

Northrop Grumman Bethpage Environmental Remedies Update

Virtual Meeting and Community Update

Ed Hannon
Project Director

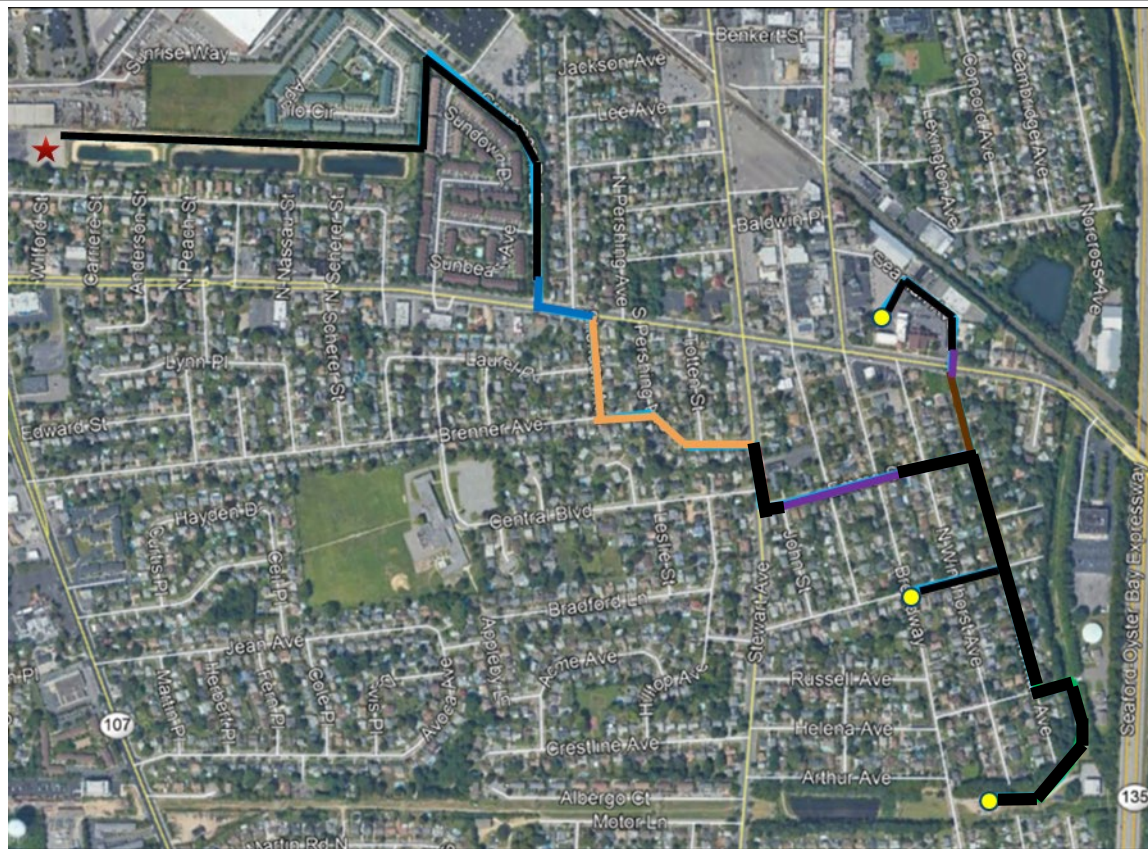
September 23, 2021

Agenda

- Groundwater treatment system piping route progress
- Street-by-street review
- Bethpage school bus route update
- Treatment system facility, construction timeline and progress
- Soil treatment and sampling progress at Bethpage Park
- Questions via Zoom chat and telephone

Piping Installation Progress as of 9/20/21

- Residential street access request approved on May 19
- Utility location completed for all Town roads and Stewart Avenue
- Utility corridor piping installation is complete
- Contractors present at the work location from 7 a.m. to 5 p.m., Monday through Friday, excluding holidays
- Construction work 7:30 a.m. to 4:30 p.m.
Schedule is weather dependent



■ Installed piping
 ● Extraction wells
 ★ Groundwater Treatment Facility

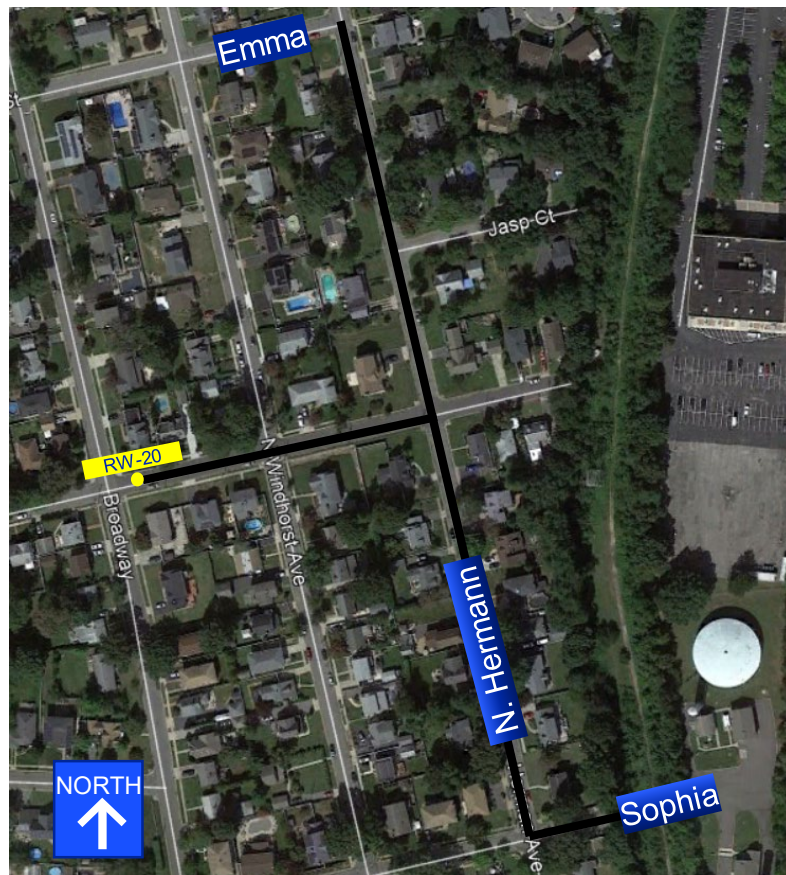
Piping Installation Timeline as of 9/20/21

Activity	Start Date	End Date	Timeline																	
			Q2 FY 2021	Q3 FY 2021	Q4 FY 2021	Q1 FY 2022	Q2 FY 2022	Q3 FY 2022												
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
TOB Utility Corridor (RW-22 to BWD Driveway)-Complete	03/30/21	04/30/21	TOB Utility Corridor (RW-22 to BWD Driveway)-Complete																	
Town of Oyster Bay residential street access permits (approved)	05/19/21	05/19/21	Town of Oyster Bay residential street access permits (approved)																	
Northrop Grumman Hosted Virtual Community meeting	06/03/21	06/03/21	Northrop Grumman Hosted Virtual Community meeting																	
Sophia St and N. Herman to Emma (complete)	06/10/21	09/01/21	Sophia St and N. Herman to Emma (complete)																	
RW-22 well vault equipment installation (ongoing)	06/11/21	10/28/21	RW-22 well vault equipment installation (ongoing)																	
RW-20 well vault equipment installation (ongoing)	07/14/21	11/04/21	RW-20 well vault equipment installation (ongoing)																	
Stewart Ave from S Pershing to Emma St (complete)	07/19/21	09/01/21	Stewart Ave from S Pershing to Emma St (complete)																	
RW-21 well vault equipment installation (ongoing)	07/27/21	11/08/21	RW-21 well vault equipment installation (ongoing)																	
Northrop Grumman Hosted Virtual Community meeting	08/18/21	08/18/21	Northrop Grumman Hosted Virtual Community meeting																	
Emma St from Stewart to N. Herman (ongoing)	09/02/21	10/29/21	Emma St from Stewart to N. Herman (ongoing)																	
Northrop Grumman Hosted Virtual Community meeting	09/23/21	09/23/21	Northrop Grumman Hosted Virtual Community meeting																	
Central Ave crossing to Grumman Rd E	09/30/21	11/05/21	Central Ave crossing to Grumman Rd E																	
N. Herman from Emma St to Central Ave	11/01/21	11/12/21	N. Herman from Emma St to Central Ave																	
S. Pershing, Brenner and Sheridan	11/01/21	12/03/21	S. Pershing, Brenner and Sheridan																	
Central Ave crossing to Seaman Ave	11/08/21	11/30/21	Central Ave crossing to Seaman Ave																	
Leak detection wire connection quality check	11/22/21	01/03/22	Leak detection wire connection quality check																	

Traffic Plan

- Daily progress updates issued to residents along work zone via flyer (and a broader audience via opt-in email and on project web site)
- Traffic control signs/flag persons are informing drivers in and outside of work zones
- When pipeline is being installed in front of a driveway, the driveway is not accessible during the workday; re-opens at the end of each workday and on the weekends
- On average, work in front of driveways (during work hours) will take about three work days. Metal plates will be installed over the excavated area at the end of each day

Sophia Street and N. Hermann (to Emma)

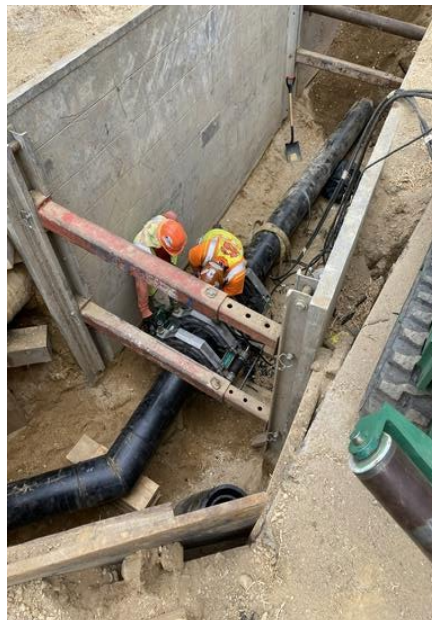


- Marked out utilities from 6/10 to 7/16
- Installed 12" diameter pipe on Sophia Street and on N. Hermann Avenue and connected to William Street piping
- Installed 16" diameter pipe heading north on N. Hermann Avenue to Emma Street
- 40 to 60 feet of pipeline installed per day (weather permitting)
- Completed site restoration and temporary paving

Pipeline Installation



**Trench and piping
installation
(intersection of Sophia
and N. Herman)**



**Fusing piping
(corner of Sophia
and N. Herman)**

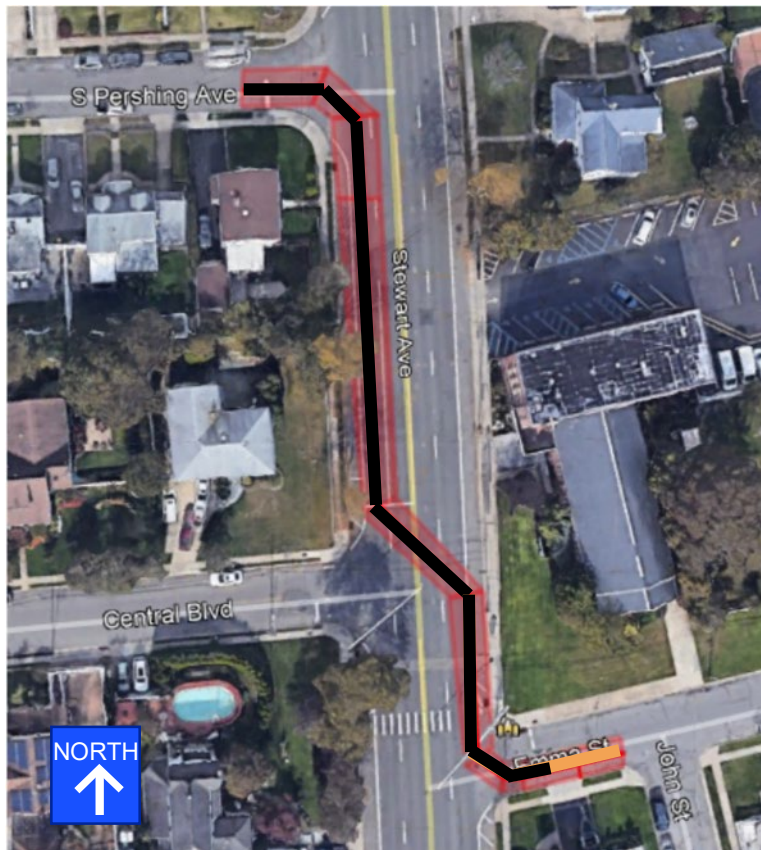


**Backfill and compact road
base
(Sophia at N. Herman)**



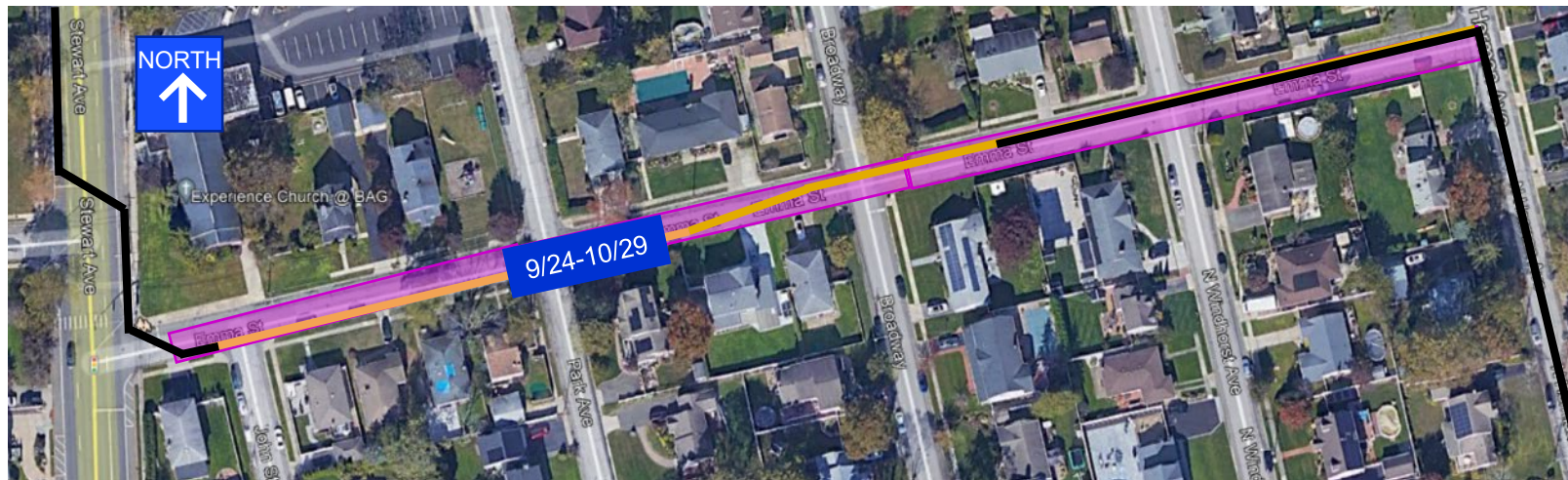
**Temporary paving
(Sophia to N. Herman)**

Stewart Avenue (S. Pershing to Emma)



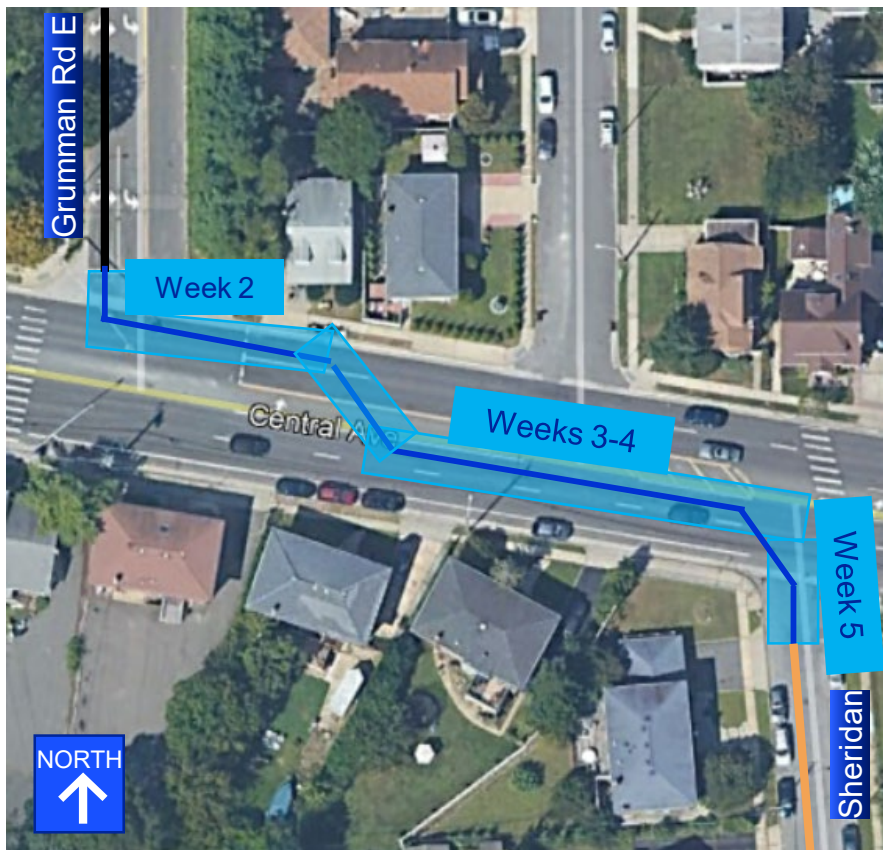
- Second crew completed installing 24" diameter pipe heading south on Stewart Avenue (crossing before Central Blvd toward Emma Street)
- Completing the Emma Street intersection
- Plan to travel east to complete the connection with Stewart Avenue
- 20 to 40 feet of pipeline installed per day (weather permitting)
- Completed site restoration and temporary paving. Final paving planned on Stewart for Columbus Day (October 11)

Emma Street (to North Herman)



- Two crews are installing a 24” diameter pipe (heading east and west at the same time) on Emma Street
- 40 to 60 feet of pipeline installed per day (weather permitting)
- Weeks 1 to 5 – Piping installation will be followed by site restoration/temporary paving

Central Avenue (Crossing at Grumman Rd E)



- This is a refinement to our schedule discussed on August 18
- Crew will install 24" diameter pipe at Grumman Rd East heading east on Central Avenue to connect to Sheridan from 9/30-11/5
- 10 to 30 feet of pipeline installed per day (weather permitting)
- Week 1 to 5 – Piping installation and site restoration/temporary paving

N. Herman (from Emma to Central)

- This is a refinement to the schedule discussed on August 18
- Will install 12" diameter pipe on N. Herman Avenue to Central Avenue from 11/1 to 11/12, from south to north
- 30 to 50 feet of pipeline installed per day (weather permitting)
- Weeks 1 to 3 – Excavation, piping installation, backfilling, site restoration and temporary paving
- Actively communicating with Bethpage School District Transportation Office



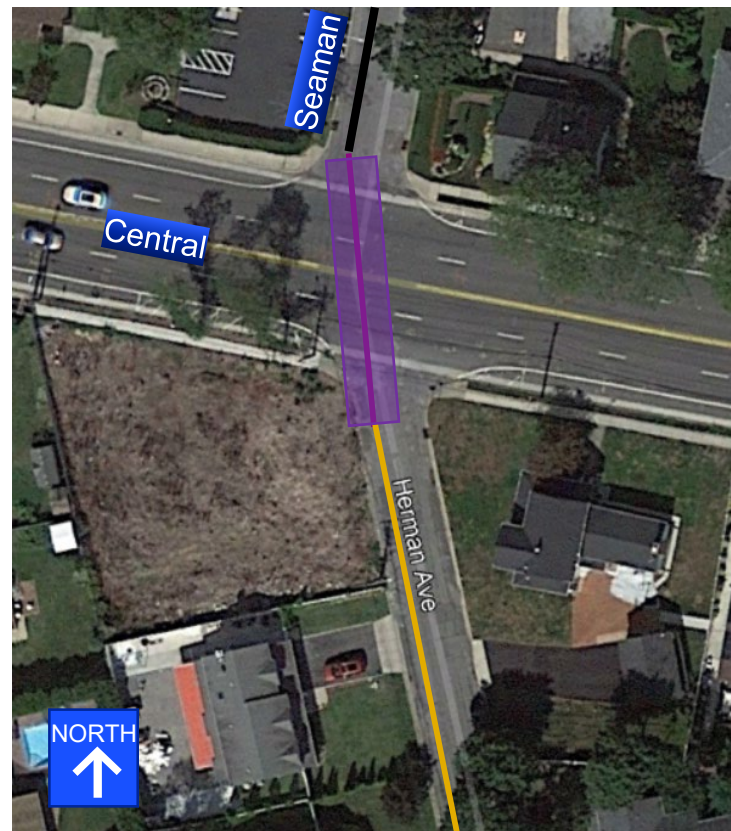
S. Pershing, Brenner and Sheridan

- This is a slight refinement to the schedule discussed on August 18
- Crew will install 24" diameter pipe generally heading west and north from 11/1 to 12/3
- 40 to 60 feet of pipeline installed per day (weather permitting)
- Weeks 1 to 5 - Piping installation and site restoration/temporary paving
- Actively communicating with Bethpage School District Transportation Office



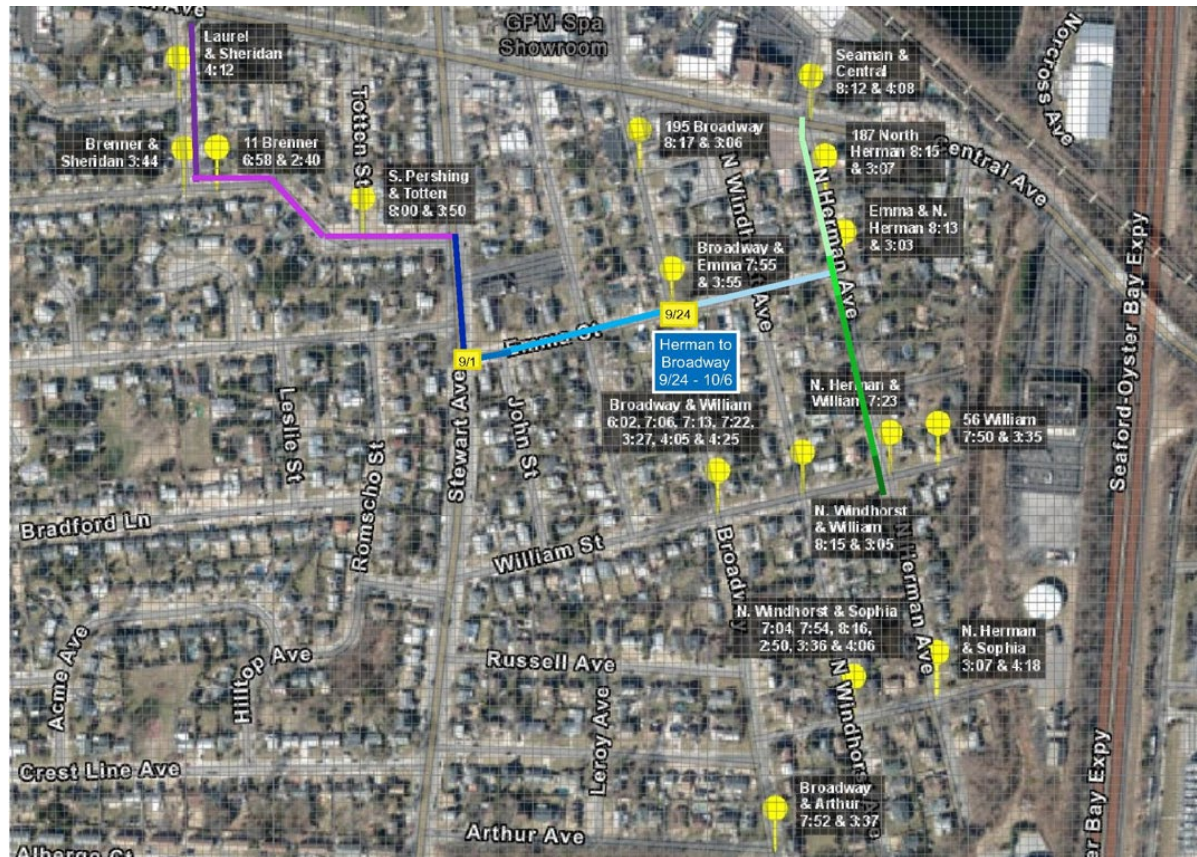
Central Avenue (Crossing at Seaman Avenue)

- This is a refinement to the schedule discussed on August 18
- Crew will install 12” diameter pipe crossing Central Ave from 11/8-11/30
- 10 to 30 feet of pipeline per day (weather permitting)
- Weeks 1 to 3 – Piping installation and site restoration/temporary paving
- Actively communicating with Bethpage School District Transportation Office



RW-21 Work and School Bus Routes/Times

1. Mapped bus stop and times for pick up and drop off
2. **Stewart Avenue Work Zone through 9/18**
3. **Emma Street Work Zone 9/24-10/29**
4. **Central Avenue crossing at Grumman Road East 9/27-10/29**
5. **N. Hermann work zone 11/1-11/12**
6. **S. Pershing, Brenner and Sheridan work zone 11/1-12/3**
7. **Central Avenue crossing at Seaman Ave 11/8-11/30**



Groundwater Treatment Facility

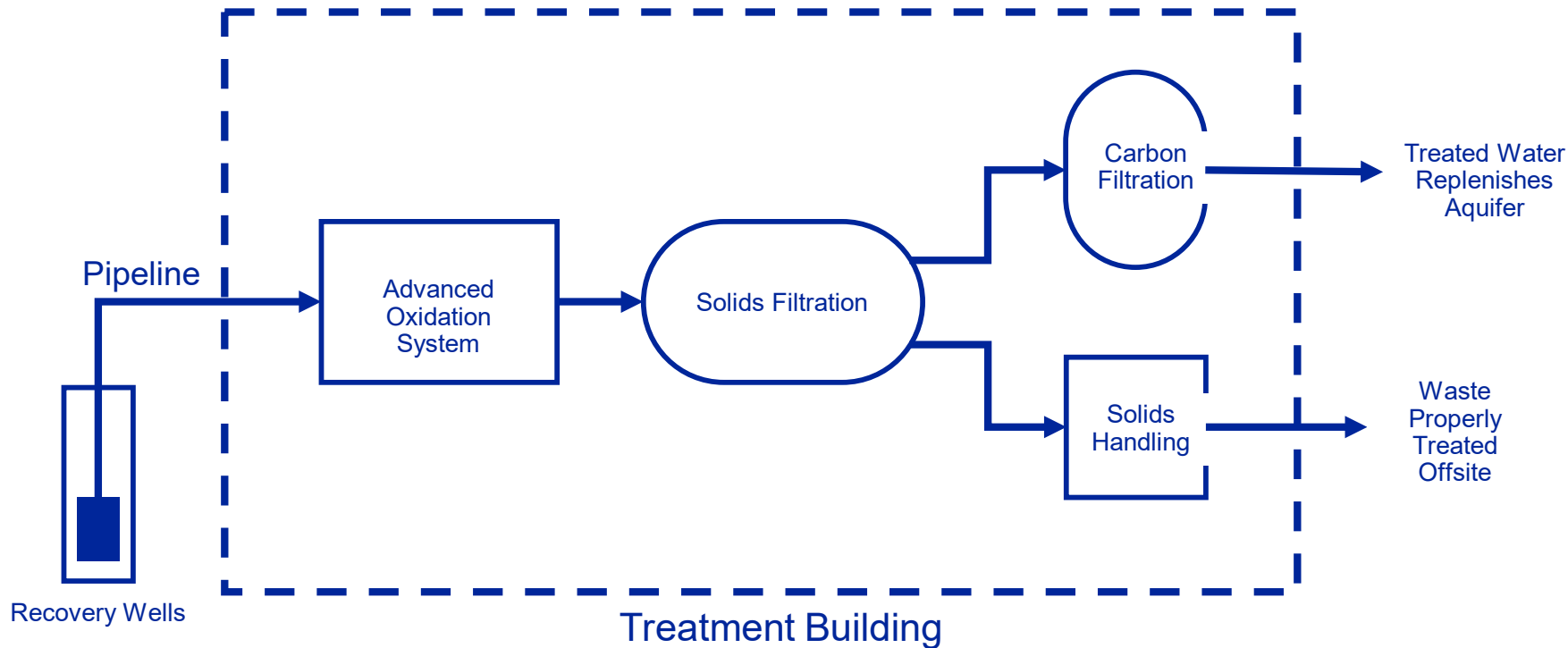
- The building is 126 x 119 feet and 35 feet high at the peak of the roof. The state-of-the-art design approved by the NYSDEC
- Once the building shell is constructed, interior construction will begin, including installing the treatment system equipment and connecting water, electric, gas, communications, and sanitary sewer
- Work in progress and is expected to take approximately 11 months (weather permitting)



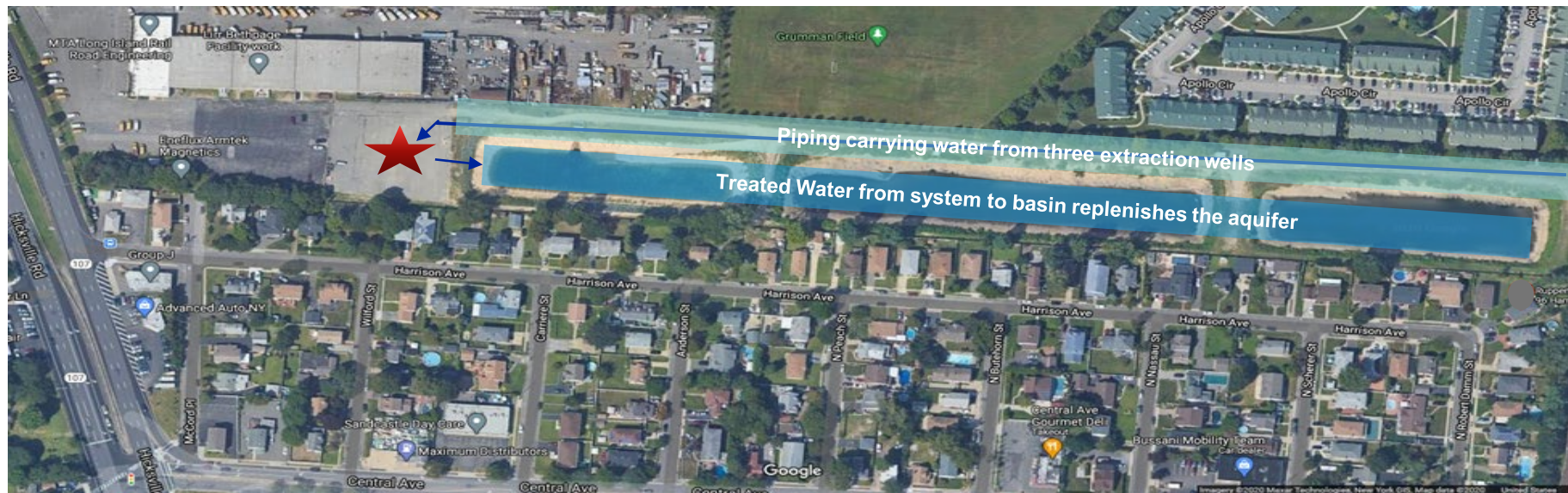
Artist's rendering of RW-21 Groundwater Treatment Facility (looking southeast)

**The Town of Hempstead Planning Department and
The Nassau County Fire Marshal have approved the project plan**

RW-21 Treatment Process

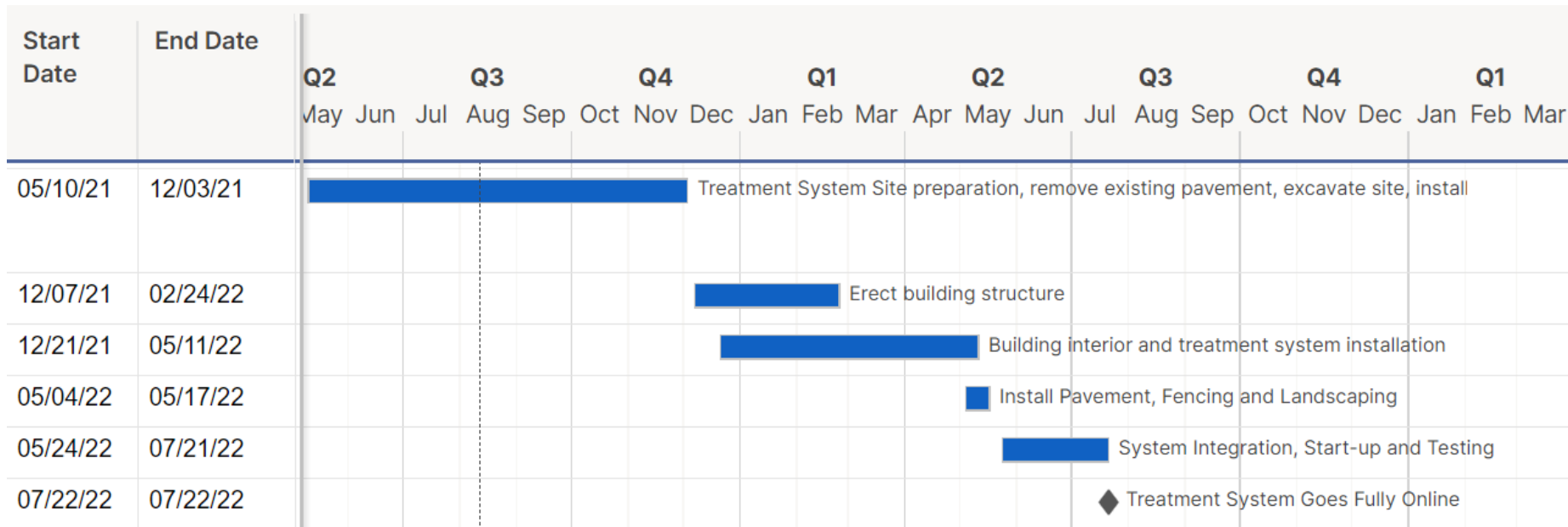


Treatment System Process



- The pipeline carries extracted water from our three recovery wells to the treatment system
- The system treats the water to NY State drinking water standards
- The aquifer is replenished via our basins

Treatment System Construction Timeline



Schedule as of 9/17/21

*Timeline is weather permitting and material availability/market conditions

Treatment System Construction Progress



**Compaction Testing of Piping Trench
(between MH-1 and CB-2)**



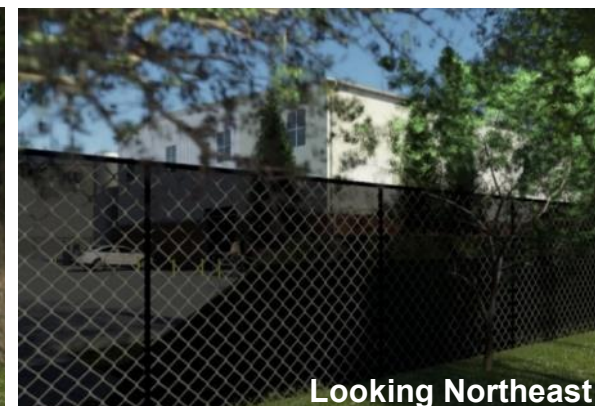
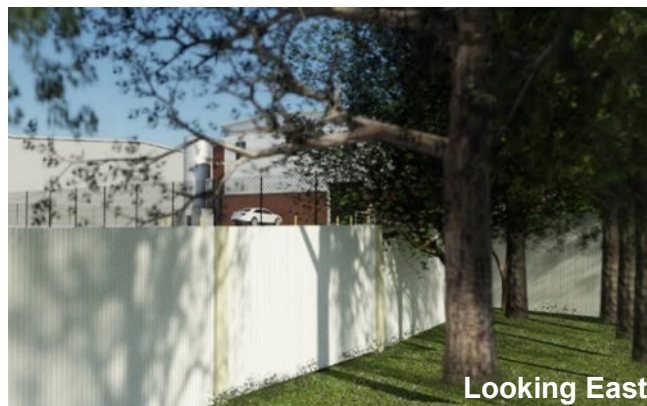
**Top of Storm Sewer Catch Basin
(CB-5)**



**Treatment Plant Building
Foundation Excavation**

Building after completion

- Facility will operate 24/7
- Routine system maintenance and monitoring will be conducted in accordance with a NYSDEC-approved Site Management Plan
- Treating up to 2.7 million gallons a day



Park Soil Thermal Remedy System

- The system has performed exceptionally well
- Received approval from NYSDEC to power down the heating elements in the ballfield
- The processing system will remain in place for now



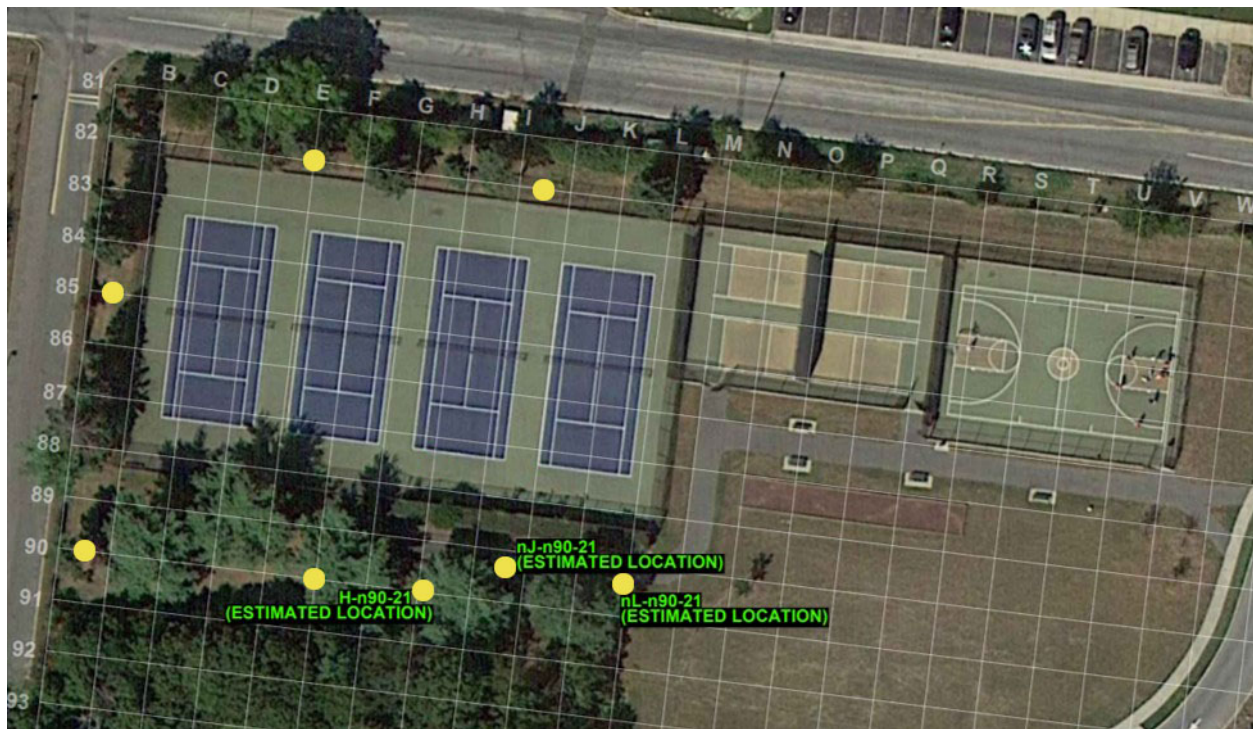
Park Soil Sampling Progress

- Sampling (in yellow starred areas) is complete
- Results have been shared with NYSDEC, NYSDOH and Town of Oyster Bay
- Data and science will determine the remedy
- Now sampling an additional location



Current Soil Sampling Locations

- 8 locations are being sampled
- Work will be conducted over next four weeks
- No impact to walking path access
- Tennis Courts open
- Data and science will drive the remedy



Our Continued Commitment

Northrop Grumman continues to work closely with the NYSDEC, the U.S. Navy and other federal, state, and local government regulatory authorities, to address environmental conditions in the area.

We remain committed to pursuing scientifically sound, targeted and effective remedial approaches that protect the health and well-being of the community and avoid unnecessary disruption.

For ongoing updates, visit our project web site
www.northropgrumman.com/bethpage

Opt-in email to Dianne.baumert-Moyik@ngc.com

Agreement with New York State on Bethpage Amended Groundwater Remedy

In late December, the State announced it had reached an agreement in principle with each of Northrop Grumman and the Navy on additional measures the parties will take, in partnership with the State, to implement the Bethpage amended groundwater remedy.

- The agreements, and the underlying Amended Record of Decision (AROD), have been widely praised as significant steps forward in protecting public health and the environment.

Northrop Grumman is pleased to have finalized the terms of its agreement with the State of New York.

Under the agreement, in partnership with the State, the company will take additional measures to implement the Bethpage amended groundwater remedy, make payments to benefit water districts and other public water supply and restoration projects, and resolve claims for natural resource damages.

The additional measures will complement the work that we understand the Navy has agreed to undertake, and further benefit the citizens of Bethpage and surrounding communities and the local water districts.

The agreement builds on the company's long-standing partnership with the State and exhaustive work over the past 25 years to understand and remediate contamination.

We look forward to obtaining final court approval of the agreement and proceeding with the work.

NORTHROP
GRUMMAN

The logo symbol consists of a thick horizontal line on the right side of the word "NORTHROP", which extends to the right and then turns 90 degrees downward to form a vertical line.