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CLARK COUNTY
WASHINGTON

Presentation on

Review of Selected Fleet Management Practices

September 20, 2017

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MERCURY

Mercury Associates, Inc. Overview

- 15-year old employee-owned fleet management consulting firm headquartered in Maryland; 30+ employees located in 10 states
- Our mission is to help organizations improve fleet management practices, improve fleet performance, and reduce fleet costs
- More than 230 organizations served in last five years with fleets of <100 to >200,000 vehicles and pieces of equipment



Other Current County Government Clients

- Harford (Baltimore), MD
- Harris (Houston), TX
- Howard, MD (Washington, DC)
- Jefferson (New Orleans), LA
- Loudoun, VA (Washington, DC)
- Orange, CA
- Orange (Orlando), FL
- Prince William, VA (Washington, DC)
- Travis (Austin), TX
- Ventura, CA
- Wake (Raleigh), NC



Project Scope

1. Evaluation of fleet management policies and procedures
2. Evaluation of fleet performance measurement and reporting practices
3. Evaluation of fleet utilization, size, and composition
4. Evaluation of fleet replacement practices, rates, and alternative capital financing approaches
5. Evaluation of fleet cost charge-back practices and rates



1. Fleet Management Policies and Procedures



Reviewed Policies and Procedures in Eight Broad Areas of Fleet Management

1. Asset Allocation and Utilization Management
2. Asset Acquisition and Disposal
3. Asset Maintenance and Repair (including parts and vendor management)
4. Asset Fueling
5. Asset Replacement
6. Fleet Management Resources (facilities, personnel, etc.) Management
7. Fleet Cost Management
8. Customer Service Management



Policies and Procedures – Key Findings

Significant omissions in documented policies and procedures exist in several areas, including:

- Budget approval prior to asset allocation
- Fuel site use and spill prevention
- Alternative fuel vehicle use/care/fuel access
- Parts inventory management and control
- Details capturing repair/fuel activity data
- Customer engagement/feedback
- Budget preparation and ISF oversight/management
- Cost charge-back rate calculation/administration



Policies and Procedures – Key Recommendations

- Develop policies and procedures to address significant gaps identified
- Conduct policy reviews biennially, standardize design format and provide greater access to stakeholders
- Establish Fleet Advisory Committee comprised of key stakeholders
- Formalize SLAs with fleet user agencies defining levels of service and key performance measures
- Establish SLAs with key suppliers defining scope of services, performance metrics and dispute resolution processes



2. Performance Measurement



Performance Measurement – Key Findings

- *FASTER*[™] system captures most data needed to develop commonly used performance metrics
- ESD uses extensive set of KPIs to monitor fleet performance
- Missing KPIs on fuel (cost/mpg) and asset utilization (miles/hours)
- ESD performance falls well within industry norms in most areas in which KPIs are used
- *FASTER* system challenges:
 - PM compliance percentage completion metric
 - Monthly “parts inventory turn” metric



Performance Measurement – Key Recommendations

- Increase focus on a few key metrics to gauge fleet health:
 - Asset cost
 - Asset fuel consumption
 - Asset utilization
- Partner w/ *FASTER* developer to utilize metrics unavailable for root cause analyses:
 - PM schedule compliance rate
 - Asset utilization in hours/miles
 - Asset fuel efficiency in MPG



3. Fleet Utilization, Size, and Composition



Utilization and Rightsizing Analysis Steps

- Profile fleet usage to identify potentially underutilized vehicles
- Survey users of potentially underutilized vehicles
- Analyze survey data and develop preliminary recommendations (retain, investigate, eliminate)
- Meet with agency representatives to finalize recommendations
- Estimate cost savings

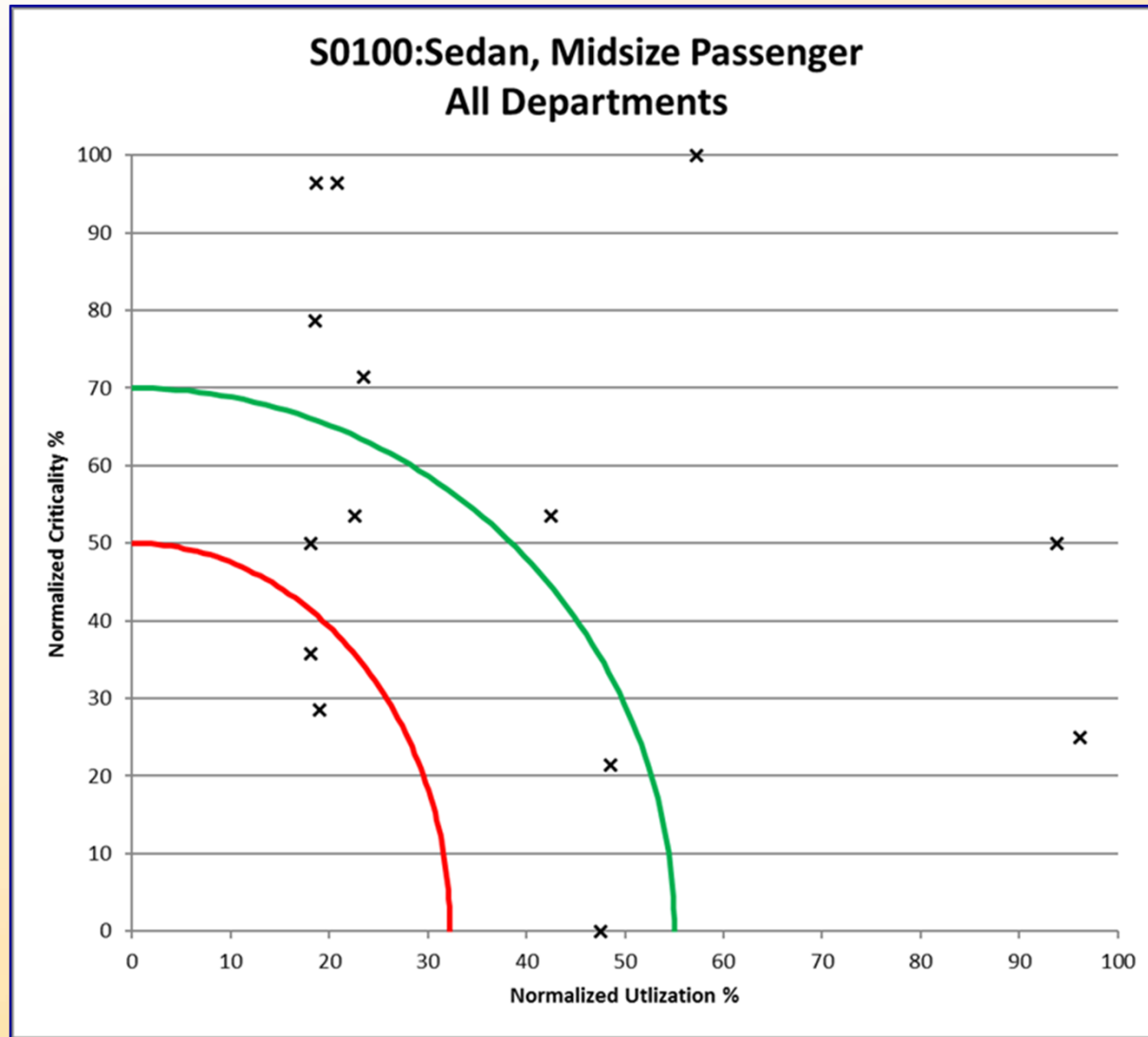


Potentially Underutilized Vehicles

Agency	Surveyed	Not Surveyed	Total	Percentage Surveyed
Sheriff	127	44	171	74%
PW Operations & Maintenance	82	182	264	31%
PW Parks & Recreation	41	51	92	45%
GS Facilities Maintenance	30	2	32	94%
Corrections	28	2	30	93%
PW Construction & Design	28	2	30	93%
PW Equipment Services	20	7	27	74%
CD Building	17	1	18	94%
Assessor	14	0	14	100%
Envir Services/Veg Management	13	2	15	87%
PW Motor Pool	8	1	9	89%
PW Wastewater Treatment Plant	7	6	13	54%
Other Departments	32	11	43	74%
Total	447	311	758	59%



Sample Survey Data Analysis Results



Initial Recommendations

Agency	Eliminate + Investigate	Retain	Total
Sheriff	52	75	127
PW Operations & Maintenance	21	61	82
PW Parks & Recreation	14	27	41
GS Facilities Maintenance	10	20	30
Corrections	10	18	28
PW Construction & Design	15	13	28
PW Equipment Services	7	13	20
CD Building	2	15	17
Assessor	5	9	14
Envir Services/Veg Management	1	12	13
PW Motor Pool	2	6	8
PW Wastewater Treatment Plant	0	7	7
Other Departments	7	25	32
Total	146	301	447



Results of Consensus Meetings with Selected Agencies

Agency	Total Vehicles Surveyed	Vehicles on Which Consensus was Reached*	Recommendation		Consensus		
			Eliminate + Investigate	Retain	Eliminate	Possibly Eliminate	Keep
Sheriff	127	1	52	75	1	0	126
PW Operations & Maintenance	82	4	21	61	1	3	78
PW Parks & Recreation	41	1	14	27	0	1	40
GS Facilities Maintenance	30	1	10	20	0	1	29
Corrections	28	1	10	18	1	0	27
PW Construction & Design	28	7	15	13	0	4	24
PW Equipment Services	20	25	7	13	15	1	4
CD Building	17	0	2	15	0	0	17
Assessor	14	0	5	9	0	0	14
Envir Services/Veg Management	13	0	1	12	0	0	13
PW Motor Pool	8	2	2	6	2	0	6
PW Wastewater Treatment Plant	7	0	0	7	0	0	7
Other Departments	32	0	7	25	0	0	32
Totals	447	42	146	301	20	10	417



Cost Savings from Rightsizing (\$000)

Cost	Year					Total
	2017	2018	2019	2020	2021	
Avoided Replacement Cost of Immediately Eliminated Units	\$92.8	\$95.9	\$99.0	\$102.0	\$105.6	\$495.5
Proceeds from Sale of Immediately Eliminated Units	\$72.2	\$0.0	\$0.0	\$0.0	\$0.0	\$72.2
Total Capital Cost Savings	\$165.0	\$95.9	\$99.0	\$102.2	\$105.6	\$567.7
Percentage of M&R Costs of Eliminated Units That is Avoidable	13%	26%	39%	40%	40%	
M&R Cost Savings	\$9.6	\$20.7	\$33.5	\$37.1	\$40.1	\$141.1
Percentage of Fuel Costs of Eliminated Units that is Avoidable	50%	50%	50%	50%	50%	
Fuel Cost Savings	\$12.8	\$13.2	\$13.7	\$14.1	\$14.6	\$68.4
Total Operating Cost Savings	\$22.4	\$33.9	\$47.2	\$51.3	\$54.7	\$209.5
Combined Capital and Operating Cost Savings	\$187.4	\$129.8	\$146.2	\$153.5	\$160.3	\$777.2



Fleet Size and Composition – Key Recommendations

- Follow up with affected departments to remove additional 10 assets earmarked for elimination
- Evaluate expansion of the current motor pool and explore additional car sharing opportunities
- Evaluate merits of increased POV use
- Continue monitoring asset utilization on a quarterly basis to maintain focus on rightsizing and identification of opportunities to use alternatives to owning assets



4. Fleet Replacement



Replacement Analysis Tasks

- Quantify current fleet replacement backlog and future fleet replacement costs based on reasonable replacement cycles by type of vehicle
- Calculate replacement rates for use with current reserve fund financing approach
- Quantify future fleet replacement funding requirements under alternative capital financing approaches: outright cash purchase, reserve fund (current financing method), and debt

Note: Future replacement dates, purchase prices, residual values, ISF replacement rates, and loan costs were calculated by individual asset by year.



Sample Stated v Actual v Recommended Replacement Cycles

Asset Class	Number in Fleet	County's Stated Repl Cycle (years)	Current Median Age (years)	De Facto Repl Cycle (years)	Mercury Suggested Repl Cycle (years)
SUV or Sedan, Law Enforcement Patrol	125	6	4	8	5
Truck, 1-Ton Utility	49	12	11	22	10
Sedan, Midsize Passenger	43	12	10	20	7
Van, Full-size 12-Passenger	31	12	11	22	10
SUV, Midsize	46	12	11	22	7
Pickup, ¾-Ton	73	12	11	22	8

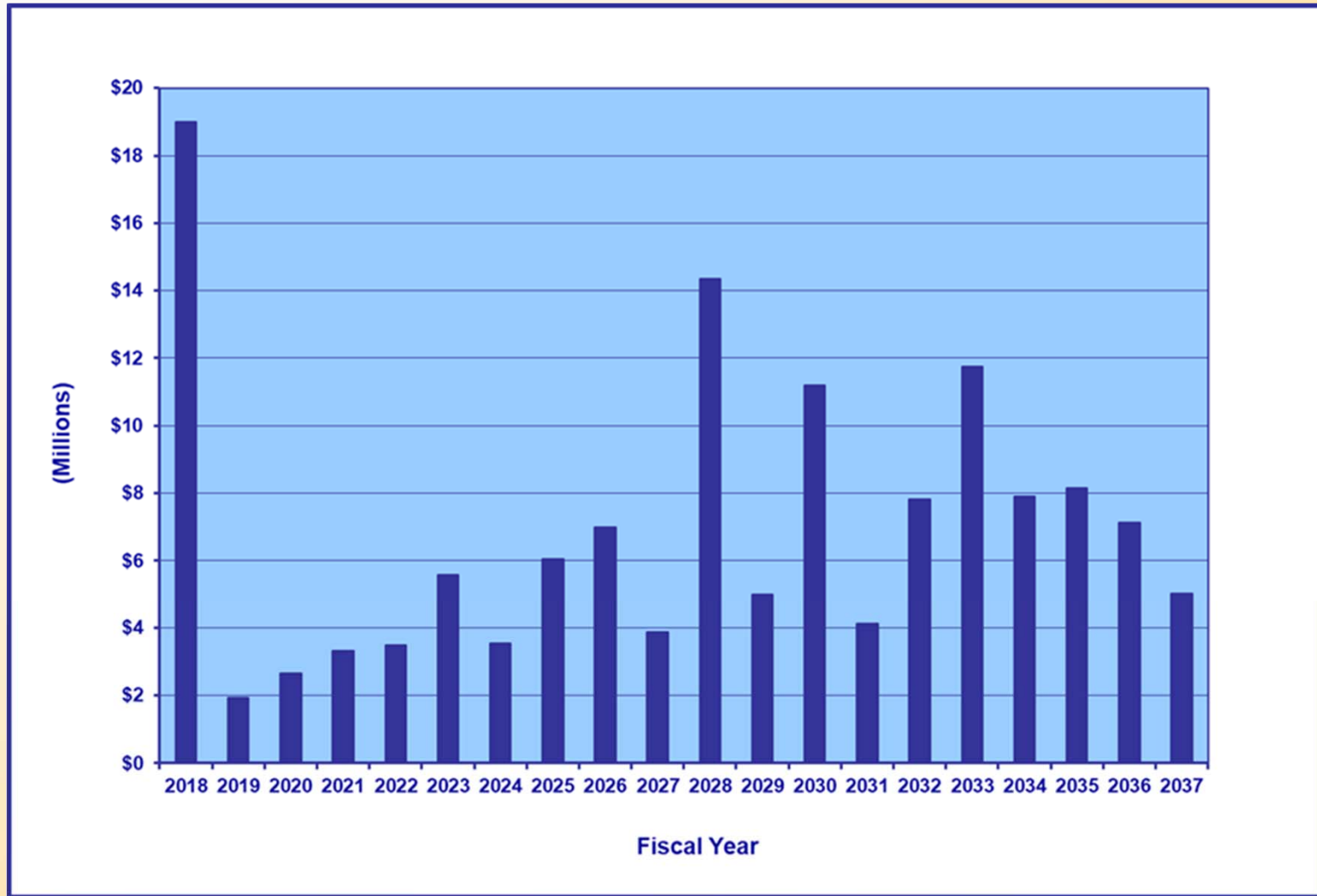


Sample Asset Classes and Planning and Rate Development Parameters

Class Description	Replacement Cycle (months)	Replacement Cycle (miles/hours)	Current Acquisition Cost	Annual Inflation Rate
SUV, Law Enforcement Patrol	60	75,000	\$ 61,600	3.28%
Sedan, Intermediate	84	100,000	\$ 23,000	3.28%
Pickup, ¾-Ton 4x4 Extended Cab	96	120,000	\$ 48,000	3.28%
Van, Mini Cargo/Passenger	96	120,000	\$ 23,000	3.28%
Truck, 1-Ton Utility	120	150,000	\$ 57,000	4.00%
Truck, Single-Axle Dump	120	8,000	\$ 165,000	4.00%
Backhoe/Loader	144	8,000	\$ 146,000	4.00%
Trailer, Flatbed	180	N/A	\$ 18,000	4.00%



Baseline Replacement Plan

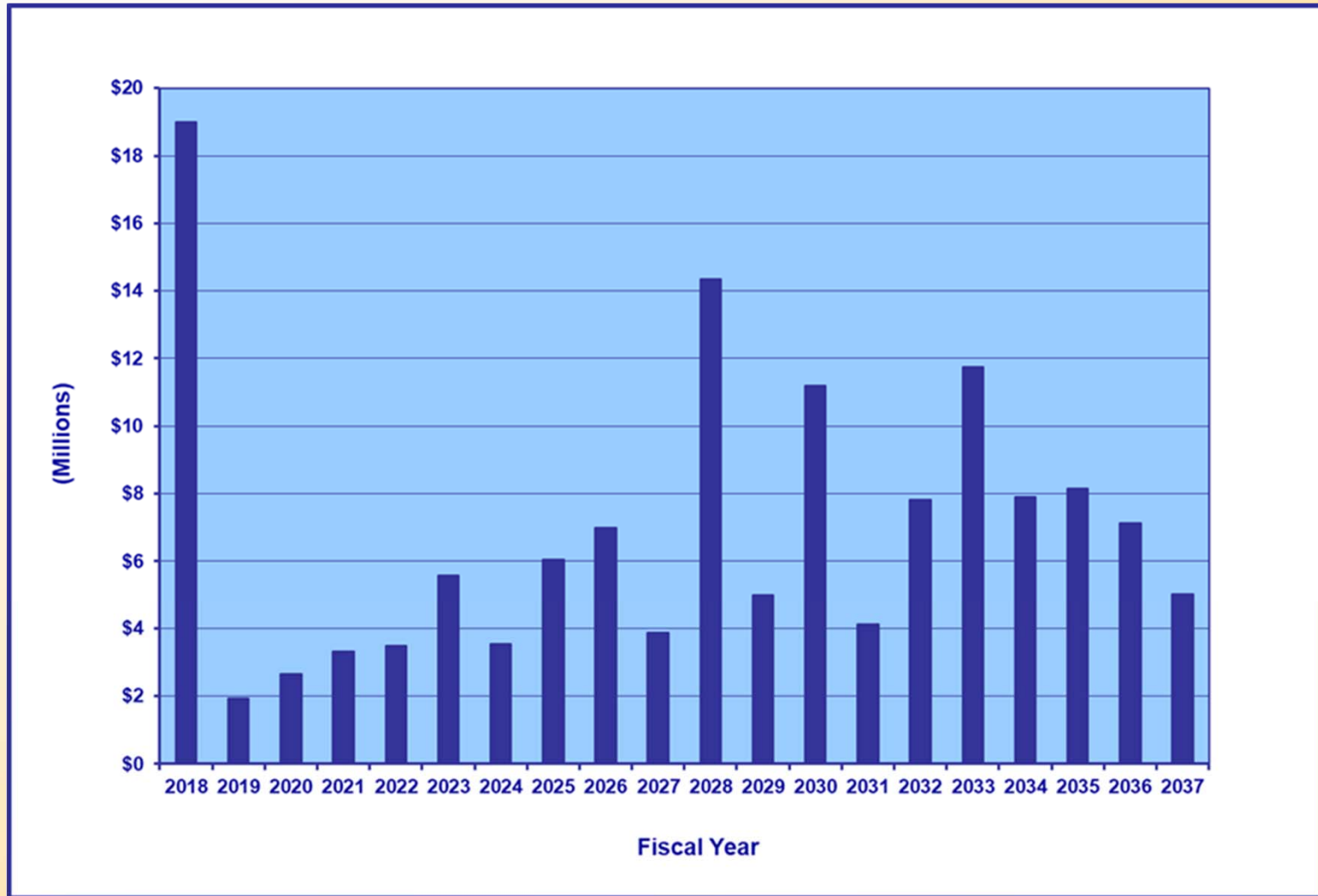


Key Replacement Statistics

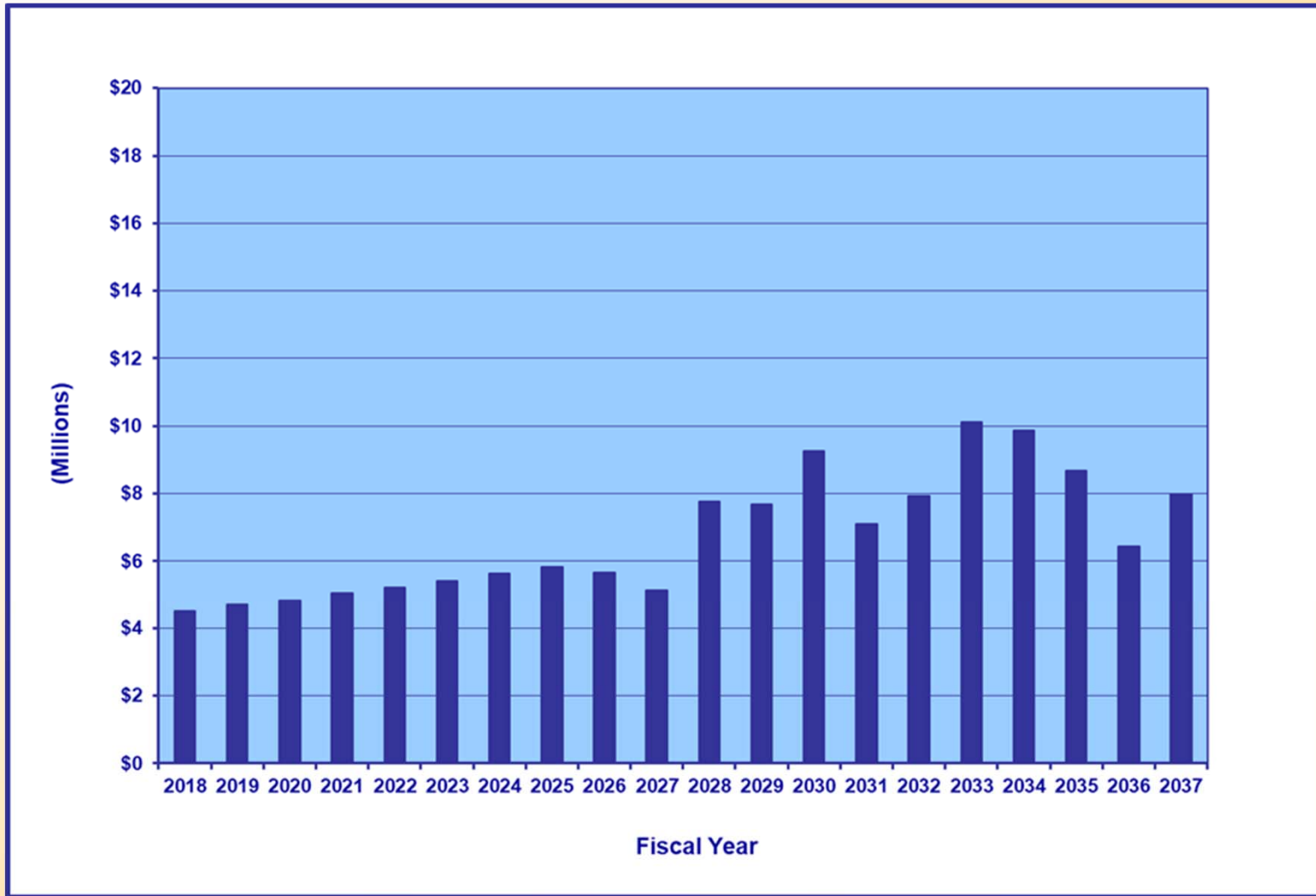
Number of assets in the fleet	758
Mean/median asset age (years)	10.3/9.0
De facto average replacement cycle (years)	18.0
Weighted average recommended replacement cycle (years)	9.5
Number of assets that will exceed recommended replacement age in FY 2018	343
Percentage of assets that will exceed recommended age at start of FY 2018	45%
Current replacement cost of the entire fleet	\$40.4 M
Cost of replacing assets that will exceed recommended age at start of FY 2018	\$17.1 M
Cost of replacing assets overdue for replacement as a percentage of total fleet replacement cost	42%
Average annual fleet replacement cost	\$4.3 M
Average annual value of asset purchases (FY2013–17)	\$2.1 M
Years of replacement backlog based on average annual replacement <i>cost</i>	4.0
Years of replacement backlog based on average annual value of replacement <i>purchases</i>	8.1



Baseline Replacement Plan



Smoothed Replacement Plan



Baseline versus Smoothed Plan

Fiscal Year	Assets Replaced		Cost (millions)	
	<i>Baseline</i>	<i>Smoothed</i>	<i>Baseline</i>	<i>Smoothed</i>
2018	382	107	\$ 19.0	\$ 4.5
2019	34	74	\$ 1.9	\$ 4.7
2020	51	103	\$ 2.6	\$ 4.8
2021	53	87	\$ 3.3	\$ 5.1
2022	49	72	\$ 3.5	\$ 5.2
2023	98	87	\$ 5.6	\$ 5.4
2024	54	94	\$ 3.5	\$ 5.6
2025	121	98	\$ 6.1	\$ 5.8
2026	116	100	\$ 7.0	\$ 5.7
2027	50	78	\$ 3.9	\$ 5.1
Totals	1,008	900	\$ 56.4	\$ 52.0

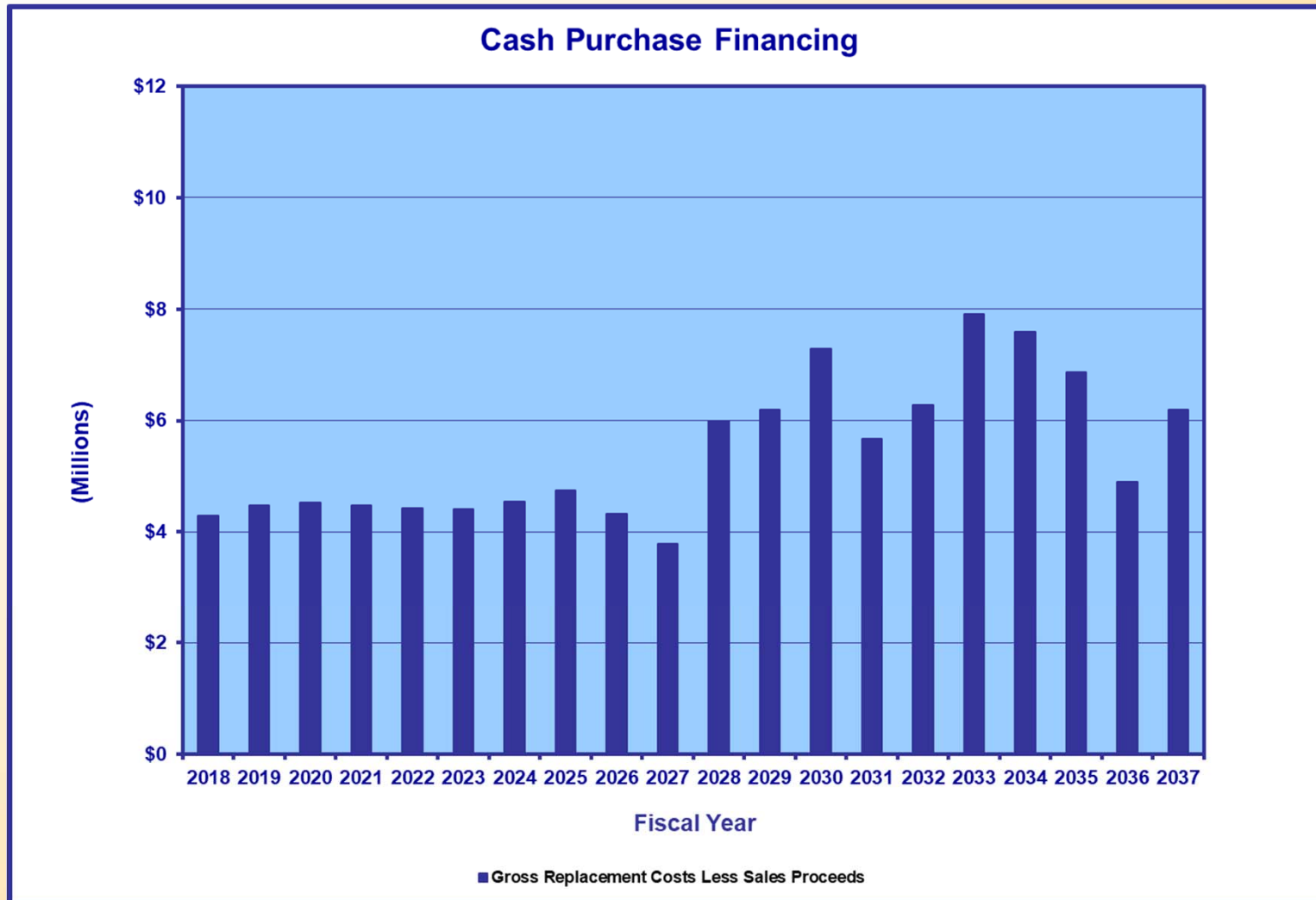


Near-Term Replacement Costs by Fund

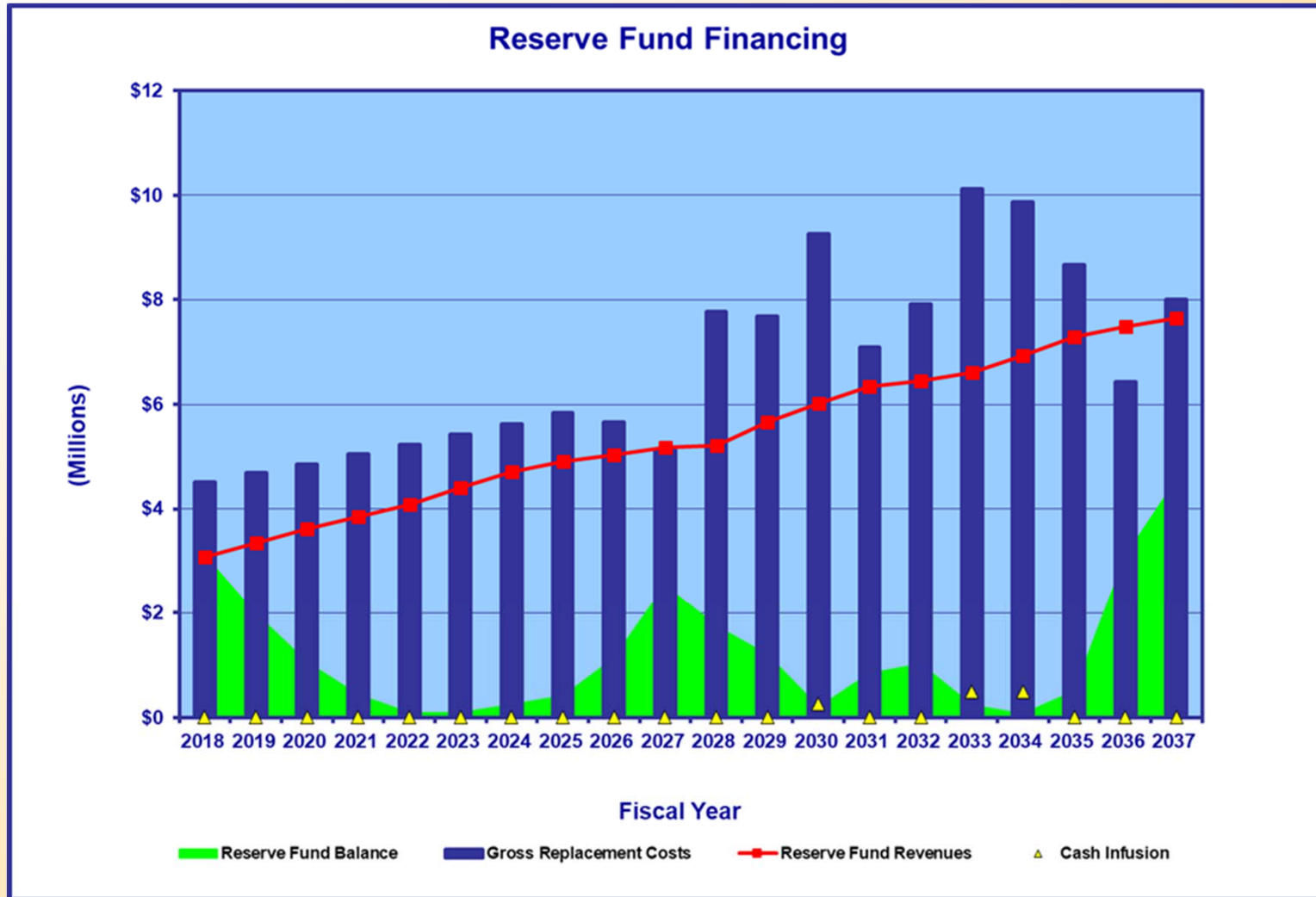
Fiscal Year	Cost (millions)		
	<i>General</i>	<i>Road</i>	<i>Other</i>
2018	\$1.5	\$1.9	\$1.1
2019	\$1.0	\$3.1	\$0.6
2020	\$1.9	\$2.3	\$0.6
2021	\$2.5	\$1.8	\$0.8
2022	\$2.9	\$2.1	\$0.2
2023	\$4.1	\$0.9	\$0.4
2024	\$3.0	\$2.1	\$0.5
2025	\$2.5	\$2.8	\$0.6
2026	\$2.7	\$2.0	\$0.9
2027	\$3.5	\$1.3	\$0.3
Totals	\$25.6	\$20.4	\$6.0



Funding Requirements Under Cash Purchase Financing



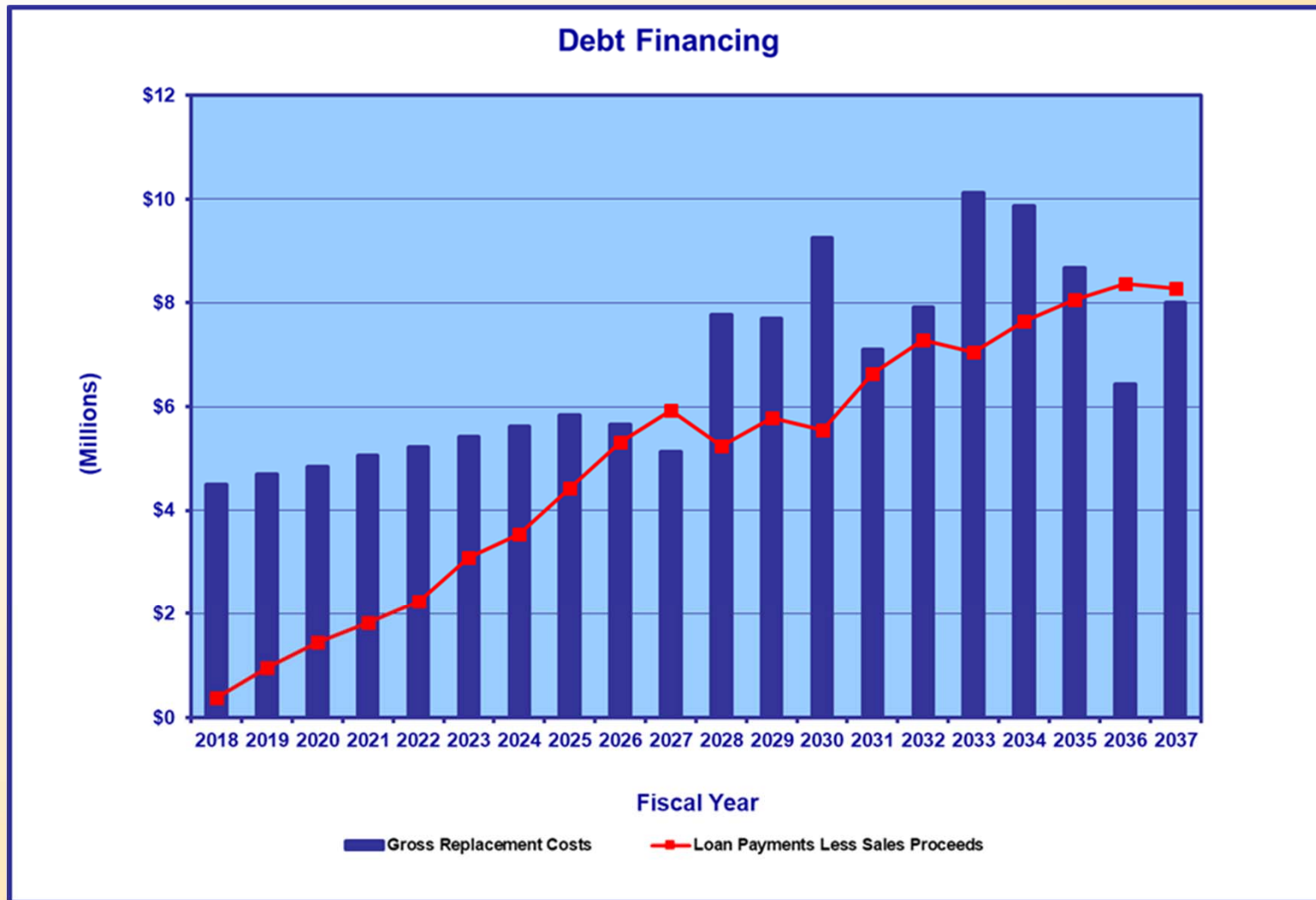
Funding Requirements Under Reserve Fund Financing



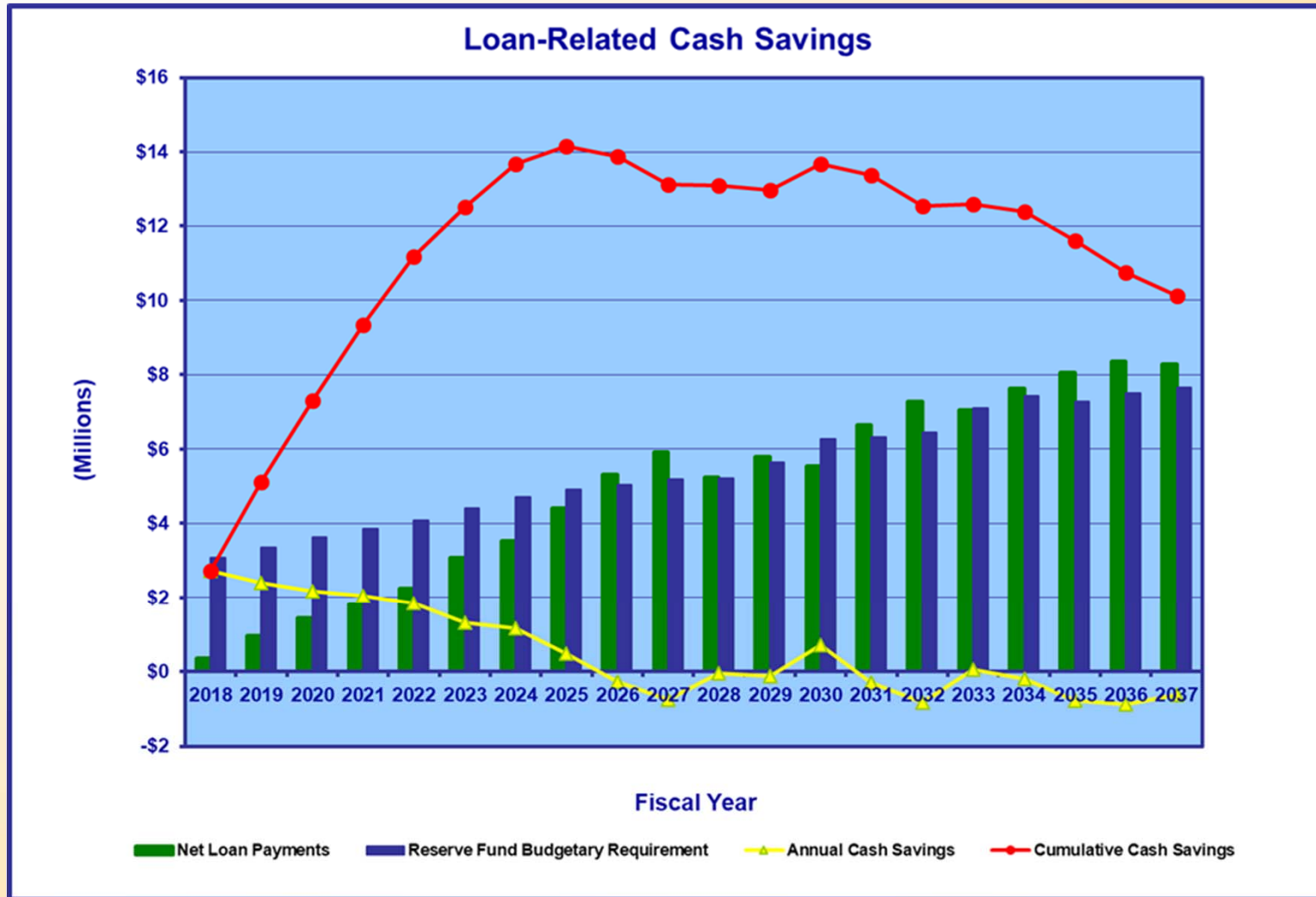
Analysis assumes \$4.3 unencumbered cash balance at start of FY 2018



Funding Requirements Under Debt Financing



Savings from Debt vs Reserve Fund Financing



*Savings amounts *exclude* elimination of FY2018 starting reserve fund balance of \$4.3M



Side-by-Side Comparison of Capital Financing Approaches

	Fiscal Year										
Costs/Funding Requirements/Savings	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Gross Replacement Costs	\$4.5	\$4.7	\$4.8	\$5.1	\$5.2	\$5.4	\$5.6	\$5.8	\$5.7	\$5.1	\$52.0
Replacement Purchases Less Used Asset Sale Proceeds	\$4.3	\$4.5	\$4.5	\$4.5	\$4.4	\$4.4	\$4.5	\$4.7	\$4.3	\$3.8	\$44.0
Reserve Fund Cash Infusions Plus Charges	\$3.1	\$3.4	\$3.6	\$3.9	\$4.1	\$4.4	\$4.7	\$4.9	\$5.0	\$5.2	\$42.2
Debt Service Costs Less Used Asset Sale Proceeds	\$0.4	\$1.0	\$1.4	\$1.8	\$2.2	\$3.1	\$3.5	\$4.4	\$5.3	\$5.9	\$29.1
Budget Savings, Debt Versus Reserve Fund Financing*	\$2.7	\$2.4	\$2.2	\$2.0	\$1.8	\$1.3	\$1.2	\$0.5	-\$0.3	-\$0.7	\$13.1
Cumulative Budget Savings*	\$2.7	\$5.1	\$7.3	\$9.3	\$11.2	\$12.5	\$13.7	\$14.2	\$13.9	\$13.1	

	Fiscal Year										
Costs/Funding Requirements/Savings	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	Total
Gross Replacement Costs	\$7.8	\$7.7	\$9.3	\$7.1	\$7.9	\$10.1	\$9.9	\$8.7	\$6.4	\$8.0	\$82.9
Replacement Purchases Less Used Asset Sale Proceeds	\$6.0	\$6.2	\$7.3	\$5.7	\$6.3	\$7.9	\$7.6	\$6.9	\$4.9	\$6.2	\$64.9
Reserve Fund Cash Infusions Plus Charges	\$5.2	\$5.7	\$6.3	\$6.3	\$6.5	\$7.1	\$7.4	\$7.3	\$7.5	\$7.7	\$66.9
Debt Service Costs Less Used Asset Sale Proceeds	\$5.2	\$5.8	\$5.6	\$6.6	\$7.3	\$7.1	\$7.6	\$8.1	\$8.4	\$8.3	\$69.9
Budget Savings, Debt Versus Reserve Fund Financing*	\$0.0	-\$0.1	\$0.7	-\$0.3	-\$0.8	\$0.0	-\$0.2	-\$0.8	-\$0.9	-\$0.6	-\$3.0
Cumulative Budget Savings*	\$13.1	\$13.0	\$13.7	\$13.4	\$12.5	\$12.6	\$12.4	\$11.6	\$10.8	\$10.1	

*Savings amounts *exclude* elimination of FY2018 starting reserve fund balance of \$4.3M



Fleet Replacement – Key Recommendations

- Refine and implement the smoothed replacement plan, incorporating results of fleet rightsizing analysis
- Determine optimal replacement cycles for key asset types
- Identify the financing method most suitable to support the implementation of the final, smoothed replacement plan
 - Implement the reserve fund charge-back rates developed by Mercury which, combined with the current fund balance, will be sufficient to finance fleet modernization
 - Consider financing the replacement of all or part of the fleet with debt to reduce short-term budgetary requirements and thus facilitate timely replacements

Update replacement plan and rates annually



5. Fleet Cost Charge-Back Practices



Guiding Principles

- Government jurisdictions generally use internal service funds and cost charge-back systems for four reasons:
 1. To facilitate the distribution of governmental fund (GF) costs to non GF entities such as enterprise and special revenue fund agencies
 2. To facilitate activity-based costing for expense reimbursement claiming under certain state and federal grant programs
 3. To facilitate the accumulation of cash reserves for the replacement of capital assets
 4. To facilitate the effective consumption and provision of goods and services
- Reason #4 is far and away the most important



Key Benefits of an ISF per GFOA*

- Govern demand for a service
- Promote discussion about the value of the service provided
- Examine value of a shared service model
- Promote competition in service delivery
- Support customization of service levels for different customers

* *Pricing Internal Services*. Chicago: Government Finance Officers Association, 2013 (available at <http://www.gfoa.org/pricing-internal-services>).



Cost Charge-Back Practices – Key Findings

- Charge-back rates are used to recover operating costs to the Equipment Rental & Revolving Fund (ERRF), an industry best practice
- Separate rates are used to distribute asset capital and operating costs, also a sound practice
- Capital (replacement) rates are calculated by individual asset, an industry best practice, but rate calculation formula used by *FASTER* is flawed
- Adequacy of current rates from a cost recovery standpoint cannot be ascertained from ERRF financial statements since capital and operating revenues and costs are comingled
- Current operating rates result in cross subsidization and do not facilitate fleet cost management and accountability
- Rate development methodology is not documented and the basis for some of the rates currently used cannot be explained



Sample Monthly M&R Rates

Class Code	Description	Rate
T9011	Truck, Catch Basin Cleaner	\$4,102.36
H4500	Street Sweeper	\$3,617.06
F3000	Roadside Brush Cutter	\$3,604.94
T9002	Truck, Paint Striper	\$3,341.29
T3000	Truck, Tandem Axle Dump	\$1,108.08
F1000	Utility Tractor w/Roadside Mower	\$972.23
H2000	Backhoe Loader	\$937.42
H3000	Wheel Loader	\$645.44
T9015	Truck, Box Body	\$635.45
T2000	Truck, Single Axle Dump	\$569.62
S3300	SUV, Full-Size - Sheriff Patrol	\$284.20
S2000	Sedan, Full-Size Sheriff Patrol	\$277.65
P2300	Pickup, 3/4 Ton 4x4 Regular Cab	\$204.44
S3100	SUV, Mid-Size 4x4	\$178.88
V0500	Van, Mini Cargo & Passenger	\$147.24
S3400	SUV, Full-Size 4x4	\$133.12
S0100	Sedan, Midsize	\$100.86
V2000	Van, Full-Size 12 Passenger	\$87.04
S3200	SUV, Compact	\$72.70



Cost Charge-Back Practices – Key Recommendations

- Employ service-based rates and markups on pass-through costs to recover operating costs on a transaction-by-transaction basis, except for fleet asset management and administration costs, which should be recovered through a fixed monthly fee per asset
- Recommended operating cost rate structure:
 1. Fleet Asset Management and Administration Fee
 2. In-House Mechanic Labor Rate
 3. Parts Procurement and Supply Markup
 4. Sublet Services Management Markup
 5. Fuel Management Markup
- Employ replacement rates furnished by Mercury if reserve fund financing continues to be used



Current versus Recommended Operating Cost Charge-Back Rates

Rate Type	Current Rate	Recommended Rate	Difference
Asset Management and Administration Fee (per asset per month) - Average for non-specialty vehicles	\$25	\$19	-\$6
Shop Labor Rate (per hour charged to a WO)	\$97	\$119	\$22
Fuel Management Markup (per gallon) - Percent per Gallon	10%	\$.34	N/A
Sublet Services Management Markup (per \$1 of vendor charges)	5%	7%	2%
Parts Management Markup (per \$1 of parts charged to a WO)	26%	25%	-1%



Sample Recommended Replacement Rates

Asset Type	Net Capital Cost	Replacement Cycle (yrs)	Annual Straight-Line Depreciation	FY 2018 Surcharge	Total Annual Replacement Rate
SUV, Law Enf. Patrol	\$ 31,444	5	\$ 6,289	\$ 3,277	\$ 9,566
Sedan, Intermediate	\$ 13,222	7	\$ 1,889	\$ 984	\$ 2,873
Pickup, ¾-T 4x4 Ext. Cab	\$ 18,917	8	\$ 2,365	\$ 1,232	\$ 3,597
Van, Mini Cargo/Passenger	\$ 15,742	8	\$ 1,968	\$ 1,025	\$ 2,993
Truck, 1-Ton Utility	\$ 30,093	10	\$ 3,009	\$ 1,568	\$ 4,578
Truck, Single-Axle Dump	\$ 133,115	10	\$ 13,311	\$ 6,937	\$ 20,249
Backhoe/Loader	\$ 104,852	12	\$ 8,738	\$ 4,554	\$ 13,291
Trailer, Flatbed	\$ 13,752	15	\$ 917	\$ 478	\$ 1,395

Notes:

- Replacement rates are calculated for each individual asset; therefore, the rates shown are not necessarily the same for all assets in these asset classes.
- The net capital cost is the original purchase price less the estimated residual value.
- Based on starting fund balance of \$4.3M in FY 2018, total annual replacement surcharge averages 34 percent of total annual depreciation over next 20 years. Surcharges change slightly from year to year based on changes in the future working capital requirements of the reserve fund.



Recap

- Policies and procedures should be developed to institutionalize all key facets of fleet management practice
- A limited number of KPIs should be used to report on key outputs and outcomes of fleet management endeavors; input-based metrics should be used to aid ESD operations management
- Identified rightsizing opportunities should be pursued
- Fleet should be modernized
- Replacement guidelines for key asset types should be validated through empirical analysis
- Fleet asset operating costs should be made more visible through changes in charge-back rate structure



Questions / Discussion

