

Green Island Power Authority

Transmission Voltage Support System Project

October 2006
(Contract signed October 2006)

Presented by:



Green Island Power Authority

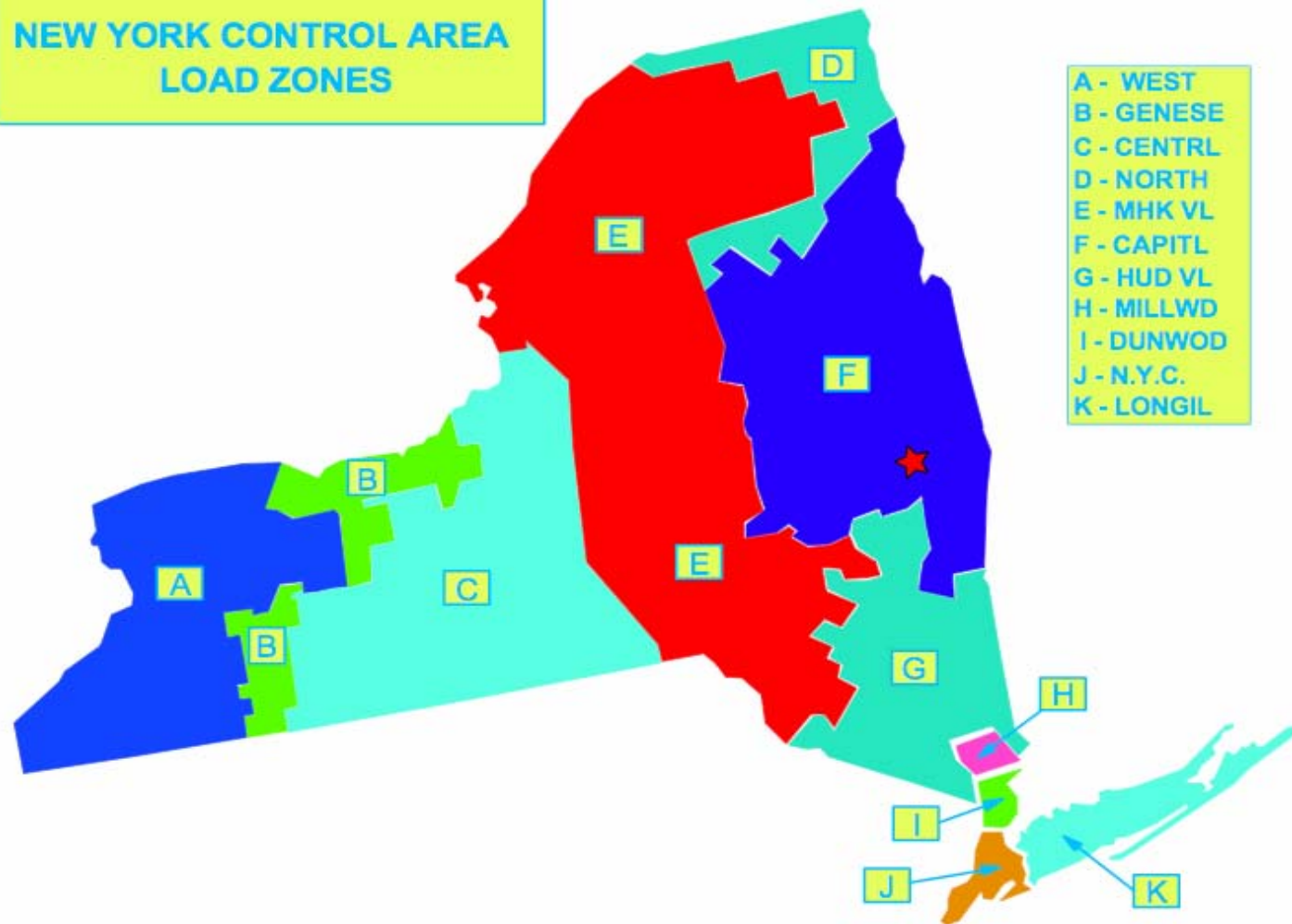
■ History

- Capital Region of New York State
- 1895
- 1985
- 2000

■ Service profile

- 1,700 customers
- Rapid industrial and commercial growth
 - 2.0 MW in 2000
 - 4.5 MW in 2006
 - 10.0 MW in 2009
 - 30.0 MW in 2016

NEW YORK CONTROL AREA LOAD ZONES

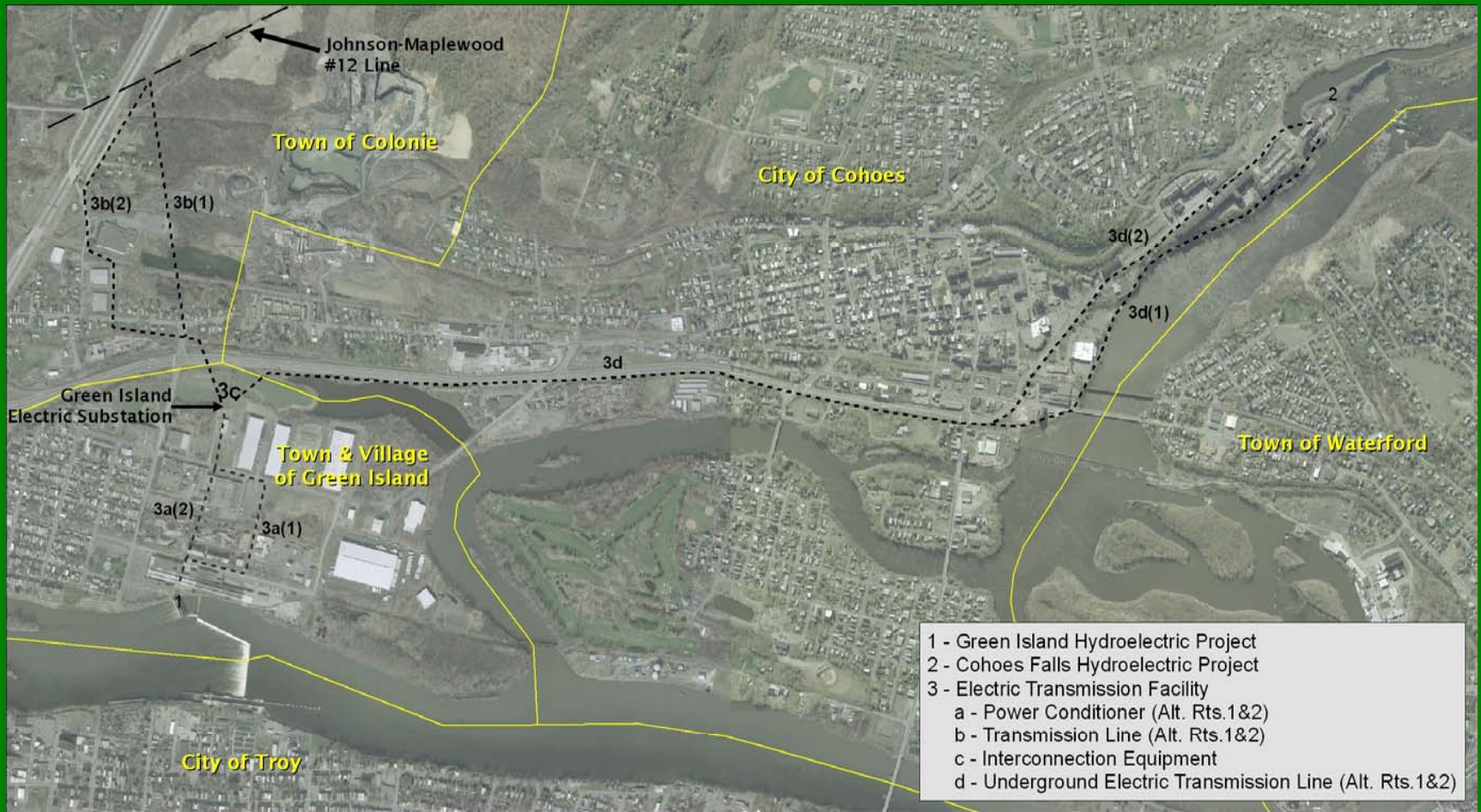


Problem

- Weak transmission interconnection
- Increased load growth
- Increased power quality requirements
- Typical of many small municipal utilities

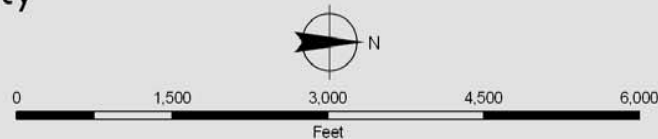
Ten Year Infrastructure Plan

- Generation
 - Green Island Hydro
 - Expansion from 4.5 MW to 10.0 MW
 - Cohoes Falls Hydro
 - New construction - 100 MW
- Transmission
 - Current 34.5 kV interconnect with National Grid
 - Planned 115 kV interconnect (2009?)
 - Potential 2nd generation HTSC link to 100 MW hydro
- Control and quality
 - Industrial load expansion requires high power quality
 - Emergency islanding capability



Green Island Power Authority Green Energy Project

October, 2006



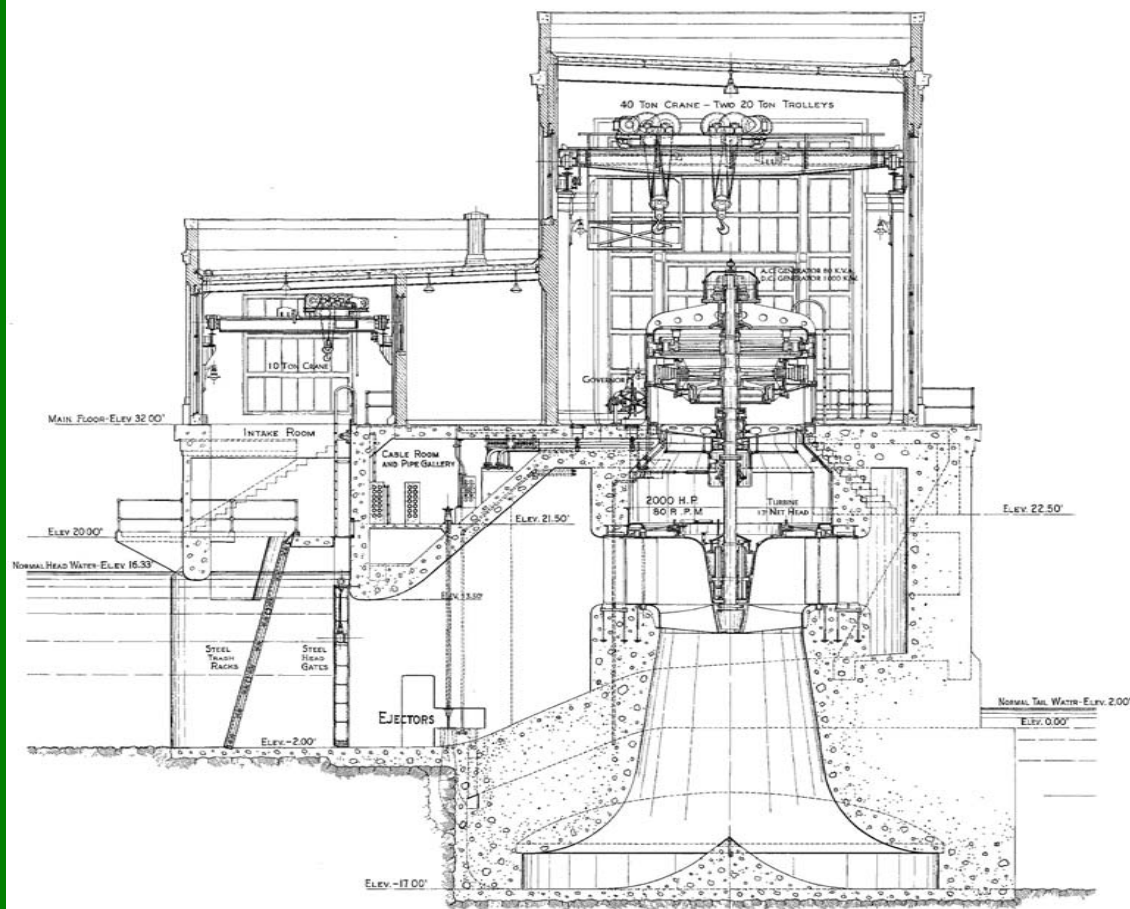
Prepared by:
 Albany Engineering
Corporation

Transmission Voltage Support System - Focus

- “Injection” point
- Realtime stepless VAR control
- Upgrade path
- Leverage existing infrastructure

TVSS - Elements

- Hydro generators
 - 4 @ 2,800 kVA/1,800 kVA
 - Expand existing VAR capability
 - Stability, excitation and cooling
- Transmission tie
 - Reconfigure hydro tie to GIPA 34.5 kV system
 - Phase 2 - 115 kV interconnect
- Control
 - Power quality monitoring
 - Stepless control of hydro voltage support including “look forward provision”



CROSS SECTION
HYDRO-ELECTRIC STATION AT GREEN ISLAND, N.Y.
HENRY FORD & SON
 INCORPORATED
 ENGINEERS & BUILDERS
 JANUARY 1922

SCALE OF FEET



Questions
