City of Dallas
Fleet Management Study

Executive Summary Report
December 5, 2018

OUTLINE

The Fleet Study, conducted from May to July 2017, reviewed five key areas: Cost of Service, Utilization, Replacement Criteria, Organizational Assessment, and Right Sizing.

- This report contains observations and recommendations made by Alvarez & Marsal (A&M) for the City of Dallas (City) 2018 Fleet Management Study (Fleet Study). The Fleet Study included five categories of review including Cost of Service, Utilization, Replacement Criteria, Right-Sizing, and an Organizational Assessment.

- The objective of the Fleet Study was to assess the operational efficiency of the City's fleet management and operations in Equipment & Building Services (EBS) and other Departments that own and/or maintain vehicles. The Fleet Study focused on the following Departments:
  - Equipment & Building Services, Police, Trinity Watershed Management, Sanitation, Aviation, Water, Public Works, Fire, and Parks and Recreation (Departments).

- A&M also conducted a benchmark analysis by reviewing Fleet Management Plans and polices and procedures from other government agencies including a best in class city as awarded by Government Fleet to understand industry benchmarks.

- As a result of the analyses and reviews conducted for the Fleet Study, A&M found:
  - **Cost of Service** - The City spends $60.2 million annually (3 percent of City budget) for fleet, including administrative and maintenance staff, maintenance, repairs, parts, and other directly related fleet management costs (excluding purchases/rentals). The average monthly cost per vehicle Citywide is $742.
  - **Utilization** - Approximately 2,373 vehicles (33 percent of total fleet) are *potentially* under utilized in the City's fleet. The actual usage will require a more thorough assessment, justification, and approval process from each Department to an advisory board.
  - **Replacement Criteria** – The process for determining which replacement eligible vehicles are actually replaced is not consistently applied across all departments. Under the current replacement criteria, 1,911 vehicles (26 percent of total fleet) would need to be replaced. We estimate the full replacement costs of these 1,911 vehicles would total $142 million.
  - **Right-Sizing** – There are *potentially* 1,004 vehicles (14 percent of total fleet) that could either be shared, pooled or surplused in the City's fleet. Some of these vehicles could fall into the underutilized or replacement categories as well. The actual number will depend on a more thorough and collaborative analysis with each Department.
  - **Organizational Assessment** - The City's fleet operations could benefit from organizational improvements such as simplifying and automating billing procedures, establishing a permanent Fleet Oversight Committee for input on vehicle acquisition and replacement criteria, improving M5 training and utilization, and finalizing the scheduling processes for vehicle maintenance.

Note: M5 is the fleet management software utilized by EBS to track and manage citywide vehicles and equipment.

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EXECUTIVE SUMMARY - OBSERVATIONS

These slides contain A&M's observations about the City fleet, EBS, and other Departments that either have vehicles owned/maintained by EBS or owned/maintained by Departments.

	Current State
Vehicles	• **Vehicle Ownership:** The City has 7,263 vehicles across the Departments included in the Fleet Study. • **Vehicle Type:** There are over 960 different makes/models across 91 vehicle categories in M5. This is an average of 10.5 makes/models per category. • **Fleet Age:** The average age of the vehicles in the City fleet is 8.6 years with 1,230 vehicles (17 percent of total fleet) older than 15 years. • **Make Ready Process:** The City recently changed the Make Ready process to shift responsibilities for technology package installs and overall vehicle finishes to the vendor rather than technology office. The change should help streamline delays in the Make Ready process and improve processing speed in 2019. • **Parts:** The City maintains a wide variety of vehicle types even within vehicle categories resulting in a high number of distributed relationships with and requirements from parts vendors leading to reduced service and higher costs.
Maintenance	• **Preventative Maintenance:** On average, 18 percent of preventative maintenance (PM) work orders are not completed by the end of the year in which they are due. In 2017, 77 percent of completed PMs were completed more than seven days after the actual due date. This has increased over the past five years. • **Vehicle Downtime:** Once turned into the maintenance shops, between 2 – 20 percent of work orders take longer than 20 days to complete leading to extended downtime. • **Work Orders:** There are a number of instances where work orders weren't properly opened or closed, resulting in the appearance of shorter or longer downtimes respectively. • **Scheduling:** Currently, there is no formal scheduling process with the shops following a FIFO turnaround. • **Shop Facilities:** Some maintenance shops are not the proper dimension for the vehicles they serve. The Southeast shop could not fit a lift, requiring trenches built into the floor to service the vehicles. • **Shop Infrastructure / Equipment:** Shops need additional IT infrastructure (tablets, bar codes, laptops, WIFI, etc.), equipment (power tools, repairs, etc.), and processes (parts runners, technicians for intake, etc.).

These slides contain A&M's observations about the City fleet, EBS, and other Departments that either have vehicles owned/maintained by EBS or owned/maintained by Departments.

	Current State
Organization	• **Organizational Structure**: The City has over 273 staff providing fleet maintenance and management across departments. • **Staffing Ratios**: The staffing ratio of 47:1 for vehicles to mechanics, actual headcount, is slightly below nationwide benchmarks of 55:1 – 60:1 vehicles per mechanic indicating incremental room for efficiency. • **Span of Control**: The staff to supervisor ratio across the department is 7:1 with a ratio of 10:1 in the shops and 3:1 in management and administrative positions indicating the potential to increase reporting structure in Management and Administration.
Staffing / Resources	• **Staffing Levels**: The current workflow in the maintenance shops leads to backlogs and increased overtime. • **Turnover**: The maintenance shops have above average turnover at 11 percent annually. • **Compensation**: The City does not maintain higher pay scales for specialized mechanics. The reported wage differential with the private sector market leads to resource gaps in the maintenance shops. • **Incentives**: The City lags behind other cities and private sector in terms of hiring, training, and raise/promotion incentives.
Technology	• **Core M5 System**: The City has a policy to maintain all vehicles in the M5 system, however, pockets remain where the vehicles are tracked in external stand alone spreadsheets or systems (e.g., Trinity's Fleet Tracker). • **System Integration**: The M5 system is not integrated with the budgeting system or the Origami system in Risk Management. EBS should provide access to M5 reports on incidents and evaluate system integration. • **Telematics System**: The Telematics system provides for a snapshot of vehicle data, but is not installed on all vehicles in the fleet. • **Manual Processes**: When the Vehicle ID Box (VIB) system has a failure point, the maintenance shops are left to manually enter vehicle data which can lead to errors in data accuracy. • **Training**: The City does not regularly conduct training in the M5 system. The lack of regular training, combined with high turnover in the extended fleet management staff leads to poor data quality.

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	Current State
Cost	• **Cost Per Vehicle**: The City spends $84.8 million on fleet (3 percent of total City budget), which includes vehicle purchases/rentals, staffing, maintenance, repairs, parts and other direct fleet costs. Vehicle maintenance, repair and operations (including staff) equals $60.2 million of that total. • **Costs Per Vehicle:** Across all Departments, this equates to an average maintenance, repair and operations (MRO) cost per vehicle per year of $8,903 or $742 per month. Average maintenance cost per vehicle is within 10% of national benchmarks for most equipment, except for police sedans and light trucks. • **Maintenance Costs Per Vehicles:** Across high cost / high use categories the City's maintenance costs are within +/-10 percent of benchmarks for rear loaders, pumper trucks, ladder trucks, and dump trucks. Police vehicles and light trucks are more costly to maintain when compared to benchmarks (i.e., greater than 10 percent deviation from the benchmark).
Utilization	• **Fleet Utilization**: Data shows 2,373 vehicles that are being driven less than 5,000 miles annually (33 percent of total fleet), 1,583 vehicles that are driven less than 2,500 miles annually (22 percent of total fleet) and 1,023 vehicles that are driven less than 1,000 miles annually (14 percent of total fleet) which are indications of *potential* under utilization in the City's fleet. • **Mileage:** The City's high cost / high use fleet vehicles generally drive more miles on an annual basis than nationwide benchmarks.
Procurement	• **Citywide Contracts:** The City maintains a series of Master Service Agreements (MSA) related to Fleet Management for purchasing, maintenance, vehicle rentals, and parts. • **Total Cost of Ownership**: The City's procurement for new vehicles is awarded on purchase price versus total cost of ownership. Given that maintenance costs, on average, are nearly 100 percent of purchase price, with automated loaders at 255 percent, there are opportunities to drive savings across the maintenance lifecycle. • **Vendor Agreements:** The current MSA's include negotiated purchase price and Service Level Agreements (SLAs) for parts and some maintenance. The City is beginning to standardize fleet in some areas (i.e. light trucks, vans and marked squads).

These slides contain A&M observations about the City fleet, EBS, and other Departments that either have vehicles owned/maintained by EBS or owned/maintained by Departments.

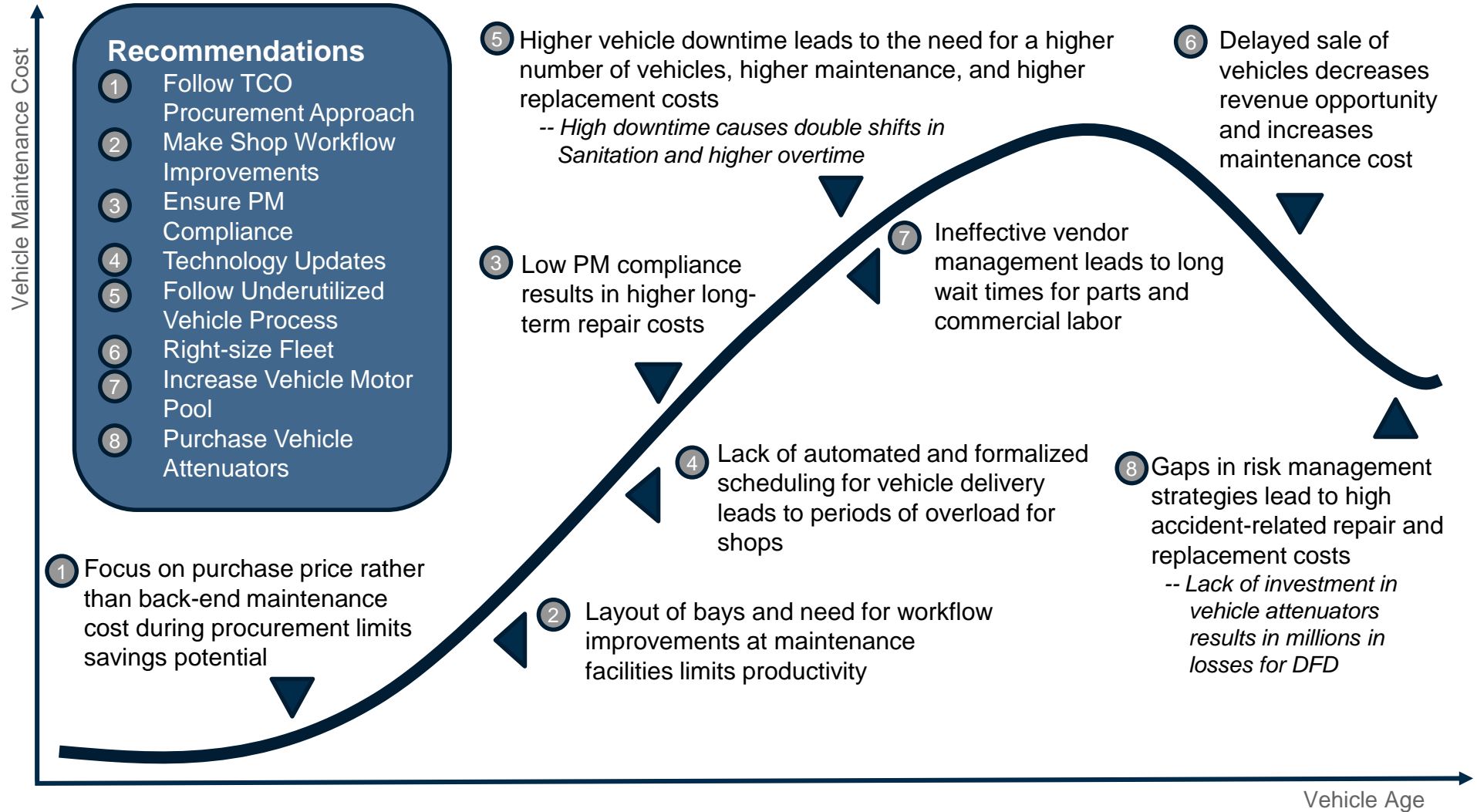|	Current State
Replacement Criteria	• **Replacement Policy:** The City's replacement criteria is not as well defined for all vehicle categories and is not implemented on a consistent basis. When it is defined for specific vehicle types, the standard metrics are average age, maintenance/repair costs and utilization. Using the current standard, 1,911 vehicles (26 percent) are eligible to be replaced. • **Fleet Replacement Aging:** In addition to the current fleet eligible for replacement, the City should expect to have an additional 1,760 vehicles eligible for replacement in the next five years for a total of 3,671 vehicles by 2024. The City has been replacing approximately 300 vehicles per year on average over the last several years but can only replace a certain percentage due to budgetary constraints. • **Actual Replacement:** The estimated full replacement cost for the fleet that is eligible for replacement (i.e., 1,911 vehicles) would cost $142 million to replace, and the full cost of replacement (i.e., 3,671 vehicles) over the next five years is expected to cost $304 million by 2024. The estimates are based on average purchase price times the number of vehicles in the category requiring replacement. • **Funding:** EBS established a fleet replacement fund in 2014, but it has not been fully implemented. The City funds vehicle replacement through debt issuance rather than through set aside funding or reserve funding.
Risk Management	• **Claims:** The City realized high claims costs resulting from three Fire Engine losses in the past few years, totaling over $2 million in replacement costs. • **Reinsurance:** The City self insures for vehicle and equipment losses, and does not utilize reinsurance for Property and Casualty costs due to the high premiums. • **Risk and Safety Review Processes:** The Office of Risk Management has assumed duties for risk and safety reviews of each department.

Based on available benchmarking data, the City appears to be on target in many categories with the exception of ratios between maintenance staff and total vehicles where they appear to lag behind.

Benchmark	Comment
Vehicle Age **Tulsa - 8 years** **Texas - 9 years**	With an average age of 8.6 years, Dallas fleet compares to nationwide fleet data of 7.9 years and Federal civilian passenger data at 9.4. Takeaway - At the aggregate level, Dallas has an average fleet in terms of age. Age of vehicles in specific Departments or in the 91 vehicle categories vary greatly.
Vehicle Mileage **Texas - 18,063** **Tulsa - 8,277**	With an average annual mileage of 9,088, Dallas fleet compares to nationwide data of 9,338 miles and Federal civilian passenger data at 10,176. Takeaway - Dallas appears to be in line in terms of annual mileage per vehicle when compared to national, Federal and benchmark averages but less than the average for the State of Texas.
Maintenance Costs **Texas - $10,837** **Tulsa - $5,400**	With an average maintenance cost per vehicle per year of $8,903, Dallas fleet compares to nationwide data of $8,616 and Federal civilian data at $9,113. Takeaway – More data collection would be helpful to draw closer comparisons but Dallas appears within expectations when compared to benchmarks regarding maintenance costs.
Staffing Levels **Tulsa - 54**	In Dallas, there are 47 vehicles for every mechanic (actual headcount) in EBS. The national benchmark for cities and counties is 55 – 60 vehicles for every mechanic. Takeaway – On the surface of the benchmark it appears more research is needed to understand why the City is not within the national benchmark on mechanic staffing.
Utilization **Tulsa - 37%**	In Dallas, there are 2,373 vehicles that are being driven less than 5,000 miles per year (32 percent of total fleet) indicating potential under utilization. However, more specific analyses and Department coordination is needed to better understand actual utilization.

Source: Government Fleet, U.S. General Services Administration, State of Texas, City of Tulsa, City of Dallas
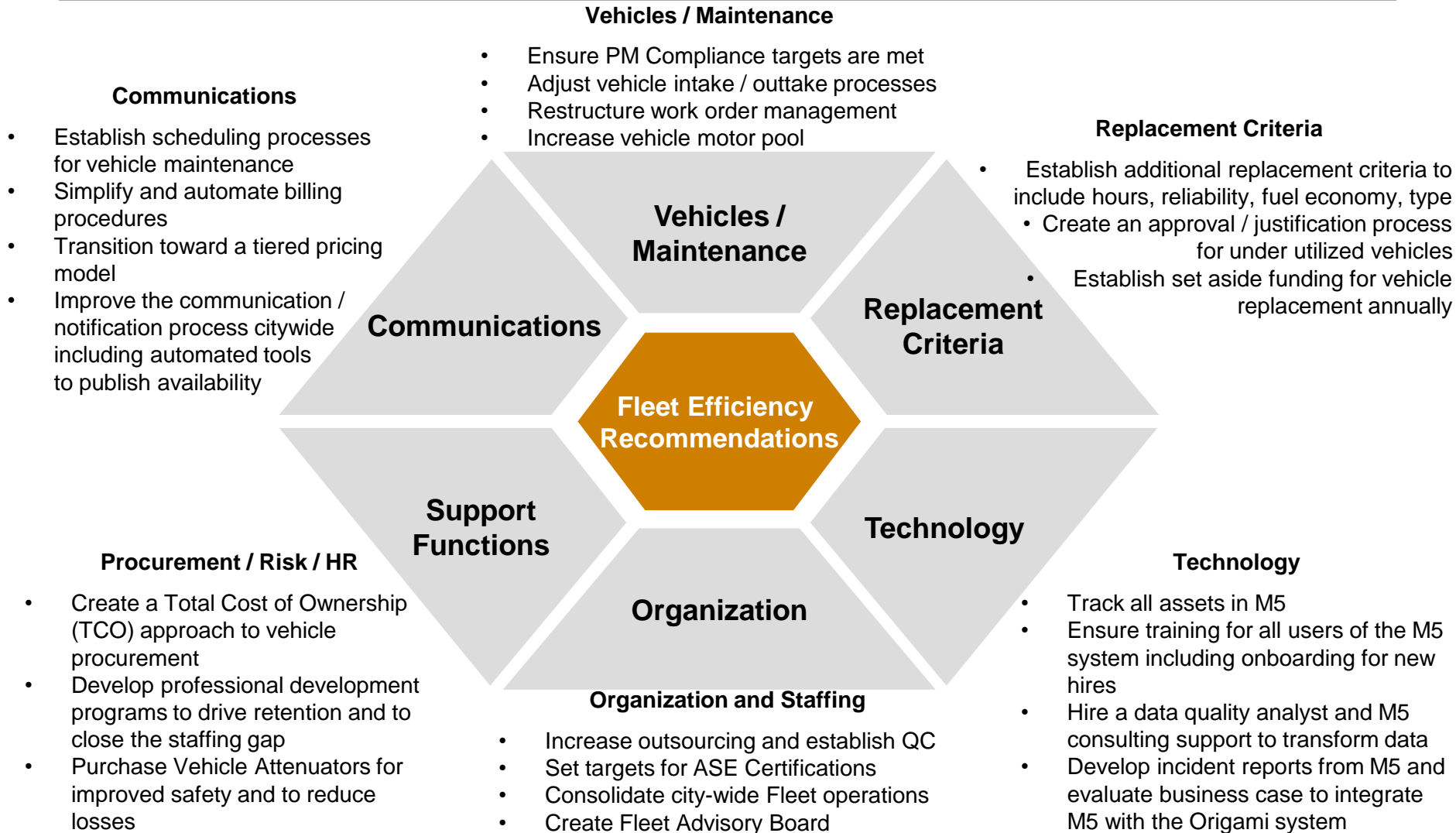
DOWNSTREAM CONSEQUENCES

A&M's recommendations are designed to address challenges across the vehicle lifecycle that lead to financial and operational inefficiencies and drive higher overall maintenance costs.

Vehicle Maintenance Cost →

Recommendations

1. Follow TCO Procurement Approach
2. Make Shop Workflow Improvements
3. Ensure PM Compliance
4. Technology Updates
5. Follow Underutilized Vehicle Process
6. Right-size Fleet
7. Increase Vehicle Motor Pool
8. Purchase Vehicle Attenuators

5. Higher vehicle downtime leads to the need for a higher number of vehicles, higher maintenance, and higher replacement costs
   -- *High downtime causes double shifts in Sanitation and higher overtime*

6. Delayed sale of vehicles decreases revenue opportunity and increases maintenance cost

7. Ineffective vendor management leads to long wait times for parts and commercial labor

3. Low PM compliance results in higher long-term repair costs

4. Lack of automated and formalized scheduling for vehicle delivery leads to periods of overload for shops

8. Gaps in risk management strategies lead to high accident-related repair and replacement costs
   -- *Lack of investment in vehicle attenuators results in millions in losses for DFD*

1. Focus on purchase price rather than back-end maintenance cost during procurement limits savings potential

2. Layout of bays and need for workflow improvements at maintenance facilities limits productivity

Vehicle Age →

The Fleet Study recommendations generally fall into six thematic categories for overall improvement of fleet efficiency and operations.

Vehicles / Maintenance

- Ensure PM Compliance targets are met
- Adjust vehicle intake / outtake processes
- Restructure work order management
- Increase vehicle motor pool

Communications

- Establish scheduling processes for vehicle maintenance
- Simplify and automate billing procedures
- Transition toward a tiered pricing model
- Improve the communication / notification process citywide including automated tools to publish availability

Replacement Criteria

- Establish additional replacement criteria to include hours, reliability, fuel economy, type
- Create an approval / justification process for under utilized vehicles
- Establish set aside funding for vehicle replacement annually

Procurement / Risk / HR

- Create a Total Cost of Ownership (TCO) approach to vehicle procurement
- Develop professional development programs to drive retention and to close the staffing gap
- Purchase Vehicle Attenuators for improved safety and to reduce losses

Organization and Staffing

- Increase outsourcing and establish QC
- Set targets for ASE Certifications
- Consolidate city-wide Fleet operations
- Create Fleet Advisory Board

Technology

- Track all assets in M5
- Ensure training for all users of the M5 system including onboarding for new hires
- Hire a data quality analyst and M5 consulting support to transform data
- Develop incident reports from M5 and evaluate business case to integrate M5 with the Origami system

Vehicles / Maintenance

Communications

Replacement Criteria

Fleet Efficiency Recommendations

Support Functions

Technology

Organization

The transformation of the City's Fleet should occur in short, medium, and long term phases.

What the Fleet Management Needs to Transform

Short Term:

Improve Workflow and Communication

- Require tracking of all assets in M5
- Hire a data quality analyst and M5
- Establish scheduling processes
- Establish a quality control function
- Increase outsourcing
- Ensure training for all users of the M5
- Simplify the billing procedures
- Improve the communication / notification process citywide
- Ensure PM compliance targets are met
- Adjust vehicle intake / outtake process
- Restructure work order management

Medium Term:

Focus on Customer Service

- Transition toward a tiered pricing model
- Develop automated tools to publish availability
- Refine workflow and continually improve work order management
- Establish expanded replacement criteria to include hours, reliability, fuel economy, type
- Create an approval / justification process for under utilized vehicles
- Set aside proper funding levels for replacement of vehicles

Long Term:

Restructure Funding and Consolidate Operations

- Integrate M5 with the Origami system for improved insurance collections
- Consolidate city-wide Fleet operations
- Set aside proper funding levels for replacement of vehicles
- Maintain continual process improvement lifecycle

0 – 12 Months   **1 – 2 Years**   **3+ Years**

OUTLINE

Project Overview of the Fleet Study

Between May and July 2018, A&M met with EBS, the Fleet Steering Committee and the following eight Departments that internally manage some portion of their own fleet:

Aviation (AVI)	**Fire & Rescue (DFR)**	**Parks & Recreation (PKR)**	**Police (DPD)**
Public Works (PBW)	**Sanitation (SAN)**	**Trinity Watershed Management (TWM)**	**Water Utilities (DWU)**

To complete the Fleet Study, A&M reviewed the following:

- Assessed fleet management practices, both centralized at EBS, as well as at the Department level, to identify opportunities to improve management and increase efficiency.

- Met with Department leadership to understand how fleet management practices varied across the City and also to understand current challenges in fleet management.

- Analyzed data from M5, as well as tracking maintained at the individual Department level, for vehicle inventory, utilization, and maintenance.

- Conducted benchmarking research, including interviews with fleet management leadership from peer cities, to evaluate the City's performance relative to national averages and comparable municipalities.

The Fleet Study engagement started on May 7 and concluded on August 17, 2018.

OVERALL PROJECT

| Work stream: Phase 1 Assessment | ● | City of Dallas Project Status Report | Project Manager: Matt McCleary | Date 07/18/2018 |

Detailed Project Progress

Work Step	Wk	May				June				July				August				
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Project Initiation																	
2. Cost of Service																	
3. Utilization Study																	
4. Replacement Criteria																	
5. Fleet Right Sizing																	
6. Organizational Structure and Performance Measures												Preliminary Findings Briefing					
7. Deliver Final Report														Final Written Report			
8. Implementation Support																	

Legend: ■ Completed   ■ Behind Schedule   □ Future Activities   ▥ Phase II Activities

Previous Week's Key Accomplishments

1. Presented draft final findings to Steering Committee
2. Department PPTs revised/edited as well as one dedicated to EBS.
3. Continued to work on Executive Summary Report PPT
4. Continued benchmarking research
5. Reviewed fleet data from City of Tulsa and continued outreach to other benchmarking cities/sources

New/Updated Project Risks/Issues

ID	Description	Mitigation	Status	Owner
1	Data collection efforts require significant effort to collect and review.	All agencies have received data request with request to meet in person with A&M to review questions.	●	Matt McCleary

Risk Level   ● Low   ● Moderate   ● High   ✓ Mitigated/Avoided

- Fleet Study kicked off on May 7, 2018.
- Weekly update meetings were held with EBS and bi-weekly meetings with the Steering Committee.
- Data collection was a challenge throughout the engagement, resulting in the overall schedule being shifted two weeks.
- At the request of the EBS Director, Departmental review time was extended into August.
- Draft report delivered to EBS on July 25th with updated draft due to the City Manager by August 17, 2018.

A&M studied five-components of Fleet Operations for the City

Assessment of the **organizational structure** and its effectiveness

Study on **fleet utilization**, including maintenance and managing surplus assets

Review of additional **wear and tear** from cars that run while sitting idle (i.e., police or bucket trucks)

Rightsize the fleet based on the utilization study and replacement criteria

Assess **accuracy of rates**, including benchmarking with comparable municipal/government fleets

Utilization Study

Organization Structure and Performance Measures

Replacement Criteria

Fleet Study Components

Fleet Right-Sizing

Cost of Service

BACKGROUND & OVERVIEW – BENCHMARKING

As part of the Fleet Study, A&M reached out to other public agencies and researched relevant benchmarking data from sources such as Government Fleet.

Benchmarking Process

Gathered, synthesized and analyzed fleet data at the City level and for each Department to establish baselines.

Gathered benchmark data from industry organizations, such as Government Fleet, and other government sources, including City of Tulsa, State of Texas and the U.S. Federal Government

Made correlations and comparisons in fleet data where appropriate and verified preliminary findings with follow up phone calls with the Cities of Tulsa and Houston.

As a result of the benchmarking analysis, A&M was able to determine which fleet management metrics the City met, lagged behind, or exceeded in comparison to other government agencies, including the city ranked Best in Fleet in 2018 by Government Fleet.

The data quality across the fleet environment will require changes to the data ownership and maintenance routines in the future to improve overall data quality.

Deliverable	Area	Quality	Data Quality Findings
Cost	MRO & EBS Fees	◑	• Data from finance requires factoring and edits to remove non-fleet costs. • Department Level Detail would improve the data set
	Fleet Purchases	◐	• Less than half of the vehicles in M5 had entries • Collected the Fiscal Year 2013-2017 Master Lease Agreements
	Personnel	◑	• Constructed from interviews and required timesheet estimates in many cases • Overtime costs are difficult to estimate impact of
	Fleet Sales	◐	• Fleet sales data is present in 21 percent in the defleeted file • Received gross sales numbers for the past year
Utilization	Vehicle Counts	◑	• Data outside of M5 challenging to get either resulting from inability to share or lack of vehicle tracking
	Mileage	◑	• Have consistently, data quality issues
	Hours	○	• Not usable
	Work Order Data	◑	• There is no tracking of receipt of vehicles
	Idle Time	◑	• Idle time is not tracked in M5
Replacement Criteria	Vehicle Age	●	• Vehicle age is one of the more reliable metrics
	Lifecycle Costs	◐	• Depreciation is not maintained in the system currently • Purchase price is limited in M5
Organization	Personnel Counts	◐	• Data requires interviews with staff to fill in detail
	Processes	◑	• Significant change currently underway

OUTLINE

The Cost of Service component assessed accuracy of rates, including benchmarking with comparable municipal/government fleets.
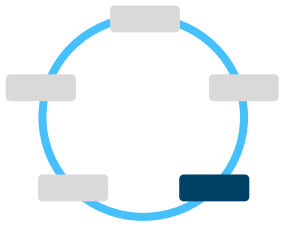
Cost of Service

The division sets rates through an annual rate modeling process that involves numerous spreadsheets. These costs are used to create a flat monthly fee to fully recover the base costs (i.e., 100 percent cost recovery). Extraordinary maintenance costs or repair costs are billed through to the departments at cost plus an overhead fee. The review will include assessment of accuracy of rates. Review/analysis of internal labor rates and associated overhead and comparison with local private market labor rates and those of comparable municipal/government fleets.

Process

Data Collection

- Interviewing / mapping of the current rate methodology.
- Detailed cost data for Citywide fleet operations.
- Collection of current budgets / spreadsheet that exemplify current rate modeling process.
- Data on actual expenses per year vs. database on department billing per year.
- Data on internal overhead.

Analysis

- Conduct root cause analysis of gap analysis between actual expenses and department billing.
- Review of billing capabilities and technologies used.
- Rate rationale analysis and optimization.
- Analysis on overhead cost allocation.
- Overhead benchmarking with comparable labor rates.

Findings

- Citywide Fleet Cost Structure Analysis.
- Optimized Rate rationale.
- Root cause analysis of the annual gap between actual expense and collections.
- Labor overhead benchmarking results.

Deliverable

Recommendations to simplify / streamline the annual billing process with an assessment of the change in cost by customer.

COST OF SERVICE - FY17 CITYWIDE SPENDING ON FLEET

Cost of service across the following departments is $84.8 million. Of that, EBS comprises 55 percent.

Fleet Expenditures

1.0M .6M
2.2M
2.9M
3.8M
5.1M
5.9M

$84.8M

46.4M

16.8M

- ■ Equipment and Building Services
- ■ Sanitation
- ■ Dallas Fire Department
- ■ Dallas Police Dept
- ■ Water Utilities
- ■ Aviation
- ■ Public Works
- ■ Parks
- ■ Trinity Watershed Management
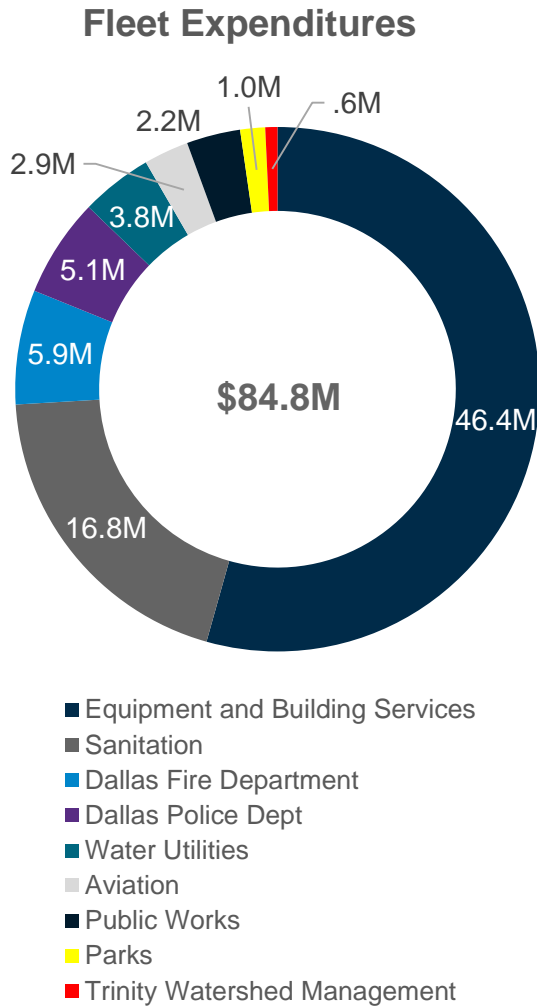
DEPARTMENT	Fleet Count	Dpt Fleet MRO (incl. fleet personnel)	Total Fleet Purchases (incl. MLA)	Grand Total
Equipment and Building Services*	888	$ 46,292,892	$ 143,359	$ 46,436,251
Sanitation	734	4,154,285	12,616,012	16,770,297
Dallas Fire Department	588	4,804,094	1,135,344	5,939,438
Dallas Police Dept**	2,171	1,050,404	4,042,087	5,092,491
Water Utilities	1434	1,537,099	2,240,981	3,778,080
Public Works	130	955,497	1,986,616	2,942,113
Aviation	682	276,045	1,925,917	2,201,961
Parks	375	474,684	569,340	1,044,025
Trinity Watershed Management	261	610,879	25,580	636,459
Grand Total	**7,263**	**$ 60,155,879**	**$ 24,685,236**	**$ 84,841,115**

* EBS total includes 565 vehicles spread among other departments, which captures the majority of remaining fleet costs not pictured.
** DPD totals include the 506 covert units which have separate funding.

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Note: To avoid double-counting, Department totals do not include fees paid to EBS. A breakdown of fees paid to EBS can be found in the department decks.

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COST OF SERVICE – BENCHMARK MAINTENANCE COSTS

For high cost / high use vehicles, the City is on target when it comes to maintenance costs per vehicle for various vehicle categories compared to nationwide fleet benchmarks.

2017 Annual Maintenance Costs ($)

Category	Dallas	Benchmark
Ladders/Aerial Truck	28,120	28,758
Rear Loader	23,457	21,643
Pumper/Engines	23,126	21,265
Dump Truck	5,887	5,933
Police Sedan	4,853	3,546
Police SUV	3,333	2,969
Light Truck	3,243	1,668

■ Dallas ■ Benchmark
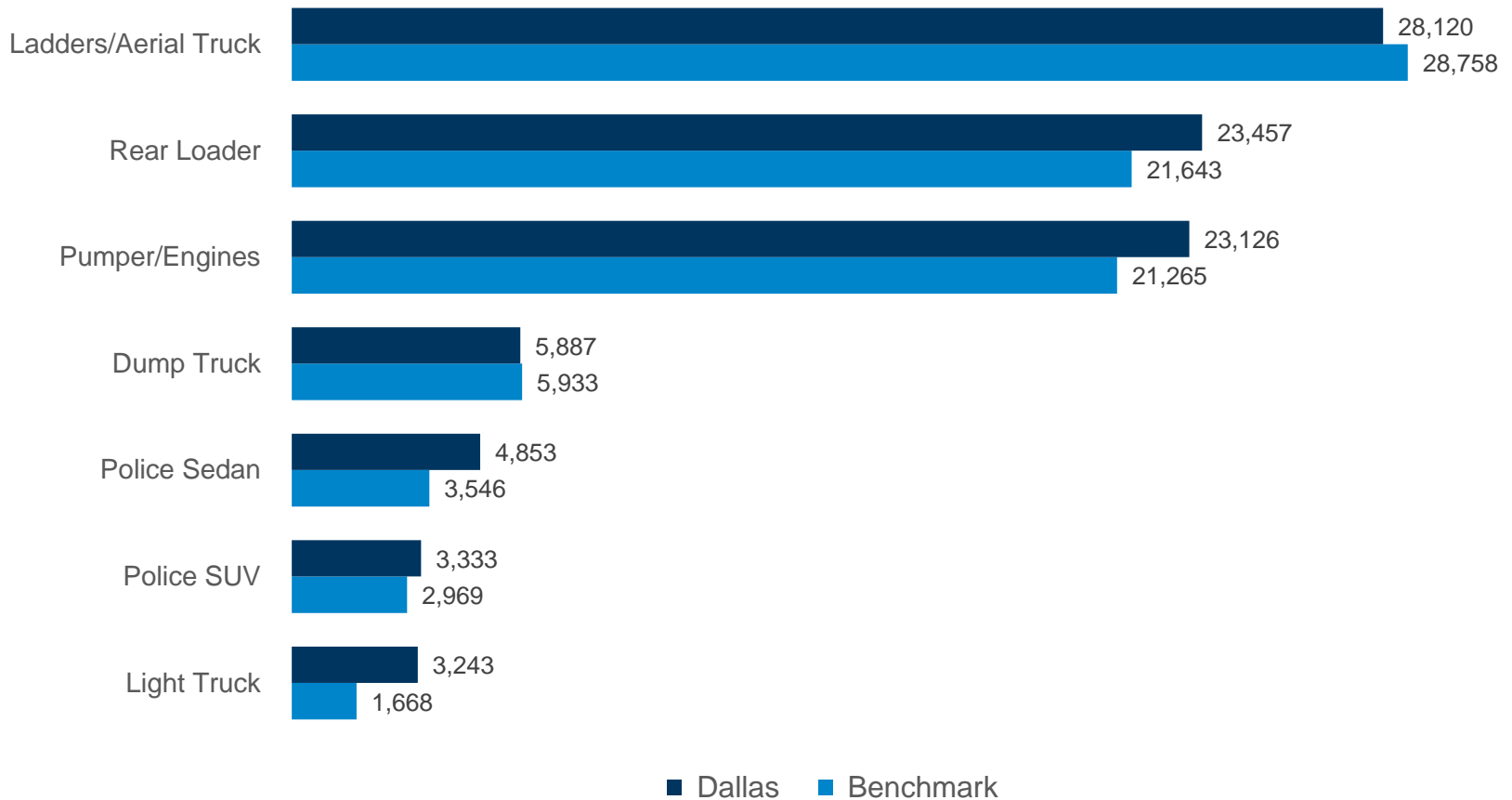
Source: GovernmentFleet.com, City of Dallas, and State of Texas

COST OF SERVICE - TOTAL COST OF OWNERSHIP

The City should consider total cost of ownership when procuring vehicles, as vehicle maintenance costs are between 21-255 percent of the total purchase price.

Comparing Lifetime Maintenance Costs to Initial Purchase Price
($ - Top 10 Vehicle Categories)
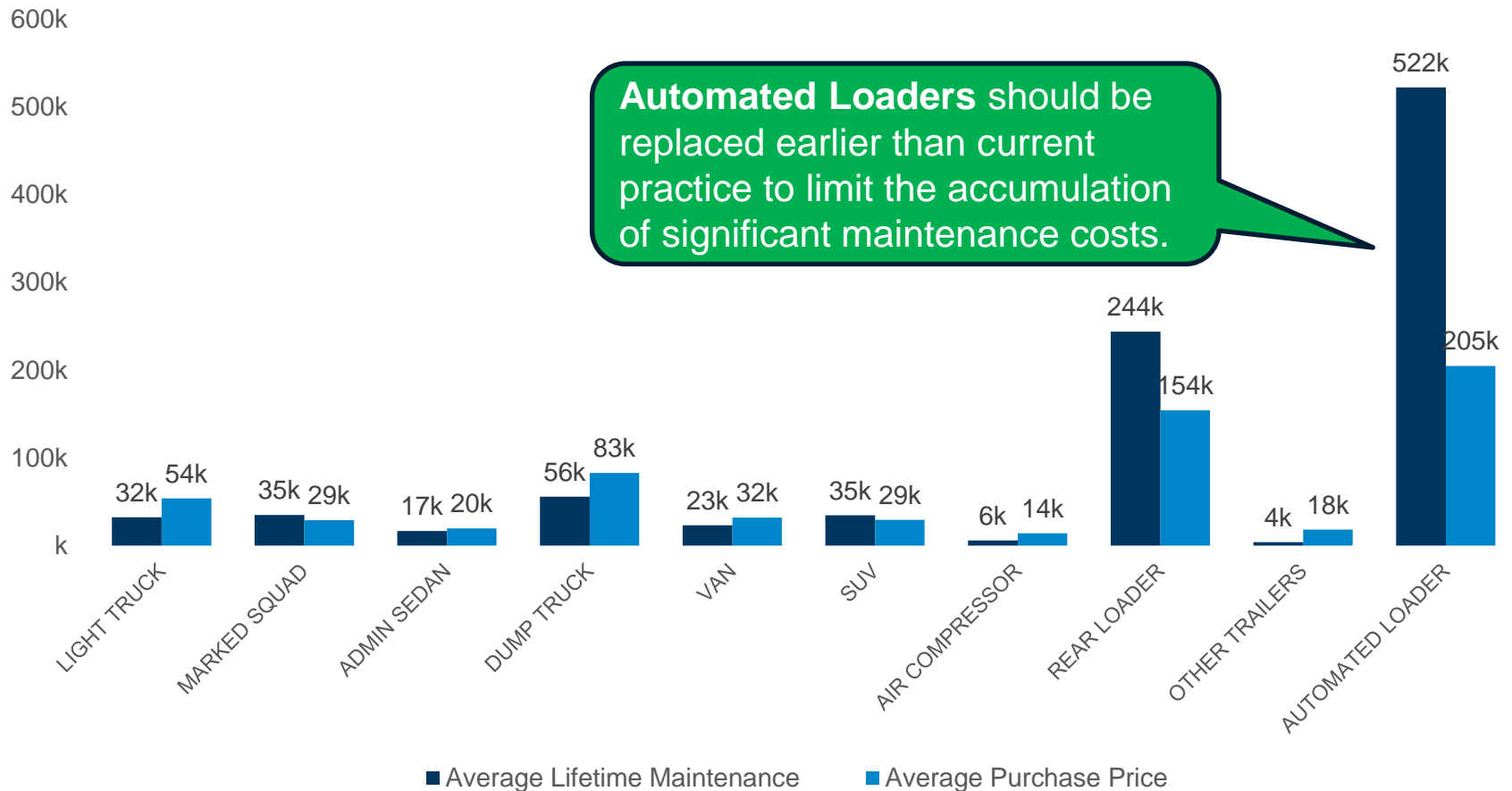
Automated Loaders should be replaced earlier than current practice to limit the accumulation of significant maintenance costs.

■ Average Lifetime Maintenance   ■ Average Purchase Price

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COST OF SERVICE - TOTAL COST OF OWNERSHIP

EBS charges Departments a standard monthly lease rate, a standard overhead rate, and any non-target** and fuel fees for its fleet maintenance and repair services.

LEASE/ MAINENTANCE

(Parts) (Parts Markup) (Commercial) (Commercial Markup) (Labor)

+

OVERHEAD RATE

(City Overhead) (Dept Overhead)

+

DIRECT FEES

(Non-Target Charges) (Fuel)
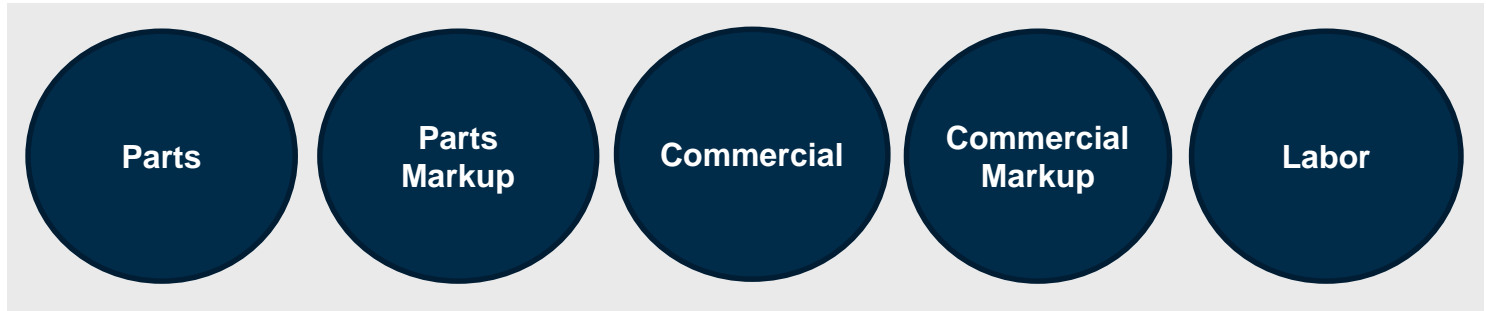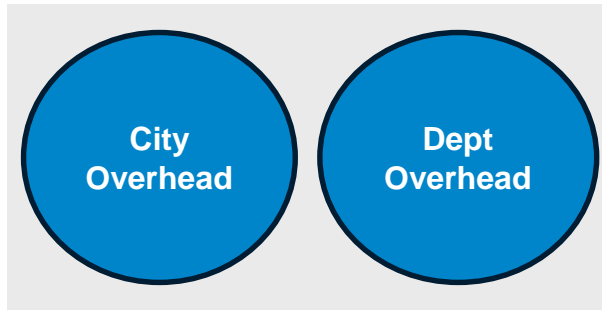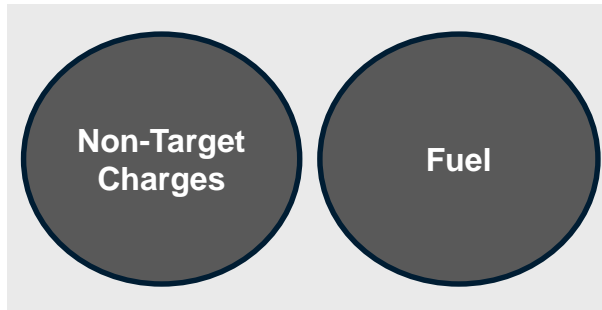
- The sum of all charges is consolidated into a single total charge and billed to each Department on a monthly basis.
- The lease rate and overhead rate depends on vehicle category and vehicle usage.
- There are reports and dashboards available to departments to review and understand the costs. Departments need refresher training (especially for new staff) who are not using or not aware of the reports.
- Customer departments are also billed for motorpool charges, although they represent a small portion of overall charges. Rates are also partially offset by proceeds from the auction house.

Details of the billing process and the individual rates breakdown can be found in the EBS Chapter.

** Non-target costs are unplanned costs for accidents, damage, break/fix, etc.

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The existing rate setting process is complex and should be simplified for improved transparency.

Process	Description	Challenges
EBS	• EBS enters rates into M5 • EBS verifies adjustments to personnel, departments, and inventory; reviews the updated billing codes for accuracy; and corrects manual entry errors where necessary. • Finalized rates are established by October 31 • EBS sends the first billing report in November • Billing report sent to CIS and EBS uploads the billing report online	• Errors from Manual Entry • Opaque System of Rate Setting • Communication and underlying policies related to retained vehicles creates the potential for underbilling
CIS	• CIS uploads the billing report in the Advantage Financial System (AFS). • At the end of the month, AFS will send a report to EBS and customer departments detailing summary maintenance charges / chargebacks.	• Lack of M5 and Advantage System Integration leads to delayed processes
Departments	• Departments must request a special report through M5 in order to view detail on lease rates • Departments enter into negotiation on rates that lasts from November to January potentially rebalancing rates and shifting costs before departments accept the new fiscal year's rates	• Departments have a learning curve for M5 to understand billing • Negotiations shifts costs around unnecessarily rather than focusing on why the costs are increasing (i.e., higher accidents, poor PM compliance, etc.)

The following are observations and recommendations focusing on Cost of Service.

	Observations	Recommendations
Cost of Service	• EBS purchases vehicles through a Master Lease Agreement (MLA). Fleet purchases are primarily organized through EBS, however, there are Departments that purchase vehicles outside of the MLA. • Overall costs for the City appear to be on target compared to available benchmarking data for the high cost and high use vehicle categories. • In terms of Total Cost of Ownership (TCO), some City vehicles' maintenance costs are between 21 percent and 255 percent of the vehicle purchase price. • All Departments do not track fleet expenditures using a centralized fleet budget code for the department, which makes aggregating the City's spend on Fleet somewhat challenging. The lack of consistency creates issues with budget forecasting and makes comparison of fleet costs across departments difficult. • As a result, identifying specific fleet related costs at the Department level is at times not directly observable – there are usually no Department budgetary line items for "fleet."	• Establish a single, consolidated, and consistent method of identifying fleet expenditures across all Departments. • Implement a TCO approach when evaluating the future purchase and maintenance of fleet vehicles. • Evaluate potential downstream opportunity for fleet consolidation into EBS once operational efficiencies are realized and trust in M5 and maintenance processes are reestablished.

The following are observations and recommendations focusing on Cost of Service.

	Observations	Recommendations
Billing Procedures	• EBS uses a labor-intensive rate-setting process to charge Departments for estimated maintenance costs on an annual basis. • EBS sets the annual lease rates for fleet vehicles and equipment in the first two years between October and November. This three-month period involves extraction from the M5 system and manual calculations of rates. • The process of calculating rates is contained in multiple spreadsheets, causing unnecessary complexity and ambiguity in established rates, creates the potential for human error, and requires customer departments to have M5 access and training to understand the individual lease rate components. • Once rates are set, the process of billing and recuperating costs is automated through the citywide Advantage Financial System.	• Streamline annual billing process by reevaluating current process and automating wherever possible. • Identify the top disparities in lease rates and actual work order totals by billing code to drive accuracy in the rate model. • Decompose the rate model into component pieces in the monthly automated report sent to client departments.

OUTLINE

The Utilization Study is a fundamental analysis on fleet management that serves as a pillar for several recommendations
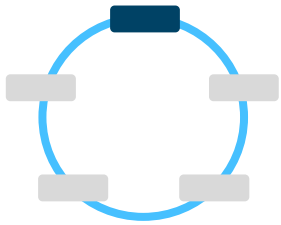
Utilization Study

EBS is responsible for assigning fleet, putting the vehicles in service, providing maintenance, and managing disposal of surplus assets. Some portions of the fleet are heavily utilized, while others are 6-8 years old with fewer than 30,000 miles.

Process

Data Collection	Analysis	Findings
▪ Collecting data on historical utilization, per vehicle type, per location. ▪ Collecting data on maintenance, per vehicle type, per location. ▪ Collecting data on surplus assets. ▪ Collecting rental contracts and data (what, who, how much).	▪ Analysis of historical utilization, per vehicle type, per location. ▪ Analysis of maintenance, per vehicle type, per location. ▪ Review of surplus assets and impact on utilization. ▪ Conduct outside rental analysis of maintenance process, benefit analysis, and staffing requirements.	• Consolidating findings and takeaways from analysis and identifying recommendations for each one of them. • Assessment of rental usage, impact on utilization, and opportunities to rework or replace existing contracts.

Deliverable

Utilization analysis that indicates the vehicle type and location of underutilized or overutilized vehicles, along with key takeaways and recommendations.

UTILIZATION – VEHICLE COUNT

Of the City's total fleet of 7,263 vehicles, 666 vehicles (9 percent) are currently not entered and tracked in the M5 system making fleetwide analyses more challenging.
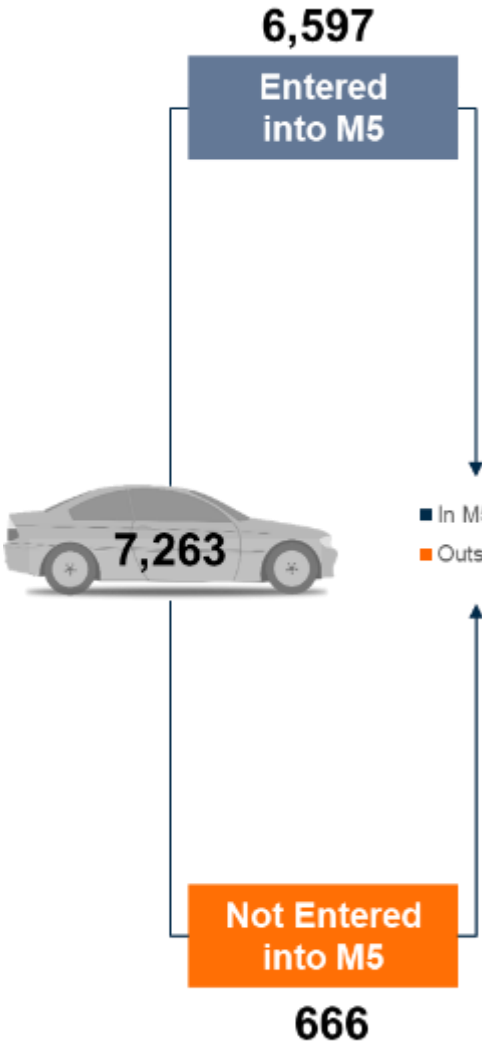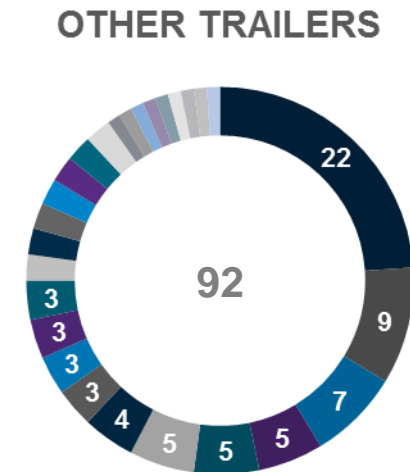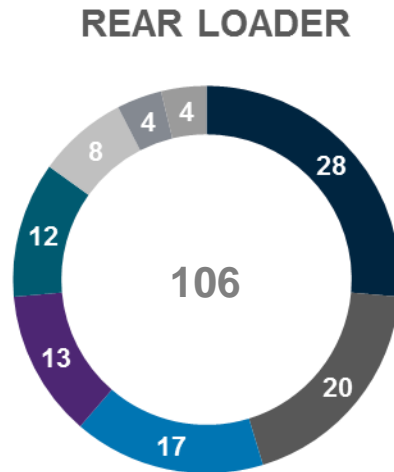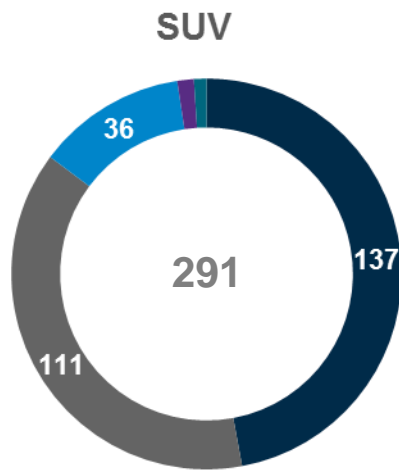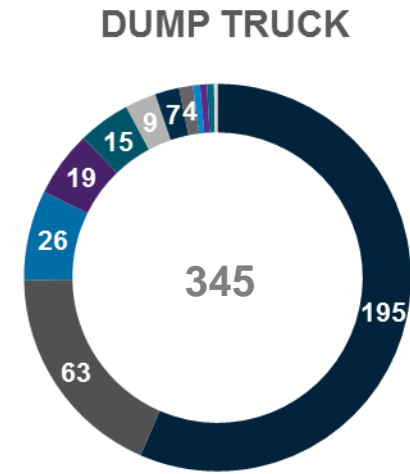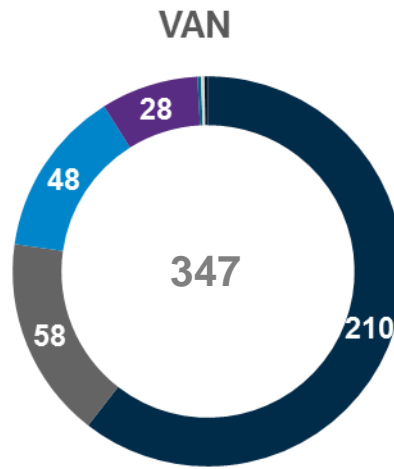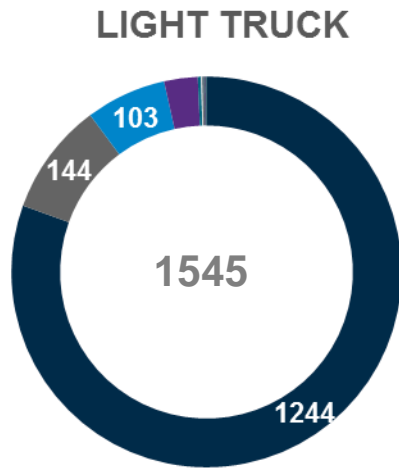

Fleet count of 7,263 verified by cross-checking Department-submitted external vehicle records with vehicles in M5.
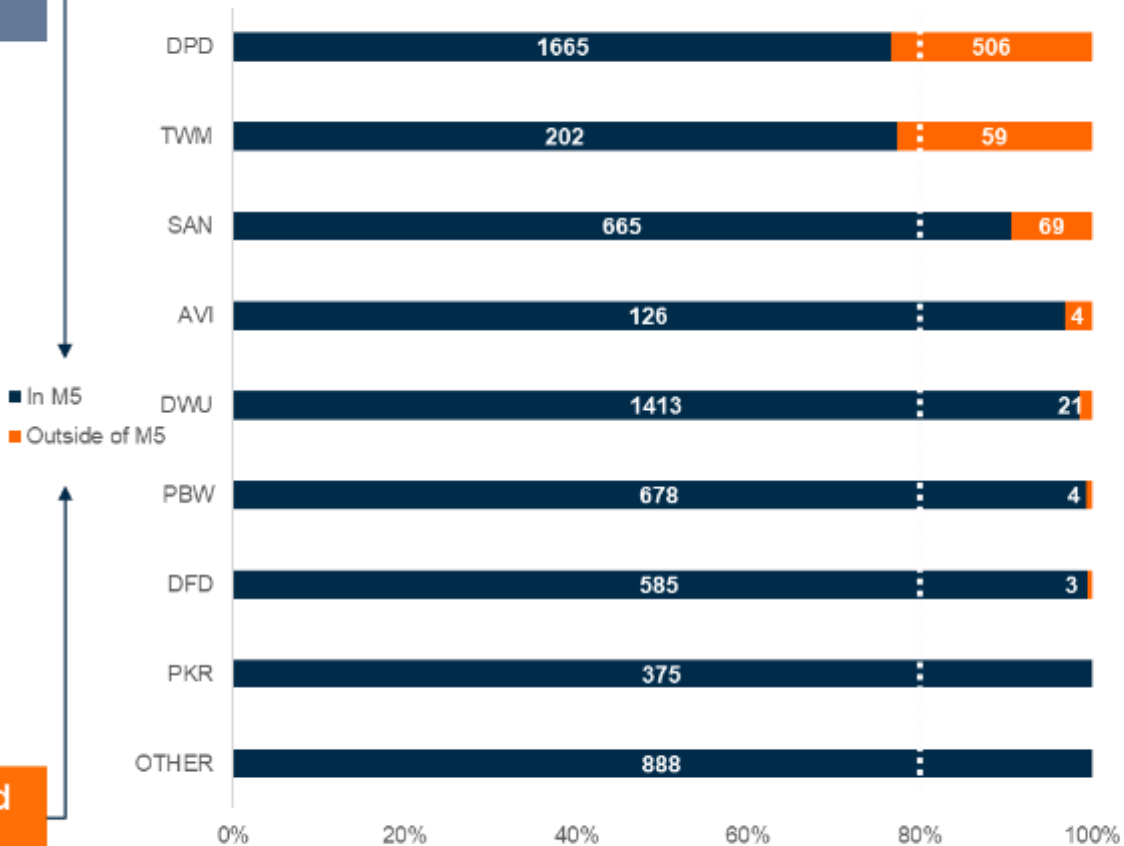
UTILIZATION - VEHICLE CATEGORY BREAKDOWN

There are numerous categories such as Dump Trucks and Rear Loaders where standardization could help reduce demand for unique parts and specialized labor.

LIGHT TRUCK

103
144
1545
1244

VAN

28
48
347
210
58

DUMP TRUCK

9 74
15
19
26
345
195
63

SUV

36
291
137
111

REAR LOADER

4 4
8
12
106
28
13
20
17

OTHER TRAILERS

22
3
3
3
3
4
92
9
7
5
5

UTILIZATION – TOP TEN VEHICLES BY MILEAGE DRIVEN

Over the last twelve periods, the marked squad had the greatest range of utilization by mileage (5,000 to 35,000 miles), after removing outliers[*] from the upper and lower limits.
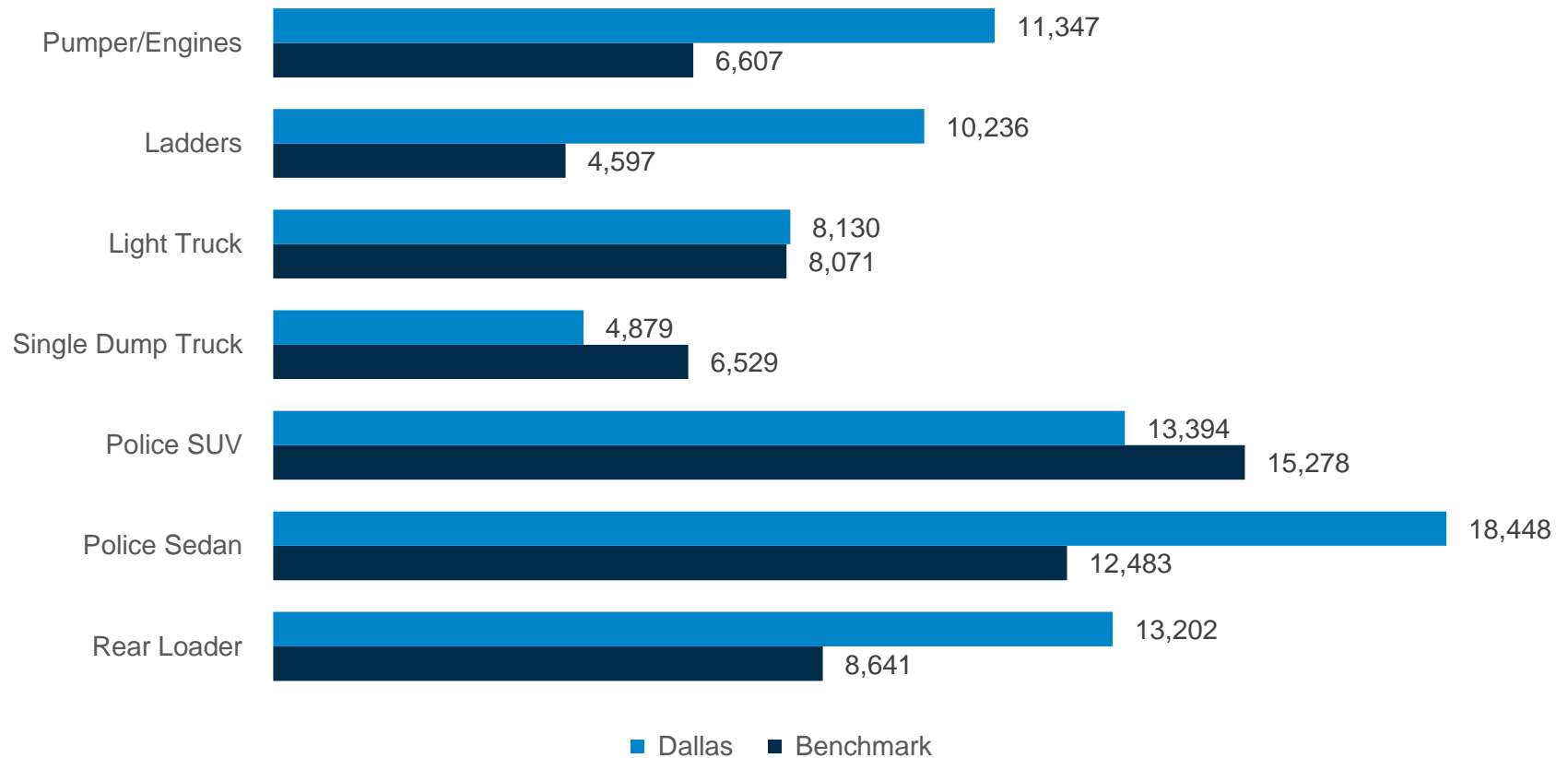
Last 12 Period Mileage for Top Ten Vehicle Categories

Last 12 Period Mileage
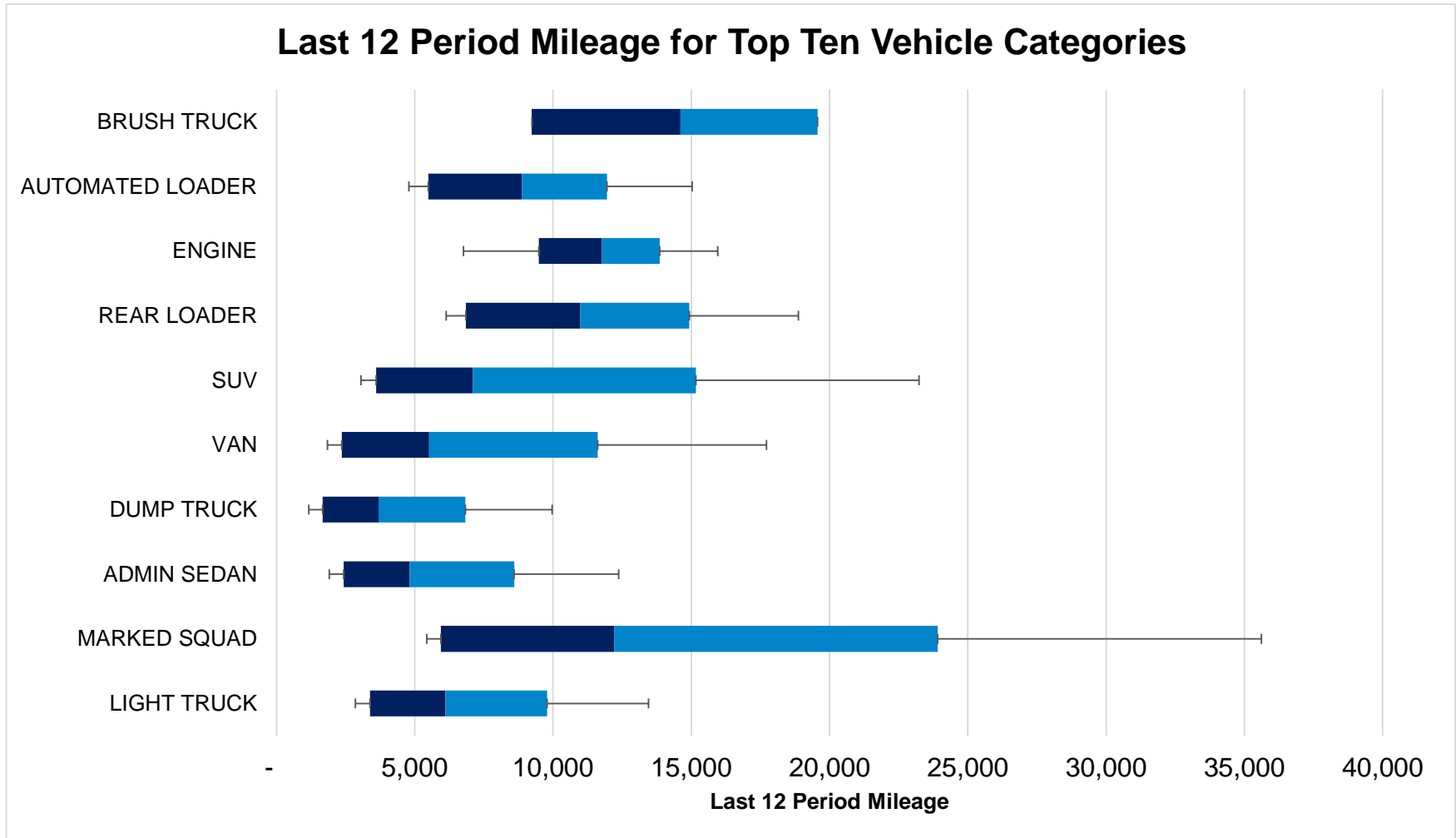
* - Outliers removed from the dataset include vehicles with abnormally high mileage or negative mileage ~~for example~~.

Percent of vehicles by mileage amount   25%   75%

50%

UTILIZATION – ANNUAL MILEAGE BENCHMARK

The average annual mileage for Fire Department equipment, police sedans, and rear loaders tend to be higher than comparable benchmark municipalities.
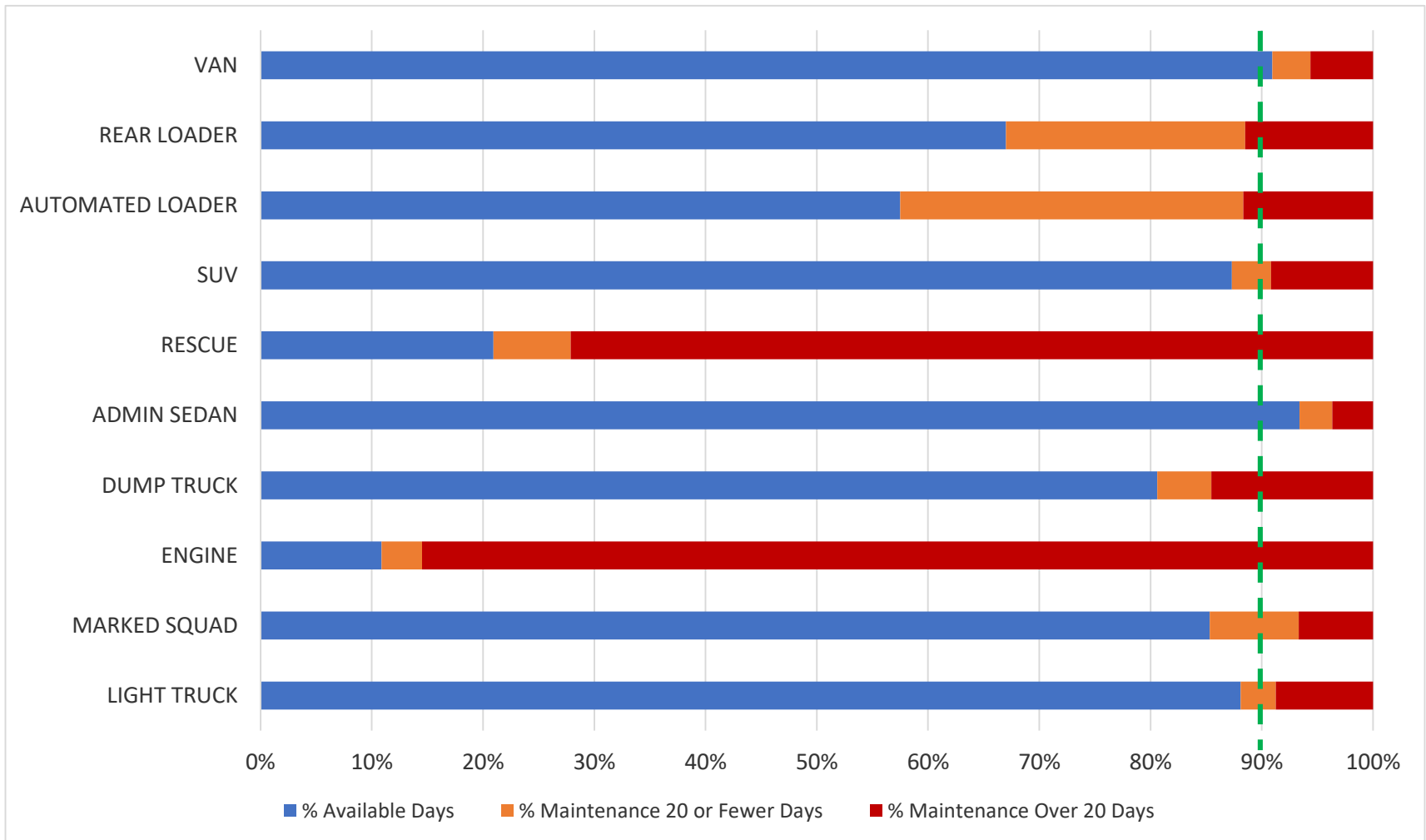
Annual Utilization by Mileage

Category	Dallas	Benchmark
Pumper/Engines	11,347	6,607
Ladders	10,236	4,597
Light Truck	8,130	8,071
Single Dump Truck	4,879	6,529
Police SUV	13,394	15,278
Police Sedan	18,448	12,483
Rear Loader	13,202	8,641

■ Dallas ■ Benchmark

KEY ASSESSMENT AREA: UTILIZATION BY VEHICLE TYPE

Five of the top ten vehicles categories by work order volume have availability approaching 90 percent, with downtime driven by work orders that are over 20 days.

Chart legend: ■ % Available Days ■ % Maintenance 20 or Fewer Days ■ % Maintenance Over 20 Days

Vehicle categories (top to bottom): VAN, REAR LOADER, AUTOMATED LOADER, SUV, RESCUE, ADMIN SEDAN, DUMP TRUCK, ENGINE, MARKED SQUAD, LIGHT TRUCK

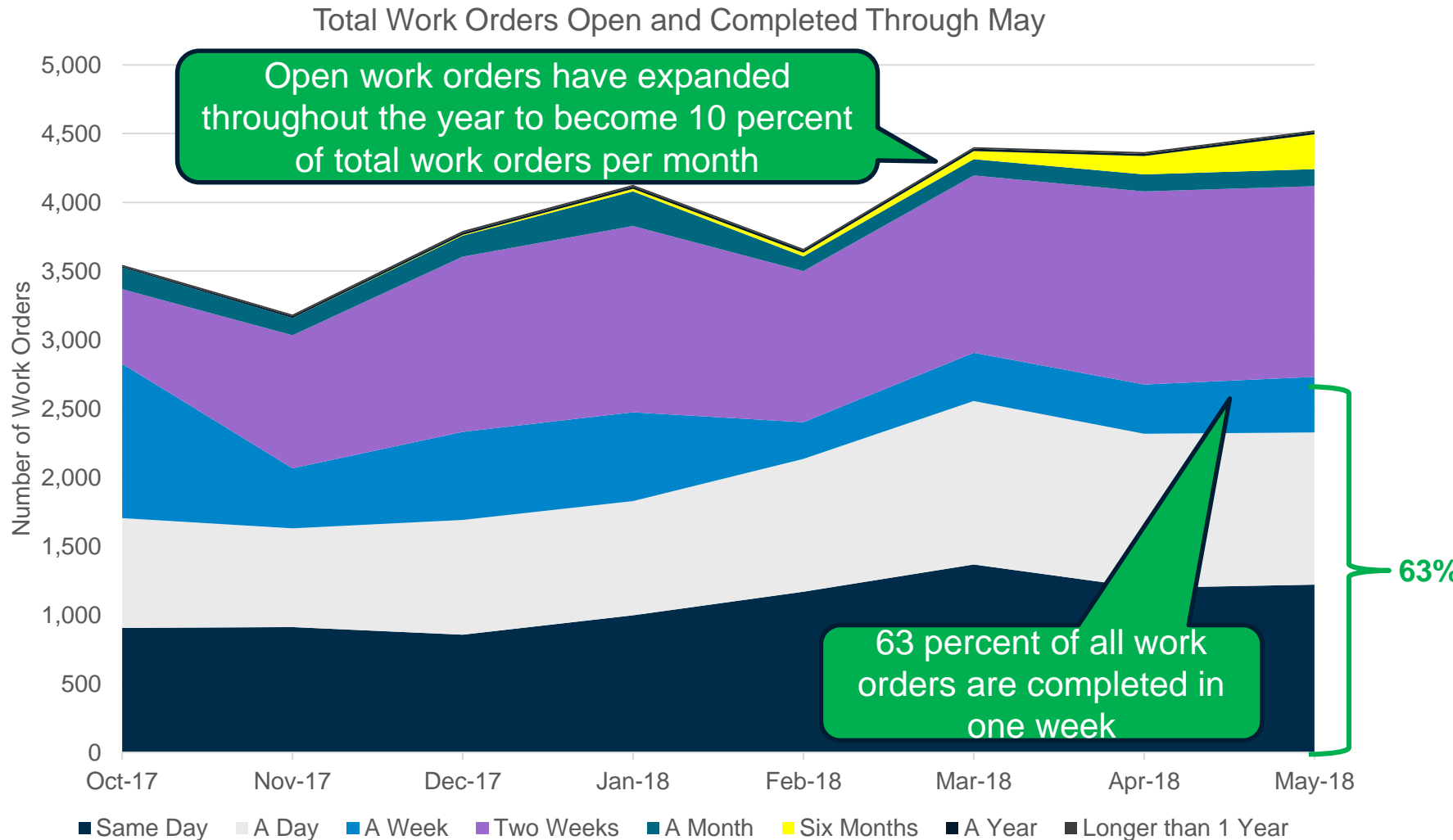# UTILIZATION – TOP TEN VEHICLES AND OPEN WORK ORDERS

At least 34 percent of the top ten vehicles by number of work orders (83 percent of all work orders) are turned in the same day whereas 20 percent of light truck work orders take over 20 days.

Vehicle Category	# of Work Orders	Average of Days in Shop	% Turned Same or Next Day	# of Work Orders Open >20 Days	Work Orders Open >20 Days as a % of Total	Average of Labor Hours/Work Order
MARKED SQUAD	7,995	7.4	34.0%	717	9.0%	3.0
LIGHT TRUCK	5,641	12.2	42.1%	905	16.0%	3.6
AUTOMATED LOADER	4,543	3.1	54.6%	77	1.7%	3.8
REAR LOADER	3,614	3.8	55.6%	99	2.7%	3.3
ADMIN SEDAN	2,408	8.8	35.3%	234	9.7%	2.7
DUMP TRUCK	1,979	12.5	43.5%	323	16.3%	4.9
ROTOBOOM	1,822	5.0	55.6%	84	4.6%	4.1
BRUSH TRAILER	1,550	3.3	54.9%	32	2.1%	3.4
VAN	1,233	9.5	39.7%	154	12.5%	2.7

NOTE: There are a number of work orders that are quick turns, for example requests for DEF fluids, that are reflected in the percentage of work orders turned the same or next day.

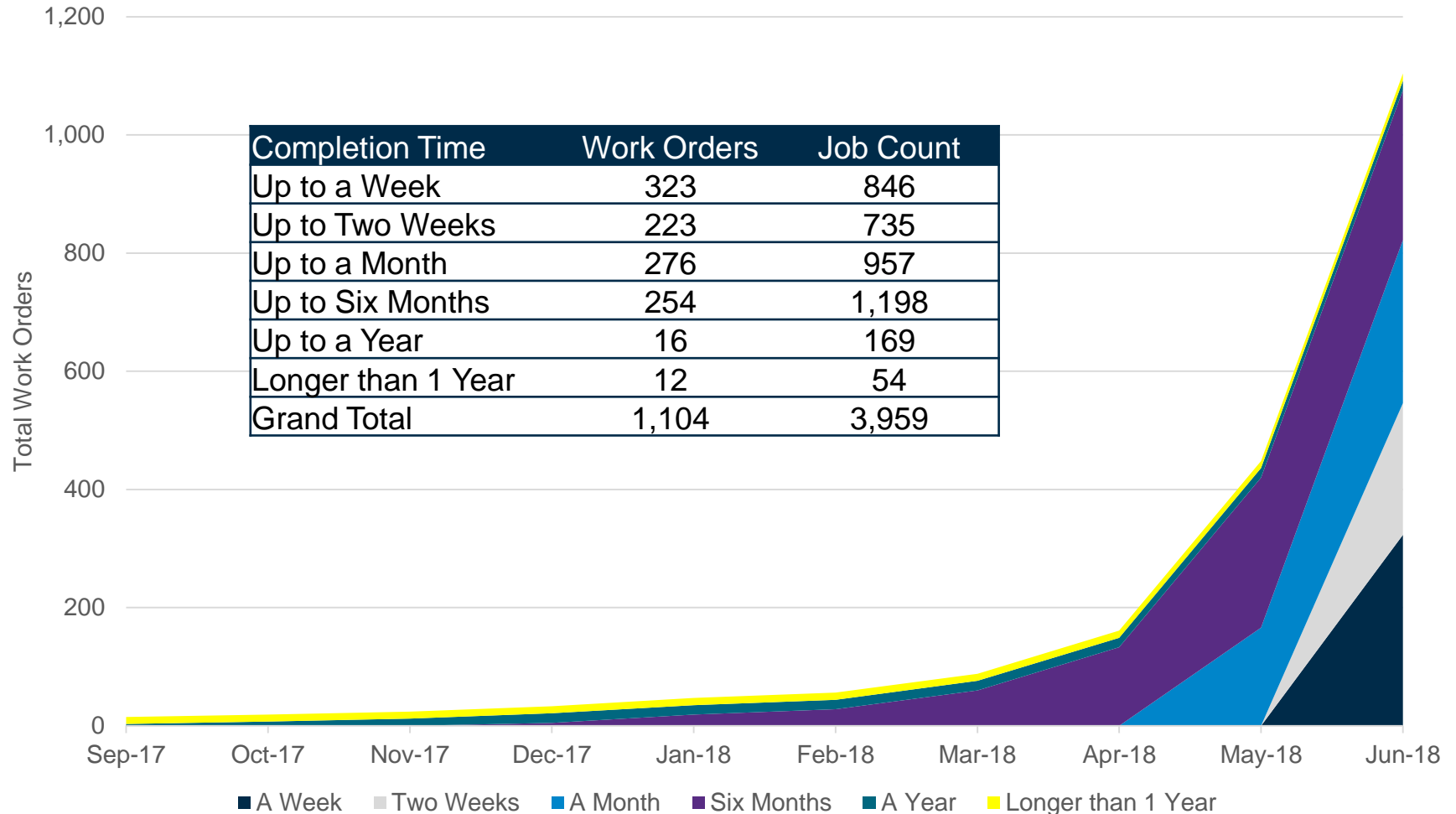# UTILIZATION - WORK ORDERS OPEN AND COMPLETED

The vehicle work orders analysis shows that 63 percent of work orders are completed in a week and 91 percent are completed in two weeks.

Total Work Orders Open and Completed Through May

Open work orders have expanded throughout the year to become 10 percent of total work orders per month

63 percent of all work orders are completed in one week

63%

Legend: Same Day | A Day | A Week | Two Weeks | A Month | Six Months | A Year | Longer than 1 Year

UTILIZATION - STATUS OF OPEN WORK ORDERS

The backlog of open work orders has increased throughout the year and now stands at 1,104 as of June 18, 2018.
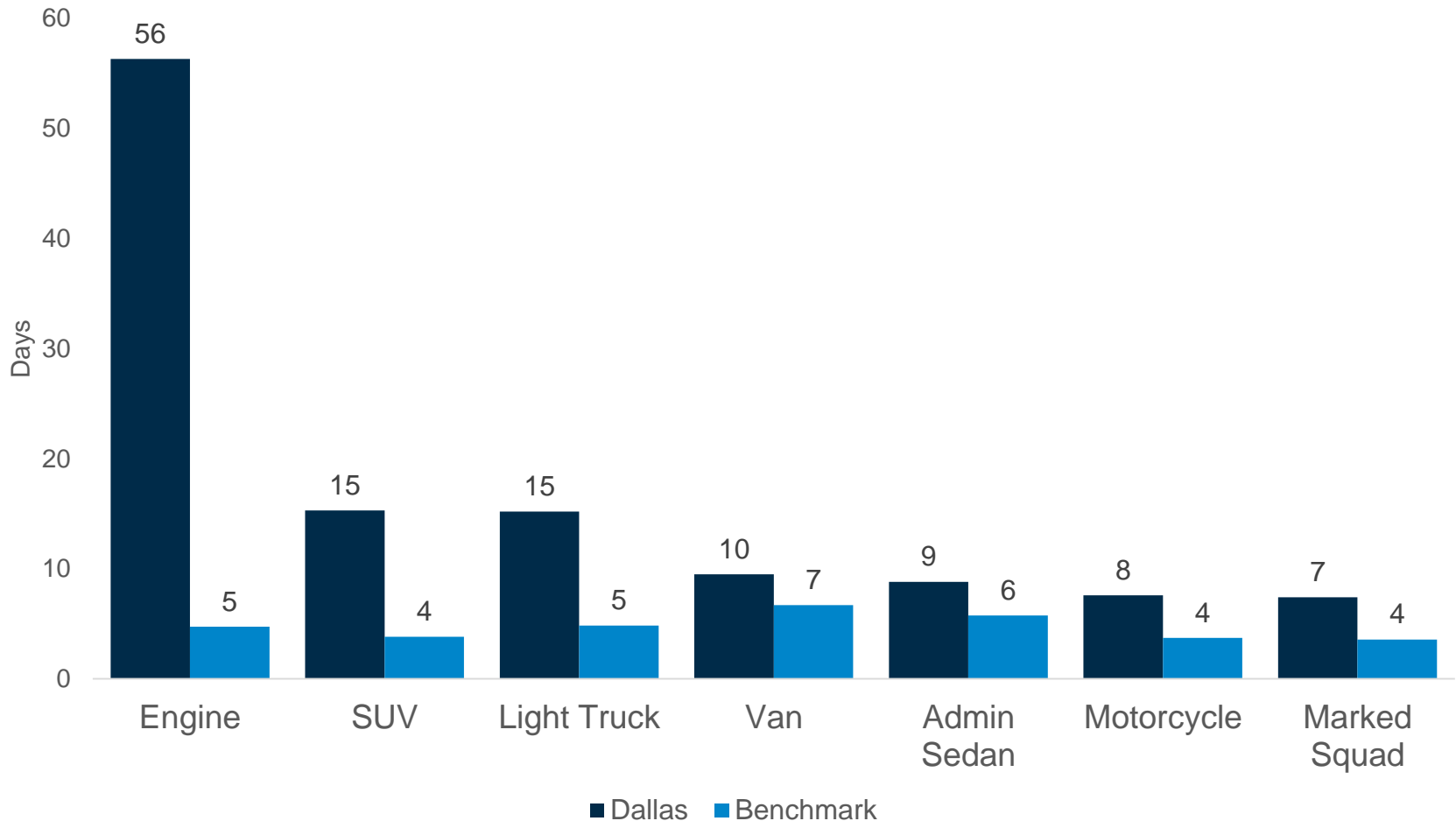
Total Open Work Orders YTD (May)

Completion Time	Work Orders	Job Count
Up to a Week	323	846
Up to Two Weeks	223	735
Up to a Month	276	957
Up to Six Months	254	1,198
Up to a Year	16	169
Longer than 1 Year	12	54
Grand Total	1,104	3,959

Legend: ■ A Week ■ Two Weeks ■ A Month ■ Six Months ■ A Year ■ Longer than 1 Year

UTILIZATION – VEHICLE AVAILABILITY BENCHMARK

Due to longer turn times for work orders, the average downtime per vehicle category is much higher than best-in-class benchmark, particularly for Fire Engines.
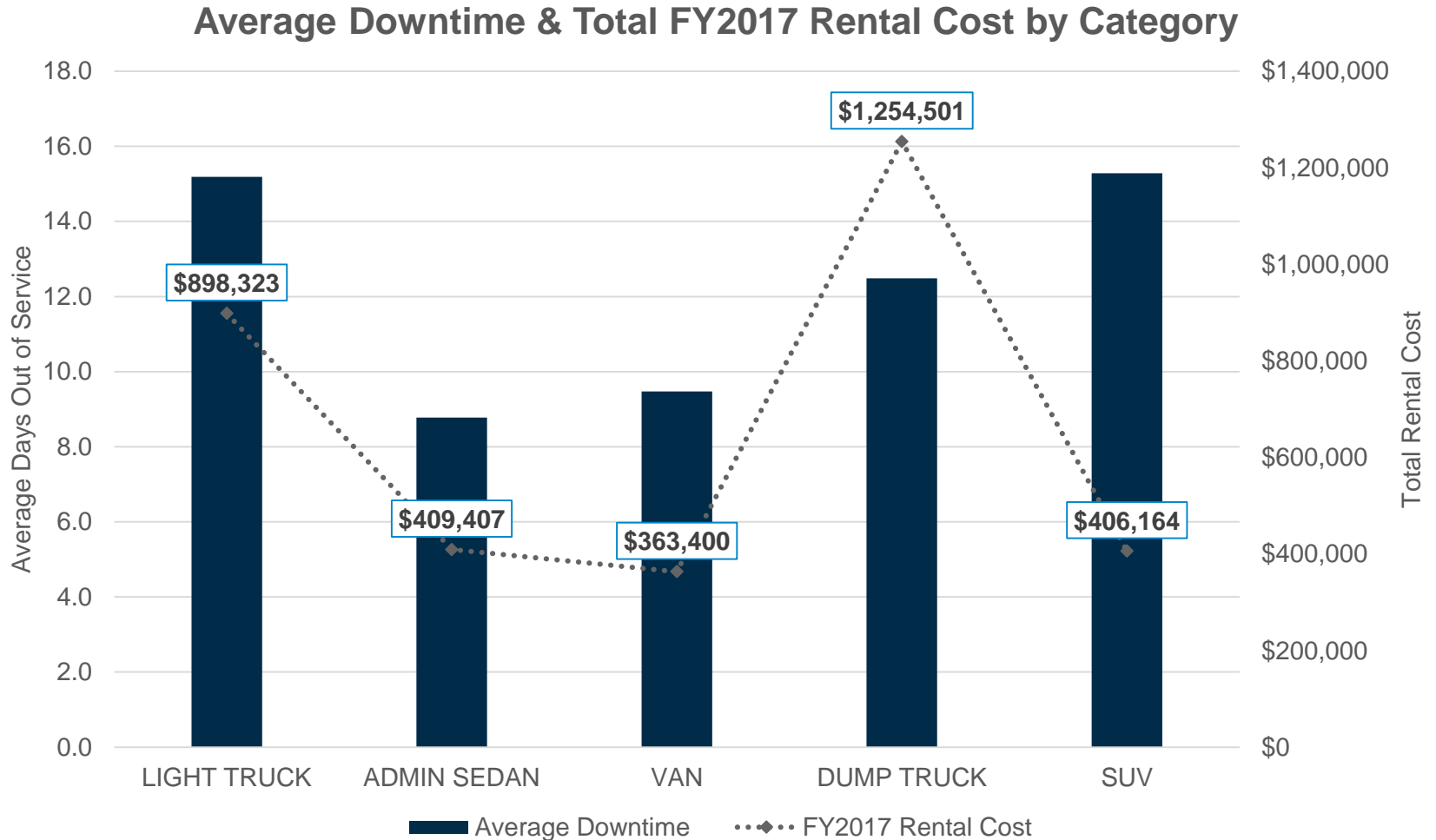

Average Downtime by Vehicle Type

Days

Vehicle Type	Dallas	Benchmark
Engine	56	5
SUV	15	4
Light Truck	15	5
Van	10	7
Admin Sedan	9	6
Motorcycle	8	4
Marked Squad	7	4

■ Dallas ■ Benchmark

UTILIZATION - RETAINED VEHICLES

As a result of lower of vehicle availability, there are 111 retained vehicles in the City's fleet. These vehicles have officially been replaced but kept in service.

Category	Number of Vehicles	Average Age	Average LTD** Mileage	Average LTD Preventative Maintenance Cost	Average LTD Repair Cost
MARKED SQUAD	47	7.8	128,206	$26,087	$4,939
LIGHT TRUCK	13	13.5	130,093	27,775	3,453
OTHER MARKED SQUAD	11	9.7	109,508	28,157	5,196
REAR LOADER	10	12.0	215,262	259,370	28,634
ADMIN SEDAN	8	10.3	114,926	28,311	14,183
AUTOMATED LOADER	4	12.8	117,278	477,690	15,930
SUV	3	18.3	173,450	22,141	149
VAN	3	16.0	104,744	30,177	9,499
ROTOBOOM	2	12.5	75,956	226,191	10,301
TRACTOR TRUCK	2	26.5	129,962	145,979	1,813
UTILITY SERVICE TRUCK	2	15.5	170,541	50,998	4,891
TRANSFER TRAILER	1	11.0	-	91,324	7,990
BACKHOE TRAILER	1	16.0	-	54,100	384
GRADALL	1	20.0	39,274	301,651	0
SWEEPER	1	13.0	174,704	340,784	4,996
OTHER TRAILERS	1	7.0	-	18,452	1,524
PATCH TRUCK	1	17.0	214,150	81,508	1,086
GRAND TOTAL	**111**	**10.8**	**130,435**	**$76,747**	**$7,898**

UTILIZATION – USE OF RENTAL BY CATEGORY

Average vehicle downtime is not directly correlated with the total rental cost across vehicle categories.

Average Downtime & Total FY2017 Rental Cost by Category

Rental cost appears to be driven more by complexity of equipment than vehicle downtime. FY2017 rental expenditures were highest for DWU, across 87 rentals.
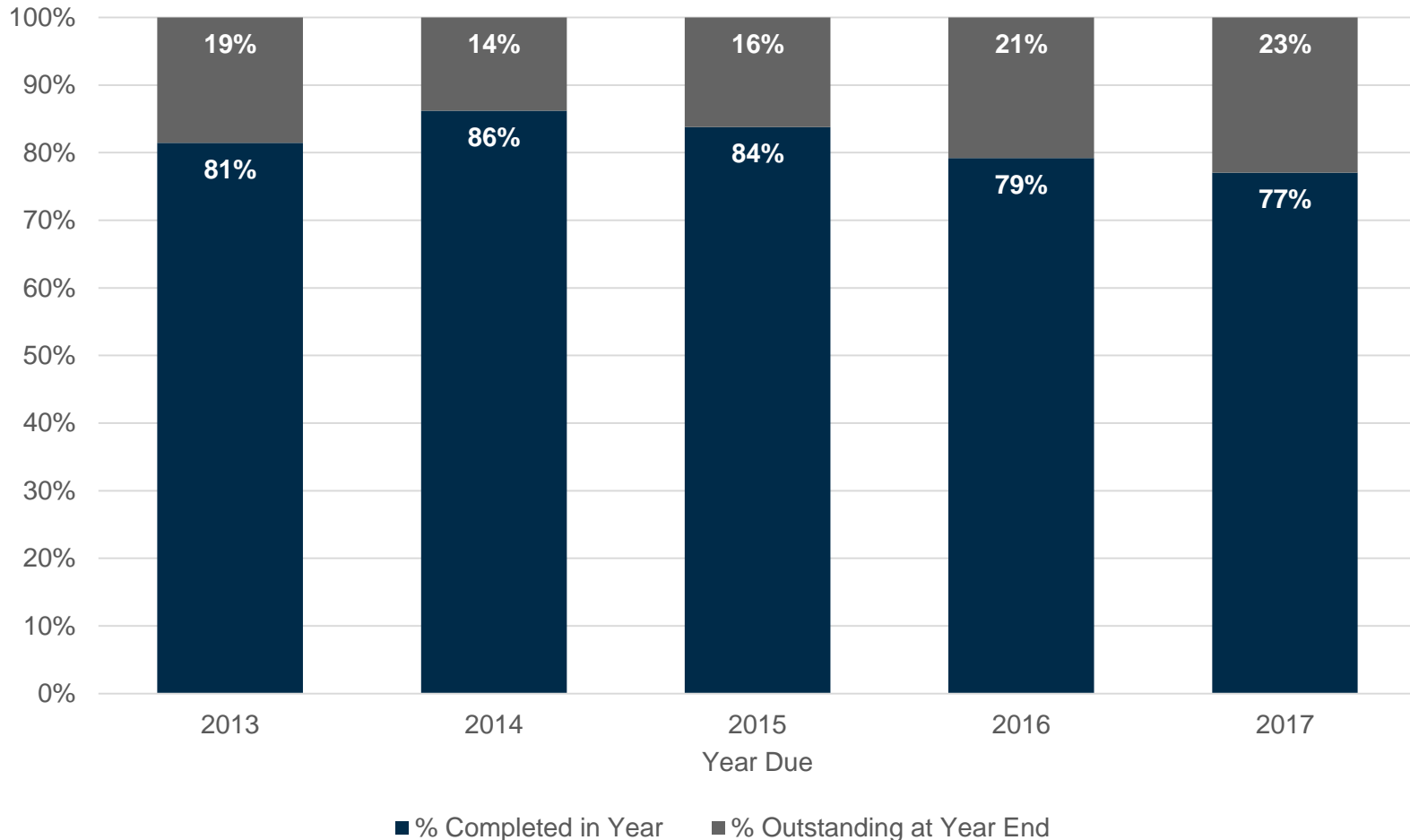

Average Downtime & Total FY2017 Rental Cost by Department
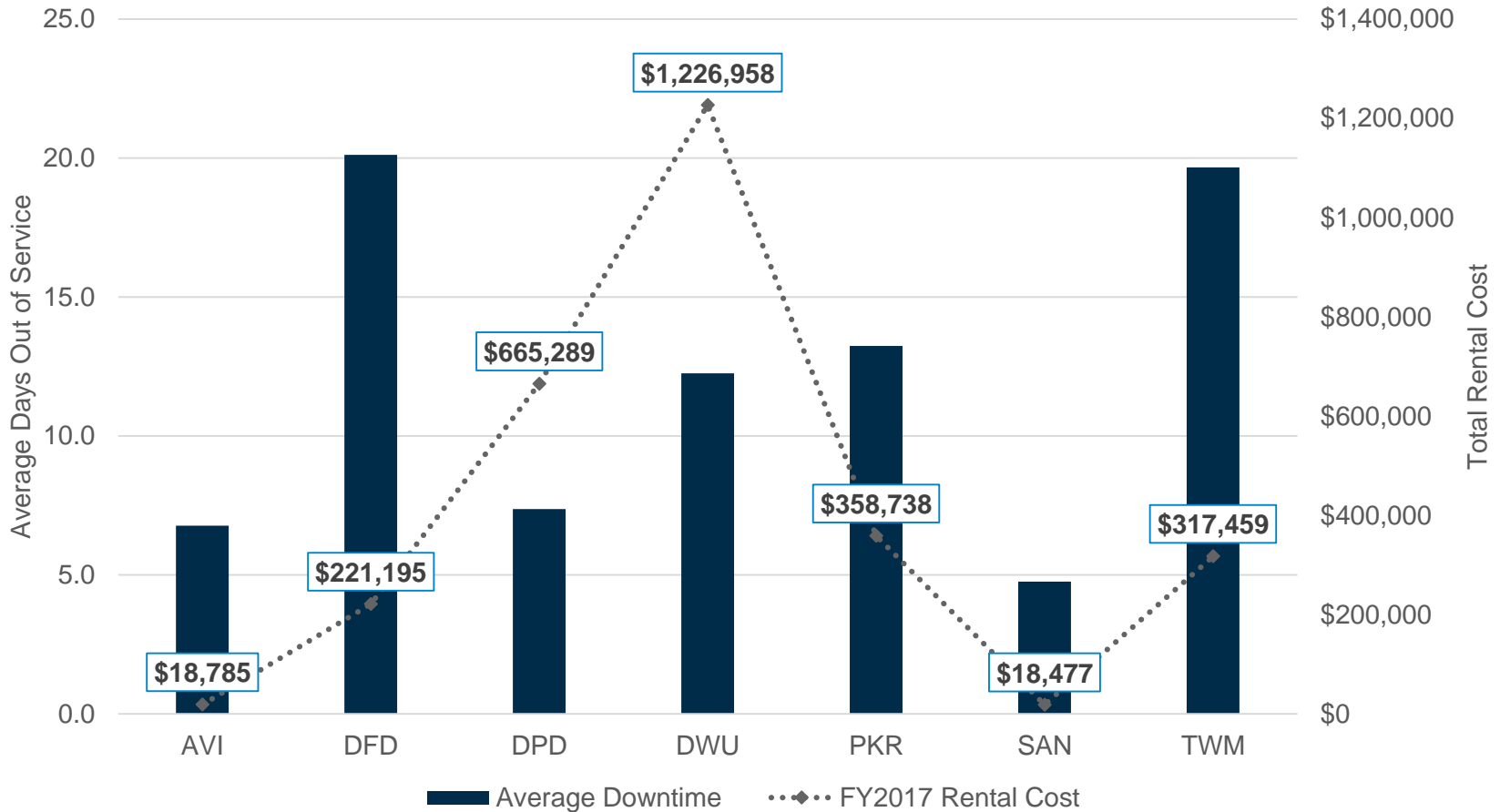
UTILIZATION – PREVENTATIVE MAINTENANCE COMPLIANCE

On average, about 18 percent of preventative maintenance (PM) work orders required are not completed by the end of the year in which they are due.

Percentage of PMs Completed by Year End

Legend: ■ % Completed in Year   ■ % Outstanding at Year End

Year Due	2013	2014	2015	2016	2017
% Outstanding at Year End	19%	14%	16%	21%	23%
% Completed in Year	81%	86%	84%	79%	77%

UTILIZATION – COMPLETED PM WORK ORDERS

The percentage of preventative maintenance performed late has increased significantly over the past five years.

PM Work Order Compliance Status
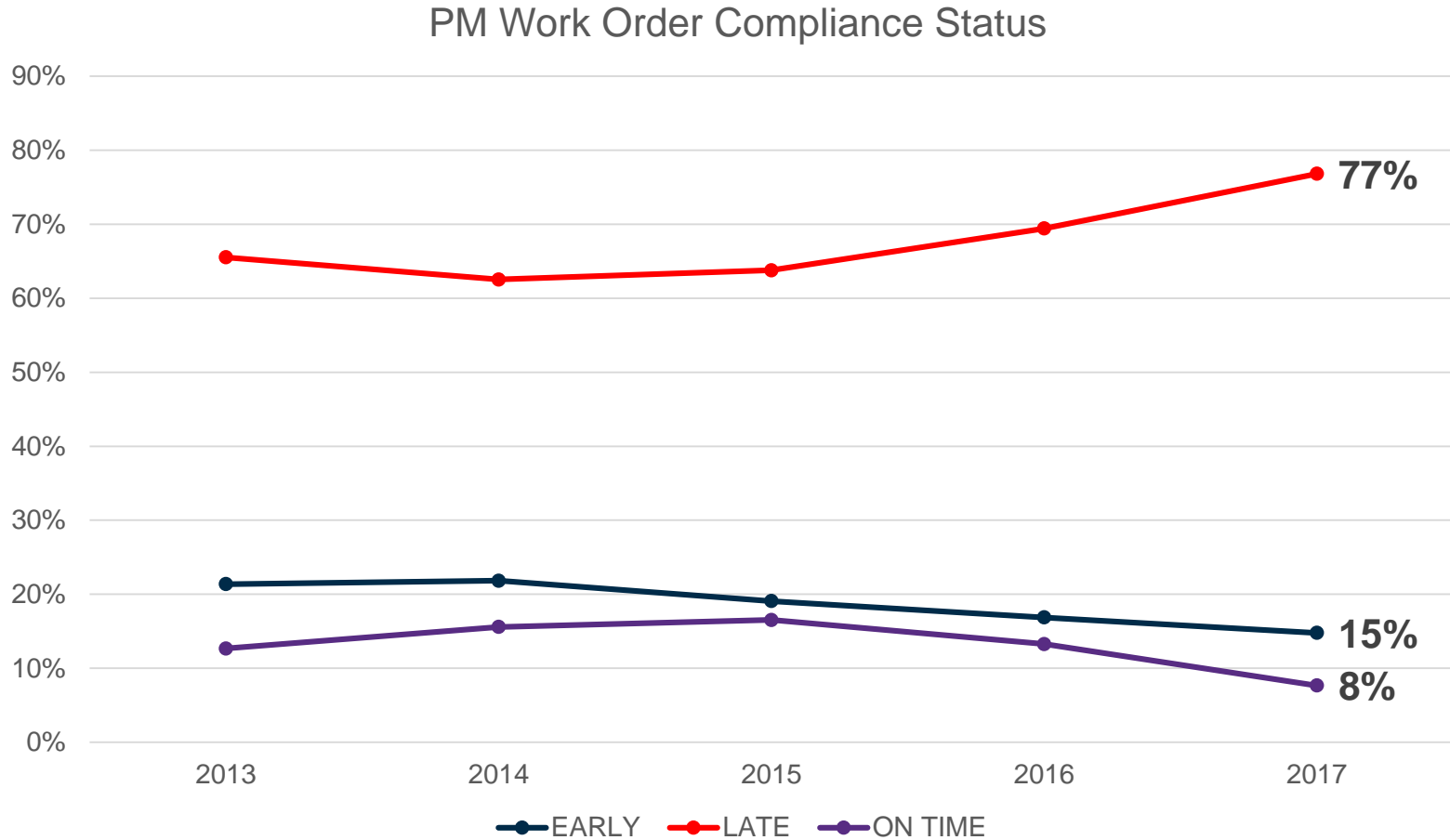
Note: "Early" means the work order was completed before the due date, "Late" means the work order was completed more than seven days after the due date, and "On Time' mean the work order was completed on the due date or within seven days after the due date.

The following are observations and recommendations that focus on Utilization.

	Observations	Recommendations
Utilization	• EBS measures vehicle utilization primarily through the VIB system, where sensors put on vehicles and equipment are read at the City's fueling stations. There are instances when the VIB readers are not properly calibrated and mileage must be manually recorded and entered into M5 leading to inefficiencies in data management. • Some departments maintain information on utilization outside of the M5 system. The Police Department collects odometer readings on patrol cars in an Excel file. Trinity Watershed uses a system they developed called Fleet Tracker to record utilization information. There are concerns about the alignment between M5 and the department-specific tracking systems. • Ideally, vehicles should be turned in for Preventative Maintenance (PM) and other repairs between shifts. However, drivers are reluctant to turn in vehicles for PMs because of historical long wait times to get vehicles returns. As a result, vehicles are often in significant disrepair when they come to the maintenance facility.	• Continue to track utilization through the VIB readers at the fueling stations for all City vehicles. The fueling station staff should be trained in troubleshooting routine issues with VIB readers and sensors. If the staff is unable to fix the sensor, the driver should schedule a maintenance appointment within five business days. • Ensure meters for both miles and hours are active for all City vehicles. Activate the capacity for VIB readers to read both meters, and track recordings in M5. • Provide department fleet managers with the access and training required to run utilization reports on a regular basis. Department fleet managers should review reports, analyze data, and work with the EBS data analysts to address issues with inaccurate data. • Identify opportunities to share vehicles between employees and across shifts to maximize total utilization. Consistently underutilized vehicles should be considered for transfer between departments, inclusion in the motor pool, or disposal with rental on an as-needed basis. • Consider using commercial vendors for routine maintenance, in addition to dedicated lanes at EBS shops, to quickly turnaround PMs and minor repairs. Explore expansion of overnight shop operations.

The following are observations and recommendations that focus on Utilization.

|	Observations	Recommendations
Utilization	• From a Citywide utilization perspective, Police Sedans and Police SUVs are driven the most out of any other vehicle category. • The City's annual mileage is generally above benchmarks especially with Police Sedans and various pieces of Fire apparatus. • At least 34 percent of the top ten vehicles by number of work orders are turned in the same day whereas 20 percent of light truck work orders take over 20 days. • According to Department interviews, staff are reluctant to bring their vehicle in for PMs because of the time it takes to get the vehicle back from EBS. • There are 111 retained vehicles in the City's fleet. These are vehicles that officially have been replaced but the Department has held on to the vehicle and kept it in service. • Outside rentals are one way to quickly access a needed vehicle but could represent an area for potential savings given the number of rentals currently being utilized. • The City's vehicle downtimes are higher than comparable benchmarks leading to lower vehicle availability.	• The City should evaluate the potential to increase outsourcing and establish a Quality Control function within EBS to improve processing and reduce vehicle downtime. • The Departments should take responsibility for achieving 96 percent PM compliance by working closely with EBS to ensure PM Compliance targets are met and track the progress of compliance and vehicle processing times. • EBS should work with each Department to develop revised vehicle intake / outtake processes for greater efficiency, to ensure quality control, and improve customer service. • Ensure the M5 module for scheduling is activated to allow drivers to make maintenance appointments. This will also help to manage the workflow for mechanics. • EBS should restructure the work order management processes to automate scheduling, establish dedicated quick lanes, and conduct outsourcing of quick turn and specialized equipment repairs. • EBS should establish surge contracts to outsource excess workload to external contractors to improve processing time and reduce overall vehicle downtime.

OUTLINE

This component of the Fleet Study consists of an assessment of the organizational structure that supports fleet management.
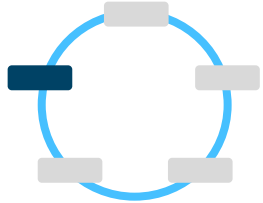
Organization Structure and Performance Measures

Assessment of the organizational structure and performance measures (including reporting structure, and performance metrics such as hours of service, vehicle turnaround time, self-performed vs outsourced repairs, etc.).

Process

Data Collection

- Organizational chart.
- Management reports and performance reports.
- Labor database with titles.
- Size and structure of the fleet maintenance staff, budget, and technologies used by external departments.

Analysis

- Span of Control analysis.
- Organizational analysis to support current or new functions required by fleet management.
- Analysis of the need for consolidation of fleet departments.
- Review of the performance measures and targets.

Findings

- Recommendations on opportunities to revise the organizational structure to drive savings including the potential for further consolidation.
- Recommendations to improve performance measures and enhance fleet management.

Deliverable

Recommendations on how to better structure the organization to support the current and proposed opportunities.
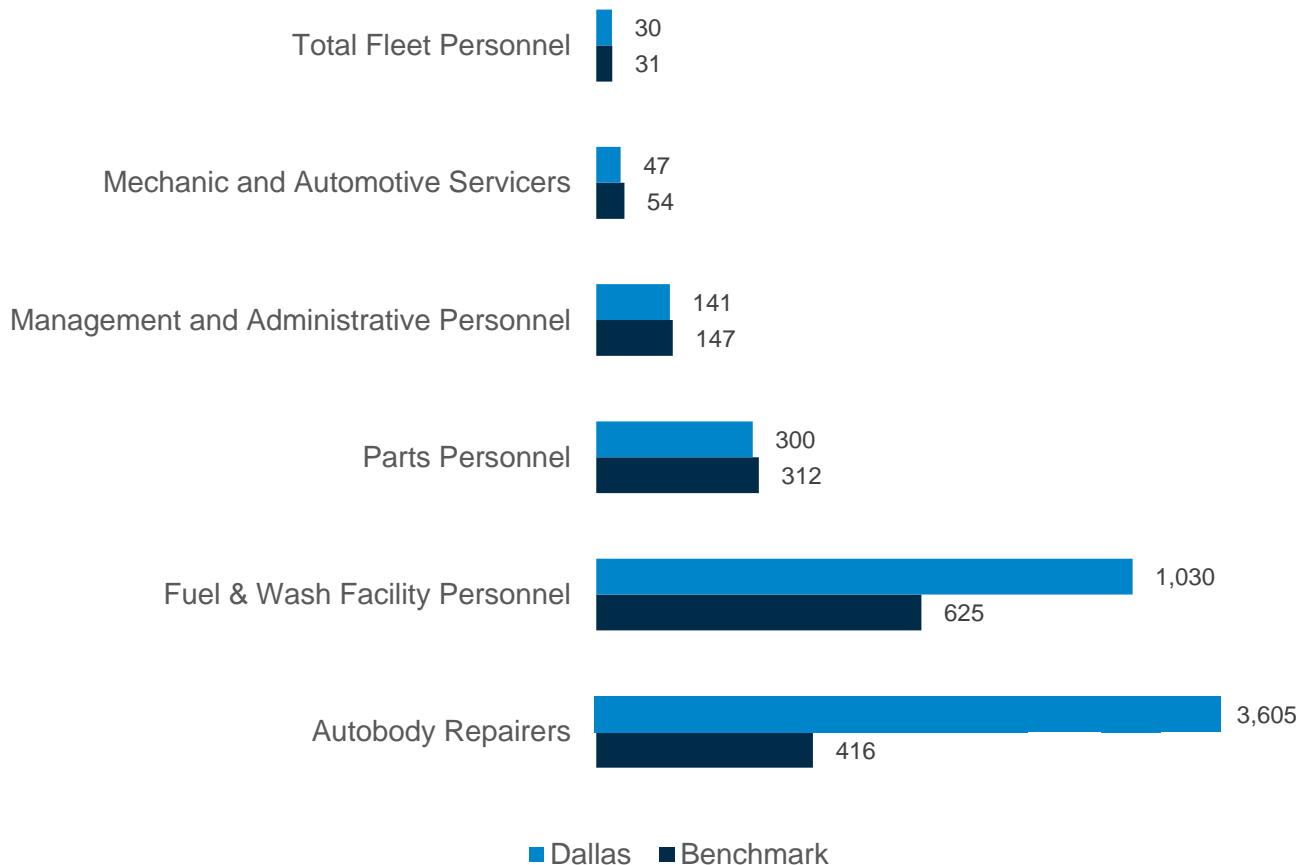
ORGANIZATIONAL ASSESSMENT - 2010 FLEET AUDIT

Some recommendations from the City's 2010 EBS Fleet Audit have been addressed whereas other components of Fleet, such as Make Ready and M5 data accuracy, remain potential issues.

2010 Finding	2010 Recommendation	2018 Current Status
Vehicle utilization criteria is not established and evaluated	Establish and evaluate vehicle utilization criteria	There is no documented vehicle utilization criteria
Vehicle Make Ready and Disposal Processes are not managed efficiently	Develop benchmarks for timely processing of vehicles through make-ready and disposition life cycles	The City recently developed a process where the majority up-fitting for marked squad cars happens at a vendor. The vehicle disposal process lacks clarity.
City-wide system to track the number and status of the vehicles in the fleet does not exist	Use Fleet Focus M5 software to track the number and status of all vehicles	There are a significant number of vehicles in the City's fleet that are not tracked in M5 for either inventory or maintenance.
M5 and Fixed Asset Registry are not reconciled	Implement appropriate controls to ensure the reliability and integrity of fleet data used for decision-making	Data quality concerns persist within the M5 system, as well as in department-specific tracking mechanisms. The City cannot easily conduct accurate analysis with the current data set.

ORGANIZATIONAL ASSESSMENT - STAFF RATIOS

City staff are more efficient in Fuel and Wash and less efficient in Maintenance when compared to best in class fleet operations.

Total Vehicles For Every One Fleet Position

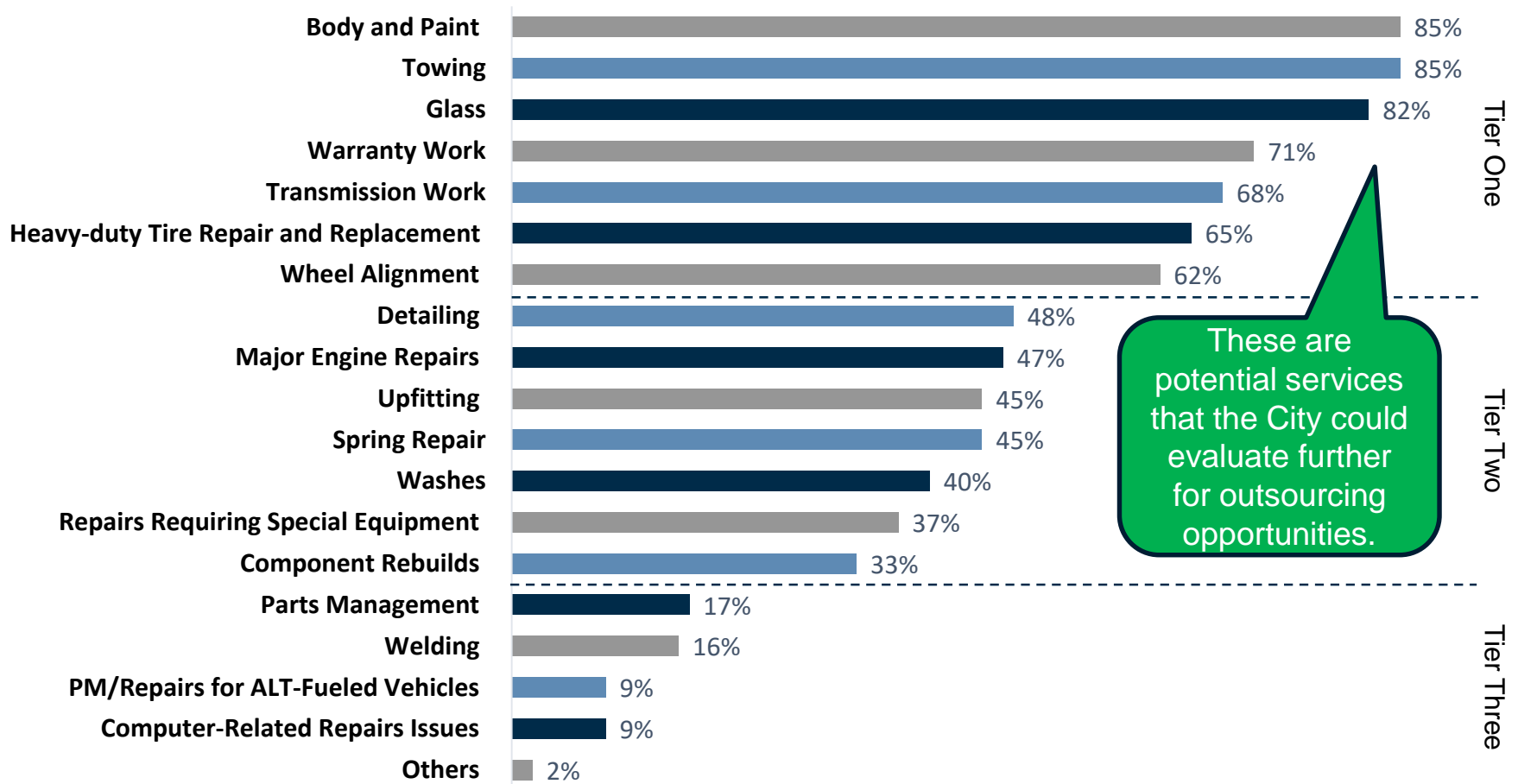| Position	Dallas	Benchmark
Total Fleet Personnel	30	31
Mechanic and Automotive Servicers	47	54
Management and Administrative Personnel	141	147
Parts Personnel	300	312
Fuel & Wash Facility Personnel	1,030	625
Autobody Repairers	3,605	416

■ Dallas ■ Benchmark

- In aggregate, for every person dedicated to fleet in EBS, there are 30 vehicles compared to the benchmark of 31.

- For the Management / Administrative and Parts positions benchmarks, the City appears to be comparable.

- Fuel & Wash and Autobody Repair is more efficient per employee due to the use of automated wash facilities and higher level of outsourcing with the body shop work.

- The City appears to be in line benchmarks when it comes to mechanics at 47 vehicles for every mechanic.

Source: Best in class benchmark city from Government Fleet "Leading Fleets" Competition and City of Dallas

According to a nationwide survey of government agencies, there are seven categories of work orders that at least 50 percent of respondents indicate they outsource.

National Benchmarks for Services Outsourced

Service	%	Tier
Body and Paint	85%	Tier One
Towing	85%	Tier One
Glass	82%	Tier One
Warranty Work	71%	Tier One
Transmission Work	68%	Tier One
Heavy-duty Tire Repair and Replacement	65%	Tier One
Wheel Alignment	62%	Tier One
Detailing	48%	Tier Two
Major Engine Repairs	47%	Tier Two
Upfitting	45%	Tier Two
Spring Repair	45%	Tier Two
Washes	40%	Tier Two
Repairs Requiring Special Equipment	37%	Tier Two
Component Rebuilds	33%	Tier Two
Parts Management	17%	Tier Three
Welding	16%	Tier Three
PM/Repairs for ALT-Fueled Vehicles	9%	Tier Three
Computer-Related Repairs Issues	9%	Tier Three
Others	2%	Tier Three

These are potential services that the City could evaluate further for outsourcing opportunities.

Source: GovernmentFleet.com

ORGANIZATIONAL ASSESSMENT - RECOMMENDATIONS

EBS should implement process improvements to restructure work order management, establish a quality control function, and increasing outsourcing.

Improve Workflow
- Establish a scheduling process and move away from "drop-off"
- Improve process flow within the maintenance shops
- Establish quick turn lanes for preventative maintenance and other small jobs

Establish Quality Control Function
- Utilize senior technicians for quality control review at the end of repair lifecycle in the "ready bay"
- Improve communication on intake / outtake of vehicles and ensure signoff both internally and with departments
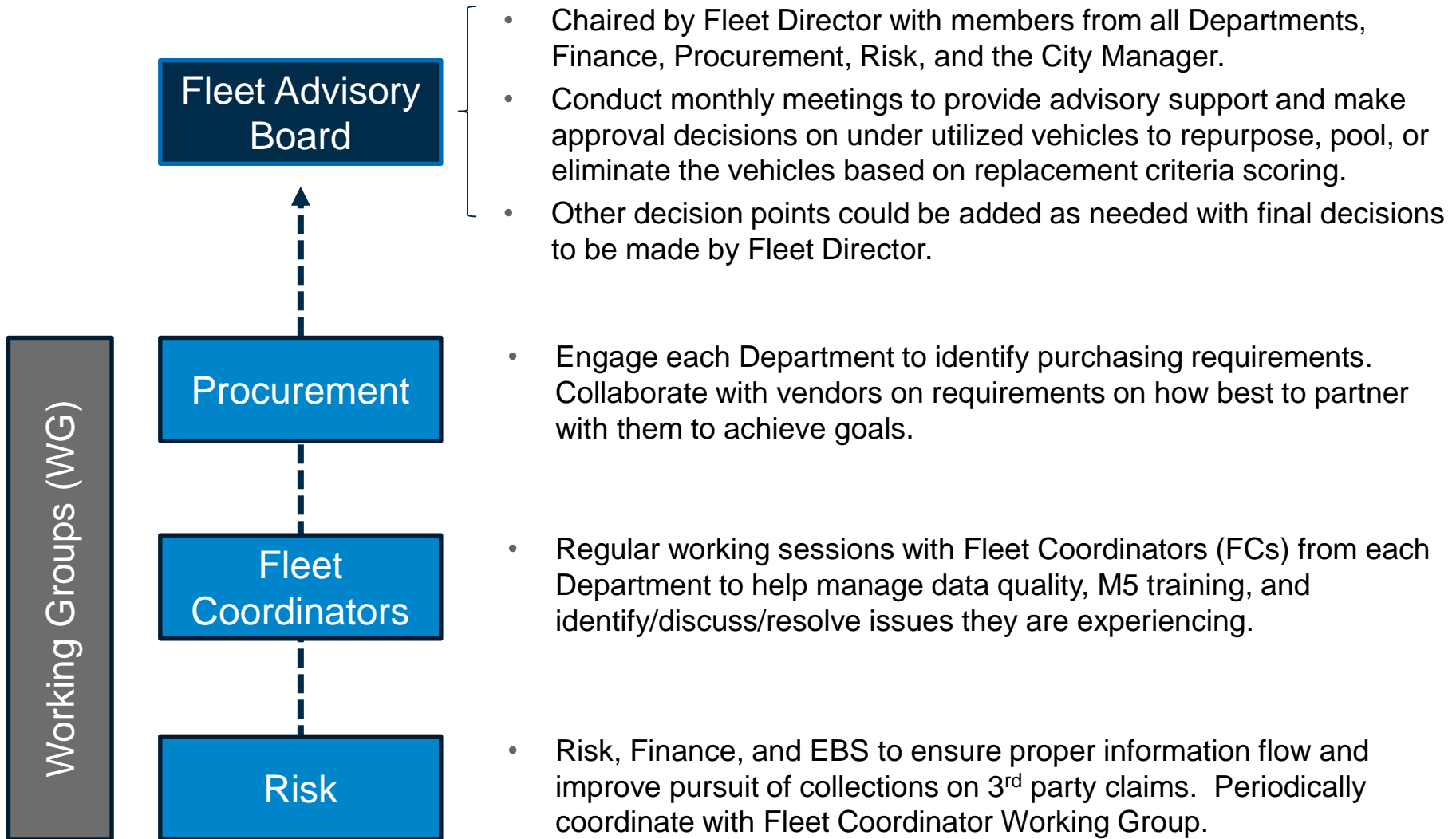
Restructure Work Order Management
- Move away from the First In First Out (FIFO) handling
- Establish work order analysis and reporting regime to triage and refine maintenance requirements on a periodic basis
- Restructure the shops to align with work flow

Increase Outsourcing
- Identify opportunities for increased outsourcing in commercially established functions (e.g., preventative maintenance, small jobs, tire repair) or in in specialty areas / specialty equipment
- Establish a warranty reporting and active pursuit process

The City should establish a Fleet Advisory Board to provide guidance on certain fleet decisions and also establish critical Working Groups.

Fleet Advisory Board

- Chaired by Fleet Director with members from all Departments, Finance, Procurement, Risk, and the City Manager.
- Conduct monthly meetings to provide advisory support and make approval decisions on under utilized vehicles to repurpose, pool, or eliminate the vehicles based on replacement criteria scoring.
- Other decision points could be added as needed with final decisions to be made by Fleet Director.

Working Groups (WG)

Procurement

- Engage each Department to identify purchasing requirements. Collaborate with vendors on requirements on how best to partner with them to achieve goals.

Fleet Coordinators

- Regular working sessions with Fleet Coordinators (FCs) from each Department to help manage data quality, M5 training, and identify/discuss/resolve issues they are experiencing.

Risk

- Risk, Finance, and EBS to ensure proper information flow and improve pursuit of collections on 3rd party claims. Periodically coordinate with Fleet Coordinator Working Group.

The City has experienced challenges in hiring, training and maintaining staff in mechanic areas. Below are several examples that could help in these areas.

Hiring - *Competitive starting wages and signing bonuses*

- Complete a wage survey (already budgeted for in the next FY) to understand where the City's wages are in relation to other public agencies and the private sector.

- Working with the Human Resources Department, investigate possibility and feasibility of offering signing bonuses for targeted fleet positions especially in the higher skilled and large equipment maintenance categories.

- Establish linkages with local high schools and community colleges to hire students and/or graduates (e.g., Tulsa has a "Students with Wrenches" program that has sourced 43 percent of their mechanics).

Training - *Step pay increases pegged to obtainment of additional training received*

- Step pay increases would be awarded following the completion of Automotive Service Excellence (ASE) certifications (Master ASE Technician certification, manufacturer component certifications, Fire Apparatus Technician certification, EVT Master Level III status).

- The step increases would occur with each certification.

Retaining - *Ongoing wage surveys and incentives tied to job performance*

- Once the City has further developed a skilled and talented pool of fleet mechanics that addresses the City's fleet needs in total, continue to annually update the wage survey to make sure competitive wages continued to be paid moving forward.

- Further develop raises and bonuses based on performance-based metrics to incentive staff to remain with the City.

ORGANIZATIONAL ASSESSMENT – MECHANIC CAPACITY

Given historic time to complete similar jobs and based on fleet management productivity levels, there appears to be sufficient mechanic capacity to complete open work orders.

Estimated Time to Complete vs. Mechanic Capacity Analysis Process

Analyzed data at the job level for all work orders that were closed in FY2018 to determine the average number of labor hours required to complete a job by reason code.	Analyzed work orders open as of June 18, 2018 to determine how long they would take to close based on historical labor hours required for similar reason codes.	Compared the total hours required to complete currently open work orders against the total direct labor hour capacity for active maintenance employees.

Estimated Time to Complete vs. Mechanic Productivity Sensitivity Analysis

Total workload for fleet services involved 140k hours in FY17

	Productivity Percentage				
Hours Required to Complete Work Order	**75%**	**70%**	**65%**	**60%**	**55%**
140,000	141%	132%	122%	113%	103%
150,000	132%	123%	114%	105%	97%
160,000	123%	115%	107%	99%	90%
170,000	116%	108%	101%	93%	85%
180,000	110%	102%	95%	88%	80%

Productivity represents the **percentage of a mechanics time that converts to direct labor hours**. The fleet management standard for mechanic productivity is **67%**, with best in class at **75%**.

NOTE: EBS currently has 134 active maintenance employees. Hours per mechanic were determined assuming 2,080 total possible hours, based on a 40-hour work week, less160 hours for holidays and vacation and 40 for training. Supervisor capacity was reduced by 50% to account for management duties.

The following are observations and recommendations that focus on Organizational Assessment.

	Observations	Recommendations
Organization and Staffing	• The City has over 273 staff providing fleet maintenance and management across Departments. The City has been experiencing challenges in the hiring, training and retaining (11 percent turnover rate) process of mechanics, especially in high skill areas that require extensive training. • The current workload combined with above average turnover results in higher levels of overtime. • While the City and EBS have made improvements and adjustments since the 2010 Fleet Audit, some issues remain such as VIB reader errors, manual entry requirements, and inconsistent use of M5 to ensure data quality. • The City appears to lag behind benchmarks when it comes to the ratio between mechanic staffing and total numbers of vehicles. • The maintenance shops appear to be slightly over staffed with 47:1 vehicles to mechanics compared to nationwide benchmarks of 55:1 to 60:1, indicating incremental room for efficiency.	• Work with the Human Resources Department to develop and implement hiring, training and retaining polices such as signing bonuses, competitive wage analyses, and raises and promotions tied to gaining ASE Certifications and other professional training. • Develop a sourcing program based on work with local high schools and colleges to provide work opportunities and apprenticeships to students and develop a recruitment pipeline for employees. • Establish a Quality Control function to ensure work orders are completed correctly to improve customer service. • Evaluate potential to consolidate city-wide fleet operations long term once improvements are made to data accuracy, billing, intake/outtake processes, and right sizing.

The following are observations and recommendations that focus on Organizational Assessment.

	Observations	Recommendations
Communication	• There is no formal or automated process for vehicle scheduling. Departments bring vehicles in on an as needed basis. Additionally, communication breakdowns in the vehicle return process (due to lack of active POCs within the departments or poor alerts) result in the vehicles remaining on the lot for up to a week. • There are different communication channels that are utilized by EBS and various Departments for the ordering of new vehicles, the replacement of old or underutilized vehicles, and the way in which vehicles are disposed of.	• Establish and automate the scheduling processes for vehicle maintenance, including improving the communication / notification process Citywide by using automated tools to publish availability. • Work with the departments to maintain an active list of POCs and to collect POC information by vehicle on intake for improved alerting. • Create Fleet Advisory Board comprised of representatives from each Department along with Finance, Risk, Procurement, and City Manager's office to help with more oversight of Fleet decisions.
Maintenance (Preventative Maintenance)	• Ideally, vehicles should be turned in for preventative maintenance and other repairs between shifts. However, drivers are reluctant to turn in vehicles for Preventative Maintenance (PM) because of long wait times to get vehicles returned. Currently, over 1,700 vehicles (23 percent of total fleet) are overdue for PM. As a result of the actual or perceived long wait times, vehicles are often in significant disrepair when they come to the maintenance facility. • Mechanics appear to spend large amounts of time each month on PM for specific Departments and specific vehicles – police sedans for example come in for PMs every 30 days.	• Increase outsourcing in routine/commercially available maintenance areas (e.g., preventative maintenance, tire replacement, etc.) and for specialized equipment. • Adjust vehicle intake / outtake processes (see the utilization chapter for additional detail) • Restructure the work order management processes (see the utilization chapter for additional detail).

The following are observations and recommendations that focus on Organizational Assessment.

	Observations	Recommendations
Technology	• EBS measures vehicle utilization primarily through the VIB system, where sensors are put on vehicles and equipment and are read at the City's fueling stations. Information from the VIB system is transferred to M5. There are instances when the VIB readers are not properly calibrated and mileage must be manually recorded and entered into M5. This causes inefficiencies and potential errors in data management. • Some Departments maintain information on utilization outside of the M5 system. 666 vehicles (9 percent of the total fleet) are not currently tracked in M5. The Police Department collects odometer readings on patrol cars in a Excel file. Trinity Watershed uses a system they developed called Fleet Tracker to record utilization information. There are concerns about the alignment between M5 and the department-specific tracking systems. • The M5 systems do not track vehicle accidents with an incident tag in the system.	• Enforce the requirement to track all vehicles in M5 by requiring purchase through existing MSAs, ensuring tracking, and reassigning vehicles not tracked. • Hire a data quality senior analyst and engage M5 consulting support to transform data quality and monitor it on an ongoing basis. In addition, the City should ensure that all users of the M5 system receive training with onboarding / orientation training for new hires or transfers into positions requiring access. • Begin tracking incidents with a data flag within the M5 system and develop reporting for the Risk Management function based on this flag. Long term, consider integration with the Origami system to improve incident alerts and improve insurance collections / recoveries.

The following are observations and recommendations that focus on Organizational Assessment.

|	Observations	Recommendations
Billing Procedures	• EBS sets the annual lease rates for fleet vehicles and equipment between October and November. This involves manual calculations for rates, which are then reuploaded to the M5 system. • The process of calculating rates is contained in multiple spreadsheets, causing unnecessary complexity and ambiguity in established rates; Departments require M5 access to understand the individual lease rate components.	• Simplify and automate the billing procedures for greater transparency and customer service. • Evaluate the potential to transition to a tiered pricing model for a more direct correlation between expected service levels and Department pricing. • Identify the top disparities in lease rates and actual work order totals by billing code to drive accuracy in the rates model. • Break down the rates model into component pieces in the monthly automated report sent to client departments.
Risk Management	• The City realized high claims costs resulting from three Fire Engine losses in the past few years, totaling over $2 million in replacement costs. • The City self insures and does not reinsure for Property and Casualty costs due to the high premiums. • The Office of Risk Management has assumed duties for risk and safety reviews of each department.	• Establish a Risk Working Group under the Fleet Steering Committee to help improve this process. • Purchase vehicle attenuators for improved safety and to reduce losses.
Procurement	• The City does not utilize a broad based Total Cost of Ownership (TCO) series of metrics for the evaluation purchases of vehicles for the Fleet.	• Work with the Fleet Steering Committee and Procurement Working Group to create a TCO vehicle procurement approach that incorporates purchase price, SLAs for parts availability and service support to drive down total maintenance costs.

OUTLINE

The Replacement Criteria component of the study focuses on a specific fleet category that could offer opportunities around maintenance and / or lease alternatives
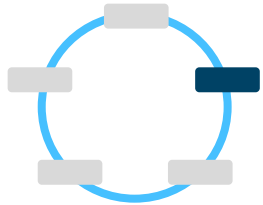
Replacement Criteria

This segment of the study goes beyond years and miles to determine appropriate replacement criteria including what is needed to review additional wear and tear from cars that run while sitting idle (i.e., police cruisers or bucket trucks). EBS has reviewed possible lease alternatives from commercial vendors.

Process

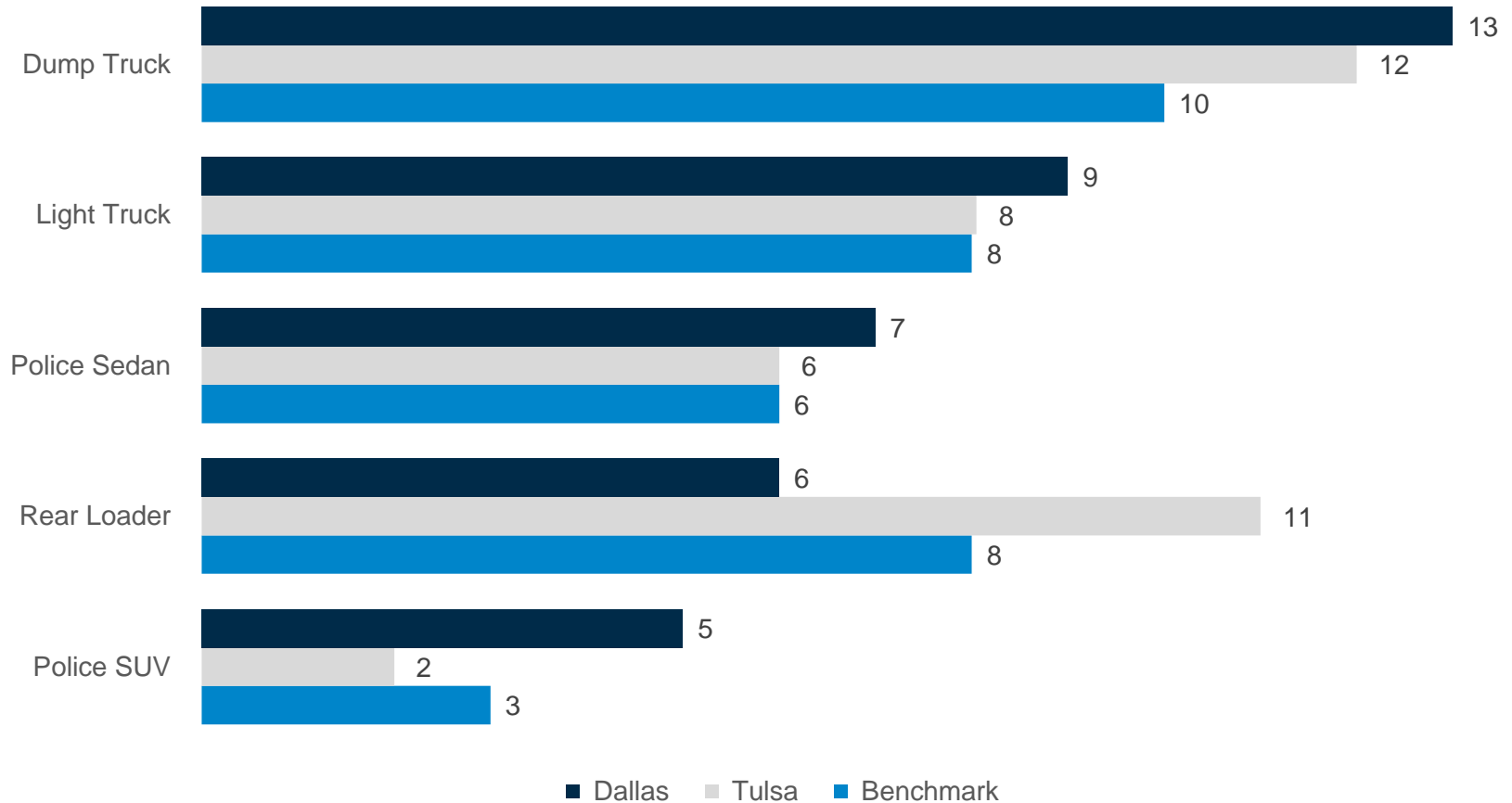| Data Collection	Analysis	Findings
▪ Records by type of vehicle that detail wear and tear information. ▪ Detailed information on maintenance, type of maintenance and costs across the past 3 years. ▪ Detail on previous lease proposals received for the City including cost per mile, maintenance treatment, etc.	▪ Mapping of the type(s) of vehicles with a high wear and tear rate. ▪ Data analysis on maintenance versus vehicle type. ▪ Make or Buy analysis on whether there is more value on keeping this function in-house or outsourcing. ▪ Analyze sustainability of the policy.	• Top 10 replacement / maintenance type per vehicle type. • Potential outsourcing opportunities. • A set of criteria to support maintenance and replacement processes.

Deliverable

Analysis and recommendations related to the replacement criteria policy and review of lease/buy alternatives by vehicle type.

REPLACEMENT CRITERIA – VEHICLE AGE

The City's heavy vehicles and police vehicles are older than benchmarks, however rear loaders are now below benchmarks after heavy investment in new vehicle purchases.

2017 Vehicle Age (years in service) by Category

Category	Dallas	Tulsa	Benchmark
Dump Truck	13	12	10
Light Truck	9	8	8
Police Sedan	7	6	6
Rear Loader	6	11	8
Police SUV	5	2	3

■ Dallas ■ Tulsa ■ Benchmark

Source: GovernmentFleet.com, City of Dallas, and City of Tulsa

REPLACEMENT CRITERIA - TARGET VS. NON-TARGET MAINTENANCE

Average vehicle repairs due to accidents (also called non-target maintenance) is generally lower than nationwide benchmarks other than with DPD (24 percent) and All Other (19 percent) indicating opportunities to reduce expenditures through safer driving.

	Target Maintenance	Non-Target Maintenance
TWM	$3,901	$284
SAN	$16,844	$1,773
PKR	$2,694	$130
PBW	$2,845	$407
DWU	$2,250	$192
DPD	$2,880	$930
DFD	$7,295	$853
AVI	$1,074	$198
All Other	$1,562	$354

Average
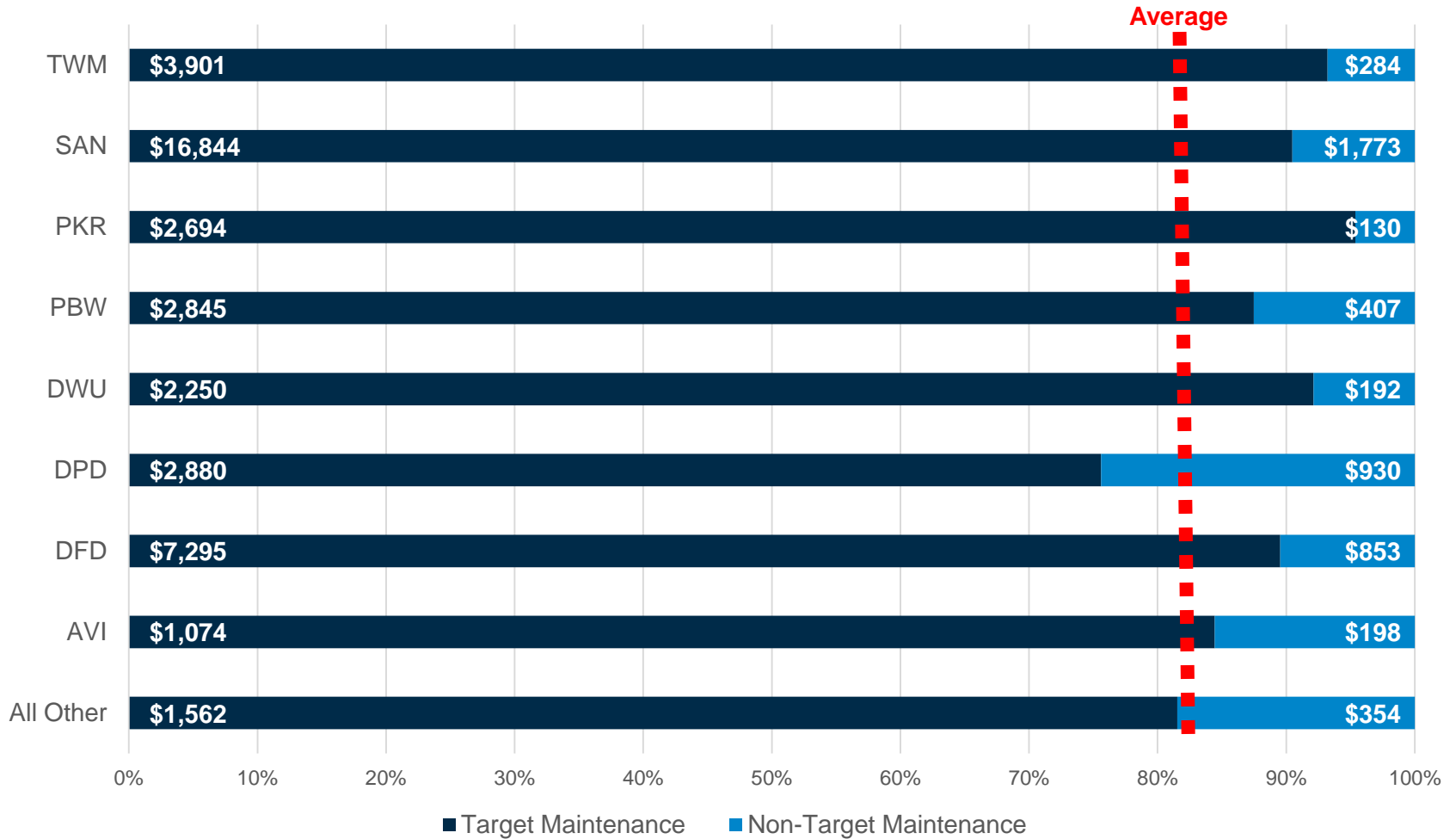
REPLACEMENT CRITERIA – CURRENT REPLACEMENT METRICS

While the City's current replacement criteria focuses on three key criteria, additional criteria could make the process to identify replacement eligible vehicles more robust.

Developing a new process would allow for consideration of additional factors, including more qualitative factors like vehicle reliability, and could help the City to make more informed decisions on which vehicles have replacement priority over others.

CURRENT FLEET REPLACEMENT METRICS

- Vehicle Age
- Life-to-Date Utilization (Mileage or Hours)
- Life-to-Date Maintenance and Repair Costs

POTENTIAL METRICS TO CONSIDER

- Vehicle Reliability
- Life-to-Date Downtime
- Life-to-Date Fuel Usage
- Life-to-Date Miles per Gallon (Fuel)
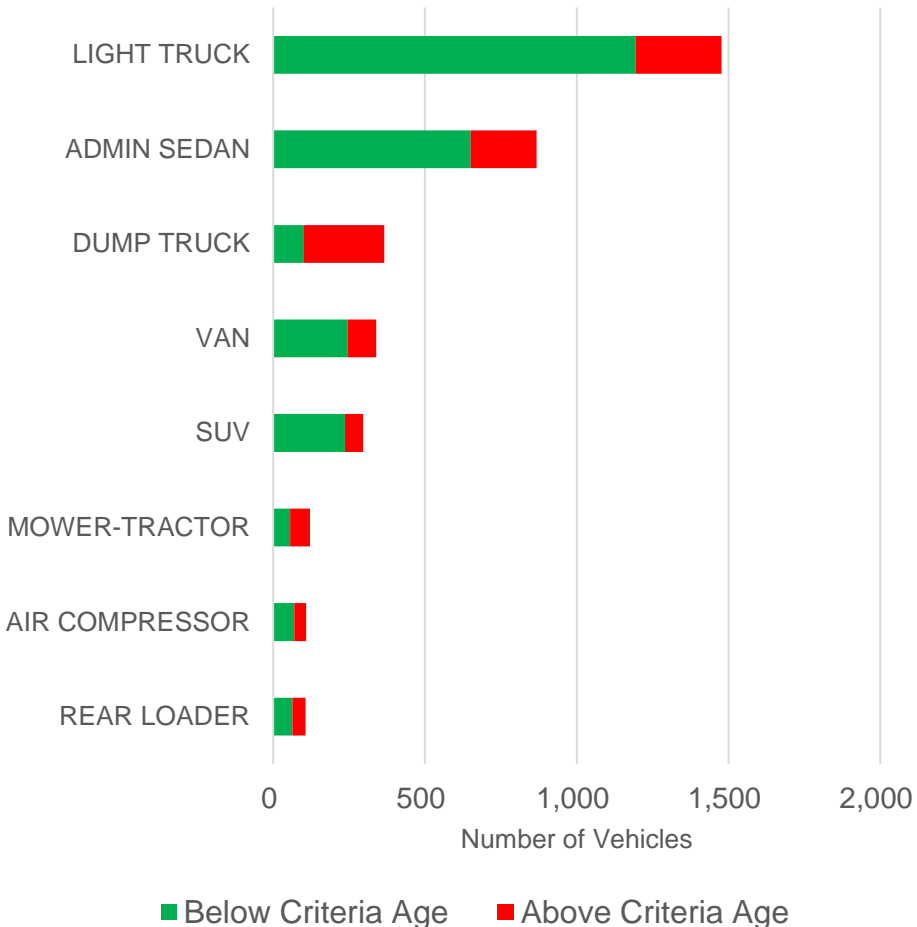
REPLACEMENT CRITERIA – CURRENT STANDARDS

There are currently 1,911 vehicles that are eligible for replacement based on the FY 2019 criteria. Approximately 38 percent of admin sedans are eligible for replacement.

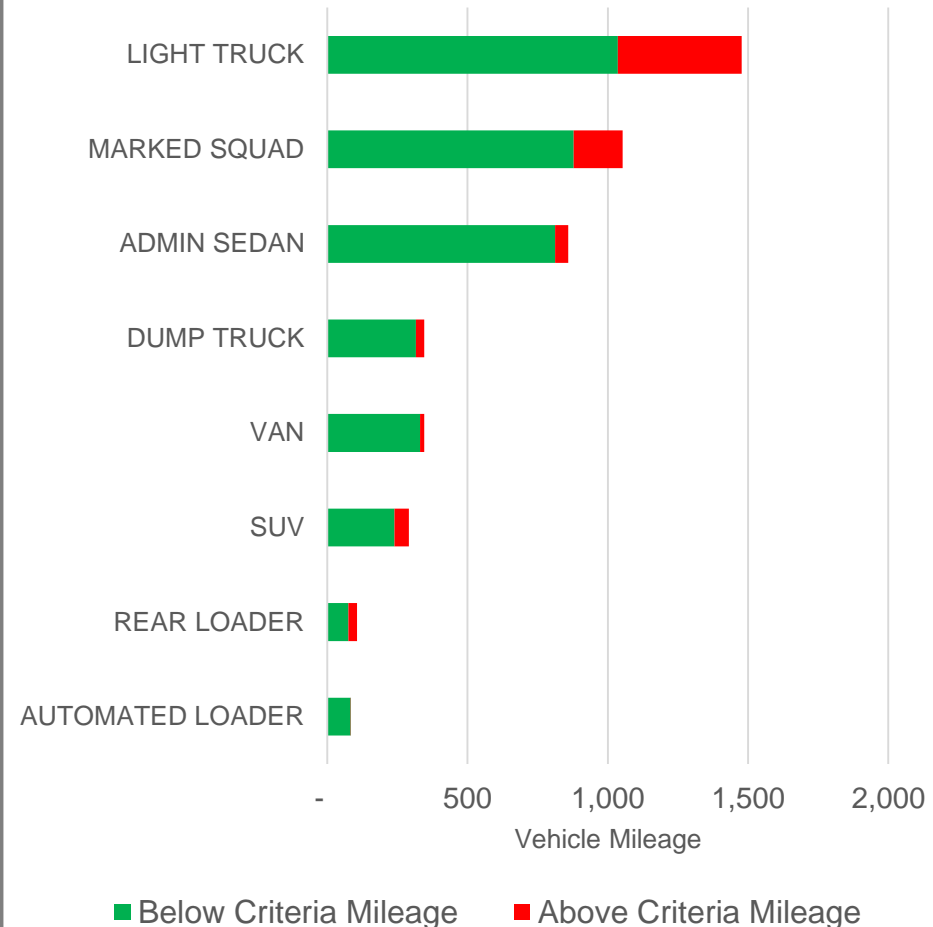| Category	Number of Vehicles	Average Age		Average Mileage		Maintenance & Repair Cost	
		Eligible Vehicles	Criteria	Eligible Vehicles	Criteria	Eligible Vehicles	Criteria
ADMIN SEDAN	319	13.8	12	94,166	130,000	$22,493	$20,000
MARKED SQUAD	246	7.4	0	120,695	110,000	$30,061	N/A
LIGHT TRUCK	156	16.2	13	121,047	90,000	$38,627	$20,000
VAN	130	13.4	12	85,360	130,000	$22,270	$12,500
SUV	92	13.4	12	133,488	125,000	$30,390	$36,000
MOWER-TRACTOR	66	19.5	10	444	N/A	$2,670	$20,000
BRUSH TRAILER	56	16.6	15	20	N/A	$109,887	$57,000
RESCUE	51	5.7	4	125,364	N/A	$87,064	N/A
AIR COMPRESSOR	46	13.7	10	4,418	N/A	$7,479	$6,000
Remaining Vehicles	*749*						
TOTAL	**1,911**						

REPLACEMENT CRITERIA – AGE AND MILEAGE

Currently, 31 percent of vehicles in the top eight categories exceed the replacement criteria for age and 18 percent exceed the criteria for mileage.

Vehicle Age

Category	
LIGHT TRUCK	
ADMIN SEDAN	
DUMP TRUCK	
VAN	
SUV	
MOWER-TRACTOR	
AIR COMPRESSOR	
REAR LOADER	

Number of Vehicles

■ Below Criteria Age   ■ Above Criteria Age

Vehicle Mileage

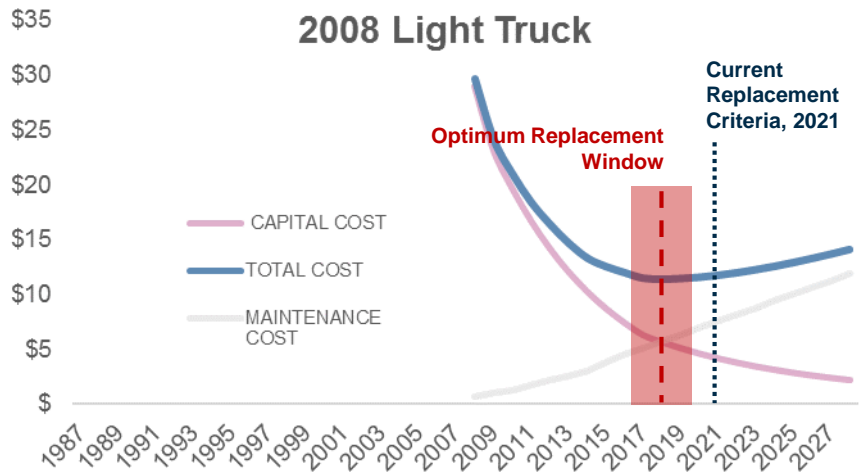| Category	
LIGHT TRUCK	
MARKED SQUAD	
ADMIN SEDAN	
DUMP TRUCK	
VAN	
SUV	
REAR LOADER	
AUTOMATED LOADER	

Vehicle Mileage

■ Below Criteria Mileage   ■ Above Criteria Mileage

REPLACEMENT CRITERIA – REPLACEMENT CYCLE GUIDELINES

The City should consider the actual total economic lifecycle to better optimize replacement criteria with earlier replacement age for Automated Loaders to avoid out year maintenance costs, while sedans could be extended without significant cost impacts.
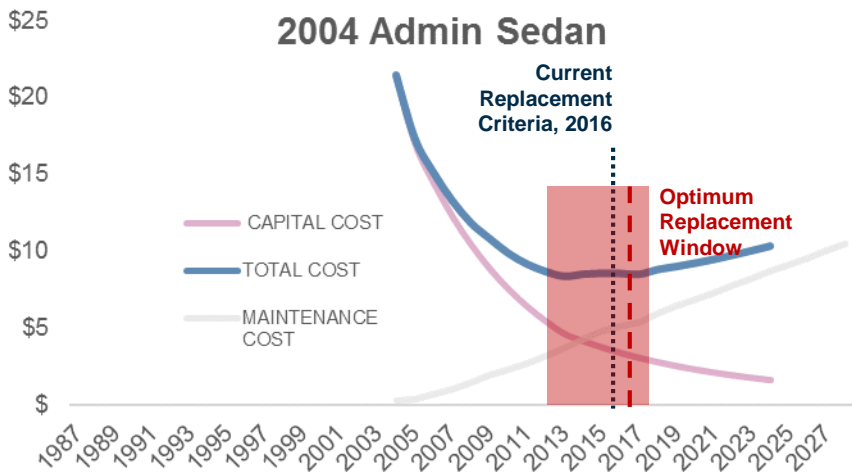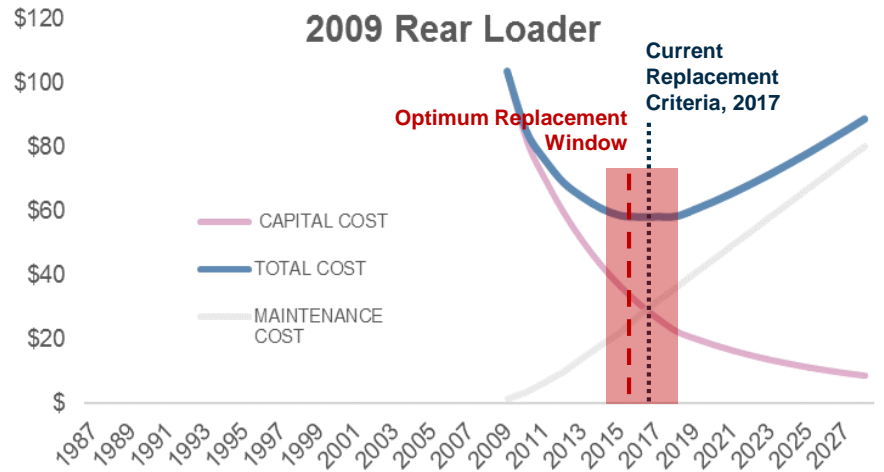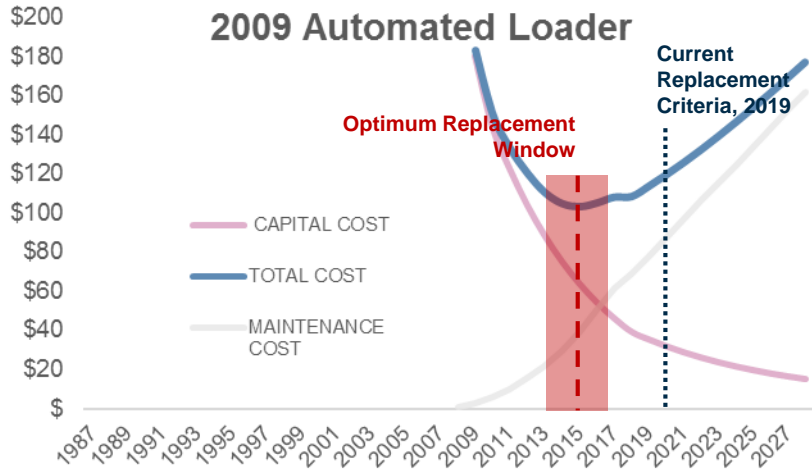
Note: The red dotted line establishes the lowest total cost across each vehicle category, while the shaded region denotes the range of years where total cost would not change significantly.

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REPLACEMENT CRITERIA – REPLACEMENT UNDER CURRENT STANDARDS
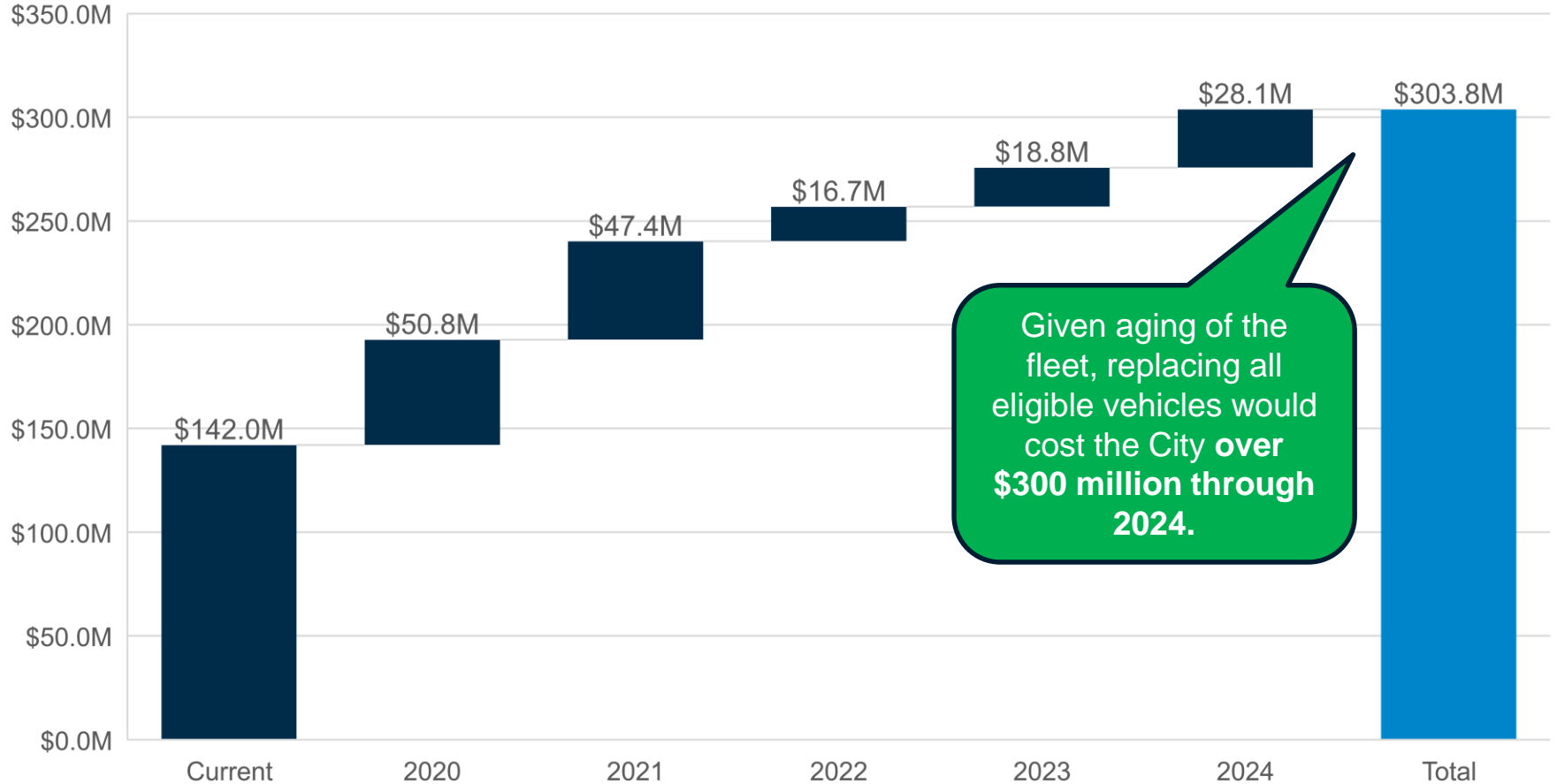
In 2019, 1,911 vehicles will be eligible for replacement using the current criteria, with a total cost of $142.0 million. The City faces over $300 million in replacement over the next five years.

Projected Replacement Cost

> Given aging of the fleet, replacing all eligible vehicles would cost the City **over $300 million through 2024.**

NOTE: The projection reflects constant present dollars. Given changes in inflation and market conditions, these projected costs would likely be higher than this estimation.

REPLACEMENT CRITERIA – REPLACEMENT UNDER CURRENT STANDARDS

Of the $303.8 million required to replace all eligible vehicles under the current criteria, over $80 million is driven by DFD, with another $120 million driven by SAN and DWU, combined.

Department	Annual Cost for Replacement Eligible Vehicles						
	2019	2020	2021	2022	2023	2024	Total
Enterprise Fund							
AVI	1,205,398	906,580	377,035	613,720	149,580	216,014	3,468,326
DWU	22,760,316	11,973,917	7,284,957	2,936,976	2,794,734	5,271,307	53,022,209
DWU - Storm Water	5,407,424	3,185,694	2,612,421	203,584	512,126	555,552	12,476,801
SAN	25,473,132	7,713,672	10,259,681	3,050,779	3,117,745	3,600,500	53,215,510
Total Enterprise Fund	54,846,270	23,779,864	20,534,094	6,805,059	6,574,186	9,643,373	122,182,847
General Fund							
DFD - EFM Maintained	756,836	265,924	251,399	375,052	108,359	172,441	1,930,010
DFD - DFD Maintained	43,563,852	713,825	16,005,440	3,563,227	8,975,617	13,660,733	86,482,693
DPD	14,060,457	1,485,292	1,755,134	714,016	656,756	733,968	19,405,623
EFM	5,033,849	1,641,547	920,119	549,877	349,095	601,555	9,096,042
PBW	13,463,416	11,447,052	3,553,192	1,094,368	953,508	1,387,654	31,899,189
PKR	6,745,356	7,089,815	2,505,907	1,462,195	689,515	604,466	19,097,253
All Other	3,518,157	4,350,926	1,889,764	2,121,267	528,918	1,261,820	13,670,852
Total General Fund	87,141,921	26,994,379	26,880,955	9,880,002	12,261,769	18,422,637	181,581,663
Total	**141,988,191**	**50,774,244**	**47,415,050**	**16,685,061**	**18,835,954**	**28,066,010**	**303,764,510**

REPLACEMENT CRITERIA – SCORING METRICS

The City should refine the existing replacement criteria for fleet vehicles based on scoring developed by the American Public Works Association (APWA).

Vehicle Age	Points
>15	5
13-5	4
10-12	3
7-9	2
4-6	1

Vehicle Mileage	Points
>100,000	5
70,000-99,000	4
50,000-69,000	3
30,000-49,000	2
<30,000	1

Vehicle Use	Points
Special purpose	5
Medium Duty	4
Single purpose	3
4-wheel drive	2
Standard vehicle	1

Annual Maintenance Cost ($)	Points
>2,000	5
1,500-1,999	4
1,000-1,499	3
500-999	2
<500	1

Source: University of Tennessee Fleet Management Study (modified APWA metrics) and benchmark Interviews

Best Practice Adjustments: Through interviews with recognized best practice fleet operations, new score criteria for replacements have been used to refine the list including: *hours, reliability, fuel economy, and vehicle condition.*
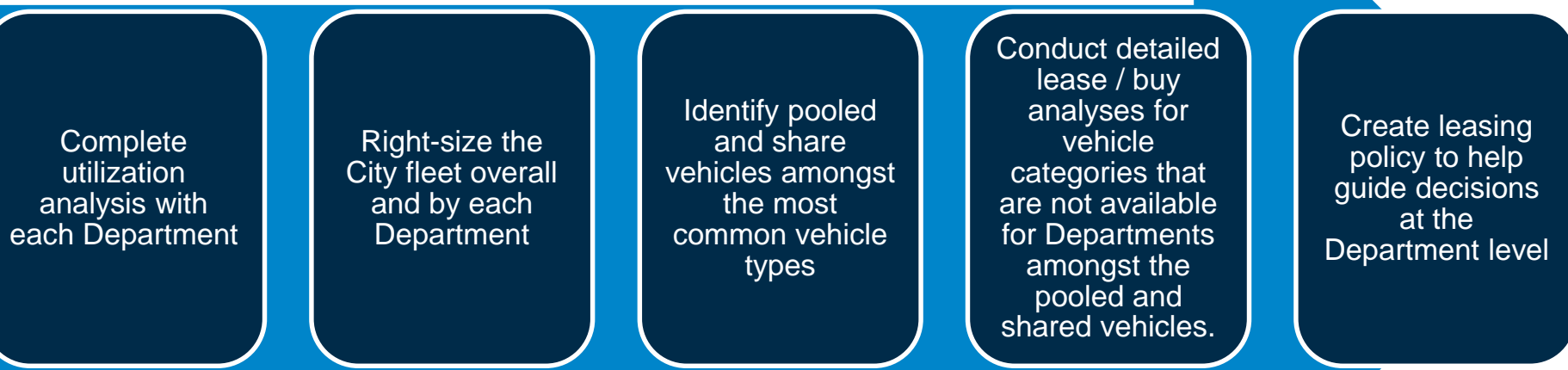
Applicability to the City: In this example, vehicles scoring higher in total points would represent vehicles with a higher likelihood of needing to be replaced. The City should re-evaluate replacement criteria by adding or modifying current replacement metrics based on Department, EBS or City Council directives.

REPLACEMENT CRITERIA - LEASE / BUY ANALYSIS

The City should undertake a detailed lease / buy analysis once the fleet is right-sized as it will help the City understand which vehicles might make more sense to lease vs purchase.

Process for conducting a lease/buy analysis for the City's fleet

Complete utilization analysis with each Department

Right-size the City fleet overall and by each Department

Identify pooled and share vehicles amongst the most common vehicle types

Conduct detailed lease / buy analyses for vehicle categories that are not available for Departments amongst the pooled and shared vehicles.

Create leasing policy to help guide decisions at the Department level

The following are observations and recommendations that focus on Replacement Criteria.

|	Observations	Recommendations
Replacement Criteria	• When compared to available benchmark data, the City appears to hold on to vehicles longer in certain vehicle categories like Automated Loaders and Light Trucks, and could extend the replacement lifecycle in categories like Admin Sedans. • The City currently only uses three criteria to evaluate the potential replacement of vehicles – age, life-to-date utilization, and life-do-date maintenance costs. • Based on the City's current criteria, 1,911 vehicles currently meet the existing replacement threshold. This number jumps to 3,671 over the next six years. Given this figure, the City is facing costs for replacement of $303.8 million for new vehicles over the next six years.	• Develop a fleet utilization scoring system (FUSS) to analyze vehicle replacement by vehicle type based on APWA and Best Practice benchmark scoring methodologies. The methodology should include a) age; b) mileage; c) use; d) maintenance costs, at a minimum, and could be expanded to include e) hours; f) reliability; g) fuel economy; and h) vehicle condition. • Consider economic lifecycle costs and the overall fleet characteristics as part of the re-evaluation of the existing replacement criteria. Once established, the scoring and replacement criteria should be a transparent process with a reassessment of the replacement criteria process by the Fleet Advisory Board every 2-3 years. • Evaluate funding mechanisms to close the funding gap for vehicle replacement over the long term and ensure that replacement funding is included in the overall budget.

OUTLINE

The Fleet Right-Sizing component of the Fleet Study focuses on the utilization analysis along with the replacement criteria to support fleet right-sizing.
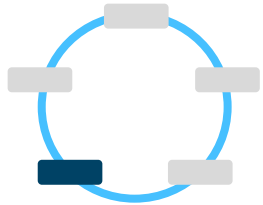
Fleet Right-Sizing

The utilization analysis serves as an input for planning and right sizing the fleet based on internal fleet allocation and external demand. In addition, the Replacement Criteria should be followed to appropriately manage fleet capacity to meet such demand. The analysis will recognize the limitations in decision-making due to decentralized vehicle ownership.

Process

Data Collection

- Actual Fleet Utilization across departments.
- Replacement Criteria Review.
- Data detailing use of outside rental vendors.

Analysis

- Demand modeling and projections.
- Supply modeling and projecting.
- Right-sizing optimization.
- Usage gaps created by use of outside rental vendors.

Findings

- Estimated Fleet units per year.
- Recommendations to increase right-sizing precision.

Deliverable

Fleet right-sizing recommendations and implementation steps.

FLEET RIGHT-SIZING – UNDERUTILIZATION IMPACT

In the City, there are approximately 2,373 vehicles that are being driven less than 5,000 miles (32 percent of total fleet) indicating potential under utilization.

Agency	Vehicles 0-1K LPD 12 Miles	Vehicles 1K-2.5K LPD 12 Miles	Vehicles 2.5K-5K LPD 12 Miles	Total Considered for Review
AVI	17	19	25	61
DFD	98	36	61	195
DPD	227	134	175	536
DWU	259	101	139	499
PBW	123	54	66	243
PKR	77	59	98	234
SAN	51	19	42	112
TWM	34	29	45	108
All Other Departments	137	109	139	385
TOTAL	**1,023**	**560**	**790**	**2,373**

Options for Rightsizing the number of vehicles

Pooled	Shared	Surplus
Vehicles are kept in central locations around the City and can be accessed by multiple departments	Vehicles are shared across employees within a department	Vehicles are de-fleeted

FLEET RIGHT-SIZING – VEHICLE OPTIONS (SHARED, POOLED, SURPLUSED)

One potential way to right size the City's fleet is to determine utilization levels of some of the most common and shared vehicles in the City's fleet.

Options to Review Common Vehicles for Rightsizing: By identifying the common vehicles across the departments, the City can increase the number of vehicles in the City's motor pool, as well as shared within departments, driving opportunities to reduce the overall number of vehicles.

Category	Vehicles 0-1K LPD 12 Miles	Vehicles 1K-2.5K LPD 12 Miles	Vehicles 2.5K-5K LPD 12 Miles	TOTAL Vehicles <5K LPD 12 Miles	Vehicles to Review for Dept Share	Vehicles to Review for City Pool	Vehicles to Review for Surplus	TOTAL Vehicles to Review
LIGHT TRUCK	270	154	276	700	70	126	70	266
ADMIN SEDAN	153	139	168	460	91	137	91	319
DUMP TRUCK	128	48	57	233	33	25	17	75
VAN	78	55	49	182	20	35	20	75
SUV	45	24	52	121	14	22	14	50
TOTAL	674	420	602	1,696	228	345	212	785

Identification of Vehicles to Review: Across the three rightsizing options, percentages to review were determined by the vehicle and mileage.

	<1,000 miles	<2,500 miles	<5,000 miles
Shared	15% - 30%	10% - 20%	5% - 10%
Pooled	15% - 40%	10% - 30%	5% - 20%
Surplused	15% - 30%	5% - 20%	0% - 10%
Total	45% - 100%	25% - 70%	10% - 40%

For Review

Common Vehicles: 785

Dept. Specific: 219

Total Vehicles: 1,004

FLEET RIGHT-SIZING – COMMON VEHICLES AND MAINTENANCE LOCATIONS

The 1,703 common vehicles that should be reviewed based on underutilization are evenly disbursed across maintenance. This should facilitating easier sharing.

Category	Departments									
	AVI	DFD	DPD	DWU	PKR	PBW	SAN	TWM	All Other Departments	TOTAL
LIGHT TRUCK	27	30	40	223	118	55	34	37	136	700
ADMIN SEDAN	12	64	174	9	5	38	2	7	149	460
DUMP TRUCK	6	4	0	45	36	100	6	32	4	233
VAN	4	6	36	29	33	4	1	8	61	182
SUV	4	41	12	15	21	6	5	4	13	121
TOTAL	53	145	262	321	213	203	48	88	363	1,696

> Common vehicles with low utilization exist across Departments. Increasing pooling and vehicle sharing could decrease the overall number of vehicles required.

Category	Locations						
	Central Service Center	Southwest Service Center	Northeast Service Center	Northwest Service Center	Southeast Service Center	Maintenance Division	Total for Major Service Locations
LIGHT TRUCK	163	88	125	93	135	27	631
ADMIN SEDAN	271	85	35	26	43	-	460
DUMP TRUCK	16	35	33	62	74	4	224
VAN	81	34	25	27	13	1	181
SUV	35	10	15	6	12	40	118
TOTAL	566	252	233	214	277	72	1,614

> Maintenance locations with high numbers of common vehicles with low utilization are reasonably spread across the City, allowing for convenient pickup in a pooling arrangement

Evaluating underutilized vehicles by category at the Department level is an option to identify opportunities to share or dispose of vehicles within a Department.

Options for Rightsizing Vehicles Within Departments: By identifying the common vehicles at the Department level, the City can increase the number of vehicles shared within departments.

Dept	Category	Vehicles 0-1K LPD 12 Miles	Vehicles 1K-2.5K LPD 12 Miles	Vehicles 2.5K-5K LPD 12 Miles	TOTAL Vehicles <5K LPD12 Miles	Vehicles to Review for Dept to Share	Potential Surplus Vehicles
DPD	MARKED SQUAD	93	56	90	239	63	32
DWU	PRESSURE MACHINE TRUCK CHASSIS	19	0	0	19	4	2
DWU	BACKHOE TRUCK	18	9	10	37	11	5
DWU	GANG TRUCK	17	7	2	26	9	5
DPD	MOTORCYCLE	12	4	5	21	7	3
DWU	CRANE TRUCK	11	4	1	16	3	1
DPD	OTHER MARKED SQUAD	11	2	0	13	2	1
DWU	PAVEMENT BREAKER	10	0	0	10	2	1
DWU	ENCLOSED SERVICE TRUCK	9	10	12	31	8	4
DFD	ENGINE	9	0	4	13	2	1
ALL OTHER DEPARTMENTS/CATEGORIES		146	41	58	245	36	17
TOTAL		**355**	**133**	**182**	**670**	**147**	**72**

Identification of Vehicles to Review:

Across the two rightsizing options, percentages to review were determined by the vehicle and mileage.

	<1,000 miles	<2,500 miles	<5,000 miles
Shared	20% - 40%	10% - 30%	5% - 10%
Surplused	10% - 20%	5% - 15%	0% - 5%
Total	**30% - 60%**	**15% - 45%**	**5% - 15%**

Note: LPD 12 is an M5 code that stands for Last Periods 12. It provides data from the last 12 months.

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FLEET RIGHT-SIZING - KEY ASSESSMENT AREAS

The following are observations and recommendations that focus on Fleet Right-Sizing.

	Observations	Recommendations
Fleet Right-Sizing	• As of June 2018, there are 2,373 vehicles in the City's fleet with utilization of less than 5,000 miles in the last twelve periods. • While the City maintains a motor pool for certain vehicles, Departments prefer to have dedicated vehicles. This includes vehicles with low utilization or those needed for limited purposes. • Vendors for the City's vehicles and equipment are generally selected through a low bid procurement process. As a result, there are vehicle categories with significant variation across make and model.	• Conduct an in-depth utilization review for each Department with fleet vehicles. The City should develop utilization thresholds for each vehicle category and individually review each vehicle that falls below the threshold to decide whether it should be moved to the motor pool, shared within the department, surplused, or maintain its current status. • Implement M5 Motorpool and consider using the AssetWorks Key Valet application to expand motor pool locations. Key Valet would allow drivers to schedule vehicle pick-up, while giving them insight into vehicle availability and usage. • Evaluate low-vehicle count, low-utilization vehicles to identify vehicles that could be surplused and rented on an as-needed basis. • Use a best value approach to procuring vehicles that would allow the City to build in parts availability, extended warranty, and maintenance contracts into the vehicle specifications. This would allow for increased standardization across vehicle categories, while driving additional value out of vendor relationships. • Create an approval / justification process for under utilized vehicles that would be presented to the City's Fleet Advisory Board for review, approval and/or reassignment.

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ACRONYM TABLE

List of Acronyms

A&M	Alvarez & Marsal		**MRO**	Maintenance, Repair, and Operations
APWA	American Public Works Association		**MSA/MLA**	Master Service/Lease Agreement
ASE	Automotive Service Excellence		**MU**	Mark Up
AVI	Aviation Department		**OH**	Overhead
CIS	Communication and Information Services		**OOB**	Office of Budget
DFD	Dallas Fire Department		**ORM**	Office of Risk Management
DPD	Dallas Police Department		**PBW**	Public Works (incl. Transportation)
DWU	Dallas Water Utilities		**PKR**	Parks and Recreation
EBS	Equipment and Building Services		**PM**	Preventative Maintenance
FC	Fleet Coordinator		**SAN**	Sanitation Department
FIFO	First In, First Out		**TCO**	Total Cost of Ownership
FY	Fiscal Year		**TWM**	Trinity Watershed Management
LPD12	Last 12 Periods		**VIB**	Vehicle ID Box
LTD	Life to Date		**WG**	Working Group
M5	Fleet management system		**WO**	Work Order