter the Insurance methodology to be based on the count of equipment / vehicles rather than the expected replacement price of vehicles equipment.**

33. **Develop a detailed policy and procedure manual for Finance and Fleet staff detailing step-by-step the expenses and inputs needed to calculate the different chargeback rates.**

34. **Develop a customer-facing one-to-two-page document flowcharting the current allocation methodology, along with numerical examples, to be provided to department staff as needed.**

7. Maintenance Staffing

We have calculated the maintenance staffing needs of the city fleet and fire fleets separately in the analysis described below.

7.1 City Fleet (without Fire)

The number of technicians and related positions required for a maintenance operation to operate effectively is primarily driven by the size and composition of the fleet it serves. Because the city's fleet consists of a wide variety of vehicles and equipment, it is necessary to establish a relative measure that allows for the evaluation and comparison of staffing needs and costs.

A process known as **Vehicle Equivalent Unit (VEU)** calculation is used to equate the level of effort required to maintain dissimilar types of vehicles to a passenger car, which is given a baseline VEU of 1.0. Work with other fleet organizations has shown that a VEU of 1.0 is equal to between 10 and 15 annual maintenance labor hours, depending upon a number of factors unique to each organization. All other types of vehicles are allocated a VEU value based on their relationship to a passenger car. For example, a half-ton pickup truck is assigned a VEU of 1.5. This means that a truck of this type on average requires about 1.5 times the annual maintenance hours of a passenger car, or between 15 and 22.5 hours per year.

For this project, a VEU was assigned for each classification of vehicle or equipment. Then, we separated the VEU calculations to identify the needed maintenance staff for the entirety of the city's fleet less the Fire Department, and then a calculation containing only Fire Department fleet vehicles. The 310 vehicles and equipment pieces in the fleet, less the fire assets, total 594.75 VEUs. Therefore, the Department's fleet maintenance responsibilities are equivalent to those of maintaining a fleet of almost 600 sedans. The following table summarizes our VEU calculations:

VEU of Recommended Fleet Composition w/o Fire

Vehicle Type	Count	VEU's / Unit	Total VEU's
Attachment	**4**		0
Canopy	2	0.5	1
Mower	2	0.5	1
Cart/ATV	**6**		
ATV	6	0.5	3

Vehicle Type	Count	VEU's / Unit	Total VEU's
Equipment HD	**15**		
Backhoe	4	5	20
Loader	5	5	25
Roller	1	5	5
Utility Tractor	5	5	25
Equipment MD	**9**		
Chipper	1	2.5	2.5
Forklift	1	3	3
Lift	2	3	6
Sweeper Small	2	3	6
UTV	3	0.5	1.5
Mobile Command	**1**		
RV	1	4	4
Motor/Pump/Generator	**12**		
Compressor	1	0.5	0.5
Generator	6	0.5	3
Generator 250kw	1	1.5	1.5
Generator 350kw	1	2	2
Pump	3	0.5	1.5
Motorcycle	**3**		
Motorcycle	3	1.5	4.5
Mower	**7**		
Mower	7	0.5	3.5
Police Interceptor	**31**		
Sedan Patrol	23	3	69
SUV Patrol	8	3.5	28
Sedan	**14**		
Sedan	14	1	14
SUV	**62**		
Compact SUV	45	1	45
Full Size SUV	2	1.5	3
Mid Size SUV	13	1.25	16.25
SUV	2	1.25	2.5
Tank/Sprayer/Spreader	**8**		
Sprayer	1	0.5	0.5
Spreader	5	0.5	2.5

Vehicle Type	Count	VEU's / Unit	Total VEU's
Tank	2	0.5	1
Trailer	**24**		
Trailer	24	0.5	12
Truck HD	**14**		
Sweeper	2	8	16
Truck HD Aerial	1	6.5	6.5
Truck HD Dump	6	5	30
Truck HD Patcher	1	5	5
Truck HD Vactor	4	8	32
Truck LD	**41**		
.5 Ton Pickup	8	1.5	12
.75 Ton Pickup	15	1.75	26.25
Compact Pickup	18	1.25	22.5
Truck MD	**38**		
1 Ton	1	2.25	2.25
1 Ton Crane	1	3	3
1 Ton Dump	2	2.5	5
1 Ton Flatbed	6	2.25	13.5
1 Ton Service	14	2.25	31.5
1 Ton Van	1	1.5	1.5
1.5 Ton Aerial	1	6.5	6.5
1.5 Ton Crane	1	3.25	3.25
1.5 Ton Dump	3	2.75	8.25
1.5 Ton Flatbed	4	2.75	11
2 Ton Aerial	1	6.5	6.5
2 Ton Dump	2	3	6
2 Ton Flatbed	1	2.75	2.75
Van	**21**		
.75 Ton Van	2	1.5	3
1 Ton Van	5	1.5	7.5
1.5 Ton Van	2	1.75	3.5
Box Van	1	1.75	1.75
Cargo Van	5	1.5	7.5
Minivan	4	1	4
Passenger Van	2	1.5	3
Grand Total	**310**		**594.75**

The next step in our analysis is to determine the number of labor hours required to maintain one VEU. The baseline is 10 hours per year under ideal conditions, but adverse or challenging conditions can increase this figure and increase the amount of mechanic time required. In determining the number of hours per VEU for an organization, a number of factors that are unique to each fleet are considered. These factors include fleet age and condition, usage levels, degree of outsourcing, and overall operating environment. For Redmond, the labor factor required to properly maintain the fleet is calculated at 12.0 hours per VEU. Our calculation is shown in the following table:

10	Baseline hours per VEU	
0	Fleet age	Fleet average age is within industry parameters.
0	Utilization levels	Overall utilization levels are not excessive.
0	Operating environment	There are no challenges presented from the environment.
1	Facility and tools	A decentralized operation requires additional facilities and tools.
0	Parts support	Supervisors and admin team to support parts purchasing.
1	Systems integration	The FMIS is not fully integrated.
12	**Total Hours per VEU**	

With 12 labor hours per VEU expected, the annual maintenance and repair workload is calculated to be 7,137 hours (594.75 VEUs x 12 hours/VEU).

While a fleet mechanic's salary is based on 2,080 hours per year (52 weeks x 40 hours per week), only 70% or 1,456 labor hours per year are available to perform actual maintenance work. The remaining payroll hours are lost to vacation, sick time, holidays, and indirect time such as training and meetings. When the 7,137 mechanic hours required to maintain the fleet are divided by the 1,456 annual labor hours available per mechanic, the result is a need for 4.9 mechanic full-time equivalents (FTEs).

Not all this workload will be necessarily handled in-house. Depending on the fleet composition, the availability of warranties and favorable vendor contracts, and the strategy and approach of the City and the Fire Department, a portion of these hours may be outsourced. Best practice is to outsource 10-15% of maintenance, with a focus on warranty work, time-consuming repairs, or work that requires special training or tools to deal with a high degree of complexity. Outsourcing 15% of the work would result in a need for **4.2 FTEs internally.** This suggests that the fleet cannot be properly maintained with the current 3.5 FTE's conducting maintenance and that outsourcing will have to be significantly higher than 15% to keep up with demand.

7.2 Fire Assets Only:

The above analysis does not include the 65 fleet assets that the Fire Department is responsible for. The 65 vehicles and equipment pieces in the Fire fleet total 209 VEUs. Therefore, the Department's fleet maintenance responsibilities are equivalent to those of maintaining a fleet of more than 200 sedans. The following table summarizes our VEU calculations:

VEU of Recommended Fire Fleet Composition

Vehicle Type	Count	VEU's / Unit	Total VEU's
Ambulance	**15**		
Ambulance	15	4.5	67.5
Cart/ATV	**10**		
Fire Aerial	1	.5	.5
Fire Apparatus	**10**		
Fire Aerial	2	10	20
Fire Pumper	7	8	56
Fire Rescue	1	5	5
Police Interceptor	**2**		
Sedan Patrol	2	3	6
Sedan	**6**		
Sedan	6	1	6
SUV	**17**		
Compact SUV	9	1	9
Full Size SUV	4	1.5	6
Mid Size SUV	4	1.25	5
Trailer	**1**		
Trailer	1	0.5	0.5
Truck LD	**7**		
.5 Ton Pickup	2	1.5	3
.75 Ton Pickup	5	1.75	8.75
Truck MD	**3**		
1 Ton Service	1	2.25	2.25
1.5 Ton Service	1	2.5	2.5
2 Ton Service	1	2.75	2.75
Van	**3**		
1 Ton Van	1	1.5	1.5

Vehicle Type	Count	VEU's / Unit	Total VEU's
1.5 Ton Van	1	1.75	1.75
Minivan	1	1	1
Grand Total	**65**		**205**

Utilizing the same calculation of baseline VEU's as above, we will have 12 labor hours per VEU expected, the annual maintenance and repair workload is calculated to be 2,460 hours (205 VEUs x 12 hours/VEU).

While a fleet mechanic's salary is based on 2,080 hours per year (52 weeks x 40 hours per week), only 70% or 1,456 labor hours per year are available to perform actual maintenance work. The remaining payroll hours are lost to vacation, sick time, holidays, and indirect time such as training and meetings. When the 2,460 mechanic hours required to maintain the fleet are divided by the 1,456 annual labor hours available per mechanic, the result is a need for 1.7 mechanic full-time equivalents (FTEs).

Not all this workload will be necessarily handled in-house. Depending on the fleet composition, the availability of warranties and favorable vendor contracts, and the strategy and approach of the Fire Department, a portion of these hours may be outsourced. Best practice is to outsource 10-15% of maintenance, with a focus on warranty work, time-consuming repairs, or work that requires special training or tools to deal with a high degree of complexity. Outsourcing 15% of the work would result in a need for **1.5 FTEs internally.** This suggests that the fleet cannot be properly maintained with the current 1.3 FTE's conducting maintenance for the Fire Department without increasing outsourcing above 15% to meet demand.

Recommendations:

35. **Centralize fleet operations and combine maintenance of fire assets with the rest of the City's fleet.**

36. **Increase staff by one technician to meet the recommended levels.**

8. Centralization

Over the past decades many municipalities have centralized support services, including IT, procurement, finance, facilities, and fleet. When it comes to fleet centralization, there are various levels from a single organization with a consolidated shop, reporting to a Fleet Manager, to several Department-run shops subject to a common fleet policy document. Large municipal fleets that have not centralized organizationally may have centralized policies and information management systems.

Arguments in support of decentralization are that fleet support can be customized to meet the needs of that department, mechanics will have a better knowledge of the equipment and their use, and the person responsible for a decentralized department can better determine staffing and resources to match their needs. All these advantages can be achieved in a well-run centralized operation.

Ultimately, a fleet organization should maximize the resources available to them by centralizing the organization, data, policies and decision-making where it makes sense to do so. We compared the current operations for the City of Redmond to industry best practices with the following results:

Criteria	Meets	Comments
1. Individual(s) with overall responsibility for fleet are trained and experienced in fleet management.	~	Individuals filling the Fleet Manager roles at Public Works and Fire do not have specific training in fleet management but have learned on the job.
2. A single data repository is used to store fleet information and generate reports to support operational fleet decisions.	X	The City has a single repository (Assetworks) but it is not fully implemented in the Fire Department.
3. A central authority in the organization makes decisions regarding priorities for fleet replacement.	X	The Fire and Public Works fleet replacement budgets and purchase decisions are separate.
4. The organization's Strategic Plan and Climate Action Plan set direction for all fleet vehicles.	✓	Overall guidance for the organization is provided in these documents.
5. Shop operations optimize the availability and use of technicians.	X	Having two separate shops results in inefficiencies in technician allocation.

The following points discuss areas for improvement in fleet centralization.

8.1 Fleet Management Training (BMP 8.1)

Fleet Management is a specialty function that requires knowledge of asset management, maintenance, risk, information technology, lifecycles, cost allocation, fuels, and sustainability. Very few people started their careers with the intention of becoming a Fleet Manager so candidates with this specialty knowledge base are not common.

A number of industry associations offer this training. These include NAFA Fleet Management Association and the American Public Works Association. Both organizations offer conferences and training classes to improve the skillsets of fleet managers.

The City has a number of employees with knowledge and experience in fleet management. Investing in formal training, however, would further improve their knowledge and skills.

8.2 FMIS (BMP 8.2)

Having all fleet data in one system is beneficial to an organization in many ways. It allows for organization-wide prioritization for electric conversion and vehicle replacement and to perform utilization audits.

All City and Fire assets have been entered in the Fleet Management Information System. Public Works personnel, including technicians have been trained on the system and work orders, fuel, utilization, and maintenance are tracked. Fire, however, does not have personnel trained to use the system.

8.3 Budget Priorities (BMP 8.3)

Decisions on fleet replacement should be made centrally to ensure replacement funding is allocated to the top priorities. There is often competition amongst law enforcement, fire, and other priorities at Public Works for limited replacement funds. Centralizing fleet replacement funding and basing decisions on a multi-year overarching replacement plan can ensure priorities are respected.

Fire and Public Works manage separate funds for fleet replacement.

8.4 Mechanic Rationalization (BMP 8.5)

Larger, centralized shops can achieve efficiencies through economies of scale. Some of the savings are achieved through the operation of a single parts room, a reduction to tools and equipment and the rationalization of bays and mechanics. Centralized operations are more capable of managing changes in workflow as it allows for shifting employees to

repairs from another department. This does not mean that services are not customized for customer needs as mechanics can be trained and assigned as leads in specific areas.

In Redmond, our calculations for technicians show that the City shop requires 4.2 mechanics and the Fire shop 1.5 Full-Time Equivalent (FTEs) technicians. The Fire shop has one mechanic and a supervisor and with vacation and training is frequently below the required staffing. A centralized shop with cross-trained technicians would ensure that Fire could still have support from a dedicated Emergency Vehicle Technician (EVT) while benefiting from additional support as priorities dictate.

Recommendations:

37. **Invest in fleet management training for personnel assigned those responsibilities.**

38. **Train Fire personnel on Assetworks functions.**

39. **Create a single fleet replacement fund and centralize fleet acquisition decisions.**

40. **Measure improvements to mechanic productivity due to centralization.**

9. Implementation Plan

A full list of recommendations as well as the level of effort required to address them is included below. This list has not been prioritized pending the completion of Component B, but a prioritized list of Component A and B recommendation appears in that final report. Level effort is assigned as 1: requires less than $25,000 or six months to achieve, 2: requires between 6 and 12 months and $25,000 to $50,000 to achieve, and 3: requires more than 12 months and $50,0000 to achieve.

#	Recommendation	Level of Effort
1.	Explore synergies that can result from centralizing the fleet maintenance and management of the City and Fire fleets.	3
2.	Consolidate the current governing boards into a single Fleet Steering Committee with regular meetings on fleet topics.	1
3.	Develop a Driver Handbook with information specific to the driver. Copies of the Handbook should be kept in every vehicle.	2
4.	Draft Service Level Agreements with all fleet customers.	2
5.	Use annual customer service surveys to identify and action areas of improvement.	1
6.	Increase maintenance staff to meet best practices.	3
7.	Establish a Data Analyst position and utilize the analysis developed from their work.	3
8.	Develop a formal training plan for all mechanics.	2
9.	Include non-technical requirements with all vehicle tenders.	1
10.	Use the ten-year replacement plan created in Component B as a basis for future planning.	1
11.	Increase the preventative maintenance compliance rate to 90%.	2
12.	Ensure training of 40 hours per years is provided to technicians.	1
13.	Enforce trip inspections for all fleet assets.	2
14.	Implement Assetworks fully for management of the Fire fleet.	2
15.	Implement telematics on all fleet assets to track utilization and candidates for electric transition.	3
16.	Develop a reporting matrix for use in making decisions about fleet maintenance, utilization, and replacement.	1
17.	Use Assetworks or other pool management software to plan/schedule pool vehicle assignments.	2
18.	Track and report on the performance metrics described.	1
19.	Return proceeds from vehicle remarketing to the fleet replacement fund.	1
20.	Discontinue tracking of issues from the 2011 report that have been completed or dismissed.	1
21.	Share this study's Space Plan with the team working on options for the new facility.	1
22.	Complete and publish the fleet Policies and Procedures Manual.	2
23.	Implement the cost allocation methodology recommended in this report.	2
24.	Continue to develop a Performance Measurement dashboard with the metrics needed by decision-makers.	2
25.	Implement the recommendations of the Utilization Review conducted as Component B of this study.	3
26.	Build a new facility with the functionality described.	3

#	Recommendation	Level of Effort
27.	Change replacement methodology to chargeback funds and departments based on the actual fleet replacement plan for that fiscal year and / or utilize a smoothed fleet replacement plan to help smooth any volatility with exact replacement.	2
28.	Remove salvage value as a factor from the replacement value, as that should be factored in as an overall revenue offset to Fleet services.	2
29.	Utilize the most recent purchase price or current purchase price of a similar type of equipment or vehicle instead of inflation to better capture the current economic environment.	2
30.	Consider the type of equipment or vehicle that will replace the current vehicle or equipment to better capture the expected purchase price, for example, if replacing a sedan with a hybrid or complete EV, the expected replacement price will be very different than a simple sedan.	2
31.	Simplify the methodology by only utilizing five years of work order history, rather than the full life of the vehicle or equipment.	2
32.	Alter the Insurance methodology to be based on the count of equipment / vehicles rather than the expected replacement price of vehicles equipment.	2
33.	Develop a detailed policy and procedure manual for Finance and Fleet staff detailing step-by-step the expenses and inputs needed to calculate the different chargeback rates.	2
34.	Develop a customer-facing one-to-two-page document flowcharting the current allocation methodology, along with numerical examples, to be provided to department staff as needed.	2
35.	Centralize fleet operations and combine maintenance of fire assets with the rest of the City's fleet.	3
36.	Increase staff to meet the recommended levels.	3
37.	Invest in fleet management training for personnel assigned those responsibilities.	2
38.	Train Fire personnel on Assetworks functions.	2
39.	Create a single fleet replacement fund and centralize fleet acquisition decisions.	3
40.	Measure improvements to mechanic productivity due to centralization.	3