Finding the Right Balance: Meeting the Need in Southwest Connecticut

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Northeast Utilities System

Overview

- Southwest Connecticut's (SWCT) urgent needs
- The Connecticut siting process
- Finding the right balance

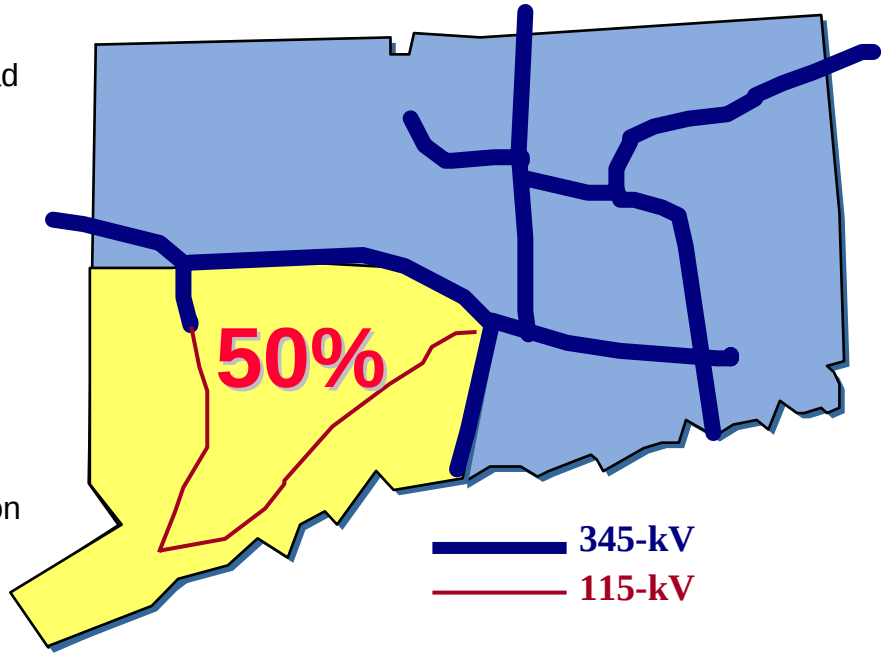
The Need: An Inadequate Transmission System

Reliability Concerns

- An inadequate system serves 50% of Connecticut's load
- New England's 345kV system stops at SWCT's border
- Does not meet national reliability standards
- SWCT noted as a major reliability concern at federal, regional and local levels

Economic Impacts

- Rising potential for wide area blackouts
- Relies on old, costly and inefficient generation plants
- Threat to the area's economy with increasing congestion costs and potential for market power
- Limits the potential of New England's competitive wholesale markets



SWCT improvements have been a top priority in each of ISO-NE's last four regional transmission expansion plans.

What's Been Done So Far …

Demand Side Management

- Conservation: 500MW of load savings since 1990 from a $600M investment
- ISO-NE Demand Response Program (SWCT): 138MW in 2004

Generation

- New/proposed generation facilities: 1,335MW
- Installed emergency generation: approx. 100MW in 2004

Transmission

- Line/equipment enhancements: 57 projects over 30 years

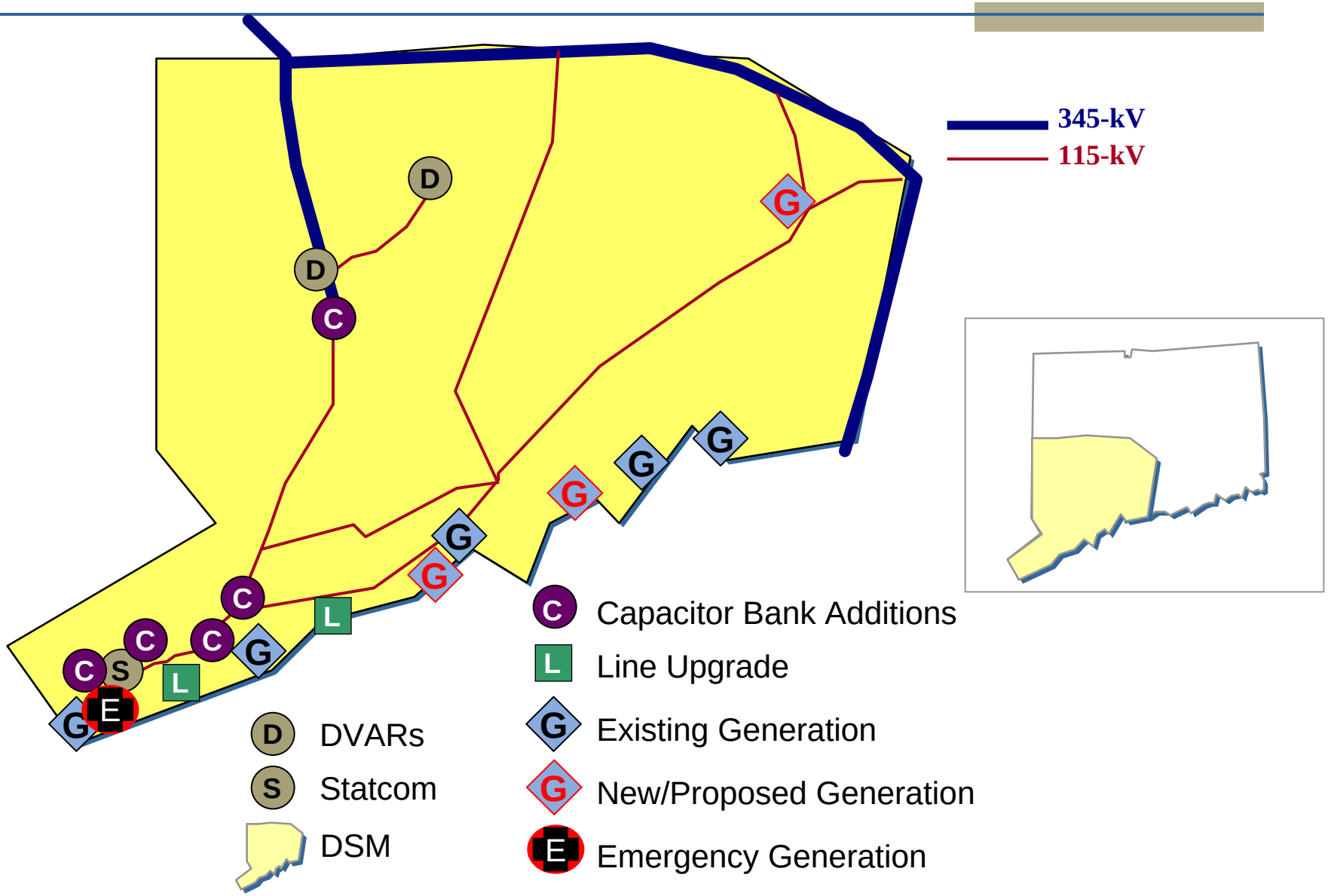
State-of-the-Art Technology

- D-VARS – voltage support equipment
- Statcom – fast-acting, automatic high-voltage regulator

D-VARS devices are installed at a substation.

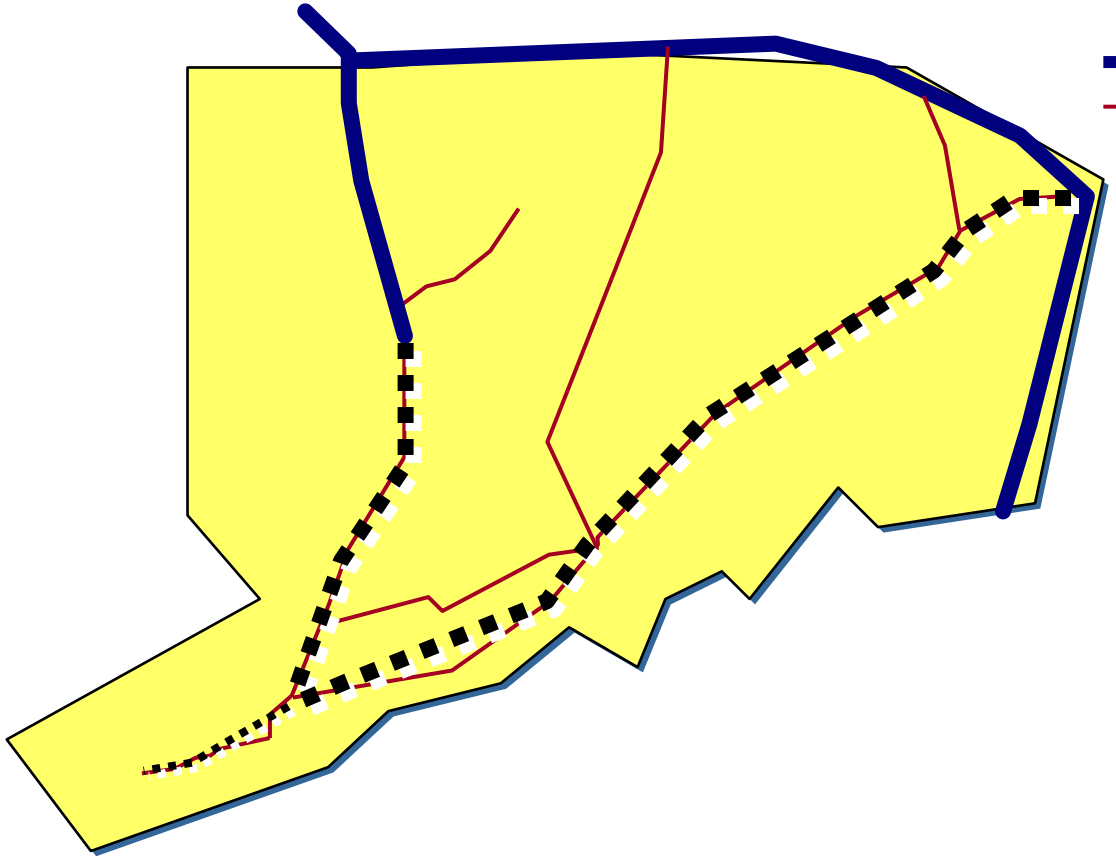
STATCOM equipment is also housed at a substation.

The Alternatives and Short-Term Fixes Have Been Exhausted.



We Can No Longer Delay or Avoid Upgrading the Transmission System.

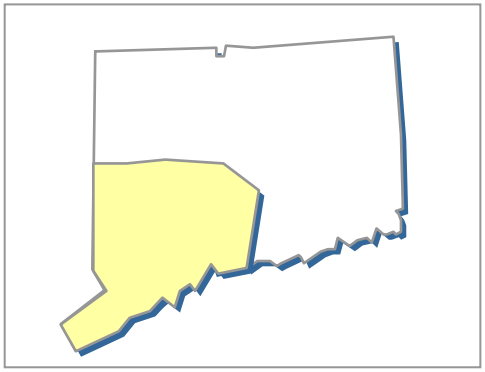
Proposed Upgrades to SWCT



Existing

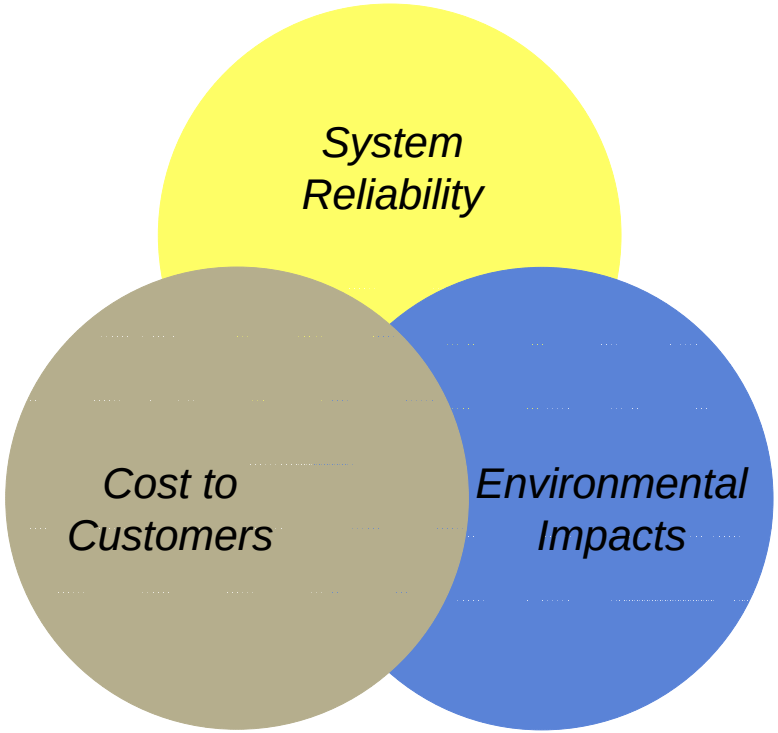
345-kV

115-kV



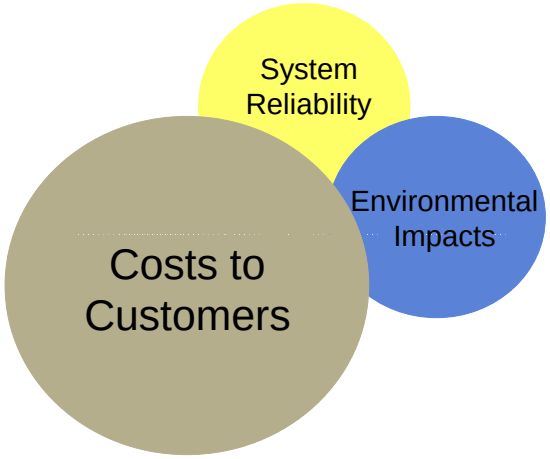
Siting Process: Historical Perspective

- Connecticut Siting Council was established in 1971.
- The Council uses a formal adjudicatory process that can take up to 12 months.
- The process is open to all interested stakeholders.
- Until 2004, the law required that the Council balance:

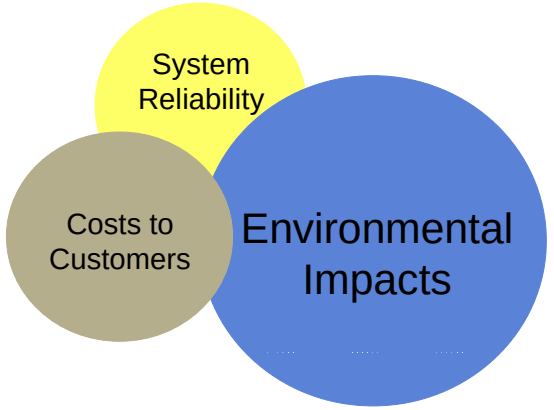


The Definition of "Balance" Depends on Your Perspective.

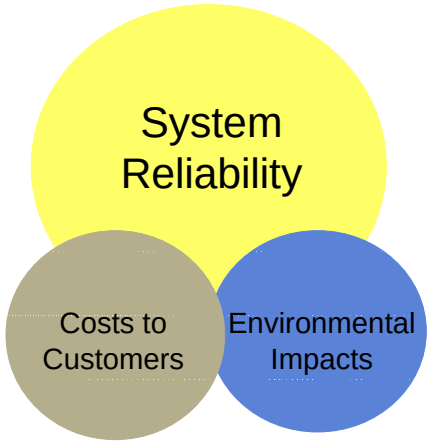
For many outside SWCT…



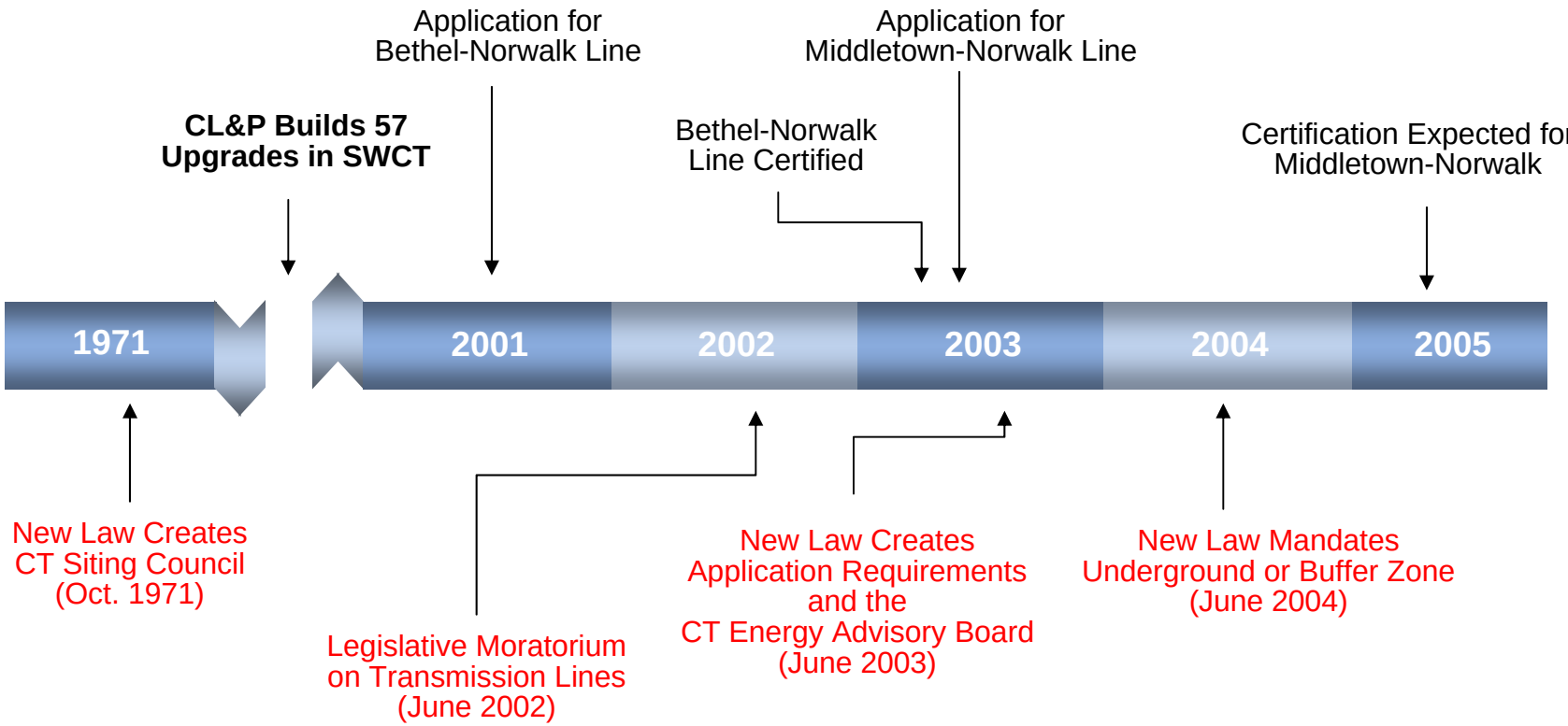
For many local opponents…



For ISO New England…

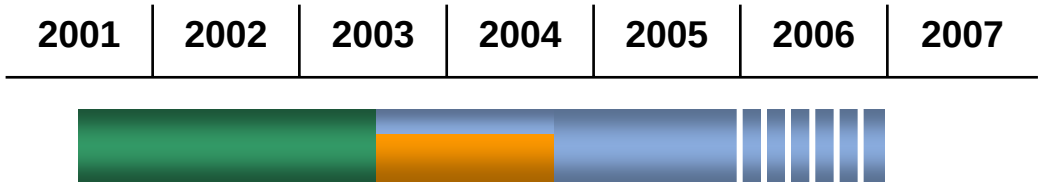


Evolution of Connecticut's Siting Process

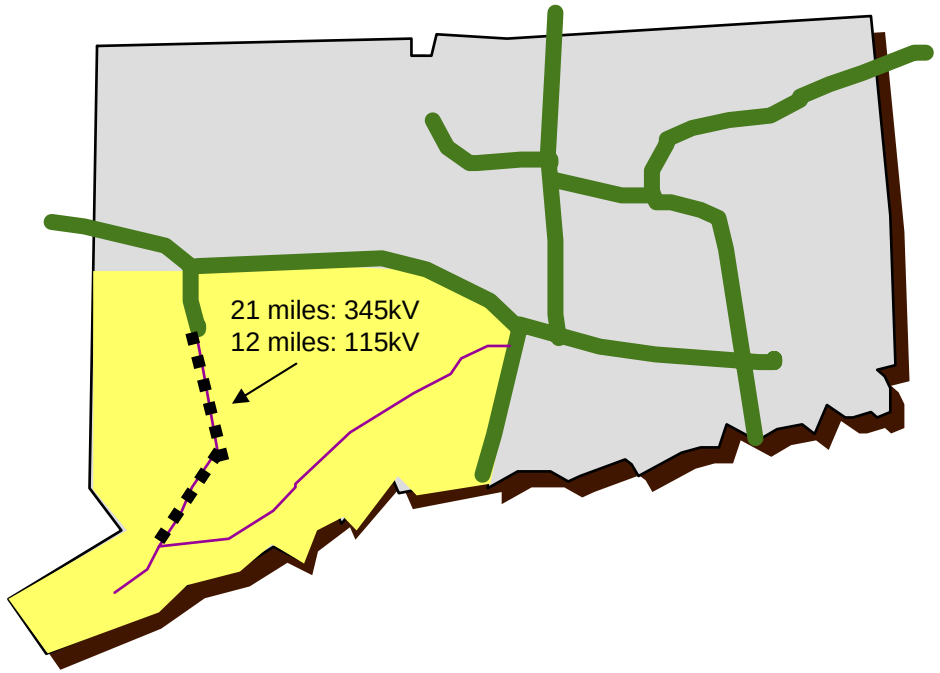


The process works well when used as originally designed.

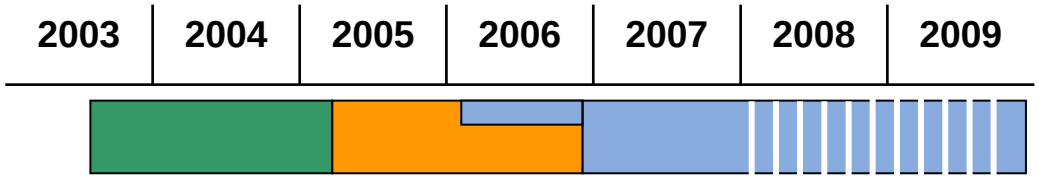
Bethel-Norwalk Project Status

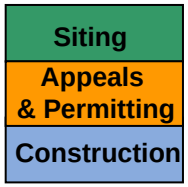


- July 2001 - Municipal Consultation begins
- October 2001 - Application is filed with the CSC
- July 2003 - CSC certifies project
- August 2004 - Court appeal dismissed
- Future -- CSC approves remaining detailed plans



Middletown-Norwalk Project Status

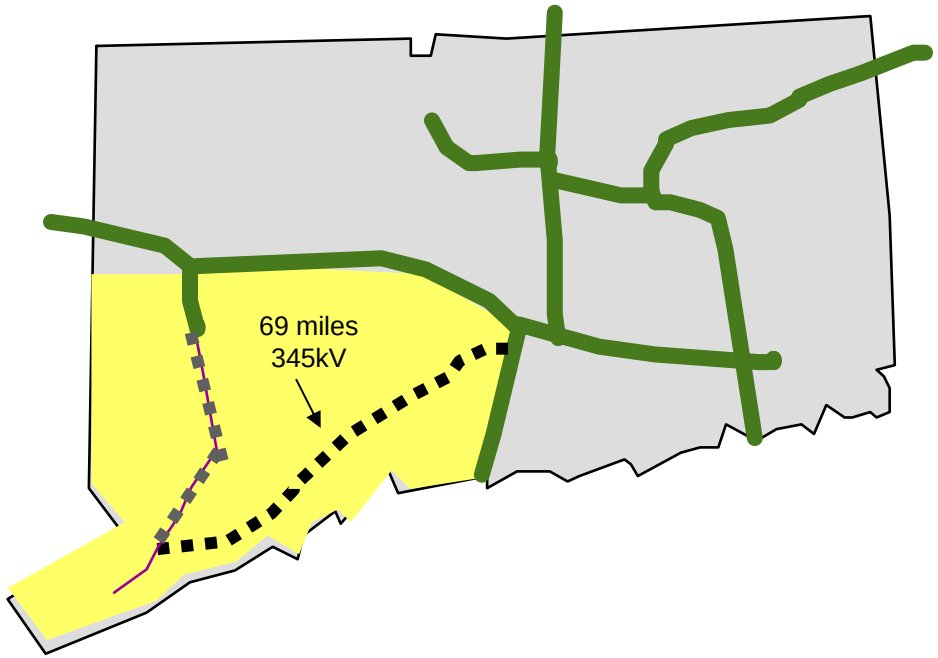




- May 2003 - CL&P and UI begin Municipal Consultation process
- October 2003 - CL&P and UI file Application with the CSC
- Dec. 2003 - February 2004 - CSC holds 8 public meetings
- March 2004 - CSC begins adjudicated hearings

The Siting Council proceeding to date has included:

- 12 volume application filing
- 19 days of adjudicated hearings
- 413 interrogatories
- Dozens of “homework assignments”



Many Route Options Were Analyzed Prior to Filing the Application.

Middletown-Norwalk Application

Preferred Route:
- 69 miles (45 miles OH and 24 miles UG)
- Acquire 12.6 acres ROW easements
- Purchase 17.7 acres for substations

Alternative A:
- 73 miles (60 miles OH and 13 miles UG)
- Acquire 61.6 acres ROW easements
- Purchase 19.5 acres for substations

Alternative B:
- 74 miles (72 miles OH and 2 miles UG)
- Acquire 29 homes
- Acquire 121.8 acres ROW easements
- Purchase 21.5 acres for substations

Routes considered but deemed not viable:
- **Highways: Rt. 15, I-91, I-95**
- **Railroads: "airline" route, Conrail, Metro North**
- **Undersea**
- **"East Shore"**

The Benefits and Drawbacks of the Technology Options Vary Greatly.

Technology Option	*Cost*	*Reliability/ Operability*	*Concerns*
Overhead	●	●	Viewscape; EMF
Underground	○	◎	EMF; constructability
OH/UG	?	?	Combination of above
Statcoms	◒	◎	Unproven technology w/multiple statcoms in close proximity
DC “Light”	◎	◒	Unproven technology; generation interconnection difficulties

Together, We Can Find the Right Balance.

- We have a public service obligation to keep the lights on.
- We can no longer delay or avoid upgrading the system.
- We are committed to help find the right balance – reliability, costs and environmental impact.