CITY OF TOPEKA

Department of Public Works
620 SE Madison Street
Topeka, KS 66607

Date: November 16, 2020

To: Brent Trout, City Manager
From: Hannah Uhlrig, Deputy Director of Public Works

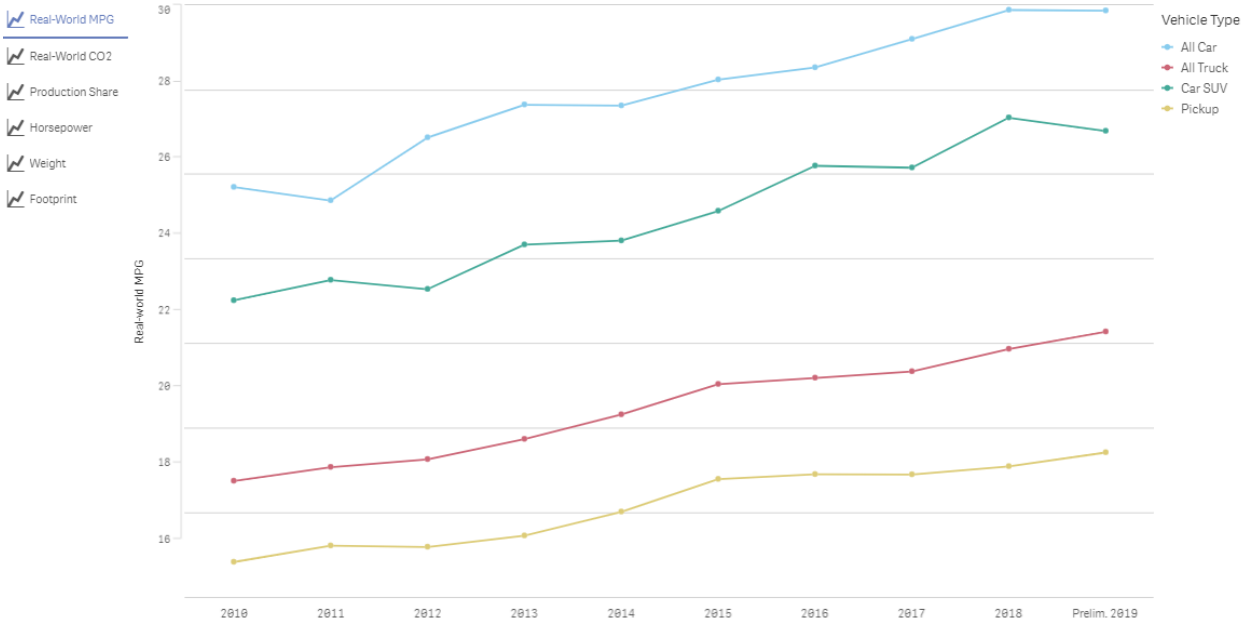
Re: Fleet Replacement Program Overview

The City's fleet assets are a critical tool in many departments successfully delivering services to the community.

Our fleet consists of everything from snow plows to sewer maintenance trucks, to road paving equipment, and police and fire vehicles. In total, Topeka's fleet consists of more than 1,050 vehicles and pieces of equipment.

The challenges that the City's fleet is facing today is very similar to a number of the City's assets, they are largely past their useful life. As a result of this we are experiencing higher operational costs, decreased reliability, and increased downtime of these assets. Our Fleet Services department has increasingly become more of a repair stop as opposed to its intended focus on preventive maintenance.as a direct result of our aging fleet. Over the past 12 months, they only spent 27% of the time on preventative maintenance and repairs from these services compared to the industry recommendation of ~80%.

The concerns of the City's aging fleet isn't limited to maintenance and reliability, it is also related to fuel efficiency and employee safety standards. Excluding emergency response vehicles, 48% are 2012 or older predating Electronic Stability Control standardization, and 87% are 2018 or older which predates back up camera standardization. Fuel efficiency has had large increases over the past 20 years. The EPA's real-world MPG reports an increase of ~16% in the cars and ~19% increase in trucks.



Fleet Replacement History

The City has historically left the replacement cycle management up to the individual departments to act upon. Fleet has provided reporting to indicate to departments which assets they would recommend to be replaced based upon age, mileage, and maintenance costs, but ultimately it has been at the department level to find the funding and act upon the recommendations. Over the last 11 years, this methodology has resulted in an average of 47 new vehicles/equipment purchased annually totally for about $2.5 million. This has left the City with an average fleet age of 10.7 years. This decentralized approach to fleet replacement management was not recommended, and was identified as inconsistent with industry best practices in the 2015 Mercury Fleet Replacement Practices Review.

In the past, a couple departments have tried lease programs. Fire has participated in lease to own programs for their apparatuses, and Police participated in a program for their patrol cars for three years. The Police lease program was considered successful by a large number of the officers because it resulted in a large number of new Ford Explorers infused into the fleet, but it was pulled by decision of a past Police Chief. This example illustrates one of the risks of a decentralized fleet replacement program Without a City-wide strategy on fleet management, change in departmental leadership can have a long-lasting impact on the department.

Mercury Summary

In 2015, Mercury Associates was engaged to develop a high level, long-range fleet replacement plan. This report was to be used to guide the future decisions of the City.

At the time of this study the average age of the fleet was 8.9 years old as seen in Figure 1 below. Since this study our average age of the fleet has increased to 10.7 years old.

Figure 1 - 2015

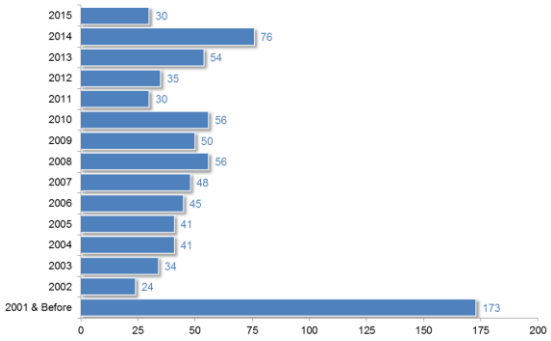
Department	# of Assets	Average Age
Communications	1	19.1
Fire	54	9.1
Information Technology	1	14.1
Municipal Court	1	16.1
Neighborhood Relations	39	11.0
Police	236	6.2
Planning	1	0.1
Public Works	453	10.0
Zoo	7	13.7
Grand Total	**793**	**8.9**

Figure 2 - Current

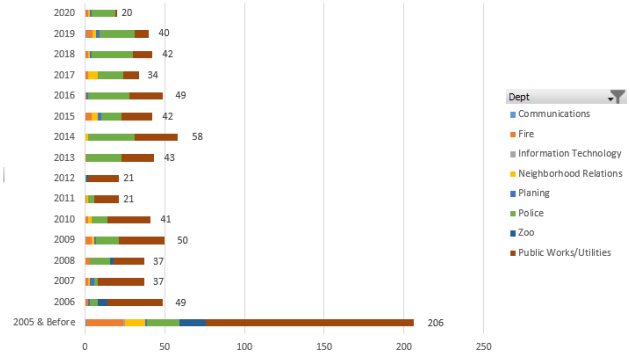
Dept	# of Assets	Average Age
Communications	2	9.0
Fire	53	12.4
Information Technology	1	0.0
Neighborhood Relations	35	10.3
Planing	13	7.6
Police	238	6.6
Zoo	26	19.7
Public Works/Utilities	422	12.3
Grand Total	**790**	**10.7**

The two below charts below show that 26% (206) of the City's vehicles are 15 years or older as compared to 22% (173) of the fleet in 2015.

2015 Study

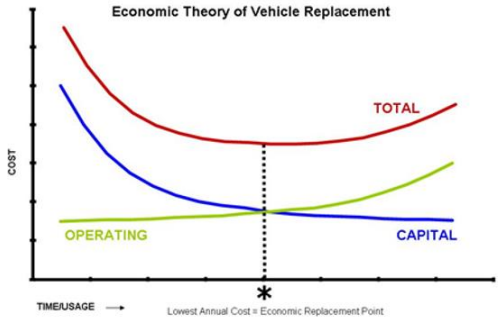


Current Fleet



The overall make up of our fleet has not materially changed since the time of this study, so it should be safe to assume the recommendations made regarding average fleet age (4.8 years) and weighted replacement cycles (8.9 years) should still hold true.

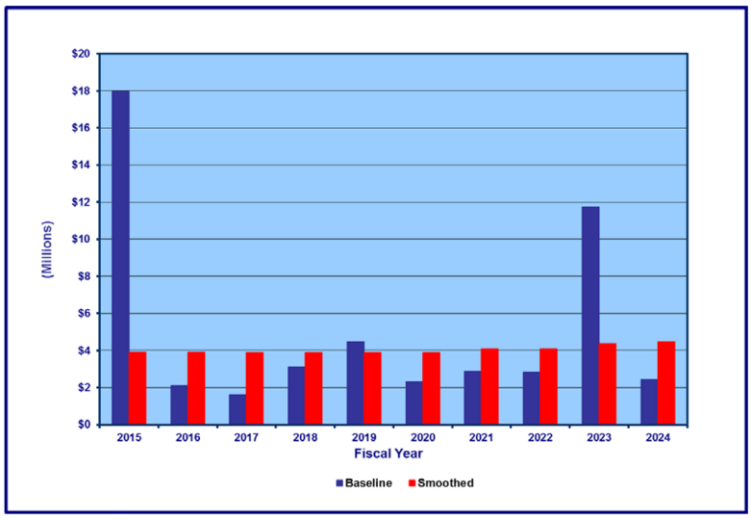
The recommendations around age and replacement cycles were based on the Economic Theory of Vehicle Replacement which targets to replace vehicles at the point of minimum cost of ownership. This calculation was completed by dividing the City fleet into 189 different replacement classifications and considers the vehicle/equipment type and intended use. This was done to estimate when that point of diminishing returns would occur based on the diverse fleet. For example, a generic use SUV-Midsize would be recommended to replace at 120 months or 110k miles while a SUV-Midsize for law enforcement would be recommended to replace at 48 months or 85k miles. This difference is due to the nature in which the vehicles are used and the expected wear that would occur during the useful life.



Per the Mercury study, this gap in the actual age of the City's fleet against the industry best practices recommendation is likely due to a lack of funding allocated to the replacement of fleet assets consistently over time. This is likely resulting in a tradeoff between low fleet capital costs and higher operating costs, including both direct and indirect costs. The direct costs are inclusive of items such as higher maintenance, repairs, and fuel costs and the indirect costs are inclusive of items such as increased downtime/reduced employee productivity, reduced vehicle safety, and likely a larger fleet than needed to allow for back-ups.

Mercury recommended the City establish a centralized fleet replacement program. The baseline program would adjust funding from year to year to meet the ideal replacement needs of the specific fleet. A true baseline program has two large pitfalls. One is the challenge of large swings in year to year budget needs, and the second is the current needs of the City's fleet. As shown below, the baseline from 2015 showed a large number of immediate replacements needed which is an unrealistic approach. To help create a realistic goal for the City, they calculated a "smoothed" funding plan off the gross replacement value (in 2015 dollars) of the total fleet at $43m. At the

recommended weighted average replacement cycle of 9.5 years, the City should be spending an average of $4.6m per year for fleet renewal. For comparison purposes, the City has spent an average of $2.6m annually over the last 5 years (2016-2020).



In the report, Mercury laid out 4 different financing options with advantages and disadvantages of each to help guide the City in a recommended approach:

1. Outright Purchase with Ad Hoc Annual Appropriations of Cash

   Advantages: Widely used in the public sector so generally accepted, simplest capital financing methods to administer, and no out-of-pocket interest expense

   Disadvantages: Almost always leads to sub-optimal replacement decision making from the inherent conflict between short-term budget needs and vehicle total cost of ownership minimization

2. Debt Financing

   Advantages: Allows organizations to spread out the capital cost over the service lives of the vehicles eliminating most of the year-to-year volatility in funding requirements and reduces the likelihood that funds will be diverted to meet other conflicting priorities

   Disadvantages: Creates competition for the use of limited fund capacity with capital improvement projects that typically have stronger political support than routine replacement of vehicles

3. Reserve Fund and Charge-Back System

   Advantages: Funding requirements do not fluctuate significantly from year-to-year and can incorporate smooth and predictable funding increases to help satisfy the gradual needs of inflation and insure fund health, reserve funds are often less of an annual target for decision makers who sometimes equate capital appropriations with discretionary or quasi discretionary spending needs, and payments of regular charges for the use of each vehicle encourages departments to pay attention to how many vehicles are needed to meet their business needs

   Disadvantages: Requires rigorous and administratively complex fund management procedures to ensure appropriate charge backs are in place to keep from depleting or inflating the fund balance, cash in a

reserve fund is susceptible to being diverted to meet other spending needs when budgets are tight, and financing the program is somewhat expensive to get started as it would require a large upfront cash infusion or require departments to purchase an asset and immediately start payments for the replacement charges

4. Lease Programing

   Advantages: Typically requires minimal capital investment to start, not likely to have funds diverted from the program during the contractual term, and keeps the fleet on a tight replacement cycle

   Disadvantages: Additional costs are incurred as part of the overhead increasing the total cost of the asset, price to exit from a lease program is often very costly as you are required to purchase the remaining value of the assets at time of exit, and potential challenge to find programs that span the entire need of the City fleet so would likely have multiple lease programs to fulfill all needs

Vehicle/Equipment Replacement Fund (VERF)

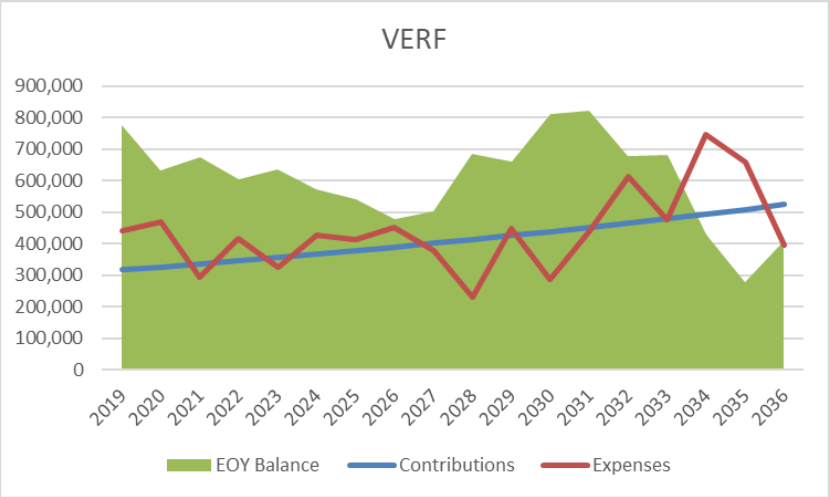
Using the Mercury Fleet Replacement Practices report as a guide, the Fleet department created a pilot program using the reserve and charge back approach. This Vehicle/Equipment replacement program (VERF) starting in 2019 leveraged cash from the Fleet Department's Fund balance, $300k, along with $600k from general fund contributions to begin the fund balance.

This pilot program has been leveraged by 9 of the City's departments (75 total assets included). Between 2019 and 2020 the VERF is estimated to replace 19 vehicles, across 7 departments, valued at ~$1.2m. Based on the current projected replacement needs and anticipated contributions (+3% annual increases) the fund balance remains healthy.

2019-20 VERF Vehicle Replacements

Department	Type	Purchase price	2019 Purchase	2020 Purchase
Fire	Brush truck	$117,029	X	
Fire	Command truck	$45,713		X
Fire	Training truck	$33,421		X
Fire	Training truck	$30,811		X
Fire	Brush truck	$119,369		X
Fire*	SUV	$36,500		X
Dev. Services	Truck	$20,223	X	
Dev. Services	Car	$17,620	X	
Dev. Services	Car	$17,788		X
Communications	Van	$30,163	X	
Facility	Van	$30,163	X	
Facility	Truck	$27,626		X
Facility*	Van	$44,000		X
Facility*	Truck	$32,000		X
Facility*	Truck/van	$36,000		X
IT	Truck	$20,523		X
Fleet	Truck	$23,567		X
Street	Sweeper	$300,365	X	
Street*	Sweeper	$224,000		X
Total cost		**$1,206,882**		

**Vehicles that should still be ordered this year, the cost are estimates only.*



The following departments are currently participating with 100% of their fleet assets:

- City Manager Office
- Development Services
- Communications
- Facility Operations
- TSG
- IT
- Fleet Services

Two other departments are participating with a portion of their assets:

- Fire Department* (27 fleet assets)
- Public Works Transportation Operations(4 fleet assets)

CIP

The funding that is currently in the CIP starting in 2024 is for $4.5m annually out of the cash funding source. This amount would be intended to fund the VERF City-Wide based on the recommended “smoothed” plan funding need to support a reserve and charge back system.

Lease Options

With the wide scope of the City’s fleet one all-encompassing lease program is not likely. To explore the feasibility of a lease program Fleet has engaged with Enterprise to understand what a program for medium and light duty classes of vehicles would entail.

Enterprise’s program covers the acquisition, maintenance, and disposal of vehicles based on their recommended replacement cycle. They provide a dedicated, local account team to support the program and adjust recommendations as needed.

Their replacement cycles are built around optimizing the resale value while realizing the benefits of lower maintenance and fuel costs immediately. For example, based on the current used car market, they are recommending 12 month lease programs for Trucks and non-emergency SUV’s. This is based on the low acquisition

price we can get against the current market's high resale on these classes. This is in comparison to the 60 month lease terms that are recommended for sedans, vans, and hybrids.

As part of the cost of ownership calculation Enterprise offers a maintenance plan for each of their leased vehicles, excluding emergency response vehicles. This maintenance plan is intended to cover all maintenance costs excluding predictive items such as tires and brakes. The cost of this plan varies based on the make, model, expected annual millage, and lease term. For example, the annual cost of the maintenance plan for a Chevy Malibu on a 60 month lease with 7,500 annual mileage max is $348 while the annual cost for a GMC Sierra 1500 on a 12 month lease with 7,500 annual mileage max is only $240. These are built on the strong likelihood that only preventative maintenance will be needed during the term of the lease.

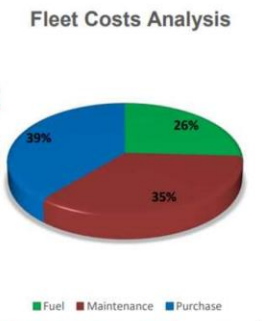
While the cost to start the program is relatively minimal, the risk is at the cost to exit. Enterprise's initial proposal recommends the replacement of 111 vehicles year 1 at an estimated cash outflow of $250k first year. For the 111 year 1 leased vehicles the estimated cost, over a 60 month term, is estimated at $3.36m with an "equity" of $3.5m in assets showing a net savings of $570k at the end of term. The flip side of this is if the City were to decide to no longer continue the Enterprise Lease program at the end of the 60 month term, the City would have to choose to sell the 111 vehicles and realize the $572k in savings or would have to purchase the remainder of the book value for $2.3m in order to retain the 111 vehicles.

Non-Police Fleet	
Estimated Equity in Non-Police Replacements	$423,500
Total Annual Cost Including Maintenance (111 units)	$671,916
Total Cost Over 60 Months (111 units)	$3,359,580
Estimated Equity over 60 Months (111 units)	$3,507,959
Total Budget Including Replacements at 60 Months (111 units)	-$571,879
Estimated "Reduced book value" at 60 Months (111 units)	$2,278,173

If the City were to stay with the Enterprise Lease Program over the 10 year period within Enterprise's proposal this would show the City net positive with a rough "projected" savings of a total ~$3m.

Current Fleet	229	Fleet Growth	-0.80%	Proposed Fleet	221
Current Cycle	15.27	Annual Miles	8,800	Proposed Cycle	2.50
Current Maint.	$121.00			Proposed Maint.	$36.01
Maint. Cents Per Mile	$0.165	Current MPG	10	Price/Gallon	$1.80

	Fleet Mix				Fleet Cost							Annual
Fiscal Year	Fleet Size	Annual Needs	Owned	Leased	Purchase	Lease*	Equity (Owned)	Equity (Leased)	Maintenance	Fuel	Fleet Budget	Net Cash
Average	229	15.0	229	0	365,143	0	-30,000		332,508	243,198	910,849	0
'21	221	111	110	111	0	626,754	-520,000	-217,188	207,679	218,768	316,013	594,837
'22	221	85	77	144	0	980,857	-364,650	-430,797	174,021	211,505	570,936	339,913
'23	221	124	40	181	0	1,155,072	-478,450	-412,016	136,283	203,362	604,251	306,598
'24	221	117	14	207	0	1,222,918	-311,025	-646,665	109,765	197,640	572,633	338,217
'25	221	142	0	221	0	1,242,950	-145,800	-980,309	95,486	194,558	406,885	503,964
'26	221	156	0	221	0	1,242,950		-807,642	95,486	194,558	725,352	185,497
'27	221	148	0	221	0	1,242,950		-663,498	95,486	194,558	869,496	41,353
'28	221	130	0	221	0	1,242,950		-753,709	95,486	194,558	779,286	131,563
'29	221	143	0	221	0	1,242,950		-578,046	95,486	194,558	954,949	-44,100
'30	221	123	0	221	0	1,242,950		-1,161,468	95,486	194,558	371,526	539,322
									10 Year Savings		$2,937,164	Avg. Sustainable Savings $170,727



Summary

To continue to support teams in successfully delivering services to the community, the City needs to deploy a strong Fleet Management Program that spans all vehicles and equipment. The continued choice between short term budgetary savings versus purchasing vehicles based on total cost of ownership models has resulted in an old, unreliable, and unsustainable fleet.

The lease program is an appealing option as it would quickly improve the health of the City's mid to light duty vehicles. This would allow the fleet to take an agile approach to changing needs and would require little upfront cash. The two major risk areas in a lease agreement is the cash requirement at time of exit and overhead rate increases impacting long term lease obligations.

The fleet replacement fund is the most desirable from a comprehensive and consistent approach as well as a low cost option as there is not a profit margin built into the pricing as there is with lease options. However, with this approach there would need to be a sizable influx of cash to jump start the fund for sustainable success and would require a strong commitment from the City to support this fund long term.