



Baltimore City Department of Public Works

FY 2021 Capital Improvement Program Presentation

January 9, 2020



Department of Public Works

Mission

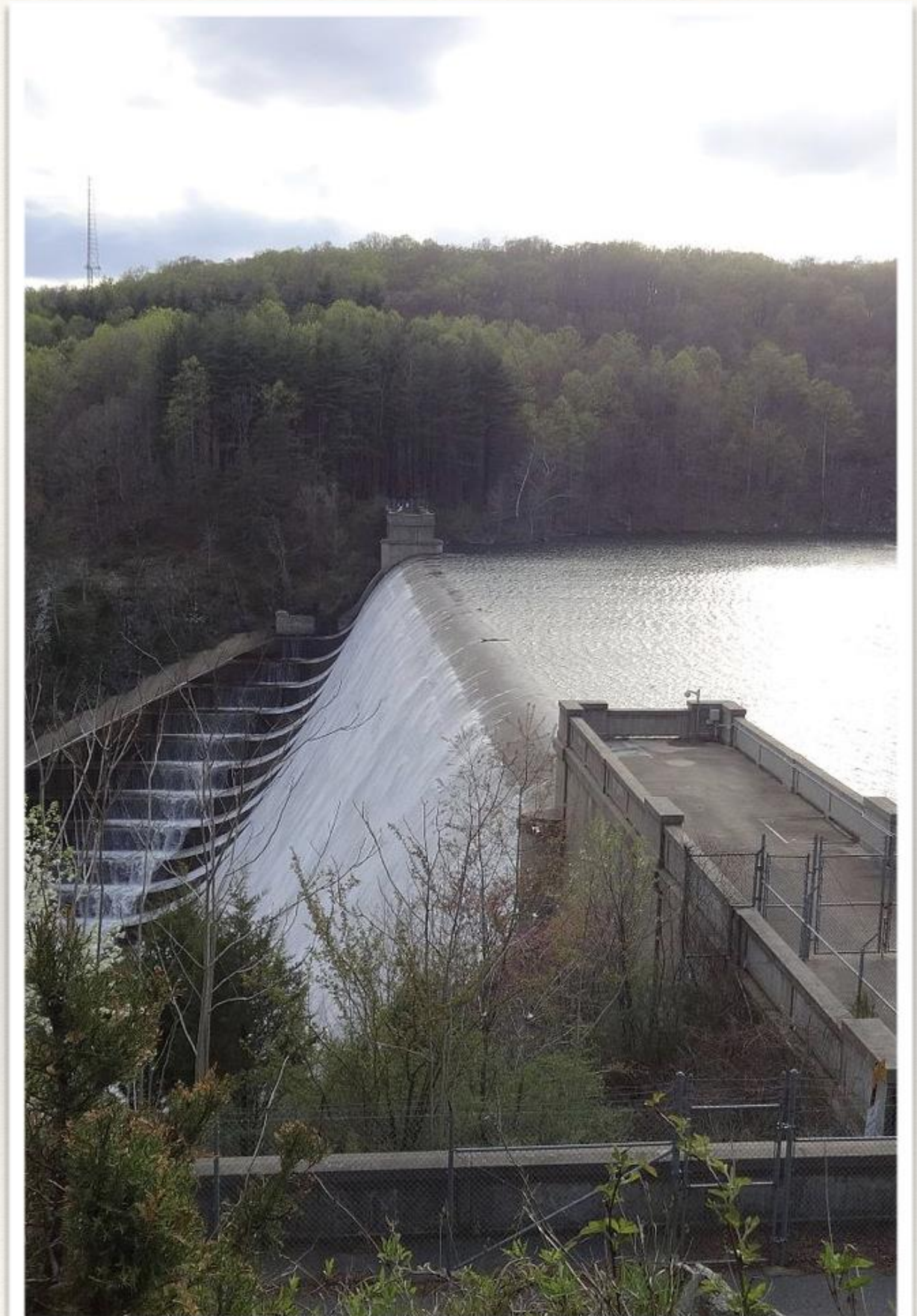
We support the health, environment, and economy of our City and the region by providing customers with safe drinking water and keeping neighborhoods and waterways clean.



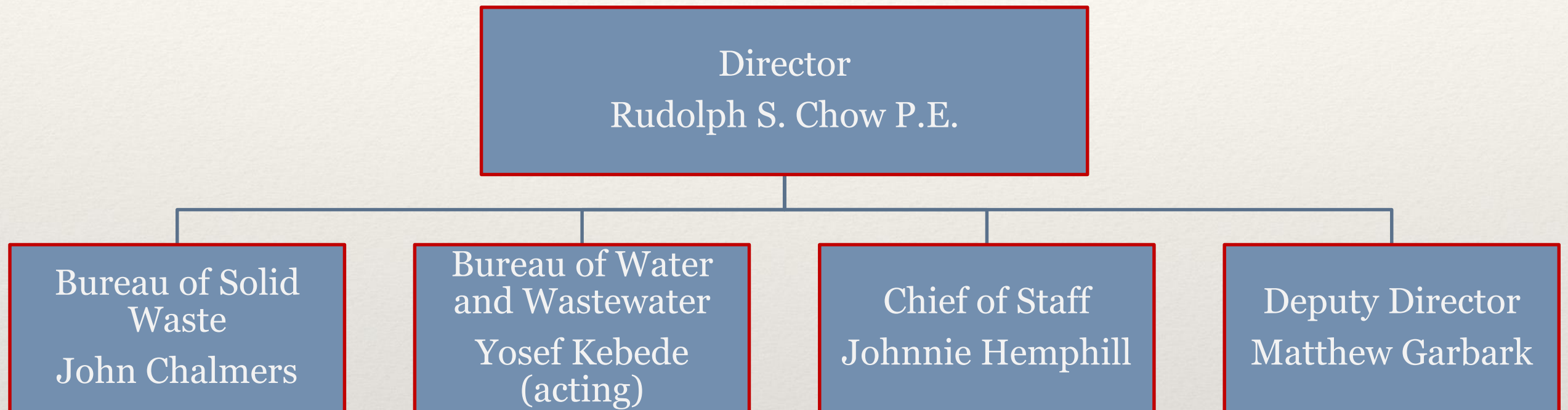
Department of Public Works

Vision

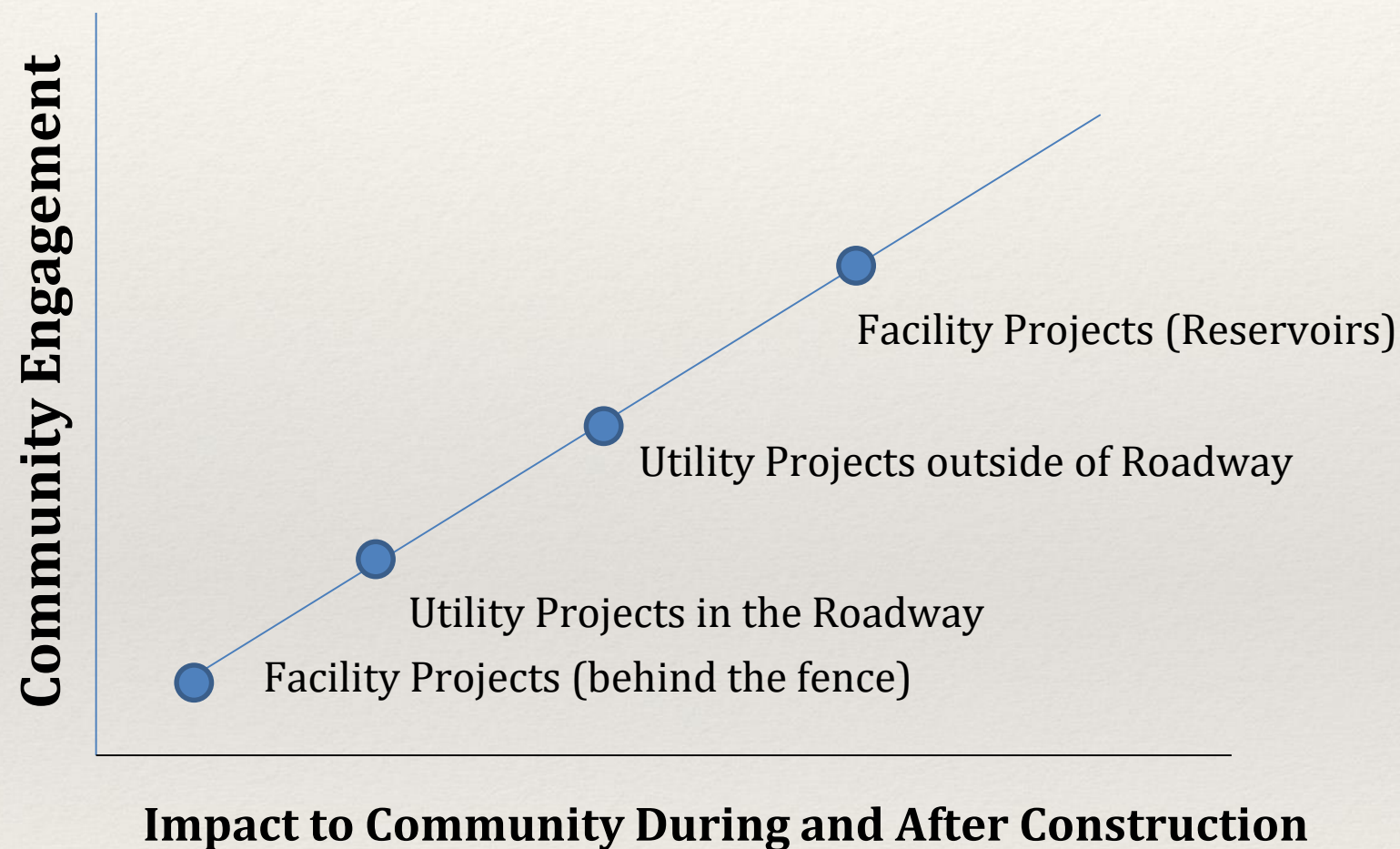
To be a strong proponent and protector of our environment and the health and vitality of our communities.



Office of the Director - Organizational Chart



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



FY 2021-2026

Capital Improvement Program Summary

CIP #	Program	(\$ in Millions)
517	Solid Waste	\$ 24
520 & 525	Stormwater & Environmental	\$ 242
551	Wastewater	\$ 1,218
557	Water	\$ 1,121

FY 2021 - FY 2026 Total = \$ 2.6 Billion



FY 2021

Capital Improvement Program Summary

CIP #	Program	(\$ in Millions)
517	Solid Waste	\$ 4
520 & 525	Stormwater & Environmental	\$ 50
551	Wastewater	\$ 276
557	Water	\$ 331

FY 2021 Total = \$ 661 Million



Solid Waste Program 517

General Fund Priority Requests

CIP #	Program	(\$ in Millions)
517-001	Bowley's Lane NE Collection Yard	\$0.5
517-012	Quarantine Road Landfill Expansion	\$3.0
517-019	Less Waste, Better Baltimore	\$0.5
FY 2021 = \$4.0 Million		

Planning's Target Funding = Up to \$4.0 Million / Fiscal Year



Solid Waste Program 517

Actual Funding Needed

Project	Appropriation (Millions)
Renovation of Solid Waste Facilities	\$ 21.4
Eastern Transfer Station	\$ 21.4
Less Waste, Better Baltimore Implementation	\$ 20.5
Solar Can Installation Phase 2 and 3	\$ 16.7
Citywide Recycling Carts	\$ 8.5
Aerated Static Pile Compost Facility	\$ 6.4
Quarantine Road Landfill Expansion	\$ 3.0



Actual Funding Needed for FY 2021 = \$97.9 Million



Solid Waste Program 517

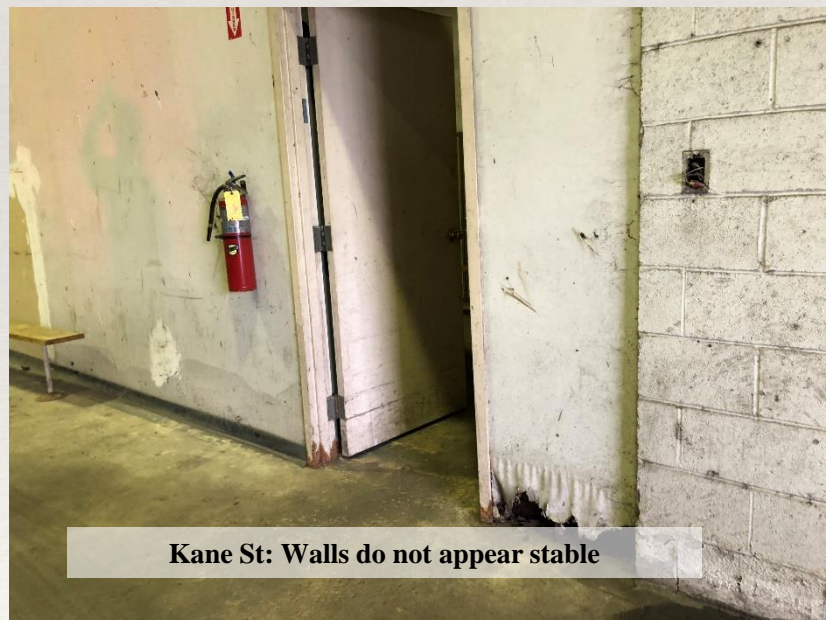
Long Term Capital Needs



Reedbird: parking lot needs regrading



Bowley's Lane: inactive fueling station



Kane St: Walls do not appear stable



Kane St: Ceiling collapsing

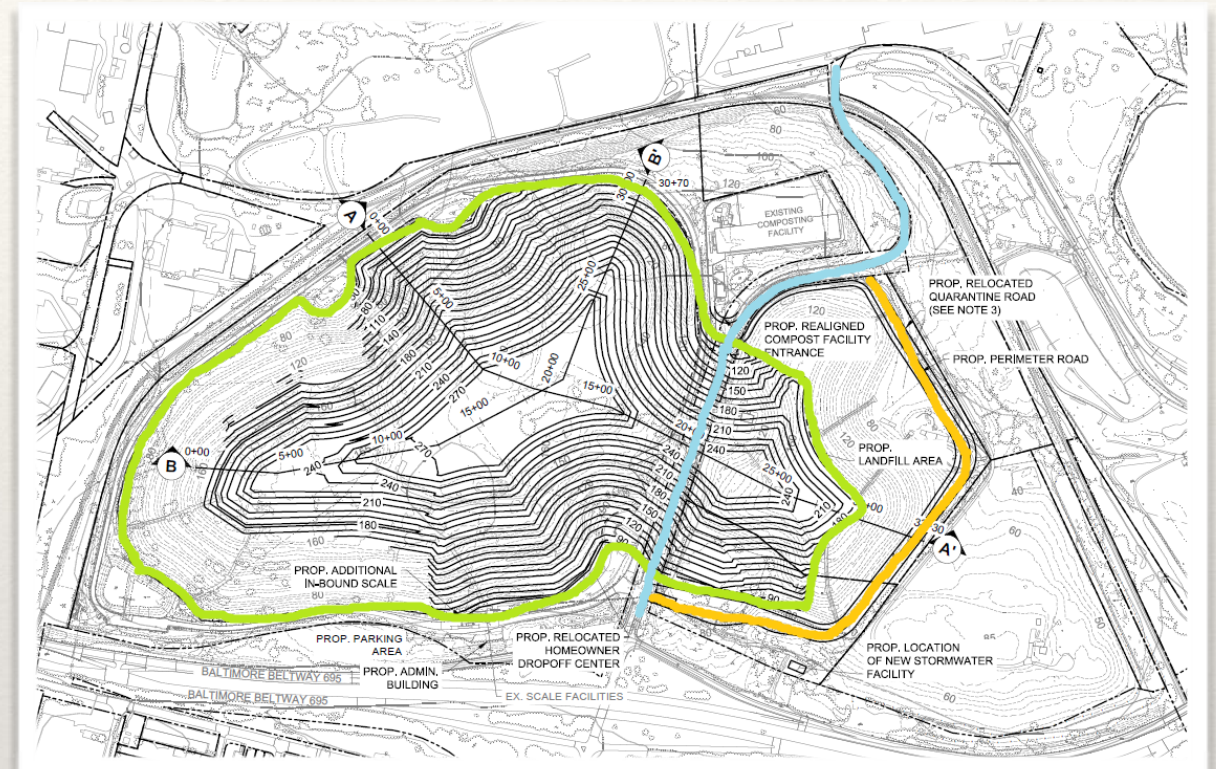


Solid Waste Program 517

Long Term Capital Needs

QUARANTINE ROAD LANDFILL EXPANSION

- ◉ Quarantine Road Landfill will reach **full capacity by the end of FY 2024** based upon current waste generation conditions
- ◉ Expansion will combine Quarantine Road Landfill and Millennium Landfill to provide an additional 11 years of capacity
- ◉ Construction for the first cell must begin by FY 2024



Solid Waste Program 517

Long Term Capital Needs

‘Less Waste, Better Baltimore’ Implementation

Less Waste, Better Baltimore
Rethinking our waste management future

- ◉ Master planning effort through 2040 and beyond that will identify programs to reduce waste generation and maximize material diversion, reuse, and recycling
- ◉ Estimated cost to implement recommended waste reduction and diversion programs is \$20.5 million
- ◉ Due to funding restrictions, a request of only \$0.5 million was submitted



Solid Waste Program 517

Recent CIP Accomplishments



The Northwest Transfer Station received renovations that made the work environment safer and better for employees. The following improvements were made:

- Repaired the building exterior
- Installed a new fire protection system, HVAC system, truck wash, exterior lighting, and attendant booth for the convenience drop-off center
- Upgraded the building's mechanical, electrical and plumbing



Stormwater Program 520

Long Term Capital Needs



Chronic flooding problems

**Aging Infrastructure
Repair on 66" Storm Drain**



Stormwater Program 520

Recent CIP Accomplishments

Chinquapin Run Stream Restoration



Before



After



Stormwater Program 520

Recent CIP Accomplishments

East Stony Run Stream Restoration



Before



After



Stormwater Program 520

Ongoing CIP Accomplishments

**Current Condition
Missing Mortar and Bricks**



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



Structural Design to Prevent Future Failures

Environmental Services Program 525

Recent CIP Accomplishments

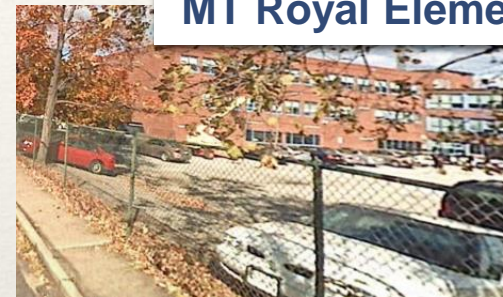
- Construction started on Chinquapin Run Stream Restoration Project (Sanitary Relocation and Stream Restoration Project)
- 36 stormwater projects under design
 - Stream Restoration
 - Impervious Removal
 - Bioretention Facilities
 - Stormwater Pond Retrofit

Impervious Area Removal

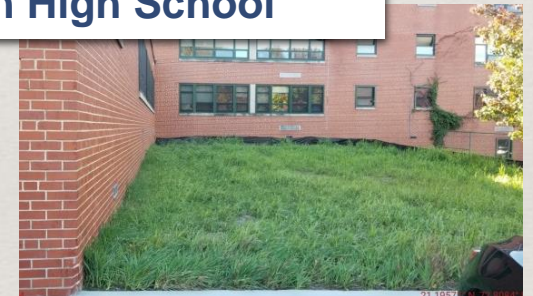
BEFORE

AFTER

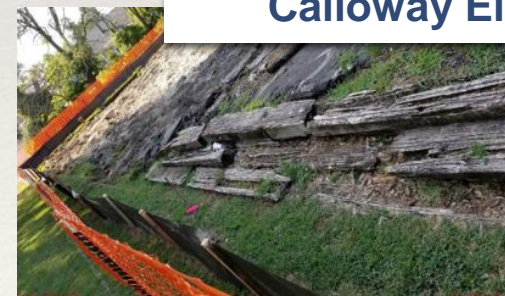
MT Royal Elementary/Middle School



Bard ConeXion High School



Calloway Elementary School



Stormwater & Environmental Programs

FY 2021 Priority Requests

CIP #	Program	(\$ in Millions)
520-052	Urgent Small Storm Drain Rehabilitation	\$3.16
520-054	Stormwater Hydraulic Modeling	\$18.00
520-055	MS4 Permit Requirement	\$5.00
520-063	Urgent Need Small Storm Drain Rehab	\$4.57
525-057	Urgent Need Stream Repair	\$5.49
525-405	City Wide Stream Restoration (Herring Run at Western Branch)	\$7.00
	Other Requests	\$6.60
FY 2021 Total = \$49.82 Million		



Wastewater Program 551

Long Term Capital Needs

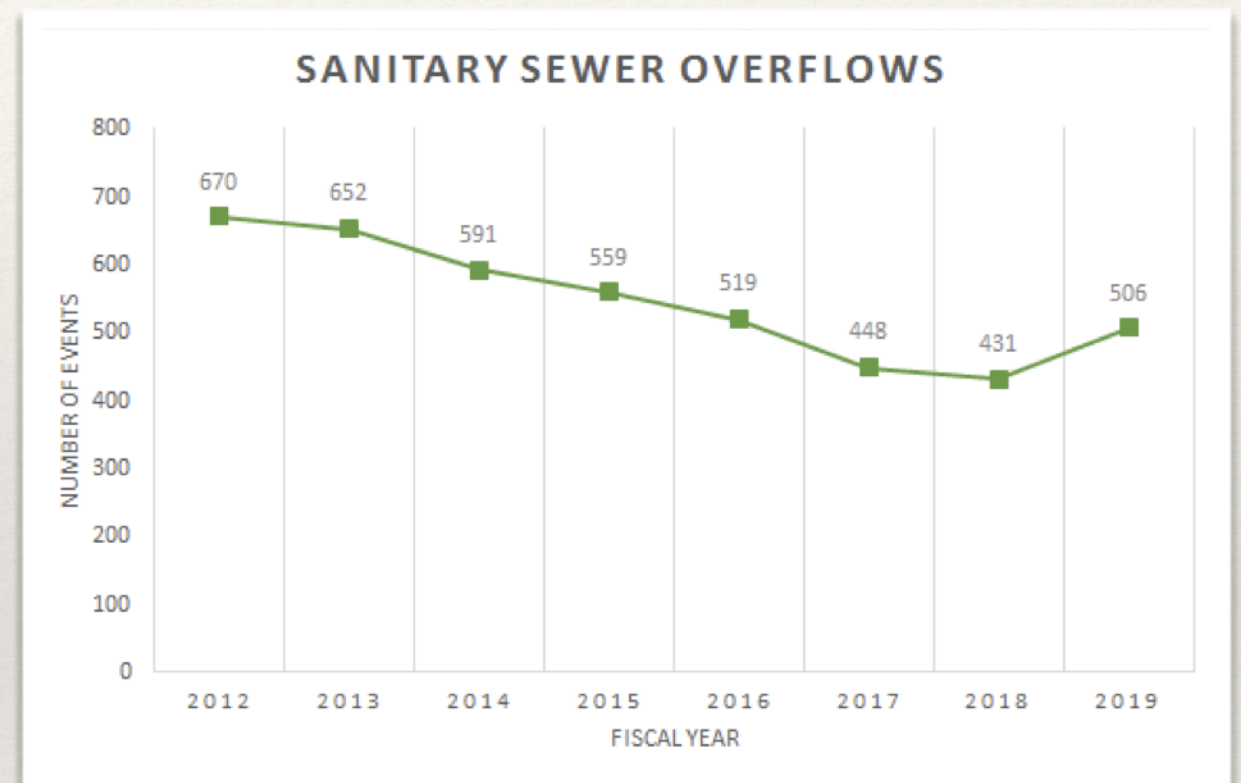
- Ongoing Federally mandated Consent Decree Anticipated > \$2.6 Billion cost (FY 2002 through FY 2030).
- Ongoing City support for capital improvements for Power Reliability, Pump Station, WWTP Security and Biosolids Upgrades requiring ~ \$0.7 Billion.



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**



25% decrease from 2012 to 2019!



Wastewater Program 551

Recent CIP Accomplishments

Back River & Patapsco Projects

- **SC-845R & SC-852R ENR Upgrades**
 - Combined Project Costs ~ \$ 320 Million
 - Patapsco WWTP Construction & Testing complete and meeting NPDES Permit.
- **SC-877 & SC-882 ENR Upgrades**
 - Combined Project Costs ~ \$ 715 Million
 - Back River WWTP Construction 98% complete.
- **SC-918 Headworks & Flow Equalization**
 - Combined Project Costs ~ \$558 Million
 - Back River WWTP Construction 68% complete



Wastewater Program 551

Recent CIP Accomplishments - Facilities

SC 829	SC 841	SC 846	SC 847
SC 848	SC 8526	SC 854	SC 855
SC 857	SC 859	SC 863	SC 868
SC 869	SC 870	SC 884	SC 886R
SC 888	SC 889	SC 901R	SC 915
SC 918S	SC 923	SC 924	SC 961

24 PROJECTS COMPLETED

SC 845R	SC 852R	SC 877
SC 882	SC 890	SC 892R
SC 918H	SC 925	SC 948
SC 927	SC 961	

11 CONSTRUCTION
PROJECTS

SC 926	SC 930	SC 935
SC 938	SC 948	SC 949
SC 950	SC 951	SC 954
SC 957	SC 982	SC 983
SC 987	SC 988	SC 989
SC 990	SC 991	SC 993
SC 994	SC 995	

20 STUDY/DESIGN PROJECTS



Wastewater Program 551

Recent CIP Accomplishments - Utilities

SC 876	SC 879	SC 894	SC 920
SC 897R	SC 898	SC 899	SC 902
SC 905	SC 906	SC 907	SC 934
SC 911	SC 912	SC 913	SC 937
SC 931	SC 932	SC 933	SC 922R
SC 909	SC 895	SC 900	SC 944R
SC 942	SC 943	SC 973	SC 974

28 PROJECTS COMPLETED

SC 903	SC 941	SC 964
SC 910	SC 953	SC 965
SC 914	SC 955	SC 967
SC 919	SC 956	SC 968
SC 921	SC 962	SC 976
SC 940	SC 963	SC 977
SC 997	SC 998	

20 CONSTRUCTION
PROJECTS

SC 945	SC 985	SC 978
SC 946	SC 866	SC 969

6 DESIGN PROJECTS



Wastewater Program 551

FY 2021 Facilities Requests

CIP #	Project	(\$ in Millions)
551-022	Eastern Avenue Pumping Station Rehab.	\$23.906
551-027	Patapsco WWTP Headworks Upgrade	\$81.580
551-030	SC-1326 SCADA Single Platform	\$6.540
551-092	Back River Rapid Sludge Loading Facility	\$6.48
551-093	Back River Sludge Storage Renovation	\$8.424
551-098	Quad Avenue Pumping Station Rehab.	\$3.888
551-123	Patapsco WWTP Primary Settling Tanks Rehab.	\$2.160
	Other Facility Projects	\$24.422
FY 2021 Total = \$ 157.4 Million		



Wastewater Program 551

FY 2021 Utilities Requests

CIP #	Project	(\$ in Millions)
551-047	SC-978 Small Diameter Sewer In Roland Park	\$3.700
551-064	Herring Run Sewershed Inflow - Project 03	\$6.907
551-073	Proj-1263 Amendment #1 Flow Monitoring	\$5.777
551-101	Gwynns Falls Sewershed Inflow - Project 01	\$22.810
551-108	Low Level Sewershed Inflow - Project 01	\$1.265
551-115	Herring Run Sewershed Inflow - Project 01	\$27.296
551-116	Herring Run Sewershed Inflow - Project 02	\$28.084
	Other Utility Projects	\$22.469
FY 2021 Total = \$ 118.3 Million		



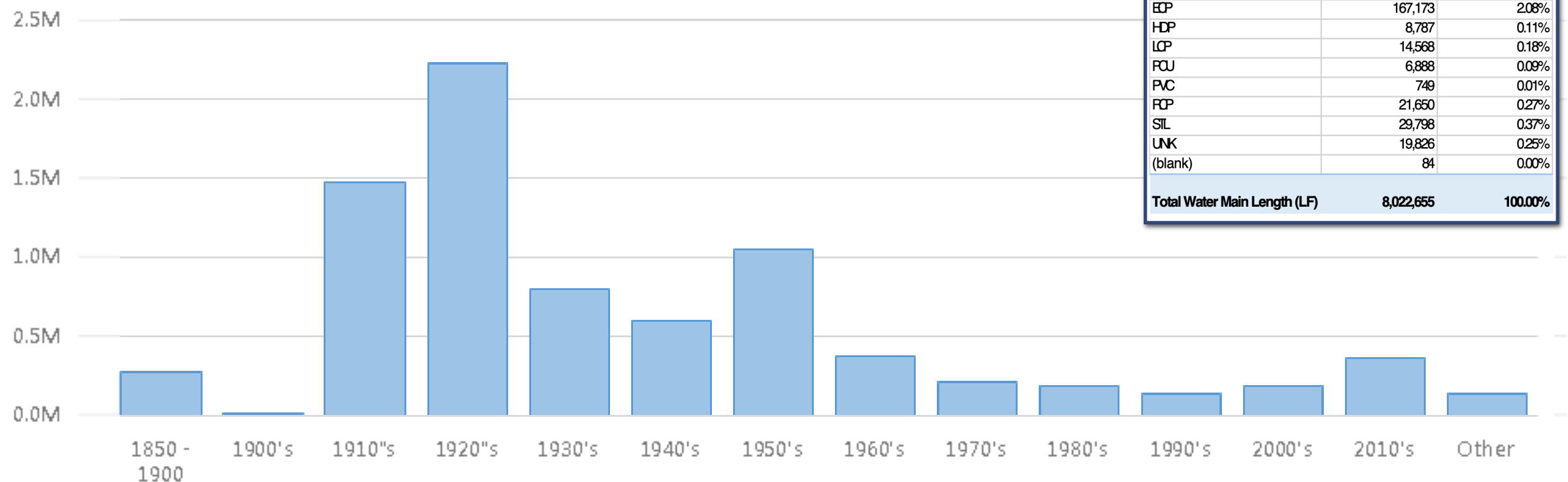
Water Program 557

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 and Percentage	
CI	6,883,543	85.80%
CND	597	0.01%
CON	67,166	0.84%
CCP	577	0.01%
DI	801,251	9.99%
ECP	167,173	2.08%
HDP	8,787	0.11%
LCP	14,568	0.18%
PCU	6,888	0.09%
PVC	749	0.01%
RCP	21,650	0.27%
SIL	29,798	0.37%
UNK	19,826	0.25%
(blank)	84	0.00%
Total Water Main Length (LF)		8,022,655 100.00%



Water Program 557

Long Term Capital Needs



Water Program 557

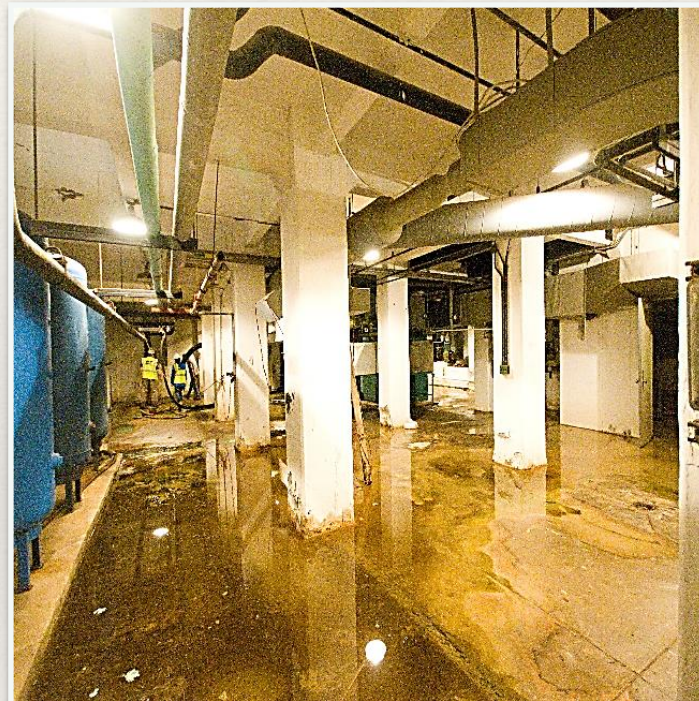
Long Term Capital Needs

Montebello WFP 1 & 2 Renovations

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



Hydraulic Valve Actuator
Corroded Leakage



Ground Water Leakage



Existing Filter Piping Conditions



Water Program 557

Recent CIP Accomplishments - Utilities

WC 1202	WC 1203	WC 1217	WC 1224	WC 1225 R
WC 1226	WC 1234	WC 1240	WC 1244	WC 1245
WC 1246	WC 1254 R	WC 1255	WC 1256	WC 1260
WC 1261	WC 1262	WC 1263	WC 1264	WC 1266 R
WC 1268	WC 1269	WC 1270	WC 1276	WC 1278
WC 1294	WC 1330	WC 1337	WC 1342	WC 1343
WC 1346	WC 1351	WC 1355	WC 1359	WC 1366
WC 1369	36 PROJECTS COMPLETED			

WC 1272	WC 1286
WC 1293	WC 1301R
WC 1302	WC 1314
WC 1339	WC 1340
WC 1363	WC 1365
10 CONSTRUCTION PROJECTS	

WC 1241	WC 1252	WC 1257	WC 1258	WC 1271
WC 1274	WC 1275	WC 1277	WC 1279	WC 1281
WC 1282	WC 1283	WC 1284	WC 1285	WC 1287
WC 1288	WC 1290	WC 1291	WC 1292	WC 1312
WC 1313	WC 1315	WC 1316	WC 1317	WC 1318
WC 1319	WC 1320	WC 1321	WC 1367	WC 1391
30 DESIGN PROJECTS				



Water Program 557

Recent CIP Accomplishments - Facilities

WC 1137 R	WC 1143	WC 1160 R	WC 1164
WC 1168	WC 1178	WC 1183	WC 1194
WC 1228 R	WC 1233	WC 1242	WC 1295
WC 1306	WC 7607	WC 8652	

**15 PROJECTS
COMPLETED**

WC 1120	WC 1173	WC 1190
WC 1204	WC 1211	WC 1230
WC 1305	WC 1328	WC 1362

**9 CONSTRUCTION
PROJECTS**

TR 1100 3	TR 1101 3R	WC 1199
WC 1207	WC 1229	WC 1243
WC 1327	WC 1354	WC 1390
WC 1406		

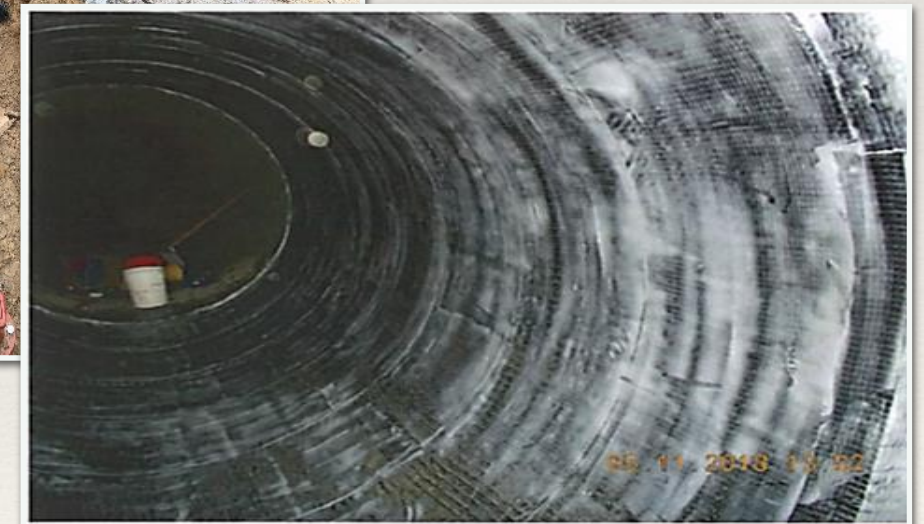
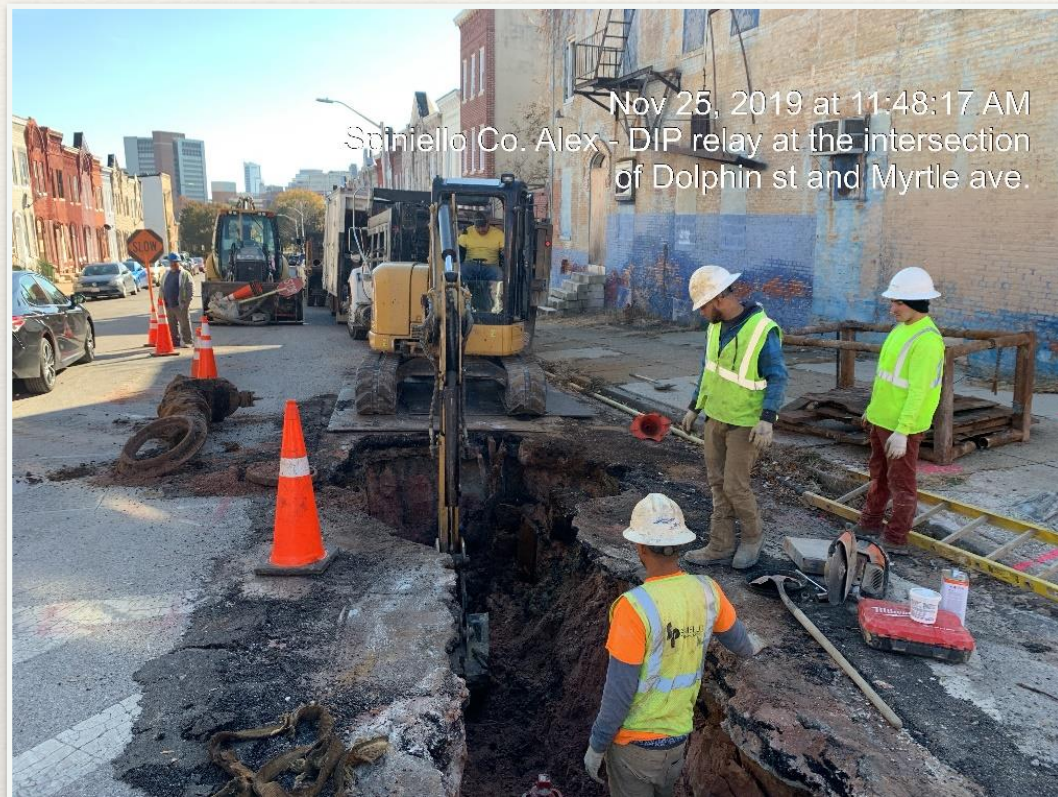
10 DESIGN PROJECTS



Water Program 557

Recent CIP Accomplishments - Utilities

DIP water main replacement



Proactive Internal Carbon-Fiber Repair of 84" PCCP



Water Program 557

Recent CIP Accomplishments - Utilities



**Proactive Internal Carbon-Fiber
Repair of 54" PCCP**



**Proactive External Post Tension
Tendon Repair of 48" PCCP**



Water Program 557

Recent CIP Accomplishments - Facilities

**WC 1173R Guilford Finished Water Reservoir Project Costs ~ \$ 70 Million
Construction at 90% Complete**



**WC 1204 Druid Lake Finished Water Reservoir
Project Costs ~ \$212 Million
Construction at 66% Complete**



**WC 1211 Ashburton Lake Finished Water Reservoir
Project Costs ~ \$178 Million
Construction at 18% Complete**



Water Program 557

FY 2021 Utilities Priority Requests

CIP #	Project	(\$ in Millions)
557-177	WC-1316 Barclay and Vicinity WM	\$23.652
557-169	Project 1201 Large Diameter Main Renewal	\$21.600
557-152	WC-1315 Hillen & Pen Lucy North WM	\$21.511
557-144	WC-1275 Ellamont St Vicinity WM	\$16.634
557-198	WC-1291 Wilkens Ave Vicinity WM	\$12.847
557-073	WC-1257 Falls Road Vicinity WM	\$10.756
557-173	WC-1288 Beechfield & Yale Heights Vicinity WM	\$10.632
	Other Utility Projects	\$118.842
FY 2021 Utilities Priority Total = \$236.5 Million		

Water Program 557

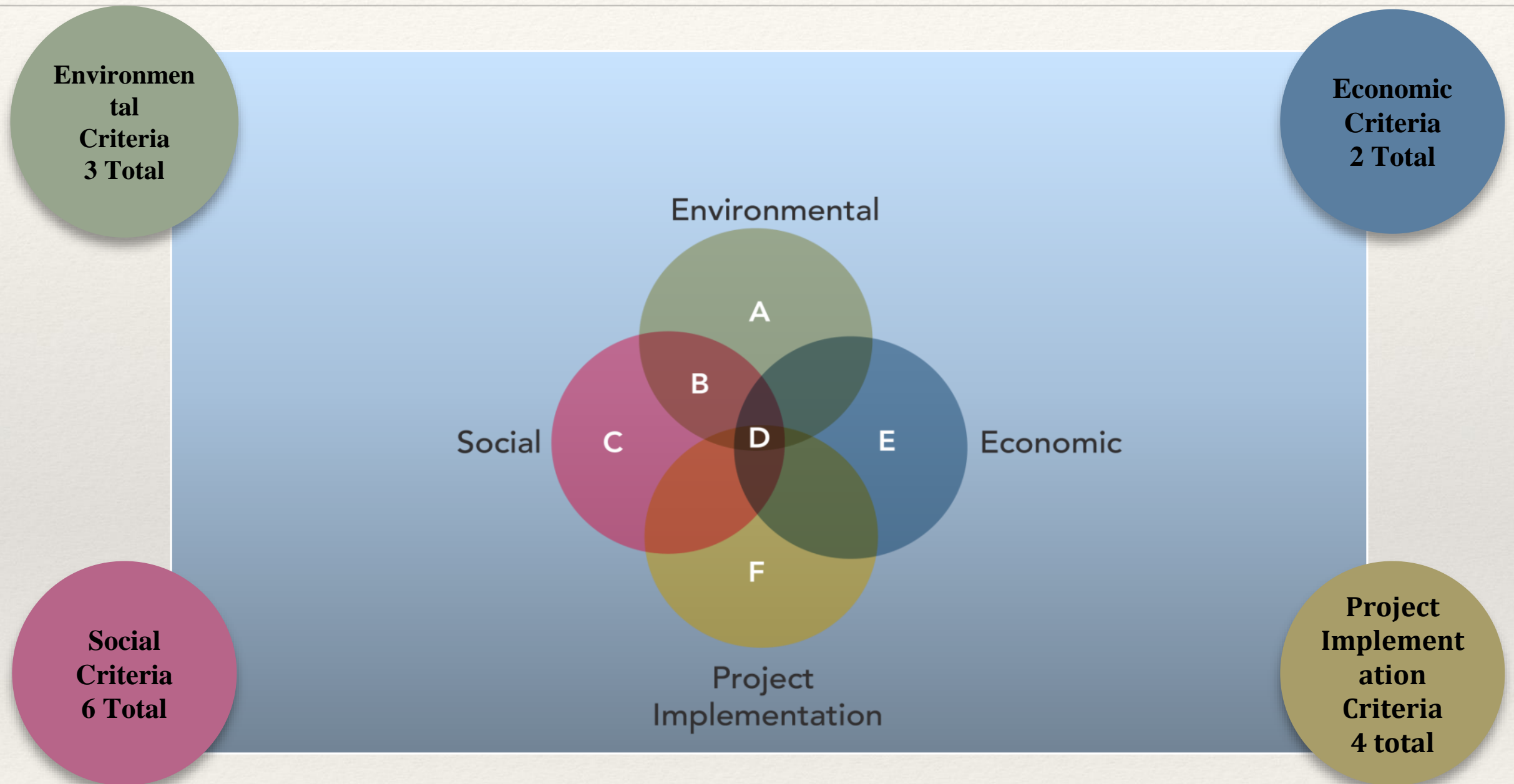
FY 2021 Facilities Priority Requests

CIP #	Project	(\$ in Millions)
557-158	Dam Rehabilitation	\$11.586
557-223	Watershed Comprehensive Plan	\$2.700
557-922	Vernon Pump Station Rehabilitation	\$14.644
557-923	Cromwell Pump Station Rehabilitation	\$41.585
557-929	Ashburton Pump Station Rehabilitation	\$11.515
	Other Facility Projects	\$12.588
FY 2021 Facilities Priority Total = \$94.6 Million		



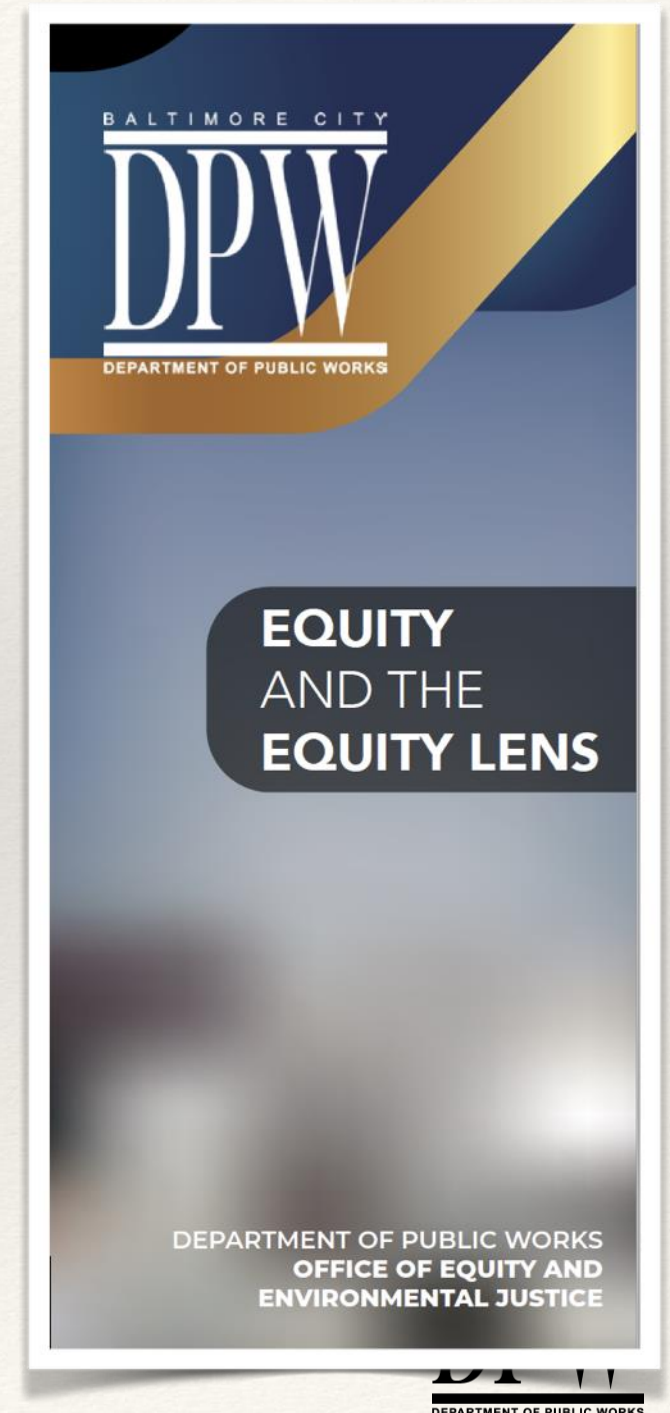
Quadruple Bottom Line with Equity Approach

Prioritization Criteria for CIP Projects



Equity Milestones

- ◉ Equity Director employed
- ◉ Draft DPW Strategy developed
- ◉ Equity Training Curriculum developed
- ◉ Equity model framework for IPF drafted
- ◉ Training brochure completed
- ◉ DPW Managers trained in Equity
- ◉ Equity added to DPW performance element



Equity Milestones

- Equity collaboration with EEO on internal workplace issues
- Equity partnership with Mayor's team on overarching equity issues Citywide
- Equity collaboration with Johns Hopkins on key DPW topical areas
- Equity Committees formed for strategic and tactical problem solving
- Statement of work for capital analysis (disaggregated) underway





FY 2021 Capital Improvement Program Presentation



Questions?