

**The Eighth Report of the
Infrastructure Maintenance Task Force**

Preliminary Report

February 2020



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Table of Contents

1. Overview	1
2. Information on Infrastructure Maintenance	1
Members of the Infrastructure Maintenance Task Force	4

Attachments

Capital Maintenance Schedule: County Government	©1
Capital Maintenance Schedule: Public Schools	©3
Capital Maintenance Schedule: Montgomery College	©5
Capital Maintenance Schedule: M-NCPPC	©8
Operating Maintenance Schedule: County Government	©11
Operating Maintenance Schedule: Public Schools	©12
Operating Maintenance Schedule: Montgomery College	©13
Operating Maintenance Schedule: M-NCPPC	©16

“There are no ribbon cuttings and few, if any, press releases for maintenance and technology; these projects traditionally do not compete well in budget deliberations. Nevertheless, these issues require our continued attention and support.”

Former Councilmember Marilyn J. Praisner
Initial Chair of the Infrastructure Maintenance Task Force
March 20, 2006

1. Overview

In March 2005 the Infrastructure Maintenance Task Force (IMTF) issued its first regular report describing the funding necessary to maintain adequately the County agencies' infrastructure, including school buildings, libraries, recreation centers, administrative buildings, roads, sidewalks and hiker-biker trails, garages and lots, ballfields, playgrounds, and other publicly owned facilities. The Task Force was initially chaired by former Councilmember Marilyn J. Praisner, and has consisted of facilities managers from Montgomery County Government, Montgomery County Public Schools, Montgomery College, and the Maryland-National Capital Park and Planning Commission.

The Task Force's mission is focused on capital programs that rehabilitate infrastructure or replace it in kind, and on operating programs engaged in preventive maintenance—the kind of maintenance that preserves the quality of a capital asset so that it can be functional throughout its useful life. A few examples of such programs are: planned life-cycle asset replacement (PLAR); exterior painting; roof replacement; resurfacing; bridge renovation and rehabilitation; and window caulking. Some types of programs *not* included in this study include school renovations/expansions, interior painting, and litter collection.

The primary objective of the Task Force is to identify the direst needs as candidates for additional funding in the upcoming Capital Improvements Program (CIP) and Operating Budget.

2. Information on Infrastructure Maintenance

Over the winter months the Task Force updated information that the members had developed for the fourth report. The Task Force used the same format as the last report for the CIP tables; the information is arrayed in the tables on ©1-10. The data items are:

- **Capital Project** title (Column A), often broken down to each **Major Element** within it (Column B). For example, the Sidewalk and Curb Replacement project is on Lines 18 and 19 on ©2, with the sidewalk element on Line 18 and the curb and gutter replacement element on Line 19. Any further clarifications or assumptions are included under **Notes** (Column C).
- **Acceptable Life Span (years)** is not the optimal life span of the asset, but what each agency feels is a tolerable life span—assuming at least some level of regular maintenance—before it has to be replaced or comprehensively rehabilitated. For example, the Department of Transportation (DOT) believes that the acceptable life span for curb and gutter is 30 years (Column D).
- **Inventory** is the quantity of the asset in **Units** that are either shown in Columns E and F, respectively. There are an estimated 3,336 miles of curb and gutter on County streets (Columns E and F).

- **How much/many should be replaced annually** is generally the **Inventory** divided by the **Acceptable Life Span**, rounded to the nearest unit. In this example, 111 miles of curb and gutter should be replaced every year (Column G).
- **Average Cost** is the mean cost of replacing/rehabilitating the particular type of infrastructure, in current-year dollars. The mean cost of replacing curb and gutter is \$105,000/mile in FY 2020 dollars (Column H).
- **Acceptable Annual Replacement Cost** is how much money should be budgeted annually to replace/rehabilitate the particular type of infrastructure so that the entire **Inventory** will last over the **Acceptable Life Span**. This is calculated by multiplying the **How much/many should be replaced annually** figure by the **Average Cost** figure. In the case of curb and gutter replacement, 111 miles x \$105,000/mile = \$11,676,000 (Column I). *This is the baseline against which the budget should be compared.*
- **FY20 Approved** is the amount budgeted for FY20—explicitly or implicitly—for this item in the CIP as approved by the Council last May. In this case there was \$6,700,000 programmed to the Sidewalk and Curb Replacement project for FY20, of which \$3,350,000 implicitly was for curb and gutter replacement (Column J).
- **FY21 Request** is the amount requested for FY20—explicitly or implicitly—for this item in the CIP as recently requested by the agency. In this case the Executive has requested \$4,500,000 for the Sidewalk and Curb Replacement project in FY21, of which \$2,250,000 implicitly is for curb and gutter replacement (Column K).
- **Future Funding Level** indicates whether the CIP programs the same level as FY21 in each of FYs22-26, or whether it eventually attains a higher or lower level. For curb and gutter replacement a higher level than \$2,250,000 is programmed in at least one later year (Column L).
- **Backlog** is the amount of funds that would need to be programmed in one year to eliminate the backlog immediately. DOT calculates that a one-time expenditure of \$233,520,000 would eliminate the backlog in curb and gutter replacement (Column M).
- **Criticality Rating** is a 1-to-5 rating on an ordinal scale indicating the relative importance of replacing this particular type of infrastructure. The scale is defined as follows:
 - 5 = Life safety and systems absolutely necessary to occupy the buildings or very important to the preservation of the facility.
 - 4 = Systems that are very important to the operation of the facility.
 - 3 = Systems that do not typically fail to perform suddenly, but are fairly important to operation of the facility.
 - 2 = Passive systems that are not vital to the operation of the facility.
 - 1 = Systems that are primarily aesthetic in nature or perform a less important function.

Curb and gutter replacement has a Criticality Rating of '4' (Column N).

The Task Force made a special effort to use the same **Acceptable Life Span** and **Criticality Rating** for similar types of infrastructure across agencies. However, the **Average Cost** of these items often differs from one agency to the next, due to the special circumstances of each agency's assets.

The **Acceptable Annual Replacement Cost** could be less than what is displayed in the tables for individual items depending upon how aggressive facilities are otherwise modernized or improved. School and other building modernizations not only provide more core space, but also replace HVAC, roof, and other building systems.

The Operating Budget tables are simpler, noting for each infrastructure element the maintenance activity, the Annual Requirement (the corollary to the Acceptable Annual Replacement Cost in the CIP tables), the FY20 Approved Budget, the FY21 Request, and the Criticality Rating. The information is displayed on ©11-16. This Preliminary Report does not include the FY21 Request for County Government departments, as this information will not be made available until March 15; a Final Report will be published after March 15 including this information.

**Members of the
Infrastructure Maintenance Task Force**

Montgomery County Department of General Services

Angela Dizelos
Sunil Pandya
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Montgomery County Department of Transportation

Fred Lees
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County Council

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.	A	B	C	D	E	F	G	H	I	J		K		L	M	N
										Acceptable Life Span (Years)	Inventory	Units	How much/may be replaced annually			
1	Capital Project	Major Element	Notes	Acceptable Life Span (Years)	Inventory	Units	How much/may be replaced annually	Average Cost	Acceptable Annual Replacement Cost	FY20 Approved	FY21 Request	Future Funding Level	Backlog	Criticality Rating		
2																
3	Montgomery County Government															
4	Infrastructure Maintenance: Capital Improvements Program															
5	HVAC/Elec Replacement: MCG	HVAC & Electrical Systems	\$15K for HVAC; \$5K for electric system	20	5,400	systems	270	\$21,800	\$5,885,883	\$2,950,000	\$2,950,000	\$11,800,000	\$44,038,246	5		
6	PLAR: MCG		PLAR total	Varies 20-50	10,089,003	sf	316,500	\$49	\$14,242,500	\$2,470,000	\$2,250,000	\$9,000,000	\$58,862,500	4		
7	Resurfacing Parking Lots: MCG	Asphalt lots and drainage		20	150	lots	6	\$163,497	\$980,981	\$650,000	\$650,000	\$2,600,000	\$3,269,935	4		
8	Roof Replacement: MCG	Roofing Systems	Roof condition survey completed in FY05	20	250	roofs	12	\$408,742	\$4,904,903	\$2,240,000	\$2,240,000	\$8,960,000	\$13,324,513	5		
9	HVAC/Elec Replacement: FS	HVAC & Electrical Systems		20	15	stations	1	\$1,150,000	\$1,150,000	\$1,150,000	\$1,150,000	Same		5		
10	Resurfacing: Fire Stations	Paved Surfaces		20	36	stations	2	\$150,000	\$300,000	\$300,000	\$300,000	Same		4		
11	Roof Replacement: FS	Roofing Systems		20	7	stations	1	\$352,000	\$352,000	\$352,000	\$352,000	Same		5		
12	Elevator Modernization	Elevator Systems, Lifts, Escalators		20	120	elevators	6	\$326,994	\$1,961,961	\$1,000,000	\$1,000,000	\$4,000,000	\$5,771,766	4		
13	Life Safety Systems:MCG	Life Safety Systems		15	125	systems	8	\$108,998	\$871,983	\$626,000	\$625,000	\$2,500,000	\$1,229,913	5		
14	Bridge Preservation Program	Paint Systems		15	145	bridges	5	\$100,000	\$500,000	\$504,000	\$504,000	Same	\$5,000,000	3		
15	Bridge Renovation	All bridge components	Work scope based on biennial inspections	20	481	bridges	25	\$200,000	\$5,000,000	\$4,000,000	\$6,780,000	\$5,000,000	\$55,000,000	4		
16	County Maintained Roadways	Primary/Arterials	FY20@PCI 69.6	15	991	lane-mi	66	\$203,000	\$13,411,533	\$6,750,000	\$6,750,000	Higher	\$170,000,000	4		
17	County Maintained Roadways	Residential/Rural	FY20@PCI 66.6	15-20	4,324	lane-mi	247	\$199,000	\$49,170,057	\$28,000,000	\$20,944,000	Higher	\$737,000,000	4		



1	A	B	C	D	E	F	G	H	I	J		K		L	M	N
										Accepted	FY20	FY21	Request			
2	Capital Project	Major Element	Notes	Acceptable Life Span (Years)	Inventory	Units	How much/many should be replaced annually	Average Cost	Acceptable Annual Replacement Cost	Approved	FY21	Request	Future Funding Level	Backlog	Criticality	
18	Infrastructure Revit. Sidewalk	Sidewalks Repairs		30	1,668	miles	56	\$74,000	\$4,114,400	\$3,350,000	\$2,250,000	\$2,250,000	Higher	\$82,288,000	4	
19	Infrastructure Revit. Curb & Gutter	Curb & Gutter Repairs		30	3,336	miles	111	\$105,000	\$11,676,000	\$3,350,000	\$2,250,000	\$2,250,000	Higher	\$233,520,000	4	
20	Street Tree Preservation	Neighborhood Block Pruning		10	500,000	each	50,000	\$375	\$18,750,000	\$3,100,000	\$3,100,000	\$3,100,000	Same	\$187,000,000	4	
21	County Maintained Storm Drain	Storm Drain	Survey is 85% completed, as of 2019. Size under 5'	40-75	Pipes 12, 130 Culverts 1,368	each	Pipes 303 Culverts 18	Pipes \$10,725 Culverts \$43,250	\$4,041,000	\$1,200,000	\$1,200,000	\$1,200,000	Higher	\$47,300,000	4	
22	Guardrail Projects	Guardrails & End Treatments		30	100	miles	3.5	\$316,800	\$1,108,800	\$25,000	\$25,000	\$25,000	Same	\$15,840,000	3	
23	Streetlighting	Pole & luminaire fixtures		25	29,500	street lights	1180	\$1,575	\$1,858,000	\$100,000	\$90,000	\$90,000	Same	\$23,231,250	4	
24	Traffic Signals	County owned signalized intersections		25	278	signals	11	\$300,000	\$3,300,000	\$1,725,000	\$1,725,000	\$1,725,000	Same	\$33,360,000	5	

1	A	B	C	D	E	F	G	H	I	J		K		L	M	N	
										Acceptable Life Span (Years)	Inventory	Units	How much/many should be replaced annually				Average Cost
2	Capital Project	Major Element	Notes														
25	Montgomery County Public Schools																
26	Infrastructure Maintenance: Capital Improvements Program																
27	Fire Safety	Life Safety Equip	Fire Alarm Systems/ Pumps	15	248	systems	17	\$177,381	\$4,045,000	\$817,000	\$817,000	\$817,000	Higher	\$12,783,000	5		
28	Food Service Equipment		Kitchen hoods	30	142	each	1	\$95,727	\$919,000	\$0	\$0	\$0	Higher	\$4,322,000	5		
29	PLAR: Door/Window	Exterior Doors/Windows		30	1,540,500	sf	27,356	\$168	\$4,604,000	\$300,000	\$300,000	\$550,000	Higher	\$28,430,000	3		
30		Interior Doors/Solid wood doors		20	1,301,500	sf	26,295	\$61	\$1,604,000	\$200,000	\$200,000	\$120,000	Higher	\$8,451,000	2		
31		Elec Service/ Distribution		35	25,203,703	sf	720,106	\$6	\$608,000	\$260,000	\$260,000	\$976,000			4		
32	PLAR: Electrical	Emergency Power		25	25,203,703	sf	1,008,148	\$18	\$232,331	\$1,012,500	\$1,012,500	\$412,500	Higher	\$44,724,000	5		
33		Lighting and Branch Wiring		20	25,203,703	sf	1,260,185	\$18	\$7,813,000	\$337,500	\$337,500	\$137,500			4		
34	PLAR: Electronics	Electronics	Stage Lighting, Security System, PA, Library Gates, Sound Systems	20	620	systems	31	\$228,888	\$7,095,528	\$75,000	\$75,000	\$125,000	Higher	\$10,385,000	5		
35	PLAR: Elevators	Bulding Elevators		20	201	each	10	\$317,000	\$3,170,000	\$1,000,000	\$1,000,000	\$300,000	Higher	\$4,834,800	4		
36		Handicap Lifts		15	109	each	7	\$62,000	\$434,000	\$130,000	\$130,000	\$175,000	Higher	\$600,000	4		
37		Ceiling		20	25,013,940	sf	1,250,697	\$9	\$13,464,000	\$450,000	\$450,000	\$375,000	Higher		1		
38	PLAR: Finishes	Floor		20	25,013,940	sf	1,250,697	\$8	\$12,806,000	\$755,000	\$755,000	\$305,000	Higher	\$114,693,000	2		
39		Wall		10	54,823,547	sf	5,482,355	\$4	\$3,972,000	\$531,000	\$531,000	\$250,000	Higher		1		
40		System		35	25,013,940	sf	714,684	\$13	\$882,000	\$25,000	\$25,000	\$450,000	Higher	\$4,500,000	4		
41	PLAR: Plumbing	(Non Restroom) fixtures		25	25,013,940	sf	1,000,558	\$14	\$216,210	\$25,000	\$25,000	\$55,000	Higher	\$2,600,000	4		
42	PLAR: Equipment	Lockers		20	70	schools	4	\$360,000	\$2,453,000	\$425,000	\$425,000	\$350,000	Higher	\$11,656,000	2		
43		Playground		20	570	pieces or systems	29	\$41,463	\$1,202,427	\$425,000	\$425,000	\$425,000	Higher	\$9,000,000	2		
44	PLAR: Casework			15	25,013,940	sf	1,667,596	\$2.24	\$3,734,000	\$110,000	\$110,000	\$0	Higher	\$26,023,000	2		
45	PLAR: Auditorium	Seating, Stage Curtain		20	25	each	2	\$351,500	\$703,000	\$0	\$0	\$0	Higher	\$3,850,000	2		

1	A Capital Project	B Major Element	C Notes	D Acceptable Life Span (Years)	E Inventory	F Units	G How much/many should be replaced annually	H Average Cost	I Acceptable Annual Replacement Cost	J		K CIP		L Future Funding Level	M Backlog	N Criticality Rating
										FY20 Approved	FY21 Request	FY20 Approved	FY21 Request			
2																
46		Pavement	Parking lot/driveway	20	18,628,000	sf	204,248	\$12	\$2,500,000	\$1,985,000	\$1,525,000	\$20,000,000	3			
47		Curb/Gutter/Sidewalks		30	4,235,000	lf	141,167	\$12	\$1,727,884	\$235,000	\$215,000	\$5,000,000	2			
48		Paved play area	Tennis/Basketball	20	10,376,000	sf	100,000	\$12	\$1,224,000	\$1,290,000	\$1,130,000	\$8,000,000	1			
49	PLAR: Site	Indoor Bleachers/Partitions		30	66	each	2	\$128,000	\$1,071,000	\$0	\$0	\$8,804,000	1			
50		Outdoor Bleacher/Grandstand		30	26	each	0.3	\$827,000	\$248,100	\$0	\$0	\$2,800,000	3			
51		Fencing		30	900,000	lf	30,000	\$17	\$520,200	\$90,000	\$30,000	\$6,250,000	2			
52		Athletic fields	Baseball, soccer, Football	20	280	fields	14	\$215,000	\$3,010,000	\$75,000	\$0	\$16,350,000	2			
53		Stormwater Mgmt		45	167	schools	4	\$50,000	\$200,000	\$616,000	\$616,000	\$8,750,000	2			
54	PLAR: QZAB Funding	QZAB funding (State)								\$608,564	\$0	n/a				
55	PLAR: ASP Funding	ASP Funding (State)								\$604,463	\$602,561	n/a				
56	PLAR: Total	PLAR Subtotal							\$76,413,680			\$345,700,800				
57	HVAC	Chillers		25	286	each	8	\$300,000	\$2,400,000	\$2,400,000	\$4,200,000	\$125,560,269	5			
58		Distribution Systems		30	25,990,076	sf	735,000	\$28	\$20,580,000	\$13,440,000	\$20,520,000	\$29,154,714	4			
59		Boilers		25	465	each	13	\$175,000	\$2,275,000	\$1,400,000	\$2,450,000	\$5,194,000	2			
60		Air Handling Units		20	1,019	each	28	\$85,000	\$2,660,000	\$760,000	\$1,330,000	\$7,620,000	2			
61	HVAC: Total	HVAC Subtotal							\$27,915,000	\$18,000,000	\$28,500,000	\$125,560,269	5			
62	Restroom Renovation	Plumbing fixtures (restrooms)		25	17,025	each	681	\$865	\$589,065	\$1,700,000	\$3,750,000	\$29,154,714	4			
63		Specialized Finishes		20	3,117	rest-rooms	156	\$14,150	\$2,207,400	\$500,000	\$1,250,000	\$5,194,000	2			
64	Restroom: Total								\$2,796,465	\$2,200,000	\$5,000,000	\$7,620,000				
65	Energy Mgt System	EMS	Energy Mgt System	20	207	systems	10	\$205,700	\$2,057,000	\$1,400,000	\$2,760,000	\$7,619,167	4			
66	Roof Replacement	Roof	Roof Replacement	20	17,013,988	sf	565,000	\$22	\$12,430,000	\$9,500,000	\$15,000,000	\$40,516,795	5			

1	A	B	C	D	E	F	G	H	I	J	K		L	M	N
											Approved	FY21 Request			
2	Capital Project	Major Element	Notes	Acceptable Life Span (Years)	Inventory	Units	How much/many should be replaced annually	Average Cost	Acceptable Annual Replacement Cost	FY20 Approved	FY21 Request	Future Funding Level	Backlog	Criticality Rating	
67	Montgomery College														
68	Infrastructure Maintenance: Capital Improvements Program														
69	Central Plant and Distribution Systems	Replaces piping and central plant function	Includes repair and replacement	30	51	buildings	2	\$211,765	\$423,529	475,000	1,000,000	6,500,000	\$ 10,800,000	5	
70	Elevator Modernization: College		Includes repair and replacement	20	45	elevators	2	\$99,220	\$198,440	\$200,000	\$200,000	\$1,000,000	\$ 650,000	4	
71	Roof Replacement: College		Includes repair and replacement	20	51	buildings	3	\$362,745	\$1,088,235	\$250,000	\$1,000,000	\$7,456,000	\$ 18,500,000	5	
72	Planned Lifecycle Asset Replacement: College														
73		Electrical Service & Distribution		35	51	buildings	1	\$84,025	\$84,025				\$ 4,285,288	4	
74	Electrical System	Lighting & Branch Wiring		20	51	buildings	3	\$220,647	\$661,942				\$ 11,253,016	4	
75		Communications & Security		15	51	buildings	3	\$229,390	\$688,171				\$ 11,698,907	3	
76		Other Electrical Systems		15	51	buildings	3	\$27,001	\$81,004				\$ 1,377,061	4	
77		Heat Generating Systems		25	51	buildings	2	\$14,640	\$29,279				\$ 746,617	5	
78	HVAC	Cooling Generating Systems		25	51	buildings	2	\$43,830	\$87,661				\$ 2,235,353	5	
79		Distribution Systems		30	51	buildings	2	\$577,500	\$1,155,001				\$ 29,452,514	5	
80		Other HVAC		15	51	buildings	3	\$0	\$0				\$ -	3	
81	Life Safety Systems: College	Fire alarms systems and sprinklers		15	51	buildings	3	\$248,282	\$744,845				\$ 12,662,363	5	
82		Emergency Light and Power		15	51	buildings	3	\$95,594	\$286,783				\$ 4,875,312	5	
83		Plumbing Fixtures		25	51	buildings	2	\$54,573	\$109,147				\$ 2,783,241	4	
84	Plumbing	Plumbing Systems (Domestic Water Distribution, Sanitary Waste, Other)		35	51	buildings	1	\$170,200	\$170,200				\$ 8,680,179	4	

1	A Capital Project	B Major Element	C Notes	D Acceptable Life Span (Years)	E Inventory	F Units	G How much/many should be replaced annually	H Average Cost	I Acceptable Annual Replacement Cost	J CIP		L Future Funding Level	M Backlog	N Criticality Rating
										Approved	FY21 Request			
2														
85		Exterior windows		30	51	buildings	2	\$112,237	\$224,474				\$ 5,724,086	3
86		Exterior doors		30	51	buildings	2	\$24,122	\$48,245				\$ 1,230,241	3
87	Exterior Enclosure	Exterior Wall Finishes		30	51	buildings	2	\$28,775	\$57,550				\$ 1,467,526	1
88		Exterior Stairs, and Ramps		30	51	buildings	2	\$24,772	\$49,544				\$ 1,263,362	2
89		Other Exterior Enclosures		30	51	buildings	2	\$3,709	\$7,418				\$ 189,172	1
90		Ceiling Finishes		20	51	buildings	3	\$128,348	\$385,043				\$ 6,545,728	1
91		Floor Finishes		20	51	buildings	3	\$155,217	\$465,650				\$ 7,916,044	3
92		Wall Finishes		10	51	buildings	5	\$83,953	\$419,764				\$ 4,281,591	1
93	Interior Construction	Interior Doors		30	51	buildings	2	\$89,197	\$198,395				\$ 5,059,066	3
94		Stairs		30	51	buildings	2	\$44	\$88				\$ 2,237	2
95		Partitions		50	51	buildings	1	\$5,713	\$5,713				\$ 291,363	4
96		Other Interior Construction		50	51	buildings	1	\$46,294	\$46,294				\$ 2,361,002	1
97		Pavement (roadways, parking lots, walkways)		20	3	campuses	0.2	\$2,031,403	\$304,710				\$ 6,094,208	3
98		Site Lighting		25	3	campuses	0.1	\$3,798,979	\$455,877				\$ 11,396,936	2
99	Site	Site Communications & Security		25	3	campuses	0.1	\$119,965	\$14,396				\$ 359,896	2
100		Storm Sewer		30	3	campuses	0.1	\$841,248	\$84,125				\$ 2,523,743	4
101		Other Site		30	3	campuses	0.1	\$1,905,290	\$190,529				\$ 5,715,870	2
102	Athletic Fields													
103		Turf	Complete renovation	10	1		0.1	\$16,402	\$1,640				\$ 16,402	2
104	Site Development -- Soccer Field	Backstops	Includes fencing & benches	15	1		0.1	\$23,600	\$1,573				\$ 23,600	2
105		Infields	Complete reconstruction	10	1		0.1	\$19,706	\$1,971				\$ 19,706	2
106	Site Development -- Football Field	Turf	Complete renovation	5	1		0.2	\$873,415	\$174,683				\$ 873,415	2
107		Seats, walkways & stairs	Treat wood and paint	20	1		0.1	\$203,028	\$10,151				\$ 203,028	2

1	A Capital Project	B Major Element	C Notes	D Acceptable Life Span (Years)	E Inventory	F Units	G How much/many should be replaced annually	H Average Cost	I Acceptable Annual Replacement Cost	J Approved		K CIP		L Future Funding Level	M Backlog	N Criticality Rating
										FY20	FY21	Request				
2																
108	Site Development -- Baseball Field	Backstops	Includes fencing & benches	15	2		0.1	\$15,340	\$2,045						\$ 30,680	2
109		Turf	Complete renovation	10	2		0.2	\$12,272	\$2,454						\$ 24,544	2
110		Infields	Complete reconstruction	10	2		0.2	\$1,599,512	\$319,902						\$ 3,199,025	2
111	Site	Pavement		20	18		1	\$47,930	\$47,930						\$ 862,740	2
112	Development --	Fencing		20	18		1	\$10,001	\$10,001						\$ 180,013	2
113	Tennis Courts	Color Coating		10	18		2	\$728	\$1,455						\$ 13,098	2
114	Site Development - Track	Repaving		20	1		0.1	\$168,829	\$8,441						\$ 168,829	2
115	Site Development - Wet Ponds	Dredging and rehabilitation		20	2		0.1	\$40,710	\$4,071						\$ 81,420	2
116	Total Planned Lifecycle Asset Replacement: College							Varies	\$7,642,190	\$3,000,000	\$4,000,000	\$16,000,000	\$ 158,168,421	Varies		

7

1	A	B	C	D	E	F	G	H	I	J		K	L	M	N
										Acceptable Life Span (Years)	Inventory				
2	Capital Project	Major Element	Notes	Acceptable Life Span (Years)	Inventory	Units	How much/many should be replaced annually	Average Cost	Acceptable Annual Replacement Cost	FY20 Approved	FY21 Request	Future Funding Level	Backlog	Criticality Rating	
M-NCPPC, Montgomery County Department of Park and Planning Infrastructure Maintenance: Capital Improvements Program															
117															
118															
119	PLAR: Play Equipment	Equipment, Surfacing, Edging		20	283	play-grounds	14	\$250,000	\$3,500,000	\$1,580,000	\$2,000,000	\$1,895,000	\$11,520,000	5	
120	PLAR: Tennis & Multi-Use Courts	Pavement, fencing, color coating	Tennis, BB, Handball, shuffleboard, Tai Chi, hockey, Bocci, Racketball	20	545	courts	27	\$80,000	\$2,160,000	\$520,000	\$900,000	\$825,000	\$9,840,000	3	
121	PLAR: Misc. Minor Renovations: Local Parks		Includes maintenance costs related to park amenities not included in this list.						\$750,000	\$1,000,000	\$700,000	\$745,000	\$10,298,000	4	
122	PLAR: Park Buildings: Local & Non-Local		Park buildings include 136 picnic shelters / gazebos / pavilions, 28 park activity buildings, 5 nature centers, 134 restroom buildings, 3 HQ buildings, 5 event centers, 111 historic structures, and miscellaneous equipment and material storage structures. Enterprise facilities such as ice rinks and tennis bubbles; and park houses managed by Property Management are not included.												
123	PLAR: Park Buildings: Local & Non-Local	Doors & Windows	Exterior Doors	30	500	doors	17	\$790	\$13,426	\$2,537	\$3,806	\$3,616		3	
124	PLAR: Park Buildings: Local & Non-Local	Doors & Windows	Exterior Windows	30	50,000	sf	1,667	\$68	\$114,098	\$21,563	\$32,345	\$30,728		3	
125	PLAR: Park Buildings: Local & Non-Local	Electrical	Electric Service / Distribution	35	725,000	sf	20,714	\$2	\$43,624	\$8,244	\$12,367	\$11,748		4	
126	PLAR: Park Buildings: Local & Non-Local	Electrical	Emergency Light & Power	25	725,000	sf	29,000	\$11	\$305,370	\$57,712	\$86,567	\$82,239		5	
127	PLAR: Park Buildings: Local & Non-Local	Electrical	Lighting and Branch Wiring	20	725,000	sf	36,250	\$11	\$381,713	\$72,140	\$108,209	\$102,799		4	
128	PLAR: Park Buildings: Local & Non-Local	Electrical	Other Electrical Systems	15	725,000	sf	48,333	\$1	\$50,895	\$9,619	\$14,428	\$13,706		4	
129	PLAR: Park Buildings: Local & Non-Local	Electronics	Fire Alarm, Security, and PA Systems	20	112	each	6	\$157,950	\$947,700	\$179,105	\$268,658	\$255,225		5	
130	PLAR: Park Buildings: Local & Non-Local	Elevators	Elevators	20	3	each	0.2	\$210,600	\$42,120	\$7,960	\$11,940	\$11,343		4	
131	PLAR: Park Buildings: Local & Non-Local	Finishes	Exterior Walls	10	1,450,000	sf	145,000	\$1	\$152,685	\$28,856	\$43,284	\$41,120		4	
132	PLAR: Park Buildings: Local & Non-Local	Finishes	Floors	20	725,000	sf	36,250	\$2	\$76,343	\$14,428	\$21,542	\$20,560		3	
133	PLAR: Park Buildings: Local & Non-Local	Plumbing	Plumbing System	35	725,000	sf	20,714	\$6	\$130,871	\$24,733	\$37,100	\$35,245		4	
134	PLAR: Park Buildings: Local & Non-Local	Plumbing	Plumbing Fixtures	25	725,000	sf	29,000	\$6	\$183,222	\$34,627	\$51,940	\$49,343		4	

1	A Capital Project	B Major Element	C Notes	D Acceptable Life Span (Years)	E Inventory	F Units	G How much/many should be replaced annually	H Average Cost	I Acceptable Annual Replacement Cost	J CIP		L Future Funding Level	M Backing	N Criticality Rating
										FY20 Approved	FY21 Request			
2														
135		HVAC	Chillers	25	25	each	1	\$15,795	\$15,795	\$2,985	\$4,478	\$4,254		5
136	PLAR: Park Buildings: Local	HVAC	Distribution System	30	725,000	sf	24,167	\$18	\$432,613	\$81,759	\$122,639	\$116,507		5
137	& Non-Local	HVAC	Boilers	25	40	each	2	\$78,975	\$157,950	\$29,851	\$44,776	\$42,537		5
138		HVAC	Package DX Units	20	80	each	4	\$31,590	\$126,360	\$23,881	\$35,821	\$34,030		5
139	Subtotal: PLAR: Park Buildings								\$3,174,783	\$600,000	\$900,000	\$855,000	\$15,448,701	4
	PLAR: Minor Renovations	Pedestrian Bridges	Work may include replacement of bridge, abutments, and footings	25	395	each	5	\$200,000	\$1,000,000	\$400,000	\$400,000	\$400,000	\$3,600,000	4
140	Subtotal: PLAR: Miscellaneous Minor Renovations: Non-Local								\$1,600,000	\$1,764,000	\$2,600,000	\$2,600,000	\$18,434,000	
141														
142	PLAR LP: Resurfacing Lots and Paths	Resurfacing of Parking Lots, Roads and Paths	Life cycle replacement includes milling, patching and resurfacing	25	11,907,374	sf	476,295	\$3	\$1,428,865	\$800,000	\$1,500,000	\$1,393,000	\$3,773,310	3
143	Trails - Hard Surface Renovation	Boardwalk & Pavement		25	83	mi	3.3	\$200,000	\$660,000	\$450,000	\$550,000	\$700,000	\$1,250,000	3
144		Backstops	Replace backstop, fencing, and benches	25	181	fields	7.2	\$32,000	\$230,400	\$54,206	\$92,710	\$102,572		3
145		Infields	Reconstruction including grading and new infield soil	10	181	infields	18	\$28,000	\$504,000	\$135,514	\$231,774	\$256,431		3
	Ballfield Initiatives: Diamond Fields	Turf	Replacement, spot grading, improving root zone soil and drainage, re-seeding or sodding	10	181	fields	18	\$38,000	\$684,000	\$254,088	\$434,576	\$480,808		4
146		Bleachers	Replacement	25	118	bleachers	4.7	\$14,000	\$65,800	\$33,878	\$57,944	\$64,108		3
147		Lights (Baseball)	Replacement	30	13	light systems	0.4	\$145,000	\$58,000	\$20,468	\$35,008	\$38,732		3
148		Lights (Softball)	Replacement	30	45	light systems	1.5	\$125,000	\$187,500	\$82,343	\$140,835	\$155,817		3
149		Lights (rectangle)	Replacement	30	36	light systems	1.2	\$95,000	\$114,000	\$53,641	\$91,744	\$101,504		3
150														

1	A Capital Project	B Major Element	C Notes	D Acceptable Life Span (Years)	E Inventory	F Units	G How much/many should be replaced annually	H Average Cost	I Acceptable Annual Replacement Cost	J		K CIP		L Future Funding Level	M Backlog	N Criticality Rating
										FY20 Approved	FY21 Request	FY20 Approved	FY21 Request			
2		Turf	Replacement; re-crown; spot grading, improving root zone soil and drainage, re-seeding or sodding	10	161	fields	16	\$125,000	\$2,000,000	\$529,351	\$905,367	\$1,001,683			4	
151	Ballfield Initiatives:															
152	Rectangle Fields	Turf	Renovation, overseeding and aeration	3	161	fields	54	\$34,000	\$1,836,000	\$188,214	\$321,908	\$356,154			4	
153		Perimeter fencing	Replacement	25	16	fields	1	\$81,000	\$81,000	\$9,909	\$16,948	\$18,752			2	
154		Bleachers	Replacement	25	16	bleachers	1	\$32,500	\$32,500	\$12,387	\$21,186	\$23,439			3	
155	TOTAL EXPENDITURES (Note: The Ballfield Initiatives PDF funds renovations to park athletic fields renovations, some school renovations, as well as funding improvements that add field capacity such as field lighting and synthetic turf. The breakdown between renovation and new construction is approximately 50% / 50% over the six-year program.															
									\$5,793,200	\$1,374,000	\$2,350,000	\$2,600,000		\$25,515,200		



A		B		C		D		E		F		G	
1	Infrastructure Element	Component		Maintenance Activity		Annual Requirement In FY20 \$		Approved Budget FY20		Proposed Budget FY21		Criticality Rating	
Montgomery County Government													
Infrastructure Maintenance: Operating Budget													
6	HVAC	Heating, ventilation, air conditioning systems and components of facilities		Preventive maintenance of HVAC systems and components		\$	2,199,359	\$	2,445,673	TBD		4	
7	Electrical	Electrical systems and components of facilities		Preventive maintenance of electrical systems and components		\$	1,649,519	\$	1,067,567	TBD		4	
8	Structural	Structural systems and components of facilities		Preventive maintenance of structural systems and components		\$	1,649,519	\$	241,418	TBD		4	
9	Roofing	Roofing systems and components of facilities		Preventive maintenance of roofing systems and components		\$	272,495	\$	100,000	TBD		5	
10	Exterior Painting	Facilities maintained by Division of Facilities Management		Painting		\$	549,840		0	TBD		4	
11	Grounds	Grounds areas adjacent to facilities		Preventive maintenance of grounds areas adjacent to facilities		\$	2,986,712	\$	764,643	TBD		3	
12	Resurfacing	Residential Roadways (contractual only)		Crack seal, slurry seal, other preventive maintenance treatments PCI 70 @ 25 Years Requires 595 LMs		\$	4,015,200	\$	1,789,410	TBD		4	
13	Patching	All roadways maintained by Montgomery County		Includes pothole repair, emergency patching, spot patching, skin patching, routine patching, and patching not included in CIP, < PCI 80, 3393 LMs		\$	1,618,557	\$	1,521,322	TBD		4	
14	Curb & Gutter Repair	Curb & Gutter within right of way		Preventive maintenance and repair of curb and gutters		\$	300,000	\$	173,887	TBD		3	
15	Sidewalk Repair	Sidewalks within right of way		Preventive maintenance and repair of sidewalks		\$	300,000	\$	116,874	TBD		3	
16	Tree Maintenance	Trees within County easements (contractual only)		Emergency pruning, emergency tree removal, and emergency stump removal		\$	7,950,000	\$	4,530,898	TBD		5	
17	Crosswalk Maintenance	Crosswalks within County roadway system		Three-year cycle per Pedestrian Safety Committee guidance		\$	583,000	\$	326,990	TBD		5	
18	Streetlight Maintenance	Streetlights on County roadways		Work includes relamping and servicing		\$	430,500	\$	428,769	TBD		5	
19	Sign Repair & Replacement	Signs on County roadways		Repair and replacement of signs		\$	1,240,000	\$	445,330	TBD		5	
20	Centerline Paint Program	Roadways throughout the County		Paint centerline on roadways		\$	1,020,000	\$	433,000	TBD		4	
21	Signal Maintenance	Signals maintained by the County		Provides repairs, service, and maintenance to signal devices during the year		\$	1,630,186	\$	921,686	TBD		5	



A	B	C	D	E	F	G
Infrastructure Element	Component	Maintenance Activity	Annual Requirement In FY20 \$	Approved Budget FY20	Proposed Budget FY21	Criticality Rating
1						
2						
3						
22	Montgomery County Public Schools					
23	Infrastructure Maintenance: Operating Budget					
24	HVAC	Heating, ventilation, air conditioning systems and components	\$ 8,000,000	\$ 6,300,000	\$ 8,000,000	4
25	HVAC	Thermostats	\$ 450,000	\$ 408,000	\$ 410,000	4
26	EMS	Automated Temp. Control	\$ 222,000	\$ 222,000	\$ 222,000	4
27	Life Safety	Fire alarm, sprinkler, hood suppression, fire extinguisher, and emergency generators	\$ 1,200,000	\$ 1,200,000	\$ 1,400,000	5
28	Elevators	Elevators	\$ 495,300	\$ 463,348	\$ 547,348	5
29	Plumbing	Backflow preventors	\$ 260,000	\$ 260,000	\$ 260,000	3
30	Roofing	Roofing system and components	\$ 410,000	\$ 410,000	\$ 410,000	3
31	Pest Management	Building and grounds	\$ 415,000	\$ 330,000	\$ 415,000	5
32	Asbestos	All asbestos containing building components	\$ 80,000	\$ 80,000	\$ 80,000	3
33	Electrical	Electrical systems and components	\$ 510,000	\$ 12,000	\$ 12,000	4
34	Asphalt and concrete	Parking lots, driveways, paved play, sidewalks	\$ 310,000	\$ 165,000	\$ 165,000	3
35	Tree Maintenance	Trees	\$ 420,000	\$ 420,000	\$ 420,000	4
36	Moveable partitions	Partitions	\$ 86,000	\$ 26,000	\$ 26,000	2
37	Overhead doors	Overhead doors	\$ 75,000	\$ 26,000	\$ 26,000	2
38	Playground Equipment	Playground equipment	\$ 280,000	\$ 230,000	\$ 230,000	4
39	Athletic and stage systems	Basketball backboards and associated gymnasium equipment. Stage curtains and rigging	\$ 650,000	\$ 590,000	\$ 590,000	4
40	Grandstands and Bleachers	Outdoor stadium and competitive playfield bleachers and interior telescopic bleachers	\$ 120,000	\$ 30,000	\$ 30,000	4
41	Pole Lights	Stadium field lighting	\$ 200,000	\$ 125,000	\$ 125,000	3
42	Stormwater Management	Bioretention and green roof maintenance	\$ 1,536,331	\$ 1,494,530	\$ 1,730,985	4

A	B	C	D	E	F	G
Infrastructure Element	Component	Maintenance Activity	Annual Requirement In FY20 \$	Approved Budget FY20	Proposed Budget FY21	Criticality Rating
Montgomery College						
Infrastructure Maintenance Schedule: Operating Budget						
43		Identify and maintain deferred maintenance items for structures	\$ 75,000	\$ 75,000	\$ 77,250	1
44		Automatic door inspections and preventive maintenance	\$ 1,000	\$ 1,000	\$ 1,000	4
45	Deferred Maintenance	Automatic door inspections and preventive maintenance	\$ 32,180	\$ 32,180	\$ 34,698	4
46	Electrical	Maintain, service, and repair to ensure generators operational during emergencies	\$ 30,256	\$ 30,256	\$ 32,480	5
47	Electrical	Periodic testing, maintenance, and repairs of electrical systems to prevent potential fire issues	\$ 10,500	\$ 10,500	\$ 11,300	3
48	Electrical	Lighting controls and component replacements	\$ 2,500	\$ 2,500	\$ 2,000	4
49	Electrical	Relamp bulbs - Globe Hall	\$ 1,500	\$ 1,500	\$ 1,500	3
50	Electrical	Routine repairs and projects	\$ 5,000	\$ 5,000	\$ 5,000	3
51	Electrical	Preventive maintenance of electrical system and components	\$ 42,900	\$ 42,900	\$ 50,000	4
52	Electrical	Preventive maintenance of electrical system and components	\$ 2,500	\$ 2,500	\$ 2,500	4
53	Electrical	Inspections, preventive maintenance, and certifications	\$ 112,500	\$ 112,500	\$ 117,500	5
54	Electrical	Third party annual certification, formerly done by state inspectors	\$ 12,000	\$ 12,000	\$ 12,000	4
55	Elevators	Repairs and replacements	\$ 2,000	\$ 2,000	\$ 2,000	4
56	Elevators	Lawn and tree services	\$ 6,000	\$ 6,000	\$ 6,000	5
57	Glass	Perform mowing, Turf, Weed & Algae Treatment	\$ 50,000	\$ 50,000	\$ 50,000	3
58	Grounds	Refuse Collection	\$ 15,000	\$ 15,000	\$ 15,000	3
59	Grounds	Tree Maintenance	\$ 21,000	\$ 21,000	\$ 21,000	3
60	Grounds	Lawn services performed to manage weeds	\$ 13,100	\$ 13,100	\$ 14,410	3
61	Grounds	Labor & cleaning window 2nd floor and up	\$ 8,000	\$ 8,000	\$ 8,000	3
62	Grounds	Replacement of filtration units	\$ 4,500	\$ 4,500	\$ 4,500	3
63	Grounds	Preventive maintenance of HVAC systems and components	\$ 24,480	\$ 24,480	\$ 26,680	5
64	HVAC	Preventive maintenance of HVAC systems and components	\$ 38,325	\$ 38,325	\$ 41,900	5
65	HVAC	Boiler Maintenance (M)				
66	HVAC	Boiler Maintenance (C)				

A	B	C	D	E	F	G
Infrastructure Element	Component	Maintenance Activity	Annual Requirement In FY20 \$	Approved Budget FY20	Proposed Budget FY21	Criticality Rating
1						
2						
3						
67	HVAC	Chiller Maintenance (C)	Preventive maintenance of HVAC systems and components	\$ 119,195	\$ 126,364	5
68	HVAC	Compressor Maintenance (C)	Preventive maintenance of HVAC systems and components	\$ 5,000	\$ 5,000	5
69	HVAC	Compressor Maintenance (M)	Preventive maintenance of HVAC systems and components	\$ 4,730	\$ 4,730	5
70	HVAC	Cooling Tower Maintenance (C)	Quarterly inspection and services	0	0	4
71	HVAC	Energy Management Systems	Maintain, service, and repair to ensure efficient operations of HVAC systems	\$ 92,060	\$ 101,266	3
72	HVAC	Energy Management Systems (C)	Maintain, service, and repair to ensure efficient operations of HVAC systems, CRAC HT429, SA250, VFD Drives	\$ 78,750	\$ 78,750	3
73	HVAC	Heating, ventilation, air conditioning systems and components of facilities. (C)	Preventive maintenance of HVAC systems and components	\$ 74,452	\$ 82,000	5
74	HVAC	Heating, ventilation, air conditioning systems and components of facilities. (M)	Preventive maintenance of HVAC systems and components	\$ 21,130	\$ 21,130	5
75	HVAC	Water Treatment (C)	Maintain, service, and repair water treatment system to preserve the integrity of the HVAC system	\$ 25,850	\$ 28,635	5
76	Indoor Plant Maintenance	Indoor Plant Maintenance (C)	Maintain and preserve indoor plants	\$ 16,741	\$ 18,415	3
77	Janitorial	Building cleaning (C)	Building cleaning	\$ 117,000	\$ 120,000	5
78	Labor	Labor (L)	Internal labor costs to perform preventive maintenance	\$ 300,000	\$ 314,520	3
79	Life Safety	Fire Alarm/Pump Maintenance & Testing (C)	Preventive maintenance of life safety systems and components	\$ 7,565	\$ 8,220	5
80	Life Safety	Fire panel monitoring (C)	Alert staff and fire dept.	\$ 16,074	\$ 18,675	5
81	Life Safety	Service & Maintenance & Testing (C)	Preventive maintenance of life safety systems inspections and components Fire Alarm & Sprinkler Systems	\$ 15,525	\$ 15,525	5
82	Life Safety	Service & Maintenance & Testing (M)	Preventive maintenance of Life Safety systems and components Fire Alarm and sprinkler systems	\$ 5,000	\$ 5,000	5
83	Locksmith	Proxy Systems & Door handicapped closers (C)	Service, Labor & repairs doors and handicapped closers and Proxy System	\$ 5,000	\$ 5,000	5
84	Locksmith	Repairs and projects (M)	Re-core locks, repair electromagnetic locks, etc.	\$ 1,000	\$ 1,000	4

	A	B	C	D	E	F	G
	Infrastructure Element	Component	Maintenance Activity	Annual Requirement In FY20 \$	Approved Budget FY20	Proposed Budget FY21	Criticality Rating
1							
2							
3							
85	Pest Control	Exterminator services (C)	Periodic inspections and corrective actions	\$ 38,000	\$ 38,000	\$ 38,000	5
86	Plumbing	Acid Tanks/Trap Cleaning (C)	Maintained to preserve the integrity of the plumbing system	\$ 9,800	\$ 9,000	\$ 10,680	3
87	Plumbing	Boiler Maintenance (C)	Maintain, service, and repair backflow preventers to preserve the integrity of domestic water system	\$ 5,000	\$ 5,000	\$ 5,000	3
88	Plumbing	Test Backflow Preventers (C)	Maintain, service, and repair backflow preventers to preserve the integrity of domestic water system	\$ 7,500	\$ 7,500	\$ 22,500	3
89	Pool	Pool (M)	Preventive maintenance, service, and repair to pool	\$ 5,000	\$ 5,000	\$ 5,500	3
90	Pool	Pool Oxygen & Tank Rental & Pak (C)	Preventive maintenance service & repair Pak & Pool Oxygen & Tank Rental	\$ 2,500	\$ 2,500	\$ 2,500	
91	Pool	Pool Pak (M)	Preventive maintenance, service, and repair to pool	\$ 2,500	\$ 2,500	\$ 2,500	3
92	Resurfacing	Repair & Seal Tennis Courts (C)	Repair, and maintain the tennis court surfaces	\$ 12,000	\$ 12,000	\$ 19,000	3
93	Roofing	Repairs (C)	Repair leaks, perform maintenance	\$ 5,000	\$ 5,000	\$ 5,000	4
94	Storm Water Management	Storm Water Management Maintenance (C)	Maintain, service, and repair to comply with County requirements regarding storm water management	\$ 30,000	\$ 20,000	\$ 20,800	3
95	Work order system	CMIMS computerized maint mgmt system (C)					
96		(C) Contracted Services	Place and track work orders, history etc.	\$ 64,710	\$ 64,710	\$ 67,360	2
		(M) In-house Materials			(L) In-house Labor		

A	B	C	D	E	F	G
Infrastructure Element	Component	Maintenance Activity	Annual Requirement In FY20 \$	Approved Budget FY20	Proposed Budget FY21	Criticality Rating
1						
2						
3						
97		M-NCPPC, Montgomery County Department of Park and Planning				
98		Infrastructure Maintenance: Operating Budget				
99	Athletic Fields / MCPS School Sites maintained by Parks	Infield, lines and turf	\$1,565,196	\$1,391,700	\$1,605,120	3
100	Athletic fields - local & non-local	Infield, lines and turf	\$7,294,257	\$6,626,255	\$6,986,975	3
101	Hard Surface Trails	Asphalt surface and connector trails	\$2,743,330	\$2,307,855	\$2,463,923	3
102	Playground Maintenance	Play equipment and safety surfacing	\$3,367,767	\$3,031,722	\$3,208,591	5
103	Tennis/Multi-use Courts	Surface, nets and fencing	\$1,654,970	\$1,351,415	\$1,426,994	3
104	Parkways	Three major parkways	\$1,276,813	\$997,756	\$1,031,609	4
105	Park Buildings	Shelters, gazebos, recreation centers, ancillary buildings nature centers, greenhouses, restrooms, historic structures, barns, visitor centers, office buildings, enterprise buildings, and maintenance yards etc.	\$4,983,508	\$3,889,567	\$4,243,806	4

