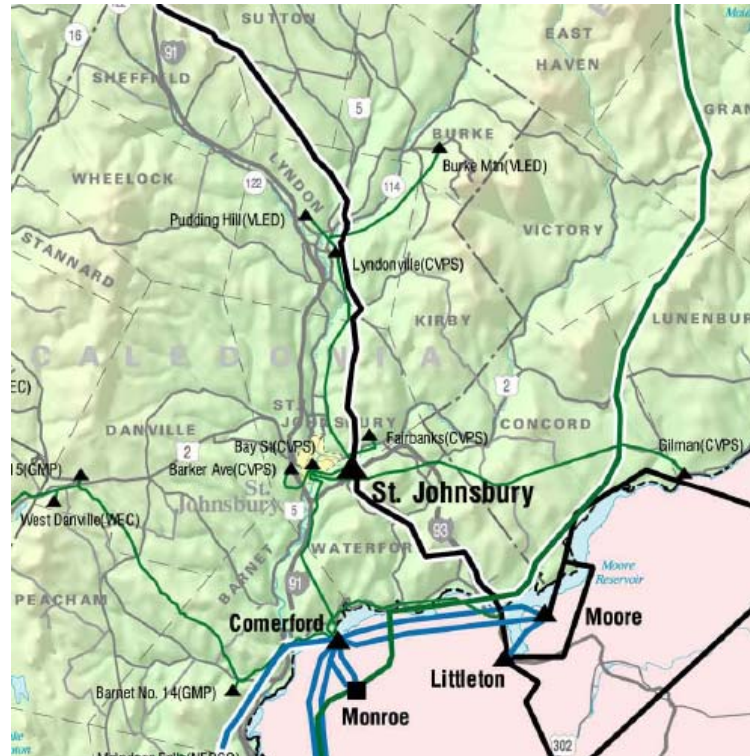


# Lyndonville Electric Department Feasibility Analysis



Presentation to the VSPC  
June 10, 2008

# History

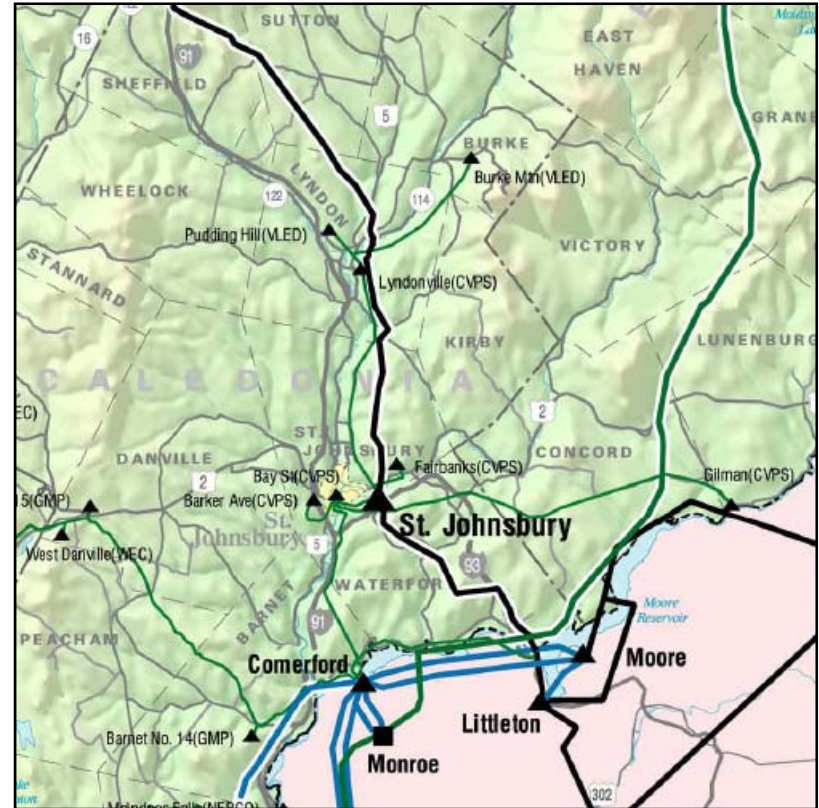
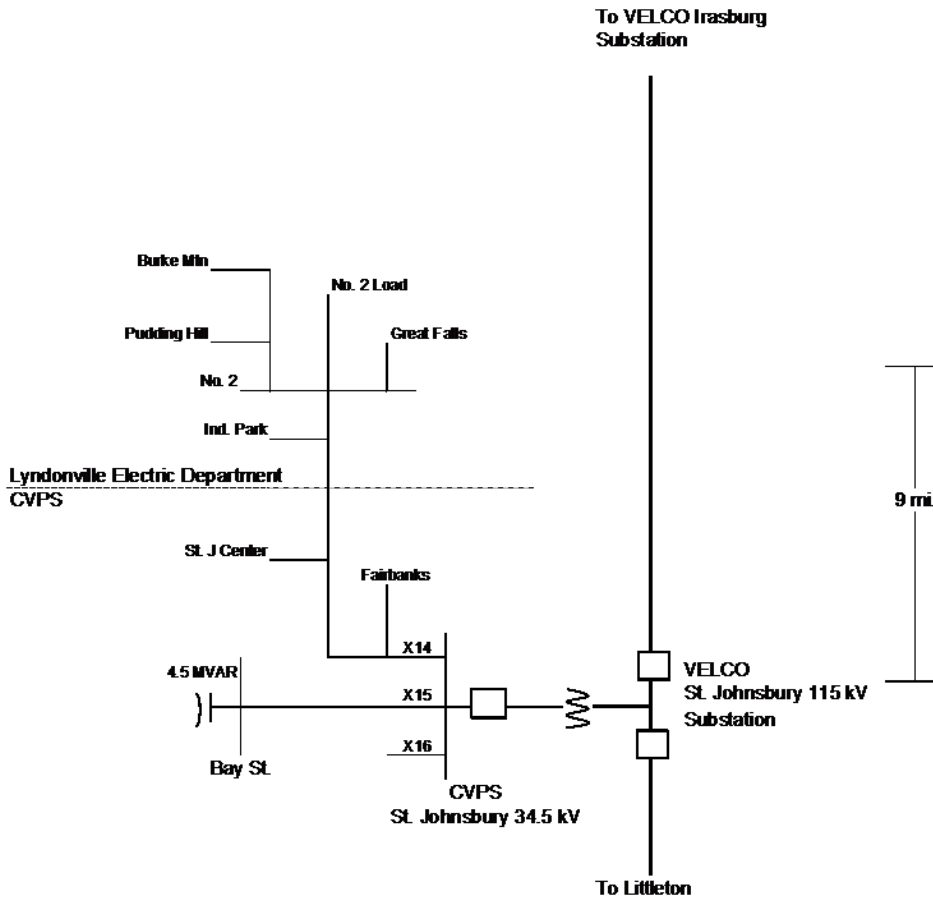
- In 2007 Lyndonville Electric Department (LED) contracted VELCO to analyze both the existing system conditions and the effect of possible load growth within the area.
- LED invited Central Vermont Public Service (CVPS) to participate in the analysis.
- On March 26, 2008 the first version of the Transmission and Distribution (T&D) Analysis was released to LED.

# Presentation Overview

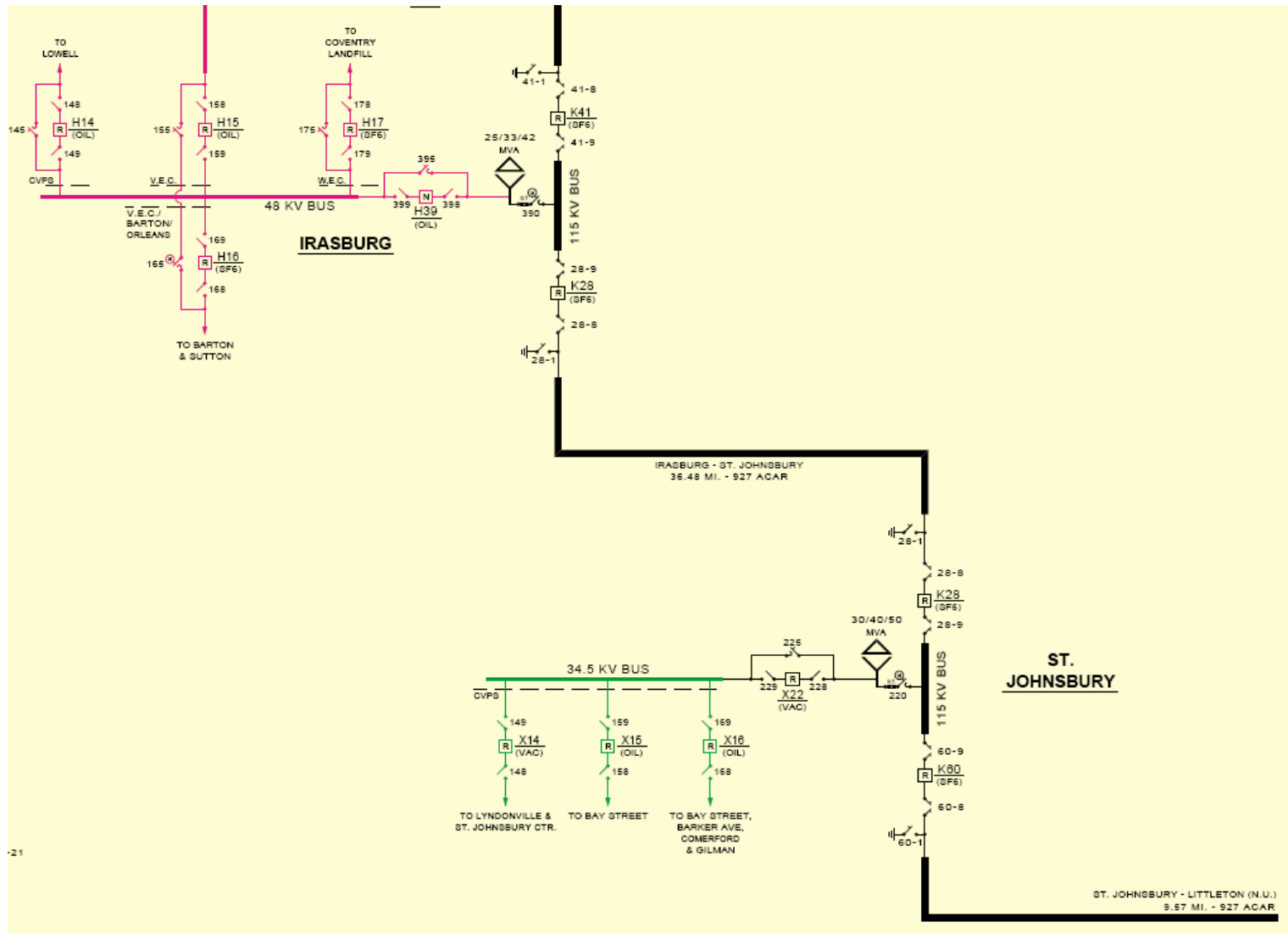
- Existing System Reliability Exposure
- T&D Analysis Performed
- T&D Alternatives Analyzed
- Current Status
- Next steps

# Existing System Configuration

Existing System



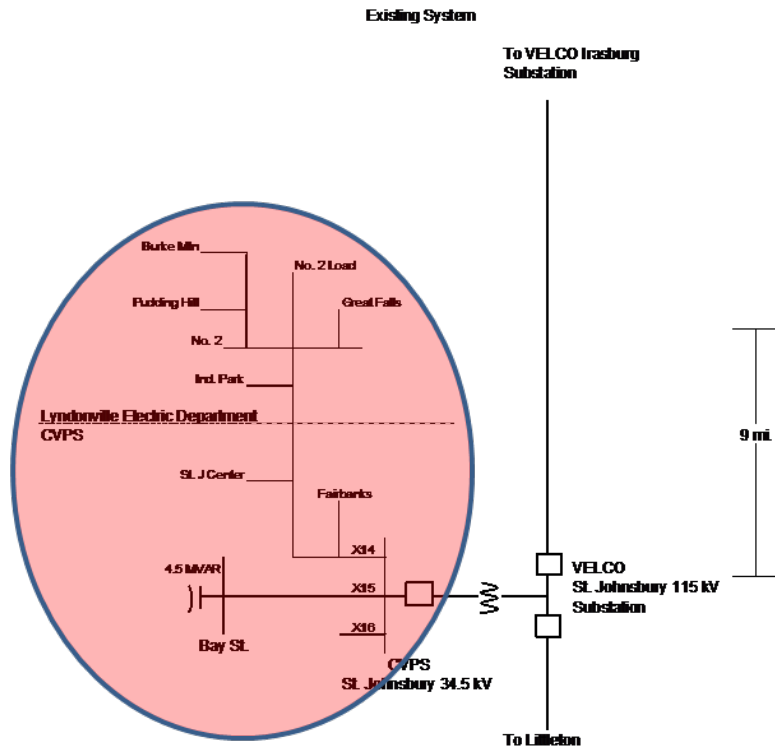
# Existing System Configuration



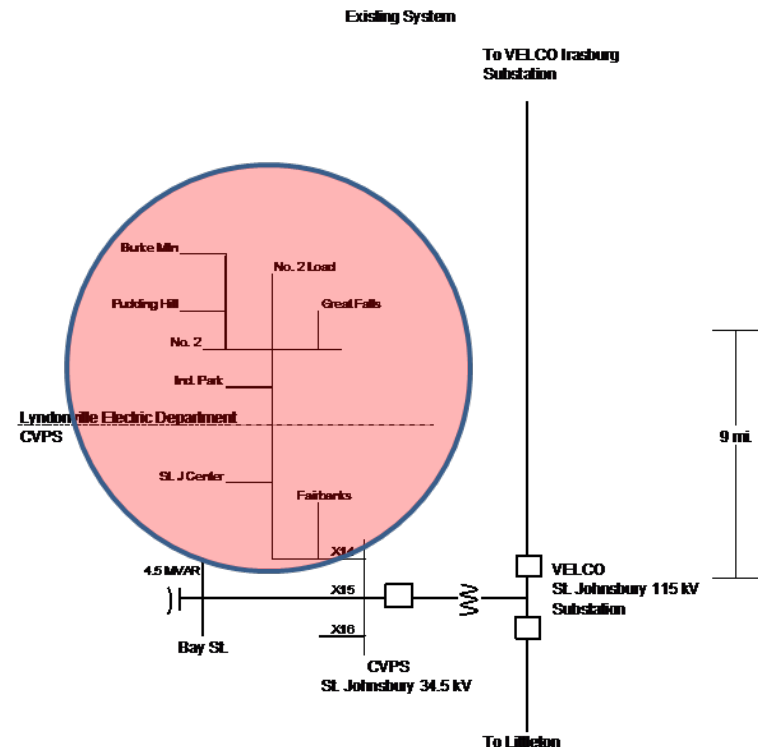
-21

# Existing System Reliability Exposure

## Loss of the St. Johnsburgy Transformer



## Loss of the X14 34.5 kV Line



Note: Loss of the Littleton Source may cause loss of both Lyndonville and St. Johnsburgy due to the Undervoltage Sectionalizing Scheme that would trip the St. Johnsburgy transformer.

# T&D Analysis Performed

- Load Levels Analyzed (Note: assumed LED and CVPS will install capacitor banks to improve power factor):
  - 2007: Non-coincident 32.68 MW Peak at 0.98 p.f.
  - 2012: 46.7 MW at 0.98 p.f.
    - 12.33 MW at Burke new
    - 2% Load Growth on all other 2007 loads
  - 2018: 51.7 MW at 0.98 p.f.
    - 1 MW at Burke New
    - 2% Load Growth on all other 2012 loads
  - 2027: 61.87 MW at 0.98 p.f.
    - 2% Load Growth on all area 2018 loads

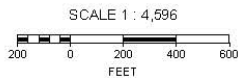
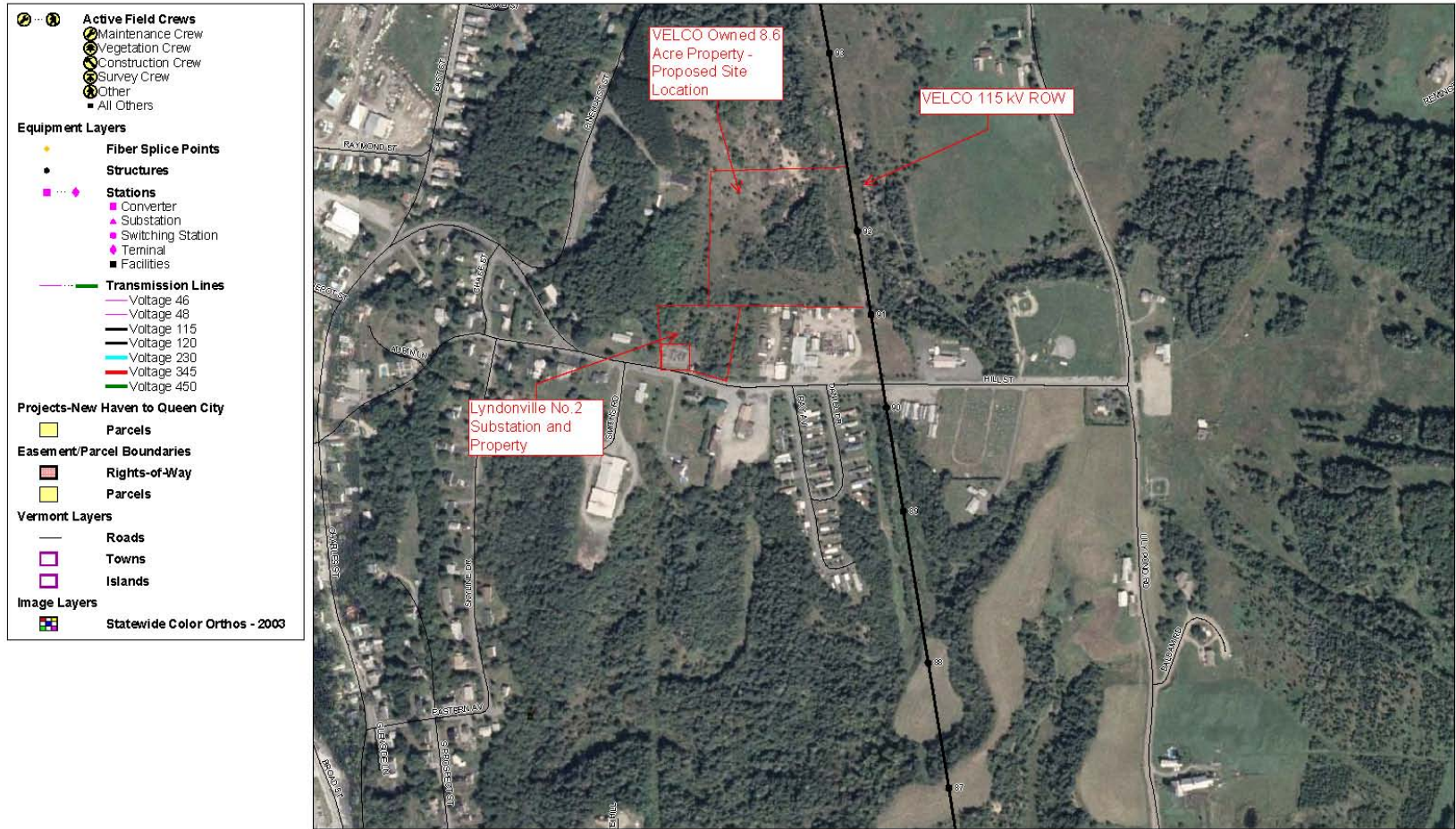
# T&D Alternatives Analyzed

- Lyndonville Location
  - Construction of a new 115/34.5 kV Lyndonville Substation.
- St. Johnsbury Location
  - Expansion of the existing VELCO 115/34.5 kV St. Johnsbury Substation and construction of a second 34.5 kV line between St. Johnsbury and Lyndonville.



# Possible Lyndonville Substation Site

## VELCO Map System



- **Current Status**

- LED and CVPS working together to determine the best transmission alternative for the study area.

- **Next Steps**

- Once a final proposed T&D Alternative is chosen NTA Screening will be performed.
- LED will request that the VSPC schedule a workshop to review both the T&D study and the NTA screening.

- **Questions and/or Comments**