



***Thunderstorm Impacts on
Wastewater System Operations***

July 17, 2019



Thunderstorms

- Thunderstorms frequently occur in the afternoon and early evening during the late Spring and Summer months and their intensity and track are hard to predict





Thunderstorm Staffing Preparations

Precautionary staffing necessary due to the unpredictable nature of thunderstorms

- Operations staff required at:
 - 3 CSO Treatment Facilities (Prison Point, Cottage Farm and Somerville Marginal)
 - 3 Northern Headworks (Chelsea Creek, Ward Street and Columbus Park)
 - 2 roving crews to respond to operational issues
- Maintenance staff stationed to address equipment issues in a timely manner at:
 - Chelsea Maintenance Facility, Chelsea Creek, Ward Street and Prison Point



Severe Weather Outlook for June 29, 2019

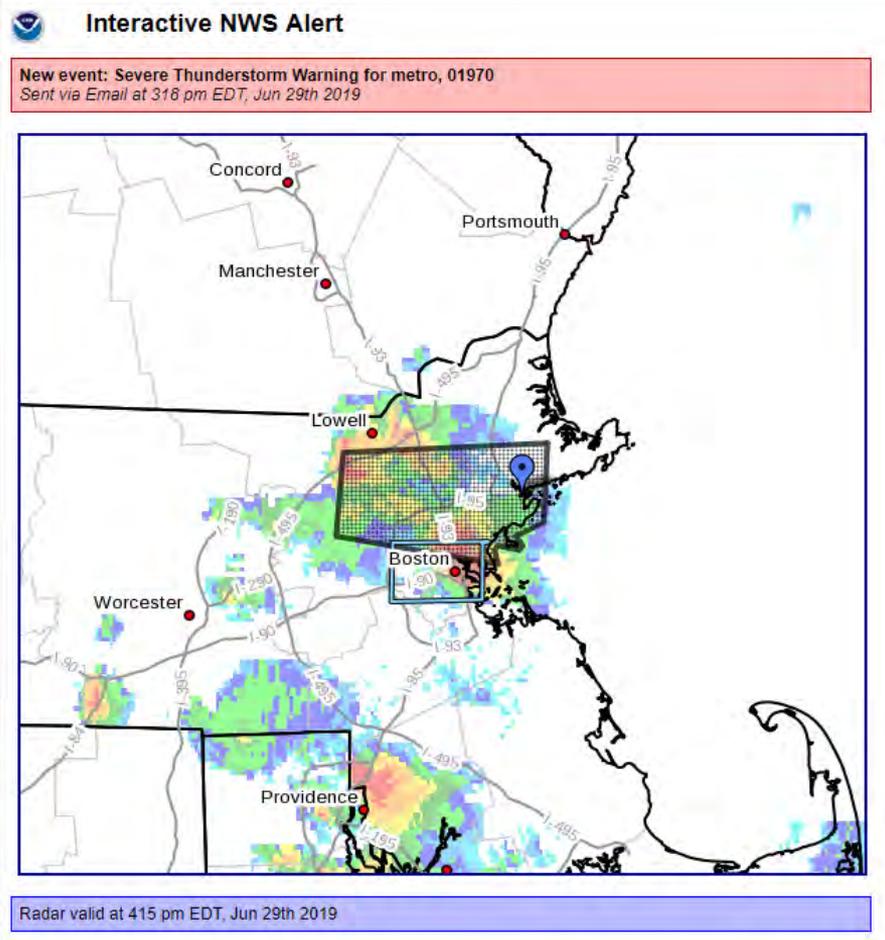
National Weather Service Forecast:

- Thunderstorms and showers
- Chance of rain 60%





Severe Thunderstorm Warning for Boston for Saturday June 29, 2019



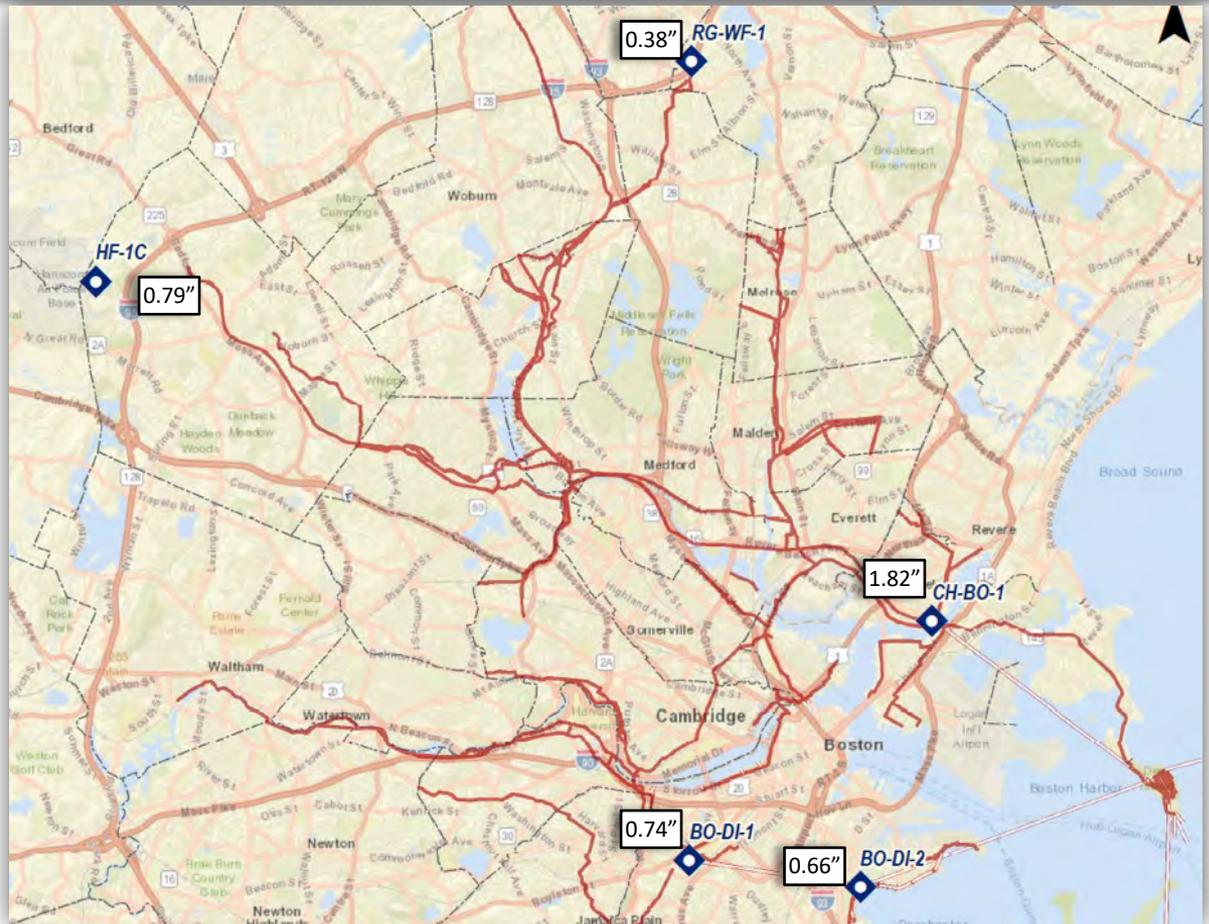


Rainfall Totals for June 29, 2019

JUNE 29th THUNDERSTORM

Measured Area Rainfall:

Hayes PS:	0.38 inches
Columbus Pk HW:	0.66 inches
Ward Street HW:	0.74 inches
Hanscom:	0.79 inches
Chelsea Creek HW:	1.82 inches



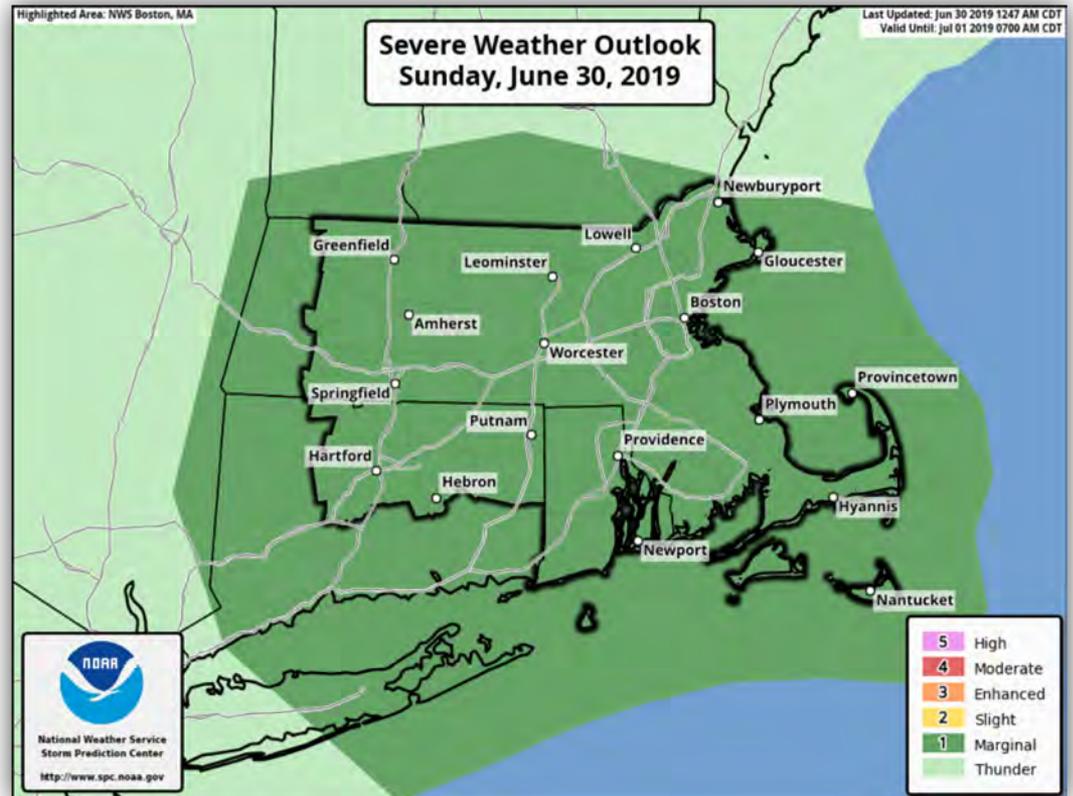
❖ Chelsea Admin Building Rain Gauge registered an instantaneous rainfall rate of 12.26 in/hr at 4:30 pm



Severe Weather Outlook for Sunday, June 30, 2019

National Weather Service Forecast:

- Thunderstorms and showers
- Chance of rain 80%





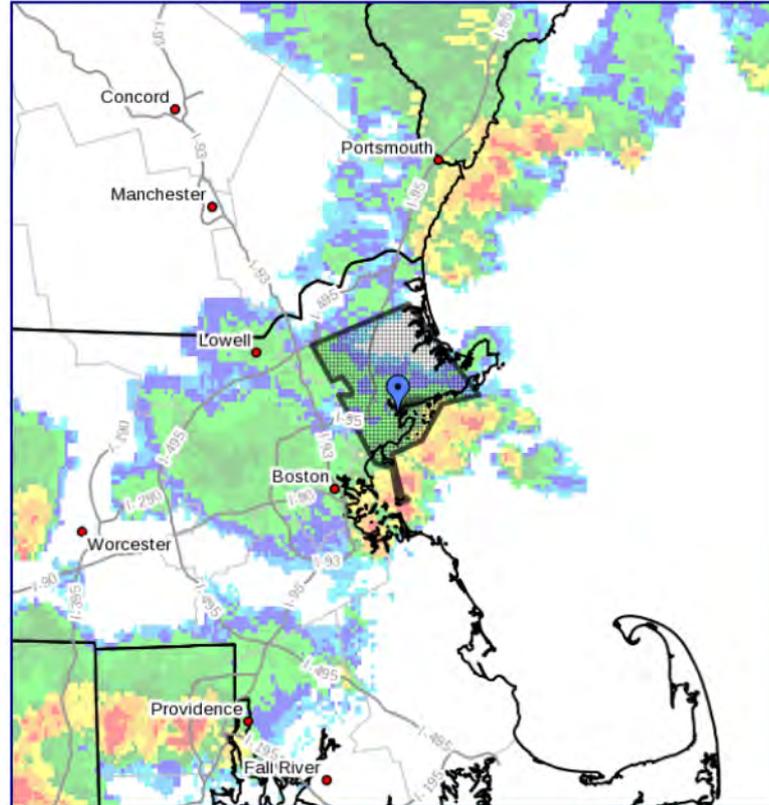
Severe Thunderstorm Warning for Sunday, June 30, 2019



Interactive NWS Alert

New event: Severe Thunderstorm Warning for 01970

Sent via Email at 235 pm EDT, Jun 30th 2019



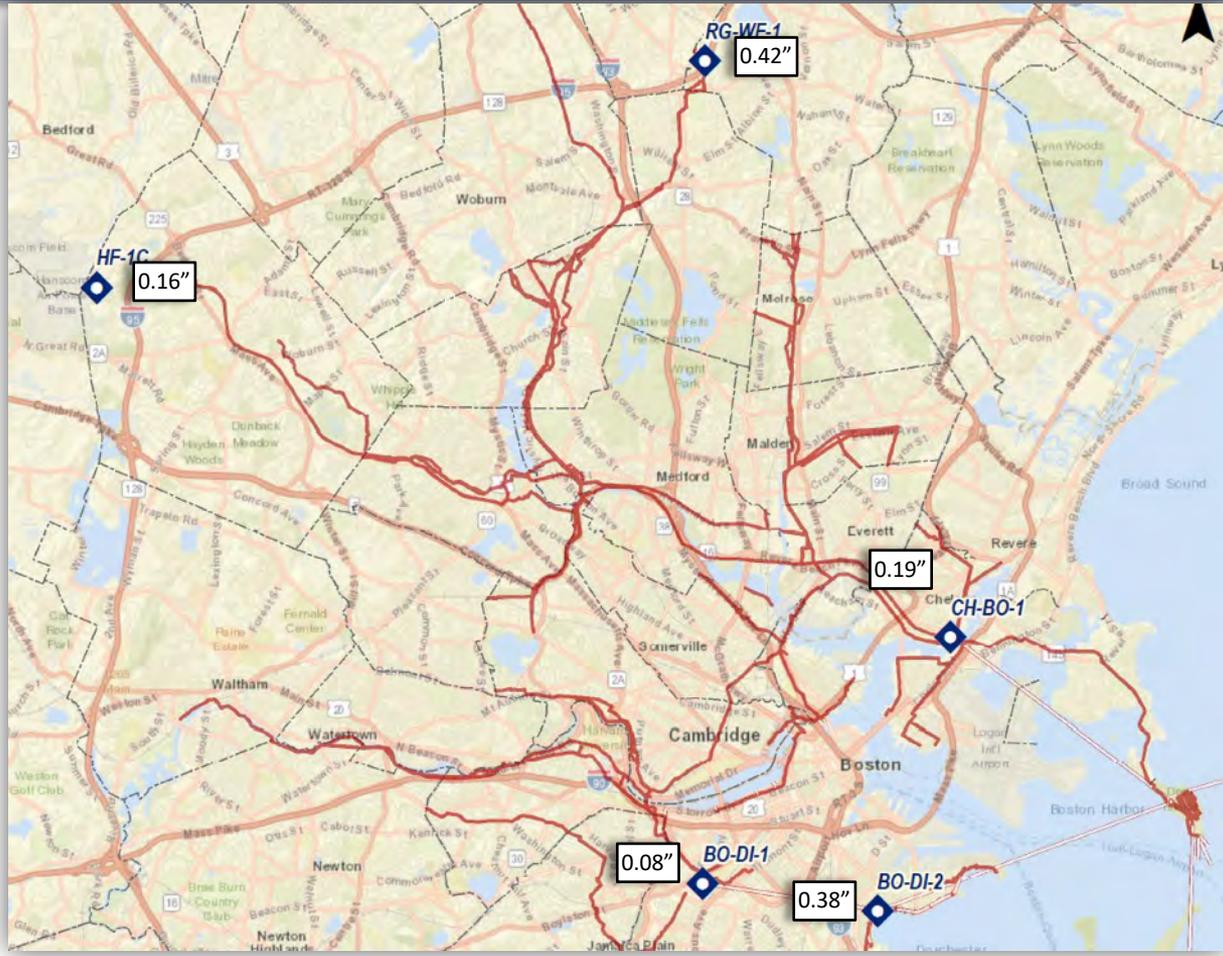


Rainfall Totals for Sunday, June 30, 2019

JUNE 30th THUNDERSTORM

Measured Area Rainfall:

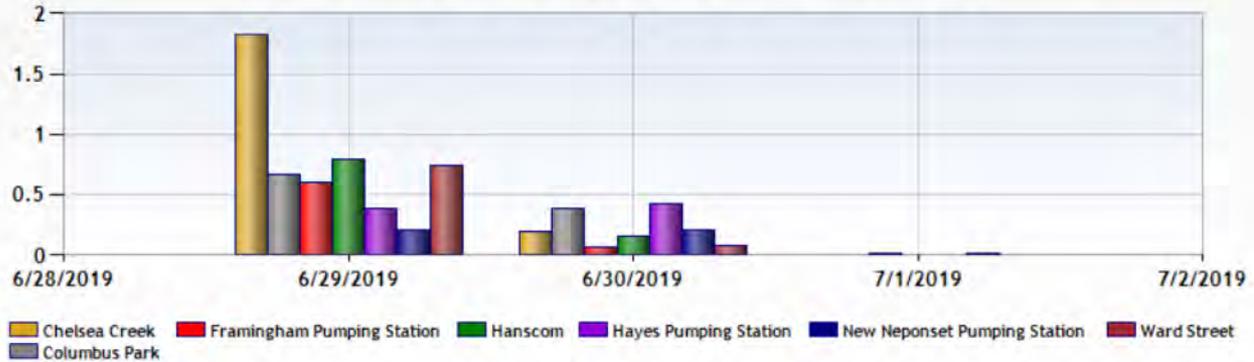
Hayes PS:	0.42 inches
Columbus Pk HW:	0.38 inches
Ward Street HW:	0.08 inches
Hanscom:	0.16 inches
Chelsea Creek HW:	0.19 inches





Rainfall Totals From June 29th to July 1st

Daily Rainfall Total in Inches from 6/29/2019 to 7/1/2019
 Collected by Chelsea Creek, Columbus Park, Framingham Pumping Station, Hanscom, Hayes Pumping Station, New Neponset Pumping Station, Ward Street Rain Gauges

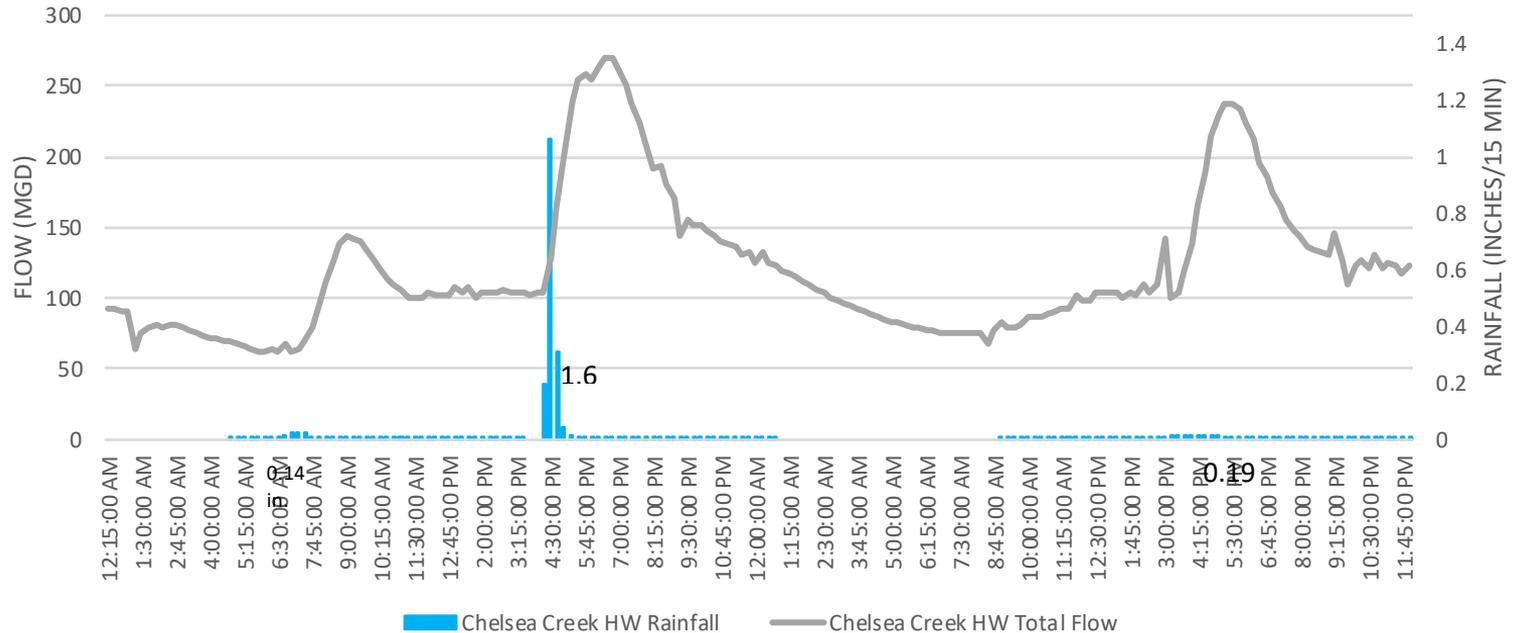


Date	Chelsea Creek	Columbus Park	Framingham Pumping Station	Hanscom	Hayes Pumping Station	New Neponset Pumping Station	Ward Street
6/29/2019	1.82	0.66	0.60	0.79	0.38	0.21	0.74
6/30/2019	0.19	0.38	0.07	0.16	0.42	0.21	0.08
7/1/2019	0.00	0.00	0.01	0.00	0.00	0.01	0.00
Total	2.01	1.04	0.68	0.94	0.80	0.43	0.82



Chelsea Creek Headworks Flow

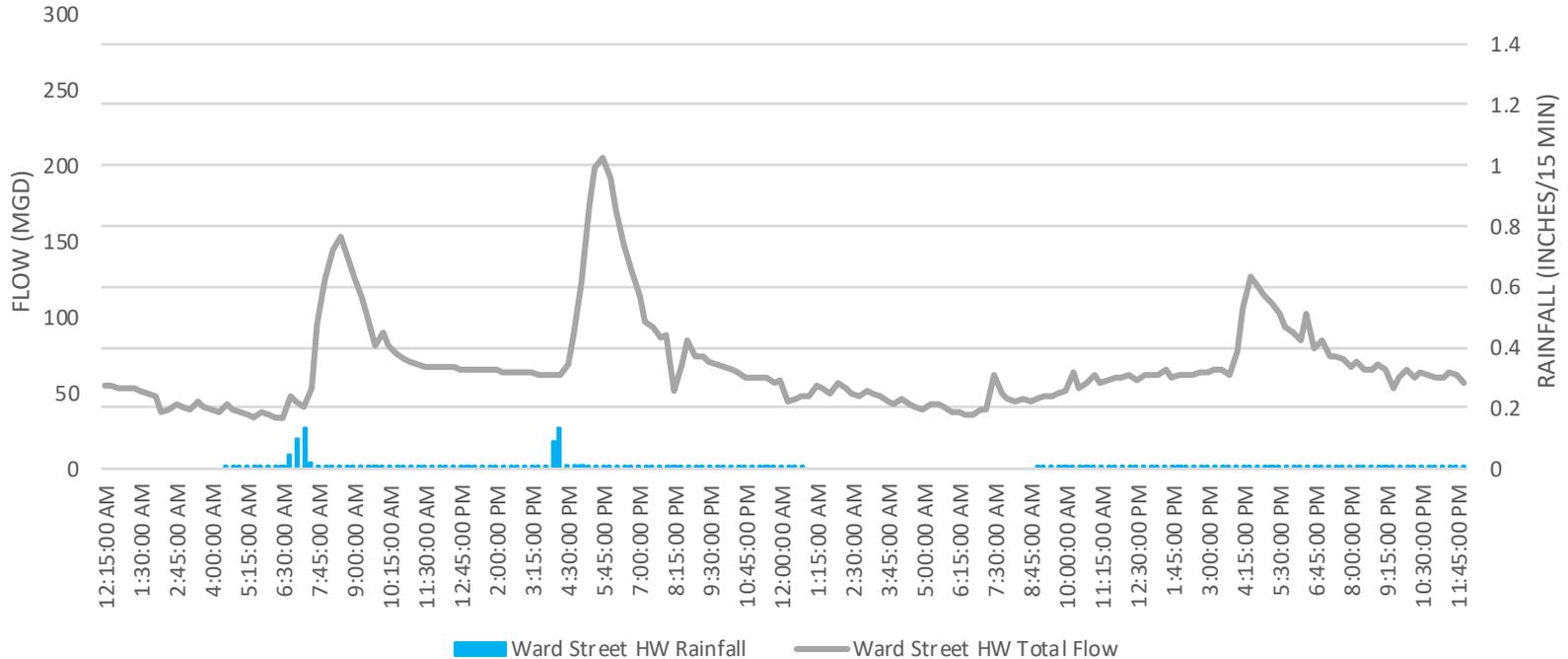
CHELSEA CREEK HEADWORKS FLOWS
JUNE 29-30 2019





Ward Street Headworks Flow

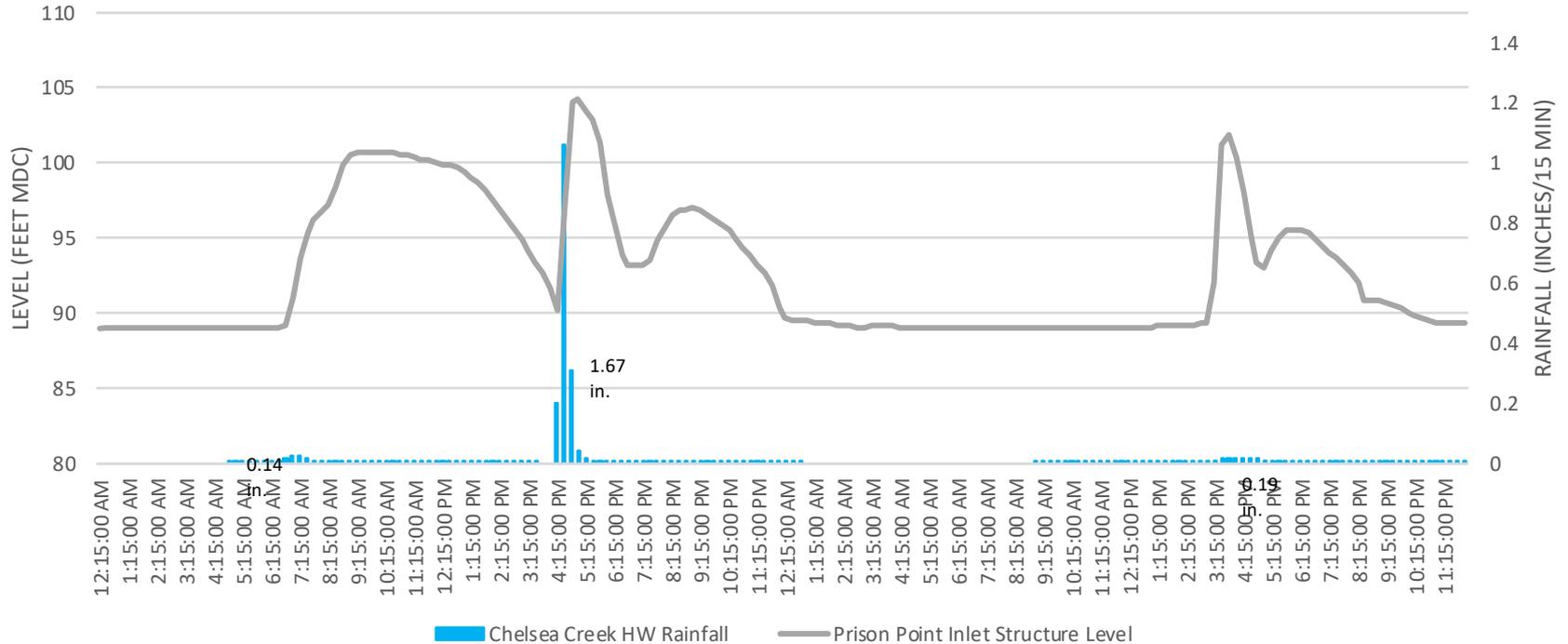
WARD STREET HEADWORKS FLOW
JUNE 29-30 2019





Prison Point CSO Inlet Elevation

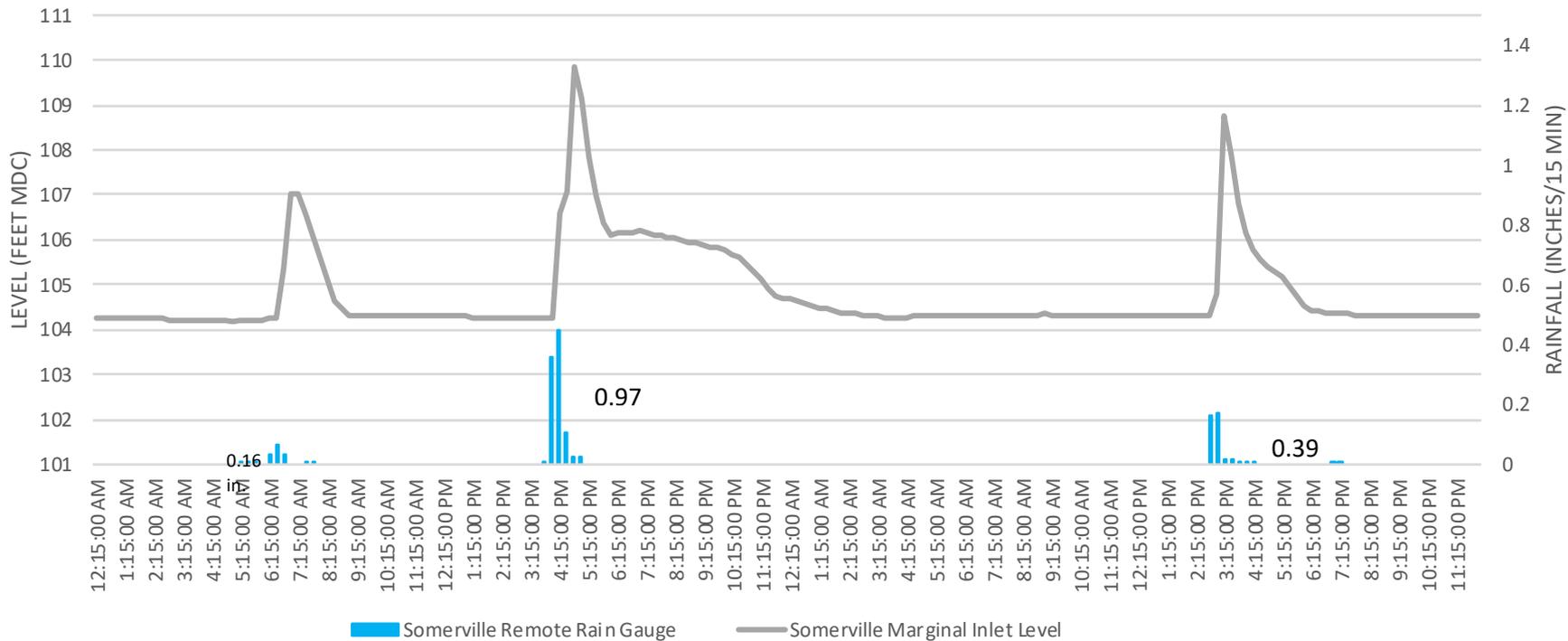
PRISON POINT CSO INLET LEVEL
JUNE 29-30 2019





Somerville Marginal CSO Inlet Elevation

SOMERVILLE MARGINAL CSO INLET LEVEL JUNE 29-30 2019





Town of Braintree Howard Street Pump Station



Legend

- Quincy's Tributary Area
- Howard St Pump Station
- Community Sewer Pipes
- Municipal Boundary
- MWRA Sewer Interceptors





***Deer Island Treatment Plant
Maintenance Coating Contract***

July 17, 2019

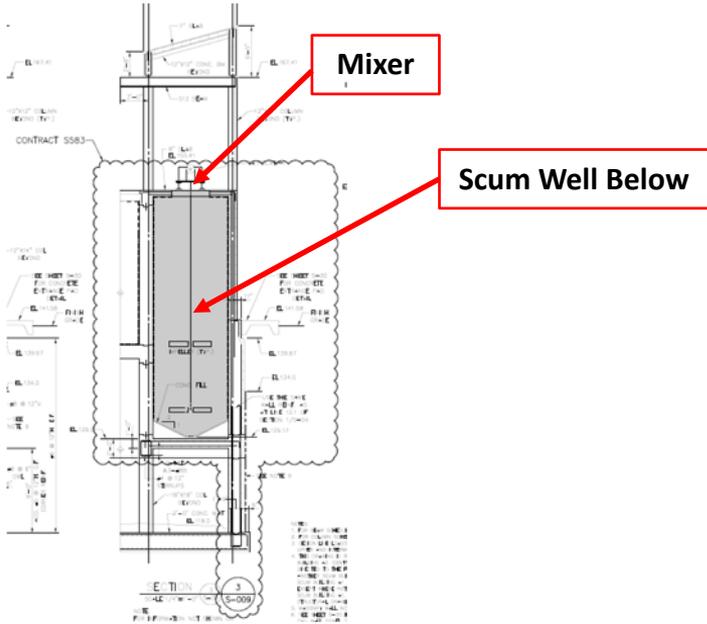


Contract S583 Scope of Services Summary

- Painting/coating/concrete and steel repairs in several areas of the Deer Island Treatment Plant:
 - Primary Scum Building Scum Wells (8 Total)
 - Odor Control Facilities Carbon Adsorbers (6 Total)
 - Module 3 Digester Overflow Boxes (4 Total)



Contract S583 Scum Well Scope

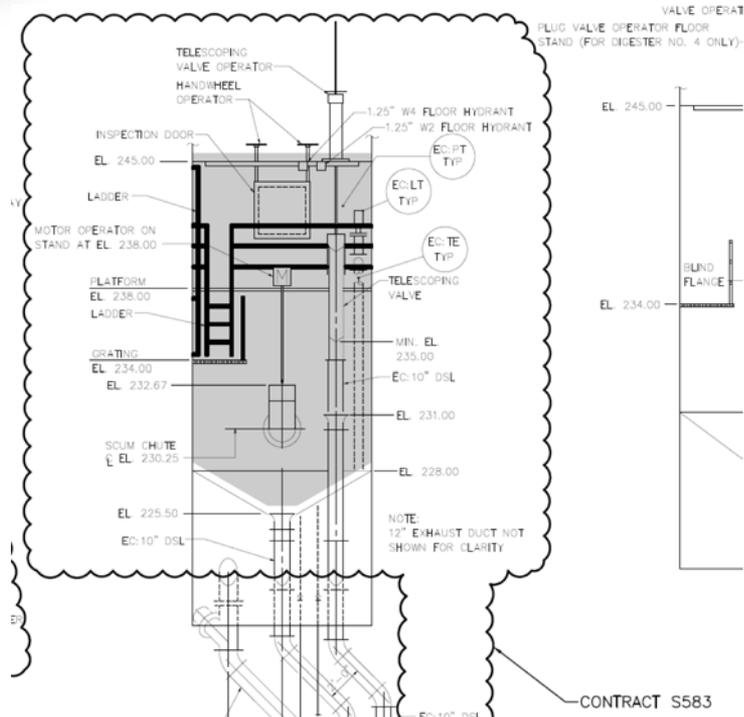


Mixer

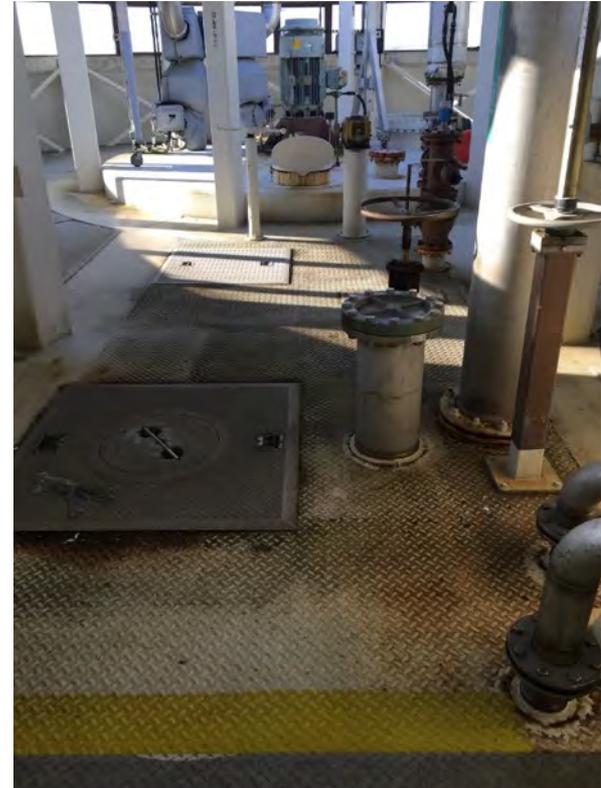
- 4 Primary Batteries each with 2 Scum Wells for a total of 8 Scum Wells



S583 Module 3 Digester Overflow Box Scope



Four (4) Overflow Boxes Total





Contract S583 Procurement Summary

Advertised and bid in accordance with Chapter 149 of the Massachusetts General laws. Bids were opened June 11, 2019:

Atlas Painting And Sheeting Co.	\$2,020,000*
<i>Engineer's Estimate</i>	<i>\$2,275,000</i>
Soep Painting Corporation	\$2,495,000
John W. Egan Co. Inc.	\$3,508,990

** Atlas bid was deemed non-responsive as it did not include the DCAMM Update Statement*

Based on the bid evaluation, Soep Painting Corporation was found to be the lowest responsible and eligible bidder





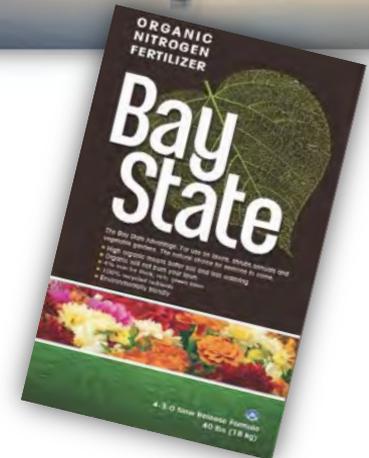
Piping Relocation at the Pelletizing Plant

July 17, 2019



MWRA Pellet Plant

- Process liquid digested sludge from Deer Island
 - 105 dry tons sludge daily
- Markets and distributes 31,000 tons pellets annually
- On-site storage for 5,000 tons of dried pellets
- Five adjacent silos
- Four remote silos connected by pipe conveyance system



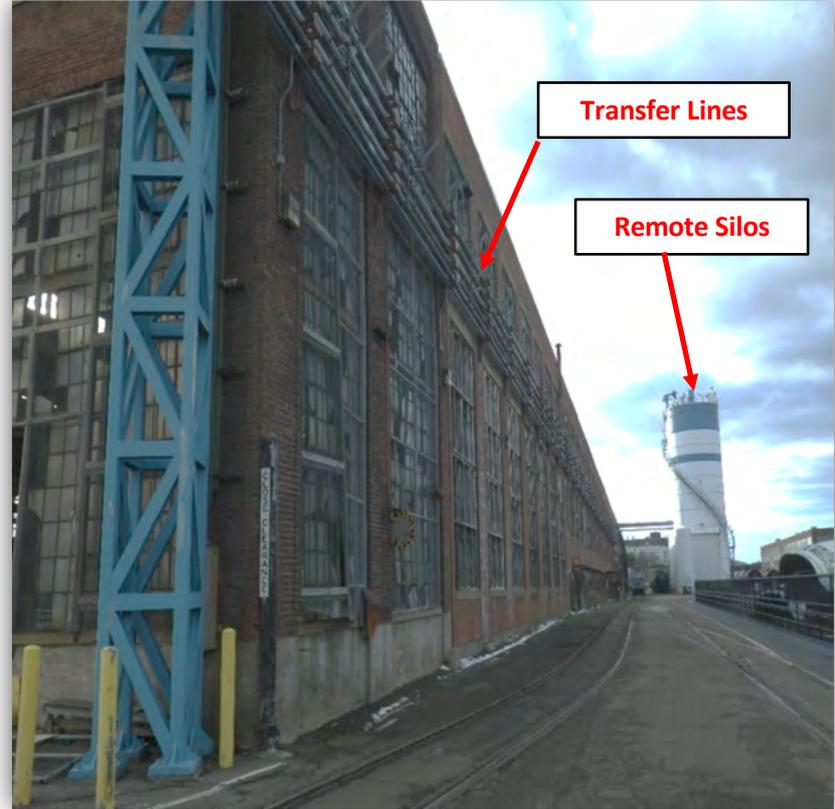


MWRA Pellet Plant Layout





Building 11 Pellet Piping Transfer Lines





Building 11 Demolition – September 2018





Post Demolition – Building 11



- Loss of access to remote silos reduces on-site storage by 45%
- Board approved Amendment 2 to NEFCO Contract for increased expenses-January 2019
- This Contract will install a new pellet conveyance piping system on dedicated supports



Contract 7173

- Bids Received:
 1. Walsh Construction Co. II, LLC \$4,250,445.00
 2. William M. Collins Co., Inc. \$5,658,061.00
 3. IPC Lydon, LLC \$6,187,762.00
 4. *Engineer's Estimate* \$3,200,000.00
- Contractor: Walsh Construction Co. II, LLC (lowest responsive bidder)
- Contract Duration: 450 days



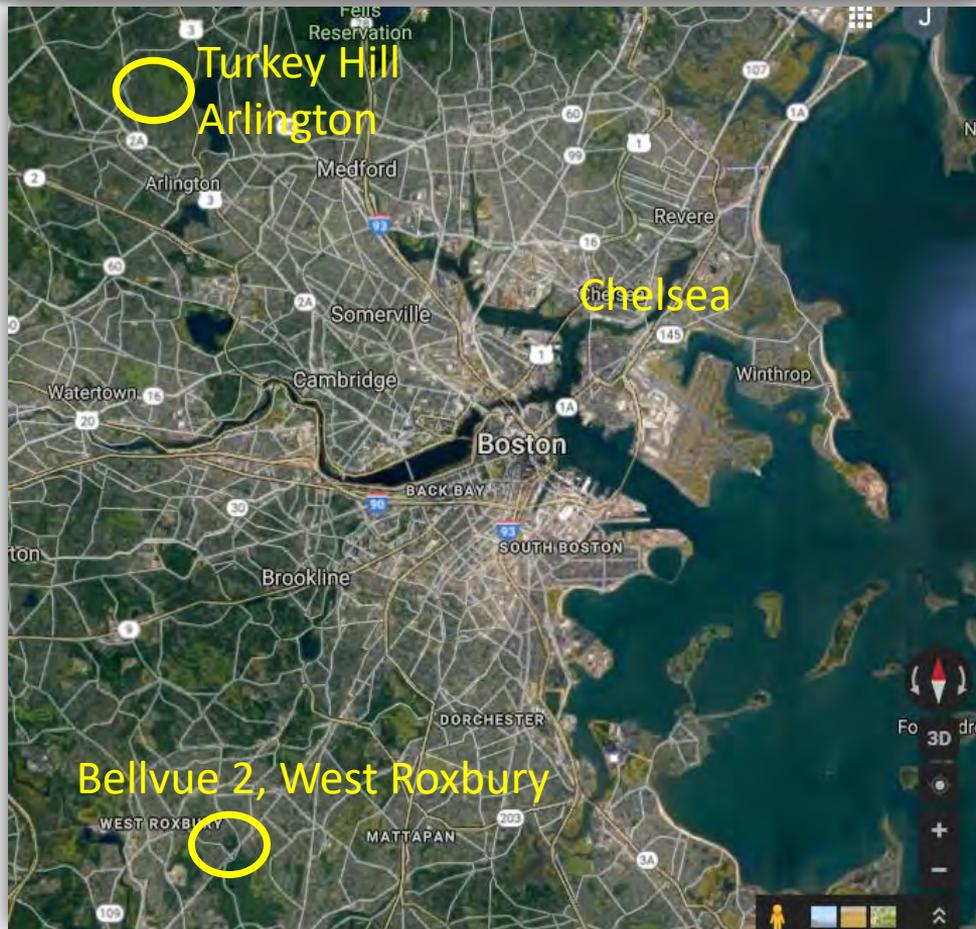


***Bellevue 2 and Turkey Hill
Steel Tank Painting***

July 17, 2019

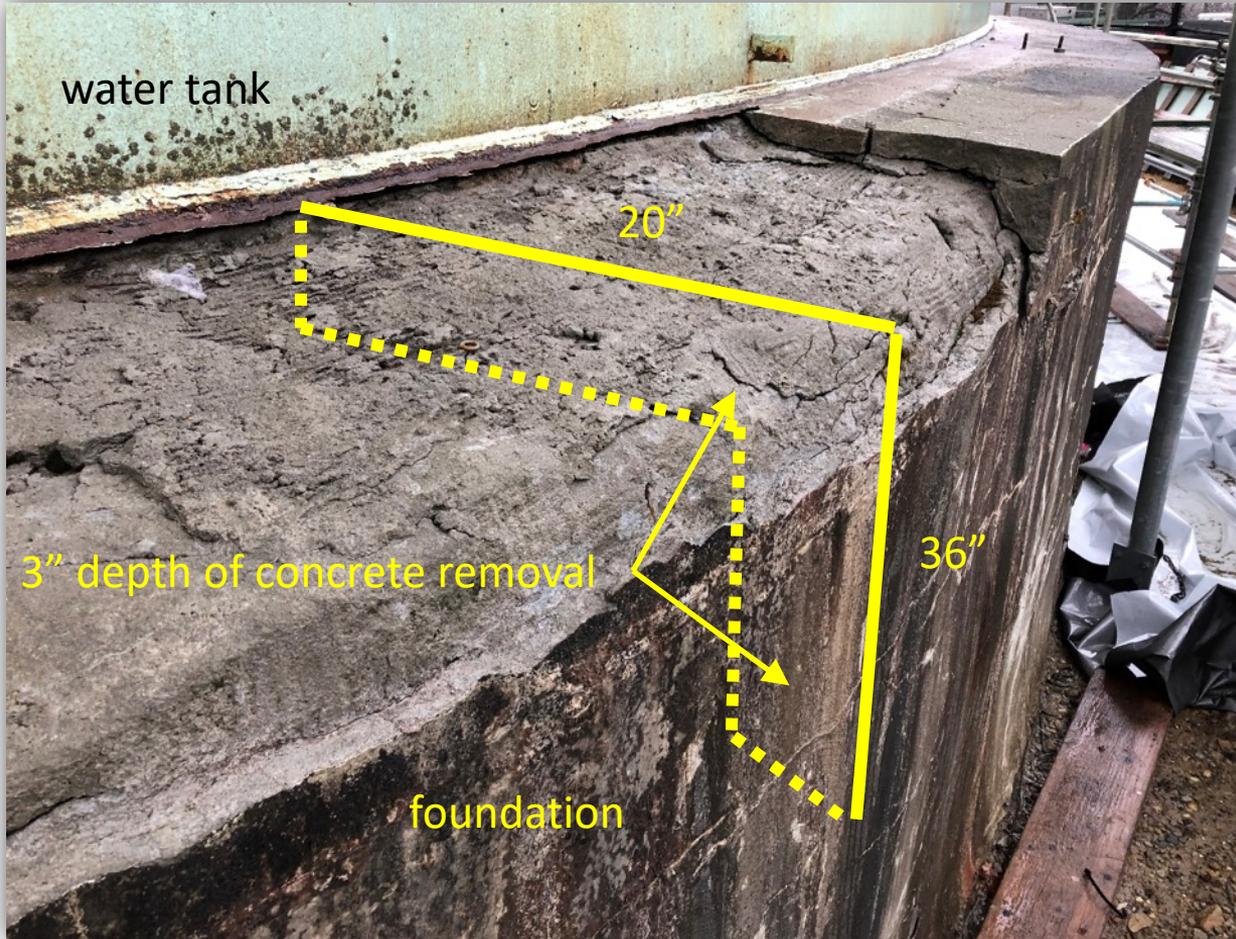


Bellevue 2 and Turkey Hill Water Tank Painting





Turkey Hill Foundation Repair Contract Repair Limits



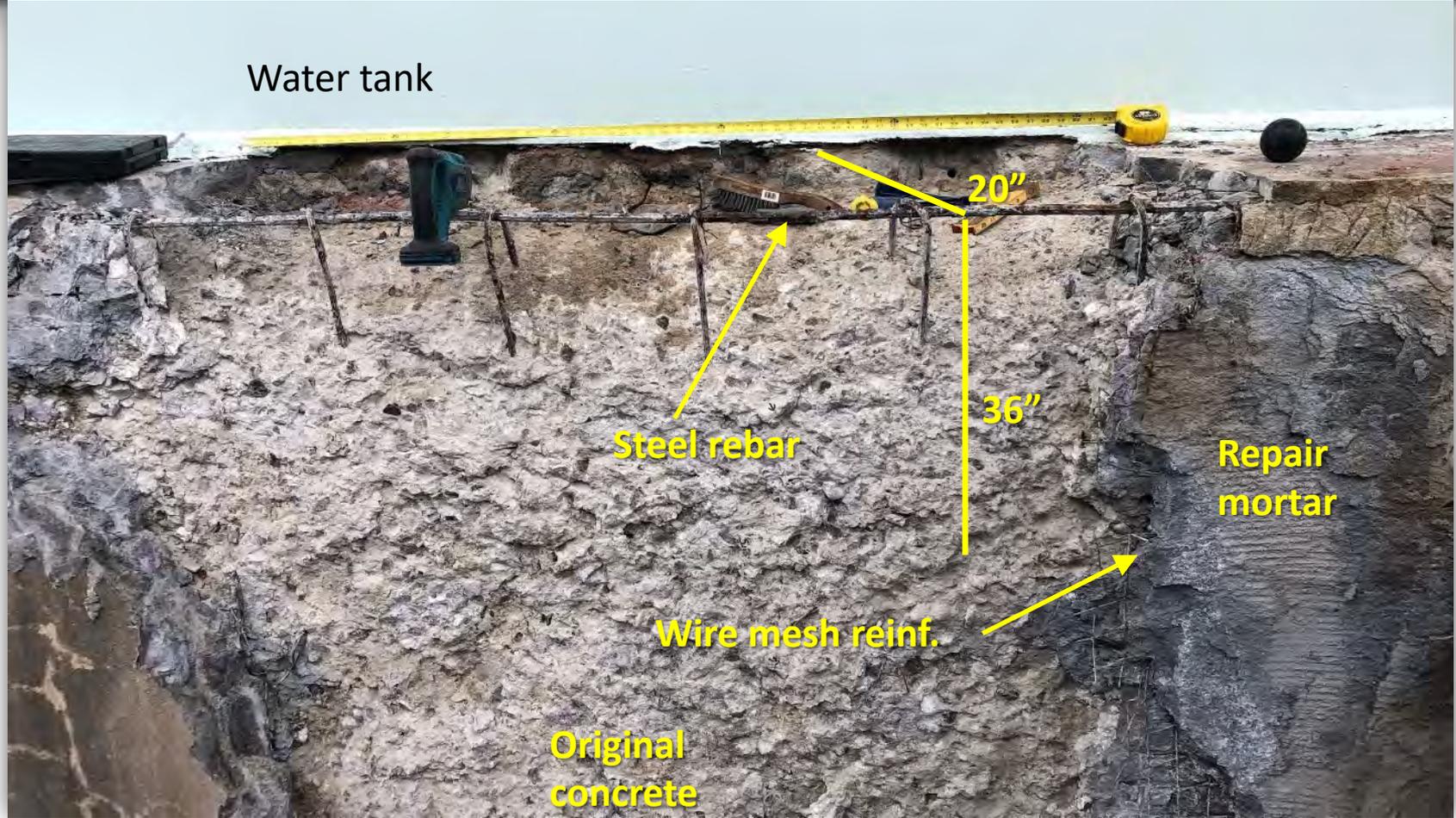


Demolition of Deteriorated Concrete on Foundation





"Test" section to determine extent of demo required



Water tank

20"

36"

Steel rebar

Wire mesh reinf.

Repair mortar

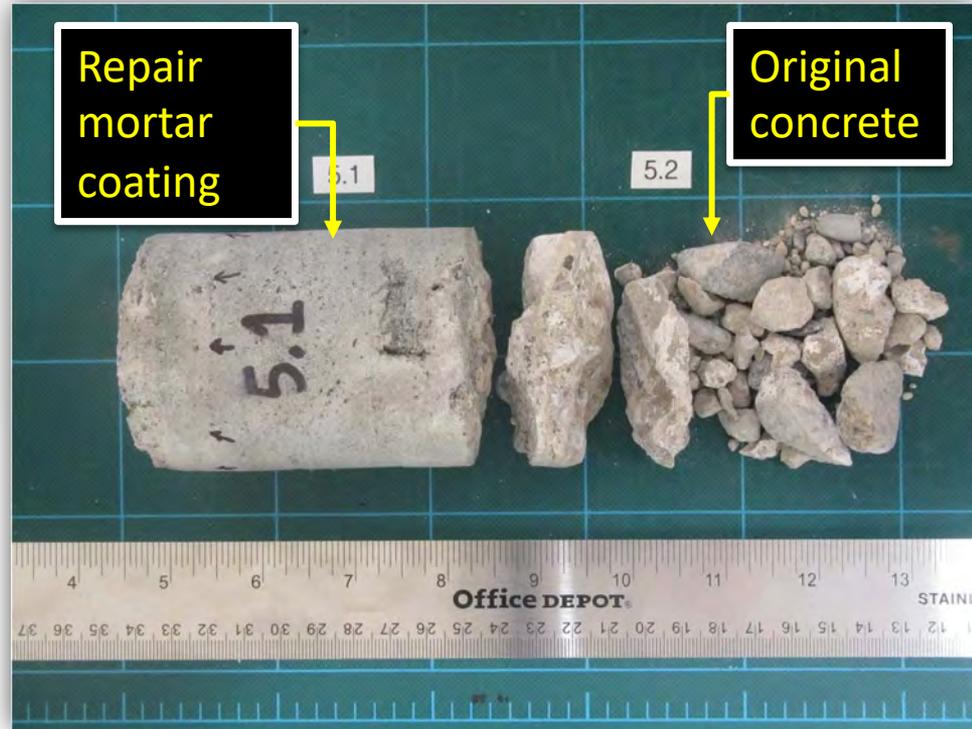
Original concrete



Foundation Core Samples

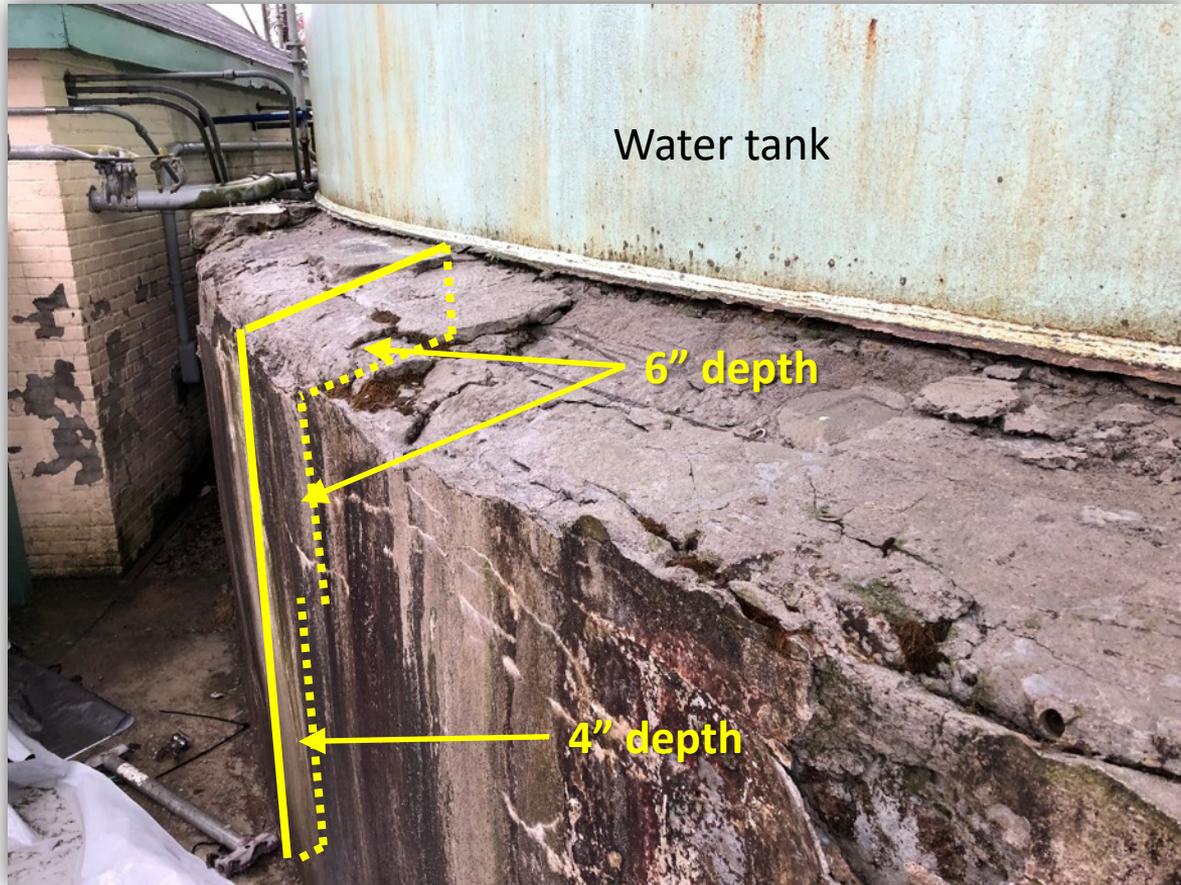
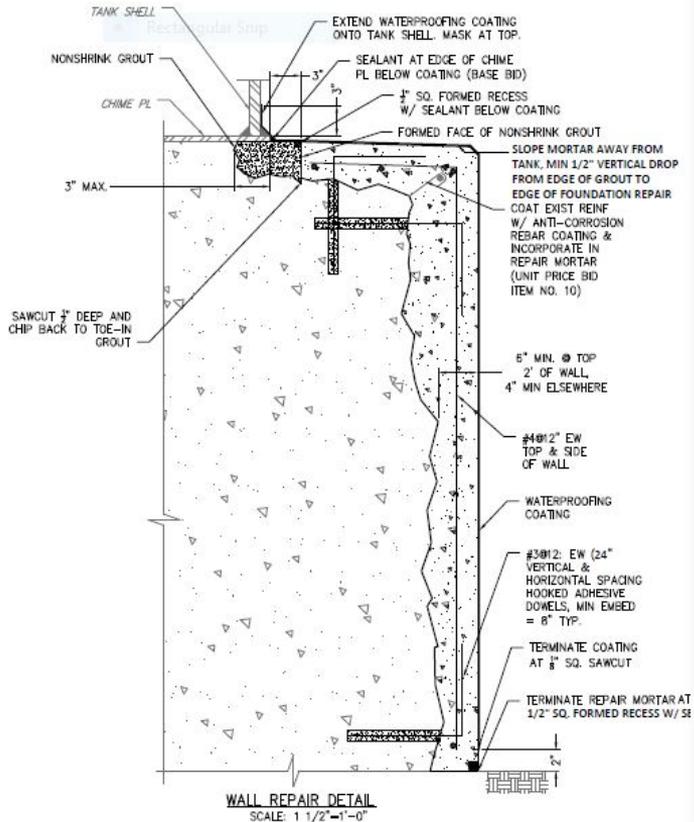


Six concrete core samples taken
2 ¾" diameter, up to 8" depth





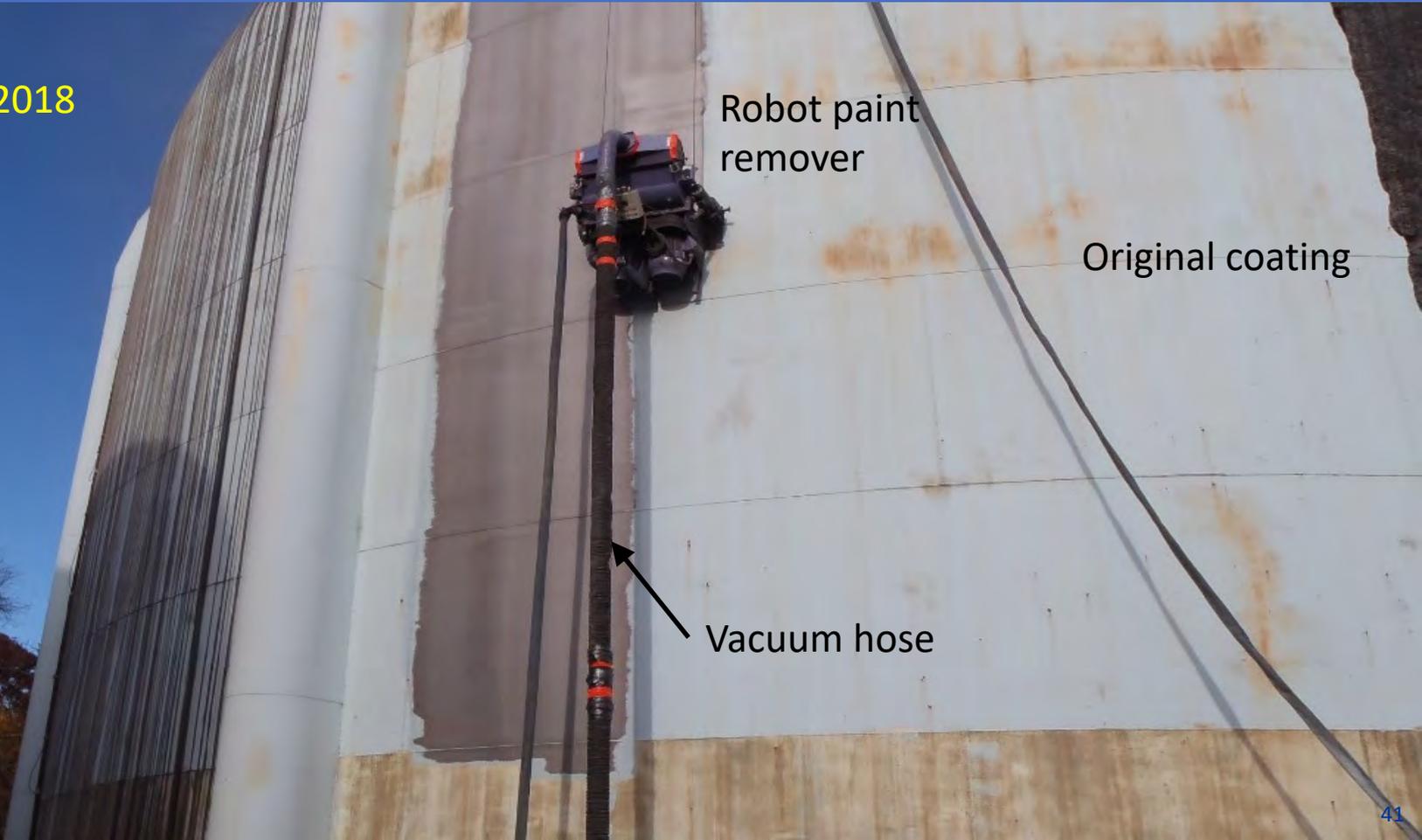
Final Foundation Repair Detail





Bellevue 2 "Robot" Paint Removal

November 2018



Robot paint
remover

Original coating

Vacuum hose



Bellevue 2 Interior surface





Bellevue 2 Ceiling Final Coating Complete





Bellevue 2 Before and After



September 2018



April 2019



Bellevue 2 MWRA Drone View





Bellevue 1 and 2





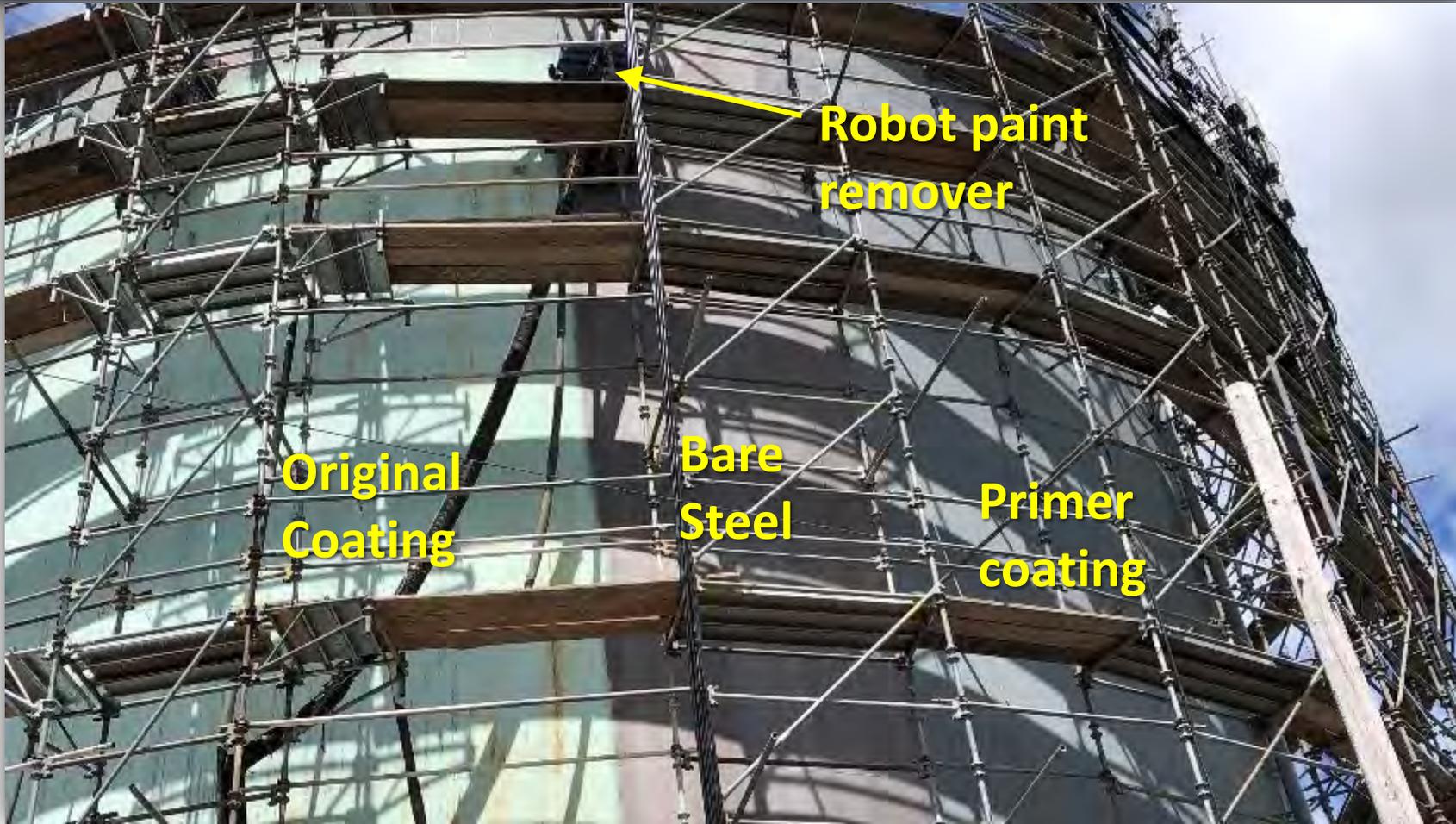
Turkey Hill Tank Antennas, February 2019



Arlington FD
Arlington PD
Armstrong Ambulance
Lifeline Ambulance
MassDOT
Mass State Police
Verizon
T-Mobile
Sprint
Cingular
AT&T
Federal Agency
MWRA



Turkey Hill Water Tank "Robot" Paint Removal



**Robot paint
remover**

**Original
Coating**

**Bare
Steel**

**Primer
coating**



Turkey Hill Exterior Finish Coating Complete

June 2019





Turkey Hill Water Tank Interior Ceiling and Wall at Finish Coating

