



Mayor Muriel Bowser
City Administrator Rashad M. Young



FLEET STAT

DPW • FEMS • MPD • OSSE • DDOT • DPR

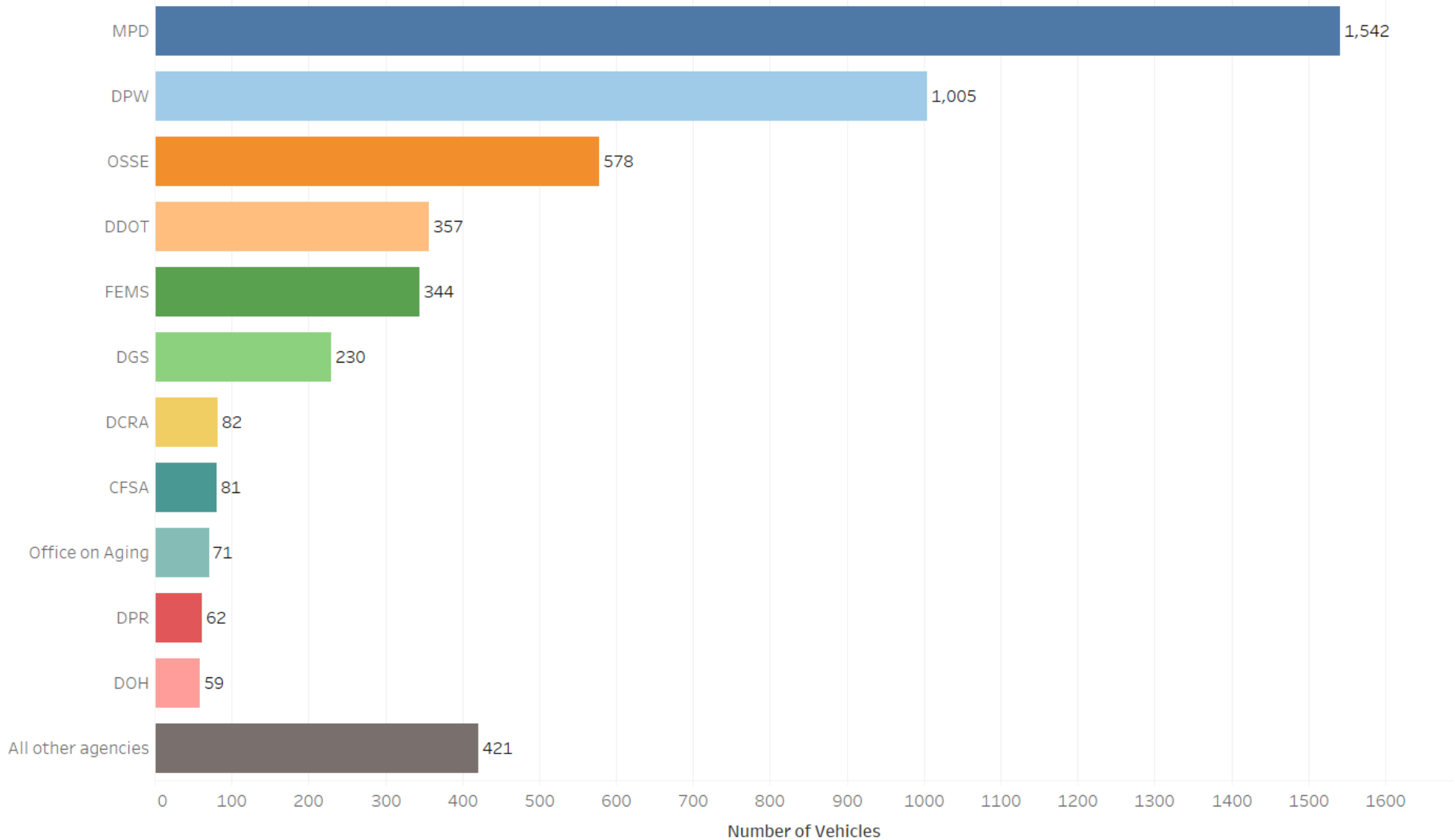
Agenda



1. Key Questions:
 - a) What is the District's current fleet inventory?
 - b) How does the District currently evaluate its fleet?
 - c) What is the condition of the current fleet?
 - d) What do District agencies spend on fleet operations?
Maintenance?
 - e) What are the proposed FY18 fleet budget enhancements?
2. Challenges
3. Recommendations
4. Appendix Slides



District's Fleet by Agency



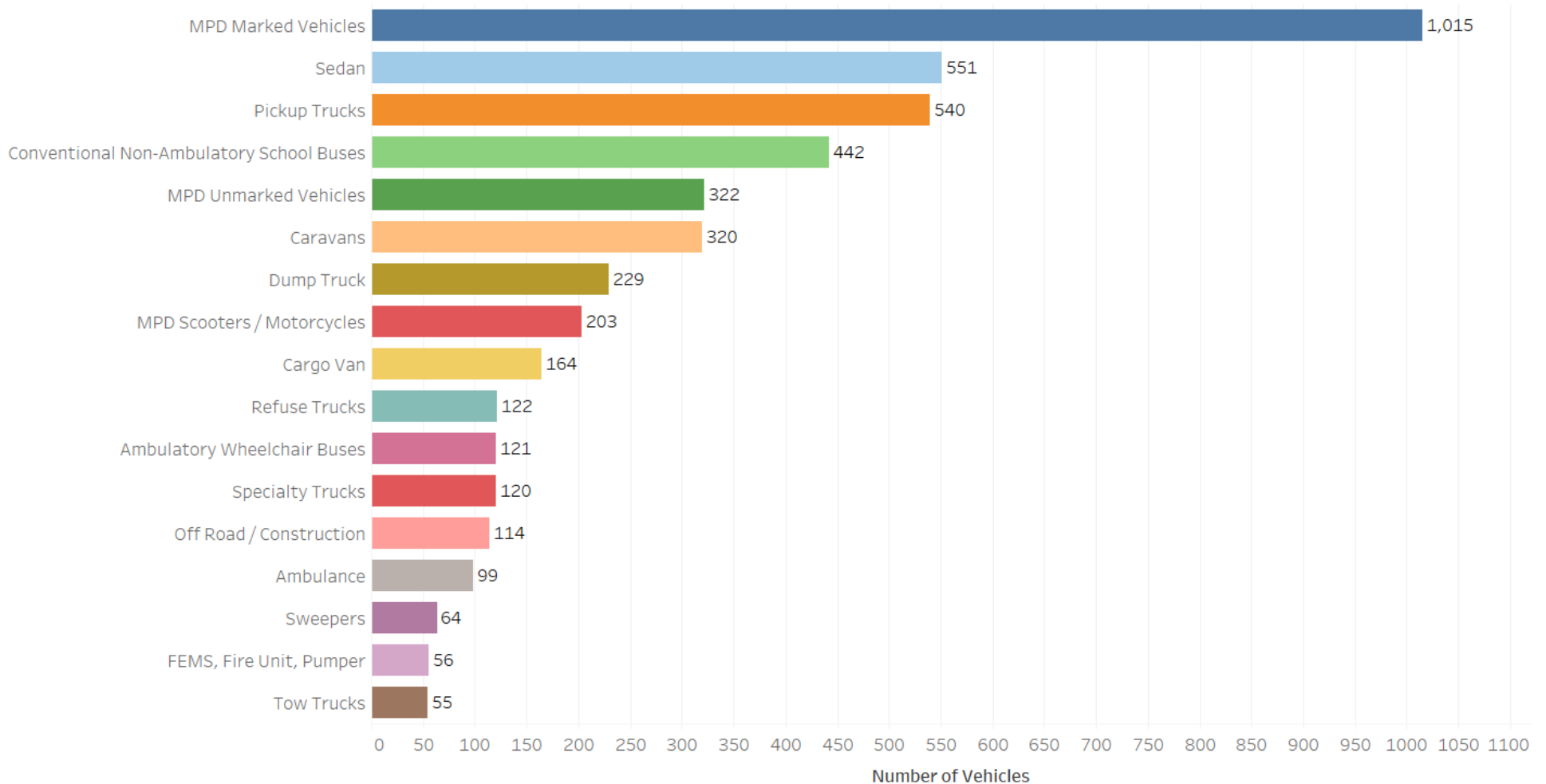
*Active vehicles only; non-self propelled vehicles, trailers, golf carts, and show pieces are excluded

**DPW manages the District's fleet, excluding MPD, OSSE, FEMS, DOC, and DC Housing Authority

**Agencies w/more than 50 vehicles are displayed individually, all others are grouped



What types of vehicles are in the District's Fleet?



*Vehicle types w/50 or more displayed

**Active vehicles only; non-self propelled vehicles, trailers, and golf carts are excluded

How does the District evaluate its fleet?



Methods for evaluating fleet include:

1. Program / agency assessments
2. 3rd party consultant reviews / assessments
3. CARSS condition scores; used by Office of Budget and Finance (scores were used to evaluate FEMS' and OSSE's FY18 budget requests)

CARRS condition scores* measure a vehicle's risk / need for replacement on a 20-point scale. Condition scores are determined by three factors:

1. Maintenance cost life-to-date (labor, parts, warranty costs, etc.)
2. Life-to-date mileage or engine hours (whichever is greater)
3. Expended life in months

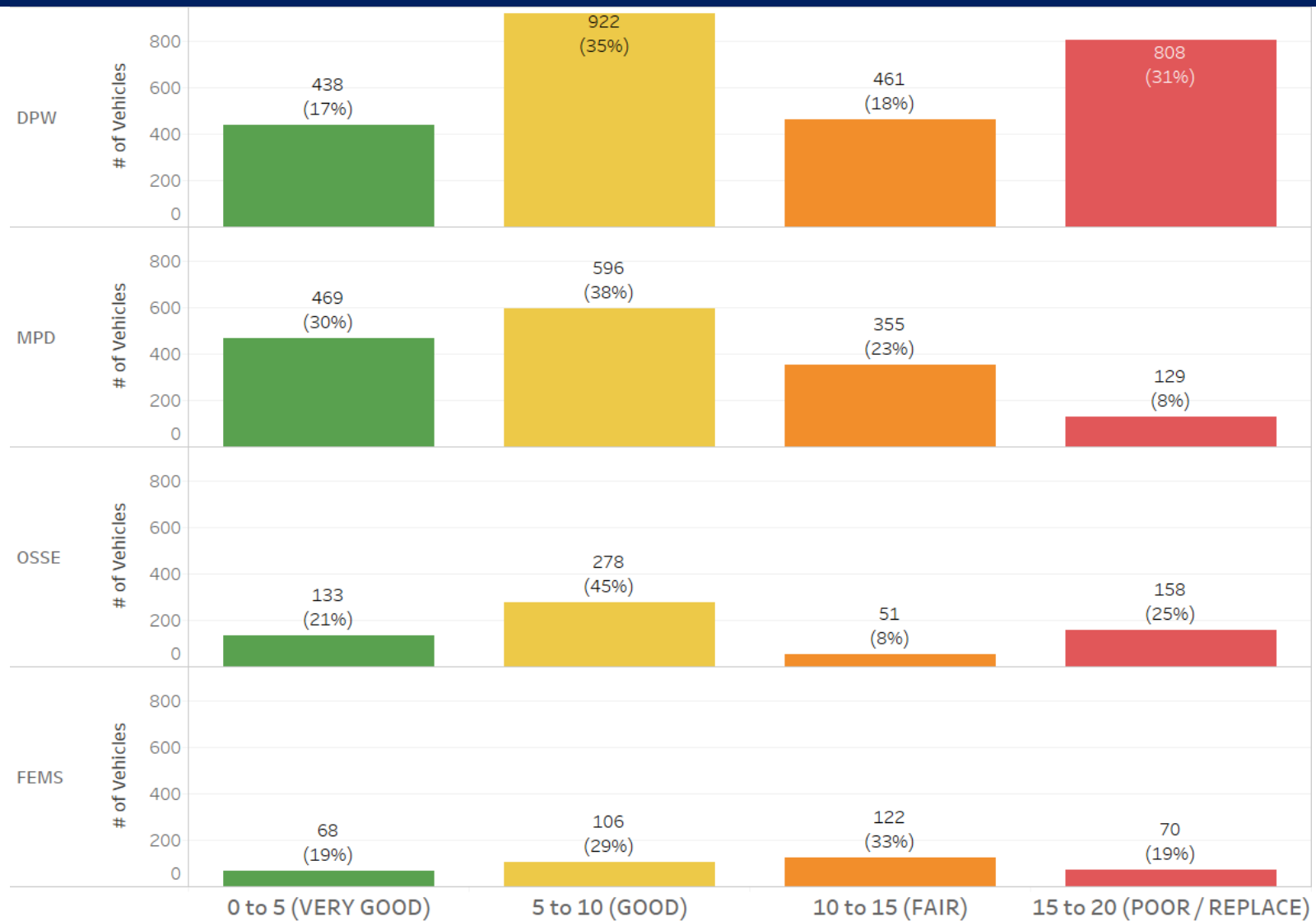
Condition Continuum



*Additional information on CARSS condition scores in the appendix



CARSS Condition Distribution: All agencies



*Vehicles w/a condition score of 15 or greater should be replaced

**DPW includes all District agencies except FEMS, MPD, OSSE, DOC, and DC Housing Authority

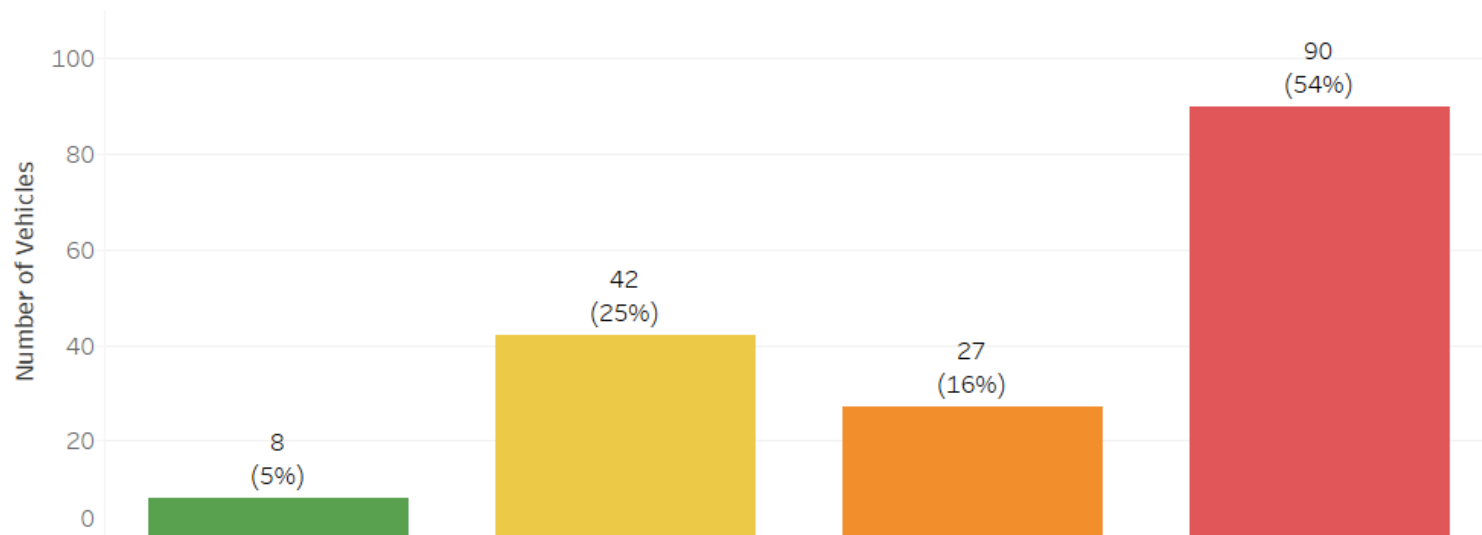
***OSSE requires 566 buses for daily operations; ~12% of buses are OOS daily; see appendix for additional information on OSSE maintenance and bus downtime

**Condition scores are for all items in FASTER (3.13.17); may include some non-propelled vehicles in overall count

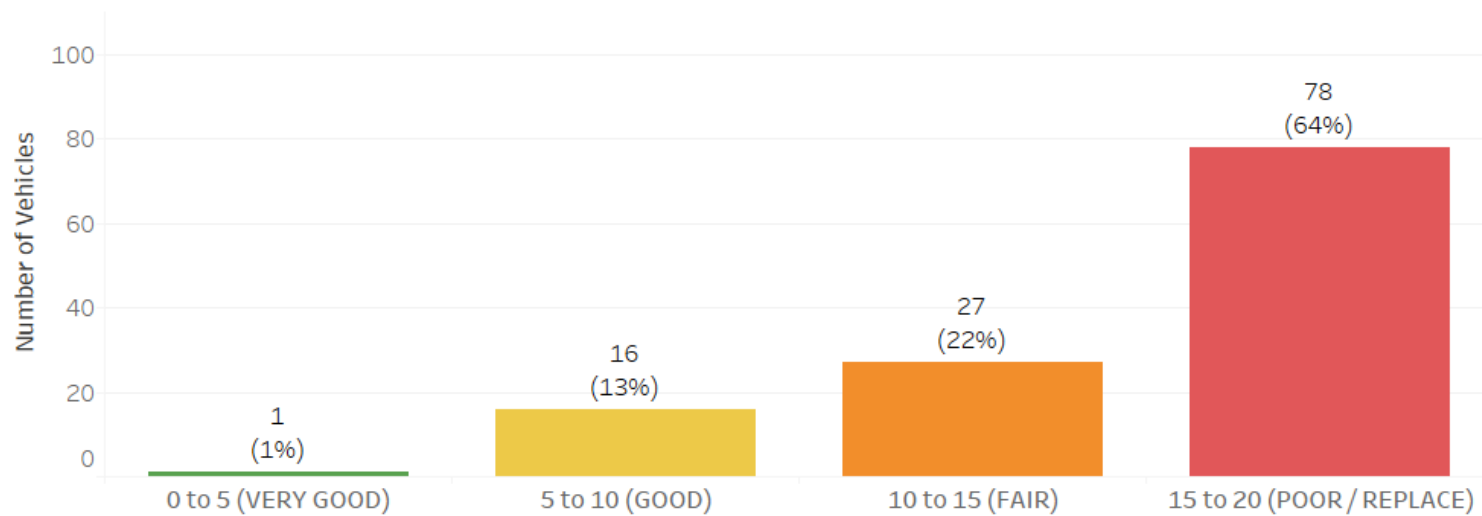


CARSS Condition Distribution: DPW Street Maintenance Assets and Garbage Trucks

DPW Street Maintenance Assets



DPW Garbage Trucks



*Vehicles w/a condition score of 15 or greater should be replaced

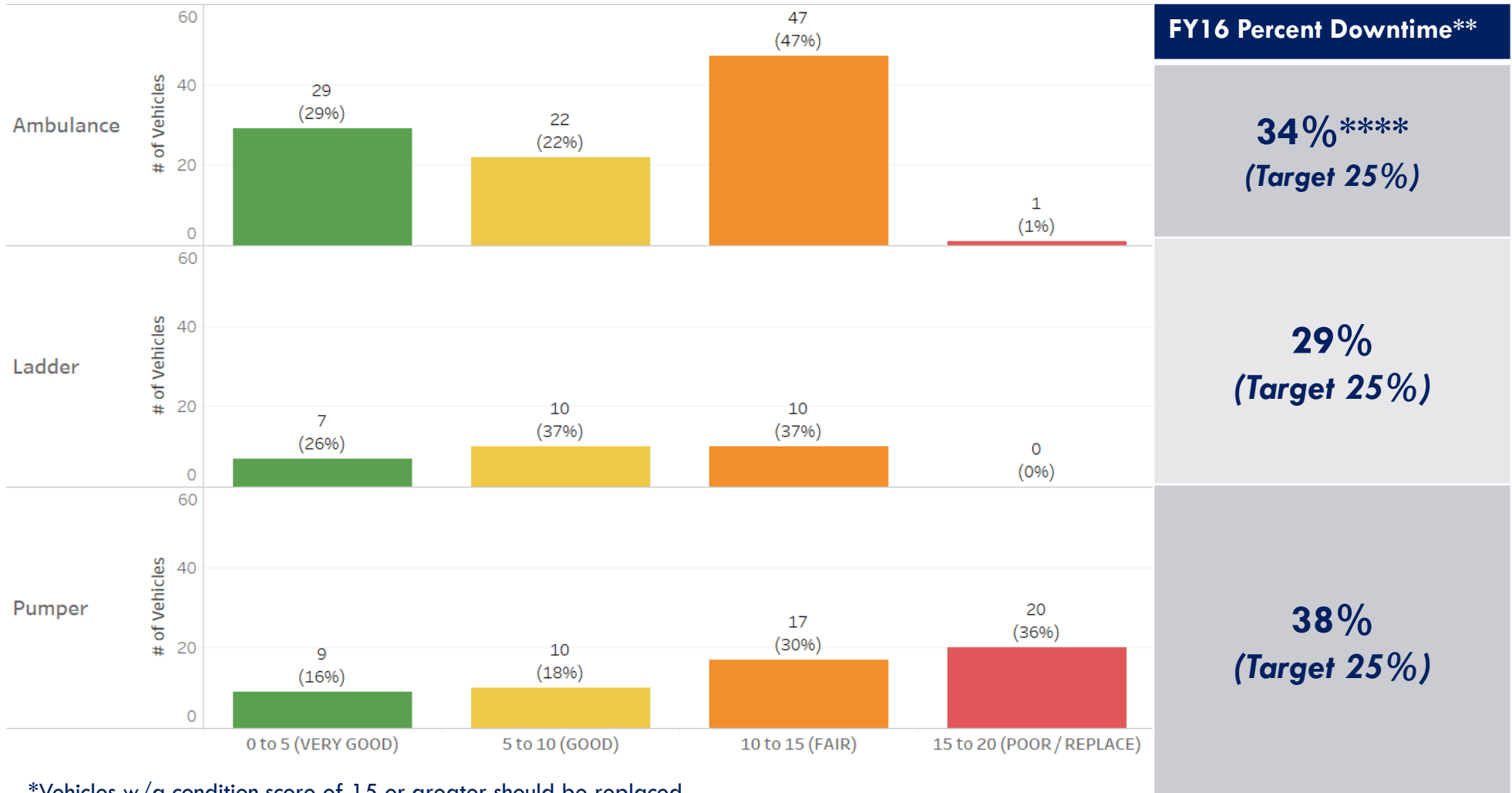
**Street Maintenance Assets include: Alley and Road Sweepers, Mini Vacuums, Street Flushers and off road mowers and loaders.

Garbage trucks includes all size refuse trucks. Note, DCRA operate 3 of the trucks



CARSS Condition Distribution: FEMS

FEMS requires 39 frontline ambulances for daily operations; 16 ladder trucks; and, 33 pumpers***



*Vehicles w/a condition score of 15 or greater should be replaced

**Numerator: Duration of time from when a work order for vehicle maintenance or repair is created until when a work order is moved to “completed” status summarized for all “active” vehicles by type / Denominator: Duration of expected operating hours summarized for all “active” vehicles by type.

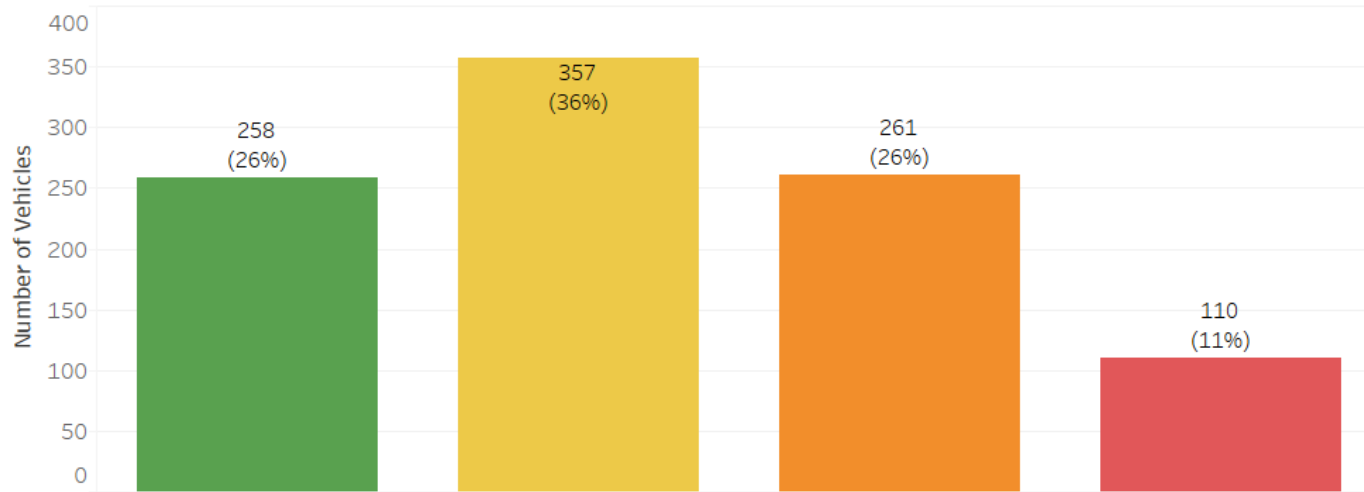
***Additional details in the appendix

****FEMS met its percent downtime target in FY17 Q1 for ambulances

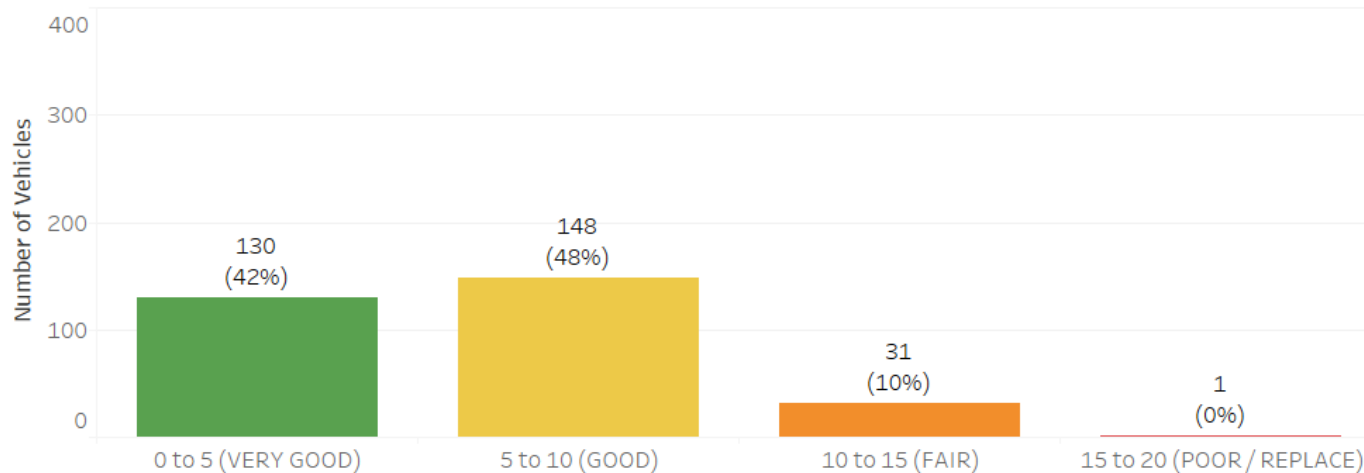


CARSS Condition Distribution: MPD's Marked and Unmarked Fleet

MPD Marked Fleet



MPD Unmarked Fleet



FY 16 Percent Downtime***

~4%

~4%

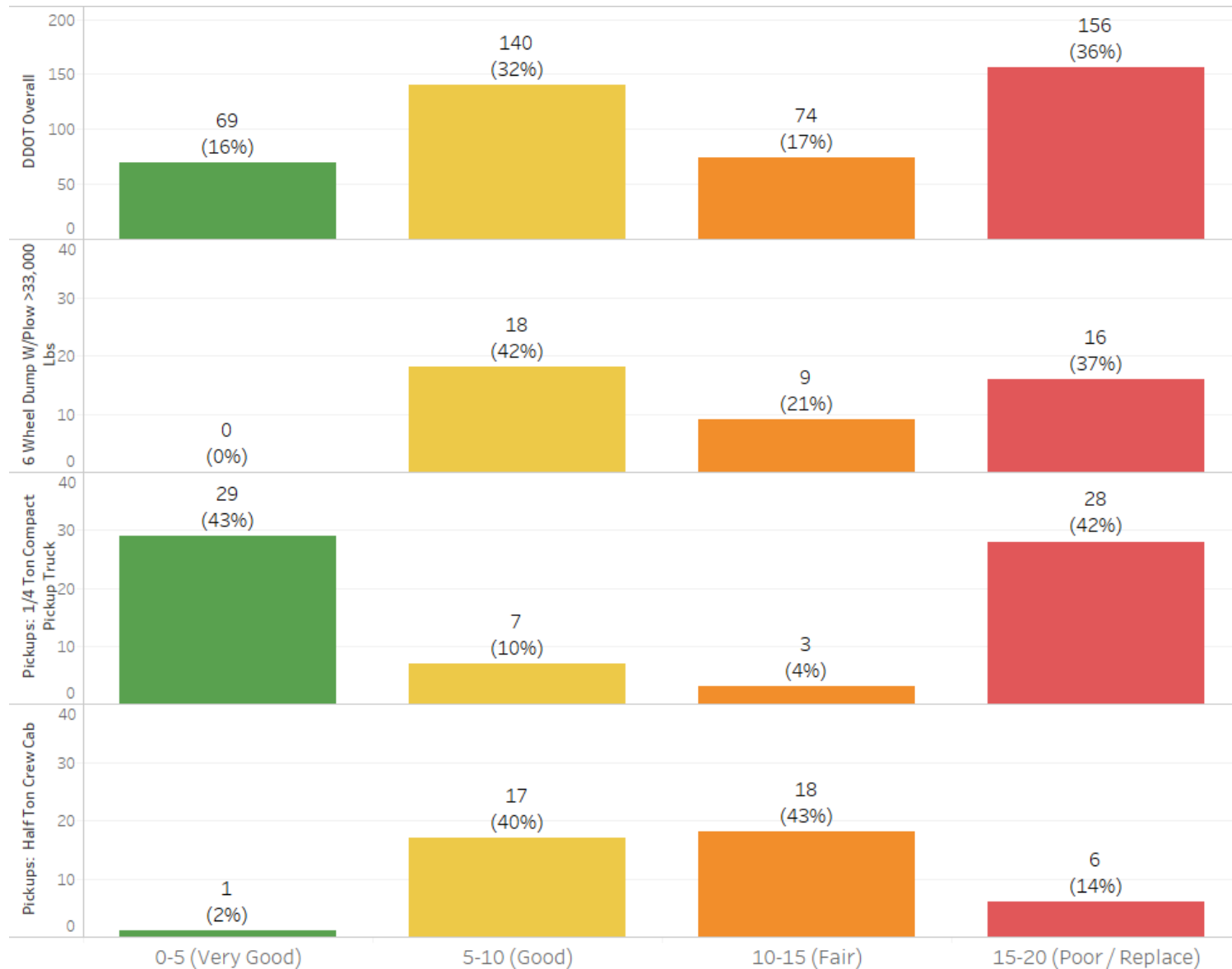
*Vehicles w/a condition score of 15 or greater should be replaced

**Marked Fleet includes: Marked Cruisers, Marked Cruisers w/Kennel, Marked SUVs, Marked Trucks, and Marked Van Prisoner Transports. Unmarked Fleet includes: SUVs, Unmarked Cruisers, and Unmarked Trucks

***Numerator: Out of service hours / Denominator: total available hours; MPD targets 96% of fleet available for service daily



CARSS Condition Distribution: DDOT



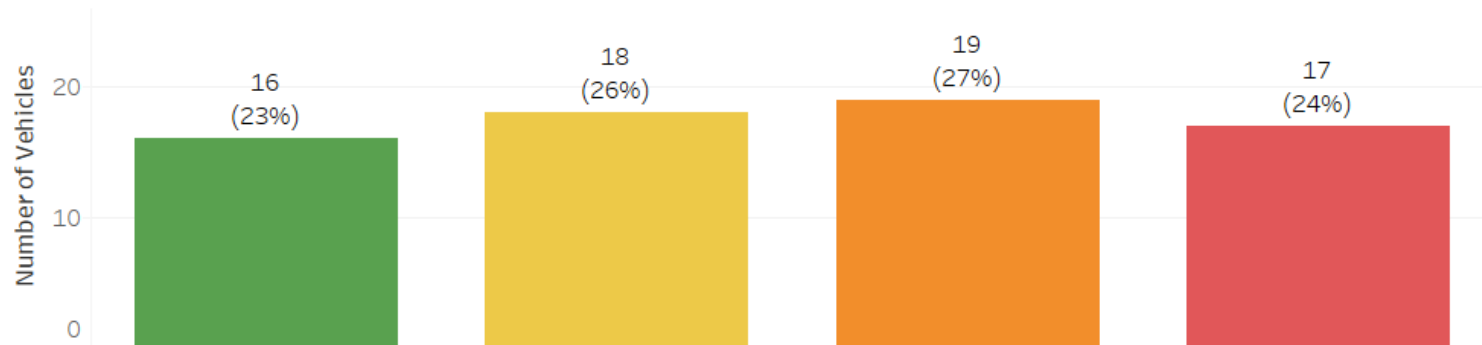
*Vehicles w/a condition score of 15 or greater should be replaced

**Condition scores are for all items in FASTER (3.13.17); may include some non-propelled vehicles in overall count

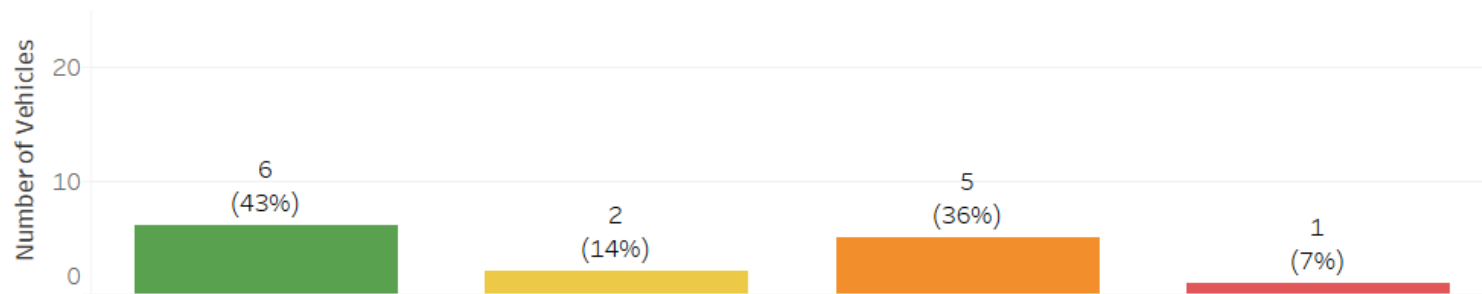
CARSS Condition Distribution: DPR Fleet



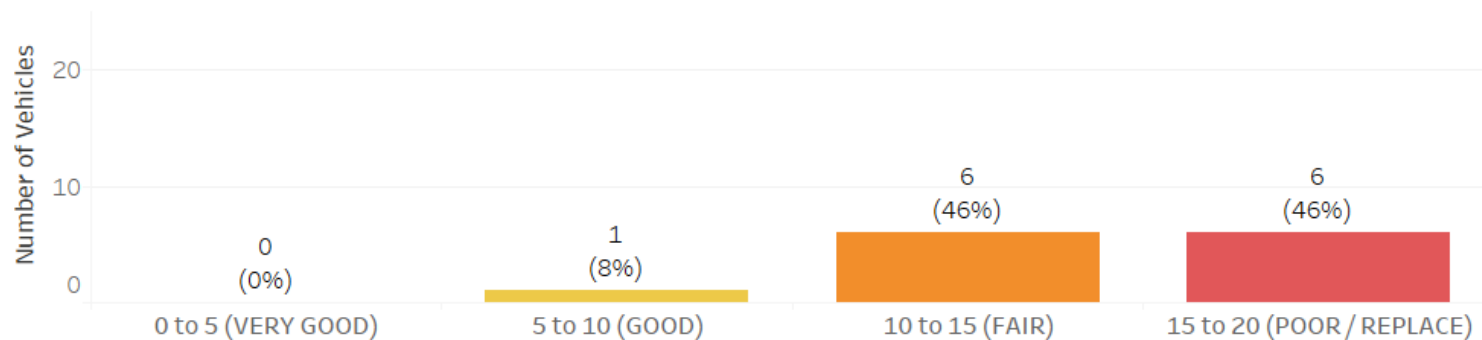
DPR ALL Fleet



15 Passenger Van



Straight Truck: Shuttle Service



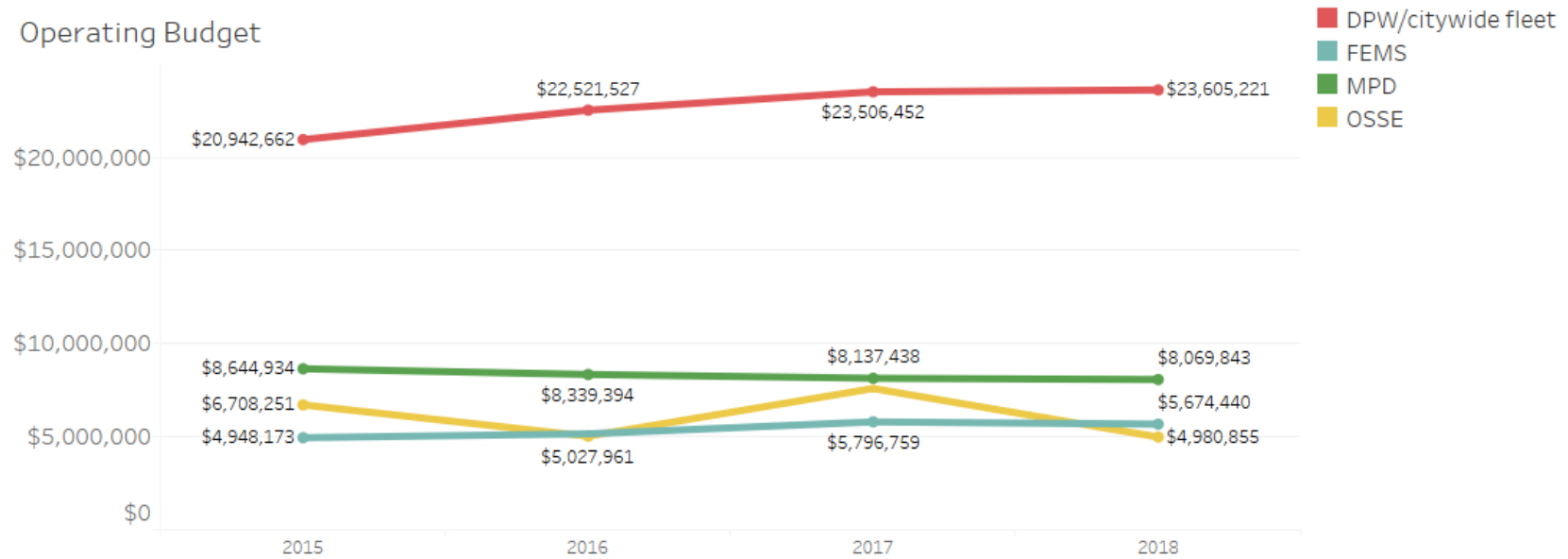
*Vehicles w/a condition score of 15 or greater should be replaced

**Condition scores are for all items in FASTER (3.13.17); may include some non-propelled vehicles in overall count

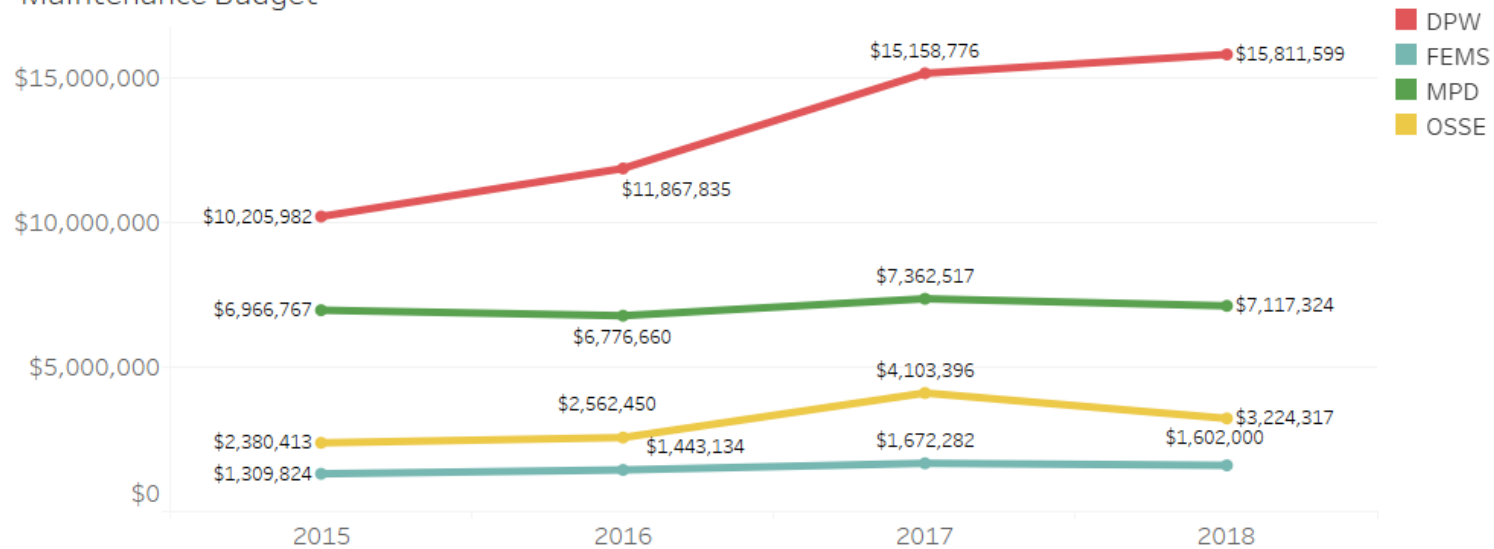
Fleet Budget



Operating Budget



Maintenance Budget



*DPW's operating budget is inclusive of all other District agencies, excluding, FEMS, MPD, OSSE, DOC, DC Housing Authority. ~\$11.8M in FY17 was for operating DPW owned and operated vehicles

**DPW Maintenance budget is included in its Operating budget; DPW bills itself for maintenance

***\$3.9M of DDOT funding is included in DPW's maintenance budget for FY17 and FY18



Fleet Maintenance: Mechanic Staffing (FY15-17)

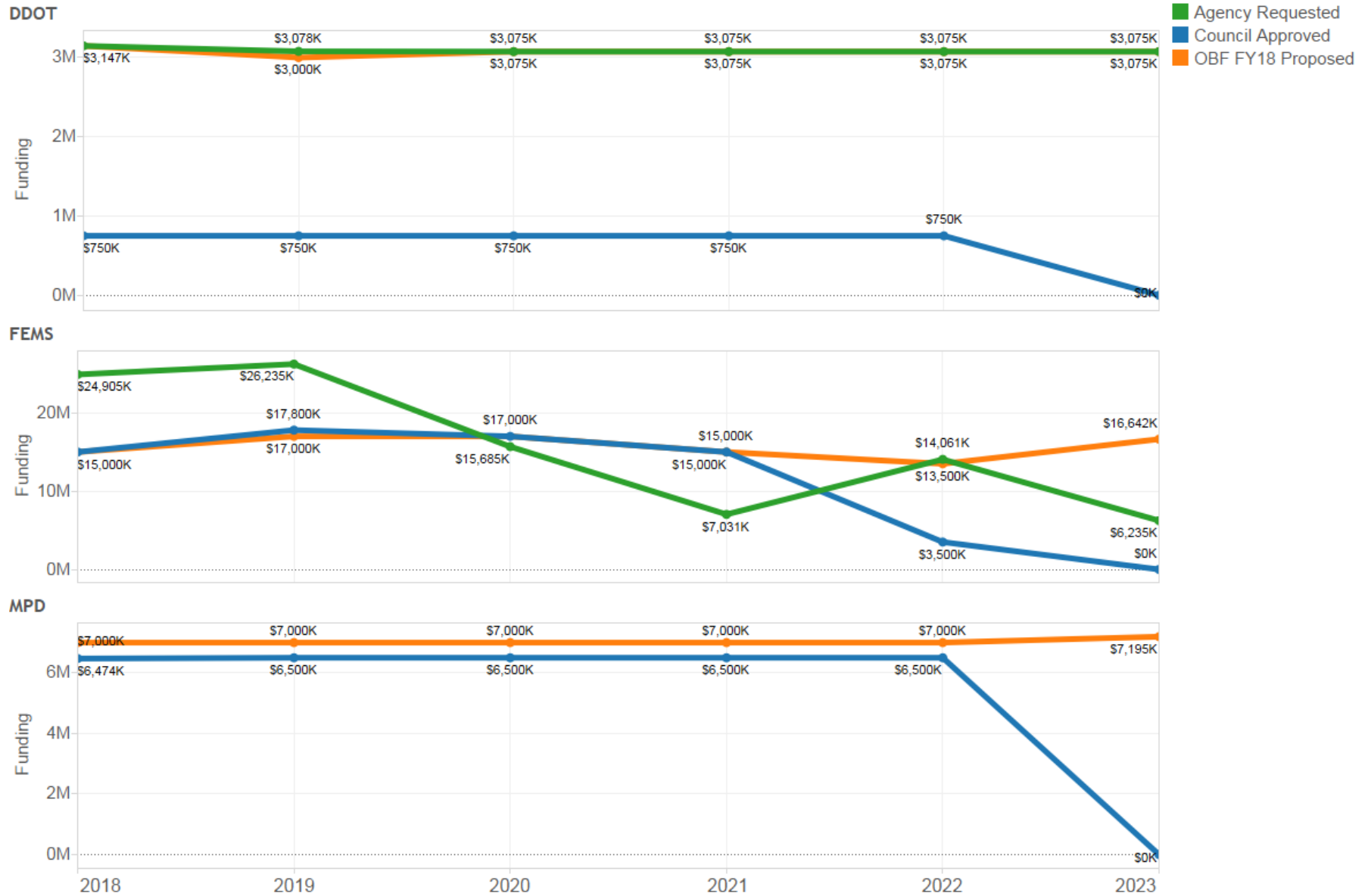


*DDOT and DPR do not have mechanics on staff; their fleet vehicles receive maintenance services from DPW

**DPW, OSSE, and FEMS all measure mechanic productivity via FASTER reports

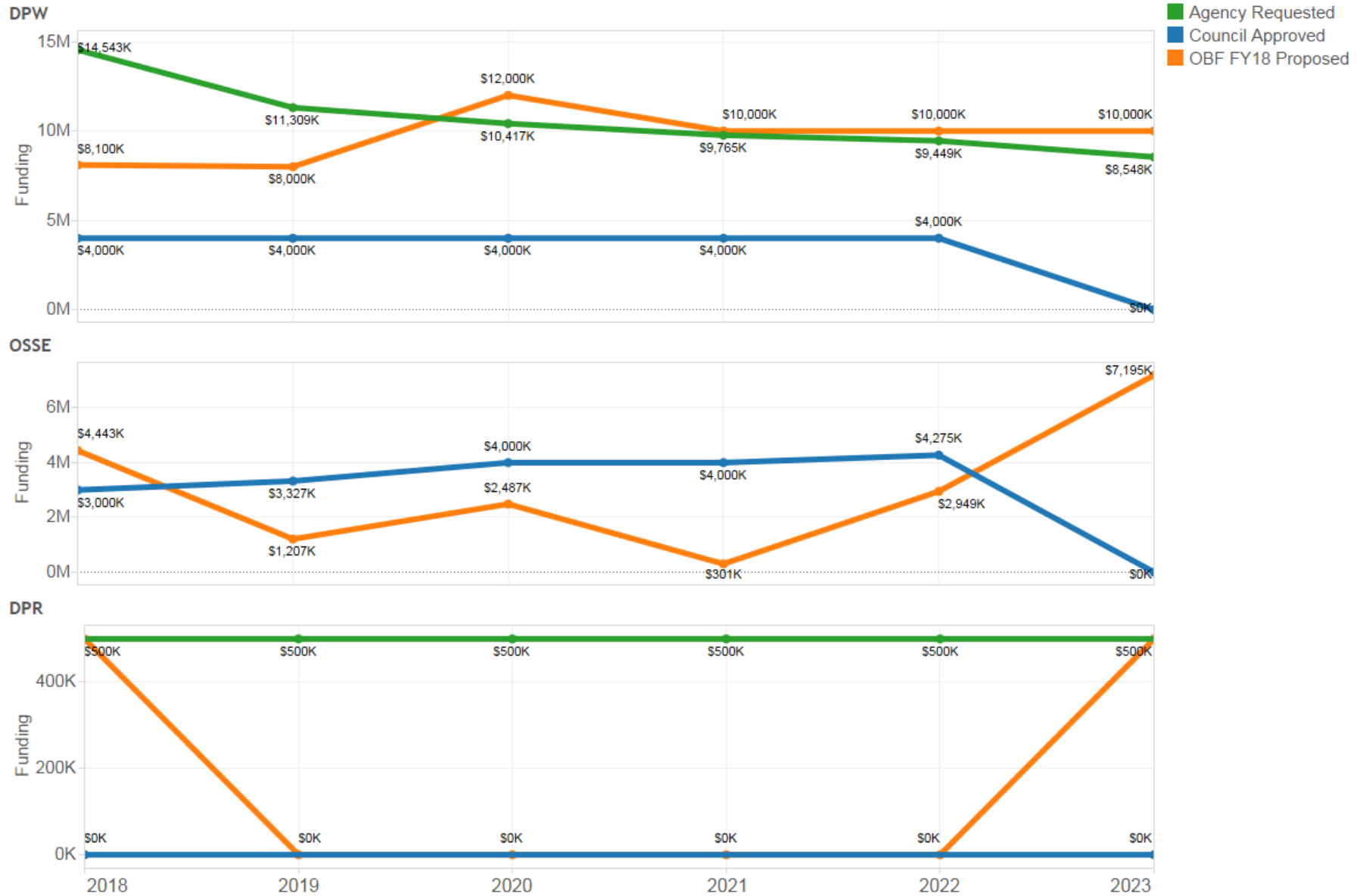


Capital Budget Requests: DDOT, FEMS, MPD





Capital Budget Requests: DPW, OSSE, DPR





- **Training:**
 - Increased usage of alternative fuel, hybrid, and electric vehicles is necessitating enhanced training for fleet mechanics; funding is required for new training
- **Dated maintenance and shop facilities:**
 - DPW: fleet repair facility requires substantial upgrades in infrastructure and technology to allow mechanics to diagnose and program technologically advanced vehicle computers and to safely service CNG and electric vehicles
 - FEMS: new facility needed to house and maintain new, larger apparatuses
 - OSSE: bus terminals are uncovered, causing additional stress and wear and tear on the buses
- **Hiring mechanics:**
 - DPW, FEMS, and OSSE have experienced challenges hiring mechanics
- **Maintenance turnaround time for vehicles under repair:**
 - Lengthy TAT for vehicles repairs, including preventative maintenance appointments
- **CNG fueling locations:**
 - Limited CNG fueling locations throughout the District to fuel OSSE buses
- **DOEE / EPA environmental compliance**
 - Environmental regulations are limiting the types of services that can be performed at terminals; OSSE noted that remaining in compliance is a challenge

Recommendations



- Implementation of a District-wide sustainable fleet replacement plan
- Socialization and District-wide use of CARSS condition assessment scores, to include:
 - Detailed overviews of the condition score formula for agency fleet program staff
 - Cleaning of FASTER databases
- Combined training academy for District mechanics
- Further discussion around the need for improved and modernized maintenance facilities, specifically for DPW, FEMS, and OSSE
- Follow-up STAT focused on fleet maintenance and operations





APPENDIX





CARSS Condition Scores

There are three factors that make up total points:

1. **Maintenance Cost Life-To-Date (LTD):**
 - Maintenance Cost LTD is weighed double, on a scale of 0-10, and hits its highest level (10) when the maintenance cost LTD equals the original purchase price. The points are determined by the percentage of the current LTD maintenance divided by the original purchase price. The points for this factor are double to identify “lemons” or high maintenance equipment.
2. **Life-to-Date Mileage or Hours:**
 - LTD meters are rated on a scale of 0-5. The points are determined by the percentage of the current LTD meter divided by the expected meter life.
3. **Expended Life In Months:**
 - Life in months is rated on a scale of 0-5. The points are determined by the percentage of the current life in months divided by the useful life in months.

Total Point Value	The higher the number, the nearer the asset is to being replaced	Total points of the 15 Point Scale include Meter + Maintenance + Age + Condition factor
Highest Meter	Points assigned due to the meter reading	$(\text{AssetMeter.Actual} / \text{AssetMeter.MeterLifeExpect}) * 5.0$
Age	Points assigned due to age	$(\text{CurrentDate InServiceDate}) / \text{Useful Life months}) * 5.0$
Remaining Life	(Useful Life In Months) minus (Current Life In Months)	$((15.0 \text{ minus (Total Points)}) \text{ divided by } 15.0) * (\text{Useful Life In Months}$
Replacement Cost	AssetAcquire. AcquireCapitalizedCost X (1 + (AssetReplace.InflationRate/12)) raised to the power of AssetReplace.DepreLifeExpect	AssetAcquire. AcquireCapitalizedCost X (1 + (AssetReplace.InflationRate/12)) raised to the power of (Current Life in Months + Adjusted Remaining Life



FEMS: Replacement Schedule / Avg. Cost of Owned Fleet

Apparatus / Vehicle Type	Replacement Schedule*
Command vehicles	No more than 6 years
Ambulances	No more than 3 years for frontline, plus additional 6 years for reserve (9 years total)
Engines	No more than 7 years for frontline plus additional 9 for reserve (16 years total)
Ladders	No more than 7 years for frontline plus additional 8 for reserve (15 years total)
Rescue Squads	No more than 7 years for frontline plus additional 8 for reserve (15 years total)

*FEMS adheres to the BDA Global recommended replacement plan

Apparatus / Vehicle Type	Avg. Acquisition Cost
Command Vehicles	\$95,333.33
Ambulance	\$226,796.21
Engine	\$434,448.23
Ladder Truck	\$780,741.91

Note: Included in the average cost are used/refurbished vehicles. A typical new Ambulance is ~\$320,000; a new Engine is ~\$750,000; and a new Ladder is ~\$1,500,000.





MPD: Replacement Schedule / Avg. Cost of Fleet

Vehicle Type	Replacement Schedule
Marked Patrol Units	5 years and/or 120,000 miles
Marked Non-Patrol and Take Home Vehicles	6 years and/or 120,000 miles
Marked Transport Vans	5 years and/or 120,000 miles
Unmarked Sedans	8 years and/or 120,000 miles
Support Vehicles	8-10 years and/or 120,000 miles

Vehicle Description	Avg. Acquisition Cost
Cmd Bus	\$448,894.67
HD FLHTPI	\$26,515.78
HD Scooters	\$9,776.90
Honda Scooters	\$4,122.26
Marked Patrol	\$26,256.13
Marked Van Prisoner Transport	\$23,150.05
Support	\$26,534.66
Unmarked	\$18,808.12





OSSE: Replacement Plan / Approved Fleet Purchases

Several key factors are considered:

- Age, mileage of bus
- Amount of money for repairs put into bus since acquiring it
- Overall bus performance
- Gas vs. diesel fuel issues

General rules:

- If the cost to repair a bus is over \$25,000 (about half what the bus is worth)
- If a bus is over 7 years old, and cost to repair is \$5,000-\$10,000, examine cost history of repairs—if they total over \$25,000, consider retiring
- If a bus is over 7 years old and has consistent performance problems

FISCAL YEAR	TYPE	QTY	AMOUNT
FY2015	Type A	50	\$2,273,550
FY2016	Type A2	35	\$2,620,424
	Type A2, w/wheel chair package	9	
FY2016 - Pending	Type A2	56	\$3,352,720
FY2017 - Pending	TBD	70	\$4,275,000
FY2018 - Proposed	TBD	50	\$3,000,000



DPW: Replacement Plan

DPW evaluates numerous factors to determine the need for fleet replacements, including:

1. Life-to-date repair and maintenance costs
2. Trade-offs of capital vs. operating expenditures
3. Alternative financing methods, such as leasing

Decision-Making Process:

Phase	Details
1	<p>Review fleet inventory data:</p> <ul style="list-style-type: none">• Identify units exceeding age, mileage/meter, and life-to-date maintenance cost guidelines• Note units exceeding at least two of the criteria or that have unusual circumstances• Receive input from fleet users for additional vehicles to evaluate
2	<ul style="list-style-type: none">• Conduct physical condition assessments• Estimate total costs to maintain each unit for another year• Calculate a condition index for each unit and prioritize units for replacement or maintenance for same year or out year
3	<ul style="list-style-type: none">• Reach agreement with agency on which vehicles will be replaced• Prepare formal list for Directors approval



DPR: Fleet Replacement Parameters / Approved Fleet Purchases

Vehicle Type	Replacement Parameters
Light Vehicles (units under 9000 lbs.)	Replacement at the end of 8 years.
Medium and Heavy Vehicles (units over 9000 lbs.)	Replacement at the end of 10 years.
Specialty Vehicles (loaders, skid steers, etc.)	Replacement at the end of 15 years.

Equipment Description	Est. Useful Life	Unit Cost	Qty.
Blue Bird Vision Shuttle Bus 36 Pass.	5 yrs.	\$99,357	1
Blue Bird All American Work Bus 44 Pass.	5 yrs.	\$114,114	1
Blue Bird All American Work Bus 44 Pass.	5 yrs.	\$114,114	1
		\$327,585	3

FEMS: Daily Apparatus Requirements



Apparatus	Requirements
Engines / Pumpers	33 Front line Engines <ul style="list-style-type: none">• 2 Training Academy Engines• 6 Water Supply Engines• 12 Battalion Ready Reserve Engines• 10 Warehouse Reserve Engines TOTAL: 63 Total Engines
Ambulances	39 Front Line Ambulances <ul style="list-style-type: none">• 1 Training Academy Ambulance• 10 EMOP/Special Event Ambulances• 38 Reserve Ambulances TOTAL: 88 Total Ambulances
Ladder Truckers	16 Front Line Ladder Trucks <ul style="list-style-type: none">1 Training Academy Ladder Truck8 Reserve Ladder Trucks1 Battalion Reserve TOTAL: 26 Total Ladder Trucks
Rescue Squads	3 Front Line Rescue Squads <ul style="list-style-type: none">• 2 Ready Reserve Squads TOTAL: 5 Total Rescue Squads



OSSE: Maintenance and Downtime

~100% of out-of-service time is reactionary maintenance

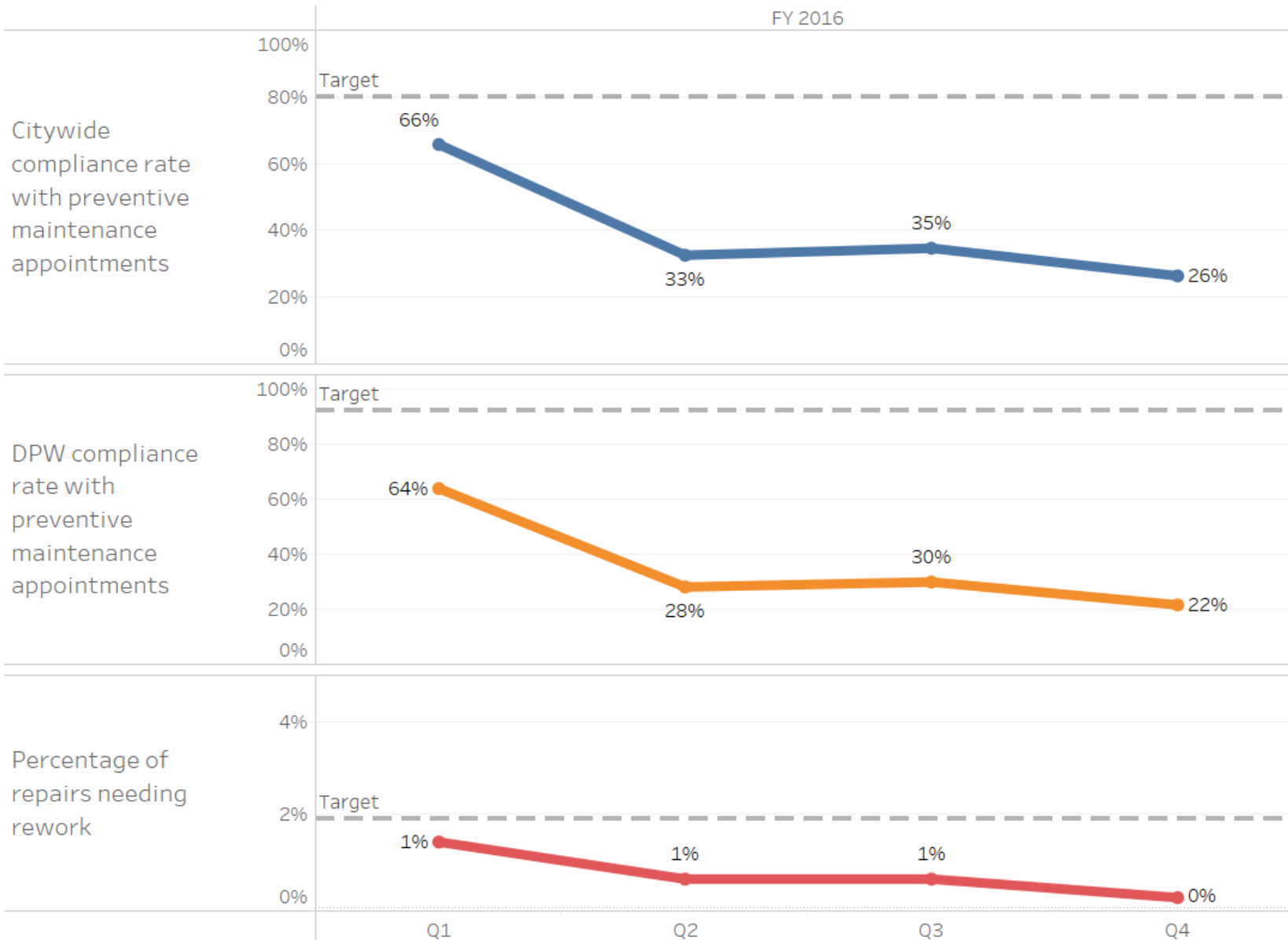
Preventive maintenance is routinely completed during times the buses are not in use, i.e. midday

- PMI Safety is performed every 90 days or 3000 miles, whichever comes first;
- PMI Lube is performed every 90 days or 5000 miles, whichever comes first;
- PMI Brake is performed every 12 months or 12,000 miles, whichever comes first

Terminal	% of Buses Out of Service Per Day, on Average
Adams Place	10%
Fifth Street	16%
New York Avenue	11%
Southwest	12%
Total	12%



DPW/Citywide Fleet Maintenance: KPIs (FY16)




UP IS BETTER

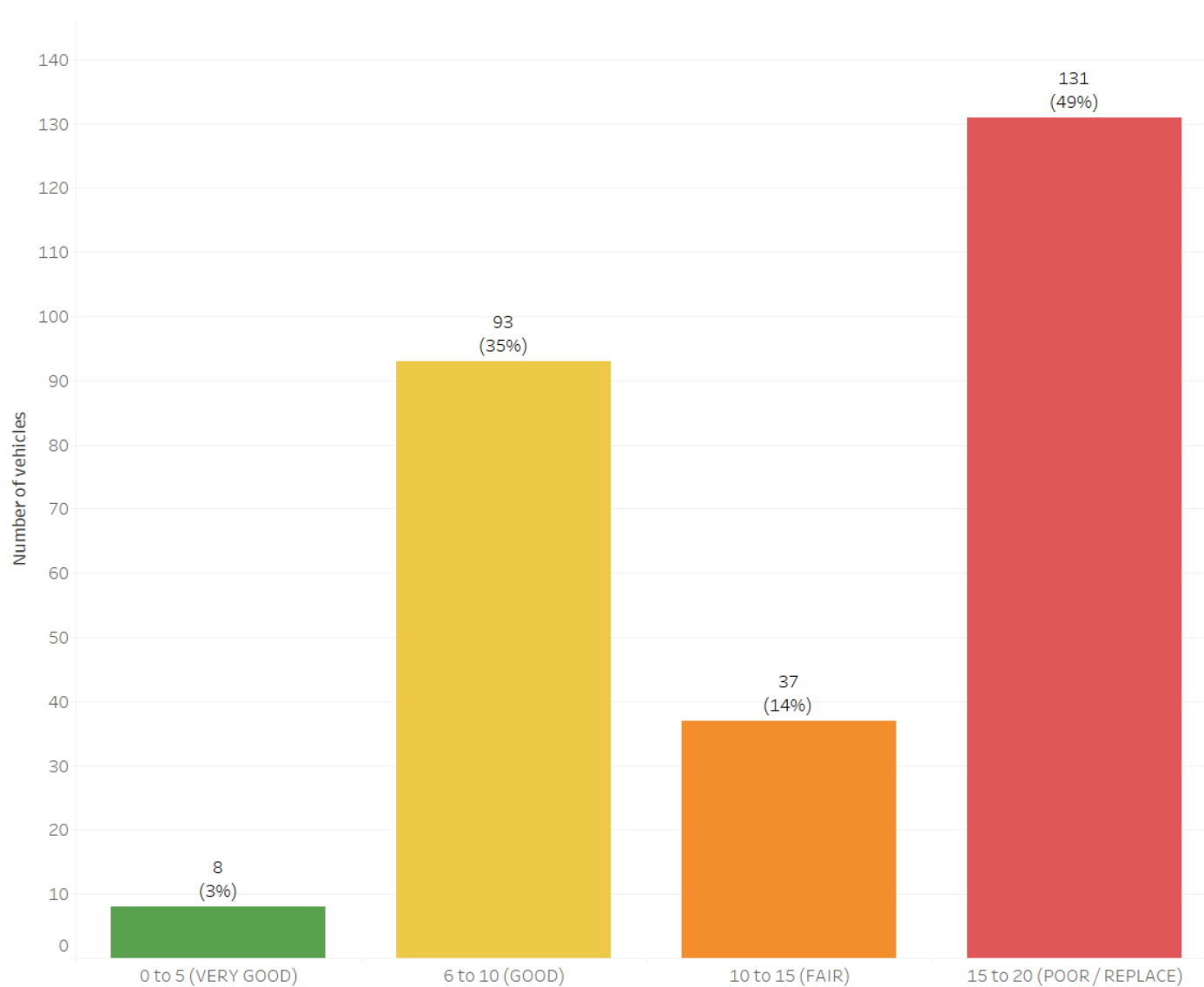

UP IS BETTER

DOWN IS BETTER


*Does not include data for FEMS, MPD, or OSSE



CARSS Condition Distribution: Snow Fleet (DPW and DDOT)



*Vehicles w/a condition score of 15 or greater should be replaced

**The snow fleet includes DPW and DDOT managed: 6 wheel dumps w/plow; 10 wheel dumps w/plow; pickups w/plow; crew cab dumps w/light plow; and ¾ ton crew cabs

***DPW leases and contracts out for a significant portion of the snow fleet, to supplement District owned vehicles. DPW leases 182 vehicles and contracts out as needed.