



Vermont System Planning Committee

Ensuring full, fair and timely consideration of non-transmission alternatives to address Vermont electric system reliability challenges.



**QUARTERLY MEETING
JUNE 10, 2008, 9:30 A.M. – 4:00 P.M.
CAPITOL PLAZA HOTEL
MONTPELIER, VERMONT**

Energy Efficiency & Forecasting Subcommittee



- **Geo-targeting. Report by Bruce Bentley on coordination of utility input on EEU geo-targeting**
- **EEU restructuring workshop process: consideration of alternative funding mechanism to fund NTA analysis for bulk system projects**
- **Coordination of demand-side management forecast (EEU) and load forecast (VELCO). Report by Riley Allen, Hantz Pr sum  and Blair Hamilton.**

Coordination of DSM and Load Forecasts



Progress since the Last VSPC Meeting

- ITRON hired by VELCO
- ITRON presented its forecast approach and assumptions to the Energy Efficiency & Forecasting Subcommittee
 - The DPS, EVT, DUs, and public members had an opportunity to comment
- ITRON has considered these comments, and plans to produce a forecast by the end of May

Effects of New Planning Process



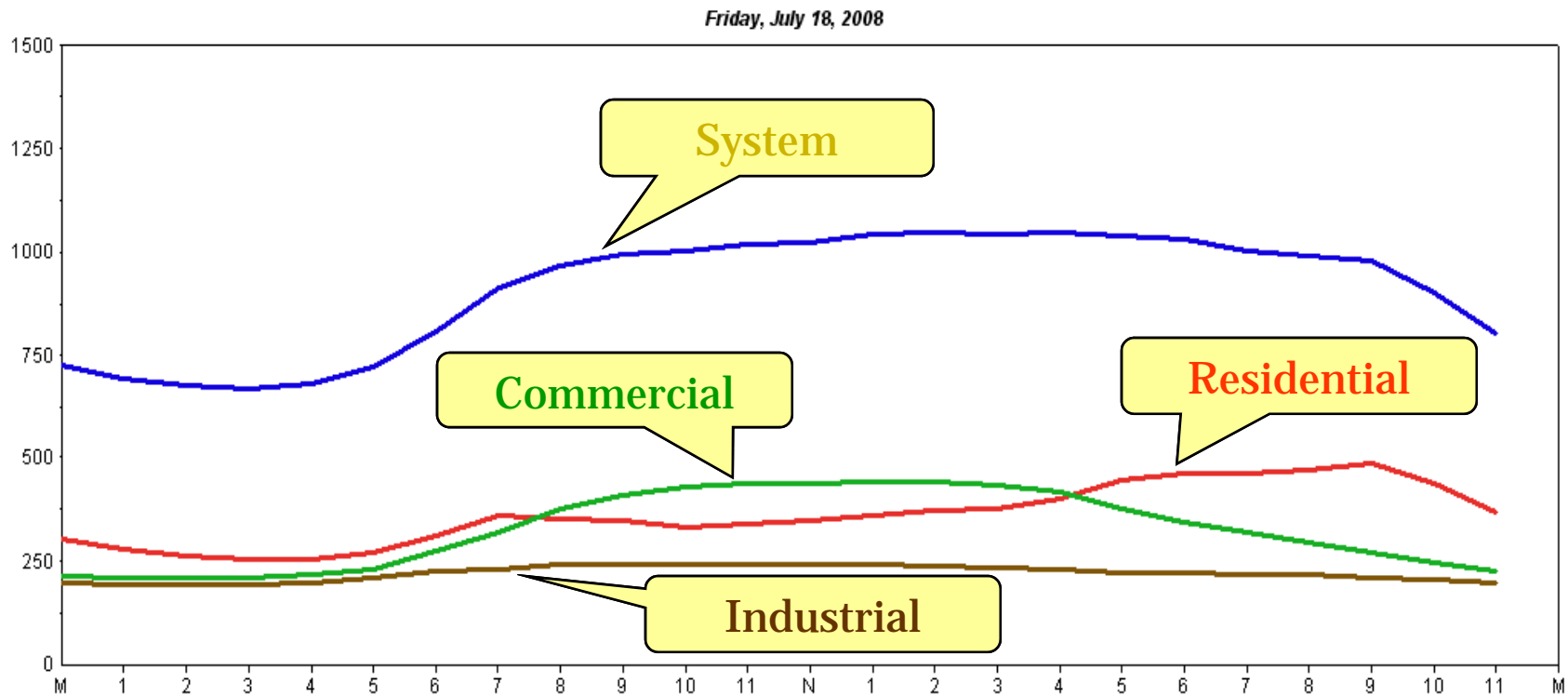
- **Coordination between Load forecasters and DSM forecasters**
 - Ability to determine what elements are included in the peak demand and DSM forecasts
- **VSPC input in forecast approach and assumptions**
 - Opportunity to comment prior to publication of forecast

Summary of Load Forecast Approach



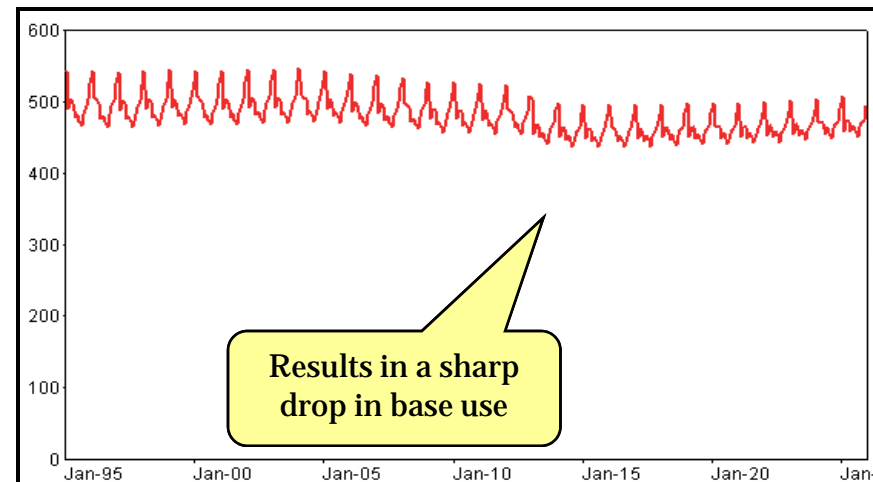
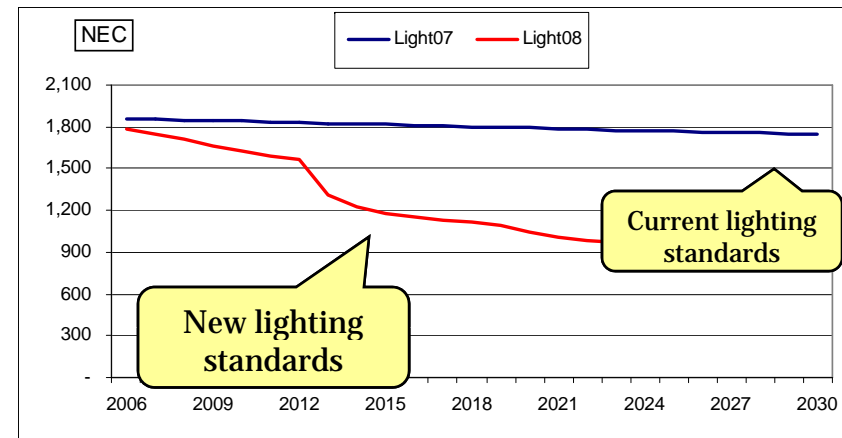
- **Build-up approach**
 - Combine class energy forecasts with hourly profiles
 - Aggregate to system load
 - Find system peak
- **Assumptions**
 - Weather data
 - ✦ Normal weather
 - Economic drivers
 - End-use saturation and efficiency trends
 - Price

Peak Day system Hourly Load profile (MW) – From ITRON

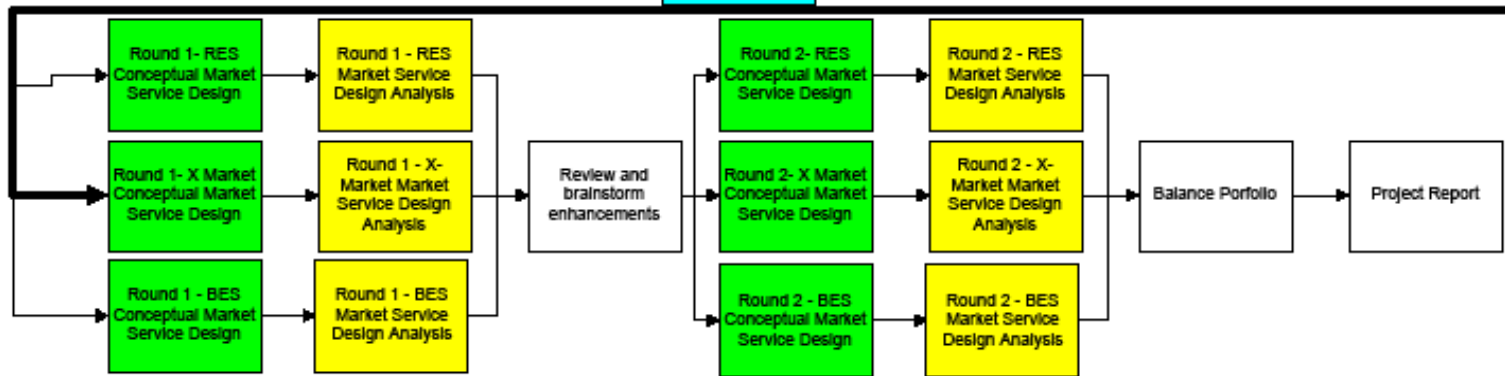
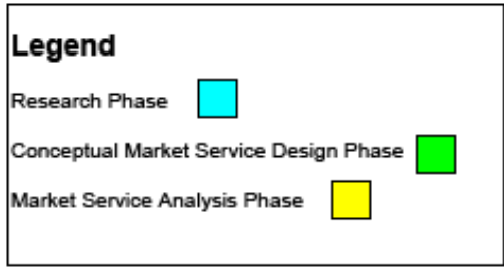
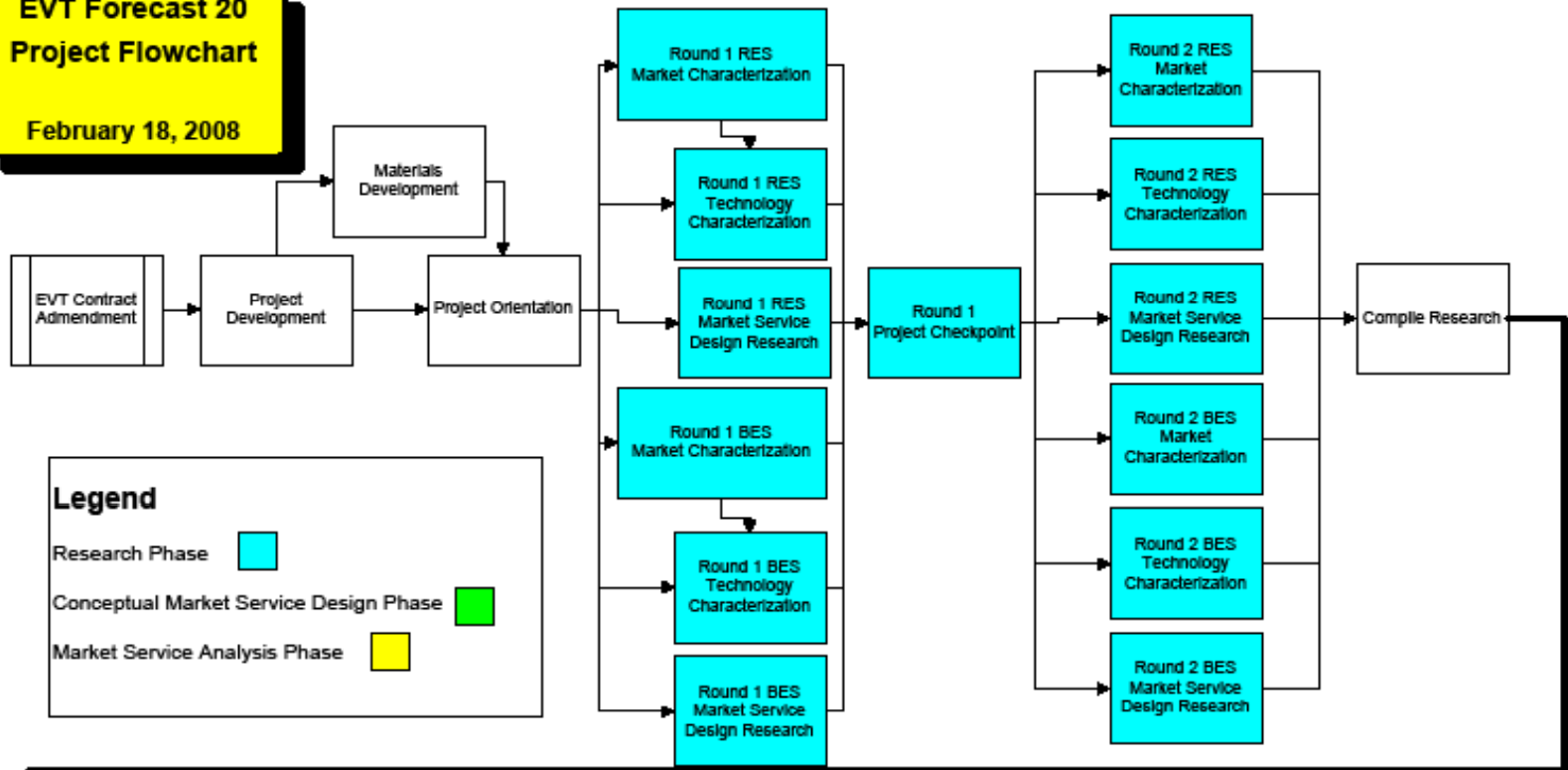


Impact of 2007 Energy Act – Lighting from ITRON

- 2007 Energy Independence and Security Act introduces a number of new appliance efficiency standards
- New lighting standards have the most significant impact on residential load
 - Lighting accounts for approximately 20% of residential “other” use
 - “Other” includes everything other than cooling and heating



**EVT Forecast 20
Project Flowchart**
February 18, 2008



**Form for Selection of Transmission Analysis-Identified
Projects for Non-Transmission Alternative Evaluation**

Identity of the proposed upgrade (description or project number): _____

1. Is the proposed project's cost expected to exceed \$2,000,000? (See note.) Yes...
No...

*If so, check "Yes" and continue to question 2; otherwise, check "No" and
discontinue the alternative analysis screening.*

2. Could elimination or deferral of all or part of the upgrade be accomplished
through the use of non-transmission alternatives? (See note.) Yes...
No...

*If so, check "Yes" and continue to question 3; otherwise, check "No" and
discontinue the alternative analysis screening.*

3. Is the likely reduction in costs from the potential elimination or deferral of
all or part of the upgrade greater than \$1,000,000? (See note.) Yes...
No...

*If so, check "Yes" and proceed to define the scope and timing of non-transmission
alternative analysis; otherwise, check "No" and discontinue the alternative analysis
screening.*

Remember to sign and date this form.

This analysis performed by: _____ on _____
Name Date

Print Name

Non-Transmission Alternatives
Screening Tool – Page 1

Approved tool due to Public
Service Board by 6/20/08

Notes, Examples, and Descriptions

- Line 1 Any transmission project whose capital cost is expected to exceed \$2 million (in year 2007 dollars, adjusted for escalation in future years using the Handy Whitman transmission cost index), including any reasonably foreseeable related projects, sub-projects, and multiple phases, should be reviewed for the applicability of non-transmission alternative analysis.
- Line 2 Non-transmission alternatives should be considered if the project can be altered or deferred with a reduction of existing peak loads by 25%. Recognizing that deployment of a load reduction program in a specific area takes time to organize and implement, the following assumptions including time and accrued load reduction should be considered when examining the load reduction:
- | Period | Magnitude of load reduction |
|----------|-----------------------------|
| 1 year | 3% of peak load |
| 3 years | 15% of peak load |
| 5 years | 20% of initial peak load |
| 10 years | 25% of peak load |
- Line 3 The \$1 million is in year 2007 dollars, adjusted for escalation in future years using the Handy Whitman transmission cost index.

Non-Transmission Alternatives Screening Tool – Page 2

Approved tool due to Public Service Board
by 6/20/08

Procedures Subcommittee



- **Information Management Protocol**
 - Deadline for filing with PSB: June 20, 2008
 - Confidentiality Agreement is being developed
- **Revisions to Rules of Procedure will be filed with the Public Service Board after adoption**

Public Participation Subcommittee



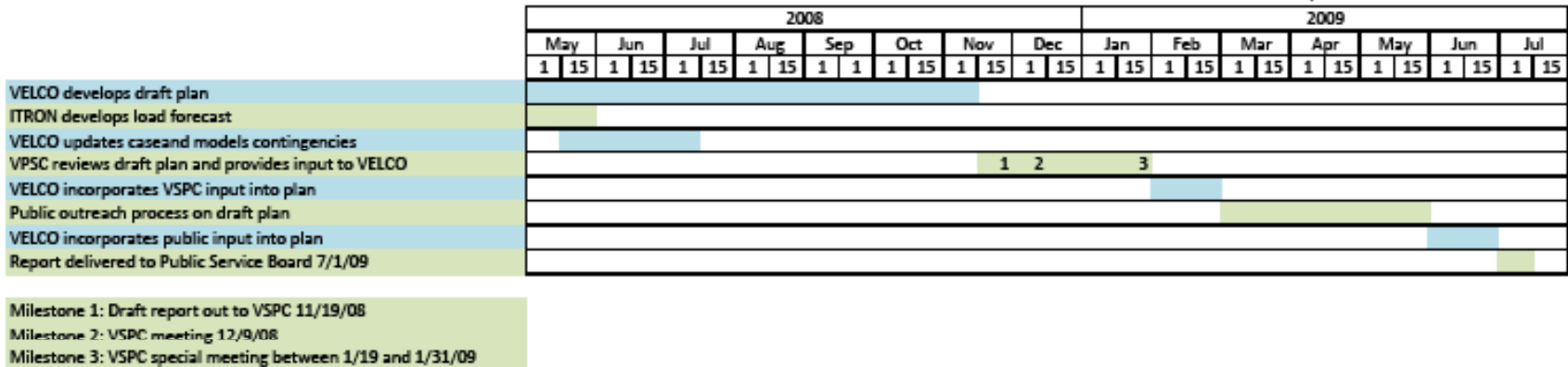
- Provided input on website redesign, particularly focused on improving information aimed at the public audience.
- Working on a general public information package to increase awareness of VSPC by key stakeholder groups, such as planners, energy committees, etc.
- Preparing for public outreach on 2009 Long Range Transmission Plan.

L RTP VSPC and Public Input Timeline



- 4/08 – 11/19/08 VELCO drafts plan
- 11/19/08 – 1/30/09 VSPC comment period
- 2/1/09 – 2/28/09 VELCO incorporates VSPC input
- 3/1/09 – 5/30/09 Public input process
- 6/1/09 – 6/30/09 VELCO incorporates public input
- 7/1/09 VELCO submits plan to Public Service Board

TIMELINE FOR VSPC AND PUBLIC INPUT INTO VELCO LONG-RANGE TRANSMISSION PLAN DUE JULY 1, 2009

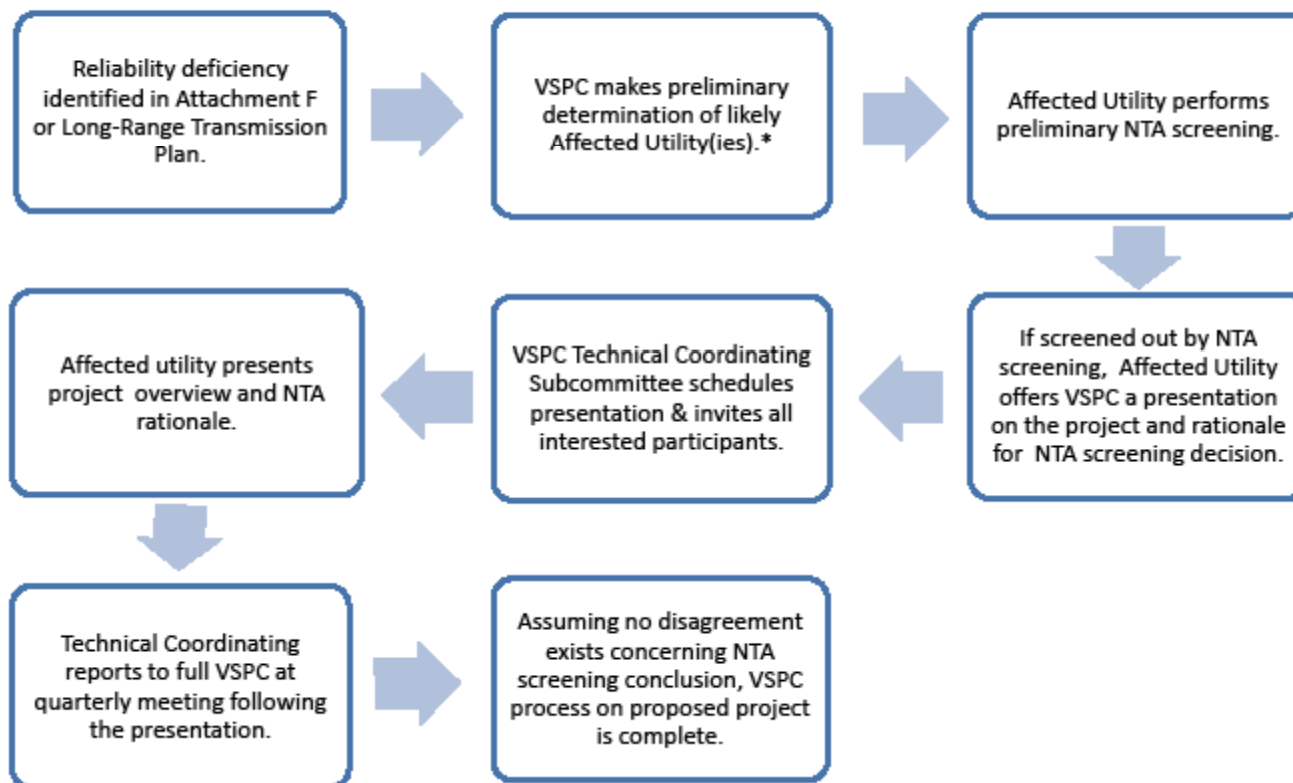


Technical Coordinating Subcommittee



- **Process flowcharts**
- **Scheduling for VSPC input to 2009 LRTP**
- **Schedule for project consideration based on timelines in Project Priority List**

VERMONT SYSTEM PLANNING COMMITTEE PROCESS FOR REVIEW OF PROJECTS
THAT ARE SCREENED OUT BY NON-TRANSMISSION ALTERNATIVE (NTA) SCREENING



*Paragraph 14 provides a mechanism for preliminary Affected Utility determination through the Long-Range Transmission Plan review process. No explicit mechanism is identified for preliminary Affected Utility determination, prior to the 2009 Long-Range Transmission Plan review, for projects identified in Attachment F. However, a subsequent stage of the VSPC process (Step 7) provides for Affected Utility determination for Attachment F projects.

Lyndonville Electric Department Feasibility Analysis



Presentation to the VSPC
June 10, 2008

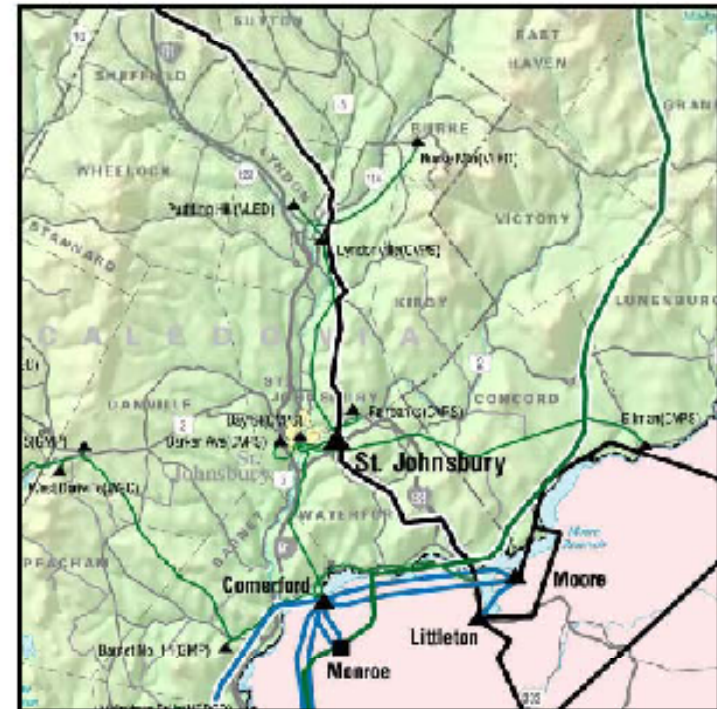
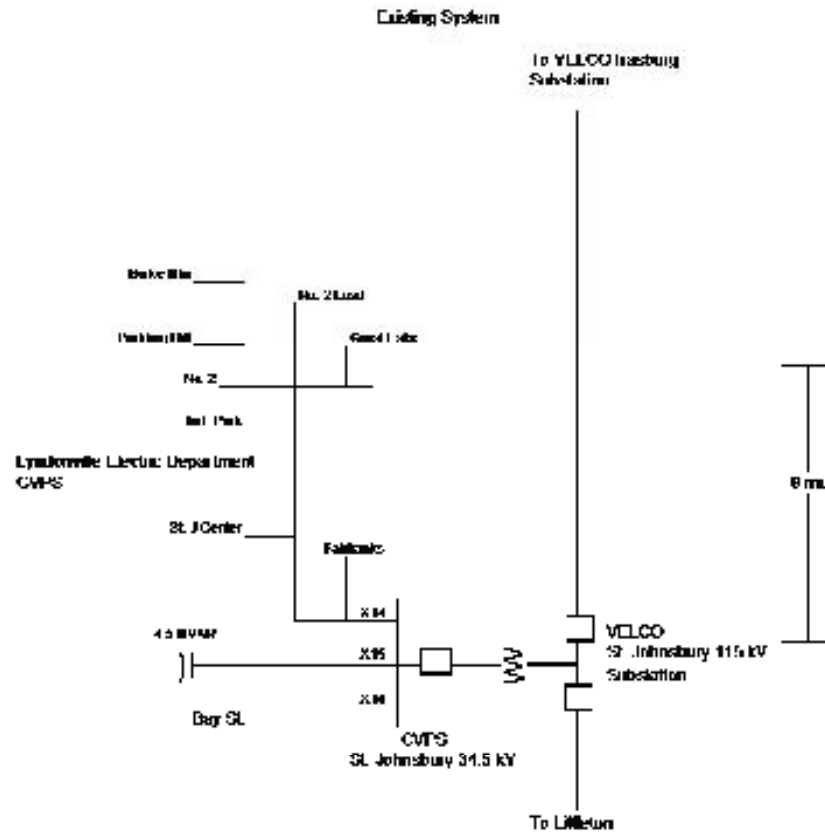
History

- 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.

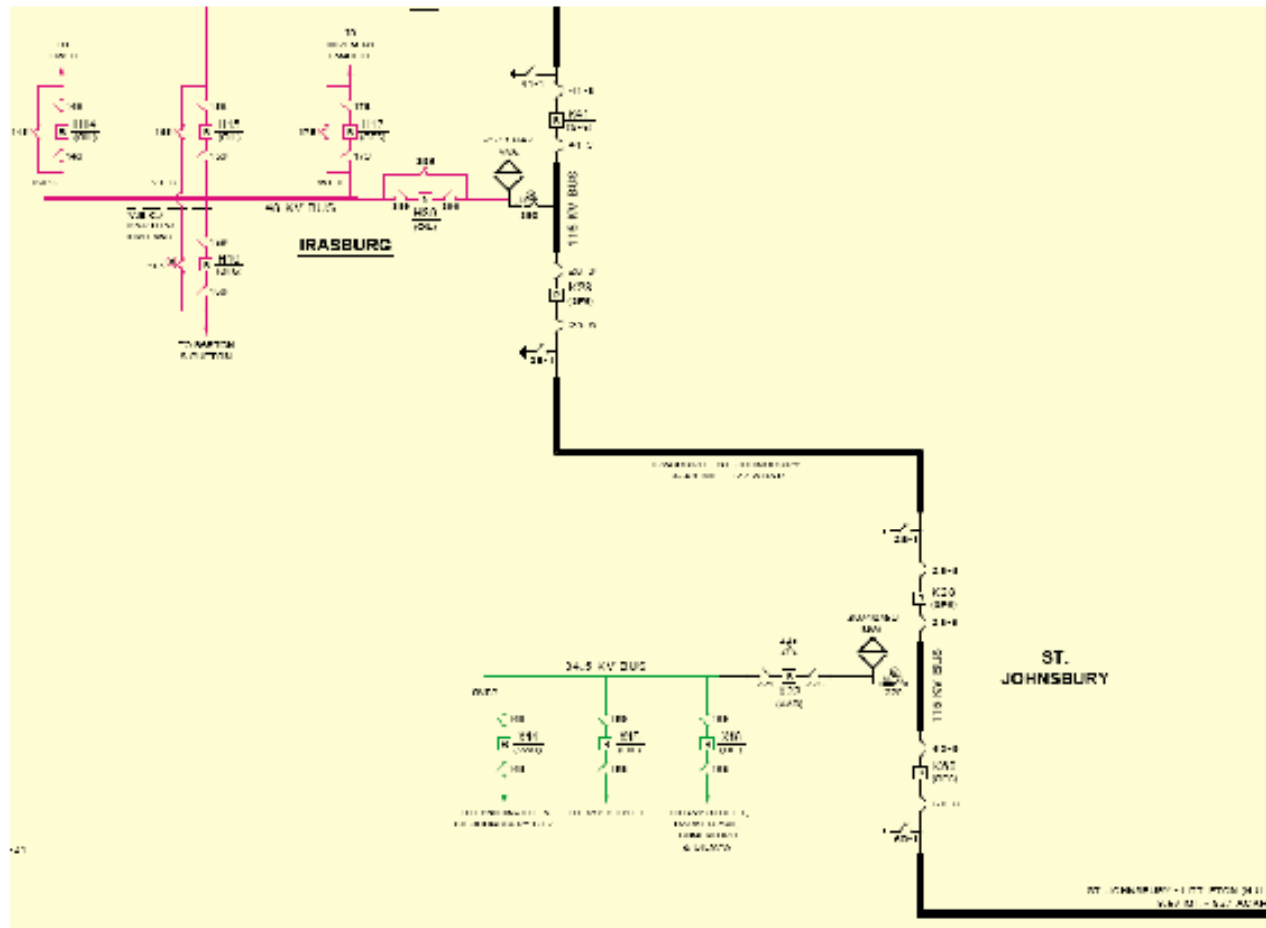
Presentation Overview

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

Existing System Configuration

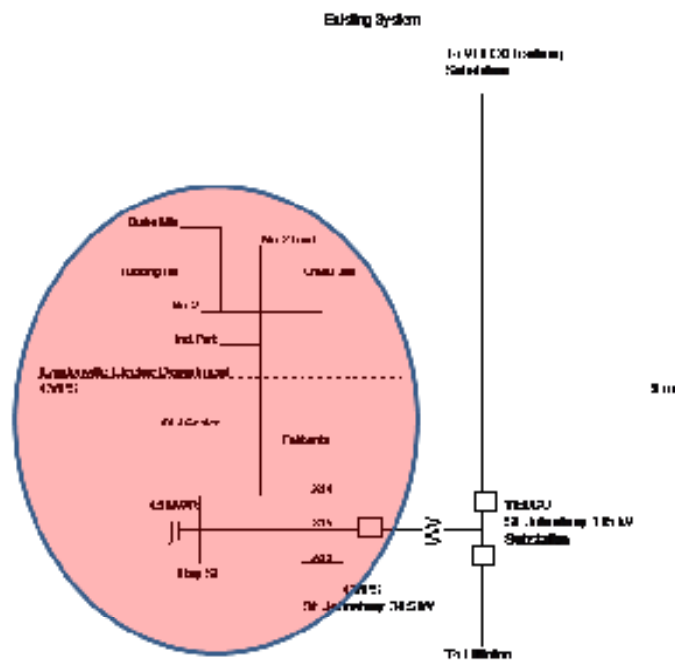


Existing System Configuration

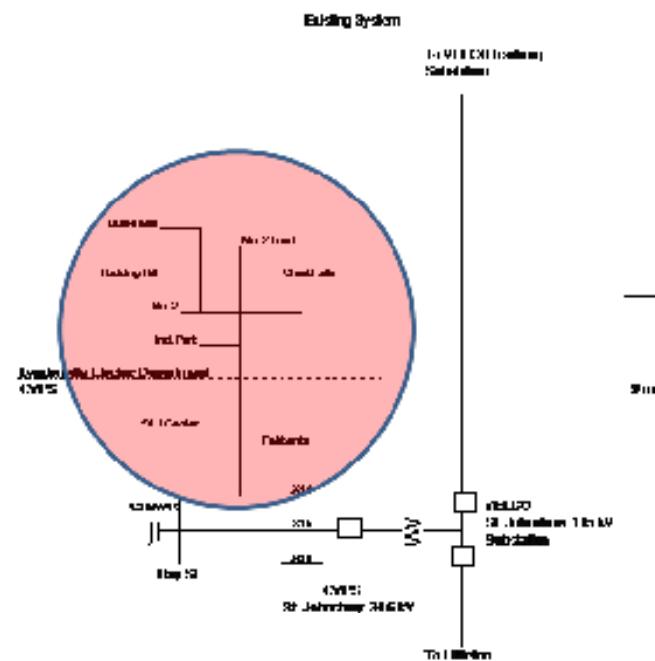


Existing System Reliability Exposure

Loss of the St. Johnsbury Transformer



Loss of the X14 34.5 kV Line



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

T&D Analysis Performed

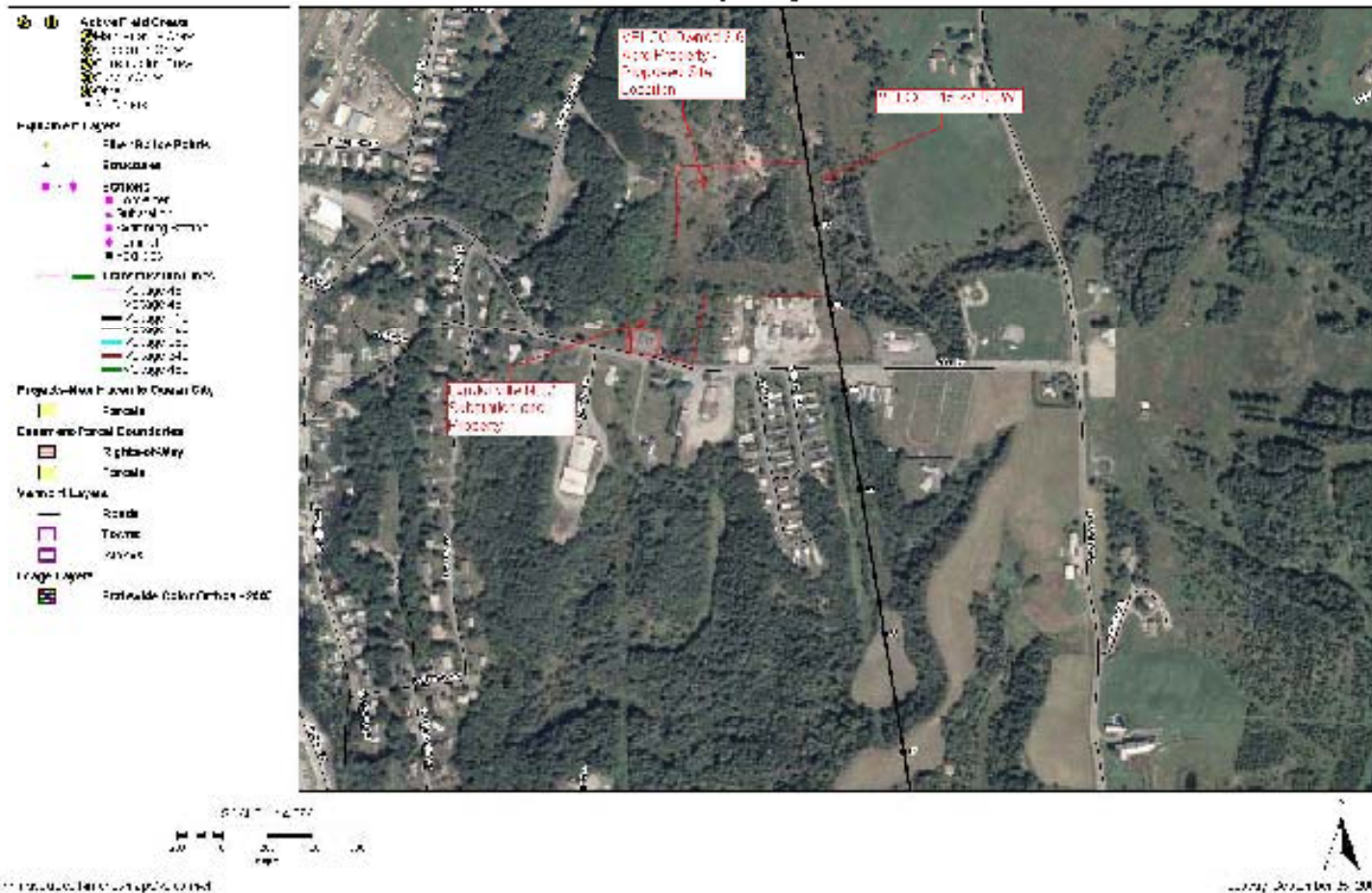
- Load Levels Analyzed (Note: assumed LED and CVPS will install capacitor banks to improve power factor):
 - 2007: Non-coincident 32.68 MW Peak at 0.98 p.f.
 - 2012: 46.7 MW at 0.98 p.f.
 - 12.33 MW at Burke new
 - 2% Load Growth on all other 2007 loads
 - 2018: 51.7 MW at 0.98 p.f.
 - 1 MW at Burke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