

# Seacoast Reliability Project Newington Alternative Route Analysis

Newington Residents September 3, 2015

# Seacoast Regional Need



- The Seacoast Region's electric demand is **growing at twice the rate** of the rest of the state, and is expected to represent approximately 25% of New Hampshire's electric demand in 2020.
- The electric transmission system serving the Seacoast Region does not meet both thermal and voltage planning criteria, putting the reliability of the system at risk even at today's electrical demand levels.
- If these criteria violations are not addressed, the risk of system overloads could lead to **power outages for large groups of customers** in the Seacoast and surrounding area.

# What We Consider When Selecting a Transmission Line Route



- Reliability Benefits/System Operability
- Environmental Impacts, including:
  - Wetlands
  - Endangered species
  - Cultural and/or historical resources
- Community Impacts, including:
  - Existing vs. acquisition of easement rights
  - Impacts to residential and business community
  - Existing land uses
- Cost, including:
  - Underground vs. Overhead
  - Length of line
  - Regionalized or localized cost recovery
- Constructability, including:
  - Existing right-of-way; other options
  - Water crossings
- Schedule to meet identified reliability need

# **Project Cost**



- New England shares one electric transmission grid and therefore costs related to regional transmission facilities, such as the Seacoast Reliability Project (SRP), are shared by all customers in New England based on the level of energy consumed (load share in NH is approximately 9%).
- Regardless of whether costs are localized or regionalized, Eversource has an obligation to implement good utility practice in decision making and spend rate payers money prudently
- ISO-NE (Independent System Operator for New England)
  - Determines which project costs can be regionalized
- NH Customers would pay approximately 9% of the cost for a Regional Transmission Project
- FERC (Federal Energy Regulatory Committee)
  - Determines how costs, deemed to have no regional benefit, would be localized
- NH Customers would pay 100% of Localized Costs
  - (e.g. NH customers throughout the state, a specific community, or particular geographic area)

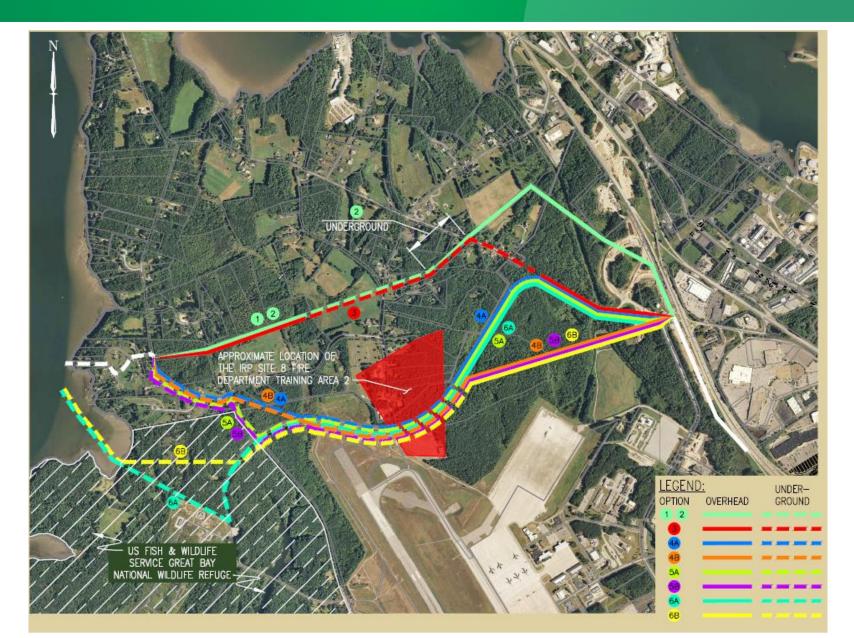
# Alternate Routes Through Newington



- ➤ The Project Team, working with the Town of Newington, evaluated additional route options through Newington to address concerns of visual and other impacts.
- ➤ The following map indicates each of the routes that were analyzed and subsequent slides provide an overview explanation of the challenges involved in each of those routes that validated the proposed route.
- ➤ It is important to note that a more in depth engineering analysis has been conducted on the proposed route. In comparison, the alternative routes were reviewed using preliminary information to assess impacts and cost.

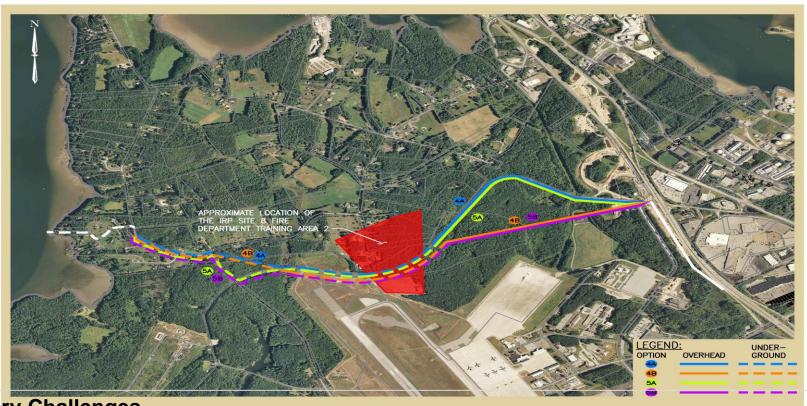
# **Newington Alternate Routes Summary**





# Alternate Routes involving Pease Development Authority





- All four routes cross a Superfund Site (Fire Department Training Area #2) on Pease property
  - A Superfund site is an uncontrolled or abandoned place where hazardous waste is located
- Remediation would be required to construct in this area
- Environmental implications are anticipated to be significant
- Schedule impacts are anticipated to be significant
- The challenges presented by this Superfund site are the primary reasons for why these routes are  $_6$  not viable

# Alternate Routes involving National Wild Life Refuge

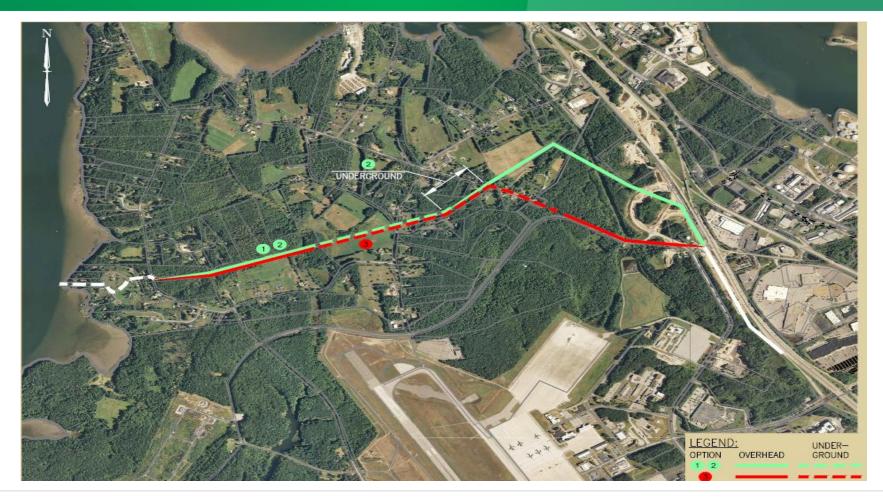




- Great Bay National Wildlife Refuge will not allow a route across their property
- In addition, these routes also cross the Superfund site on the Pease property
- Routes 6A & 6B require crossing the National Wild Life Refuge which is the *primary* challenge deeming these routes not viable

# Alternate Routes Through Newington





- Routes 1, 2 and 3 presented the most potential viability
- Primary Challenges for these routes include the need for new ROW, new underground easements and additional cost for underground

## Newington Option #1 PROPOSED ROUTE



#### Option #1

- Underground through Gundalow Landing
- Overhead in existing ROW to edge of Frink Farm
- Underground in existing ROW through Frink Farm and past Hannah Ln.
- Overhead in existing ROW to Spaulding Crossing

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#### **Primary Challenges**

- Residential crossings
  - Eversource is committed to working with residents to secure underground rights
- Little Bay Road Transition Structure
  - Need to acquire new easement on town property (Flynn Pit) to relocate transition structure to lessen visibility
- Historic District crossing
  - The current design proposes an underground construction which will require new underground rights
  - Will pursue regional cost recovery due to presence of property on the National Historic Registry

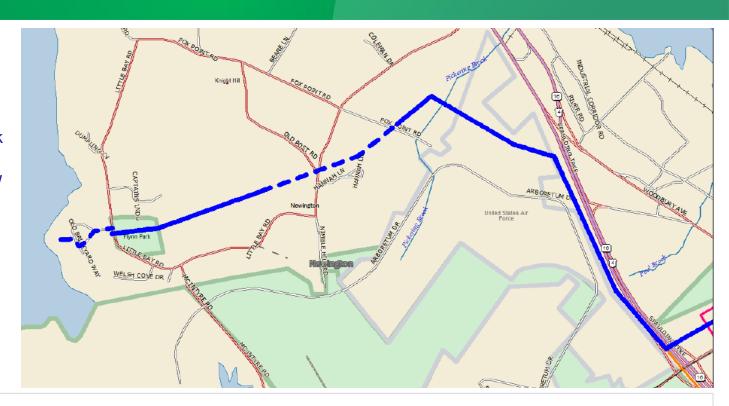
This route requires support from the town and residents to acquire underground rights

## Newington Option #2



#### Option #2

- Underground through Gundalow Landing
- Overhead in existing ROW to edge of Frink Farm
- Underground in ROW through Frink Farm and past Fox Point Rd.
- Overhead in existing ROW to Spaulding Crossing



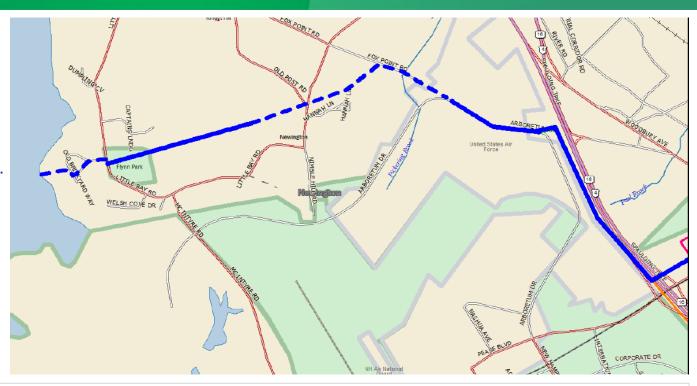
- Residential Crossing
- Historic District Crossing
- 1200ft of additional underground
  - Need to acquire underground rights in existing ROW
- Increased visibility of transition structure (edge of Fox Point Rd.)
- Cost: additional \$2-\$4M above the cost of proposed route (does not include the cost to acquire new ROW rights)

### Newington Option #3



#### Option #3

- Underground through Gundalow Landing
- Overhead in existing ROW to edge of Frink Farm
- Underground in ROW from Frink Farm to Fox Point Rd.
- Underground in ROW past Fox Point Rd to Arboretum Dr.
- Overhead along Arboretum Dr. to existing ROW
- Overhead in existing ROW to Spaulding Crossing



#### **Primary Challenges**

- Residential crossing
- Historic District crossing
- Requires FAA approval for overhead transition
- 2,600ft of additional underground
- 4,500ft of new ROW acquisition from residents, the town and Pease
- Need to acquire underground rights in existing Eversource ROW

- 110,000sqft of additional tree clearing
- 1,500ft of additional road restoration
- Cost: additional \$5 \$8.5M above the cost of proposed route (does not include the cost to acquire new ROW rights)

(Cost and distances are estimated)

# Remaining Alternative Routes Cost\* Analysis





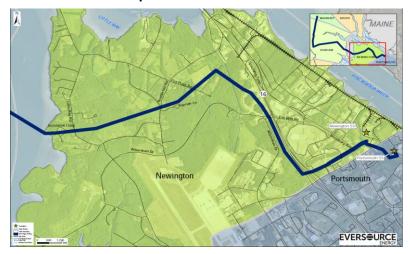
Route	Regionalized Cost (NH Customers pay 9%)	Project Localized Cost (Local Customers pay 100%)	Estimated Total Cost for Customers \$6.3M \$8.3 - \$10.3M		
Opt 1 Proposed Route	\$6.3M	\$0	\$6.3M		
Opt 2 UG to Fox Point	\$6.3M	+ \$2 - \$4M	\$8.3 - \$10.3M		
Opt 3 UG past Fox Point	\$6.3M	+ \$5 – \$8.5M	\$11.3 – \$14.8M		

<sup>\*</sup> All costs listed are estimates; local cost allocation TBD by FERC

# In Summary



- Feedback from the town and residents resulted in the review of potential alternative routes through Newington
- Analysis of the alternative routes resulted in the proposed route
- Feedback on the proposed route from the town, residents and experts resulted in
  - Reduced structure heights
  - Additional Underground
  - Structure relocations
  - Transition Structure relocations
- Eversource has the overhead rights it needs to construct the Project. In order to build portions underground, Eversource must secure the associated underground rights.



- We understand that residents have questions related to easement language and, therefore, we encourage them to reach out to our Real Estate consultant, Cornerstone, to ensure a prompt response and streamlined communication. Eversource is in continuous contact with Cornerstone to address any real estate concerns.
- We're committed to working with residents to secure the necessary underground rights that will support filing an application with the desired portions of an underground line design.

### **Contact Information**



Project Manager Dena Champy

Transmission Project Outreach Sandra Gagnon

**Project Hotline 1-888-926-5334** 

**Project website:** 

https://www.eversource.com/about/major-projects-infrastructure/seacoast-reliability-project

**Project Email:** 

TransmissionInfo@eversource.com

# Appendix A



- Appendix A Individual Alternative Route Challenges
- Appendix B Proposed Route Details
  - Mapping
  - Structure Locations
  - Structure Heights
  - Cross Sections of the Corridor
- Appendix C Visual Simulations
- Appendix D Existing Corridor with Similar Line Design
- Appendix E Project Timeline
- Appendix F Public Participation Information

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- Underground in existing ROW through Frink Farm and past Hannah Ln.
- Overhead in existing ROW to Spaulding Crossing

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#### **Primary Challenges**

- Residential crossings
  - Eversource is committed to working with residents to secure underground rights
- Little Bay Road Transition Structure
  - Need to acquire new easement on town property (Flynn Pit) to relocate transition structure to lessen visibility
- Historic District crossing
  - The current design proposes an underground construction which will require new underground rights
  - Will pursue regional cost recovery due to presence of property on the National Historic Registry

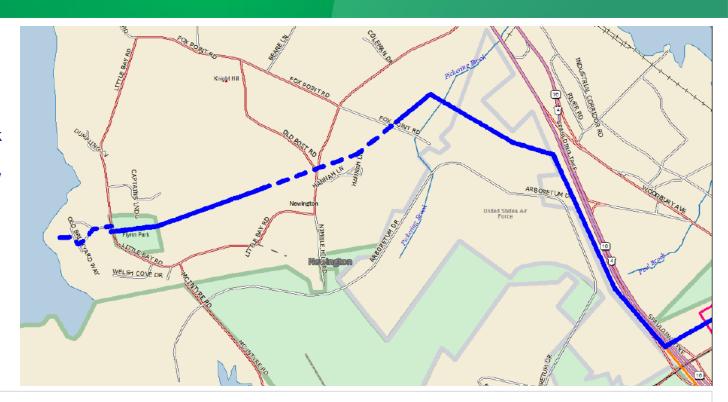
This route requires support from the town and residents to acquire underground rights

## Newington Option #2



#### Option #2

- Underground through Gundalow Landing
- Overhead in existing ROW to edge of Frink Farm
- Underground in ROW through Frink Farm and past Fox Point Rd.
- Overhead in existing ROW to Spaulding Crossing



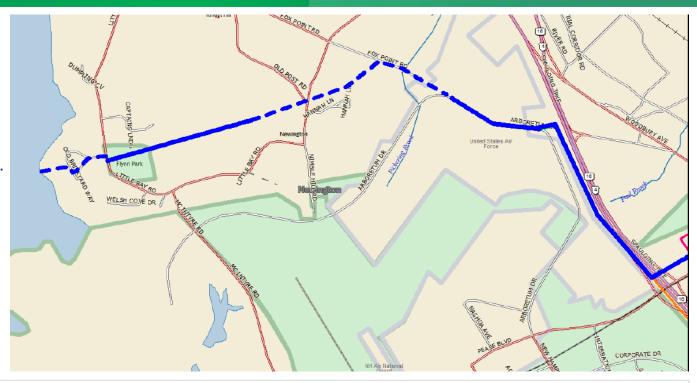
- Residential Crossing
- Historic District Crossing
- 1200ft of additional underground
  - Need to acquire underground rights in existing ROW
- Increased visibility of transition structure (edge of Fox Point Rd.)
- Cost: additional \$2-\$4M above the cost of proposed route (does not include the cost to acquire new ROW rights)

## Newington Option #3



#### Option #3

- Underground through Gundalow Landing
- Overhead in existing ROW to edge of Frink Farm
- Underground in ROW from Frink Farm to Fox Point Rd.
- Underground in ROW past Fox Point Rd to Arboretum Dr.
- Overhead along Arboretum Dr. to existing ROW
- Overhead in existing ROW to Spaulding Crossing



#### **Primary Challenges**

- Residential crossing
- Historic District crossing
- Requires FAA approval for overhead transition
- 2,600ft of additional underground
- 4,500ft of new ROW acquisition from residents, the town and Pease
- Need to acquire underground rights in existing Eversource ROW

- 110,000sqft of additional tree clearing
- 1,500ft of additional road restoration
- Cost: additional \$5 \$8.5M above the cost of proposed route (does not include the cost to acquire new ROW rights)

(Cost and distances are estimated)

### Newington Option #4A



#### Option #4A

- Underground through Gundalow Landing
- Underground along Little Bay Rd.
- Underground across Pease property to Arboretum Dr.
- Underground along Arboretum Dr. to North Runway
- Overhead along Arboretum to existing ROW
- Overhead in existing ROW to Spaulding Crossing



- Residential crossing
- Crossing of a known Superfund site
- Tree clearing in Town Forest
- FAA approval required for overhead portions
- 4,500ft of additional Underground
- 10,000ft of new ROW acquisition
- 440,000sqft of additional tree clearing
- 2,000ft of additional road restoration

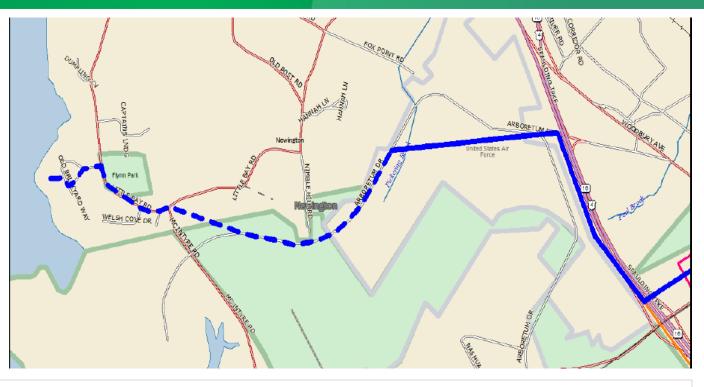
- Eversource cannot occupy existing 50ft Maritimes & Northeast natural gas easement.
- Cost: additional \$9 \$15M above the cost of proposed route (does not include the cost to acquire new ROW rights)

# Newington Option #4B



#### Option #4B

- Underground through Gundalow Landing
- Underground along Little Bay Rd.
- Underground across Pease property to Arboretum Dr.
- Underground along Arboretum Dr. to North Runway
- Overhead in new ROW to existing ROW
- Overhead in existing ROW to Spaulding Crossing



- Residential crossing
- Crossing of a known Superfund site
- FAA approval required for overhead portions
- Tree Clearing in Town Forest
- 4,500ft of additional Underground
- 9,000ft of new ROW acquisition
- 525,000sqft of additional tree clearing
- 2,000ft of additional road restoration

- Eversource cannot occupy existing 50ft Maritimes & Northeast natural gas easement.
- Cost: additional \$9 \$14.5M above the cost of proposed route (does not include the cost to acquire new ROW rights)

# Newington Option #5A

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#### Option #5A

- Underground through Gundalow Landing
- Underground along Little Bay Rd. to McIntyre Rd. intersection
- Underground along
   McIntyre Rd. to Arboretum
   Dr. intersection
- Underground along Arboretum Dr. to North Runway
- Overhead along Arboretum Dr. to existing ROW
- Overhead in existing ROW to Spaulding Crossing

- Residential crossing
- Crossing of a known Superfund site
- Tree clearing in Town Forest
- FAA approval required for overhead portion
- 5,000ft of additional underground
- 9,500ft of new ROW acquisition
- 408,000sqft of additional tree clearing
- 3,000ft of additional road restoration

- Eversource cannot occupy existing 50ft Maritimes & Northeast natural gas easement.
- Cost: additional \$10 \$17M above the cost of proposed route (does not include the cost to acquire new ROW rights)

# Newington Option #5B

# **EVERS**URCE

#### Option #5B

- Underground through Gundalow Landing
- Underground along Little Bay Rd. to McIntyre Rd. intersection
- Underground along
   McIntyre Rd. to Arboretum
   Dr. intersection
- Underground along Arboretum Dr. to North Runway
- Overhead in new ROW to Existing ROW
- Overhead in existing ROW to Spaulding Crossing

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- Residential crossing
- Crossing of a known Superfund site
- FAA approval required for overhead portions
- Tree Clearing in Town Forest
- 5,000ft of additional underground
- 8,500ft of new ROW acquisition
- 490,000sqft of additional tree clearing
- 3,000ft of additional road restoration

- Eversource cannot occupy existing 50ft Maritimes & Northeast natural gas easement.
- Cost: additional \$10 \$16M above the cost of proposed route (does not include the cost to acquire new ROW rights)

# Newington Option #6A



#### Option #6A

- Underground Welch Cove to NWR Buildings
- Underground NWR
   Buildings to Arboretum Dr.
- Underground along Arboretum Dr. to North Runway
- Overhead along Arboretum Dr. to Existing ROW
- Overhead in existing ROW to Spaulding Crossing

# NewIngon NewIng

- Portion of underwater cable outside of existing Little Bay cable corridor
- National Wildlife Refuge (NWR) will not consider route across their property
  - Potential Impact to endangered species
- Crossing of a known Superfund site
- Tree clearing in Town Forest
- FAA approval required for overhead portions
- 8,000ft of additional underground
- 15,000ft of New ROW acquisition
- 525,000sqft of additional tree clearing

- Eversource cannot occupy existing 50ft Maritimes & Northeast natural gas easement.
  - **Cost:** additional \$17 \$28.5M above the cost of proposed route (does not include the cost to acquire new ROW rights and additional underwater construction)

## Newington Option #6B



#### Option #6B

- Underground Welch Cove (NWR) to McIntyre Rd./Arboretum Dr. intersection
- Underground along Arboretum Dr. to North Runway
- Overhead in new ROW to existing ROW
- Overhead in existing ROW to Spaulding Crossing

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- Portion of underwater cable outside of existing Little Bay cable corridor
- National Wildlife Refuge (NWR) will not consider route across their property
  - Potential Impact to endangered species
- Crossing of a known Superfund site
- FAA approval required for overhead portions
- Tree clearing in Town Forest
- 4,600ft of additional Underground
- 11,000ft of new ROW acquisition

- 615,000sqft of additional tree clearing
- Eversource cannot occupy existing 50ft Maritimes & Northeast natural gas easement.
  - **Cost:** additional \$8.5 \$14M above the cost of proposed route (+ cost to acquire new ROW, easement/license from Pease and additional underwater construction)

# Appendix B



- Appendix A Individual Alternative Route Challenges
- Appendix B Proposed Route Details
  - Mapping
  - Structure Locations
  - Structure Heights
  - Cross Sections of the Corridor
- Appendix C Visual Simulations
- Appendix D Existing Corridor with Similar Line Design
- Appendix E Project Timeline
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# Legend for Mapping



Town Boundary	5	Wetlands
Land Owner Parcels	нини	Wetland Extends
PSNH Fee Area		Wetlands Impact
Contours 2ft	$\sim$	Stream Centerline
Project Corridor	5	Stream Top of Bank
Roads		Designated River Buffer 250'
—— Local	20	Conservation Lands
===== Not Maintained	20	100 Year Floodplain
Private		Archeologic Sensitive Areas
State		Historical Sites
Railroad	$ \mathfrak{S} $	Tree Line

# Gundalow Landing to the Flynn Pit

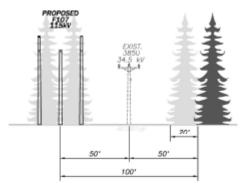


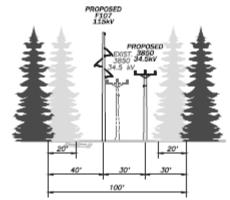


The new transmission line will be underground through Gundalow Landing and will transition overhead on Town owned property (Flynn Pit) north of the existing distribution line crossing the *property.* 

Right-of-way cross section looking east from Flynn Pit

Right-of-way cross section looking east from transition structure





Structure Heights							
Line Structure Number Proposed He							
Transmission	F107 -110	65					
Transmission	F107-111	75					
Transmission	F107-112	79					
Distribution	3850-1	47.5					
Distribution	3850-2	44					
Distribution	3850-3	53					

\*Information based on preliminary design and subject to change

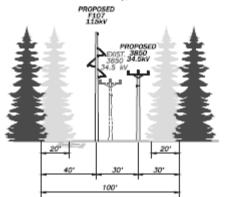
# Between Little Bay Road and the Frink Farm



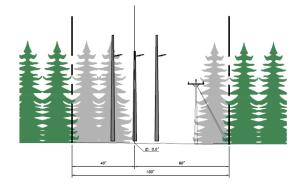


The new transmission line and existing distribution will be built side by side from the Flynn Pit to the Frink Farm. The transmission line will transition underground just west of the Frink Farm. The existing distribution line will remain across the farm.

Right-of-way cross section looking east towards Nimble Hill Rd.



Transition Structure (F107-116)
Right-of-way cross section looking
east towards Nimble Hill Rd.

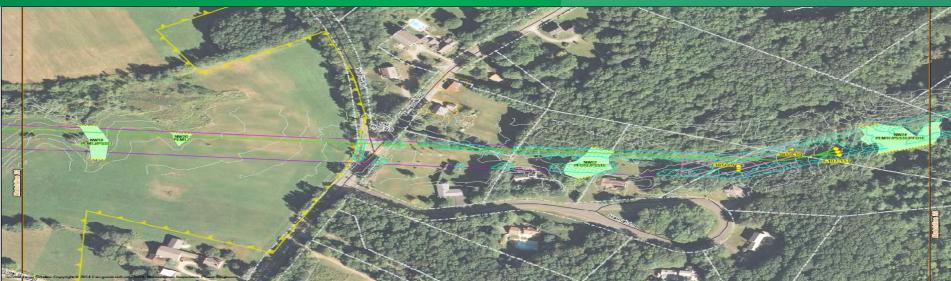


Structure Heights							
Line	Structure Number	Proposed Height					
Transmission	F107 -113	79					
Transmission	F107-114	79					
Transmission	F107-115	84					
Transmission	F107-116	65					
Distribution	3850-4	48.5					
Distribution	3850-5	53					
Distribution	3850-6	57.5					
Distribution	3850-7	38.5					

\*Intormation based on preliminary design and subject to change

### Frink Farm to end of Hannah Lane



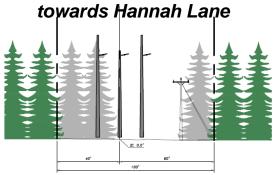


The new transmission line will be underground across the Frink Farm and underground through the existing corridor near Hannah Lane where the line transitions to overhead just past Hannah Lane.

The existing distribution line will remain overhead in this entire section.

Transition Structure (F107-117)

Right-of-way cross section looking west



Structure Heights						
Line Structure Number		Proposed Height				
Transmission	F107 -117	65				
Distribution	3850-9	38.5				
Distribution	3850-10	39.5				

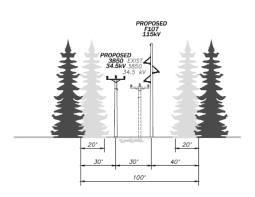
# End of Hannah Lane past Fox Point Road





The new transmission line and existing distribution will be built side by side from the end of Hannah Lane past Fox Point Road.

Right-of-way cross section looking east from the end of Hannah Lane



Structure Heights							
Transmission Structure Number	Proposed Height	Distribution Structure Number	Proposed Height				
F107 -118	79	3850-11	53				
F107-119	84	3850-12	48.5				
F107-120	75	3850-13	35				
F107-121	70	3850-14	35				
F017-122	70	3850-15	39.5				
F107-123	75	3850-16	47.5				
F107-124	84	3850-17	53				

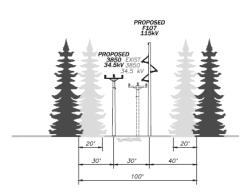
# **Along Spaulding Turnpike**





The new transmission line and existing distribution will be built side by side east of Fox Point Road near the Spaulding Turnpike.

Right-of-way cross section looking east of Fox Point Road



Structure Heights						
Transmission Structure Number	Proposed Height	Distribution Structure Number	Proposed Height			
F107-125	84	3850-18	48.5			
F107-126	84	3850-19	53			
F107-127	100	3850-20	66.5			
F107-128	100	3850-21	70			
F017-129	84	3850-22	53			
F107-130	84	3850-23	48.5			

\*Information based on preliminary design and subject to change

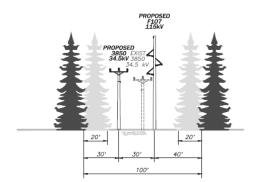
# **Along Spaulding Turnpike**



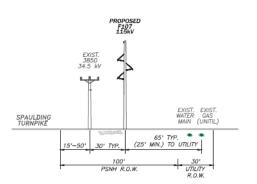


The new transmission line and existing distribution will be built side by side east of Fox Point Road to the water tower. The existing distribution line parallel to the Spaulding Turnpike will remain east the of the tower.

Right-of-way cross section looking toward water tower from the west



Right-of-way cross section looking east of the water tower



Structure Heights								
Line	Structure Number	Proposed Height						
Transmission	F107-130	84						
Transmission	F107-131	66						
Transmission	F107-132	84						
Transmission	F107-133	79						
Transmission	F017-134	70						
Transmission	F107-135	75						
Distribution	3850-23	48.5						
Distribution	3850-24	39.5						

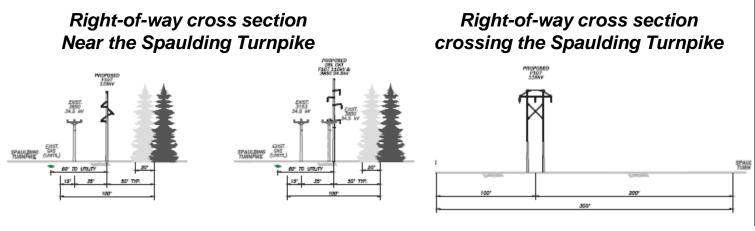
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# Along Spaulding Turnpike to Portsmouth





The new transmission line and existing distribution line run parallel to the Spaulding Turnpike



Structure Heights					
<b>Transmission</b>	Proposed				
Structure	Height				
Number					
F107-136	79				
F107-137	84				
F107-138	75				
F107-139	70				
F017-140	70				
F107-141	75				
F107-142	85				

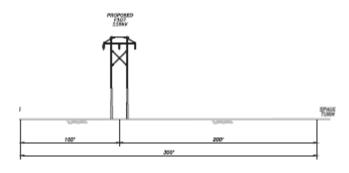
# Spaulding Turnpike to Portsmouth



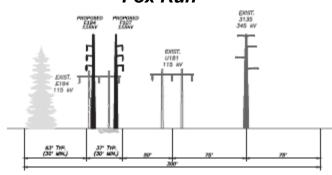


The new transmission line will cross the parking lots of the Crossing at Fox Run. Portions of an existing transmission line will be relocated as well

Right-of-way cross section at side of Crossing at Fox Run



Right-of-way cross section looking east at the Crossings at Fox Run



Structure Heights				
<b>Transmission</b>	Proposed			
Structure	Height			
Number				
F107-143	70			
F107-144	84			
F107-145	95			
F107-146	90			
F017-147	90			

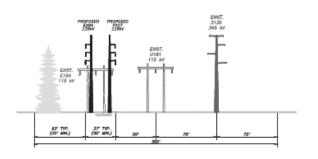
# Spaulding Turnpike to Portsmouth



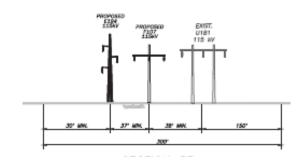


The new transmission line will be built in an existing right-of-way between Woodbury Avenue and Gosling Road before entering Portsmouth on Eversource property

Right-of-way cross section looking east from Woodbury Avenue



Right-of-way cross section looking East from Gosling Road



Structure Heights					
<b>Transmission</b>	Proposed				
Structure	Height				
Number					
F107-147	90				
F107-148	70				
F107-149	30				
F107-150	55				
F017-151	79				

# Appendix C



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# Visual Simulation View near Newington Public School

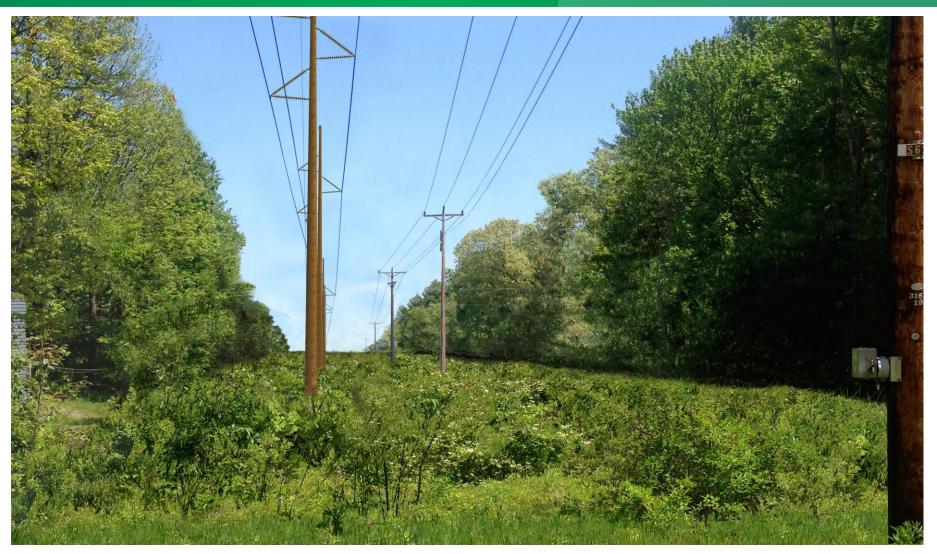




- Side by Side Line Design
- Taken in the winter to show scenery without foliage

# Visual Simulation Typical Structures in Newington





- Typical Simulation of a Side by Side Line Design (Transmission poles aligned with Distribution poles)
- Picture/Image is not from Newington but representative of the typical view of a side by side design

# Appendix D



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# Similar Line Design Representative Line Design in Rochester





Location is a ROW in Rochester, NH where the ROW interests with Betts Road

# Appendix E



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  - Structure Locations
  - Structure Heights
  - Cross Sections of the Corridor
- Appendix C Visual Simulations
- Appendix D Existing Corridor with Similar Line Design
- Appendix E Project Timeline
- Appendix F Public Participation Information

# SEC Application Process and Public Participation Opportunities



#### Schedule is Estimated and Subject to Change

Opportunities for Public Participation	Activity	Q4 '14	Q1 '15	Q2 '15	Q3 '15	Q4 '15	Q1 '16	Q2 '16	Q3 '16	Q4 '16	Q1 '17
	Initial Project Update to Municipal Officials										
	Pre-Application Public Information Sessions (2)										
	File Application										
	SEC Accepts Application										
	Post-Application Public Information Sessions (2)										
	SEC/Agency Joint Public Hearings										
	SEC Hearings										
	SEC Decision								_		
	Start of Construction*										
	Stakeholder Outreach										

# Appendix F



- Appendix A Individual Alternative Route Challenges
- Appendix B Proposed Route Details
  - Mapping
  - Structure Locations
  - Structure Heights
  - Cross Sections of the Corridor
- Appendix C Visual Simulations
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# Public Participation in SEC Process





- Step 1: At least 30 days prior to filing an Application with the SEC, Eversource will host two public information forums (and open houses), which describe and discuss the proposed project, one in each affected County.
- Step 2: Within 45 days after the Application has been reviewed and accepted by SEC, Eversource will host two additional public information forums, to describe and discuss the proposed Project, one will be held in each affected County.
- **Step 3**: 90 days after the acceptance of the Application, the SEC will hold additional public hearings, which will include questioning of the Applicant.