STRATEGIC ASSET MANAGEMENT PLAN – 10 YEAR OUTLOOK

For Fleet Management (NSF)

This Strategic Asset Management Plan for Fleet Management provides alignment between the Agency strategy, stakeholder requirements, organizational objectives and resulting asset management objectives to ensure that BPA fleet assets are managed and measured to create and deliver value.

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1.0 EXECUTIVE SUMMARY

The Bonneville Power Administration (BPA) NSF - Fleet Management (FM) organization's mission is to provide the agency with a safe and dependable fleet to support the agency's mission, daily operations, and emergency needs in a cost effective and safe manner. FM is charged with managing the life cycle of vehicles and heavy mobile equipment from acquisition to end-of-life disposal. Additionally, FM is responsible for supplying third party rentals through its Loan Pool program to supplement any shortage in BPA's fleet inventory. BPA's aircraft (helicopters, airplanes, and drones) is excluded from the FM and is captured in the Transmission Strategic Asset Management Plan.

Approximately 1553 of the fleet is BPA owned, and 920 are leased assets from the General Service Administration (GSA). BPA fleet is comprised of light to heavy-duty vehicles, construction, mobile and material handling equipment. The BPA fleet is necessary to transport material, equipment, and personnel throughout the BPA service territory. Much of our service territory is off road and in mountainous remote areas. Sedans and vans are used to carry personnel and work equipment. Light, medium, and heavy-duty trucks are designed to carry material and equipment off road for the maintenance of BPA's power grid.

When FM began developing its Strategic Asset Management Plan (SAMP) in 2020, an assessment of the fleet assets found that BPA is operating with an aging fleet. An aging fleet is not only costly to maintain but also poses potential safety and reliability risks. Moreover, it may not meet future demands and needs which can result in service interruptions for BPA rate payers. FM secured the necessary capital funding in 2020 to replace aging fleet assets. However, FM has not been able to replace these assets at the desired rate due to external barriers such as supply chain issues, and limited personnel bandwidth to support FM procurement needs.

This SAMP outlines FM's approach to replacing the aging fleet assets and implementing new asset management practices to better manage the agency's fleet. New asset management practices include investing in system operations such as data analysis tools, and standardizing replacement schedules. These two initiatives will allow FM to forecast lifecycle costs, determine when to replace a given fleet asset, and track capital investments. The desired outcomes are to modernize BPA's fleet, pivot away from a 45-year fleet asset replacement schedule and implement system operations that will allow for data-based decision making going forward.

2.0 ACKNOWLEDGEMENTS

2.1 Senior ownership

The mission of the Supply Chain organization is to deliver best value through collaborative partnerships utilizing effective and efficient processes. We ensure investments in fleet and the delivery of business services are aligned with BPA's strategic business objectives and support the core business activities across the agency. We will demonstrate our commitment to asset management practices in the following ways:

- Align fleet asset investments in accordance with organizational objectives to support BPA's core businesses;
- Make data-based and risk-informed decisions to maximize the value of our people and fleet assets while improving safety and environmental stewardship; and
- Continuously improve awareness of asset management activities to execute day-to-day operations in a cost-effective manner.

The future holds incredible opportunities with change as the only constant. We look forward to these opportunities and will continue to find ways to improve the service we provide by tempering change with fiscal restraints.

ROBIN FURRER

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Date: 2025.03.10 12:36:08 -07'00'

Robin R. Furrer
Chief Administrative Officer

2.2 Strategy Development Approach

2.2.1 Key Contributors

- Manager, Fleet Management
- Data Steward, Fleet Management
- Business Analyst II, Fleet Management
- Equipment Specialists, Fleet Management
- Foremen III, Fleet Management
- Supervisor, Finance Capital Investment

2.2.2 Key Activities

- Assess state of the agency's fleet assets and identify aging assets for replacement
- Assess system operations capabilities: fleet data management and analytics
- Assess maintenance capabilities: personnel and fleet garages
- Identify key stakeholders, risks, and compliance
- Conduct regular engagement with customers and stakeholders such as Transmission Services (TS) and Chief Administrative Office (CAO)
- Develop strategies to get from current state performance levels to future state performance targets
- Identify challenges and gaps that need to be overcome to achieve optimal performance

3.0 STRATEGIC BUSINESS CONTEXT

3.1 Alignment of SAMP with Agency Strategic Plan

The Fleet Management (FM) SAMP defines the strategic direction for the procurement, lease, maintenance, and replacement of BPA's fleet assets.

The purpose of this document is to review current fleet management practices, and to prepare a roadmap of key initiatives for implementing an asset management plan in the FM organization. This includes setting specific and measurable asset management goals. Although the FM SAMP objectives were developed in alignment with the 2018-2023 Agency Strategic Plan, they remain consistent with supporting the agency's 2024-2028 Strategic Plan of creating "a reliable, resilient electric grid capable of supporting the region's growth."

Objective 1: Invest in Fleet Data Management

Invest in system operations that will allow FM to better collect, store and analyze fleet data to help with data-based decision making. This initiative will aid with streamlining the procurement, maintenance, and replacement of BPA's fleet assets in a manner that will financially benefit the agency while also meeting its strategic goals and daily operation needs.

Objective 2: Manage BPA's Fleet Assets in a Sustainable & Economical Manner

Right-size BPA's fleet by investing in a robust capital replacement program to modernize the fleet to help reduce the cost of maintenance and safety risks. The rightsizing of BPA's fleet will also increase the availability of vehicles and equipment to meet the agency's business needs.

Alignment with Agency's Strategic Plan	NSF – Fleet Management Strategic Asset Management Goals	
	Objective 1: Improve Fleet Data Management	Objective 2: Manage BPA's Fleet Assets in A Sustainable & Economical Manner
BPA's 2024-2028 Strategic Plan Goals		
Invest in People		X
Enhance the Value of Products and Services	X	X
Sustain Financial Strength	X	X
Mature Asset Management	X	
Preserve Safe and Reliable System Operations		X
Modernize Business Systems and Processes	X	

Furthermore, FM recognizes the foundational work BPA has completed in the last five years to continue to be a leader in responding to the region's growing load needs. FM is actively strengthening its asset management practices to provide the agency with the right vehicles and equipment to support this continuous effort to meet the region's growing energy demands.

3.2 Scope

The FM SAMP covers a ten-year planning period and provides a high-level overview of BPA's Fleet Management program, asset management initiatives, and future asset management goals. The plan ensures a consistent approach to planning, acquisition, operations, maintenance, and disposal of fleet assets at all stages of their lifecycle. Furthermore, the SAMP demonstrates how FM will manage risks associated with fleet assets, and help the agency meet regulatory requirements.

The procurement, maintenance, and replacement of GSA leased fleet assets, and BPA's aircraft (helicopters, airplanes, and drones), does not fall under the responsibility of FM. Therefore, the SAMP covers only BPA owned fleet assets.

This plan serves as the foundation for the FM Asset Plan (AP) which will provide further details on how FM will execute its SAMP initiatives and meet its asset management objectives and goals.

3.3 Asset Description and Delivered Services

BPA owned assets include mission-critical equipment as well as non-critical equipment that is essential for BPA to serve our customers. Mission-critical equipment are assets that are required on a daily or weekly basis to maintain BPA's operations. These assets include equipment such as man-lifts, digger derricks, wire stringing equipment, work/crew trucks, pole trucks, and equipment/material hauling trucks and trailers. Less critical equipment is assets that can become mission-critical in cases of emergencies or inclement weather. These assets include equipment such as Sno-Cats, mobile generators, dozers, excavators, backhoes, railcars, and other specialized equipment. The assets managed by the FM Loan Pool program are also BPA owned assets.

Table 3.3-1, BPA Owned Fleet Assets

BPA OWNED FLEET ASSETS			
MISSION CRITICAL		NON-CRITICAL	
ASSET CATEGORY	TOTAL COUNT	ASSET CATEGORY	TOTAL COUNT
BOOM EQUIPMENT	17	AERIAL CART	25
EMERGENCY GENERATOR	132	BOOM EQUIPMENT	48
MANLIFT < 55	62	CLASS 5-7 TRUCK	2
MANLIFT > 125	3	CLASS 8 TRACTOR	16
MANLIFT 55-75	5	CONSTRUCTION EQUIPMENT	84
MANLIFT 75-125	11	DUMP TRUCK	18
MISC	3	FORKLIFT	138
PLATFORM < 55	5	LIGHT TOWER	20
PLATFORM > 75	2	LOAN POOL RENTAL	5
PLATFORM 55-75	12	MANLIFT 75-125	4
POLE TRUCK	13	MISC	15
STRINGING EQUIPMENT	12	MOBILE GENERATOR	30
TRAILER	32	PLATFORM < 55	17
VERTICAL PERSON LIFT	9	ROUTE VAN	44
SEASONAL		SMALL ELECTRIC VEHICLE	44
ASSET CATEGORY	TOTAL COUNT	SMALL GAS VEHICLE	80
CLASS 5-7 TRUCK	1	SNOW EQUIPMENT	2
CLASS 8 TRACTOR	1	TRAILER	535
CONSTRUCTION EQUIPMENT	2	UTILITY TRACTOR < 30 HP	4
MAN LIFT < 55	1	UTILITY TRACTOR > 30 HP	2
SNOW EQUIPMENT	36	WINCH TRUCK	14
TRAILER	47		

GSA leased assets range from passenger vehicles used by BPA's management, finance, and support staff, to trailers, heavy-duty pickups, and services trucks, used by the agency's electrical, construction and field crews.

Table 3.3-2, GSA Leased Fleet Assets

GSA LEASED FLEET ASSETS	
NON-CRITICAL	
ASSET CATEGORY	TOTAL COUNT
CAB AND CHASSIS	86
CARGO TRUCK	1
DUMP TRUCK	5
SEMI-TRACTOR	1
PICKUP	404
SEDAN	19
SEMI TRUCK	1
STAKE BED	65
SUV	232
TRAILER	8
SERVICE TRUCK CREW CAB	29
SERVICE TRUCK EXTENDED CAB	37
SERVICE TRUCK REGULAR CAB	3
VAN	29

FM is charged with managing the life cycle of these vehicles and heavy mobile equipment from acquisition to end of life disposal (less the GSA leased assets). Additionally, FM helps the agency maintain the engine generators that support substations and radio sites throughout BPA's service territory. The scope of services FM provides are as follows:

Vehicles and Equipment Acquisition

The acquisition of new and replacement assets occurs through FM identification of aging assets for replacement, or an equipment order request. The acquisition process includes FM's Equipment Specialists sourcing for the new asset, securing appropriate funding, performing final specs and Q&A inspections, and coordinating final delivery. Often the Equipment Specialists travel to the manufacturer's site to vet the vehicle or equipment before moving forward with procurement.

Loan Pool Program

The Loan Pool Program is responsible for meeting any equipment shortfall needs of the agency. This is accomplished by utilizing centrally managed assets and tools that are operated, tracked, and controlled by Loan Pool personnel, or using third-party rentals. The Loan Pool ensures that the agency's field personnel have the tools and mobile equipment necessary to perform required tasks.

Maintenance Services

The Mobile Equipment Maintenance (NSFM) organization of FM is responsible for the maintenance and repairs of BPA owned fleet assets. All 15 FM garages are staffed with Heavy Mobile Equipment Mechanics (HMEM) who have the skills and experience required to maintain a specialized fleet such as BPA's. The maintenance support provided by

NSFM includes preventative and corrective maintenance, routine inspections, vehicles, and equipment modifications, and facilitating warranty repairs and vended services. NSFM is not responsible for the maintenance of BPA's aircraft. The maintenance, modifications and repairs of GSA leased assets are the responsibilities of GSA.

GSA Leased Asset Services

FM serves as a liaison between BPA and GSA for GSA leased assets. A FM's Equipment Specialist plans for, manages and oversees the ordering, delivery, and return of GSA leased pickups, utility trucks, sedans, tractor trailers and dump trucks. The Equipment Specialist is also responsible for facilitating and reviewing standard and non-standard vehicle modifications as well as the maintenance, recovery, and replacement of GSA-leased vehicles involved in an accident.

3.4 Demand Forecast for Services

Multiple agency programs use the fleet assets for operational, emergency, business continuity, and project-specific needs. There are several factors that have a direct impact on the demand for fleet assets and services, some of which include sustain programs, construction projects, transportation, and unplanned vehicles and equipment failures and/or damages.

FM works with these agency programs to determine their vehicle and equipment needs. Based on a program's work initiatives (demand), FM takes into consideration business constraints (supply) to help determine if a new fleet asset can be purchased, leased from GSA when possible, or loaned from the Loan Pool Program.

FM anticipates an increase in demand for fleet assets and services as BPA invests in new transmission expansion projects to deliver energy from geographically dispersed resources to population centers where energy demand is expected to grow.

The global supply chain heavily influences FM's ability to meet the agency's fleet assets demand and needs. The COVID-19 pandemic made this evident when FM experienced challenges and delays in procuring new and replacement fleet assets due to supply chain disruptions and logistic issues. Long manufacturer lead times hindered FM's ability to deliver fleet assets in a timely manner. Although vehicles and equipment's market availability have increased in the last year, FM is still experiencing similar supply chain challenges and delays. To that end, it is vital that FM strengthens its asset management practices to combat any supply chain issues that may impede the delivery of fleet assets and services.

3.5 Strategy Duration

The SAMP outlines FM's asset management initiatives and goals spanning over ten years. Typically, the progress of the SAMP is evaluated every two years in coordination with the Integrated Program Review (IPR) cycle to support the IPR. However, the next IPR will take place in FY2027; therefore, the next SAMP evaluation and refresh will occur in three years. In the meantime, FM will be cognizant of any new business or policy requirements that may prompt a change to the SAMP.

4.0 STAKEHOLDERS

4.1 Asset Owner and Operators

FM is the designated owner for all BPA owned vehicles and mobile equipment including railcars (except for aircraft). FM also acts as the Asset Center Representative (ACR) for GSA leased vehicles. The end users, or operators, of the fleet assets are both federal employees and contract personnel of BPA. The ownership of the fleet assets does not transfer from FM to an operator or organization (department). FM remains the designated owner throughout an asset lifecycle.

4.2 Stakeholders and Expectations

FM's primary stakeholders are the Transmission Field Services (TF), Engineering & Technical Services (TE), and Supply Chain Services (NS). TF and TE play crucial roles in constructing and maintaining BPA's power grid. TF heavily influences the composition of BPA's fleet due to the high need of specialized vehicles and equipment required to maintain the power grid. NS assists TF and TE with the receipt, shipping, and delivery of equipment to the field.

Table 4.2-1, Stakeholders

Stakeholders	Expectations	Current Data Sources	Measures
Transmission Field Services ***Engineering & Technical Services*** ***Supply Chain Services***	Fair Price Vehicles and Equipment Safety Asset Availability and Functionality	Enterprise Asset Management (EAM) Functional Teams Regular Meetings with TS TS Senior Support	Safety Asset Availability Asset Usability Lifecycle Cost Use Rates
Logistic Services	Fair Price Vehicles and Equipment Safety Asset Availability and Functionality	Enterprise Asset Management (EAM) Functional Teams Regular Communications with NSL NSL Senior Support	Safety Asset Availability Asset Usability Lifecycle Cost Use Rates
BPA Senior Executives	Program Success Meeting Customers' Needs and Federal Regulations Stays Within Budget Safety	SAMP and AP Budget Safety Incident Report Related to Fleet BPA 2024 – 2028 Strategic Plan	Quarterly Reports Metrics Regular Meetings with Senior Leadership
Department of Energy (DOE)	Communication Adhere to DOE's policies and guidelines	Federal Automotive Statistical Tool (FAST), a web-based reporting tool cosponsored by GSA and DOE DOE Fleet Managers Meetings DOE Publications DOE Memos	FAST Report GSA Order Approval Motor Vehicles Guidelines
General Administration Services (GSA)	Communication Adhere to GSA's leased vehicles guidelines Good Stewardship of GSA vehicles	GSA Fleet Drive-thru website GSA's Fleet Service Representative GSA's Guide to Your Fleet Vehicle	FM's Asset Center Representative Miles, Usage, and Leasing Report

5.0 EXTERNAL AND INTERNAL INFLUENCES

The table below summarizes the influences on the management of fleet assets. Externally, fleet management is guided by federal policies and mandates, the global supply chain, and future expansion of BPA's power grid. Additionally, the job market may limit the availability of skilled heavy mobile equipment mechanics, which in turn forces FM to utilize a more costly outsourcing of services. Internally, the fleet program's operation depends on staffing and funding which are necessary to secure and allocate fleet assets, maintain the fleet, perform analyses, maintain data, make strategic decisions, and perform administrative tasks. The needs of internal business partners are the substantial determinant for the allocation and deployment of fleet assets.

Table 5.0-1, External and Internal Influences

External Influences	Affects and Actions
Energy Policy	Since its inception in October 2011, FM's asset management practices have been influenced by Federal executive orders and/or mandates. FM is aware that energy policies may change depending on the Federal administration cyclical changes. However, FM will continue to move forward with its fleet optimization in support of BPA's strategic goals related to asset management and maximizing asset value, to strengthen financial health and environmental stewardship.
Global Supply Chain	The COVID-19 pandemic caused widespread supply chain issues that impacted both businesses and consumers. The supply chain issues from 2020 continue to hinder FM's ability to secure adequate parts and replacement assets. Additionally, the limitation of available supplies has caused price increases for both assets and parts.
Skilled Heavy Mobile Equipment Mechanics Availability	Heavy mobile equipment mechanics (HMEM) are difficult to hire. There is a nationwide shortage of competent workers within this craft. BPA has a highly diverse and complex set of assets, which requires an elevated level of understanding and skills, making it difficult to find qualified HMEM. Additionally, BPA's service territory is in remote areas, which potentially can be less attractive for someone to want to relocate to.
Future Expansion of BPA's Power Grid	Future transmission expansion projects will increase demands for vehicles and equipment. FM will need to be properly funded and staffed to meet purchasing and maintenance needs to support construction and maintenance of the power grid expansion.
Internal Influences	**Affects and Actions**
Customers/Business Partners	BPA's programs, projects/constructions, and mission critical assignments dictate what kind of assets are needed, when and where.
Data Mining and Analysis	Inability to analyze data trends due to not having a data analysis tool in place. This reduces FM's ability to perform lifecycle cost analysis, establish new replacement schedules based on asset type and industry standards, and track capital investments through each asset lifecycle. FM is currently exploring utilizing available technologies at BPA to implement a data analysis tool that will be able to create metrics, and perform analyses needed to make good business decisions and support the asset management plan.
Limited Capital Funds	Prior to FY20, FM was not as actively engaged in Asset Management practices and principles which resulted in FM historically either underspending or not requesting adequate capital funding to maintain BPA's fleet. This resulted in an aging fleet which required securing increased capital funding to begin retiring and replacing old assets. Now FM is actively engaged and maturing in Asset Management, resulting in improved capital funding forecasts and higher funding level approvals. However, the same level of capital funding will need to be sustained to meet the SAMP's 10-year asset management plan.
Limited Resources (Personnel)	Resources to support the level of replacement needs are limited. FM has two Equipment Specialists who are currently operating over 100% to source, vet, and procure new and replacement assets. Additionally, NSS – Contracts & Strategic Sourcing, does not have the personnel to support the level of procurement needs. These two factors along with global supply chain issues create challenges for FM to meet the desired asset replacement rate.

5.1 SWOT Analysis

As BPA expands its transmission capacity, FM will need to ensure the proper resources are secured to meet any increased demand for fleet assets. Those resources include funding, staffing, fleet assets, system operations, and infrastructure (garages). In the table below, FM identifies the strengths and opportunities that support (or can support) current and future FM operations as well as weaknesses and threats that can hinder progress.

Table 5.1-1: SWOT

Favorable	*Unfavorable*
Strengths	***Weaknesses***
• Fleet personnel possesses substantial years of experience in the industry; many are subject matter experts. • 15 FM garages are strategically located in BPA's service territory to be able to respond to mission critical assignments and perform daily and annual maintenance of assets. • AssetWorks Enterprise Asset Management (EAM) software program captures asset information; establishes and tracks maintenance schedule, cost, issues, and parts; and manages assets. • Streamlined parts purchasing program to standardize inventory, save money, and create efficiency.	• Age of BPA fleet assets. • Most garage facilities are outdated resulting in reduced efficiency in maintenance activities and outsourcing of services. • Lack of telematics. • Limited funding for Fleet personnel training on emerging industry technology. • Lack of contracting personnel's availability to assist with fleet procurements which causes delays in securing fleet replacements. • Due to aging workforce through attrition, FM poses to lose a significant experience and industry knowledge.
Opportunities	***Threats***
• Craft-specific standard vehicle configurations can reduce up-fit costs. • Implement the use of telematics. • Upgrades to sites and new construction of Fleet garages except for the new Ross Garage. • Streamline accounting.	• Global supply chain and logistic issues to secure adequate parts and replacement assets. • Current and probable future inflation will negatively impact FM's capital and expense budgets. • Potential future automotive strike causing a pause in production, limited fleet parts and assets availability, and extensive delays with procuring vehicles.

6.0 ASSET MANAGEMENT CAPABILITIES AND SYSTEM

BPA adopted the Institute of Asset Management (IAM) model for Asset Management agency wide. The IAM model provides guidelines for developing and implementation of an Asset Management program compliant with ISO 55000. ISO 55000 is the international standard for Asset Management. The IAM model focuses on six different categories: Strategy and Planning, Decision Making, Life Cycle Delivery, Asset Information, Organization and People, Risk and Review.

Group 1 – Strategy & Planning

17. Asset Management Policy
18. Asset Management Strategy & Objectives
19. Demand Analysis
20. Strategic Planning
21. Asset Management Planning

Group 2 – Asset Management Decision Making

35. Capital Investment Decision-Making
36. Operations & Maintenance Decision-Making
37. Lifecycle Value Realization
38. Resourcing Strategy
39. Shutdowns & Outage Strategy

Group 3 – Life Cycle Delivery

6. Technical Standards & Legislation
7. Asset Creation & Acquisition
8. System Engineering
9. Configuration Management
10. Maintenance Delivery
11. Reliability Engineering
12. Asset Operations
13. Resource Management
14. Shutdown & Outage Management
15. Fault & Incident Response
16. Asset Decomissioning & Disposal

Group 4 – Asset Information

31. Asset Information Strategy
32. Asset Information Standards
33. Asset Information Systems
34. Data & Information Management

Group 5 – Asset Information

1. Asset Information Strategy
2. Asset Information Standards
3. Asset Information Systems
4. Data & Information Management
5. Competence Management

Group 6 – Risk & Review

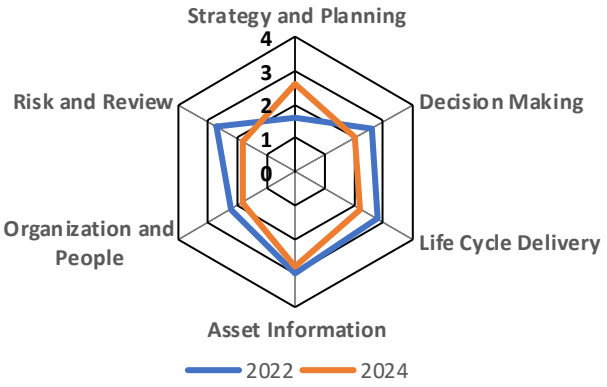
22. Risk Assessment & Management
23. Contingency Planning & Resilience Analysis
24. Sustainable Development
25. Management of Change
26. Asset Performance & Health Monitoring
27. Asset Management System Monitoring
28. Management Review, Audit & Assurance
29. Asset Costing & Valuation
30. Stakeholder Engagement

Thirty-nine questions across the six categories are the base of the maturity level assessment. Using the IAM maturity scale, FM evaluated the program's asset management maturity level on a scale of 0-4 for each of the six different categories.

The following section provides an in-depth evaluation of the program's maturity level, identifying strengths and weaknesses of FM's asset management in each of the categories (Table 6.1-1 Maturity Level).

6.1 Current Maturity level

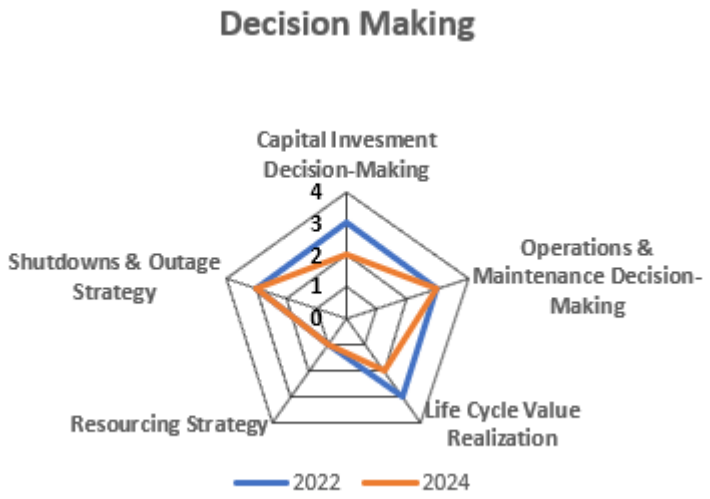
Category	2024 Average	2022 SAMP
Strategy and Planning	2.6	1.6
Decision Making	2.0	2.6
Life Cycle Delivery	2.2	2.8
Asset Information	2.8	3.0
Organization and People	1.8	2.2
Risk and Review	1.8	2.7
Average	2.2	2.5

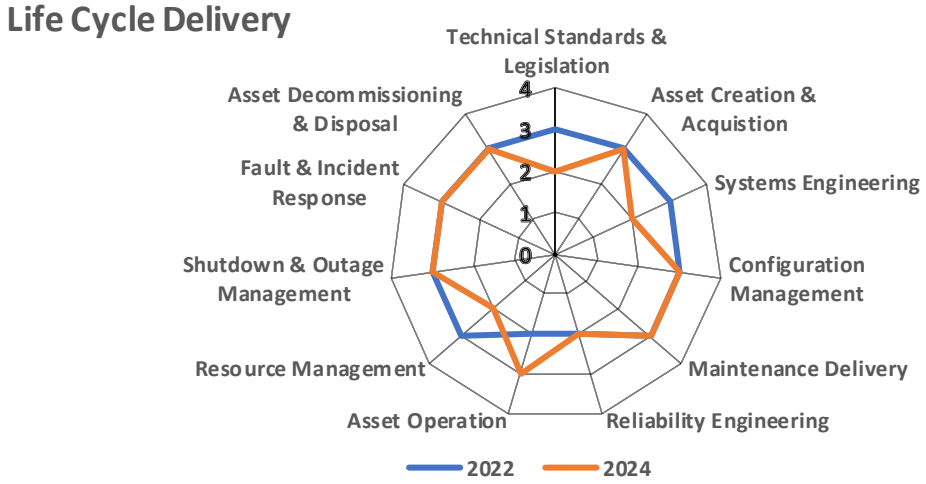


On average, the maturity level across all categories is 2.2 on a scale of 0-4. FM believes the average score of 2.2 is a fair assessment of where the program lands in each category. Based on this year's scoring, FM's maturity level slightly decreased from two years ago. FM gained a better understanding of asset management practices over the last two years. Therefore, FM was able to provide a more honest evaluation of its asset management program maturity levels, which speaks to the decrease in scoring. However, FM can demonstrate that its asset management practice has significantly progressed since FY2022. FM has put systems and processes in place to integrate asset management standards and practices into its program operations.

Table 6.1-1 Maturity Level

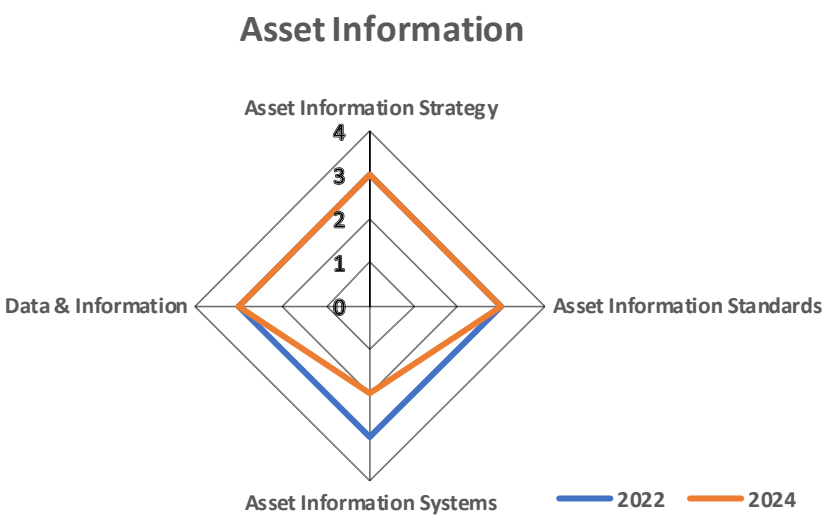
Subject Area	Maturity Level
Strategy & Planning	 **Strengths**: FM has made considerable progress around strategy and planning since the organization was established in 2011. Prior to adopting and implementing asset management practices, FM was more reactive versus initiative-taking in its operation. FM is now able to plan better for vehicles and equipment maintenance, replacements, and emergencies with the additional data points and reports made available. Furthermore, FM has the data to support and forecast long-term needs and demand. **Weaknesses**: Although FM's asset management plan includes replacing an ageing fleet, the organization does not have adequate personnel resources to replace old vehicles and equipment at the desired rate. This is compounded by external influences, such as supply chain issues, labor strikes within the auto industry, and GSA limiting ordering allowance, which create delays for FM to move forward with certain plan initiatives.

Subject Area	Maturity Level
Decision Making	 **Strengths**: There are fifteen fleet services garages throughout BPA's districts to support the agency's vast service territory. FM has procedures in place to help the agency respond to emergency shutdowns, outages and vehicle and equipment failures. Additionally, FM adheres to regular preventative maintenance schedules for BPA's fleet to prevent unnecessary vehicle and equipment failures. Currently, FM is in the process of finalizing an asset lifecycle report that will help establish a defined asset replacement schedule based on asset type and industry standards. **Weaknesses**: Presently, FM's Capital Investment Decision-Making is based on the need to replace aging assets and requests for new fleet additions. FM is working towards building a robust capital replacement program that will be based on industry standards with the end goal of pivoting from replacing assets when they are well pass their lifecycle.

Subject Area	Maturity Level
Life Cycle Delivery	

Strengths: FM has proper procedures and processes for the procurement, maintenance, and disposal of fleet assets as well as business continuity plans to respond to emergencies, shutdowns, and outages. FM ensures the agency has high quality assets that either meet or exceed utility asset standards to meet not only BPA's business needs but also federal regulatory obligations.

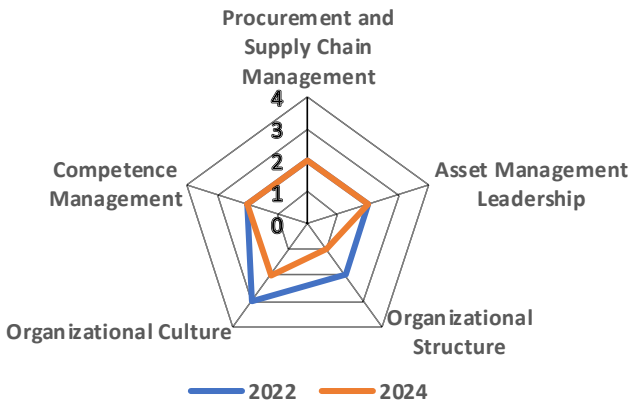
Weaknesses: FM's capital replacement program has not kept up with fleet industry standards replacement schedule. As a result, the agency has an aging fleet that requires significant maintenance to ensure safety, reliability, and efficiency. This has a negative monetary impact on FM's operations and maintenance budget due to the higher cost of maintaining an aging fleet. FM is proactively working to replace old fleet assets as new vehicles and equipment become available on the open market.

Subject Area	Maturity Level
Asset Information	

Strengths: FM incorporated a SEIS and the fleet database is more comprehensive than in the past. FM is now collecting and storing data that helps understand asset performance trends, maintenance downtime and cost, and lifecycle cost. FM is currently developing an analysis tool to perform data analyses that will assist with:

- more accurate projection of future year replacement;
- more accurate projection of types of assets for replacement; and
- ease the tracking of capital investments (status of procurement, asset purchases moving from year to year due to delays, tracking 1:1 replacement).

Weaknesses: The use of telematics can provide FM with a complete picture of BPA's fleet usage and trends. Telematics are technology-based hardware tools that collect and record vehicle operational data. The gathering of measurable, actionable data such as mileage, driver behavior, fuel usage, etc. can assist with identifying key areas of improvement to drive cost savings and improve safety.

Subject Area	Maturity Level
Organization & People	 **Strengths**: FM leadership continues to build on its program support staff, Foremen IIIs, and HMEMs to strengthen the organization's commitment to deliver its asset management goals. FM understands the crucial role the organization serves in providing the agency with a safe and reliable fleet. **Weaknesses**: FM poses to lose considerable experience and industry knowledge due to retirements in the coming years. Furthermore, additional staff are needed to fully execute and sustain FM's asset management goals. A staffing plan has been developed to address these issues. However, hiring constraints continue to be a barrier. In the area of Procurement and Supply Chain Management, FM's initiative to replace aging fleet assets lacks sufficient procurement personnel to assist with purchasing. This is compounded by limited inventory of fleet assets in the marketplace and other supply chain issues.

6.2 Long Term Objectives

To support BPA's 2024 – 2028 Strategic Plan goals and outcomes FM has developed asset management long-term objectives that are meant to balance capital investments and risks; provide a proper, safe fleet to meet the agency's needs and regulatory obligations; and allow for sustainable long-term planning. These objectives and the supporting initiatives will enhance risk-based decision making and portfolio optimization, and mature FM's asset management program and achieving success in strategic plan outcomes 4.2.1 Decision Optimization, 4.2.2 Lifecycle Cost, and 4.2.3 Risk Based Decisions and 4.2.4 Leadership Alignment by 2028. The overall goal for FM is to pivot the management of fleet assets away from practices that compromise safety, financial health, asset availability and reliability.

Objective 1: Invest in Fleet Data Management

Invest in system operations that will allow FM to better collect, store and analyze fleet data to help with data-based decision making. This initiative will aid with streamlining the procurement, maintenance, and replacement of BPA's fleet assets in a manner that will financially benefit the agency while also meeting its strategic goals and daily operation needs.

Objective 2: Manage BPA Fleet Assets in a Sustainable & Economical Manner

Right-size (optimize) BPA's fleet by investing in a robust capital replacement program to modernize the fleet to help reduce the cost of maintenance and safety risks. The rightsizing of BPA's fleet will also increase the availability of vehicles and equipment to meet the agency's business needs.

6.3 Current Strategies and Initiatives

Initiative 1: Fleet Data Analysis Tool

In support of FM's *Objective 1 Invest in Fleet Data Management* FM has implemented an Enterprise Asset Management (EAM) system for the collection and warehousing of fleet data. Since the implementation of EAM in 2016, FM can collect data points beyond labor hours and where parts were purchased. Data points such as asset criticality, condition, age, and health; cost of parts and types of parts for maintenance; time to complete maintenance; asset usage and downtime; etc. together provide a complete picture of the status of a given asset.

To fully support its asset management goals, FM needs to be able to perform analyses to understand asset performance, determine lifecycle cost, mitigate associated risks, and establish replacement schedules based on asset types and industry standards. Beginning in FY2023 FM began development of an analysis tool that will establish metrics, perform analyses, and report fleet asset information. BY FY2024 the analysis tool, in conjunction with EAM, will be used for long-term asset management planning, resource planning, tracking capital investments, and mitigating associated risks, further strengthening FM asset management maturity levels in all IAM model six categories.

Initiative 2: Fleet Portfolio Size and Composition

In support of FM's *Objective 2 Manage the BPA Fleet Assets in a Sustainable and Economical Manner* FM must address the size and composition of the agency's fleet asset portfolio. Past practices of asset procurement and management have left BPA with an aging fleet. To continue to hang onto an aging fleet not only poses a financial risk but also is a high risk for safety and business continuity. The first step is to replace aging assets that are beyond their lifecycle use. Once the analysis tool is available, the second step is to perform an optimization analysis. The optimization analysis will help to determine reallocation of assets to a different organization if under used by the current organization; the proper mix of owned and leased assets that has the best value for BPA for future business operation.

Initiative 3: Lifecycle Replacement Schedule

Restructuring FM's asset replacement program is a key step in achieving FM's *Objective 2 Manage the BPA Fleet Assets in a Sustainable and Economical Manner*. The current replacement rate for fleet assets is 40 years, well beyond the industry standard recommended replacement rate for all asset types. Instead of replacing at failure or in emergency situations, FM will structure a lifecycle replacement program based on industry best practices, asset types, and fleet data analyses. With reporting from the data analysis tool FM will implement a lifecycle reprogram for new assets starting in Q3 of FY 2024. As new assets are brought into the portfolio the structured replacement program, FM will utilize data collection and analysis tool to make informed and strategic decisions and strengthen FM's maturity in Life Cycle Delivery.

6.4 Resource Requirements

For FM to have a strong asset management program, it will need the following resources:

Financial: Continued capital investment funding for each fiscal year to replace assets based on fleet industry standards and best practices. This will prevent BPA from retaining assets beyond their useful lifecycle which will save money in the long term. Furthermore, newer assets will decrease maintenance related risks and safety risks.

Personnel: Hire additional qualified Equipment Specialists as well as Procurement and Contracting personnel to assist with the purchasing of fleet assets. Recruit additional program support team to assist with data collection, analytics, and reporting. Backfill hiring in the near future to address staff retirements.

Data and Technology: In the future, additional funding will be needed to expand fleet data collection and management capabilities for telematics. This is a federal regulatory requirement that FM has already begun the discussion of implementing and deploying telematics.

7.0 ASSET CRITICALITY

7.1 Criteria

Fleet assets fall under three criticality levels: 1) Mission Critical, 2) Seasonal, and 3) Non-Critical.

Level 1	**Mission Critical**	**Mission critical assets are crucial to the daily operations and maintenance of BPA's power grid. In addition, they are assets that are not readily available for rent, lease, or purchase in the marketplace.**
Level 2	**Seasonal**	**Seasonal assets are critical during specific times of the year and less critical at other times, i.e., Sno-Cats. Sno-Cats are needed for hard to access locations during the winter months. They are not available on the rental market. Therefore, they are essential to BPA's operation during the winter months. During the summer months they are non-critical to BPA's operation.**
Level 3	**Non-Critical**	**Assets that are readily available for rent, lease or purchase as needed, and are considered non-critical to BPA's operation.**

The primary factors used to establish the criticality levels are as follows:

1. The potential impact an asset will have on BPA's ability to restore power during outages or other emergencies.
2. The availability of an asset on the open market whether it is available for lease, rent or purchase.
3. Is an asset critical year-round or on a seasonal basis, i.e., snow removal.
4. The availability of adequate maintenance services, internal or commercial.

7.2 Usage of Criticality Model

Criticality is one of five factors used to prioritize fleet assets. The other factors include age, usage, health/condition, and risk. The criticality levels model is used as a tool to engage with our stakeholders. It helps stakeholders communicate to FM what assets are critical to their organization functions and/or projects. FM takes this information and assigns criticality levels to the respective fleet assets. This information is beneficial with prioritizing asset replacements and maintenance (perform maintenance internally or outsource to vendor).

8.0 CURRENT STATE

8.1 Historical Costs

Capital Expand

To modernize BPA's aging fleet, FM has been focused on capital investments of new fleet assets. The highest level of capital spends occurred in FY2023 while the lowest spend occurred in FY2021. Compared to FY2023, the four previous years' spending levels are significantly lower due to various circumstances.

- Prior to FY2020, there was a lack of replacement methodology and limited fleet data availability. As a result, FM did not have a complete picture to forecast its capital expand spending needs for FY2017 – FY2021. With improved fleet data availability, FM was able to advocate for increased spending once it was realized the agency's aging fleet requires significant funding for replacements. Therefore, the IPRs set for FY2022 – FY2025 are significantly higher than previous years.

- The lower spending levels in FY2020 – FY2022 can be attributed to disruptions of the global supply chain caused by the COVID-19 pandemic. Out of an abundance of health and safety, there was a pause or decrease in production in auto related industries. This resulted in limited market availability of vehicles, heavy mobile equipment, and parts, both for the public and private sectors. Limited supply and competition with other buyers created unavoidable procurement challenges.

- FM was able to procure numerous fleet assets post pandemic in FY2022 and FY2023. However, the supply chain issues of limited vehicles, equipment, and parts still presented procurement challenges. New fleet assets received in FY2022 and FY2023 may include replacement assets purchased in FY2019 and FY2020. There is a possibility that FM's actual capital spend in FY2024 and FY2025 may be higher than the set IPRs if new fleet assets from prior years are received.

- The increased capital spending between FY2022 and FY2023 includes the increased cost for sourcing fleet assets, onboarding new vehicles and equipment, quality checks, learning new maintenance requirements, and modifications.

Table 8.1-1 Historical Spend

Program	Historical Spend (in thousands) With Current Rate Case						
Capital Expand (CapEx)	2019	2020	2021	2022	2023	Current Forecast or Rate Case	
						2024	2025
Total Capital Expand	$5,844	$5,799	$3,920	$7,625	$10,136	$14,200	$14,200
Expense (OpEx)	2019	2020	2021	2022	2023	2024	2025
Total O&M Expense	$11,046	$11,017	$12,327	$12,088	$13,541	$14,000	$15,400

O&M Expense

The goal of replacing an aging asset is not only to modernize BPA's fleet but to also reduce the maintenance cost. However, the operations and maintenance (O&M) expense for FM has increased since FY2019 even though FM has increased its asset replacement rate in FY2022 and FY2023. Unforeseen expenses and current inflation trends have significantly impacted FM's O&M spending.

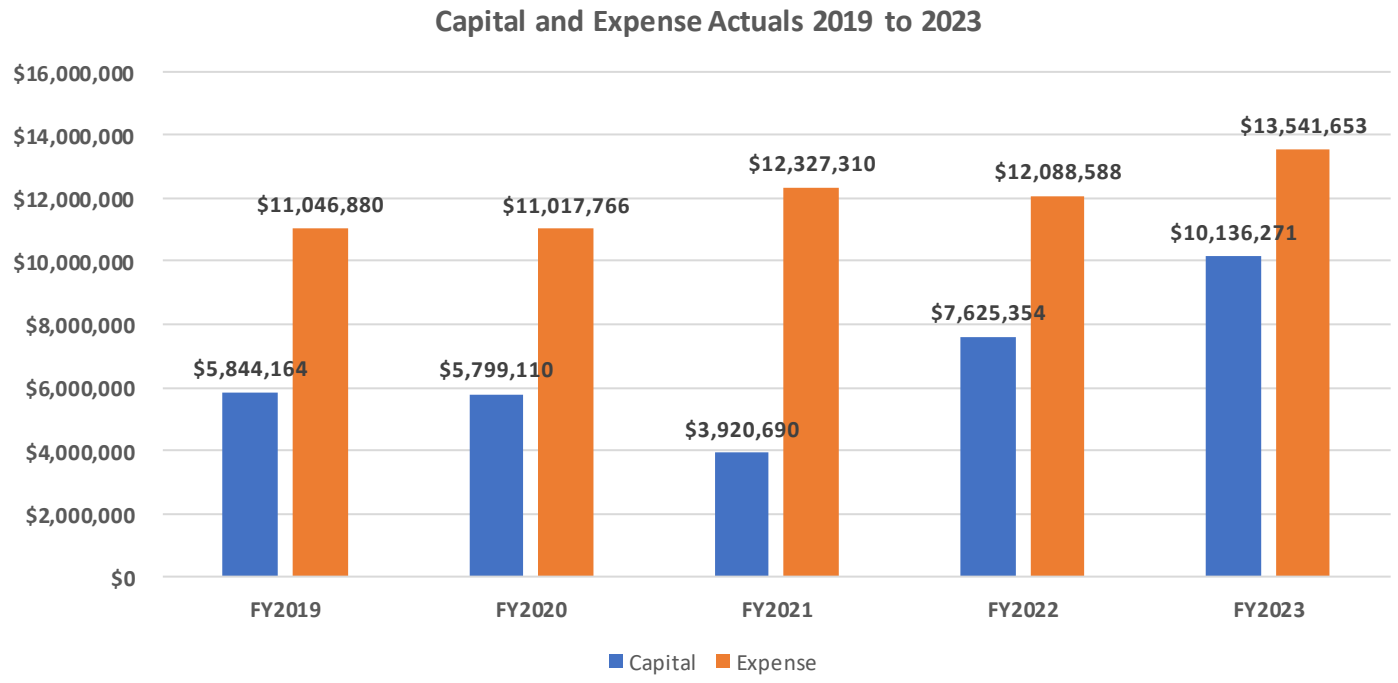
Unforeseen Expenses

- Not able to predict when a vehicle or equipment will fail, and how much it will cost to fix it.
- Newer fleet assets are outfitted with new technology that require not just tools but software to maintain and fix assets.
- FM has not been able to replace the aging fleet at the desired rate. Therefore, the majority of the agency's fleet remains in operation beyond their lifecycle use. Keeping vehicles and equipment much longer than its usable lifecycle will continue to drive higher maintenance cost. Parts for older equipment are much harder to find and costly.

Inflation Trends

- Rising cost for parts, fuel, and services.
- Increased cost of living affects the cost of labor.

Figure 8.1-2 Historical Expenditures, Capital Expand and Expense



8.2 Asset Condition and Trends

The condition assessments of fleet assets are performed by the HMEMs during the vehicles and equipment annual inspections. These condition assessments help gage the health of BPA's fleet; the assessments serve as a base point to measure health.

The condition of a fleet asset is subjective to where it is used (environment), how often it is used, and what it is used for. Additionally, since condition is subjective, to predict a condition trend for an asset type or category is unrealistic. Therefore, an industry standard on how to assess the condition of a vehicle or equipment does not exist. When a condition assessment is performed by the HMEMs, the following are taken into consideration:

- ✓ How much unplanned maintenance has this vehicle or equipment undergone?
- ✓ Are there external or internal deteriorations that can lead to malfunction, specialized maintenance needs, or unforeseen damage? For instance, has a rusted area worsened since the last inspection that can lead to parts breaking down?
- ✓ How often is the vehicle or equipment being used, and what is it being used for?
- ✓ What is the age of the vehicle or equipment?

The condition assessment has five categories of scoring which is recorded for each asset in EAM:

1) Very Poor 2) Poor 3) Fair 4) Good 5) Very Good

The condition, health and age of an asset is then evaluated to determine if the asset can continue to be in service, or if it should be retired or replaced.

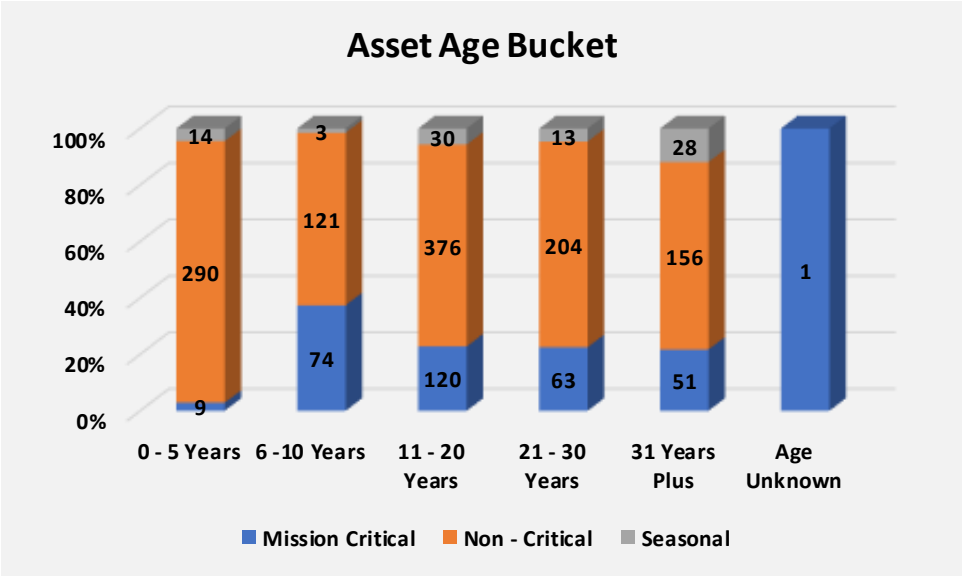
8.2.1 Asset Age

For simplicity of reporting the age of 1,553 fleet assets, the age of vehicles and equipment are categorized into five buckets (or age ranges):

1) 0-5 Years 2) 6-10 Years 3) 11-20 Years 4) 21-30 Years 5) 31 Years Plus

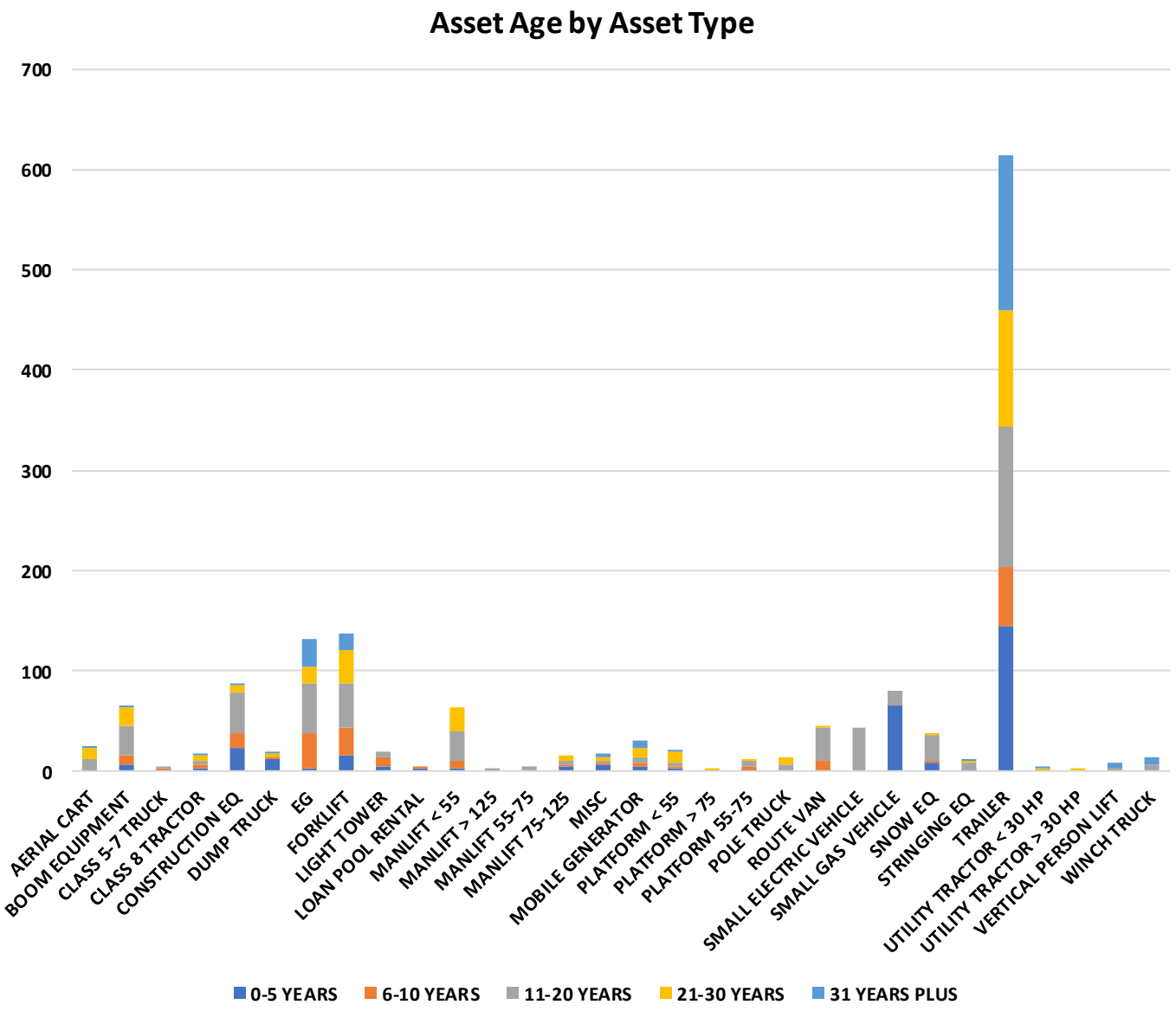
Figure 8.2-1 Current Asset Age by Classification illustrates the age of the agency's fleet assets by the age bucket and criticality level.

Figure 8.2-1, Current Asset Age by Classification



The figure shows 33% of the fleet assets are between the age range of 0 – 10 years old, and 67% are 11 – 31 years or older. It can be said that a majority of the agency's fleet is aging and is either at or beyond usable lifecycle. Moreover, the data shows 74% of the mission critical fleet assets fall in the age range of 11 – 31 years.

Figure 8.2-2, Current Asset Age by Asset Type



8.2.2 Asset Condition

Most of the fleet assets are in favorable condition. Seventy-five percent of the BPA's fleet assets are in either good or very good condition; 17% are in fair condition; 6% are in either very poor or poor condition; and 3% have not yet been assessed. Routine inspections and services have allowed FM to keep the fleet assets at their current condition levels. However, condition ratings alone do not determine whether to keep a vehicle or equipment in service. As previously mentioned, age and health are also considered.

Figure 8.2-3, Current Asset Condition by Classification

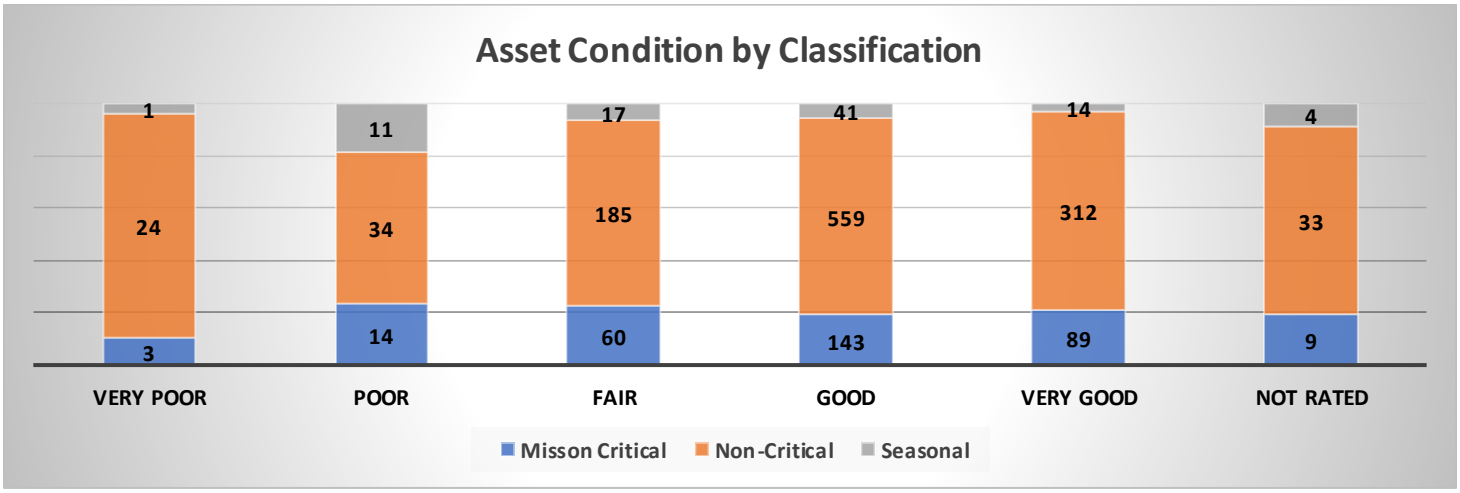
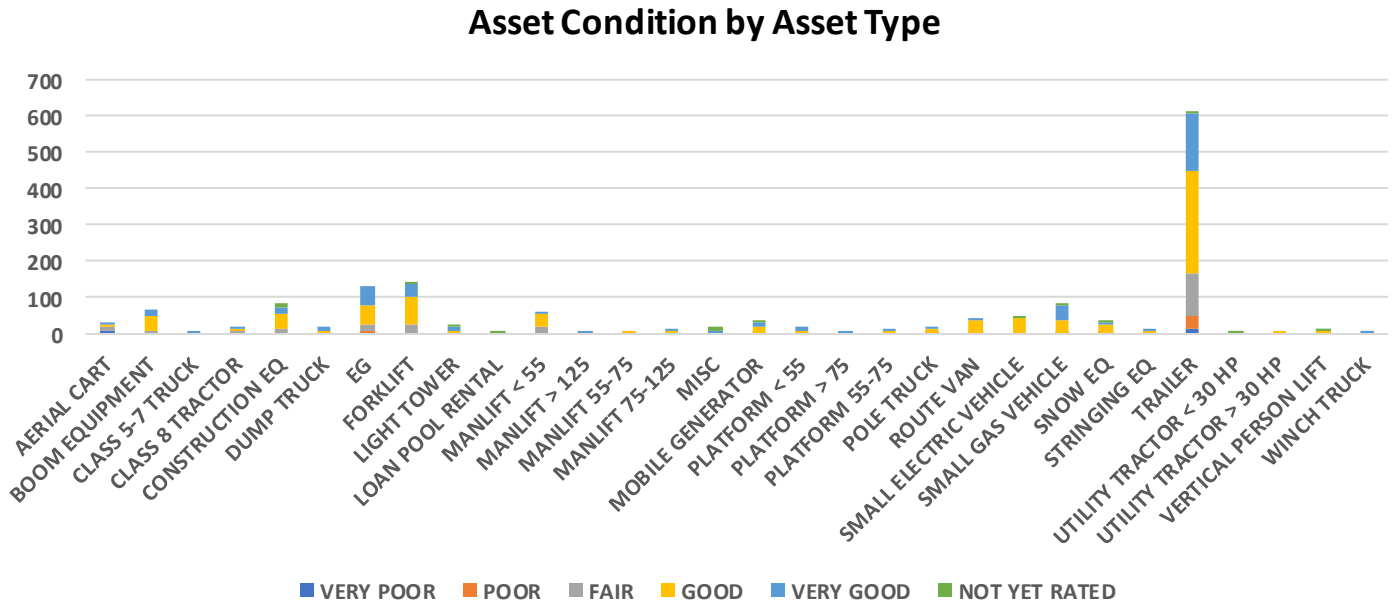


Figure 8.2-4, Current Asset Condition by Equipment Category



8.3 Asset Performance

Asset performance for vehicles and equipment are tied to age, condition, and lifecycle expectations. Every fleet asset has a pre-defined maintenance schedule, allowing them to operate until they fail or are damaged. Therefore, a fleet asset's performance can be based on its in-service (asset availability) rate over its lifecycle. The age and condition of a fleet asset are factors that affect the in-service rate along with any unforeseen maintenance that requires repair services.

FM is currently in the process of finalizing a lifecycle report that will help monitor in-service rates and the cost of maintenance.

Required Table 8.4-1 Historical Asset Performance Summary

Strategic Goal	Objective	Measure	Units	Year -5 (2019)	Year – 4 (2020)	Year – 3 (2021)	Year – 2 (2022)	Year – 1 (2023)
85% In-Service Rate for All BPA Owned Fleet Assets	Fleet Reliability	Weighted Availability Factor	Varies	Data Not Available	Data Not Available	Data Not Available	Data Not Available	80%

8.4 Performance and Practices Benchmarking

FM is exploring utilizing a third-party service to provide fleet industry standards benchmarking around asset performance, maintenance, and lifecycle cost. This service utilizes data from similar utilities within the United States which will allow an apple-to-apple comparisons.

9.0 RISK ASSESSMENT

Risk Category	Risk Name: Risk Description, Mitigation	Likelihood	Consequence
Safety	**Functionality:** As vehicles and equipment ages, it results in outdated safety functionality as improved technology is implemented in industry. Aging assets are more prone to breakdowns which can result in increased catasrophic failures. To mitigate this risk, aging assets will need to be removed from service and replaced with newer assets.	Likely	Extreme
Reliability	**Labor:** As vehicles and equipment ages, the required maintenace and upkeep of the equipment results in increased labor hours, labor costs, and longer asset downtime. Replacement parts become sparse which can result in decreased reliability and further asset downtime. To mitigate the risks of an asset being unavailable for a long period of time, we can rely on vehicles and equipment rentals. However, this will have a financial impact on increased rental costs.	Moderate	Major
Financial	**Financial Costs:** It becomes more expensive to maintain assets as they age. However, new equimment frequently uses software which raises O&M costs for new equimpent as well. In either case, the cost of maintenance will be increasing.	Almost Certain	Moderate
Environmental	**Environmental Hazards:** As vehicles and equipment age, the potential for increased air pollution grows. It is especially important to consider larger assets as they often have less efficient fuel economies, increasing environmental impacts. Using assets with less efficient fuel economies, as well as inefficient driving practices (e.g.. idling), also means increased fuel costs. If FM doesn't explore assets with increased fuel economies (e.g. vehicles that use alternative fuels), BPA could possibly face EPA fines and program scrutiny from DOE. Federal code requires agency fleets to be comprised of a certain percentage of alternative fuel vehicles.	Possible	Moderate
Compliance	**Program Compliance:** As assets age, it becomes more difficult to achieve and maintain compliance with applicable regulations, e.g., OSHA, DOT etc.	Likely	Moderate

Likelihood Scale
Level 1 – Rare: This event could happen once every 30 years
Level 2 – Unlikely: The event could happen at some time (once in every 10 years)
Level 3 – Possible: The event should happen at some time (once in every 5 years)
Level 4 – Likely: The event will happen in most conditions (about once in every 2 years)
Level 5 – Almost Certain: Once a year or more frequently
Level 6 – Descriptor: Frequency

Consequence Scale
Extreme: Aging assets can increase the likelihood of catastrophic failures.
Major: Aging assets can decrease the reliability and availability of an asset, result in a high maintenance cost, and a greater negative environment footprint.
Moderate: Aging assets can result in a high maintenance cost and leave a greater negative environment footprint.
Minor: No impact
Insignificant: No impact

Figure 9.0-1, Risk Assessment, Safety

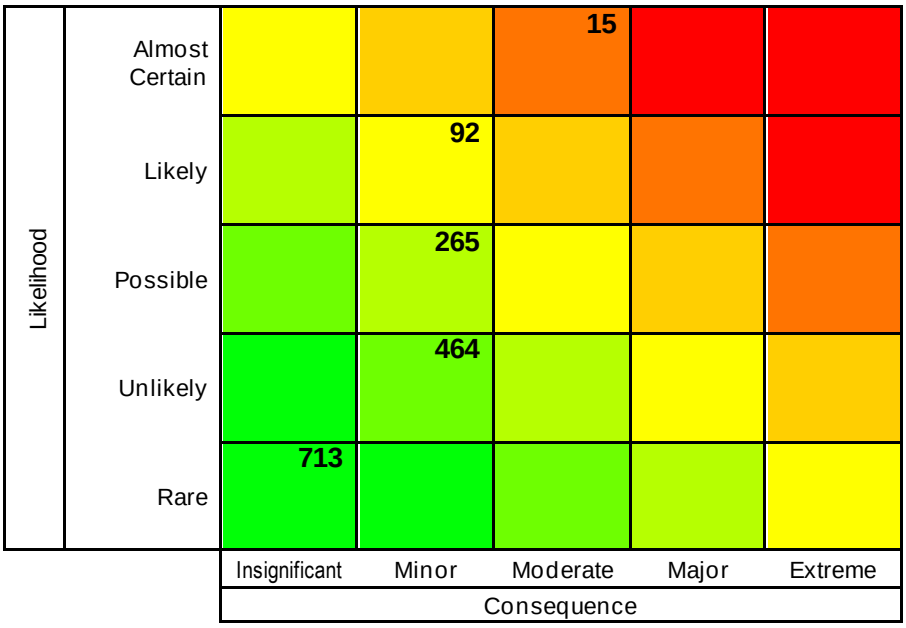


Figure 9.0-2, Risk Assessment, Reliability

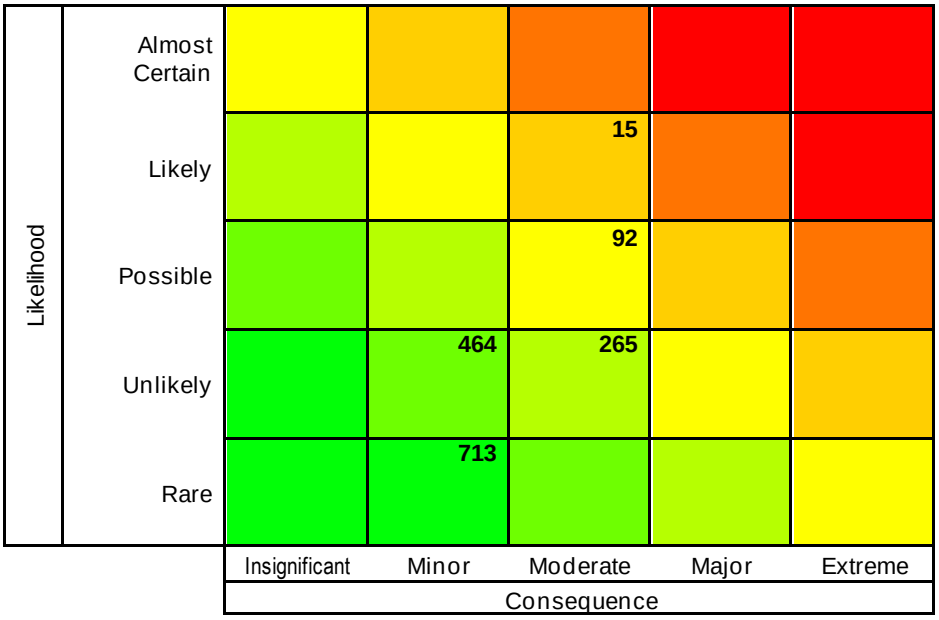


Figure 9.0-3 Risk Assessment, Financial

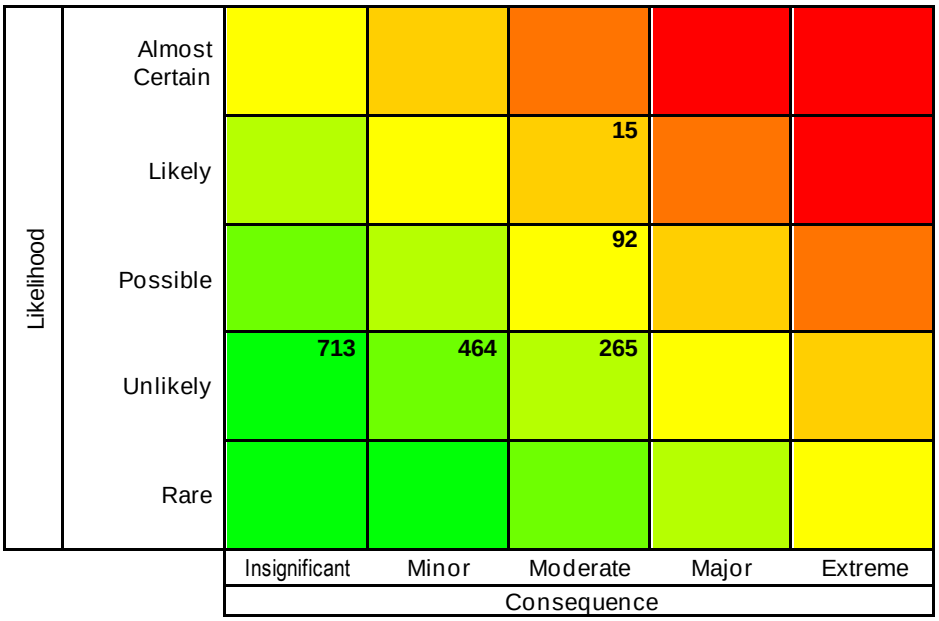


Figure 9.0-4, Risk Assessment, Environment/Trustworthy/Stewardship

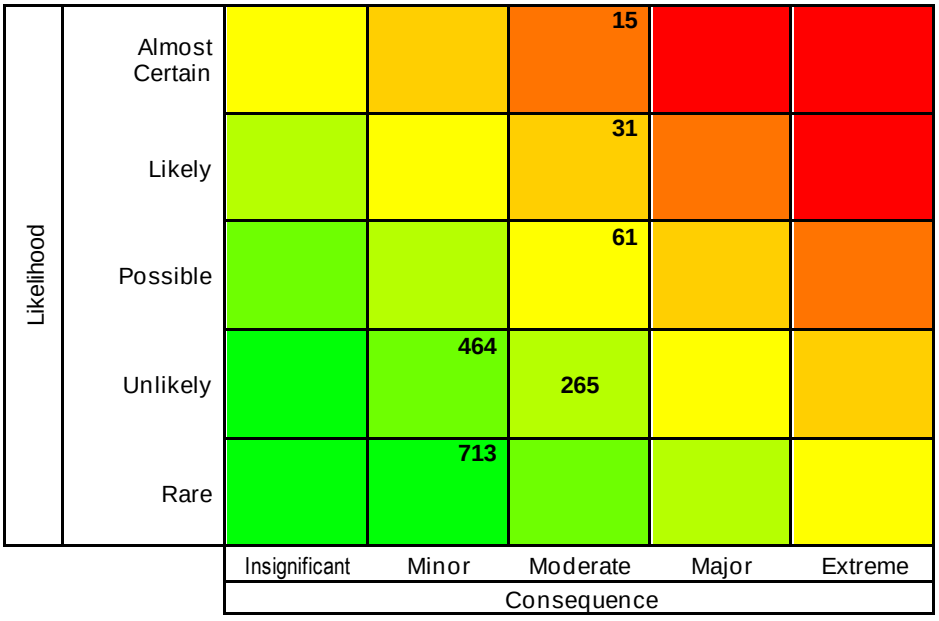
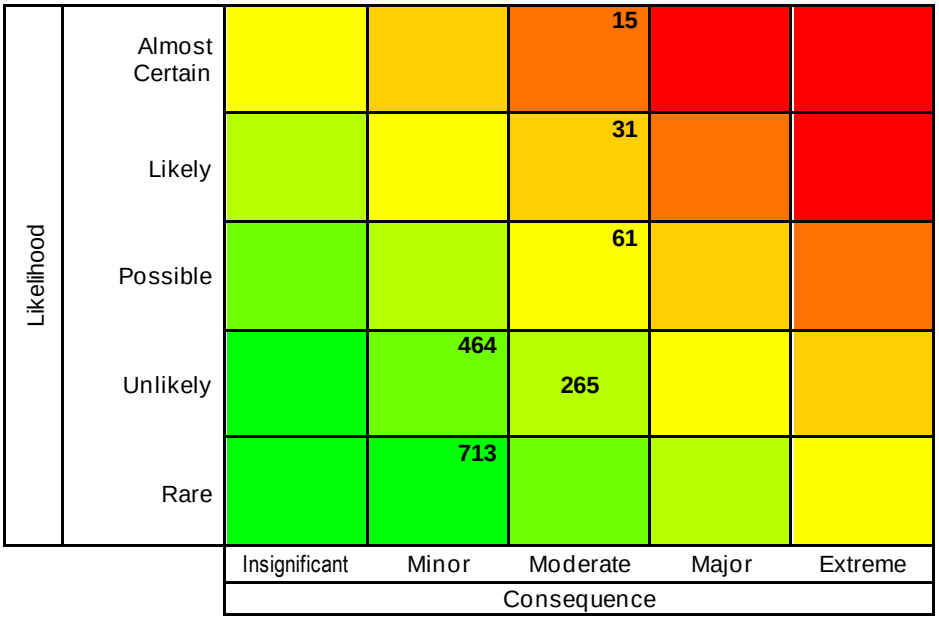


Figure 9.0-5, Risk Assessment, Compliance



10.0 STRATEGY AND FUTURE STATE

FM's overall strategic direction is to right-size BPA's fleet in a way that is cost effective in maintenance, procurement (when possible), and mitigates risk. Right-sizing will help FM determine if an asset is needed long term or short term based on its utilization rate; meets the agency's business needs and Federal guidelines. Furthermore, this evaluation will help inform whether an asset should be retired, replaced (new purchase), or rented.

The need to right-size BPA's fleet derives from recognizing that although 75% of the agency's fleet is in good to very good condition, 67% of the fleet are 11 years or older. 1041 of 1553 BPA owned fleet are between the age range of 11 – 75 years old. Prior to fiscal year 2020, FM did not invest in capital replacement at the necessary rate to replace aging assets. As a result, the make-up of the agency's current fleet are heavily older assets. Over time, it will become more expensive to maintain older vehicles and equipment as parts become harder to source or are not available. The risks of continuing to operate with an aging fleet will have a negative impact on safety, cost, and asset availability. Therefore, FM has begun investing in a robust capital replacement program to mitigate these risks. Right-sizing complements this effort by identifying if an asset is necessary to the agency's operation; if it should be replaced or rented if it is retired.

FM's strategy also includes aligning asset replacement practices for new assets with industry standards. Assets will be replaced based on the asset type lifecycle versus age.

10.1 Future State Asset Performance

Future asset performance goal is to provide an 85% in-service (availability) rate in a manner that is cost effective to BPA, in compliance with regulatory requirements, safe, and supports the agency's mission and daily operations. The process to achieving this goal includes replacing aging assets, understanding the lifecycle and performance of each asset, aligning fleet assets replacement schedule with industry standards, and adhering to routine maintenance and inspections.

Table 10.1-1 Future Asset Performance Objectives

Objective	This Year	Year +1	+2	+3	+4	+5	+6	+7	+8	+9	+10
Increase assets availability	80%	81%	82%	82%	83%	83%	84%	84%	85%	85%	85%
Measure total cost of ownership	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Explore benchmarks for asset performance	0%	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

10.2 Strategy

As mentioned in section 6.2 Long Term Objectives, FM's overall goal is to pivot the management of fleet assets away from practices that compromise safety, financial health, and asset availability and reliability. To achieve this goal, FM began adopting new asset management practices in FY2020 that are in the process of implementation. As FM asset management program matures, FM will adjust its strategic direction as needed to continue to align with BPA's 2024 – 2028 Strategic Plan goals and outcomes.

10.2.1 Sustainment Strategy

FM's sustainment strategy is a layered approach that requires the program to catch with replacing aging fleet assets from years past while simultaneously putting systems (data analytic tools) in place to standardized fleet asset management practices. These two initiatives are in progress, and FM is making significant headway on both fronts. FM has identified the aging fleet assets for replacement as well as continuing to develop analytic tools to perform the necessary analyses for better fleet management.

Sustainment Strategy:

- Equipment Specialists work closely with Fleet Manager, Contracts & Strategic Sourcing, and manufacturers, to vet new vehicles and equipment for purchase to replace identified aging fleet assets.
- FM's data team works with internal BPA IT resources to develop, evaluate, and implement data analytic tools utilizing either existing BPA or third-party technologies.
- Once the appropriate data analytic tools are in place, FM will utilize the tools for data-based decision making:
    - Lifecycel cost
    - Establish replacement schedules based on asset type and lifecycle expectancy

  - Project cost of replacement
  - Track capital investments
- The data analytic tools will also be utilized for resource planning, right sizing the fleet, and mitigating associated risks.

To summarize, FM's sustainment strategy is to standardize how fleet assets are managed from procurement to end-of-life disposal.

10.2.2 Growth (Expand) Strategy

The majority of FM's capital Expand spending will be spent on replacing like for like fleet assets. Any new addition to BPA's fleet is dependent upon new business needs.

New Addition to Fleet

- New addition requests are reviewed on a case-by-case basis. Request for a new fleet asset must be supported with a strong business case, evaluated, and approved by the Fleet Manager and Fleet Council.

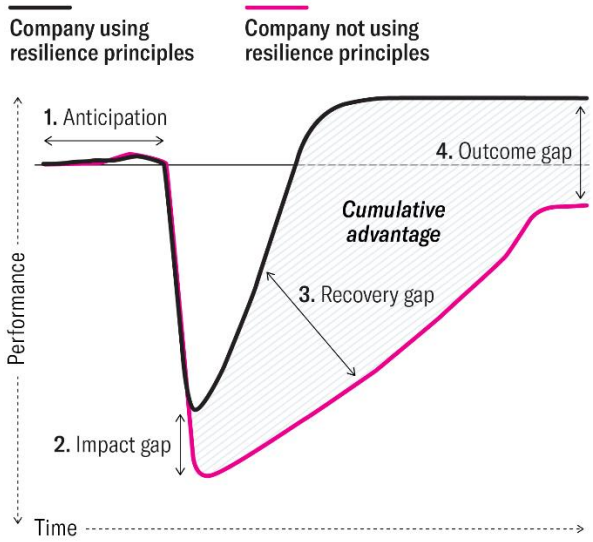
- Based on BPA's Strategic Plan *Objective 4 Advance Transmission Investments and Innovative Solutions to Integrate Loads and Resources,* FM anticipates future expansion to the agency's fleet to support transmission expansion projects. FM will work with the Transmission Field organization to develop a resource and acquisition plan to ensure adequate vehicles and equipment are procured to help BPA meet this objective.

10.2.3 Strategy for Managing Technological Change and Business Resiliency

The resiliency of the agency's fleet assets is a key component of BPA's overall business resiliency strategies. Specifically, BPA maintains an overarching internal policy (260-2) that acts as a framework for resilience activities within all business units and related asset categories. This policy aims to achieve the following:

- A comprehensive and effective business resilience program to support the resilience efforts of internal organizations and ensure that BPA can fulfill its statutory and commercial obligations in times of emergency. This includes anticipating, withstanding, and responding to disruptive events affecting the Pacific Northwest.
- Alignment of risk management and asset management with resiliency goals.
- A consistent framework for prioritizing risk within asset categories, and documents prioritization decisions. Risks are analyzed based on category (safety, reliability, financial, environmental, and compliance), likelihood, and consequences.
- Planning efforts to detail disaster recovery, business continuity management, emergency management, grid and physical security, cyber security, insider threat, supply chain, workforce resilience, Power Services, transmission planning, and extreme weather.

It is BPA's policy to incorporate resilience concepts and activities into its business practices to enhance the agency's capabilities to be prepared for, respond to, and recover from unexpected disruptions. Resilient agencies prepare for and connect the unrelated pieces of information in a way that makes the organization stronger and more resilient. Resiliency's purpose is to quickly bounce back from below the baseline to an operational reality higher than what it was prior. This can be illustrated in the graphic below.



Additionally, FM and Bonneville's Business Resilience Program work collaboratively to ensure that BPA anticipates and mitigates the risks of disasters to its critical systems and asset portfolios throughout the entire lifecycle of an asset. Resiliency is a growing area within the utility space that requires dynamic business decision making, flexibility and adaptability. Today's technology is changing at a rapid pace. FM considers technological changes and trends that influence how BPA makes business decisions in response to resiliency events.

10.3 Planned Future Investments/Spend Levels

FM requires $14.2M per year in capital for Rate Case (FY2026 – FY2028) but expects to spend $14M per year based on FM's capacity to procure fleet assets and market availability. As aging assets are replaced with modernized equipment, the spending level for capital investment will decrease over future fiscal years. However, the overall capital costs for new fleet investments will increase due to inflation, advanced technology training, maintenance software solutions, and availability of assets. To ensure capital has been adequately resourced in future fiscal years, a standard inflation rate was applied to the expected capital spend of $14M and was averaged across future rate cases (FY29-30, FY31-32, FY33-34 & FY35-36).

The required operating expense for this Rate Case (FY2026 – FY2028) aligns with the spend in the BP-26 Integrated Program Review (IPR). The expense required to operate and maintain BPA's fleet program in Future Fiscal Years (FY2029 – FY2035) was calculated by using an inflation rate of 4.6%.

The depicted spend in Tables 10.3-1 and 10.3-2 have been adjusted accordingly to accommodate for increased cost for labor, parts, and vendor services. By the end of this Rate Case (FY2026 – FY2028) FM will require $30M in capital and expense dollars. Over a 10-year period FM will grow to $39M in capital and expense dollars.

Table 10.3-1 Optimal Future Expenditures (in thousands)

Program	Rate Case FY's			Future Fiscal Years						
Capital Expand (CapEx)	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Total Capital Expand (CapEx)	$14,200	$14,200	$14,200	$15,200	$15,200	$15,900	$15,900	$16,630	$16,630	$17,190
Expense (OpEx)	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Total O&M Expense	$14,506	$15,170	$15,865	$16,591	$17,351	$18,145	$18,976	$19,845	$20,754	$21,704
Total	$28,706	$29,370	$30,065	$31,791	$32,551	$34,045	$34,876	$36,475	$37,384	$38,894

Table 10.3-2 Expected Future Expenditures (in thousands)

Program	Rate Case FY's			Future Fiscal Years						
Capital Expand (CapEx)	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Total Capital Expand (CapEx)	$14,000	$14,000	$14,000	$15,200	$15,200	$15,900	$15,900	$16,630	$16,630	$17,190
Expense (OpEx)	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Total O&M Expense	$14,506	$15,170	$15,865	$16,591	$17,351	$18,145	$18,976	$19,845	$20,754	$21,704
Total	$28,506	$29,170	$29,865	$31,791	$32,551	$34,045	$34,876	$36,475	$37,384	$38,894

10.4 Implementation Risks

Table 10.4-1, Implementation Risks

Risk	Impact	Mitigation Plan
Personnel Resources	**Asset Procurement** – currently FM has two Equipment Specialists who are responsible for purchasing new fleet assets for the entire agency from vetting new assets to contract execution. The vetting process involves traveling to meet with manufacturers and performing inspections. By default, their bandwidth limits FM's ability to replace aging assets at a faster rate. Furthermore, this is compounded by the limited availability of Contracts & Strategic Sourcing (NSS) to assist with procurement. **Retirement** – FM faces losing valuable industry and working knowledge due to employee attrition. We anticipate five employees who may retire in the next three to four years. **Qualified HMEMs** – it is a challenge to find qualified Heavy Mobile Equipment Mechanics who have both the knowledge and work experience of maintaining heavy mobile equipment. BPA's heavy mobile equipment is specific to the utility industry. The mechanic must not only know how to maintain and repair older equipment but must also be able to learn how to maintain and repair newer equipment with new technology and software.	• If possible, hire an additional Equipment Specialist to manage the workload and purchasing needs. • Work with NSS to prioritize purchasing needs and explore ways to increase their bandwidth to assist. • Work with Recruitment to explore new avenues to attract qualified candidates and utilize direct hiring authority to fill positions. • Work with Human Resource (HR) to eliminate the CDL requirement for HMEM to open the candidate pool for both federal and contract personnel. Candidates can train and obtain CDL certification once hired.
Distributions in Supply Chain	**Fleet Asset Market Availability** – During the global COVID-19 pandemic, asset market availability was extremely limited. Post pandemic, availability moderately increased, however, FM is competing with other agencies and private customers to procure vehicles and equipment. This contributes to the slow rate of replacing aging assets mentioned above. **Parts Market Availability** – FM experiences the same market availability issues with parts during and post pandemic. Furthermore, many manufacturers stock parts for up to 20 years, which is prior to the end of their useful life. For instance, if an equipment's end of life is 30 years, a manufacturer may only keep stock of parts for repair up to 20 years. Parts no longer available through the manufacturer are procured through third parties, which will cost extra time and money to procure. This new trend can become costly for the agency's older fleet assets. **Pause or Slow Down in Production** – the COVID-19 pandemic proved that a pause in production is a realistic public health measure that has significant impacts on the availability of goods and products. Post pandemic, manufacturers are experiencing staffing shortage to meet pre-pandemic production levels. If another event occurs resulting in a pause or slowdown in production, FM will face similar supply chain issues. For instance, the recent 2023 United Auto Workers strike caused a delay in ordering and receiving vehicles.	• As much as possible, source other manufacturers whose products meet the agency's fleet needs, utility standards, and federal guidelines/regulations. • As the fleet is updated, and replacement schedules based on industry standards and asset types for new vehicles and equipment are implemented, this will mitigate the need to have parts for assets 20 years or older. • A pause or slowdown in production is an unforeseen, unpredictable risk that the last few years has proven can become a tangible risk. Communications with customers and vendors will be key to prioritize needs, develop alternative plans as needed to secure assets and parts.

Risk	Impact	Mitigation Plan
Growing Complexities of Vehicles and Equipment	Newer vehicles and equipment are being built with newer technological functions, i.e., multiple computer systems. Newer technology requires training for troubleshooting and repair vehicles/equipment as most are outfitted with manufacturer specific software. Furthermore, these new assets require proper infrastructure for service and maintenance. Ten out of fifteen fleet garages are antiquated. They are not outfitted for newer and larger assets. Also, most of the fleet garages do not have internet signal. This will become a challenge when troubleshooting and repairs require using software.	• The option to outsource services is always available. However, outsourcing is more expensive than providing the service in-house. Outsourcing can be a short-term solution, but FM and the agency will want to implement a long-term solution that is more cost effective.
Changes in federal mandates for types of fleet assets	New federal mandates may change the trajectory of the composition of the types of vehicles and equipment we procure for replacement.	• BPA, Western Area Power Administration (WAPA), Southwestern Power Administration (SWPA), and Southeastern Power Administration (SEPA) have collaborated on how to navigate federal mandates for utilities.

10.5 Asset Conditions and Trends

As mentioned in section 8.2 Asset Condition and Trends, a fleet asset condition is subjective to how often it is used, the intended use, age and any unforeseen maintenance and repair issues that are not regular maintenance or inspections. For instance, a forklift with low age and high usage may be in worst condition than a forklift with high age and low usage. Therefore, it is not realistic to predict expected changes to condition for a given fleet asset type.

That said, FM is presently discussing the employment of telematics in the near future for vehicles and equipment. Telematics will capture data such as driver behavior, energy consumption, mileage, engine hours, diagnostic issues, etc. Telematic data along with benchmarking studies and existing BPA fleet data can assist with predicting how long an asset may function. Once telematic data is available, FM will revisit how it will capture and present this data.

10.6 Performance and Risk Impact

The expectation is that as the fleet is right-sized and aging fleet assets are replaced, asset performance levels will improve, and the overall risk threshold will decrease. With a modernized fleet of the correct size, composition, allocation, FM's customers can expect to have more "up-time" with vehicles and equipment as well as the proper assets to meet their business/project needs.

Another key to mitigating risks is the change in how FM makes its business decisions. Moving forward, from procurement to disposal of a fleet asset, FM will rely on internal fleet data, and monitor/analyze fleet management trends, to make data-based decisions versus making reactionary-based decisions. Furthermore, standardizing fleet assets replacement cycles by asset types and industry standards will significantly lower the risk in the areas of safety, reliability, and finance. Shorter replacement cycles will help FM avoid holding onto to aging assets that can pose high safety, reliability, and financial risks.

Figure 10.6-1, Strategy, Risk Assessment Safety

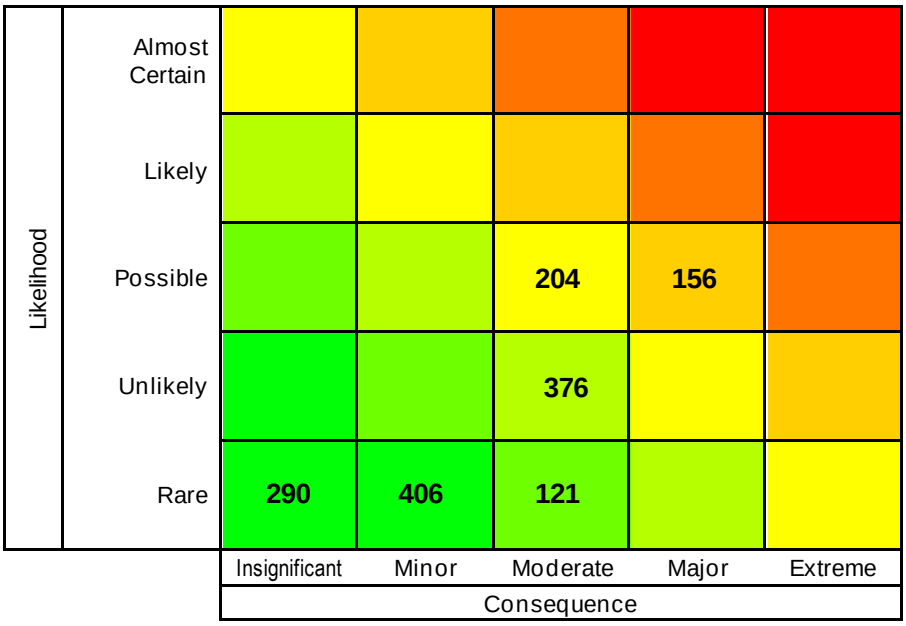


Figure 10.6-2, Strategy, Risk Assessment Reliability

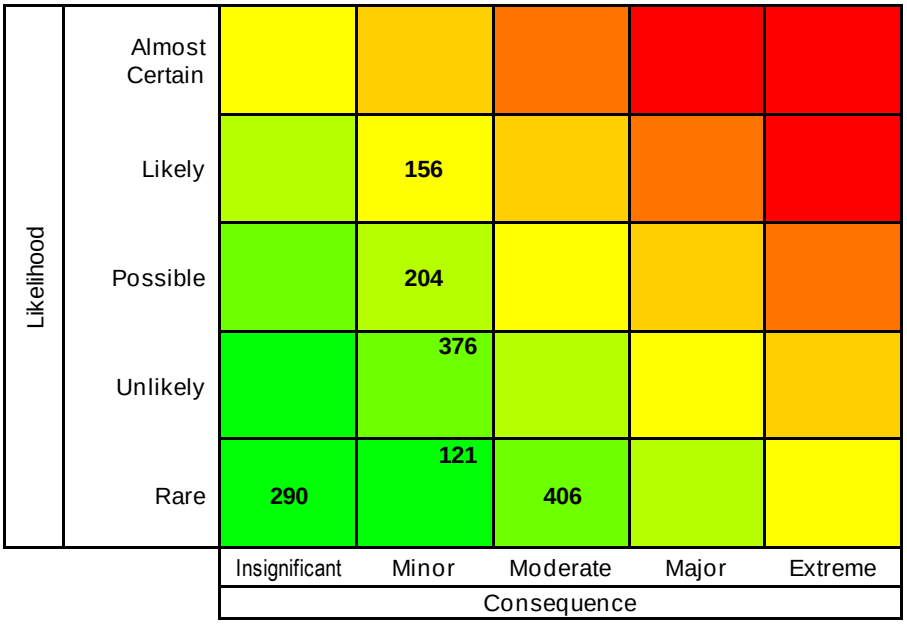


Figure 10.6-3, Strategy, Risk Assessment Financial

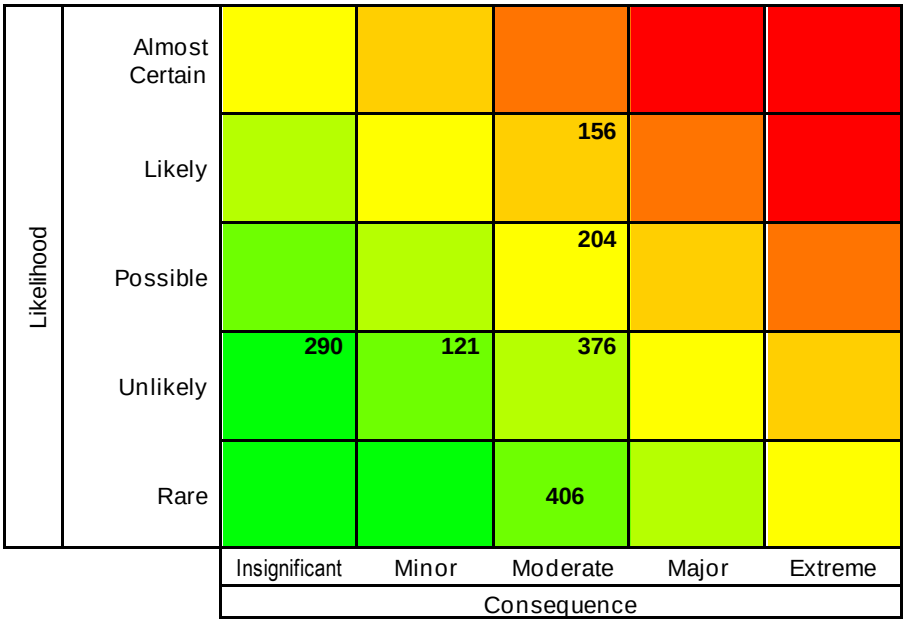


Figure 10.6-4, Strategy, Risk Assessment Environment/Trustworthy/Stewardship

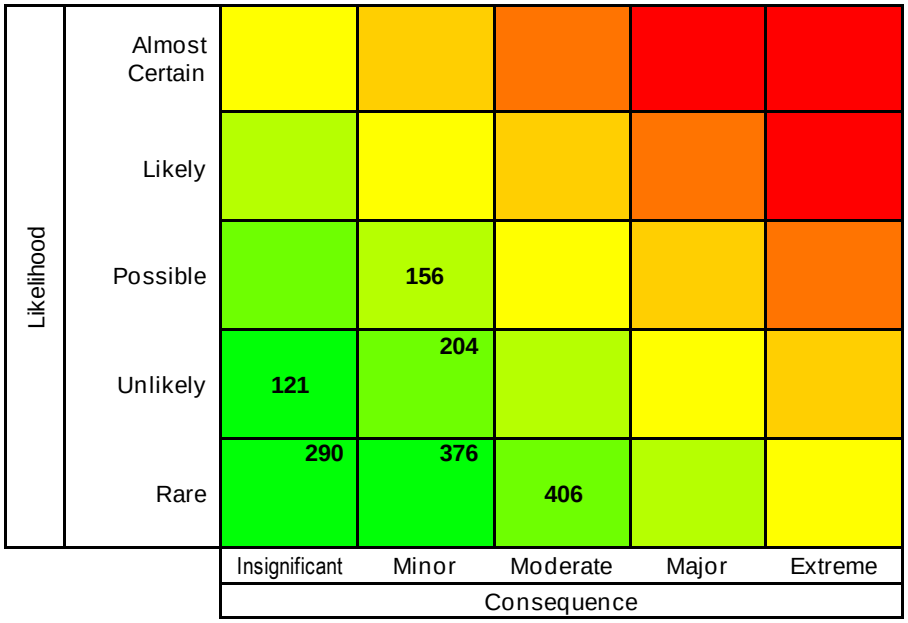
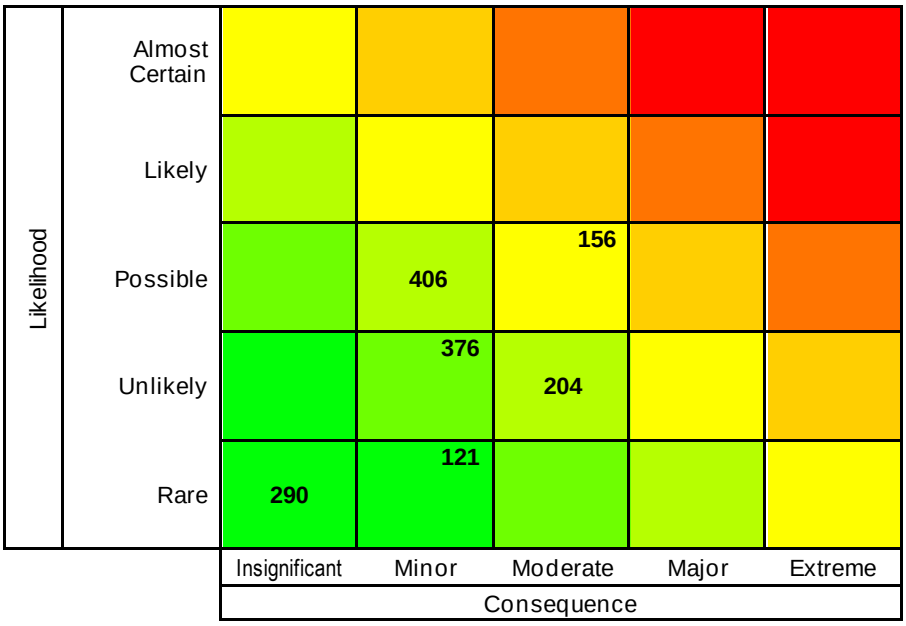


Figure 10.6-5, Strategy Risk Assessment Compliance



11.0 ADDRESSING BARRIERS TO ACHIEVING OPTIMAL PERFORMANCE

Procurement Challenges

Contracting and procurement processes present ongoing challenges for replacing aging fleet assets and purchasing new additions. As mentioned earlier in sections 5.0 External and Internal Influences, 6.4 Resource Requirements, and 10.4 Implementation Risks, two Equipment Specialists oversee the vetting and purchasing of fleet assets for the entire agency. Even with both Equipment Specialists performing above 100% capacity, FM is still not able to replace aging fleet assets at a suitable rate. This is due to the significant amount of time needed for sourcing, traveling, coordinating with vendors, manufacturers, and BPA Contracting & Strategic Sourcing (NSS) organizations. Furthermore, there is often a delay in acquiring a purchasing contract due to the limited availability of NSS personnel. Therefore, a fleet asset may be available for purchase but waiting on awarded funds to move forward.

The long-term solution is to hire additional staffing for both FM and NSS to increase personnel bandwidth and availability. In the interim, FM will prioritize replacement needs and work closely with NSS to help accelerate procurement as much as possible.

Supply Chain Challenges

The availability of fleet assets and parts are driven by the market. Disruptions in the global supply chain influence when and how many products are available. Disruptions can be caused by labor, public health, material resources, and other unforeseen issues or changing trends. If fleet assets or parts become challenging to procure, there is the option to utilize third-party vendors for rentals or services. However, the vendors are facing the same supply chain challenges. Therefore, this option has its limits as well.

The steps FM can take to mitigate these challenges are to keep a pulse on the market, and build/maintain relationships with vendors and manufacturers. These relationships are crucial to have high priority access to fleet assets and parts as they become available on the market. For instance, FM parts department has partnered with 2-3 local suppliers for routine maintenance parts. This has allowed FM to supply parts to the other fleet garages as needed or assist in locating hard to find parts. Furthermore, when possible, the parts department will bolster parts inventory levels to mitigate temporary supply chain disruptions.

Program Resources and Infrastructure

Training - As FM modernizes the agency's fleet, new training will be required for the HMEMs to service and maintain the fleet assets. Newer vehicles and equipment have modern technology that not only requires parts but also software to troubleshoot for repairs and maintenance. More likely than not, the software or computer system installed in a fleet asset is manufacturer specific. Therefore, it will be a learning curve for the HMEMs to become familiar with various software and computer systems. FM will need to heavily invest in training for the HMEMs to strengthen their knowledge and skills. As with any investment, this will require additional expense funding.

Fleet Garages – 10 out of fifteen fleet garages are antiquated. They are not equipped to service larger and/or newer assets. The services can be outsourced to a third-party vendor, or newer garage, i.e., the Ross fleet garage. However, long term this is not a financially sustainable option. If a fleet asset is in a rural area, it will cost a significant amount of time and money to retrieve the asset to bring in for service. FM will need to partner with the Facility organization to address the need to update or build new garages.

12.0 DEFINITIONS

Compliance: Must be an executive order/directive requiring the specific investment must be made and that the project as proposed includes only the minimum required to comply with the directive.

Enterprise Asset Management (EAM): An AssetWorks software program utilized to store fleet data, create, and track maintenance work orders, and create standardized reports.

Expansion: Adding new assets to the system that did not exist before providing new capability. Examples include new IT applications, new buildings, and new units at existing power generation sites, new lines, and substations.

Heavy Mobile Equipment Mechanic (HMEM): A Heavy Mobile Equipment Mechanic repairs and maintains construction and surface mining equipment such as bulldozers, cranes, motor graders, dump trucks, digger derricks, forklifts, heavy duty pickup trucks, backhoes, loaders, and other diesel and gas-powered construction equipment.

Replacements: In kind replacement of equipment and components. Examples include wood poles, transformers, batteries, existing buildings, breakers, reactors, conductors, vehicles, and construction equipment.

Telematics: Telematics are technology-based hardware tools that can be installed in vehicles and mobile equipment to collect and record operational data. Data collected and recorded can include driver behavior, mileage, fuel usage, diagnostic issues, odometer, or engine hours, etc.