



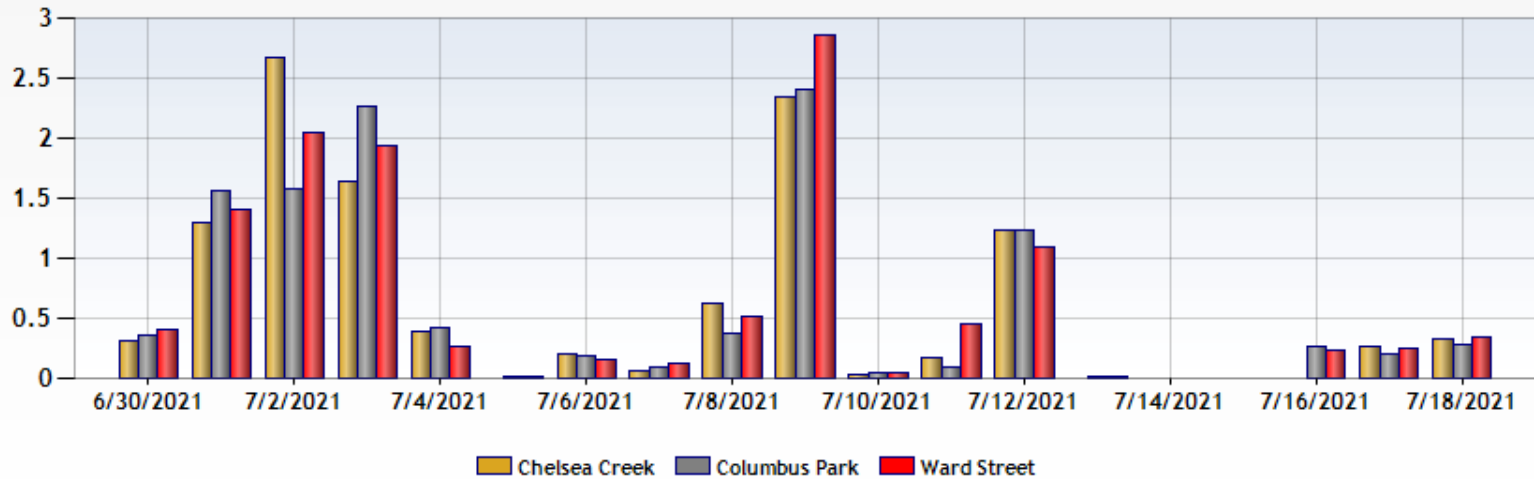
*Recent Storm Impacts  
on MWRA's Wastewater System*

July 23, 2021



# 19-Day Rainfall

Daily Rainfall Total in Inches from 6/30/2021 to 7/18/2021  
Collected by Chelsea Creek, Columbus Park, Ward Street Rain Gauges



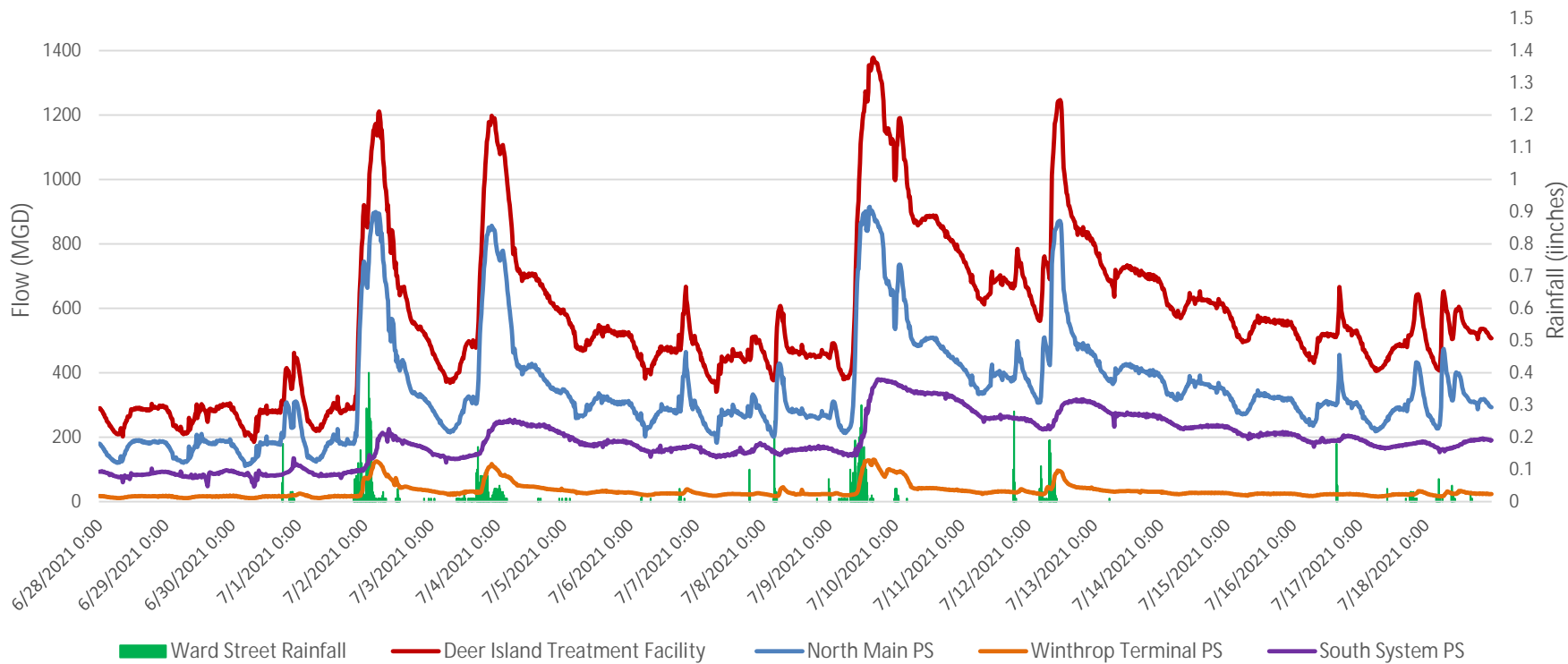
Chelsea Creek: 11.59" Columbus Park: 11.39" Ward Street: 12.15"

- MWRA's service area experienced over 11-inches of rainfall over an 18-day period
- Typical annual rainfall for Boston area: 43 inches distributed throughout the year



# Deer Island Treatment Facility Flows

Deer Island Treatment Facility Flows and Rainfall  
June 28-July 18, 2021





# South System Flows

South System Flows and Rainfall  
June 28-July 18, 2021





# CSO Facility Activations

Storm Event	CSO Facility	Duration	Discharge Vol (MG)
July 1 <sup>st</sup> – 2 <sup>nd</sup> Rainfall 3.46"	Somerville Marginal CSO	11 hrs 30 min	21.18 MG
	Prison Point CSO	8 hrs 40 min	58.45 MG
	Cottage Farm CSO	11 hrs 30 min	21.18 MG
July 3 <sup>rd</sup> – 4 <sup>th</sup> Rainfall 2.21"	Somerville Marginal CSO	6 hrs 24 min	9.79 MG
	Prison Point CSO	6 hrs 10 min	26.38 MG
July 9 <sup>th</sup> – 10 <sup>th</sup> Rainfall 2.89"	Somerville Marginal CSO	7 hrs 10 min	24.81 MG
	Prison Point CSO	7 hrs 48 min	57.52 MG
	Cottage Farm CSO	5 hrs 29 min	21.16 MG
July 12 <sup>th</sup> Rainfall 1.53"	Somerville Marginal CSO	2 hrs 10 min	6.02 MG
	Prison Point CSO	3 hrs 30 min	15.98 MG
July 18 <sup>th</sup> Rainfall 0.56"	Somerville Marginal CSO	4 hrs 19 min	1.37 MG



# CSO Facilities Typical Year Performance Comparison

CSO Facility	Typical Year Performance*	June 30 <sup>th</sup> – July 18 <sup>th</sup>
Somerville Marginal CSO	30 activations, 100.53 MG	5 activations, 63.4 MG
Prison Point CSO	17 activations, 253.69 MG	4 activations, 158.33 MG
Cottage Farm CSO	2 activations, 8.95 MG	2 activations, 42.34 MG

\* Top Ten Storms in Typical Year

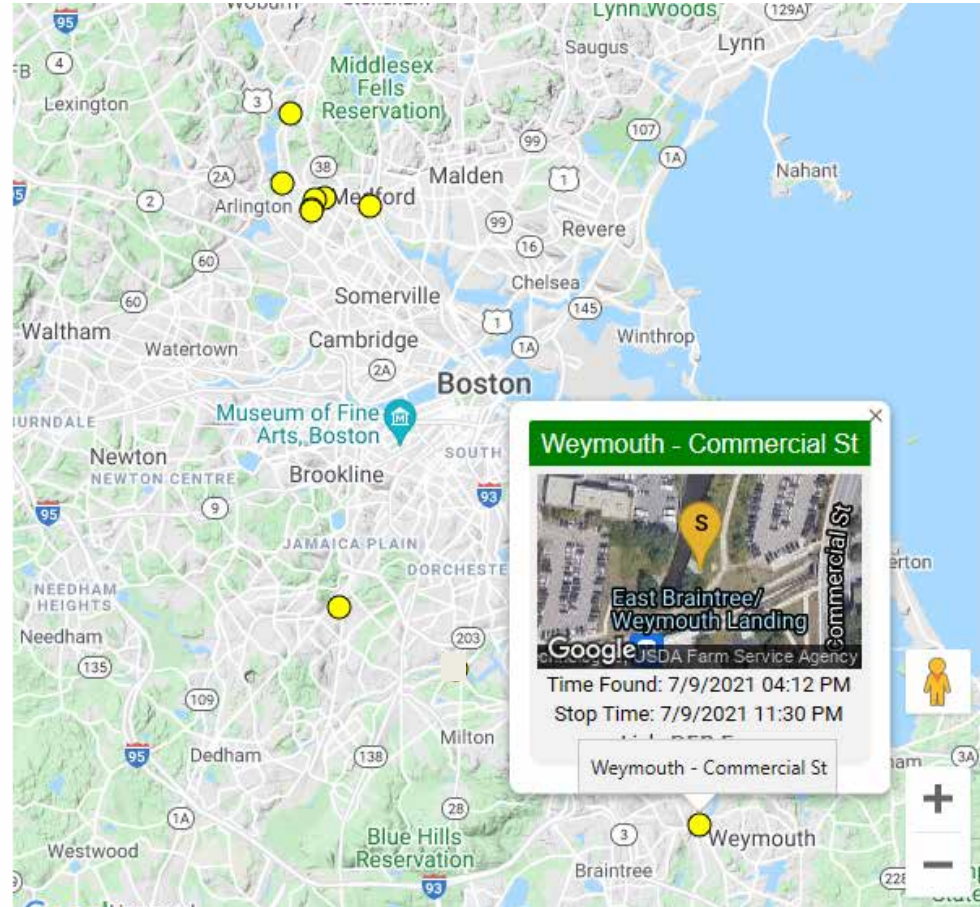
Duration hours	Volume inches	Avg Inten in/hr	Max Inten in/hr	Inter- event hours
23	2.76	0.12	0.65	12
50	3.89	0.08	0.2	139
18	1.34	0.07	0.44	91
4	1.18	0.29	1.08	33
72	2.91	0.04	0.66	29
84	2.39	0.03	0.31	59
7	1.14	0.16	0.63	12
11	0.87	0.08	0.75	162
13	1.19	0.09	0.51	127
18	1.34	0.07	0.44	91

Max Hourly Rainfall during July 1<sup>st</sup> – 2<sup>nd</sup> Storm  
1.23 inches per hour = 5-10 year storm



# SSO Discharges during July 9<sup>th</sup> Storm Event

- SSO Discharged: 9.79 MG  
(6.4 MG at Archdale)
- Notifications: DEP/EPA, Local Boards of Health, MWRA's website





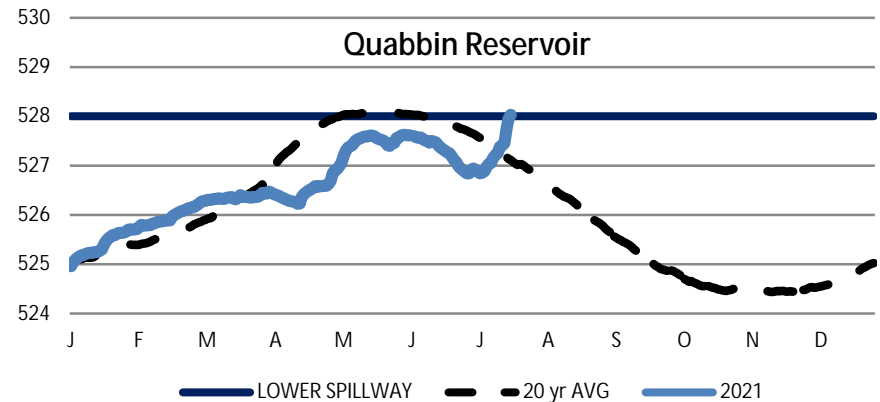
- Staff burnout
  - Long hours
  - Back-to-back coverage
  - Vacation season
  - Mandatory standby





# Water System Reservoirs

- Reservoir releases as rivers recede to maintain freeboard
  - Metropolitan back up reservoirs
  - Sudbury system
  - Wachusett reservoir
- Seasonal Quabbin transfer for water quality able to be maintained throughout
- Quabbin Reservoir spilling as of Tuesday July 20





*7155 Section 22 Rehabilitation Alternatives  
Analysis and Environmental Permitting*

July 21, 2021



## Phased Approach

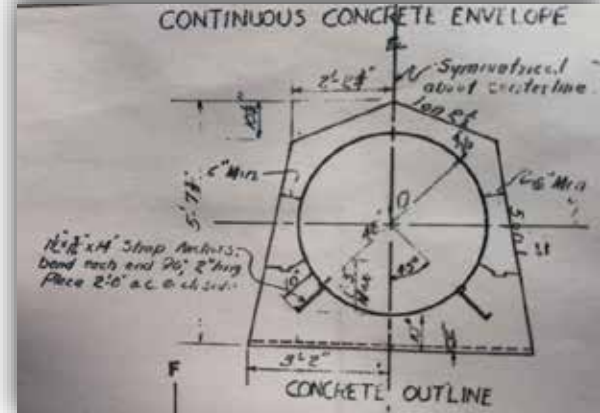
- Test pits completed first to determine plan for borings
- 29 Phase 1 borings completed
- Phase 2 test pits and borings were not required

## Cost Savings

- Overall, \$550,000 of the \$1.7 million condition assessment cost was saved



# Section 22 Through DCR's Neponset River Estuary (ACEC), Boston





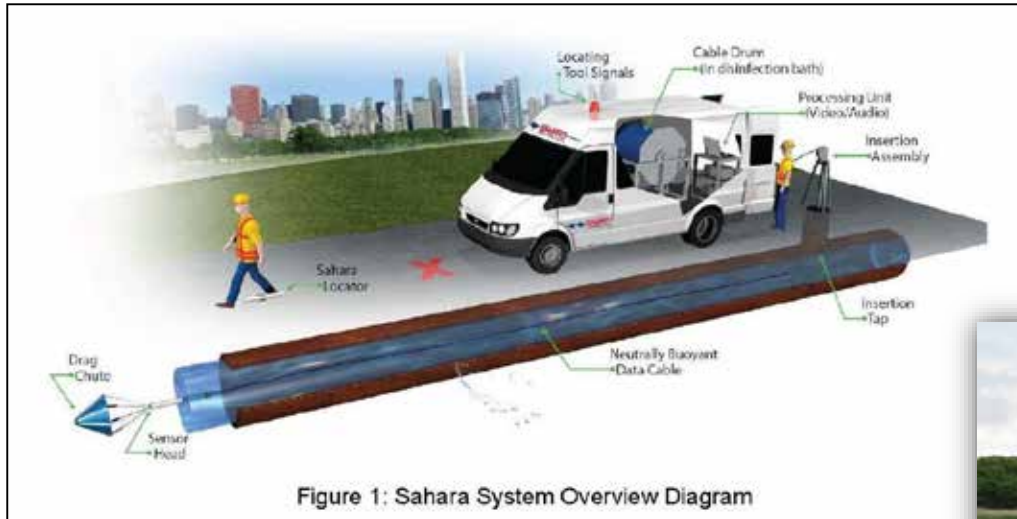
## Section 22 Concrete Encasement

- Test pits determined good condition of wood piles in marsh





# Neponset River Crossing Internal Leak Detection Equipment



- Internal leak detection of 600-foot Neponset River Crossing found pipe in good condition
- Re-evaluate in 20 years







## Section 21, Milton and Quincy

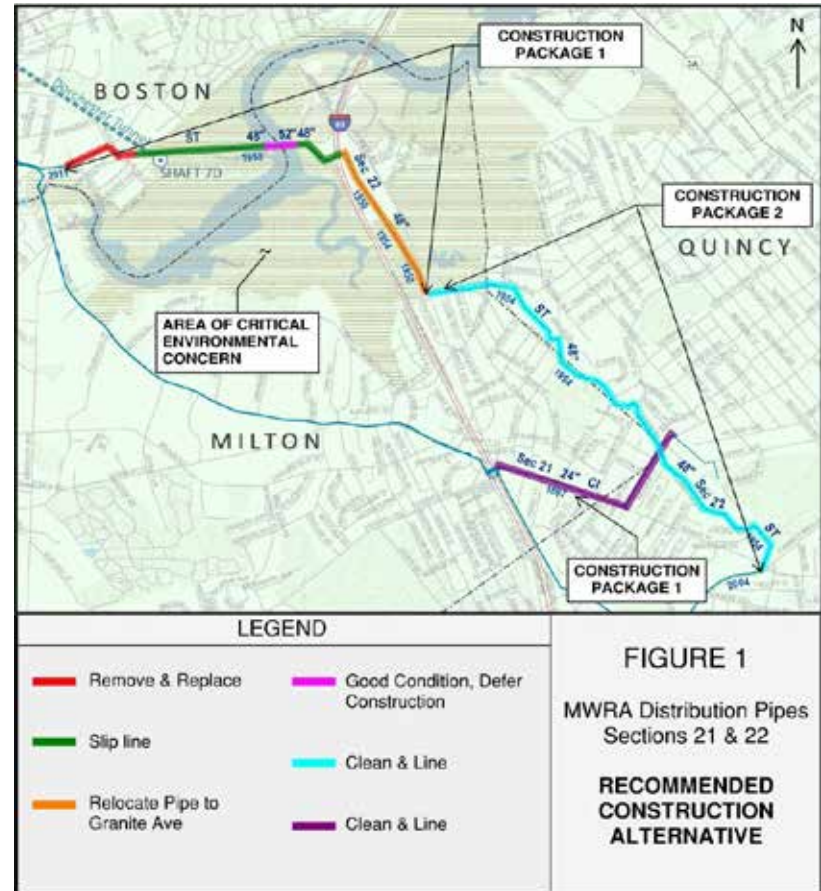
- Section 21 - Pipe wall thickness good, but heavily tuberculated
- Rehabilitation is to clean and line





# Recommended Construction Alternative

- Program reduced construction cost from \$50 million for full pipe replacement to \$26 million recommended plan







*Carroll Water Treatment Plant  
SCADA System Improvements  
Contract 7582*

July 21, 2021



# Carroll SCADA System Improvements



Typical Replacement PLCs

- Replace Legacy PLCs and Instrumentation panels (32 PLCs, 16 panels, 30 PC terminals)
- Install Redundant Fiber Optic Communication Network Loop Throughout Plant
- Install Hardened Redundant Industrial Servers
- New Server room (HVAC and Fire Suppression)
- Upgrade Cyber security and UPS power
- Operator Control Room Refurbishment
- Complex Cutover – 24/7 Operation



# Control Panel Replacement



An Existing panel and UPS





# Operator Control Room Refurbishment

## Existing Control Room



## New Control Room Rendering





## Contract 7582 Bid Results

Bidders	Cost
LeVangie Electric Co., Inc.	\$12,905,070
<i>Engineers Estimate</i>	<i>\$13,971,833</i>
Mass Electric Construction Co.	\$15,779,000
J.F. White Contracting Co.	\$18,430,855



- For approval
- Presenter:
  - Andrea Murphy, Director of Human Resources



## Appointment of Program Manager, Tunnel

- For approval
- Presenter:
  - Andrea Murphy, Director of Human Resources



# Appointment of Community Relations Coordinator, Tunnel

- For approval
- Presenter:
  - Andrea Murphy, Director of Human Resources





# Appointment of Director, TRAC

- For approval
- Presenter:
  - Andrea Murphy, Director of Human Resources



## Appointment of Program Manager, Wastewater

- For approval
- Presenter:
  - Andrea Murphy, Director of Human Resources



- For information
- Presenter:
  - Michele Gillen, Director of Administration
  - Douglas Rice, Director of Procurement

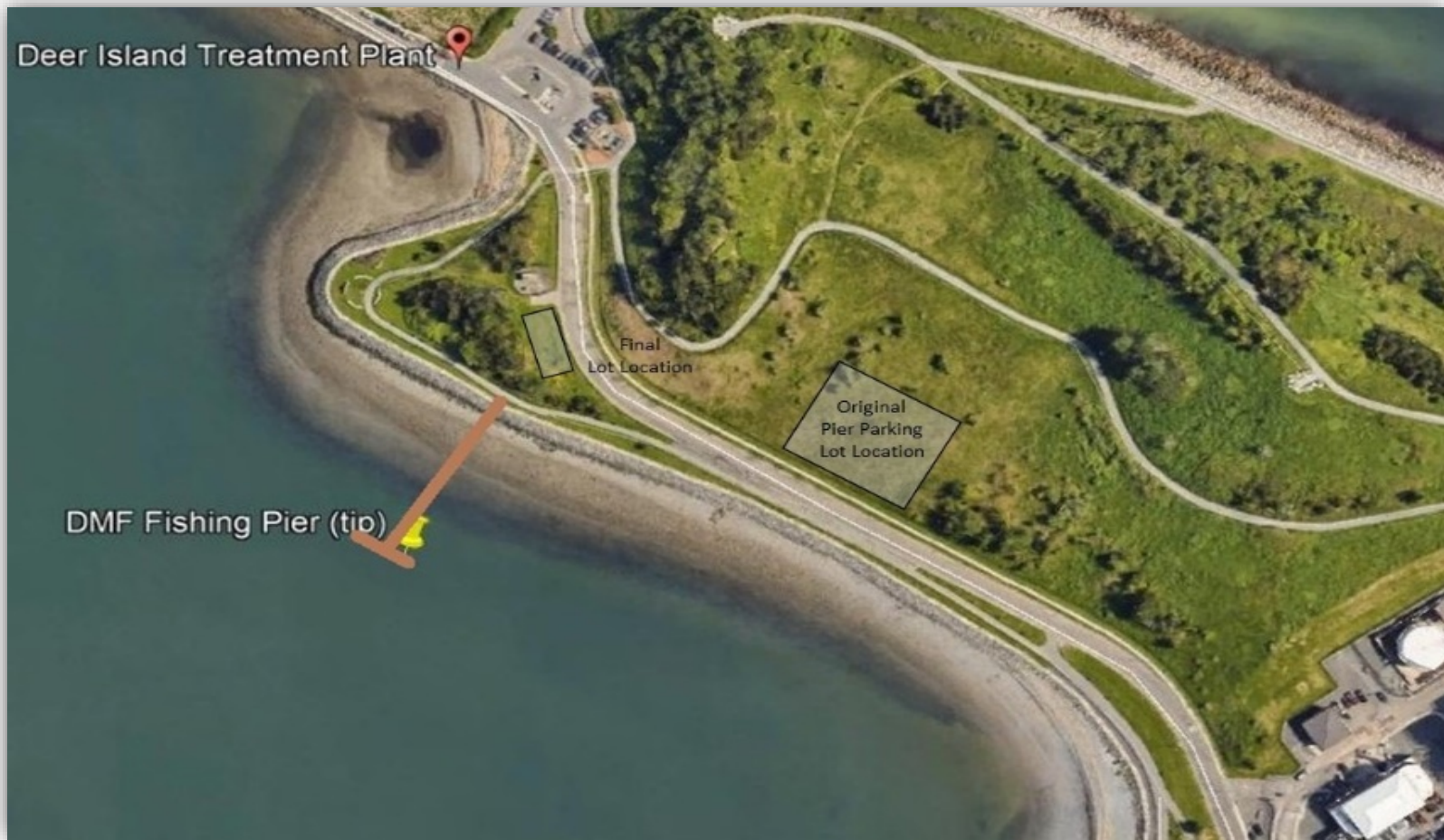


*Memorandum of Understanding with  
Mass. Department of Fish and Game  
for Public Access Fishing Pier  
at Deer Island, Amendment 3*

July 21, 2021



# Deer Island Fishing Pier and Parking Lot





# Deer Island Fishing Pier







# Deer Island Fishing Pier Parking Lot





## Fishing Pier Parking Lot Opening Ceremony – June 24







## 42 Cisco Switches, WRA-4985Q

- Contract Award
- Presenter:
  - Paula Weadick, Director of MIS