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# V148S 115 kV Transmission Line Asset Condition Refurbishment Project

Presentation to the Energy Facility Siting Board  
June 22, 2022 – Cumberland  
June 29, 2022 – Lincoln

# Agenda

- Introduction
- Project Area
- Project Overview
- Need
- Alternatives
- Construction Sequence
- Schedule
- Community Outreach
- Impact Mitigation
- Project Impact



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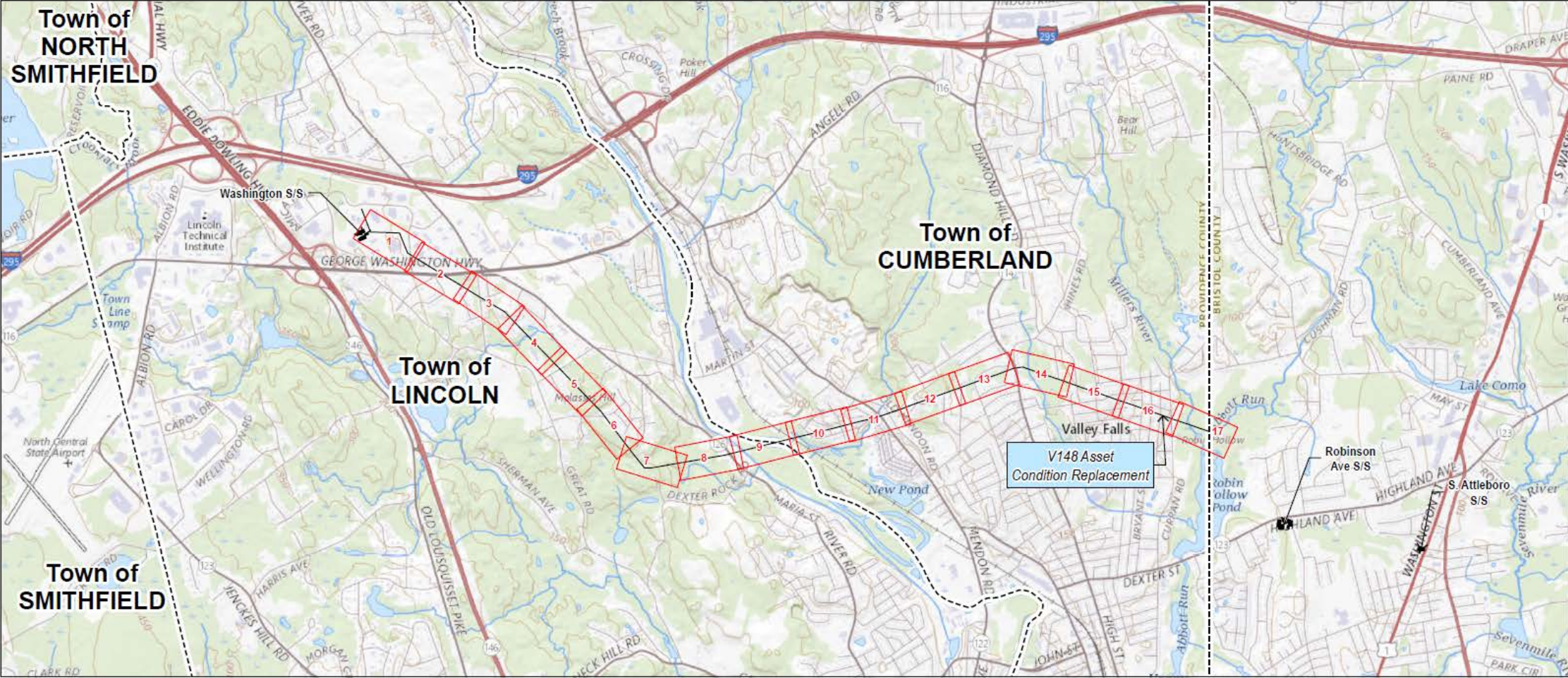
View South – George Washington Highway, Lincoln

# Project Area



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# Project Overview



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- 4.8 miles through Lincoln and Cumberland
- Portions of the Line date back to 1914. Line was upgraded from 69 kV to 115 kV in 1959.
- Structures:
  - Remove 64 existing wood and lattice structures
  - Install new structures
    - 54 steel davit arm replacement structures
    - 4 steel H-frame replacement structures
    - 1 new steel davit arm structure
- Conductor: 1113kcmil 54/19 ACSR “Finch”
- Shield wire - fiber optic ground wire



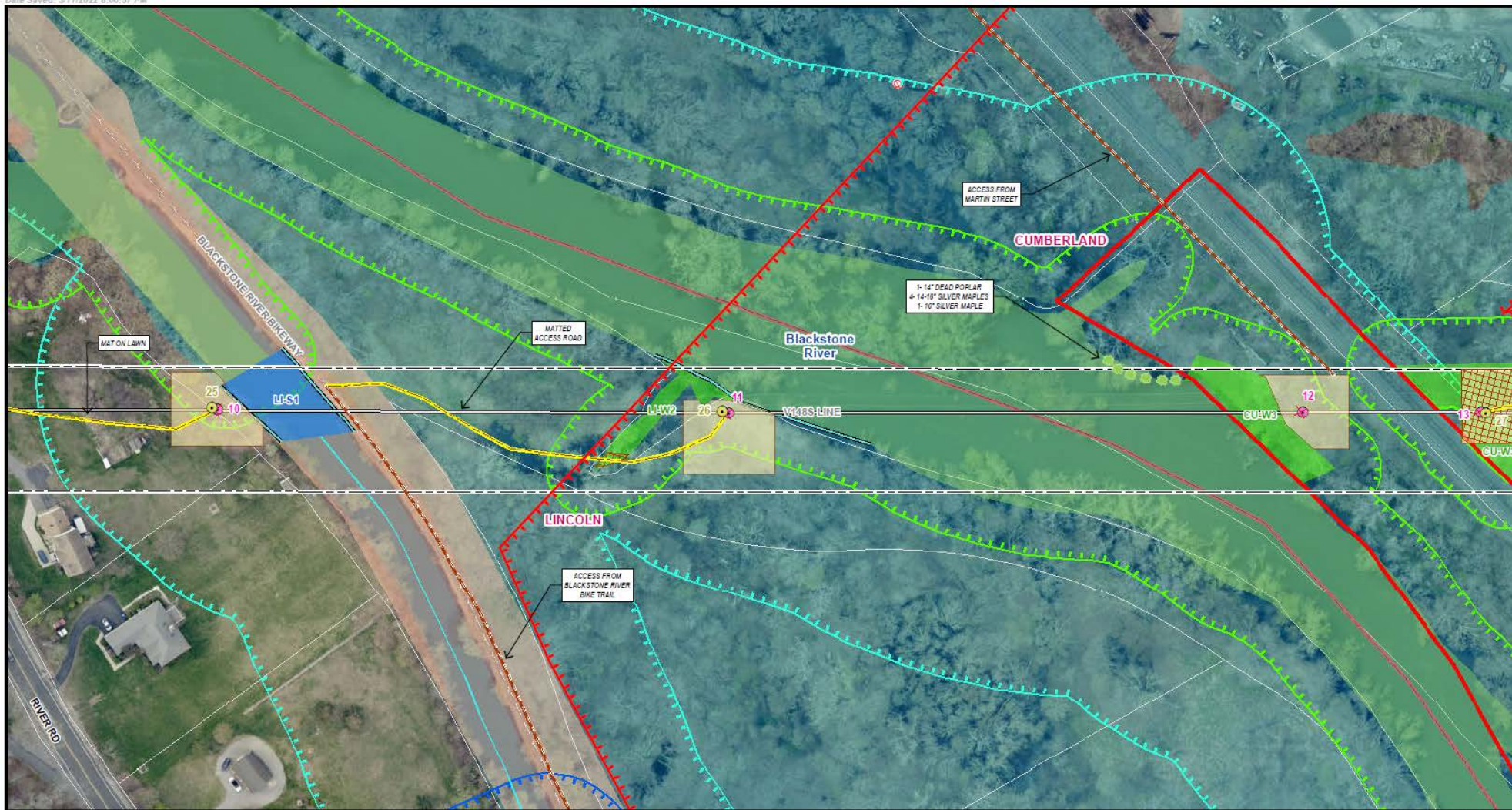
View to West – River Road, Lincoln



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Legend		*Indicates Layers Set to Transparency	
Existing Structure	V148S OH Line	Community Wetland Protection Area/Outstanding Resource Water	Culverts
Install Structure with Steel Davit	Approx. Edge of ROW	Natural Heritage	Catch Basin
Install Structure with Steel H-Frame	Preferred Access	NHEHP Priority & Estimated Habitats	Bike Path
Install Structure with Concrete Calson (1) and Steel Davit Arm	Access Road to be Improved	State-Listed Species Habitat	Stone Wall
Install Structure with Concrete Calson (2)	Refresh with Stone	Conservation Land*	Fence
Remove Steel Lattice Structure	Off ROW Access	Soil Stockpile	Guardrail
Remove Wood 3-Fole Structure	Alternate Access	Town Boundary	Superfund Site Boundary
Remove Wood H-Frame Structure	Construction Mats	Parcel Boundary	Tree to be Removed
Remove Wood H-Frame Structure	Work Envelope*	MADEP Hydrologic Connections	Approximate Pipeline
Remove Wood H-Frame Structure	Graded Work Envelope*	USFWS Wetlands*	Access Gate
Remove Wood H-Frame Structure	Guard Structure	Estimated Wetlands	
Full Pad	Field Delineated Intermittent Stream	50ft Perimeter Wetland	
Graded Full Pad	Field Delineated Perennial Stream/Bank	100ft Riverbank Wetland	
Field Delineated Intermittent Stream	Field Delineated Stream*	300ft Riverbank Wetland*	
Field Delineated Perennial Stream/Bank	Field Delineated Wetland Lines	FEMA 100yr Floodplain*	
Field Delineated Stream*	Wetland Rehabilitation	Water Bar	
Field Delineated Wetland Lines	MADEP Hydrologic Connections	Hazardous Material Site	
Field Delineated Wetlands*	USFWS Wetlands*	Leaking Underground Storage	
Wetland Rehabilitation	Estimated Wetlands	Surface Water Protection	
MADEP Hydrologic Connections		Ground Water Compliance Boundary	
USFWS Wetlands*		Zone II Wetland Protection	
Estimated Wetlands			

**V148S LINE ASSET CONDITION REFURBISHMENT PROJECT**

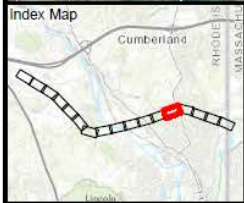
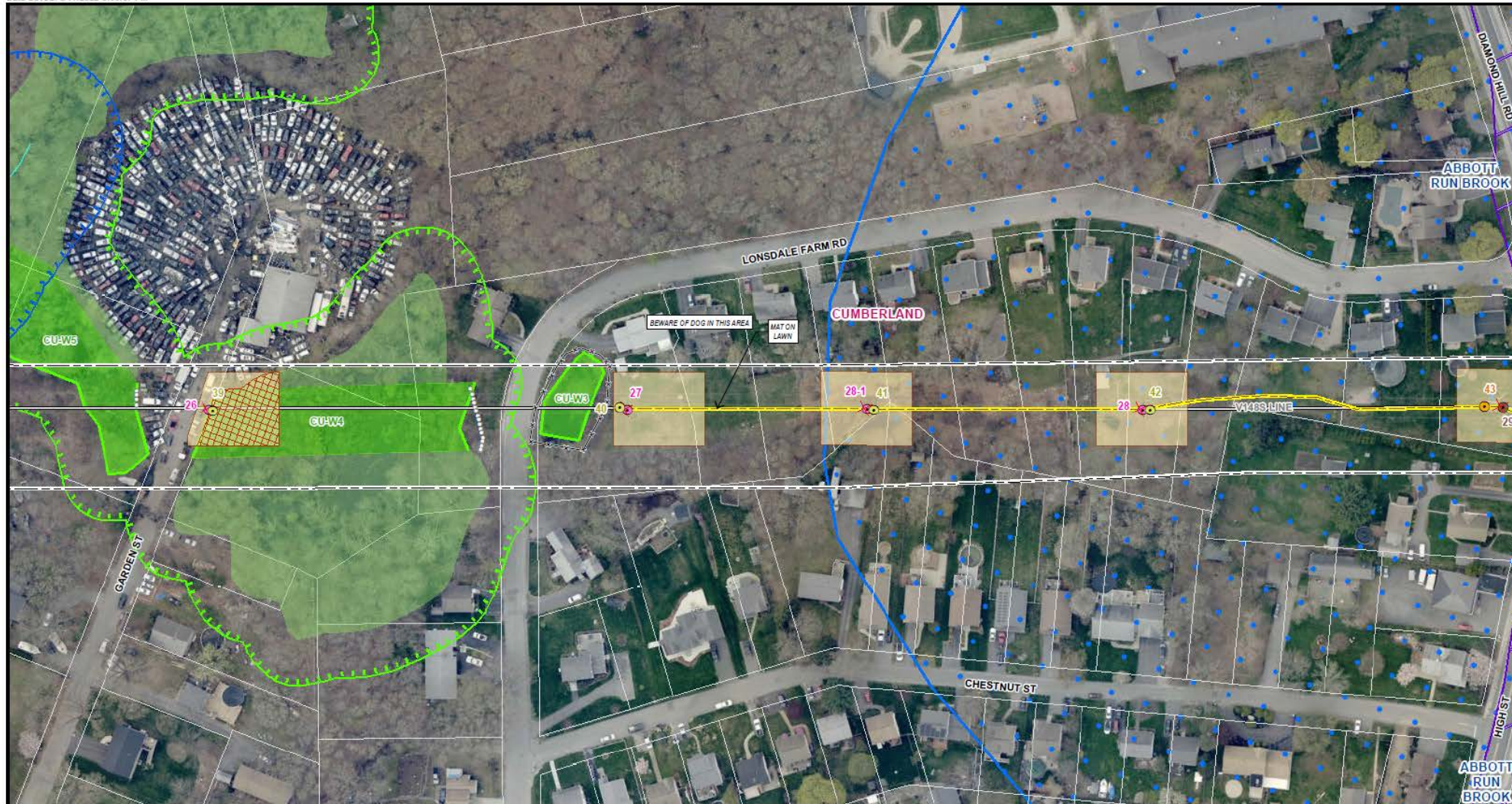
Figure 3-1  
Project Alignment Drawings  
City of Lincoln & Cumberland, RI  
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1 inch = 100 feet

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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**Legend**

Existing Structure	V148S OH Line	Full Pad	SDR Perimeter Wetland	Community Wetland Protection Area-Outstanding Resource Water	Catch Basin
Install Structure with Steel H-Frame	Approx. Edge of ROW	Graded Full Pad	100R Riverbank Wetland	Natural Heritage	Catch Basin
Install Structure with Steel H-Frame and Steel Davit Arm	Preferred Access	Field Delineated Intermittent Stream	200R Riverbank Wetland	N-ESP Priority & Estimated Habitats	Blade Path
Install Structure with Concrete Calson (1) and Steel Davit Arm	Access Road to be Improved	Field Delineated Perennial Stream/Bank	PEMA 100yr Floodplain	State-Listed Species Habitat	Stonewall
Install Structure with Concrete Calson (2)	Refresh with Stone	Field Delineated Stream	Water Bar	Conservation Land	Fence
Remove Steel Lattice Structure	Off ROW Access	Field Delineated Wetland Lines	Hazardous Material Site	Guarantee	Guardrail
Remove Wood 3-Pole Structure	Alternate Access	Field Delineated Wetlands	Leaking Underground Storage	Parcel Boundary	Superfund Site Boundary
Remove Wood H-Frame Structure	Construction Mats	Wetland Replication	Surface Water Protection	Tree to be Removed	
	Work Envelope	MADEP Hydrologic Connections	Ground Water Compliance Boundary		
	Graded Work Envelope	USFWS Wetlands	Approximate Pipeline		
	Guard Structure	Estimated Wetlands	Access Gate		

*\*Indicates Layers Set to Transparency*

**V148S LINE ASSET CONDITION REFURBISHMENT PROJECT**  
Figure 3-1  
Project Alignment Drawings  
City of Cumberland, RI  
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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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# Project Need



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Asset condition refurbishment project is driven by the need to maintain a reliable system. The reliability is compromised by the following:

- age of assets
- existing wood structures have deteriorated due to weather, storm damage, and woodpecker damage
- existing circuits need to be recondored

Project includes addition of high-speed communications between substations via a dual purpose Optical Ground Wire (OPGW) –steel/aluminum ground wire with integrated fiber optics



# Alternatives



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- No-Action – Does not address the identified need.
- Partial Upgrade – Existing structures do not meet current clearance requirements so substantial modifications would be required to support new conductors.
- Preferred Option – Address the identified need by replacing all existing structures. The new structures will have less impacts on the natural and social environment due to the longer lifespan of steel structures, reduced need for repeated future maintenance, improved reliability of the new conductor and the two OPGW lines.



# Construction Sequence



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- Removal of vegetation and Right of Way (ROW) mowing in advance of construction;
- Installation of soil erosion and sediment controls;
- Access road and work pad maintenance or construction;
- Installation of structures, insulators and OPGW;
- Removal and disposal of existing transmission line components; and
- Restoration of the ROW.

# Schedule

ACTIVITY	ESTIMATED START DATE	ESTIMATED COMPLETION DATE
Planning and Engineering	November 2020	March 2022
Permitting and Licensing	October 2020	July 2022
Construction	July/August 2022	May 2023
Facilities In-Service	May 2023	
Final Restoration	July 2023	

# Community Outreach



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- Reviewed Project with Town officials
- Pre-construction outreach
  - Contacted abutters by mailing in advance of survey and geotechnical work
- On-going outreach
  - Community Open House events;
  - Community outreach (e.g. door-to-door);
  - Interactive website;
  - Project hotline;
  - Fact sheets, door hangers, FAQs, timelines, etc.; and
  - Advertising.

# Summary of Existing Natural and Social Environment



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- Watershed and Waterways
- Soils
- Wetlands
- Rare Species
- Land Use
- Cultural and Historical Resources



# Impact Mitigation



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- No long-term impacts to natural or social environment are expected.
- Any short-term impacts will be mitigated by use of soil erosion and sediment controls and best management practices (BMPs)
- An environmental monitor will ensure compliance with all regulatory programs and permit conditions

# Project Impact



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- Construction noise is expected to be intermittent
- Traffic impacts will be temporary
- No long-term impacts to residential, commercial or industrial land uses
- Disturbed areas will be restored to previously existing or improved condition



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# V148S Transmission Line Asset Condition Refurbishment Project