



Fleet Replacement Analysis

Somerville Police Department

Chief Charles Femino

December 2022

Somerville Police Department Fleet Replacement Analysis

3-Step Methodology

- (1) Inventory of fleet units
- (2) Evaluation and selection of Fleet Replacement Rubric
- (3) Uniform application of replacement parameters to all fleet units

SPD Fleet Replacement Analysis

Key Take-aways | Total Fleet

- 41 units, representing 60% of the SPD fleet, need immediate replacement
- Of the 41 units, 1 is assigned to Animal Control and 9 are frontline (24/7 severe duty service)
 - 5 units in Patrol
 - 4 units in Traffic
- **SPD requests funding for the immediate replacement of 10 fleet units¹, with a total estimated value of \$650,000²**

Fleet Unit Condition	# of Units	%
I - Excellent	7	12%
II - Good	11	16%
III - Qualifies for replacement	9	12%
IV - Needs immediate replacement	41	60%
TOTAL FLEET	68	100%

¹ SPD is doing an analysis of its secondary and auxiliary units to determine optimal fleet size, which may be lower in number versus the status quo. However, this analysis does not affect the frontline fleet and the immediate need to replace 9 frontline units.

² \$650,000 = 10 units x \$65,000/unit



Somerville Police Department Fleet Replacement Analysis

3-Step Methodology

(1) Inventory of fleet units

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(3) Uniform application of replacement parameters to all fleet units

SPD Fleet Replacement Analysis

(1) Inventory of 68 Fleet Units

Frontline (20 units)

- Patrol (15)
 - 7 Ward
 - 2 Supervisor
 - 1 Wagon
 - 5 Spares
- Traffic (5)

Secondary (31 units)

- Detective (16)
- Unmarked (5)
- Special Ops (3)
- Family Services (3)
- Prof Standard (1)
- Academy (1)
- West (1)
- Wagon (1)

Auxiliary (17 units)

- Special Ops (2)
- Special Ops-motorbike (2)
- Traffic-motorbike (5)
- Special Events (2)
- SRT (2)
- Academy (1)
- Homeland (1)
- COHR (1)
- Minibus (1)



Somerville Police Department Fleet Replacement Analysis

3-Step Methodology

(1) Inventory of fleet units

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(3) Uniform application of replacement parameters to all fleet units

SPD Fleet Replacement Analysis

(2) Evaluation and Selection of Fleet Replacement Rubric

- SPD evaluated several fleet replacement rubrics
- SPD selected and adopted the Fleet Capital Equipment Program (CEP) Points Replacement Guideline System used by Dakota County, MN
 - Assigns weights to myriad input variables to determine unit condition

Fleet Replacement Rubric Components
Age
Mileage
Type of service
Reliability
Maintenance & Repair (M&R) Costs
Condition
Energy Efficiency



SPD Fleet Replacement Analysis

(2) Evaluation and Selection of Fleet Replacement Rubric

- The Fleet Capital Equipment Program (CEP) Points Replacement Guideline System allows for the determination of a Fleet Unit Condition Index (FUCI) that can be used to rate equipment and determine relative condition to others in the fleet

Fleet Unit Condition Index (FUCI)	
Condition I	Excellent
Condition II	Good
Condition III	Qualifies for replacement
Condition IV	Needs immediate replacement



Fleet Capital Equipment Program (CEP) Points Replacement Guidelines

FACTOR	POINTS												
Age	One point for each year of chronological age, based on in-service date. <i>Based on in-service date.</i>												
Miles/Hours	On-Road Vehicles and Equipment: one point for each 10,000 miles or one point for each 20,000 miles with 7 liter or larger size diesel engines. Off-Road Equipment: one point for each 1000 hours of use on over 150 horsepower diesel engines or one point for each 200 hours of use on under 150 horsepower diesel engines. <i>Based on Class of Vehicle or Equipment by four different criteria.</i>												
Type of Service	1, 3, or 5 points are assigned based on the type of service that vehicle receives. For instance, a police patrol car would be given a 5 because it is in severe duty service. In contrast, an administrative sedan would be given a 1. <i>Based on Class of Vehicle or Equipment.</i>												
Reliability	1 to 5 points are assigned depending on the frequency that a unit was in for repairs last year. A 5 would be assigned to a unit that is in the shop three or more times per month on average, while a 1 would be assigned to a unit in the shop an average of once every three months or less. <i>Based on each individual Equipment # looking at the Closed Repair Order Count for (Last Year).</i> <ul style="list-style-type: none"> • 1 for 4 or less • 2 for 5 to 15 • 3 for 16 to 25 • 4 for 26 to 35 • 5 for 36 or more 												
Maintenance & Repair Costs (M&R)	1 to 5 points are assigned based on total M&R costs (not including repair of accident damage). A 5 is assigned to a unit with life to date M&R costs equal to or greater than the vehicle's original purchase price, while a 1 is given to a unit with life to date M&R costs equal to 20% or less of its original purchase cost. <i>Based on each individual Equipment # comparing the Standard Maintenance Costs to the (Purchase Price + Non-Maintenance Costs).</i> <ul style="list-style-type: none"> • 1 for 20% or less • 2 for 21% to 48% • 3 for 49% to 75% • 4 for 76% to 99% 												
Condition	This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc. A scale of 0 to 5 points is used with 5 being poor condition. <i>This will be filled in by Fleet staff based on condition evaluation.</i>												
Energy Efficiency	0 to a maximum of 6 points are assigned based on energy efficiency categories. Points from each category are added together to get total points. <ul style="list-style-type: none"> • 2 for utilization or sharing across fleet groups • 2 for right sizing of replacement unit • 1 for flex fuel unleaded compatible or bio diesel fuel compatible engines • 2 for hybrid, electric, or alternative fuel engine • 2 for alternative power unit or anti idle technology <i>Based on the recommended replacement unit and will be filled in by fleet staff.</i>												
Point Ranges	<table border="0"> <tr> <td>Under 18 points</td> <td>Condition I</td> <td>Excellent</td> </tr> <tr> <td>18 to 22 points</td> <td>Condition II</td> <td>Good</td> </tr> <tr> <td>23 to 27 points</td> <td>Condition III</td> <td>Qualifies for replacement</td> </tr> <tr> <td>28 points and above</td> <td>Condition IV</td> <td>Needs immediate consideration</td> </tr> </table>	Under 18 points	Condition I	Excellent	18 to 22 points	Condition II	Good	23 to 27 points	Condition III	Qualifies for replacement	28 points and above	Condition IV	Needs immediate consideration
Under 18 points	Condition I	Excellent											
18 to 22 points	Condition II	Good											
23 to 27 points	Condition III	Qualifies for replacement											
28 points and above	Condition IV	Needs immediate consideration											

SPD Fleet Replacement Analysis

(2) Evaluation and Selection of Fleet Replacement Rubric

Adopted from:

Fleet Capital Equipment Program (CEP) Points Replacement Guidelines – Dakota County, MN



Somerville Police Department Fleet Replacement Analysis

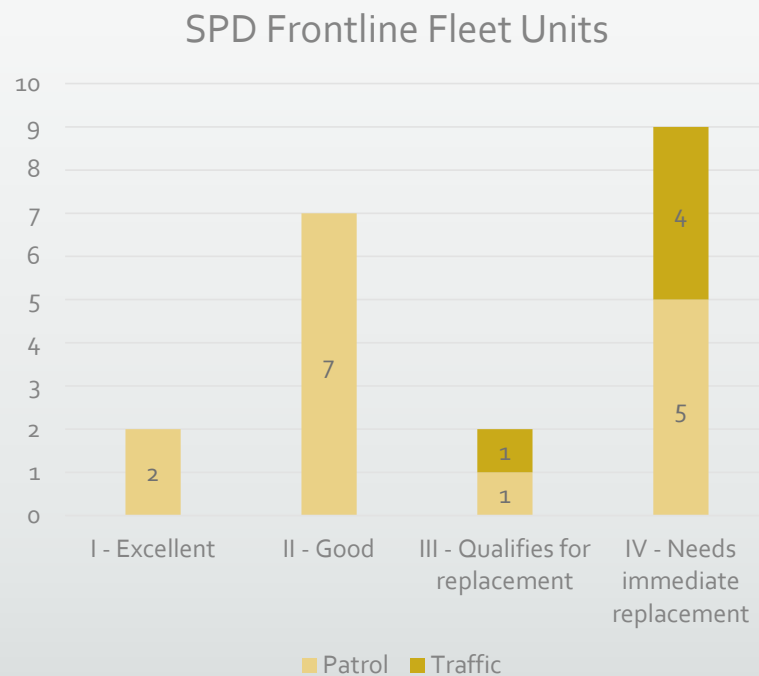
3-Step Methodology

(1) Inventory of fleet units

(2) Evaluation and selection of Fleet Replacement Rubric

(3) Uniform application of replacement parameters to all fleet units

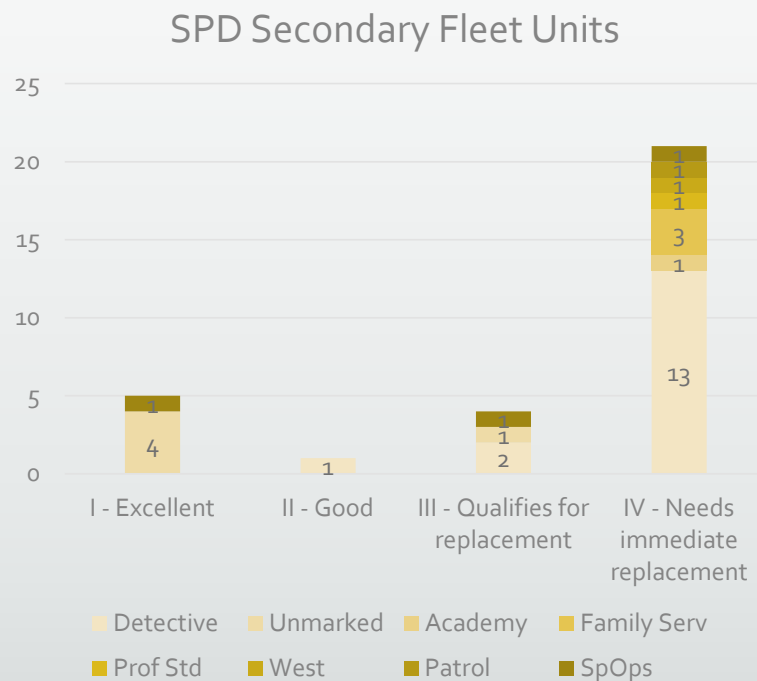
(3) Uniform application of replacement parameters Category 1: Frontline



- 9 frontline fleet units need immediate replacement
 - Patrol – 5 units
 - Traffic – 4 units



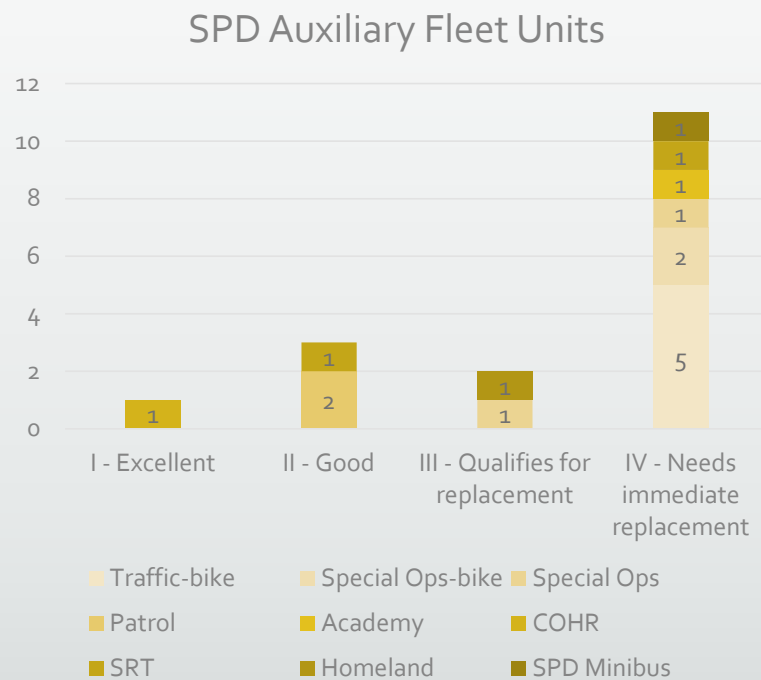
(3) Uniform application of replacement parameters Category 2: Secondary



- 21 secondary fleet units need immediate replacement
 - Detective – 13 units
 - Family Services – 3 units
 - Academy – 1 unit
 - Patrol – 1 unit
 - Professional Standards – 1 unit
 - Special Ops – 1 unit
 - West – 1 unit



(3) Uniform application of replacement parameters Category 3: Auxiliary



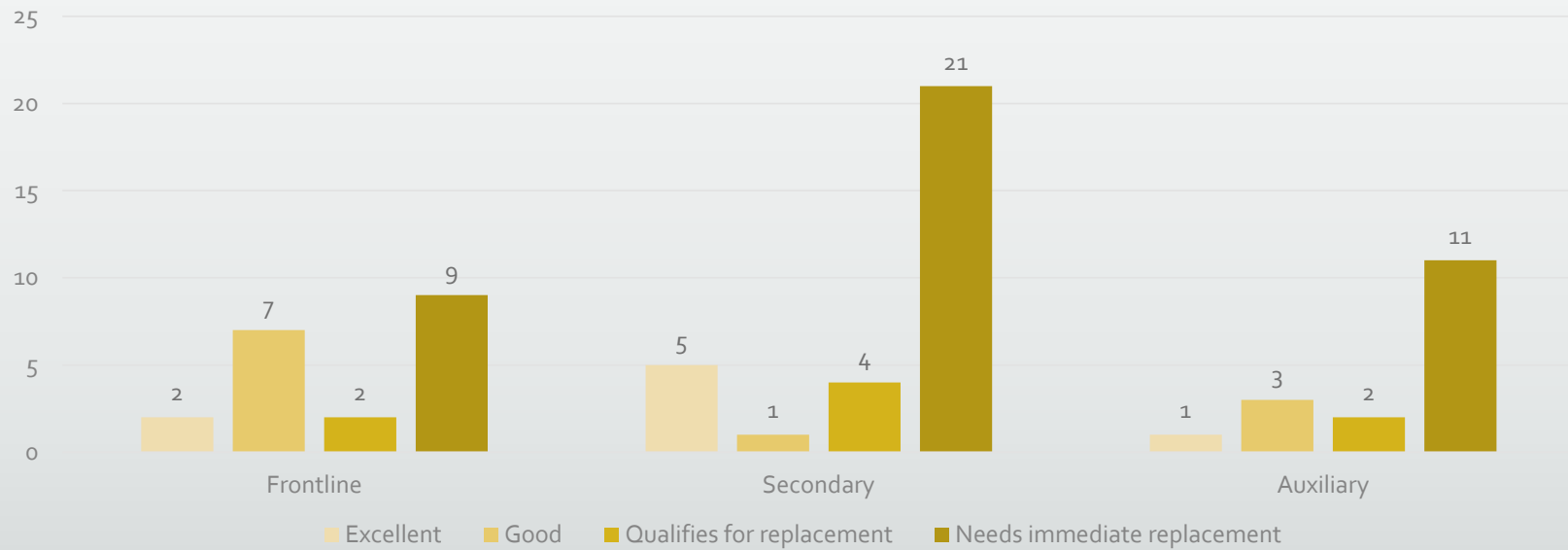
- 11 auxiliary fleet units need immediate replacement
 - Traffic (motorbike) - 5 units
 - Special Ops (motorbike) - 2 units
 - Special Ops - 1 unit
 - Academy - 1 unit
 - SPD Minibus - 1 unit
 - SRT - 1 unit



SPD Fleet Replacement Analysis

Total Fleet | By Category

41 units, representing 60% of the SPD fleet, need immediate replacement
Of the 41 units, 9 are frontline (24/7 severe duty service)



Appendix

Detailed Inventory of Fleet Units

Category 1: Frontline Patrol (15 units) & Traffic (5 units)

SPD Fleet Unit Details							Fleet Replacement Rubric									
VIN	Plate #	Year	Fleet Unit Make	Fleet Unit Model	Category	Assignment	Age	Miles/ Hours	Type of Service	Reliability	M&R	Condition	Energy Efficiency	Total Points	Condition Index	Fleet Unit Condition
1FM5K8AR2GGA96626	MP787	2016	Ford	Explorer	Front Line	Patrol	6	8	5	2	2	2	6	31	IV	Needs immediate replacement
1FM5K8AR4GGB06931	MP788	2016	Ford	Explorer	Front Line	Patrol	6	8	5	2	2	2	6	31	IV	Needs immediate replacement
1FM5K8AR6HGC25095	MP781	2017	Ford	Explorer	Front Line	Patrol	5	9	5	2	2	2	6	31	IV	Needs immediate replacement
1FM5K8AR4HGC25094	MP783	2017	Ford	Explorer	Front Line	Patrol	5	8	5	2	2	2	6	30	IV	Needs immediate replacement
1FM5K8AR0HGC25092	MP786	2017	Ford	Explorer	Front Line	Patrol	5	8	5	2	2	2	6	30	IV	Needs immediate replacement
1FTYE1CM6HKB01505	MPD181	2017	Ford	Transit	Front Line	Patrol	5	4	5	2	2	2	6	26	III	Qualifies for replacement
1FM5K8AW1LGA97122	MPF695	2020	Ford	Explorer	Front Line	Patrol	2	3	5	1	1	1	6	19	III	Qualifies for replacement
1FM5K8AW0LGA97127	MPF690	2020	Ford	Explorer	Front Line	Patrol	2	3	5	1	1	1	6	19	II	Good
1FM5K8AW9LGA97126	MPF691	2020	Ford	Explorer	Front Line	Patrol	2	3	5	1	1	1	6	19	II	Good
1FM5K8AW5LGA97124	MPF693	2020	Ford	Explorer	Front Line	Patrol	2	3	5	1	1	1	6	19	II	Good
1FM5K8AW3LGA97123	MPF694	2020	Ford	Explorer	Front Line	Patrol	2	3	5	1	1	1	6	19	II	Good
1FM5K8AWXLGA97121	MPF303	2020	Ford	Explorer	Front Line	Patrol	2	2	5	1	1	1	6	18	II	Good
1FM5K8AW7LGA97125	MPF692	2020	Ford	Explorer	Front Line	Patrol	2	2	5	1	1	1	6	18	II	Good
1FM5K8AW2LGA97128	MPF689	2020	Ford	Explorer	Front Line	Patrol	2	1	5	1	1	1	6	17	I	Excellent
1FM5K8AW4LGA97129	MPF688	2020	Ford	Explorer	Front Line	Patrol	2	0	5	1	1	1	6	16	I	Excellent
1FM5K8AR3EGC08511	MPA878	2014	Ford	Explorer	Front Line	Traffic	8	5	5	3	3	3	6	33	IV	Needs immediate replacement
1FM5K8AR8EGC08519	MPB955	2014	Ford	Explorer	Front Line	Traffic	8	5	5	3	3	3	6	33	IV	Needs immediate replacement
1FM5K8AR5EGC08512	MPA879	2014	Ford	Explorer	Front Line	Traffic	8	4	5	3	3	3	6	32	IV	Needs immediate replacement
1FM5K8AR4EGC08520	MPB956	2014	Ford	Explorer	Front Line	Traffic	8	3	5	3	3	3	6	31	IV	Needs immediate replacement
1FM5K8AR7HGD59274	MPC214	2017	Ford	Explorer	Front Line	Traffic	5	5	5	2	2	2	6	27	III	Qualifies for replacement

Category 2: Secondary Detective (16 units)

SPD Fleet Unit Details							Fleet Replacement Rubric									
VIN	Plate #	Year	Fleet Unit Make	Fleet Unit Model	Category	Assignment	Age	Miles/Hours	Type of Service	Reliability	M&R	Condition	Energy Efficiency	Total Points	Condition Index	Fleet Unit Condition
JTJHW31U072007899	4HG285	2007	Lexus	RX400H	Secondary	Detective	15	8	3	5	5	5	6	47	IV	Needs immediate replacement
4T1BK36B28U315704	3AWR10	2008	Toyota	Avalon	Secondary	Detective	14	6	3	5	5	5	6	44	IV	Needs immediate replacement
1FAHP2DW5BG127514	168DJ1	2011	Ford	Taurus	Secondary	Detective	11	6	3	4	4	4	6	38	IV	Needs immediate replacement
1FAHP2DW2BG118673	465EK2	2011	Ford	Taurus	Secondary	Detective	11	6	3	4	4	4	6	38	IV	Needs immediate replacement
1FAHP2DW0AG104009	376BZ3	2010	Ford	Taurus	Secondary	Detective	12	5	3	4	4	4	6	38	IV	Needs immediate replacement
1FAHP2HW9BG127526	459CP1	2011	Ford	Taurus	Secondary	Detective	11	5	3	4	4	4	6	37	IV	Needs immediate replacement
1FAHP2DWXBG127508	7HZ340	2011	Ford	Taurus	Secondary	Detective	11	4	3	4	4	4	6	36	IV	Needs immediate replacement
1FAHP2H8XFG126070	155ZX8	2015	Ford	Taurus	Secondary	Detective	8	5	3	3	3	3	6	31	IV	Needs immediate replacement
1FAHP2H83FG126069	156ZX8	2015	Ford	Taurus	Secondary	Detective	7	6	3	3	3	3	6	31	IV	Needs immediate replacement
1FM5K8AR2EGC08516	1MHG77	2014	Ford	Explorer	Secondary	Detective	8	5	3	3	3	3	6	31	IV	Needs immediate replacement
1FMJU1JTOHEA63827	5TC733	2017	Ford	Expedition	Secondary	Detective	5	10	3	2	2	2	6	30	IV	Needs immediate replacement
1FAHP2H85FG112593	2DE855	2015	Ford	Taurus	Secondary	Detective	7	4	3	3	3	3	6	29	IV	Needs immediate replacement
NMOLS6F7XF1203928	2DH995	2015	Ford	Transit	Secondary	Detective	7	4	3	3	3	3	6	29	IV	Needs immediate replacement
1FM5K8AR9GGB12840	2ZHD37	2016	Ford	Explorer	Secondary	Detective	6	6	3	2	2	2	6	27	III	Qualifies for replacement
3FA6POT97HR344748	4YD425	2017	Ford	Fusion	Secondary	Detective	5	5	3	2	2	2	6	25	III	Qualifies for replacement
3FA6POT93HR344746	2ZL722	2017	Ford	Fusion	Secondary	Detective	6	1	3	2	2	2	6	22	II	Good

Category 2: Secondary Non-Detective (15 units)

SPD Fleet Unit Details							Fleet Replacement Rubric									
VIN	Plate #	Year	Fleet Unit Make	Fleet Unit Model	Category	Assignment	Age	Miles/Hours	Type of Service	Reliability	M&R	Condition	Energy Efficiency	Total Points	Condition Index	Fleet Unit Condition
1FDAW56P73ED27650	MPE566	2003	Ford	DRWSUP	Secondary	Academy	19	8	5	5	5	5	6	53	IV	Needs immediate replacement
1FTSE3EL6ADA43864	MP3804	2010	Ford	E350/VAN	Secondary	Patrol	12	6	5	4	4	4	6	41	IV	Needs immediate replacement
1FAHP2DW9AG104011	4NX920	2010	Ford	Taurus	Secondary	Family Services	12	5	3	4	4	4	6	38	IV	Needs immediate replacement
1FAHP2DW0AG135275	7DF370	2010	Ford	Taurus	Secondary	Family Services	12	5	3	4	4	4	6	38	IV	Needs immediate replacement
1FAHP2DW0BG118672	674GR4	2011	Ford	Taurus	Secondary	Prof. Standard	11	6	3	4	4	4	6	38	IV	Needs immediate replacement
1FAHP2DW2AG135276	236KH9	2010	Ford	Taurus	Secondary	Family Services	12	4	3	4	4	4	6	37	IV	Needs immediate replacement
1FM5K8AR9EGC08514	MPA877	2014	Ford	Explorer	Secondary	Special Ops	8	5	5	3	3	3	6	33	IV	Needs immediate replacement
1FM5K8AR1DGA63872	1VKG26	2013	Ford	Explorer	Secondary	West	9	5	3	3	3	3	6	32	IV	Needs immediate replacement
1FAHP2H87FG112594	2DE845	2015	Ford	Taurus	Secondary	Unmarked	7	4	1	3	3	3	6	27	III	Qualifies for replacement
3FA6P0T99HR344749	5JZ661	2017	Ford	Fusion	Secondary	Special Ops	5	3	3	2	2	2	6	23	III	Qualifies for replacement
1FTEW1P42LKE43665	MPE845	2020	Ford	F150	Secondary	Special Ops	2	1	5	1	1	1	6	17	I	Excellent
1FM5K8AW0LGA83230	7TY992	2020	Ford	Explorer	Secondary	Unmarked	2	3	1	1	1	1	6	15	I	Excellent
1FM5K8AW4LGA83232	1EZV63 *	2020	Ford	Explorer	Secondary	Unmarked	2	2	1	1	1	1	6	14	I	Excellent
1FM5K8AW2LGA83231	7TY942	2020	Ford	Explorer	Secondary	Unmarked	2	0	1	1	1	1	6	12	I	Excellent
1FM5K8AW4LGA83229	7TY982	2020	Ford	Explorer	Secondary	Unmarked	2	0	1	1	1	1	6	12	I	Excellent

Category 3: Auxiliary (17 units)

SPD Fleet Unit Details							Fleet Replacement Rubric									
VIN	Plate #	Year	Fleet Unit Make	Fleet Unit Model	Category	Assignment	Age	Miles/Hours	Type of Service	Reliability	M&R	Condition	Energy Efficiency	Total Points	Condition Index	Fleet Unit Condition
1HD1FMM19BB615116	MMC8581	2011	Harley	FLHTP	Auxiliary	Special Ops-Bike	11	6	5	4	4	4	6	40	IV	Needs immediate replacement
1HD1FMM11BB644447	MMC8584	2011	Harley	FLHTP	Auxiliary	Special Ops-Bike	11	6	5	4	4	4	6	40	IV	Needs immediate replacement
1HD1FMM12BB615054	MMC8562	2011	Harley	FLHTP	Auxiliary	Traffic-Bike	11	6	5	4	4	4	6	40	IV	Needs immediate replacement
1HD1FMM17BB615177	MMC8563	2011	Harley	FLHTP	Auxiliary	Traffic-Bike	11	6	5	4	4	4	6	40	IV	Needs immediate replacement
1HD1FMM10BB615912	MMC8582	2011	Harley	FLHTP	Auxiliary	Traffic-Bike	11	6	5	4	4	4	6	40	IV	Needs immediate replacement
1HD1FMM15BB615341	MMC8583	2011	Harley	FLHTP	Auxiliary	Traffic-Bike	11	6	5	4	4	4	6	40	IV	Needs immediate replacement
1FAHP2DW4BG118674	1WY855	2011	Ford	Taurus	Auxiliary	Special Ops	11	6	3	4	4	4	6	38	IV	Needs immediate replacement
1HD1FMM15CB664797	MMC8564	2012	Harley	FLHTP	Auxiliary	Traffic-Bike	10	5	5	3	3	3	6	35	IV	Needs immediate replacement
1FDEE3FL5DDA31118	MPA593	2013	Ford	Cut Van	Auxiliary	SPD	9	5	5	3	3	3	6	34	IV	Needs immediate replacement
1FM5K8AR3DGA68605	2LN545	2013	Ford	Explorer	Auxiliary	Academy	9	5	3	3	3	3	6	32	IV	Needs immediate replacement
1FM5K8AR7FGA94174	153ZX8	2015	Ford	Explorer	Auxiliary	SRT	8	5	3	3	3	3	6	31	IV	Needs immediate replacement
1FM5K8AR7HGC66447	MPD300	2017	Ford	Explorer	Auxiliary	Special Ops	5	4	5	2	2	2	6	26	III	Qualifies for replacement
1FT7W2B65KEG82096	MPE205	2019	Ford	F250	Auxiliary	Homeland	3	3	5	2	2	2	6	23	III	Qualifies for replacement
WDAFF4CD6HP540361	5YZ999	2017	Mercedes	Sprinter 3500	Auxiliary	SRT	5	0	3	2	2	2	6	20	II	Good
4XARSU999L8028533	MXN5167	2020	Polaris	R2ORSU99AP	Auxiliary	Special Events	2	3	5	1	1	1	6	19	II	Good
4XARRU996L8935624	MXN5168	2020	Polaris	R2ORRU99AP	Auxiliary	Special Events	2	3	5	1	1	1	6	19	II	Good
JN8AT3BB0MW216823	2HVB59	2021	Nissan	Rogue	Auxiliary	COHR	1	2	3	1	1	1	6	15	I	Excellent

THANK YOU

Somerville Police Department