NORTHROP GRUMMAN

Northrop Grumman Bethpage Environmental Remedies Update

Virtual Meeting and Community Update

Ed Hannon
Project Director

March 25, 2021

NORTHROP GRUMMAN

Agenda

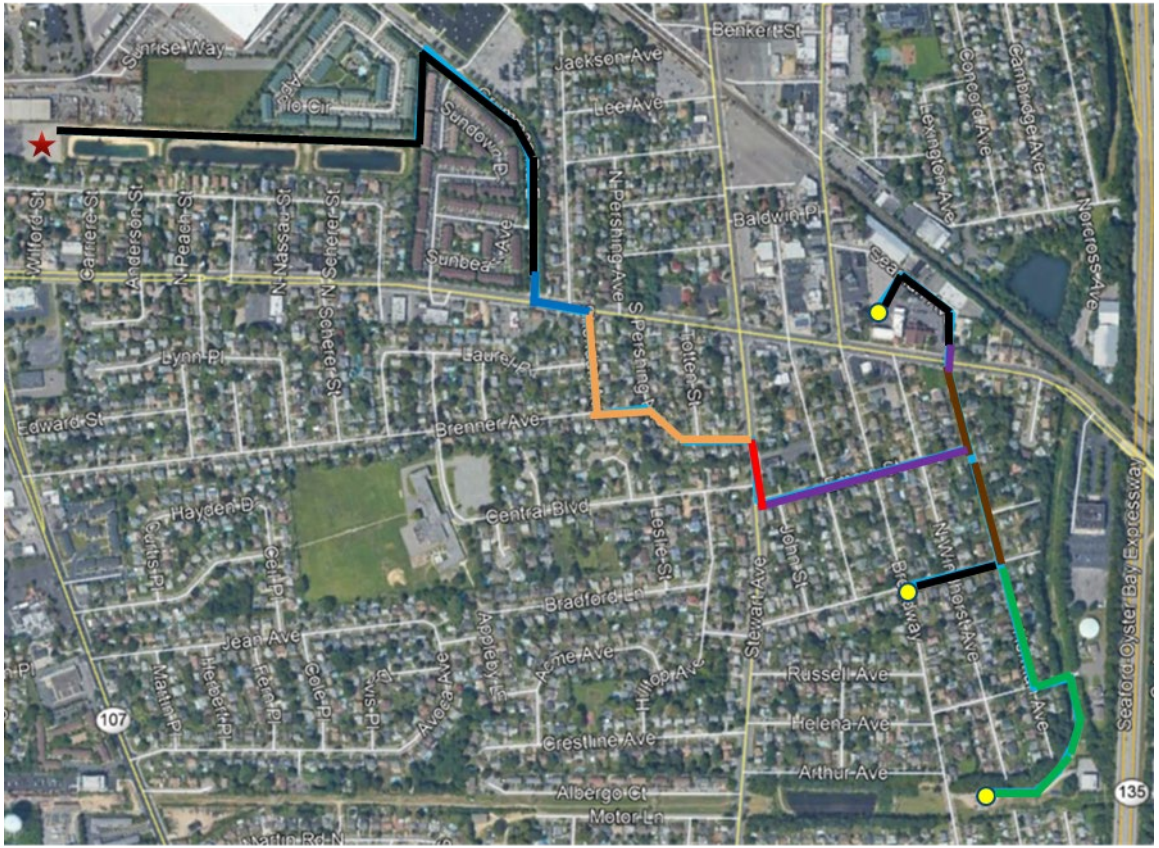
- Groundwater treatment system piping route and installation timeline
- Street-by-street review
- Traffic plan
- Examples of our previous piping work
- Treatment system facility and process
- Building construction timeline
- Soil sampling at Bethpage Park
- Questions via Zoom chat and telephone

The Piping Route

The Town of Oyster Bay approved our access request on February 9.

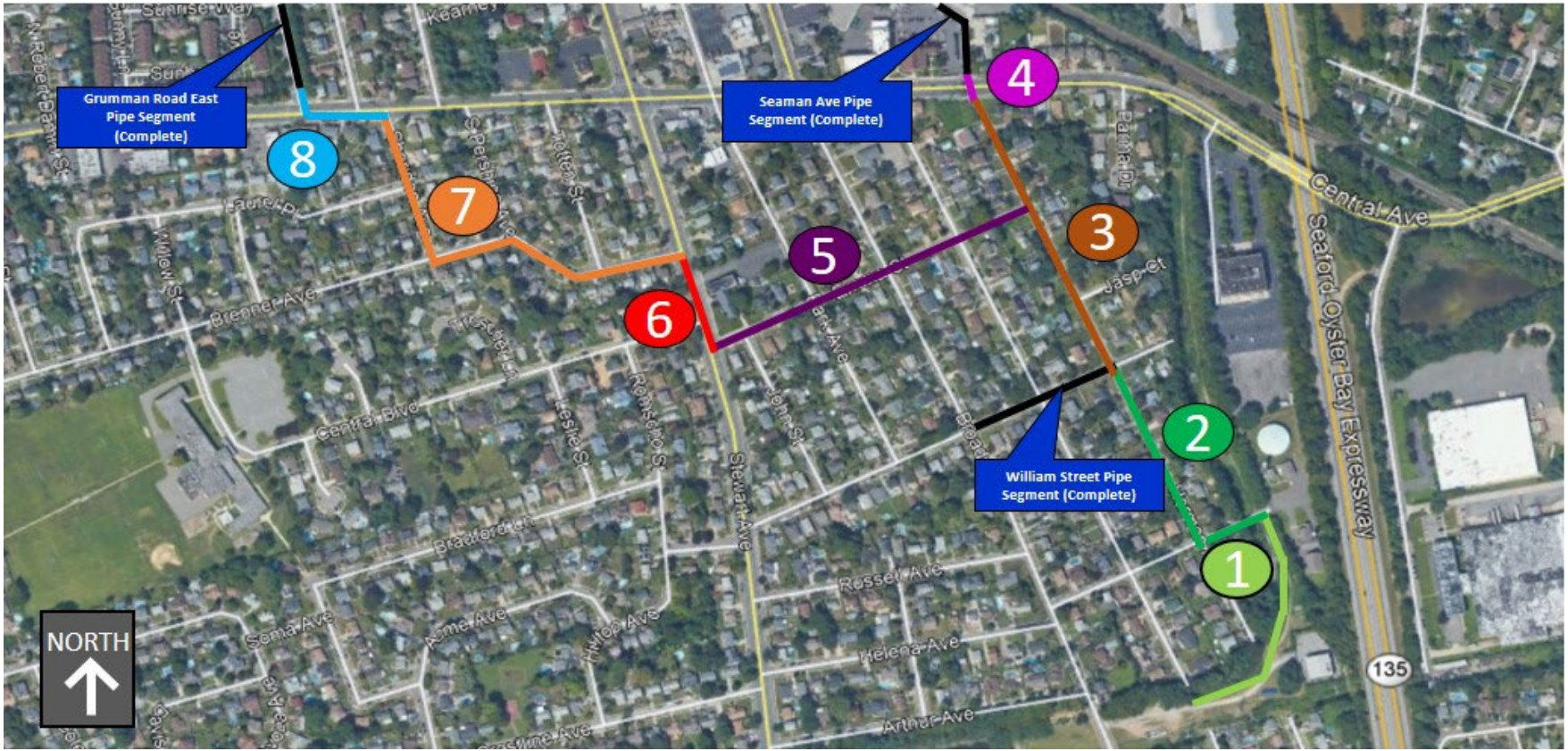
We will begin installation work on the Utility Corridor (lower right-hand corner of the image) beginning March 30, 2021.

Our contractors will have presence at the work location from 7 a.m. to 5 p.m., Monday through Friday, excluding holidays. Our work schedule is weather dependent.



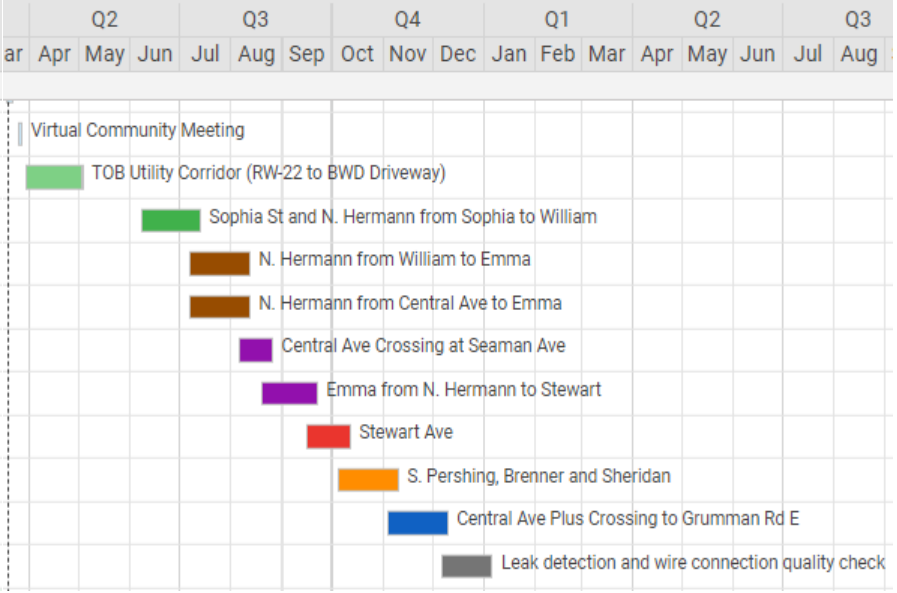
Installed piping

Route by Segment of Installation



Piping Installation Timeline

Activity/Task	Start Date	End Date
Virtual Community Meeting	03/25/21	03/25/21
TOB Utility Corridor (RW-22 to BWD Driveway)	03/30/21	05/03/21
Sophia St and N. Hermann from Sophia to William	06/08/21	07/13/21
N. Hermann from William to Emma	07/07/21	08/12/21
N. Hermann from Central Ave to Emma	07/07/21	08/12/21
Central Ave Crossing at Seaman Ave	08/06/21	08/26/21
Emma from N. Hermann to Stewart	08/20/21	09/22/21
Stewart Ave	09/16/21	10/12/21
S. Pershing, Brenner and Sheridan	10/05/21	11/10/21
Central Ave Plus Crossing to Grumman Rd E	11/04/21	12/10/21
Leak detection and wire connection quality check	12/07/21	01/06/22

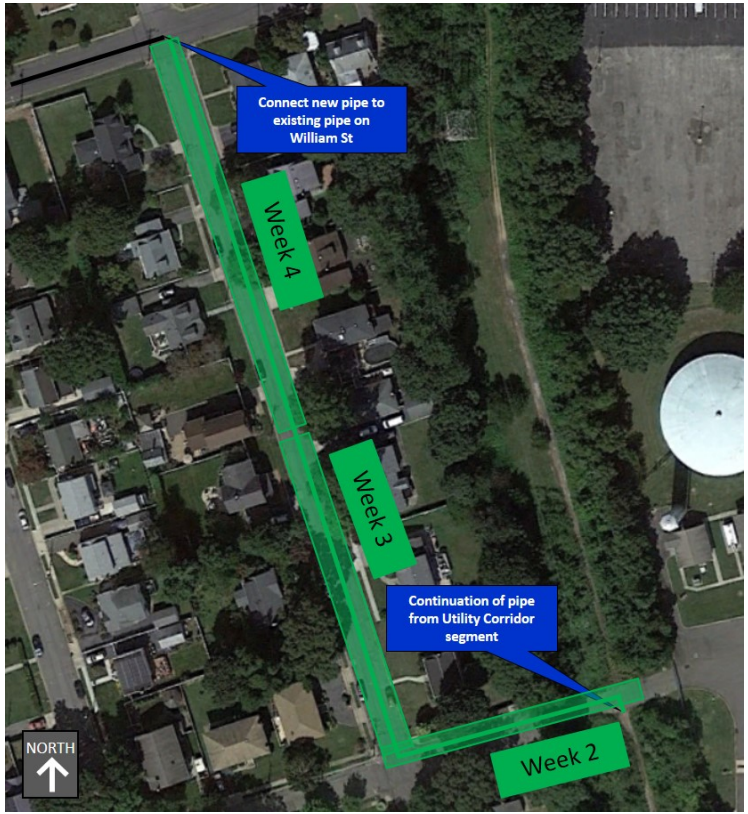


Our goal is to complete all of our work as quickly as possible while ensuring the safety of our local contractors and the community

Utility Corridor #1

- We will install 12” diameter pipe generally heading east and north from 3/30 to 5/3
- Weather permitting, our team will install an average of 60 to 80 feet of pipeline per day
- Estimated duration for this segment is five weeks
  - Week 1 – Mobilization and site preparation
  - Weeks 2 to 4 – Piping installation
  - Week 5 – Demobilization and site restoration

From Utility Corridor via N. Hermann to William #2



- We will install 12” diameter pipe heading north on N. Hermann Ave from 6/8 to 7/13
- Weather permitting, our team will install an average of 60 feet of pipeline per day
- Estimated duration for this segment is six weeks
  - Week 1 – Site preparation
  - Weeks 2 to 4 – Piping installation
  - Weeks 5 to 6 – Site restoration

N. Hermann from William to Central #3

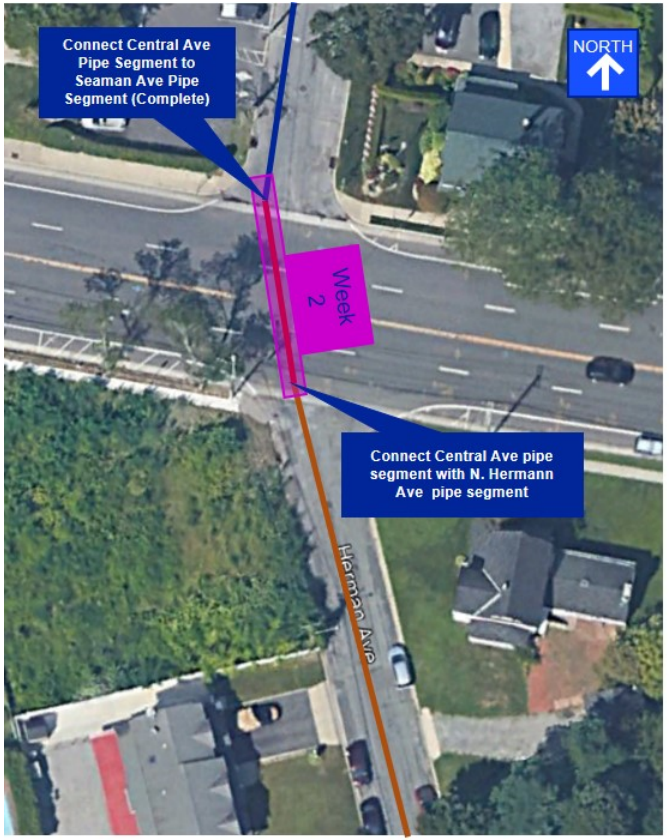
- We will install 12” diameter pipe heading south on N. Hermann Ave and 16” pipe heading north on N. Hermann Ave from 7/7 to 8/12

- Weather permitting, our team will install an average of 40 to 60 feet of pipeline per day

- Estimated duration for this segment is six weeks
  - Week 1 – Site preparation
  - Weeks 2 to 4 – Piping installation
  - Weeks 5 and 6 – Site restoration

Central Avenue Crossing at Seaman Avenue #4

- We will install 24” diameter pipe crossing Central Ave from 8/6 to 8/26
- Weather permitting, our team will install an average 20 to 30 feet of pipeline per day
- Estimated duration for this segment is three weeks
  - Week 1 – Mobilization and site preparation
  - Week 2 – Piping installation
  - Week 3 – Site restoration



Emma Street from N. Hermann to Stewart Ave #5

- We will install 24” diameter pipe heading west on Emma St from 8/20 to 9/22
- Weather permitting, our team will install an average of 40 to 60 feet of pipeline per day.
- Estimated duration for this segment is five weeks
  - Week 1 – Site preparation; Weeks 2 to 4 – Piping installation
  - Week 5 – Site restoration

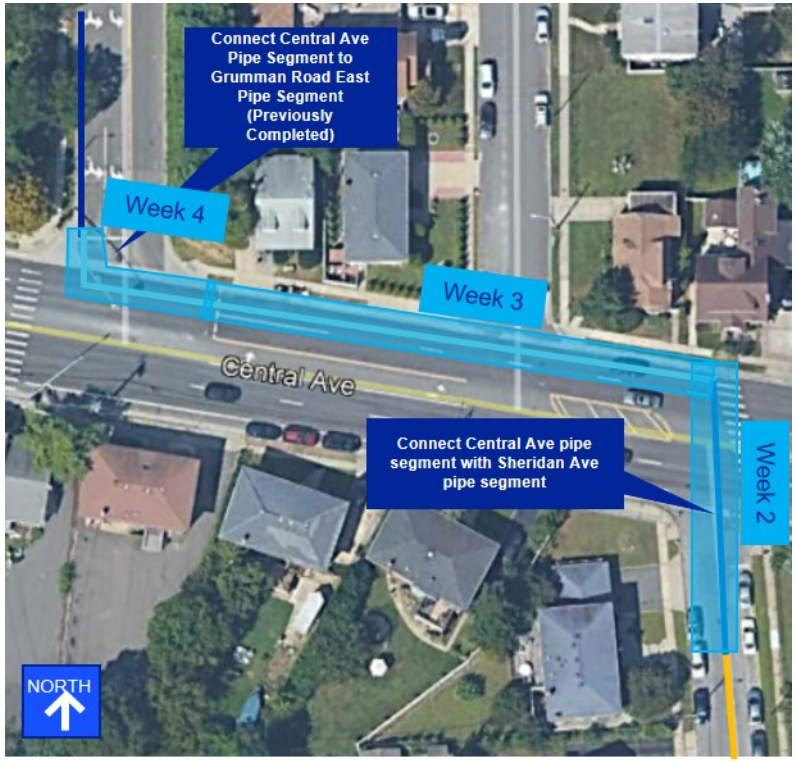
Stewart Avenue #6

- We will install 24” diameter pipe heading north on Stewart Ave from 9/16 to 10/12
- Weather permitting, our team will install an average of 30 to 40 feet of pipeline per day
- Estimated duration for this segment is four weeks
  - Week 1 – Mobilization and site preparation
  - Week 2 and 3 – Piping installation
  - Week 4 – Site restoration

S. Pershing, Brenner and Sheridan #7

- We will install 24” diameter pipe generally heading west and north from 10/5 to 11/10
- Weather permitting, our team will install an average of 40 to 60 feet of pipeline per day
- Estimated duration for this segment is six weeks.
  - Week 1 – Mobilization and site preparation
  - Weeks 2 to 5 – Piping installation
  - Week 6 – Site restoration

Central Avenue and Crossing at Grumman Rd E #8



- We will install 24” diameter pipe heading west on Central Avenue to connect at Grumman Rd East from 11/4 to 12/10
- Weather permitting, our team will install an average 20 to 30 feet of pipeline per day
- Estimated duration for this segment is five weeks
  - Week 1 – Mobilization and site preparation
  - Weeks 2 to 4 – Piping installation
  - Week 5 – Site restoration

Our traffic plan

- Northrop Grumman will provide notification at least one week prior to each closure and attempt to accommodate special needs
- Traffic control signs and flag persons will inform drivers real-time about construction activities
- While the pipeline is being installed in front of a driveway, the driveway will not be accessible during the day, but will re-open by 4:30 p.m. each workday and on the weekends
- Work in front of driveways (during work hours) will be conducted over a three workday period. We will install metal plates over the excavated area at the end of each day.
- Flag persons will direct traffic during working hours, as necessary

Example of our Work Along Grumman Road East

1. Establish traffic controls with intermittent lane closure
2. Segment of asphalt is cut and trench is excavated working around existing underground utilities
3. Pipeline is shaped and fused in 40’ to 60’ lengths and installed
4. Metal plates are temporarily placed over trench at the end of the workday
5. Trench is backfilled and permanent asphalt is applied

Finished Work Along Grumman Rd East and Seaman Ave

Grumman Road East

Seaman Avenue

Groundwater Treatment Facility

The building size is 126 feet long by 119 feet wide by 35 feet high at the peak of the roof. The state-of-the-art design has been approved by the NYSDEC

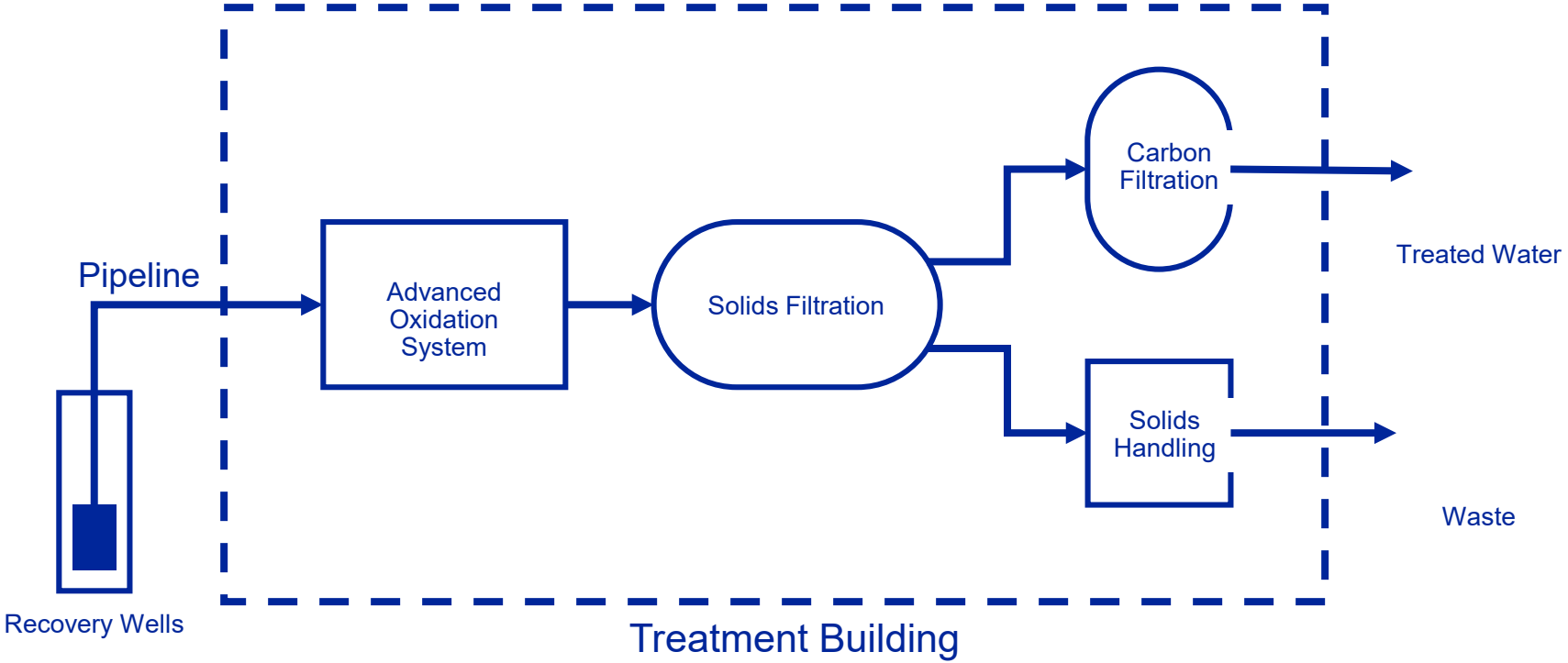
Once the building shell is constructed, we will begin interior construction, including installing the treatment system equipment and connecting water, electric, gas, communications, and sanitary sewer

We expect this work to take approximately 12 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 our project plan

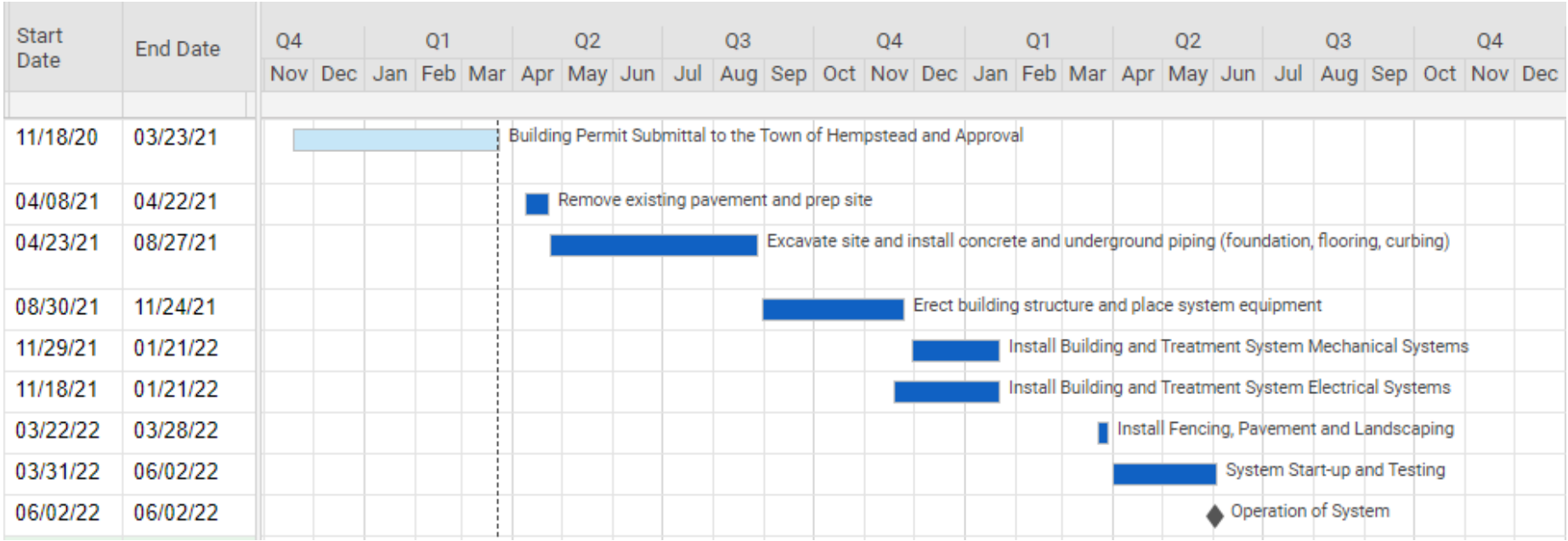
RW-21 Treatment Process



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



*Timeline is weather permitting

Example of construction process

Project Controls in Place

- Equipment and Materials
- Odors and Dust
- Noise
- Quality and Safety
- Traffic
- Vibration

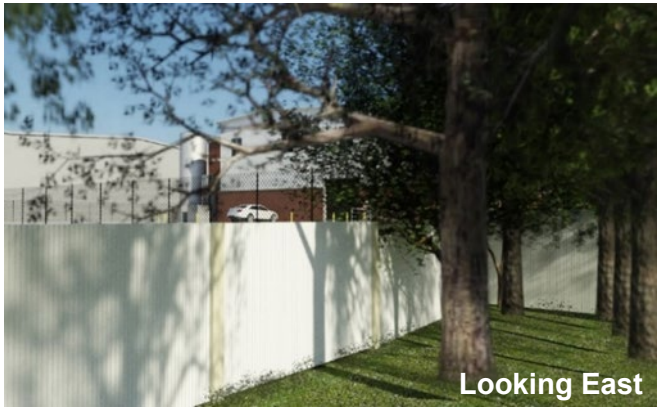
Building after completion

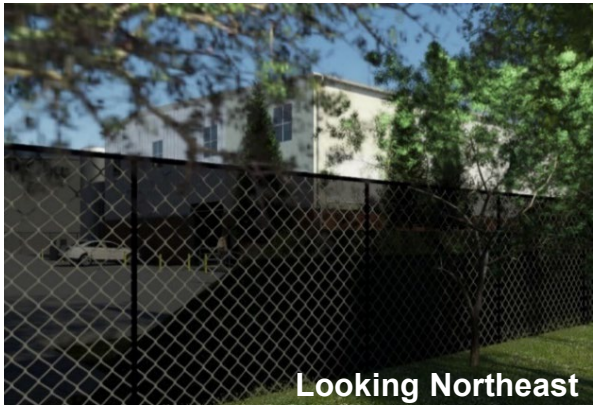
We expect to operate the facility 24 hours a day, seven days a week

We will conduct routine system maintenance and monitoring as needed, in accordance with a NYSDEC-approved Site Management Plan

Reliable and safe design

Treating up to 2.7 million gallons a day





Park Soil Thermal Remedy System

The system is working very well

Data since August 26 startup reflects the outcomes we modeled in our system design to remove VOCs

Data is shared regularly with NYSDEC, NYSDOH and Town of Oyster Bay

The system will complete its operation in late March

Ongoing Park Soil Sampling

Sampling (in yellow starred area) began March 8 and will take approximately 30 days

Results will be shared with NYSDEC, NYSDOH and Town of Oyster Bay

Data and science will drive our recommended 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

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