

FY 2020 Capital Improvement Program Presentation

January 17, 2019



CATHERINE E. PUGH
MAYOR



Department of Public Works

Mission

We support the health, environment, and economy of our City and the region by providing customers with safe drinking water and keeping neighborhoods and waterways clean.

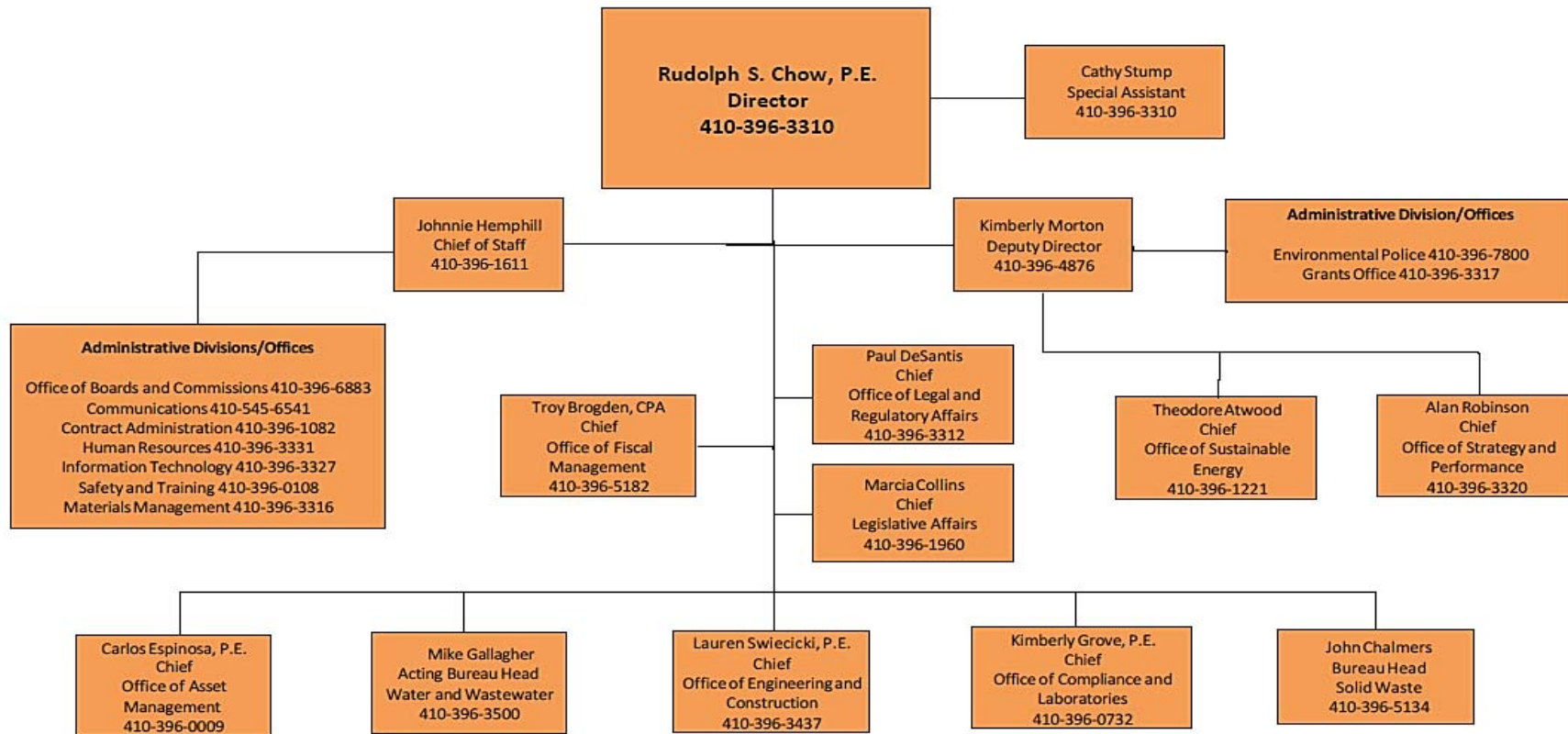
Vision

To be a strong proponent and protector of our environment and the health and vitality of our communities.



Department of Public Works

Office of the Director



Updated January 7, 2019



Baltimore City

Department of Public Works Overview³



FY 2019 Operating Budget

<u>Service</u>	<u>FY 19 Budget</u>	<u>FY19 Positions</u>
Solid Waste	88,722,813	717
Water	191,706,689	939
Wastewater	269,267,317	870
Stormwater	<u>30,560,092</u>	<u>145</u>
Total	580,256,911	2,671



Baltimore City Department of Public Works Overview



FY 2020 Capital Improvement Program Summary (Millions)

➤ Solid Waste Program 517	= \$ 6.552
➤ Stormwater & Environmental Programs 520 & 525	= \$ 17.074
➤ Wastewater Program 551	= \$ 176.032
➤ Water Program 557	= \$ 165.121

FY 2020 Total = \$ 364.779 Million



Baltimore City
Department of Public Works Overview



FY 2020-2025 Capital Improvement Program Summary (Millions)

➤ Solid Waste Program 517	= \$	99.368
➤ Stormwater &	= \$	116.819
Environmental Programs 520 & 525	= \$	613.560
➤ Wastewater Program 551	= \$	922.584
➤ Water Program 557	= \$	

FY 2020 - FY 2025 Total = \$ 1.752 Billion



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Baltimore City
Department of Public Works Overview



Solid Waste Program 517

Recent CIP Accomplishments

- Contract awarded for the Study Phase of Quarantine Road Landfill Expansion project in November 2018
- The Northwest Transfer Station is under construction and facility improvements. This project is currently 75% complete



Solid Waste Program 517

Long Term Capital Needs

Quarantine Road Landfill Expansion



Legend

Current Road

Replacement Road

Railroad Tracks

Expansion Area

Alternate Road

Justification:

- Millennium acquisition extends disposal independence.
- Expansion adds 30 years of landfill life to the landfill.

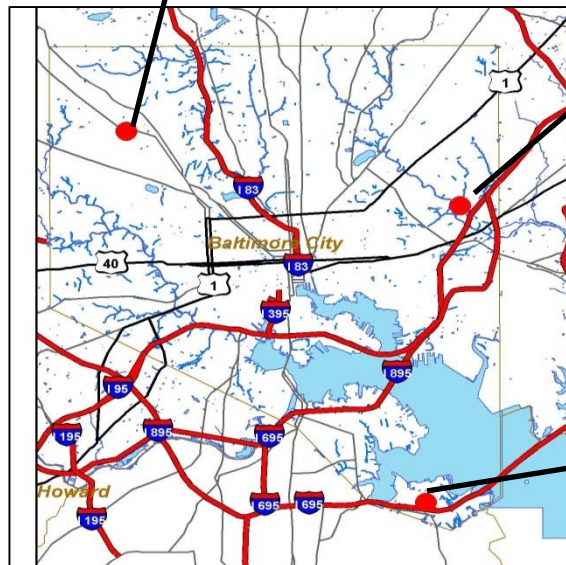
Solid Waste Program 517

Long Term Capital Needs

9



Bowleys Lane
NE Collection
Proposed
(100% Design
Complete)



Anticipated
NE Transfer
Station
Location TBD

Quarantine
Road LF



Baltimore City
Department of Public Works Overview



Solid Waste Program 517

Long Term Capital Needs

Bowleys Lane Convenience Center Upgrades



Convenience Center is located on the same parking lot for employees and visitors



Poor security measures allow trespassers to illegally dump after hours



Equipment entrance and parking lot need re-grading

Solid Waste Program 517

General Fund Priority Requests

11

<u>CIP No.</u>	<u>Project</u>	<u>Appropriation (Millions)</u>
517-001	Bowley's Lane NE Collection Yard	\$0.81
517-012	Quarantine Road Landfill Expansion	\$4.18
517-015	QRLF E&S Control Plan & Wet Pond	\$1.56

FY 2020 = \$6.552 Million

Planning Target Funding = \$0 to 3.0 Million / Fiscal Year



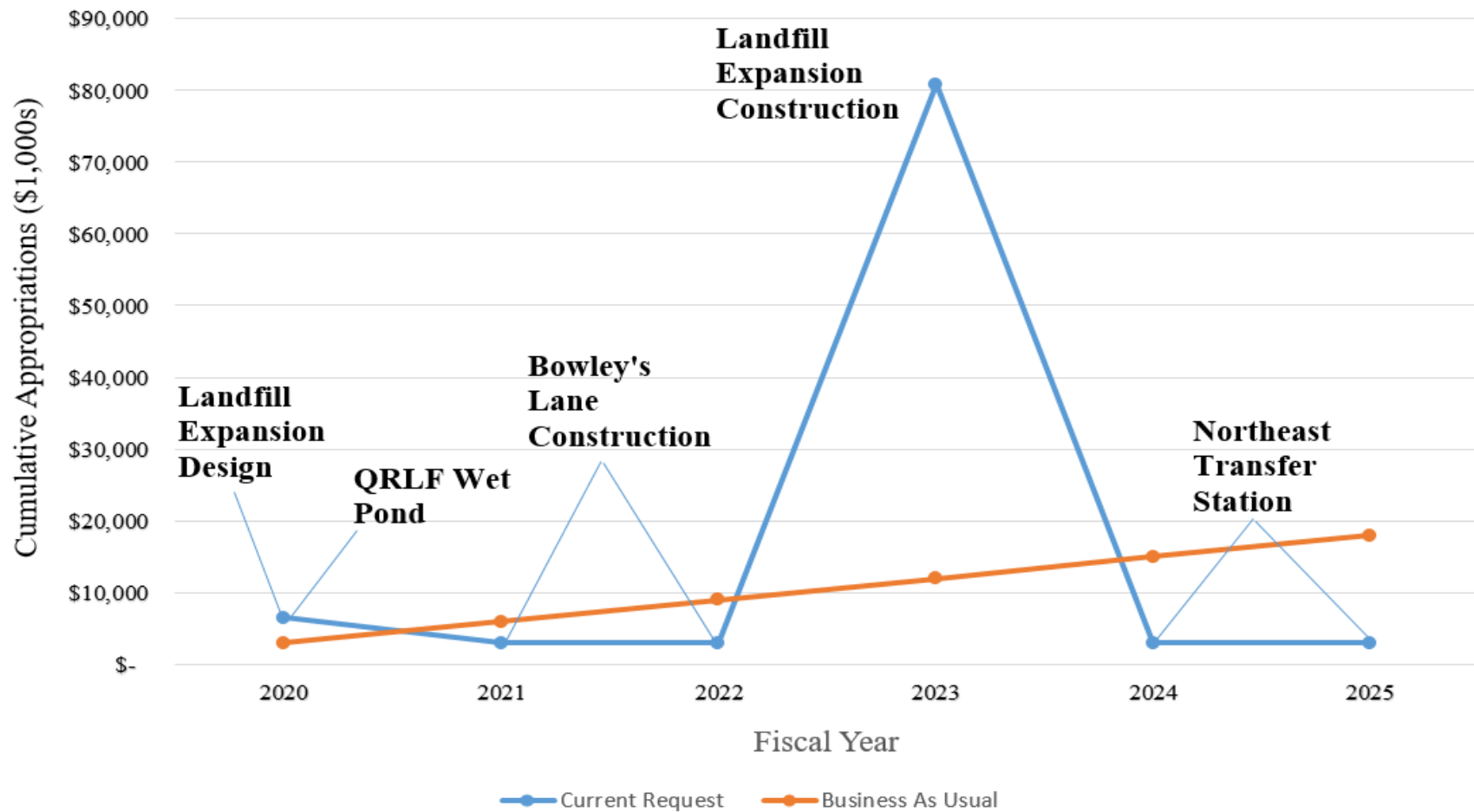
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Baltimore City
Department of Public Works Overview



Solid Waste Program 517 Long-Term Capital Improvement Needs

12



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Baltimore City Department of Public Works Overview

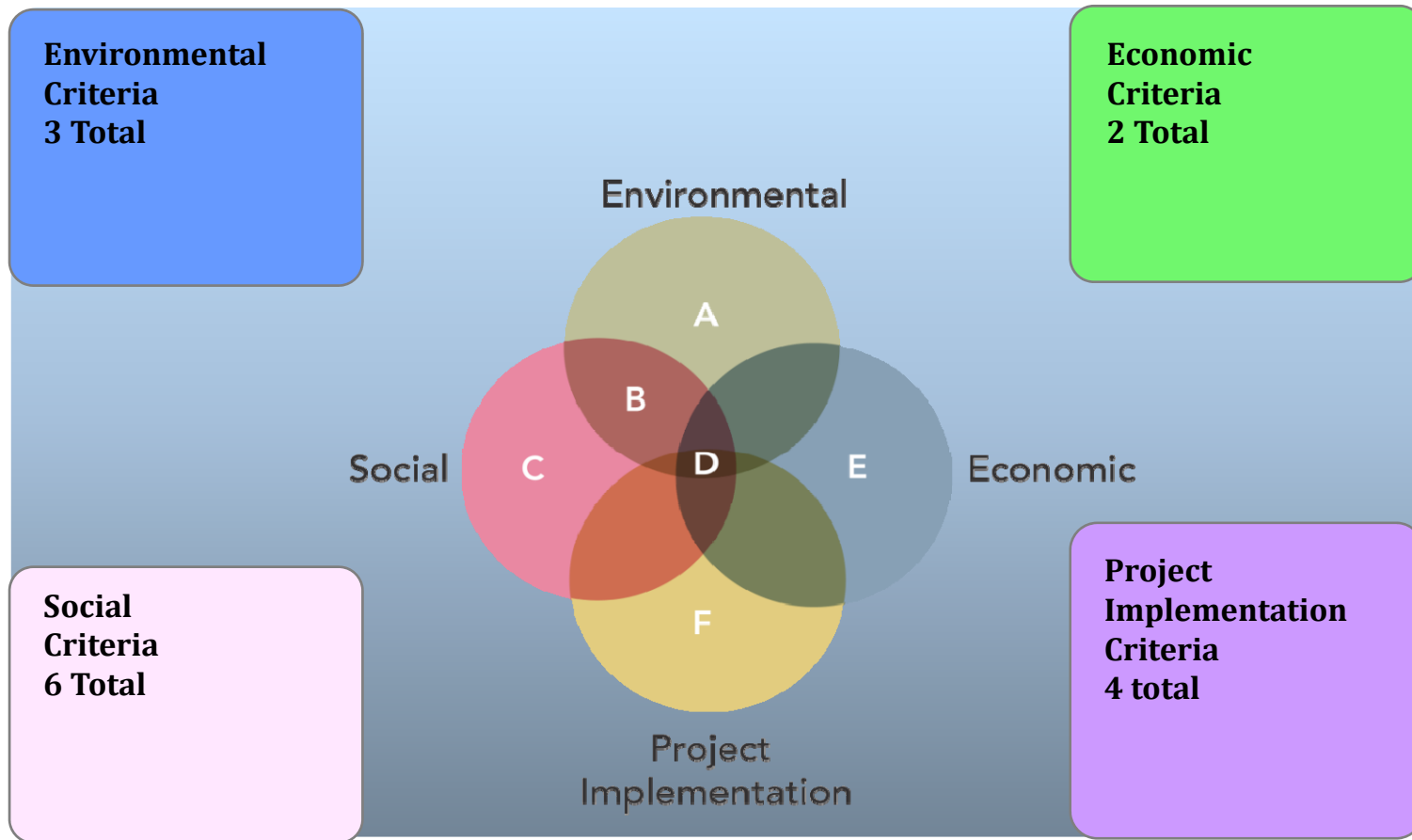


RUDOLPH S. CHOW, P. E.
DIRECTOR

Quadruple Bottom Line Approach

Prioritization Criteria for CIP Projects

13



Quadruple Bottom Line Approach

Prioritization Criteria for CIP Projects

14

QBL Dimensions	Criteria No.	Revised Criteria	WW	Water	Storm
Environmental	1	Regulatory Driven Projects	X	X	X
	2	Sewage Overflows	X	X	X
	3	Surface Water Quality	X	X	X
Social	4	Health and Safety/Improve Quality of Life	X	X	X
	5	Drinking Water Quality		X	
	6	Potable Water Leakage		X	
	7	Drinking Water Service		X	
	8	Customer Satisfaction	X	X	X
	9	Mayor's Five Pillars	X	X	X
Economic	10	Alternative Funding Source	X	X	X
	11	Economic Benefit	X	X	X
Project Implementation	12	Service Life and Consequence of Failure	X	X	X
	13	Better Performance of System	X	X	X
	14	Time Component	X	X	X
	15	System Impact	X	X	X



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Stormwater Program 520

Recent CIP Accomplishments

15

Addressed Citizen's Complaints

SDC 7771 Urgent Need Drainage Repairs at Various Locations continue. Total 119 repair locations. Completed 109 cleaning and point repairs.



96" Repair at Franklin



60 inch Stormdrain repair at Mt. Royal School



Stormwater Program 520

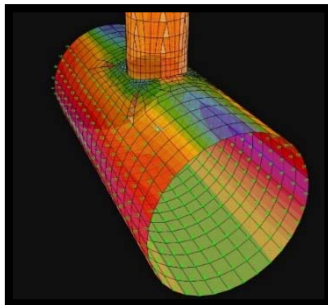
Recent CIP Accomplishments

16

**Addressing Structural Deficiencies:
SDC 7768 Storm drain Design in Harris Creek Watershed.**



Missing mortar and bricks



**Structural Design to
Prevent Future Failures**



Monument St. Sink Hole

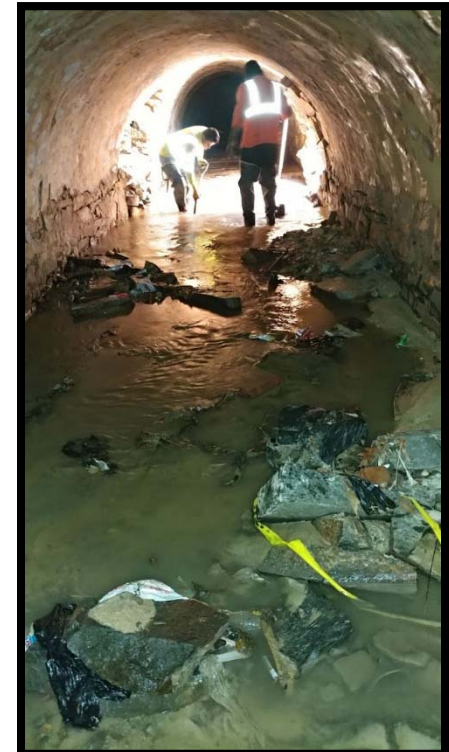
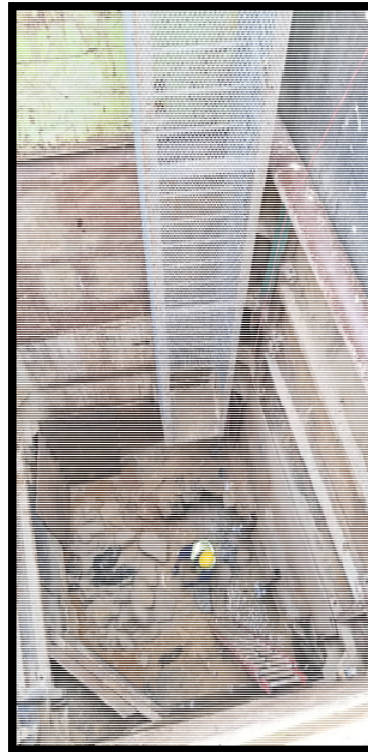
Stormwater Program 520

Long Term Capital Needs

17



Chronic flooding problems



**Aging Infrastructure
Repair on 66" Stormdrain**

Stormwater Program 520

FY 2020 Priority Requests

18

<u>CIP No.</u>	<u>Project</u>	<u>Appropriation (Millions)</u>
520-011	Colgate Creek Pumping Station	\$ 3.75
520-052	Storm Drain and Inlet Rehabilitation	\$ 0.82
520-053	Storm Drain and Inlet Repair #2	\$ 2.70
520-054	Stormwater Hydraulic Modeling	\$ 4.00

FY 2020 Total = \$11.27 Million



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Environmental Services Program 525

Recent CIP Accomplishments

19

- **Substantial Completion of Lower Stony Run Stream Restoration.**
- **Construction started on Chinquapin Run Stream Restoration Project (Sanitary Relocation and Stream Restoration Project)**
- **36 stormwater projects under design**
 - **Stream Restoration**
 - **Impervious Removal**
 - **Bioretention Facilities**
 - **Stormwater Pond Retrofit**



East Stony Run Stream Restoration



Curb Bumpout Bio-Retention (Bush St)



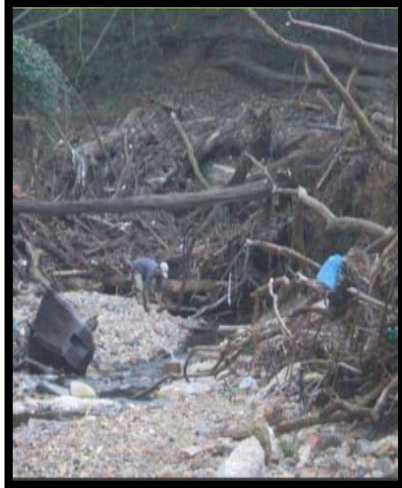
Bio-Retention (Lanvale)

Environmental Services Program 525

Recent CIP Accomplishments

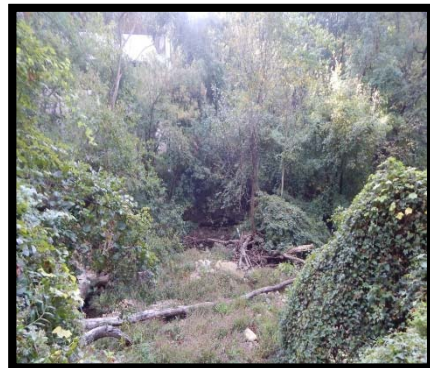
20

Lower Lower Stony Run Stream Restoration



Before

After



Environmental Services Program 525

FY 2020 Priority Requests

21

<u>Project</u>	<u>Appropriation (Millions)</u>
525 – 054 MS4 Permits	\$ 4.60
525 – 034 Herring Run Stream Restoration	\$ 1.20

FY 2020 Total = \$5.8 Million



Before

**Chinquapin Run Stream
Restoration
(Currently under
Construction)**

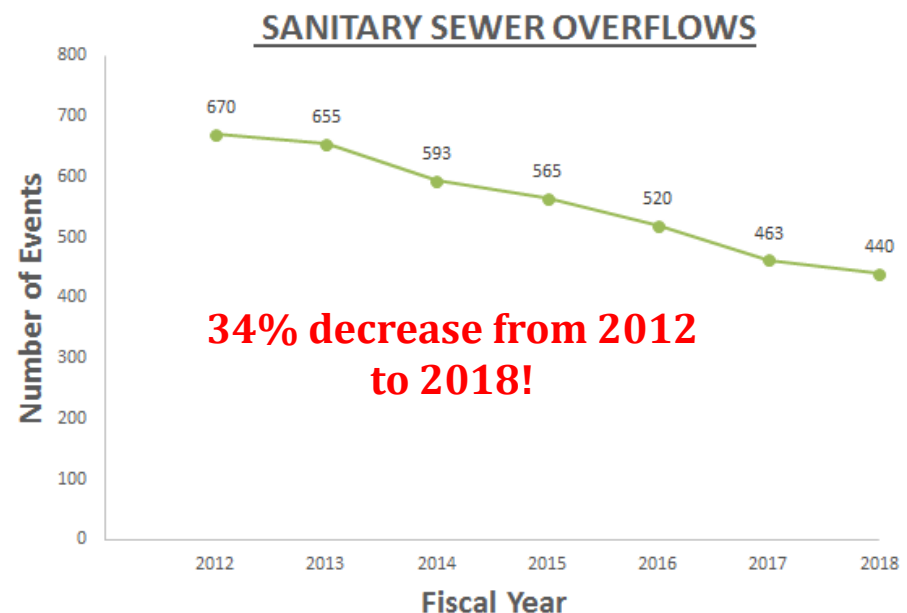


During Construction

Wastewater Program 551

Modified Consent Decree

- **Consent Decree entered in September 2002**
 - **Addresses sanitary sewer overflows (SSOs) from the City's collection system**
- **Modified Consent Decree was entered in October 2017.**
 - **The City is doing more**
 - **The City is working smarter**
- **Phase I deadline – January 1, 2021**
- **Phase II deadline – December 31, 2030**



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DEPARTMENT OF PUBLIC WORKS
RUDOLPH S. CHOW, P. E.
DIRECTOR

Wastewater Program 551

Recent CIP Accomplishments

Back River & Patapsco Projects

- **SC-845R ENR Nitrification**
Construction approx. \$430 M, 95% complete.
Performance testing underway.
- **SC-882 Activated Plant No. 4 at Patapsco**
Construction approx. \$286 M, 95% complete.
- **SC-877 De-nitrification Facility
& Mods. to Activated Plants at Patapsco
No. 2 & 3**
Construction approx. \$280 M, 98% complete.
Performance testing underway.



Wastewater Program 551

24

Recent CIP Accomplishments - Utilities

SC 876	SC 879	SC 894	SC 920	SC 903	SC 941	SC 964	SC 945	SC 985	SC 978
SC 897R	SC 898	SC 899	SC 902	SC 910	SC 953	SC 965	SC 946	SC 866	SC 969
SC 905	SC 906	SC 907	SC 934	SC 914	SC 955	SC 967			
SC 911	SC 912	SC 913	SC 937	SC 919	SC 956	SC 968			
SC 931	SC 932	SC 933	SC 922R	SC 921	SC 962	SC 976			
SC 909	SC 895	SC 900	SC 944R	SC 940	SC 963	SC 977			
SC 942	SC 943			SC 973	SC 974				

26 PROJECTS COMPLETED

20 CONSTRUCTION
PROJECTS

6 DESIGN PROJECTS



Baltimore City
Department of Public Works Overview



Wastewater Program 551

25

Recent CIP Accomplishments - Facilities

SC 829	SC 841	SC 846	SC 847	SC 845R	SC 852R	SC 877	SC 926	SC 930	SC 935
SC 848	SC 8526	SC 854	SC 855	SC 882	SC 890	SC 892R	SC 938	SC 948	SC 949
SC 857	SC 859	SC 863	SC 868	SC 918H	SC 925	SC 948	SC 950	SC 951	SC 954
SC 869	SC 870	SC 884	SC 886R	SC 927	SC 961		SC 957	SC 982	SC 983
SC 888	SC 889	SC 901R	SC 915				SC 987	SC 988	SC 989
SC 918S	SC 923	SC 924	SC 961				SC 990	SC 991	SC 993
							SC 994	SC 995	

24 PROJECTS COMPLETED

11 CONSTRUCTION PROJECTS

20 STUDY/DESIGN PROJECTS

Note: Project Status through FY 2020



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Wastewater Program 551

Long Term Capital Needs

Ongoing Federally mandated Consent Decree
Anticipated > \$2.6 Billion cost (FY 2002 thru FY 2030)



City support of additional EPA regulations
required approx. \$1.0 Billion of upgrades at
the Back River & Patapsco WWTPs
to protect the Chesapeake Bay.

Wastewater Program 551

FY 2020 Facilities Priority Requests

<u>CIPI No.</u>	<u>Project</u>	<u>Appropriation (Millions)</u>
551-019	Patapsco WWTP Secondary Reactor Rehab.	\$ 3.58
551-032	Jones Falls Pump Station Rehab.	\$ 10.09
551-036	Patapsco WWTP Admin. Building Rehab.	\$ 1.56
551-089	Back River WWTP Power Reliability Improvements	\$ 17.69
551-090	Dundalk Pump Station Rehab.	\$ 6.16
551-097	Patapsco WWTP PST Scum Collection Rehab.	\$ 4.59
551-526	Back River WWTP Egg-Shaped Digesters Rehab.	\$ 2.05
551-692	Electrical Systems Upgrades	\$ 35.56
	Other Wastewater Facilities Projects	\$ 13.31

FY 2020 Total = \$ 94.633 Million



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Wastewater Program 551

FY 2020 Utility Priority Requests

<u>CIP/No.</u>	<u>Project</u>	<u>Appropriation (Millions)</u>
551-034	High Level Interceptor Rehabilitation	\$ 20.89
551-047	SC 978: Small Diameter Sewer Main Replacement	\$ 0.13
551-048	SC-969 Lane Siphon Across Armistead Rehabilitation	\$ 1.53
551-056	Sewer Interceptors and Siphons Repairs	\$ 14.51
551-057	Sewer Interceptors and Siphons Assessments	\$ 10.40
551-078	Sewer Force Mains Assessments	\$ 3.00
551-079	Sewer Force Main Repairs	\$ 3.41
551-082	Greenmount Ave/ Preston St Sewer Relocation	\$ 2.12
551-083	Font Hill Ave Sewer Rehabilitation	\$ 6.48
551-099	Repairs of Sanitary Sewer Mains - Zone A	\$ 9.44
551-100	Repairs of Sanitary Sewer Mains - Zone B	\$ 9.44

FY 2020 Total = \$81.399 Million



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Department of Public Works Overview



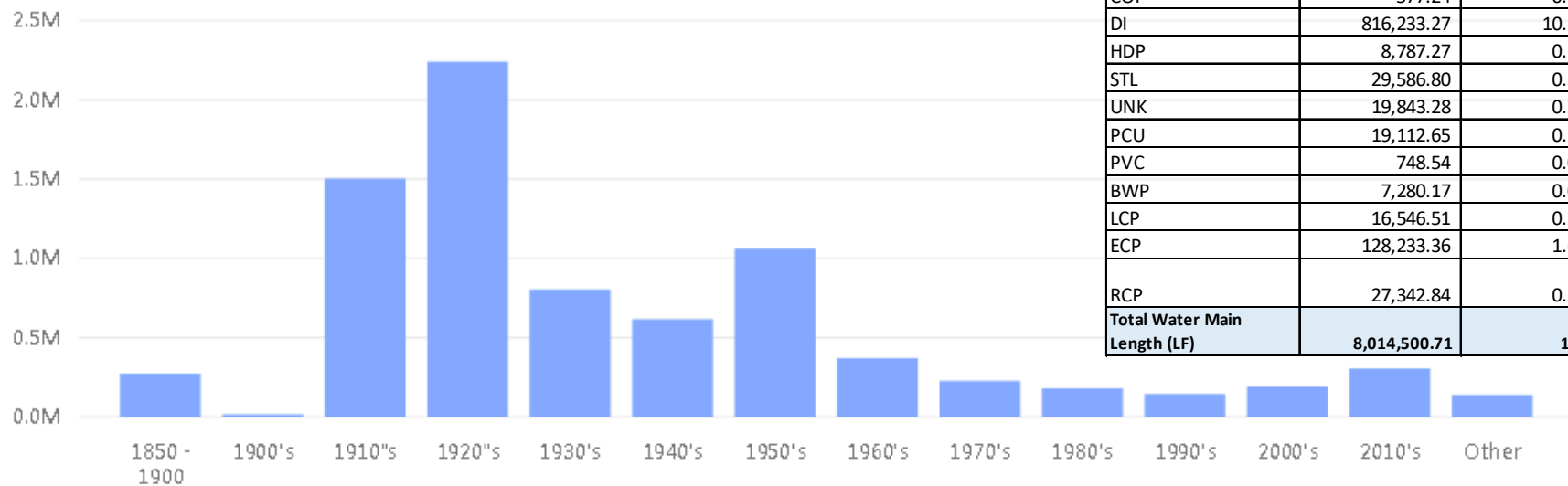
Water Program 557

Long Term Capital Needs

Average Age of Water Main Assets Approximately 80 Years

Length of Active Baltimore City Water Mains Installed by Decade
Average Age is Approximately 80 Years Old

Water Main Installation by Decade



Pipe Material	Pipe Length & Percentage	
CI	6,854,449.37	85.53%
CND	596.99	0.01%
CON	85,162.44	1.06%
COP	577.24	0.01%
DI	816,233.27	10.18%
HDP	8,787.27	0.11%
STL	29,586.80	0.37%
UNK	19,843.28	0.25%
PCU	19,112.65	0.24%
PVC	748.54	0.01%
BWP	7,280.17	0.09%
LCP	16,546.51	0.21%
ECP	128,233.36	1.60%
RCP	27,342.84	0.34%
Total Water Main Length (LF)	8,014,500.71	100%



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Baltimore City
Department of Public Works Overview



Water Program 557

Recent CIP Accomplishments-Mains

WC 1202	WC 1203	WC 1217	WC 1224	WC 1225R	WC 1272	WC 1286	WC 1241	WC 1252	WC 1257	WC 1258	WC 1271
WC 1226	WC 1234	WC 1240	WC 1244	WC 1245	WC 1293	WC 1301R	WC 1274	WC 1275	WC 1277	WC 1279	WC 1281
WC 1246	WC 1254 R	WC 1255	WC 1256	WC 1260	WC 1302	WC 1314	WC 1282	WC 1283	WC 1284	WC 1285	WC 1287
WC 1261	WC 1262	WC 1263	WC 1264	WC 1266 R	WC 1339	WC 1340	WC 1288	WC 1290	WC 1291	WC 1292	WC 1312
WC 1268	WC 1269	WC 1270	WC 1276	WC 1278	WC 1363	WC 1365	WC 1313	WC 1315	WC 1316	WC 1317	WC 1318
WC 1294	WC 1330	WC 1337	WC 1342	WC 1343			WC 1319	WC 1320	WC 1321	WC 1367	WC 1391
WC 1346	WC 1351	WC 1355	WC 1359	WC 1366							
WC 1369	36 PROJECTS COMPLETED					10 CONSTRUCTION PROJECTS	30 DESIGN PROJECTS				

Note: Project Status through FY 2020



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Water Program 557

Recent CIP Accomplishments-Utilities

WC 1137 R	WC 1143	WC 1160R	WC 1164	WC 1120	WC 1173	WC 1190	TR 11003	TR 11013 R	WC 1199
WC 1168	WC 1178	WC 1183	WC 1194	WC 1204	WC 1211	WC 1230	WC 1207	WC 1229	WC 1243
WC 1228R	WC 1233	WC 1242	WC 1295	WC 1305	WC 1328	WC 1362	WC 1327	WC 1354	WC 1390
WC 1306	WC 7607	WC 8652							

15 PROJECTS COMPLETED

**9 CONSTRUCTION
PROJECTS**

9 DESIGN PROJECTS

Note: Project Status through FY 2020



Baltimore City
Department of Public Works Overview



Water Program 557

Recent CIP Accomplishments-Utilities



**AMI/R new
meter install**



**Proactive Internal Carbon-Fiber
Repair of 84" PCCP**



DIP water main replacement



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**Baltimore City
Department of Public Works Overview**



Water Program 557

Recent CIP Accomplishments

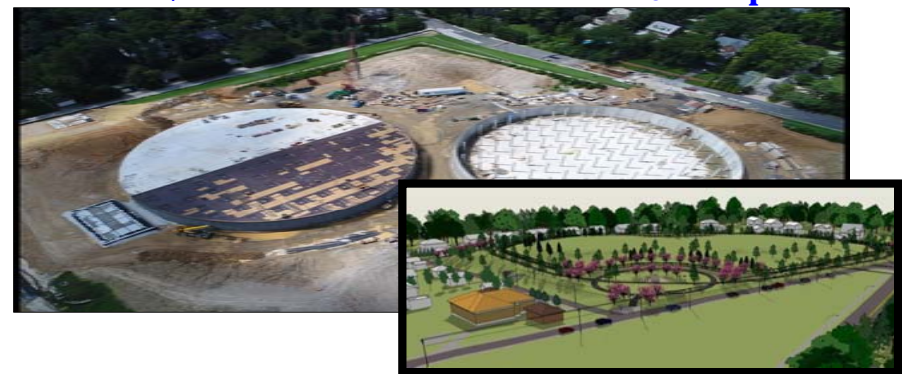
WC 1211 Ashburton Lake Finished Water Reservoir Improvements Approx. \$137 M construction at 8% Complete



WC 1204 Druid Lake Finished Water Reservoir Improvements Approx. \$134.5 M, construction at 39% Complete



WC 1173R Guilford Finished Water Reservoir Improvements Approx. \$54.4 M construction at 80% Complete



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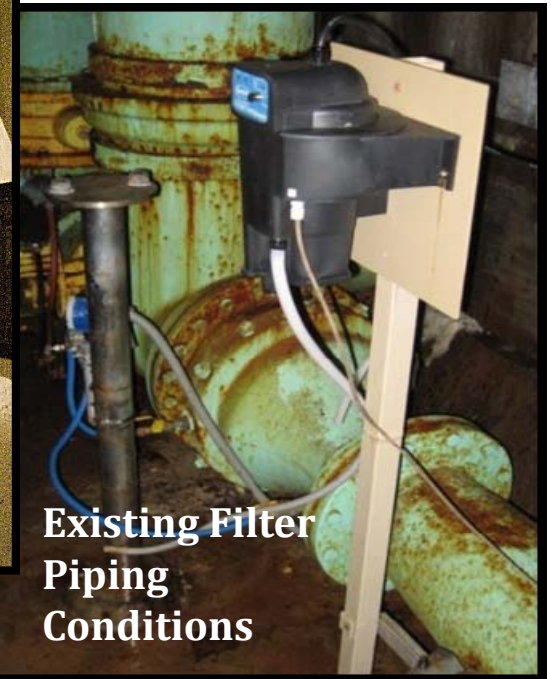
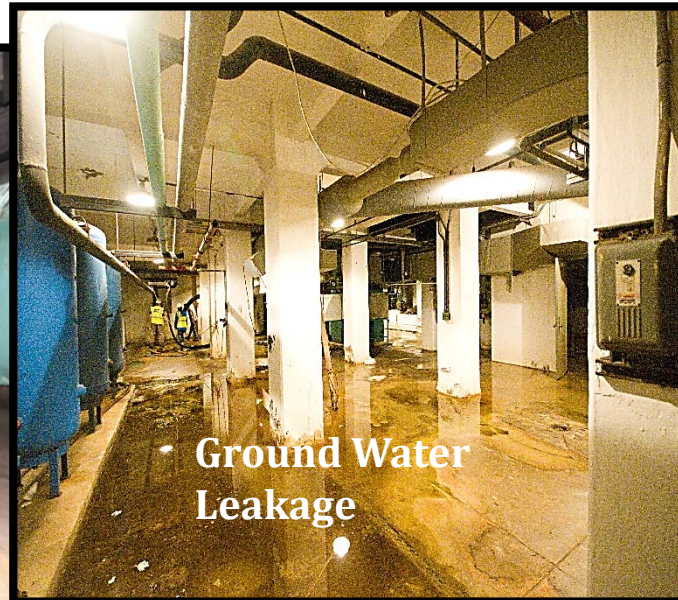


Water Program 557

Long Term Capital Needs

Montebello WFP 1 & 2 Renovations

Mechanical/Structural/Electrical/Controls Work
Appropriations > \$ 125 Million



Water Program 557

FY 2020 Facilities Priority Requests

<u>CIPI No.</u>	<u>Project</u>	<u>Appropriation (Millions)</u>
557-025	Ashburton WFP Washwater Lake Dredging	\$ 1.50
557-027	Ashburton WFP Low Lift Pump Controls	\$ 1.62
557-105	Montebello WFP 1 & 2 Filter Control Panels	\$ 1.36
557-106	Montebello WFP 1 & 2 Structural Rehab	\$ 3.96
557-114	Montebello WFP 1 & 2 Dehumidification Improvements	\$ 3.96
557-170	Montebello WFP 2 Improvements	\$ 4.48
	Other Water Facility Projects	\$ 2.56

FY 2020 Facilities Total = \$19.472 Million



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Water Program 557

FY 2020 Utilities Priority Requests

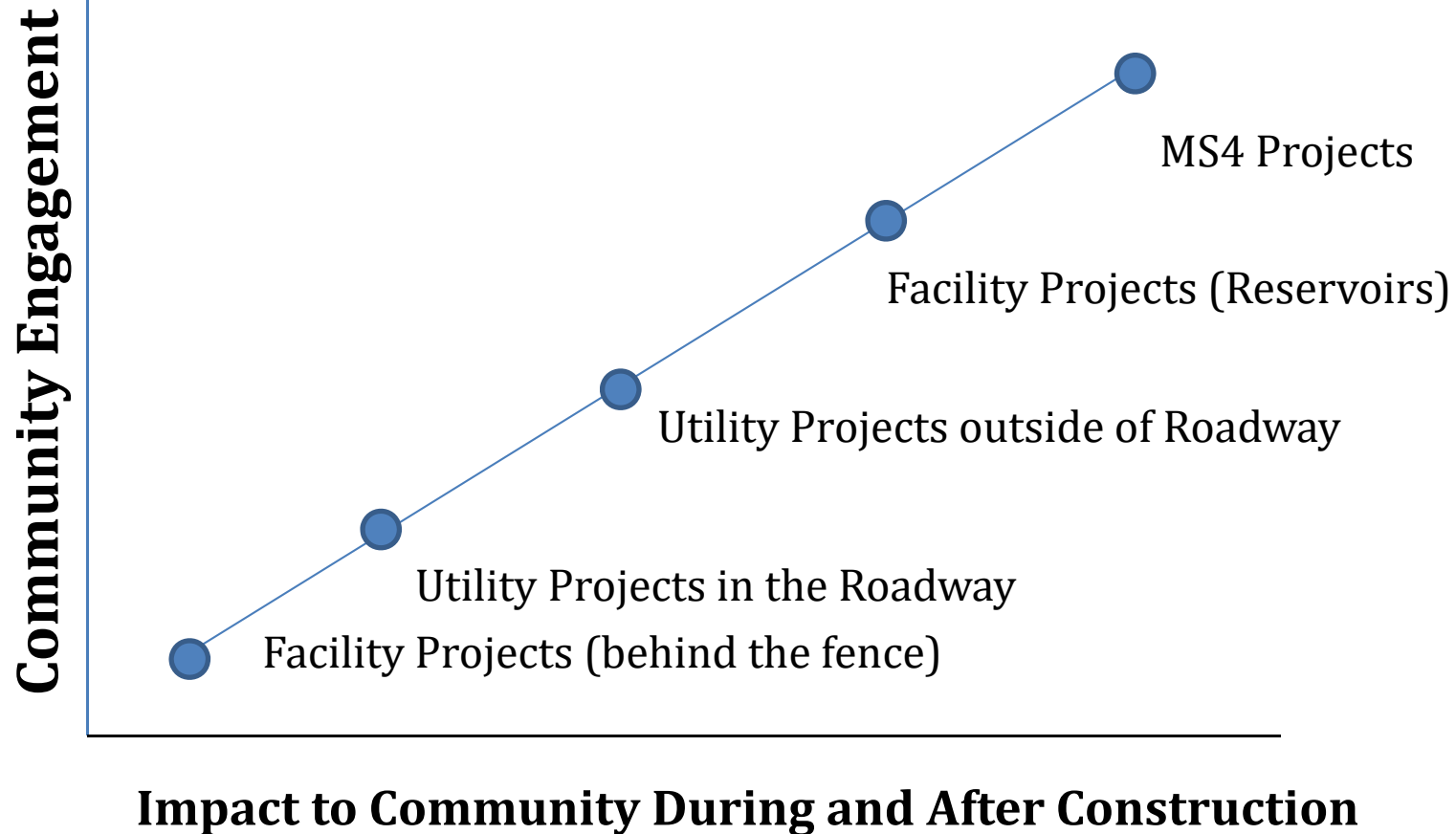
<u>CIPI No.</u>	<u>Project</u>	<u>Appropriation (Millions)</u>
557-122	WC1281 South St & Vicinity Water Main Replacement	\$ 10.43
557-161	Carbon Fiber Reinforced Polymer Large Main Repairs	\$ 3.24
557-172	WC1241 Water Main Replacements Various Locations	\$ 9.35
557-173	WC1288 WM Replacement Beechfield, Yale Heights Vicinity	\$ 8.38
557-174	WC1290 Downtown Area & Madison St WM Replacement	\$ 10.46
557-175	WC1282 Baltimore St & Fulton St Vicinity WM Replacement	\$ 13.26
	Other Water Main Replacement & Rehab Projects	\$ 46.83
	Other Utility Projects	\$ 43.66
FY 2020 Utilities Total		= \$145.649 Million



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OEC Community Engagement



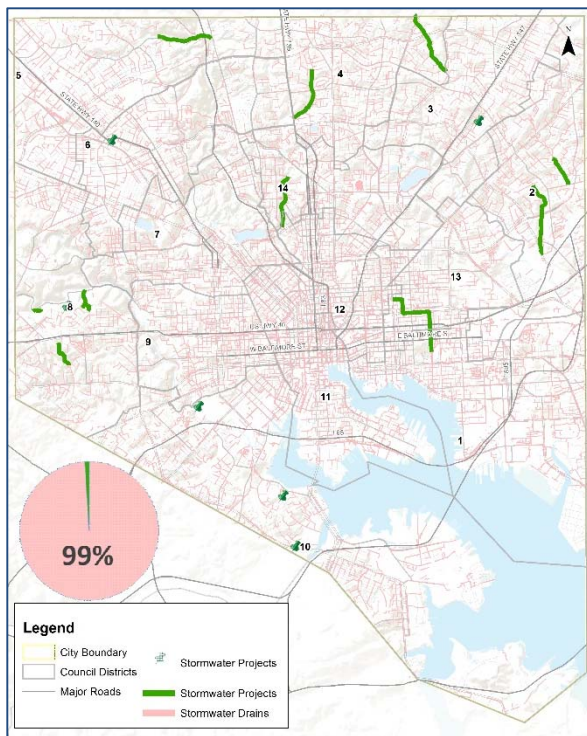
DPW's Routine Community Engagement

- DPW in the Community Meetings
- Consent Decree Annual Meeting
- Staff Dedicated to Routine Engagement and Outreach
- Programs
- Events
- Publications
- Social Media

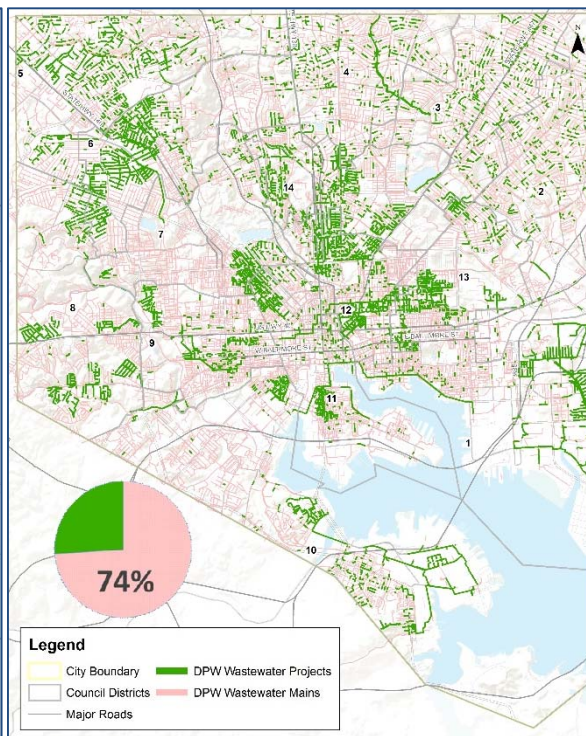


DPW in the Community – Project Locations (System-wide)

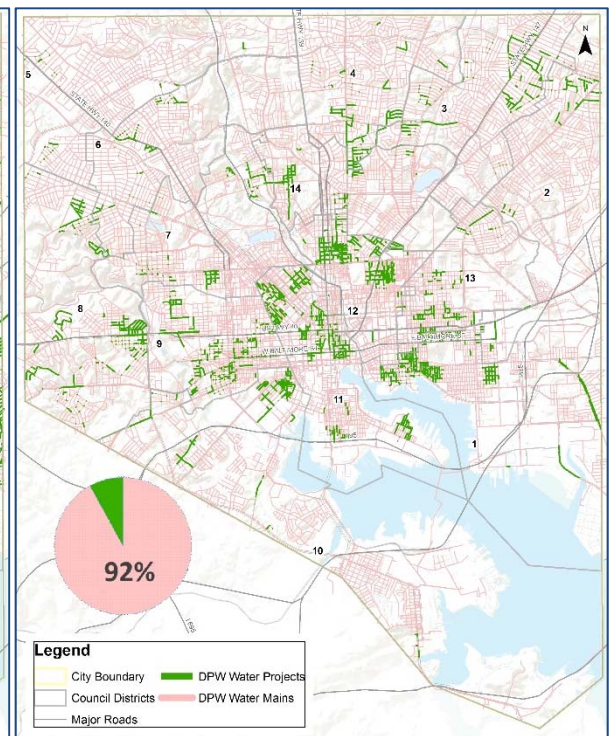
DPW Stormwater Projects



DPW Wastewater Projects



DPW Water Projects



FY 2020 Capital Improvement Program Presentation

Questions?

Web Links:

<http://cityservices.baltimorecity.gov/DCP/ProjectList.aspx>

<http://www.baltimorecity.gov/Government/AgenciesDepartments/Planning/PlanningCommission.aspx>



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