#### STATE OF NEW HAMPSHIRE

INTRA-DEPARTMENT COMMUNICATION



то:		File				
FROM:		Mary F. Daun, P.E., Solid Waste Management Bureau, NHDES				
SUBJECT:		Pre-Application meeting, Campton/Thornton Municipal Landfill, Thornton, NH Permit No. DES-SW-TP-94-021				
DATE:		November 18, 2024				
ATTENDEES:						
	NHDES		Mary Daun, P.E., Jaime Colby, P.E.;			
	Town o	f Thornton:	Chris Boldt, Desiree Mahurin, Peter Laufenberg, Matthew Peltier;			
	Eversou	ırce:	Jennifer Codispoti, Almir Memic, Samuel Harris, Mary-Kate Daley, Samuel Eames, Jeremy Fennel, Erik Newman, Angus Strachan;			
	GZA:		David Lamothe, P.E., Jennifer Baron			

The Town of Thornton, Eversource, GZA, and NHDES personnel met via MS Teams on November 13, 2024 at 11:00 am to discuss a Type IB permit modification application for the replacement of utility pole structures on the Campton/Thornton Municipal Landfill. Eversource has an easement through the landfill for its utility lines. There are three utility structures (Nos. 47, 48, and 49) within the landfill footprint that require replacement. Each existing structure has two wooden poles and guy wires that penetrate the landfill cap. Eversource/GZA is developing a scope of work to perform a geotechnical subsurface investigation of the gravel pads Eversource is proposing to replace two structures (Nos. 47 and 49) with metal pole structures. Utility structure No. 48 (center structure) will not be replaced, but the wooden poles cut and left in place.

GZA proposes to conduct two test borings near Structure Nos. 47 and 49 to evaluate soil types, to confirm no waste is present, and to determine the depth to groundwater. GZA proposes to backfill the test borings with the material removed. NHDES requested that if waste is encountered in the borings, the waste be characterized and disposed of at an authorized facility. NHDES suggested collecting soil samples for analytical pre-characterization during the drilling. A temporary geomembrane repair after test boring work will consist of patching the existing LLDPE geomembrane using a 60 mil moldable tape sealant.

Eversource proposes replacing utility structure Nos. 47 and 49 with two new steel structures. The work will include the installation of drilled shafts with permanent casing to support the taller poles. Once the drilled shaft foundation is complete, the geomembrane cap system will be booted around each shaft.

Equipment loading on the landfill is proposed to be limited to 8 psi and matting will be used for heavy equipment. NHDES noted that if the permittee can demonstrate an appropriate alternative through stability calculations, a higher loading may be permissible.

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Eversource personnel also discussed their evaluations of possible alternatives to the replacement of the utility structures. However, they stated that an alternative of either spanning the landfill or relocating the line was too costly and would delay the project schedule.

Eversource indicated a timeline of performing the geotechnical test borings in either the first or second quarter of 2025, and initiating construction in summer of 2025 pending receipt of required project approvals.

NHDES staff discussed the timeline for processing a Type IB permit modification application. NHDES staff also outlined the post-closure requirements for the Town of Thornton which will also be reviewed during the permitting process. Such requirements include having an approved closure plan of record, including a current post-closure maintenance and monitoring program; ensuring access restrictions are in place for the landfill; and having a current financial assurance plan.

The slides presented at the pre-application meeting by Eversource are attached to this memo.

The meeting was adjourned at approximately 12:30 pm.



### Beebe River to Whitefield (X178) Line Rebuild Project

### **Thornton Landfill Design Alternatives**



November 2024



## Agenda

- Introductions
- Project Overview
- Landfill Design Alternatives
- Construction Methods
- Schedule

# What are We Doing and Why?

### **EVERSURCE**

- Replace the older, degraded wooden pole structures with new weathering steel structures.
  - Recent physical inspections and engineering analysis of this line revealed that many of the existing wooden structures are in poor condition due to their age, woodpecker and insect damage, and pole/crossarm rot.
  - The amount of "emergency repair work" needed on these lines continues to increase.
    - Recently completed D-rated structure repairs/ replacements on the U199, Q195 and X178 lines.
- Install new transmission wire (conductor) and communication wire (OPGW).
  - Existing communication between substations relies on older technology which results in slower communication.
- The new steel structures will be able to support the weight of the new wires and will better withstand the storms we experience here in New Hampshire.
- The line must be built to present-day electrical safety standards and codes, which require more robust structures.



### **Structure Deterioration Identified on Landfill**

#### **EVERSURCE**

- Recent inspections of structures along the X178 identified additional deterioration of the three structures located on the landfill (cross arm cracking, pole-top rot)
- Emergency repairs may be required and immediate access to landfill if conditions change.
- Additional challenges to repair or replacement due to vehicular clearance.



Structure 49



### **Existing Structures 47-49 at Thornton Landfill**



### **Wire Clearance Challenges**

<b>EVERSU</b> R	CE
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Location	ORIGINAL Elevation (MSL)	Planned Elevation (MSL)	Elevation From Lidar- 2018 (MSL)	As Built landfill height over Planned (FT)	Wire Clearance at MAX OP TEMP (FT)
STR 47	650	642	657.92	15.92	36.53
STR 48	642	642	651.72	9.72	25.19
STR 49	640	640	645.95	5.95	32.15
Mid-span point (wire)	656	642	659.82	17.82	16.752

TABLE NOTES:

- NESC MIN PEDESTRIAN CLEARANCE = 16.09FT
- NESC MIN VEHICLE CLEARANCE = 20.09FT
- Min Wire clearance is in different location from highest elevation in the span
- All elevations shown relative to Mean Sea Level (MSL)

### **Construction Plans**

#### **EVERSURCE**

### **Overhead View of Landfill**



#### **Preferred Solution**

- Eversource will stay within our existing easement in replacing the existing wood structures with steel structures, with an approximate 10' offset from the current poles (subject to change based on result from Geotechnical borings).
- The project has been designed and will be executed using construction practices designed to prevent impacts to groundwater, which will be demonstrated through pre-and postconstruction monitoring.
- The project will obtain all necessary environmental permits and approval through NHDES and will be executed fully in compliance with all applicable environmental laws and permit conditions.
- Replacement of existing structures 47 & 49 will include the installation of concrete foundations with permanent casing to support the taller poles on the landfill needed to remove structure 48.

Landfill Structure Height Overview							
Structure	Existing	Proposed	Difference				
47	52.00	70.00	18.00				
48	Removed without replacement						
49	40.14	70.00	29.86				

## **Unfeasibility of Longer Span or Relocation**

#### **EVERSURCE**

### **Spanning the Landfill**



Eversource would still need to access the landfill and perform construction activity to take down the old structures and hardware with this option.

#### **Relocating the Line**

- Eversource does not have property rights outside of the 225' easement it currently owns and occupies.
- Eversource would need to maintain a 225' ROW even in a re-route scenario.

- Both alternatives would have project delay and additional permitting implications
- Additional cost responsibility of the Town

# **Geotechnical Soil/Test Borings**

### **EVERSURCE**

#### **Boring Work Scope**

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One test boring will be performed near Structure 47 and Structure 49 to evaluate the soil types below the landfill and determine depth to the groundwater table and refusal (if encountered).



Standard Penetration Tests will be obtained continuously through the landfill material and at 5-foot intervals thereafter in native soil materials or structural fill. The borings will be advanced to depths on the order of 60 to 70 feet below ground surface.



Soil samples will be collected in the native soils only for geotechnical laboratory analysis. Photographs of the landfilled soils encountered in the split spoon sampler will be obtained but no samples will be retained.



Upon completion of drilling, the soils and waste generated by the drilling of the test borings will be returned to the borehole at the approximate depths from which they were generated.

#### **Temporary Geomembrane Repair**

- Targeting early 2025, GZA and New England Boring Contractors, Inc. (NEBC) will complete the work with a rubber track-mounted drill rig. Subcontractor Leighton A. White, Inc. (Leighton White) will use a low ground pressure mini excavator for the geomembrane repair.
- The geomembrane liner penetrations made from the augers/casing and grounding rods at each boring location will be temporarily repaired and the excavated areas will be backfilled to restore the area to the original grade per NHDES requirements.
- Leighton White will patch the area using a 60 mil LLDPE geomembrane liner patch taped into place using a 60 mil moldable tape sealant (such as Tapecoat or equivalent) to provide a watertight seam. The tape will be applied to dry, clean geomembrane surfaces clear of loose surface material, soil, and dust.

# **Construction Methods**

### **EVERSURCE**

#### **Access and Installation**

#### Access

- 8 PSI limit recommendation for working on landfill
- Matting on top of landfill (timber or poly) required
- **Concrete Foundations**
- Two drilled shafts will be installed at each of the two proposed structure locations, Structure 47 and Structure 49
- Permanent casings will be advanced to maintain the integrity of each drilled shaft hole.
- Existing wooden poles will be cut below liner, and liner repaired.



**COLOR DIFFERENCE OVER A PERIOD** 



### **Permanent Geomembrane Repair**

**EVERSURCE** 

- Upon completion of each drilled shaft foundation, the geomembrane liner penetrations made during the shaft installation at each structure location will be permanently repaired.
  - Each drilled shaft will be "booted" or sleeved with an unreinforced LLDPE geomembrane patch with the same or better thickness and material properties as the existing geomembrane cap liner.
  - The "boot" liner will be field welded to the existing geomembrane cap liner, which is common practice for penetrations of a geomembrane cap, using extrusion welding.
  - Hot seam patches/permanent repair will also be completed at each of the temporary patch locations (test boring/grounding rod locations) at the time of the permanent geomembrane "boot" installation.
  - Once geomembrane "boot" has been installed and the temporary liner patches have been permanently repaired, a final liner inspection will be conducted to check for any remaining flaws that need repairs.
  - Restoration of the landfill to original grade with landfill cover material.

### **Environmental Considerations**

#### **EVERSURCE**

**Proposed Monitoring** 

- Air Quality Monitored through all phases of construction
- Water Quality Monitoring Conducted pre- and post-construction
- Soil testing will be completed during geotechnical borings
- Upon completion of drilling for the foundation structures, the soils and waste generated by the drilling of the drilled shaft will be disposed in accordance with regulatory requirements.

### Schedule

#### **EVERSURCE**

- Geotechnical Soil/Test Borings: Anticipated Q1/Q2 2025, pending outage availability
- Construction: Anticipated 2025, pending receipt of required project approvals
  - Landfill Construction will be determined pending results of test borings and consultation with Town of Thornton and NH Dept. of Environmental Services.