

# New Haven Operations Facility



Summary of  
Alternatives Analysis  
October 2019

# Project Need and Solution

- North American Electric Reliability Corporation (NERC)
  - Requires functional backup facilities within 2 hours of a qualifying event
- Existing Facilities are Inadequate
  - Proximate to main campus (one event could remove both facilities)
  - Inadequate building and overall siting concerns
  - Limitations of working space for business continuity events
- New Combined Backup Operation Facility
  - Backup Operations Facility
  - Secondary Data Center
  - Temporary Work Space
    - Business Continuity Events/Incident Command
    - Operator Training
    - Other Business Purposes



# Alternatives and Project Elements Considered

- Several alternatives were evaluated to select the preferred solution. The alternatives consisted of two main categories:
  - Alternatives to address need through separate solutions
    - Seek service providers such as “cloud” for secondary data storage needs
    - Procure mobile operations and emergency response units and construct new secondary data center
    - Construct new backup operations and secondary data center and lease emergency work space
    - Construct three separate facilities (backup operations, secondary data center, and emergency response facility)
  - Alternatives to address need through a combined solution.
    - Repurpose existing facility into combined facility
    - Construct new combined backup operations, secondary data center and emergency facility



# Alternatives Review Methodology

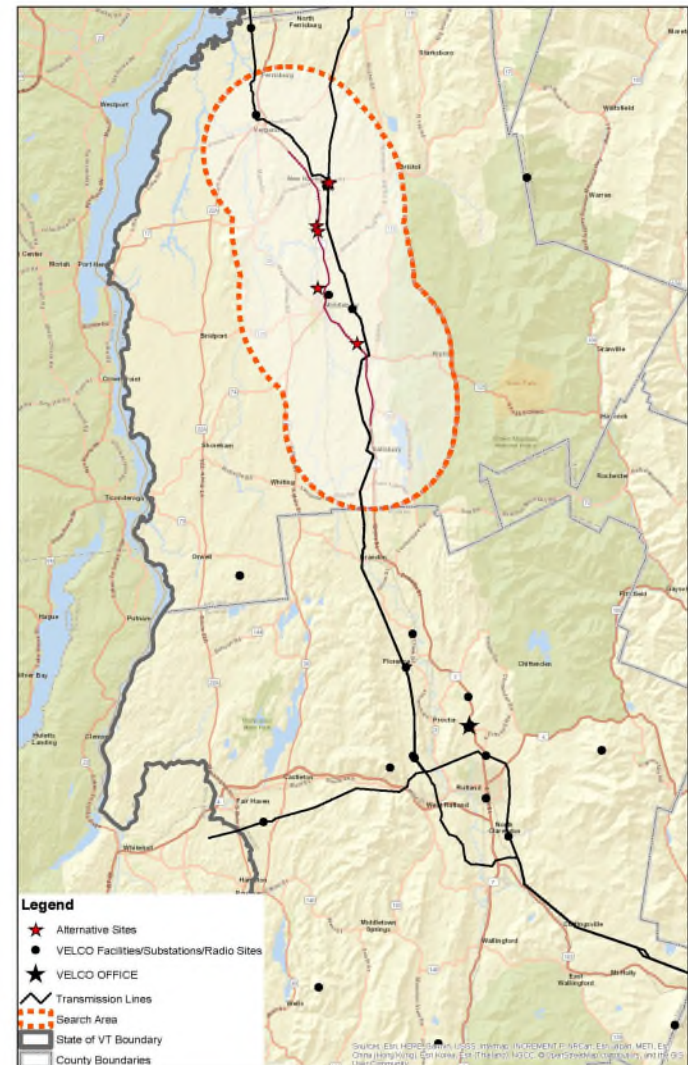
- The alternatives review consisted of the following criteria:

Criteria	Definition
Primary Advantages	Primary positive attributes associated with the alternative.
Primary Disadvantages	Primary negative attributes associated with the alternative.
Major Risks of Alternative	Primary positive attributes associated with the alternative including project and facility usage risks.
Resiliency of the Alternative	Ranking of the overall resiliency of the alternative, which includes a determination of the expected ability of the solution to withstand extreme weather, etc. and support the ability to recover the system.
Dispersed Facilities	Includes a determination of the co-location or separation of facilities.
Estimated Costs	Includes a conceptual estimate in accordance with VELCO's cost-estimating methodology.

- Resulted in the selection of the preferred alternative – (Construct new combined backup control, data center and emergency facility)

# Siting Alternatives

- After the preferred alternative was selected a siting analysis was performed
- Developed siting requirements
  - Information from North American Transmission Forum
  - New England peer utilities
  - Insight from reliability organizations, NPCC, NERC, etc.
  - Business requirements informed by VELCO ERP and BCP
- Developed siting criteria
  - Costs
    - Land acquisition
    - Access
  - Site location
    - Accessibility
    - Travel time
    - Security
    - Distance from hazards
  - Availability of services
    - Water
    - Electric
    - Communication
  - Site characteristics
    - Flood areas
    - Slopes and other hazards/constraints
    - Constructability



# Alternative Siting Results

- Several alternative sites that met the siting criteria were reviewed, including
  - Existing utility properties
  - Lands available for acquisition
- Several alternatives at VELCO New Haven site
  - Use of existing parcels
  - Use of acquired abutting parcels
  - Use of both existing and abutting parcels
- Resulted in the selection of the preferred siting alternative – ***(Construct new combined facility on New Haven parcels)***



# Alternatives Analysis Summary

- Ultimately, the decision to select the proposed solution was based on:
  - Review of solution alternatives that would best meet company needs
  - Development of siting criteria based on industry information
  - Review of alternatives and selection of the preferred solution