



## Takoma Park City Council Meeting March 16, 2022 Agenda Item 4

### **Regular Meeting**

Presentation of the Pavement Condition Analysis

### **Recommended Council Action**

Receive Presentation

### **Context with Key Issues**

The City established the current street restoration program in 2004. The program set as a goal to maintain city roadways in fair or better condition. It established a 20-year life cycle for streets and set a funding goal of \$500,000 annually to achieve that cycle.

The City relies on pavement condition analysis to identify roadway conditions and rank them. The City has had the pavement condition survey performed in 2003, 2011, 2016 and 2021. The presentation will provide general information about the pavement analysis process and will compare roadway conditions over time. Additionally, the presentation will provide detailed information about the annual expenditures for street resurfacing since 2004.

### **Council Priority**

Fiscally Sustainable Government  
Engaged Responsive and Service Oriented Government

### **Environmental Impact of Action**

The process of resurfacing roadways uses chemicals and materials that have a negative impact on the environment. The process also generates dust and odors which can have a short-term impact. The milled asphalt roadway material is reused in roadway base or structural fill or recycled by the asphalt manufacturing plant.

### **Fiscal Impact of Action**

The City has a stated goal of funding the Street Restoration program at \$500,000 annually

### **Racial Equity Impact Statement**

We do not believe this Council action will adversely affect or disproportionately impact any particular group.

### **Attachments and Links**

Pavement Condition Presentation

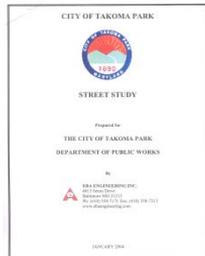


# CITY OF TAKOMA PARK

## Street Restoration Program Overview 2004 - 2021

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# PAVEMENT EVALUATION HISTORY

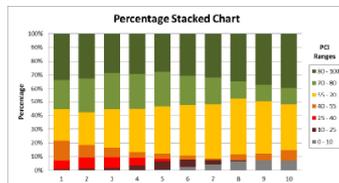
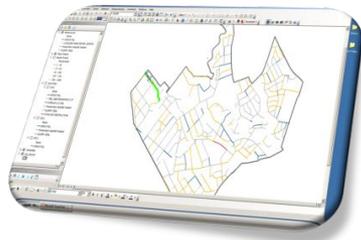


□ 2003 - Pavement Evaluation Study included traffic counts & pavement cores. The investigation was done manually by EBA Engineering

□ 2011- Pavement Evaluation Study included automated video inspection and condition analysis through proprietary software performed by Enterinfo

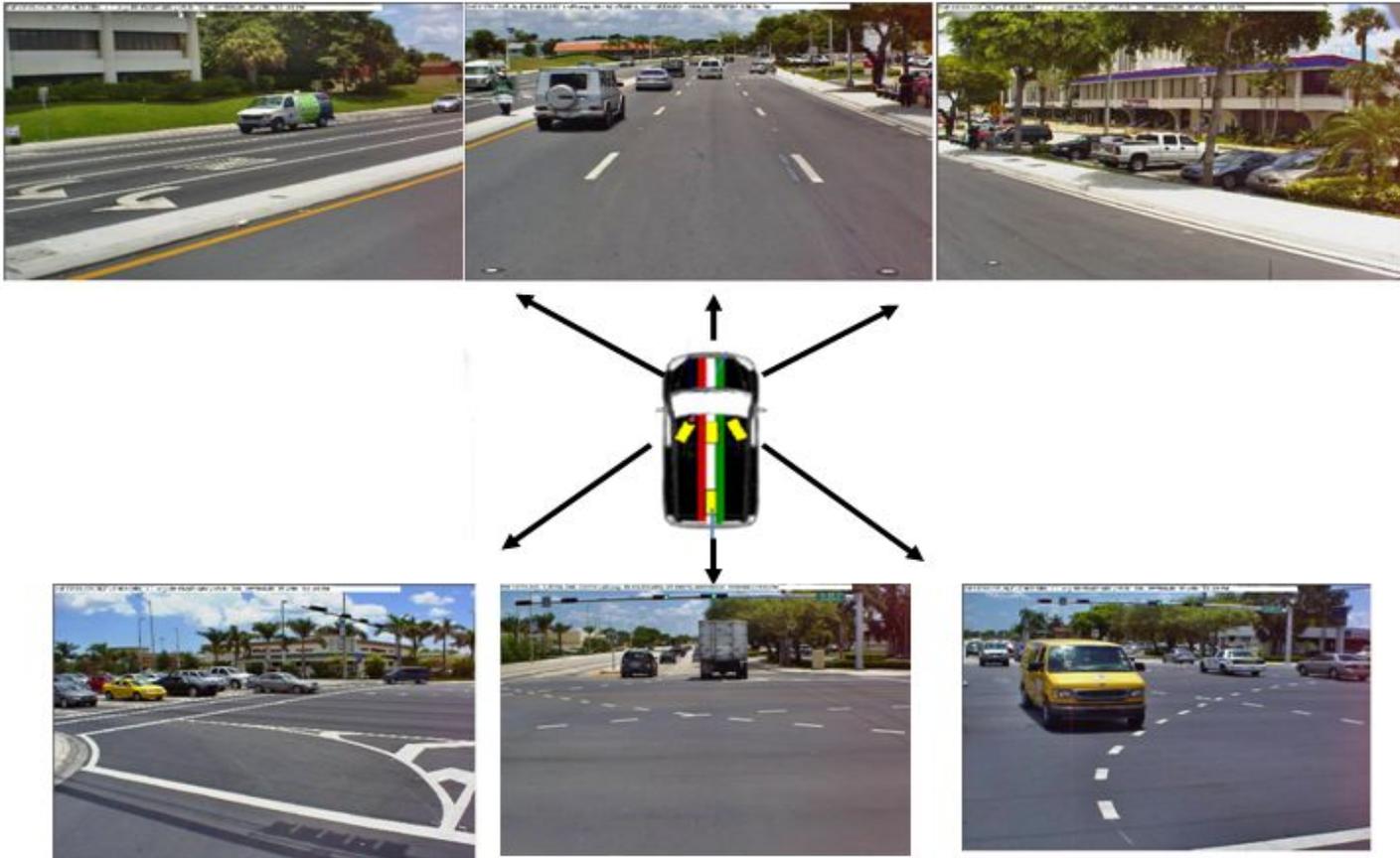
□ 2016 - Pavement Evaluation Study used the same technology as 2011 and data was integrated into GIS

□ 2021 – Automated pavement survey, surface analysis, distress classification and rating were performed by O’Connell & Lawrence



# Automated Video Inspection

Data collection occurs through six cameras, that take pavement & right of way images

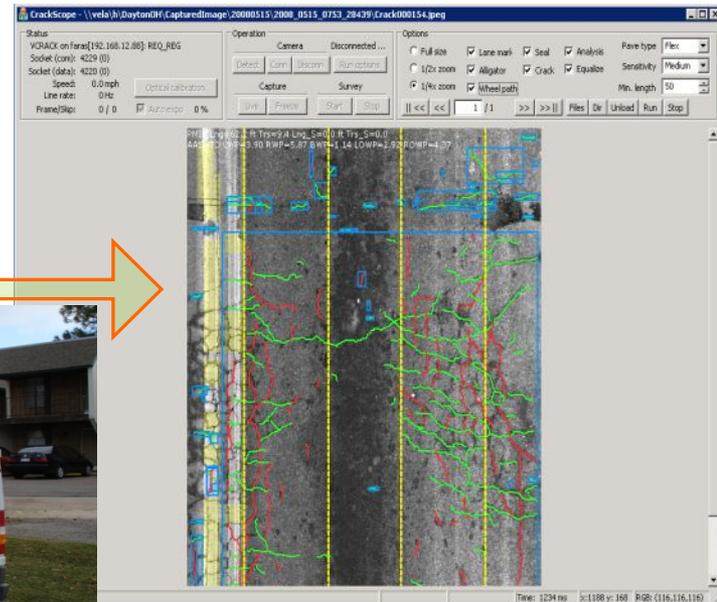


# Automated Roadway Condition Analysis

**GPS/Distance/Inertial**



**Automated Crack Detection**



# Automated roadway condition analysis leads to pavement condition rating

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Distress types such as alligator cracking, joint reflection cracking, utility patches, potholes, rutting and raveling are the most common. The PCI rating reflects the severity and frequency of these distresses.

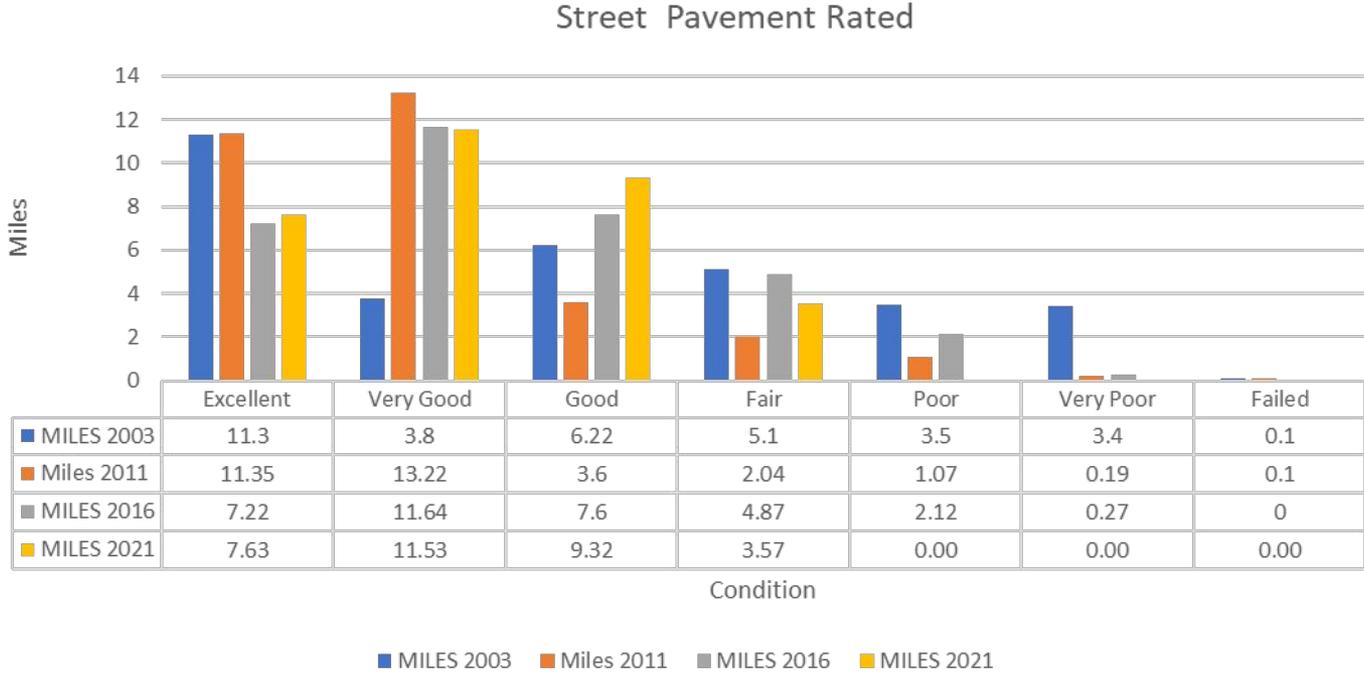


# Street Condition Rating

<i>PCI Number</i>	<i>Rating</i>
<i>100</i>	Excellent
<i>85</i>	Very Good
<i>70</i>	Good
<i>55</i>	Fair
<i>40</i>	Poor
<i>25</i>	Very Poor
<i>10-0</i>	Failed

- PCI ratings are measures of pavement structural integrity & surface condition
- Street resurfacing schedules are primarily based on the Pavement Condition Rating (PCI)

# Pavement Condition Rating in 2003, 2011, 2016 and 2021



# City-Wide Pavement Rating



## Legend

### Center Line 2021 Rate

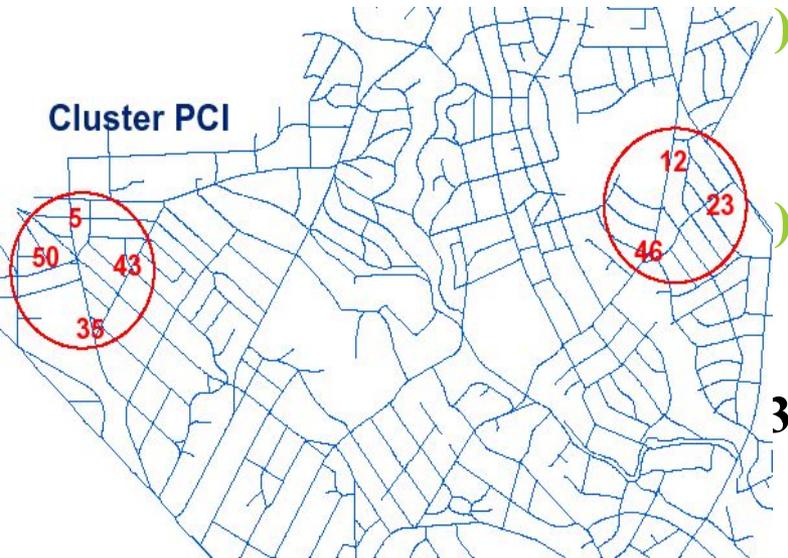
-  POOR-FAIR
-  FAIR
-  GOOD
-  VERYGOOD
-  EXCELLENT



- Streets rated Poor to Fair will have priority for resurfacing
- These streets are shown with red and orange color

# Street Restoration Program

The annual street restoration schedule is based on the following criteria:



## **Pavement Condition Ratings:**

Ratings are adjusted overtime assuming pavement conditions deteriorate

## **Logistical considerations:**

Clustering of work to optimize efficiency, scheduling & reduce mobilization cost

## **3) Public safety & life span considerations**

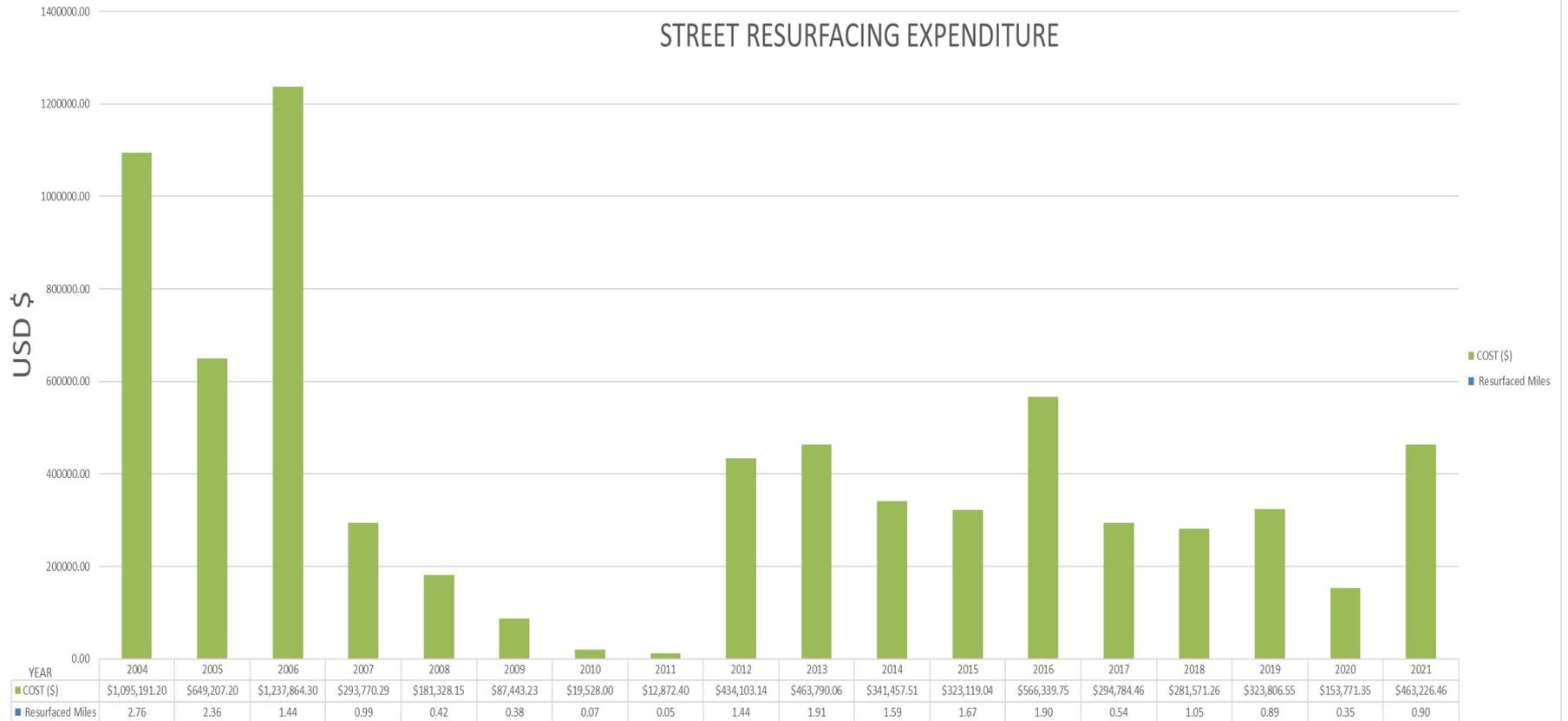
Considerations for how traffic volumes might accelerate deterioration

## **4) Other work planned for the street**

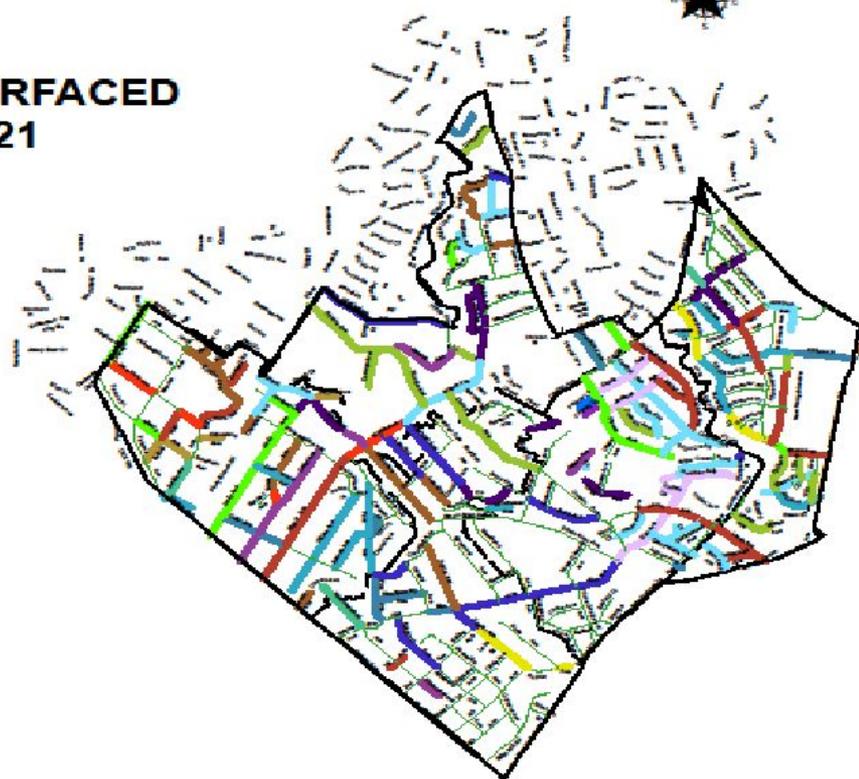
Coordinate with scheduled utility work or City projects

Year	Resurfaced Miles	No. Blocks	COST (\$)
2004	2.76	30	\$1,095,191.20
2005	2.36	21	\$ 649,207.20
2006	1.44	30	\$1,237,864.30
2007	0.99	12	\$ 293,770.29
2008	0.42	6	\$ 181,328.15
2009	0.38	3	\$ 87,443.23
2010	0.07	1	\$ 19,528.00
2011	0.05	1	\$ 12,872.40
2012	1.44	11	\$ 434,103.14
2013	1.91	15	\$ 463,790.06
2014	1.59	19	\$ 341,457.51
2015	1.67	17	\$ 323,119.04
2016	1.90	27	\$ 566,339.75
2017	0.54	22	\$ 294,784.46
2018	1.05	14	\$ 281,571.26
2019	0.89	11	\$ 323,806.55
2020	0.35	5	\$ 153,771.35
2021	0.90	5	\$ 463,226.46
<b>SUM</b>	<b>20.72</b>	<b>250</b>	<b>\$7,223,174.34</b>
<b>AVERAGE</b>	<b>1.15</b>		<b>\$ 401,287.46</b>

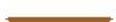
## STREET RESURFACING EXPENDITURE



# STREET RESURFACED 2004-2021



**Legend Year Resurfaced**

	2004
	2005
	2006
	2007
	2008
	2009
	2010
	2011
	2012
	2013
	2014
	2015
	2016
	2018
	2019
	2020
	2021

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# Tentative Street Resurfacing List FY 22 through FY 25

egm	StreetName	From Street	To Street	Length	Length	Width	PCI	Cum miles	Es. Cost/ segment	Cum. cost	STATU	Schedule	Budget Exp./yr
	2/2/2022			feet	mile			Σmile	\$	\$		Year	
9	SLIGO MILL RD	SLIGO MILL RD	SHERIDAN ST	160	0.03	30	45.00	0.03	\$ 11,393.24	\$ 11,393.24		FY22	
39	SERVICE RD	EASTERN STREET NW	EASTERN AVENUE NE	609	0.12	23	50.00	0.15	\$ 43,250.16	\$ 54,643.40	HOLD	FY23	WSSC
6	SLIGO MILL RD	ORCHARD AVE	SLIGO MILL RD	214	0.04	26	55.00	0.19	\$ 15,189.49	\$ 69,832.89		FY22	
85	NEW HAMPSHIRE SERV	NEW HAMPSHIRE AVE	NEW HAMPSHIRE AVE	314	0.06	20	47.39	0.25	\$ 22,289.51	\$ 92,122.40		FY22	
369	NEW HAMPSHIRE SER	KINGWOOD DR	MERWOOD DR	669	0.13	18	57.00	0.37	\$ 47,541.38	\$ 139,663.78		FY22	
124	KENTLAND AVE	NEW HAMPSHIRE AVE	HOPEWELL AVE	345	0.07	29	49.16	0.44	\$ 24,507.74	\$ 164,171.51		FY22	
107	KENTLAND AVE	HOPEWELL AVE	EAST WEST HWY	187	0.04	29	50.04	0.47	\$ 13,257.88	\$ 177,429.40		FY22	
10	SHERIDAN ST	NEW HAMPSHIRE AVE	SLIGO MILL RD	253	0.05	39	50.09	0.52	\$ 17,973.31	\$ 195,402.70		FY22	
469	HOUSTON AVE	ROANOKE AVE	BRIGHTON AVE	207	0.04	26	54.79	0.56	\$ 14,730.49	\$ 210,133.20		FY22	
142	LARCH AVE	NEW HAMPSHIRE AVE	LOCUST AVE	106	0.02	26	55.00	0.58	\$ 7,534.98	\$ 217,668.17		FY22	
467	HOUSTON AVE	BRIGHTON AVE	KENNEBEC AVE	767	0.15	26	55.00	0.73	\$ 54,499.57	\$ 272,167.74		FY22	
224	DOGWOOD AVE	CEDAR AVE	BIRCH AVE	319	0.06	26	57.00	0.79	\$ 22,666.49	\$ 294,834.23		FY22	
238	DOGWOOD AVE	BIRCH AVE	HOLLY AVE	324	0.06	26	58.00	0.85	\$ 23,006.72	\$ 317,840.95		FY22	
242	HEATHER LA	HEATHER AVE	LANE #2	599	0.11	15	57.00	0.96	\$ 42,531.79	\$ 360,372.75		FY22	
376	DUNDALK RD	BOSTON AVE	DUNDALK RD	486	0.09	26	57.25	1.05	\$ 34,529.59	\$ 394,902.34		FY22	
269	ERSKINE ST	GLENSIDE DR	THIRTEENTH AVE	156	0.03	40	59.62	1.08	\$ 11,089.50	\$ 405,991.84		FY22	
252	MAPLE AVE	PHILADELPHIA AVE	PHILADELPHIA AVE	192	0.04	27	62.00	1.12	\$ 13,624.22	\$ 419,616.06		FY22	
482	UNIVERSITY LA	UNIVERSITY BLVD	ANNE AVE	617	0.12	20	62.35	1.24	\$ 43,854.48	\$ 463,470.54		FY22	1.19
338	DARWIN AVE	GRANT AVE #2	DARWIN AVE	369	0.07	26	63.07	1.31	\$ 26,192.53	\$ 489,663.08		FY22	\$ 446,412.91
212	ASPEN AVE # 2	BOYD AVE	LINCOLN AVE	456	0.09	26	64.78	0.23	\$ 32,395.36	\$ 87,038.77		FY23	
199	HANCOCK AVE	GRANT AVE	HANCOCK AVE	188	0.04	24	64.95	0.27	\$ 13,330.48	\$ 100,369.24		FY23	
258	ERSKINE ST	FOURTEENTH AVE	ERSKINE ST	137	0.03	26	65.00	0.29	\$ 9,751.63	\$ 110,120.87		FY23	
263	ERSKINE ST	THIRTEENTH AVE	THIRTEENTH PL	222	0.04	26	65.00	0.34	\$ 15,794.65	\$ 125,915.52		FY23	
483	ROANOKE AVE	HOUSTON AVE	HUDSON AVE	506	0.10	23	65.10	0.43	\$ 35,940.88	\$ 161,856.40		FY23	
280	BUFFALO AVE	ALBANY AVE	TAKOMA AVE	473	0.09	23	66.17	0.52	\$ 33,606.80	\$ 195,463.21		FY23	
102	TULIP AVE	SPRUCE AVE	CARROLL AVE	356	0.07	23	67.12	0.59	\$ 25,312.62	\$ 220,775.82		FY23	
110	HOPEWELL AVE	KENTLAND AVE	LARCH AVE	444	0.08	26	67.49	0.67	\$ 31,522.22	\$ 252,298.04		FY23	
312	BUFFALO AVE	NEW YORK AVE	ALBANY AVE	525	0.10	23	67.79	0.77	\$ 37,253.29	\$ 289,551.33		FY23	
261	ERSKINE ST	THIRTEENTH PL	FOURTEENTH AVE	272	0.05	26	68.00	0.82	\$ 19,340.18	\$ 308,891.50		FY23	
101	WOODLAND AVE	ELM AVE	BEECH AVE	440	0.08	23	68.20	0.91	\$ 31,265.71	\$ 340,157.22		FY23	
92	HICKORY AVE	ELM AVE	MONTGOMERY AVE	336	0.06	23	68.60	0.97	\$ 23,836.95	\$ 363,994.17		FY23	
105	HICKORY AVE	MONTGOMERY AVE	COLUMBIA AVE	554	0.10	23	68.76	1.08	\$ 39,337.53	\$ 403,331.70		FY23	
352	CHESTNUT AVE	HODGES LA	GRANT AVE #2	198	0.04	18	69.13	1.11	\$ 14,051.01	\$ 417,382.71		FY23	
484	HUDSON AVE	EASTRIDGE AVE	ROANOKE AVE	205	0.04	26	69.40	1.15	\$ 14,564.73	\$ 431,947.44		FY23	
373	SERV RD	KINGWOOD DR	KINGWOOD DR	16	0.00	18	69.60	1.15	\$ 1,126.29	\$ 433,073.73		FY23	

egm I	StreetName	From_Street	To_Street	Length	Length	Width	PCI	Cum miles	Es. Cost/ segment	Cum. cost	STATU	Schedule	Budget Exp./yr
	2/2/2022			feet	mile			Σmile	\$	\$		Year	
470	ROANOKE AVE	KENNEBEC AVE	HOUSTON AVE	557	0.11	23	69.65	1.26	\$ 39,564.71	\$ 472,638.44		FY23	
225	HANCOCK AVE	LEE AVE	GRANT AVE	346	0.07	24	69.66	1.33	\$ 24,547.79	\$ 497,186.23		FY23	2.53
11	KANSAS LA	KANSAS AVENUE NE	WESTMORELAND ST	386	0.07	26	69.74	1.40	\$ 27,393.29	\$ 524,579.52		FY23	\$ 469,936.12
90	LAUREL AVE	CARROLL AVE	EASTERN STREET NW	334	0.06	57	70.00	1.46	\$ 23,724.66	\$ 548,304.18		FY24	
169	ELM AVE	DEVONSHIRE RD	LARCH AVE	471	0.09	28	70.00	1.55	\$ 33,423.38	\$ 581,727.56		FY24	
187	ELSON ST	FOURTEENTH AVE	ELSON ST	141	0.03	24	70.00	1.58	\$ 10,002.15	\$ 591,729.71		FY24	
423	ELWYN CT	MISSISSIPPI AVE	ELWYN CT	110	0.02	30	70.00	1.60	\$ 7,839.79	\$ 599,569.50		FY24	
217	COLBY AVE	CHERRY AVE #2	COLBY AVE	333	0.06	20	70.01	1.66	\$ 23,645.13	\$ 623,214.63		FY24	
255	FOURTEENTH AVE	ERSKINE ST	ELSON PL	314	0.06	26	70.96	1.72	\$ 22,267.34	\$ 645,481.97		FY24	
259	FLOWER AVE	GARLAND AVE	GARLAND AVE	38	0.01	23	71.00	1.73	\$ 2,686.29	\$ 648,168.26		FY24	
190	WILLOW AVE	VALLEY VIEW AVE	TULIP AVE	1239	0.23	21	72.00	1.96	\$ 88,011.06	\$ 736,179.32		FY24	
139	LARCH AVE	HOPEWELL AVE	NEW HAMPSHIRE AVE	650	0.12	30	72.48	2.09	\$ 46,132.27	\$ 782,311.59		FY24	
451	ERIE AVE	FLOWER AVE	MAPLE AVE	833	0.16	23	72.78	2.24	\$ 59,135.94	\$ 841,447.53		FY24	
79	ELM AVE	POPLAR AVE	POPLAR AVE	51	0.01	23	72.88	2.25	\$ 3,619.37	\$ 845,066.90		FY24	
40	FIRST AVE	FIRST AVE	WESTMORELAND	165	0.03	20	72.93	2.28	\$ 11,734.67	\$ 856,801.57		FY24	
148	ETHAN ALLEN AVE	GRANT AVE	SYCAMORE AVE	140	0.03	30	73.00	2.31	\$ 9,954.76	\$ 866,756.33		FY24	
244	HEATHER LA	LANE #2	GLENGARY	296	0.06	15	73.00	2.37	\$ 21,000.65	\$ 887,756.99		FY24	
153	WOODLAND AVE	WOODLAND AVE	ETHAN ALLEN AVE	718	0.14	23	73.01	2.50	\$ 50,968.96	\$ 938,725.94		FY24	
137	COLUMBIA AVE	POPLAR AVE	SYCAMORE AVE	367	0.07	23	73.17	2.57	\$ 26,043.57	\$ 964,769.51		FY24	1.28
434	ALLEY #4	NEW HAMPSHIRE SERV	UNIVERSITY BLVD	553	0.10	20	73.42	2.68	\$ 39,267.50	\$ 1,004,037.01		FY24	\$ 479,457.49
245	BALTIMORE AVE	TAKOMA AVE	ALBANY AVE	642	0.12	23	73.61	2.80	\$ 45,568.31	\$ 1,049,605.32		FY25	
28	COCKERVILLE AVE	CIRCLE AVE	CIRCLE AVE	39	0.01	26	73.63	2.81	\$ 2,796.50	\$ 1,052,401.82		FY25	
389	HOLTON LA	NEW HAMPSHIRE SERV	NEW HAMPSHIRE AVE	88	0.02	29	73.72	2.82	\$ 6,219.92	\$ 1,058,621.74		FY25	
375	CENTRAL AVE	CARROLL AVE	DAVIS AVE	240	0.05	30	73.74	2.87	\$ 17,071.60	\$ 1,075,693.34		FY25	
183	JACKSON AVE	JACKSON AVE	BOYD AVE	117	0.02	26	74.12	2.89	\$ 8,339.44	\$ 1,084,032.78		FY25	
222	HEATHER AVE	HEATHER LA	ELM AVE	144	0.03	23	74.41	2.92	\$ 10,255.85	\$ 1,094,288.63		FY25	
270	GLENSIDE DR	ERSKINE ST	NEW HAMPSHIRE SERV	91	0.02	17	74.46	2.94	\$ 6,452.94	\$ 1,100,741.56		FY25	
134	TULIP AVE	CEDAR AVE	MAPLE AVE	438	0.08	23	74.98	3.02	\$ 31,077.73	\$ 1,131,819.30		FY25	
186	NEW YORK AVE	TAKOMA AVE	PINEY BRANCH RD	393	0.07	23	75.00	3.09	\$ 27,893.99	\$ 1,159,713.29		FY25	
378	HOLTON LA	NEW YORK AVE	CHICAGO AVE	866	0.16	23	75.00	3.26	\$ 61,511.90	\$ 1,221,225.19		FY25	
387	BOSTON AVE	HOLTON LA	NEW HAMPSHIRE	853	0.16	44	75.00	3.42	\$ 60,560.62	\$ 1,281,785.81		FY25	
431	5TH AVE	BOSTON AVE	TAKOMA AVE	870	0.16	26	75.03	3.58	\$ 61,759.88	\$ 1,343,545.69		FY25	
7	ELM AVE	5TH AVE	WESTMORELAND	474	0.09	26	75.21	3.67	\$ 33,678.30	\$ 1,377,223.99		FY25	
115	WILLOW AVE	ELM AVE	ETHAN ALLEN AVE	202	0.04	28	75.30	3.71	\$ 14,348.17	\$ 1,391,572.16		FY25	\$ 1.14
191	PHILADELPHIA AVE	MAPLE AVE	PARK AVE	559	0.11	25	76.19	3.82	\$ 39,688.85	\$ 1431261.012		FY25	\$ 427,224.00