



2024 VT Long-Range Transmission Plan
Transmission needs & modeling solutions

VSPC Technical Working Group

June 13, 2024

Study Scenarios

- **Peak Load**

- VT Roadmap / Policy forecast scenario
- Continued Growth / Low forecast scenario
- Summer, Winter
- 2033, 2043

- **Spring Daytime Load**

- Low load
- Solar PV: 500 - 1300 in 100 MW increments
- Other behind-the-meter generation resources at full capacity

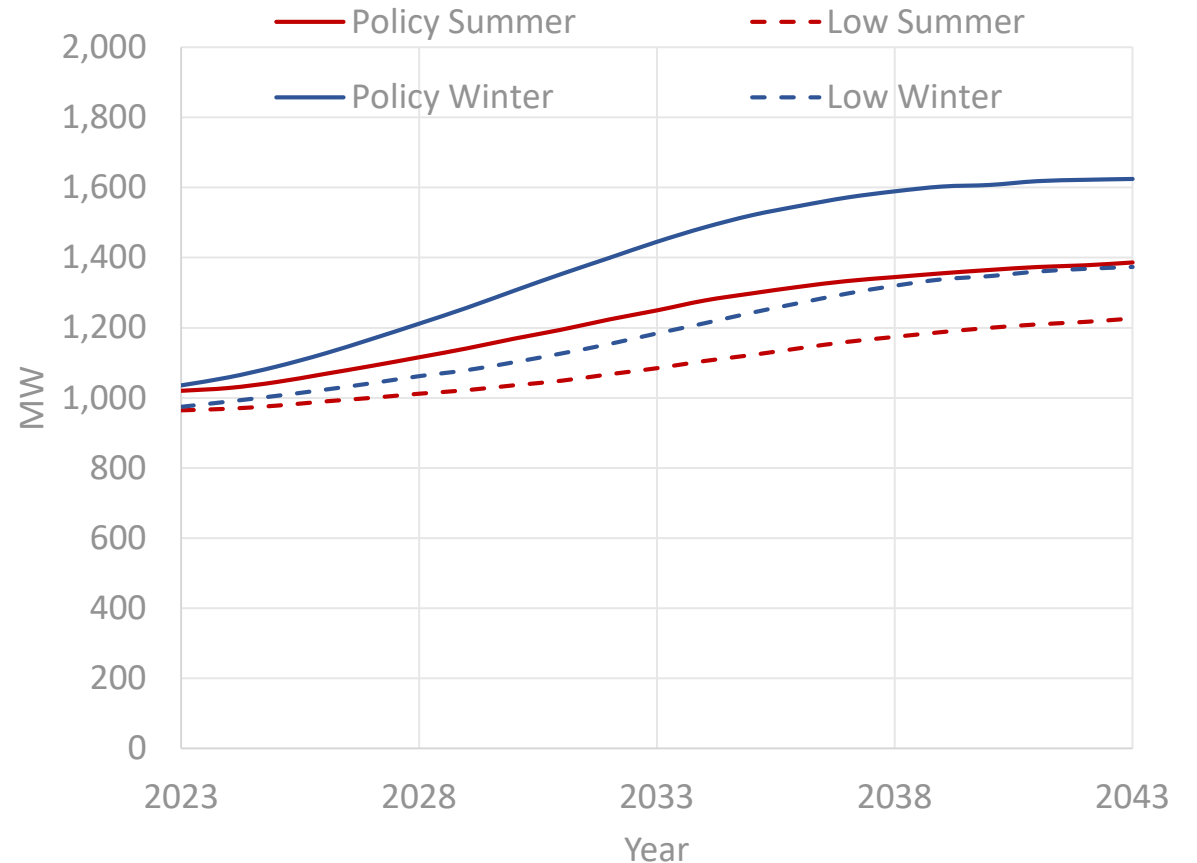
VT Peak Load Forecasts

- VT Roadmap (Policy)

- Annual sales of HP increase to 18k by 2029
- Non-fleet EVs grow to 90% of vehicles by 2043
- Fleet EVs 100% electrification between 2038 and 2045

- Continued Growth (Low)

- Annual sales of HP remain at 10.5k
- Non-fleet EVs grow to 60% of vehicles by 2043
- Fleet EVs constant at 2032 level through 2043



RESULTS

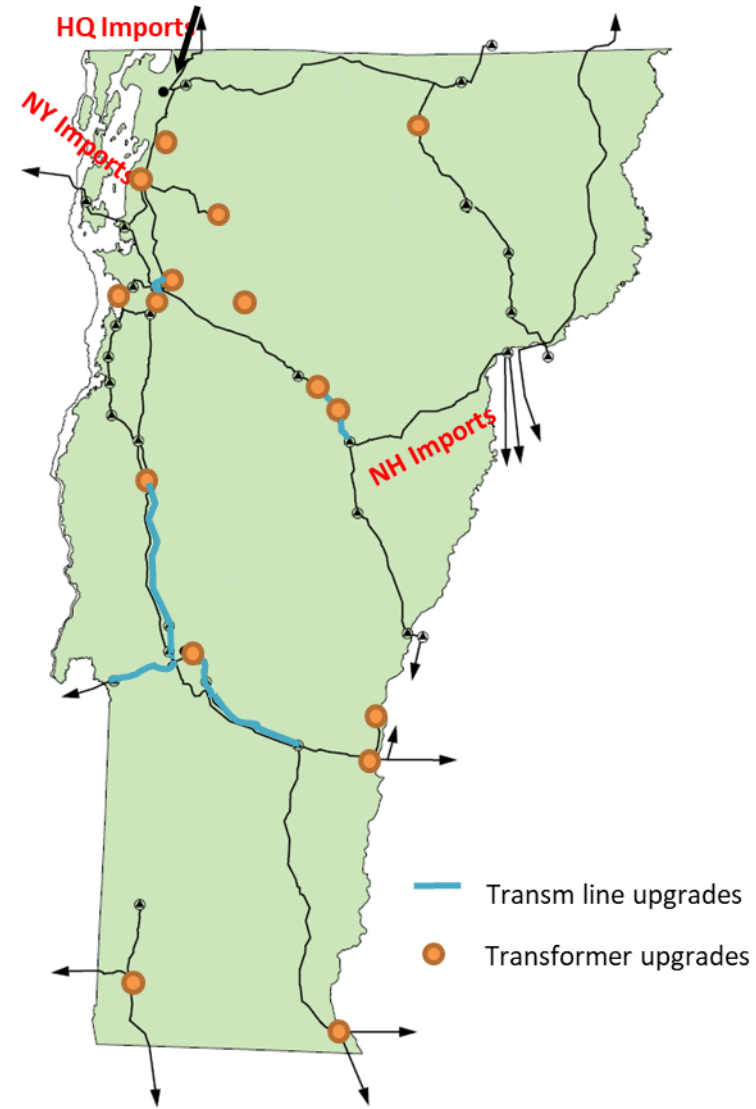
VT ROADMAP

LOAD GROWTH

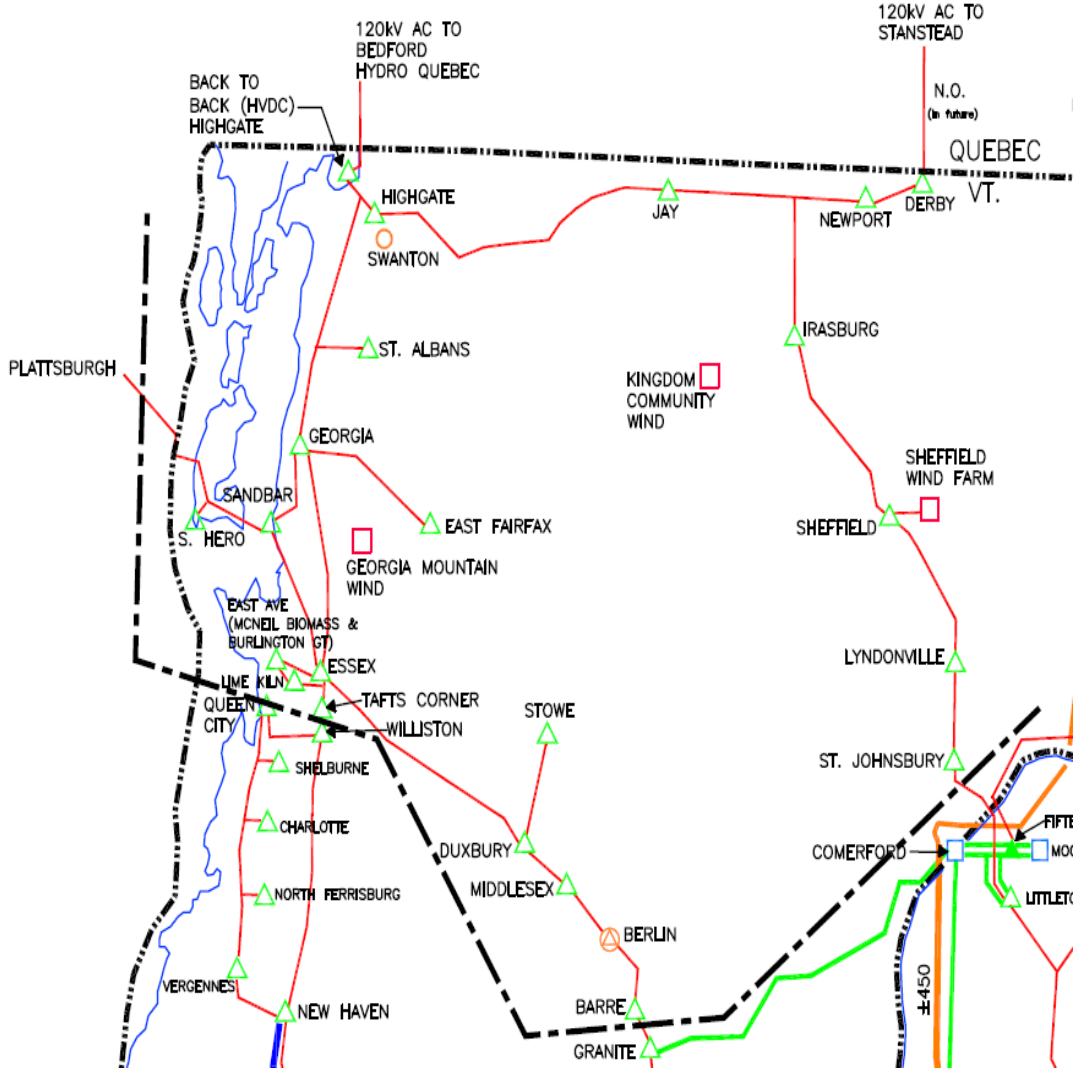
SCENARIO

Policy Scenario 2043

- 75 miles of overloaded transmission lines
- 19 overloaded transformers

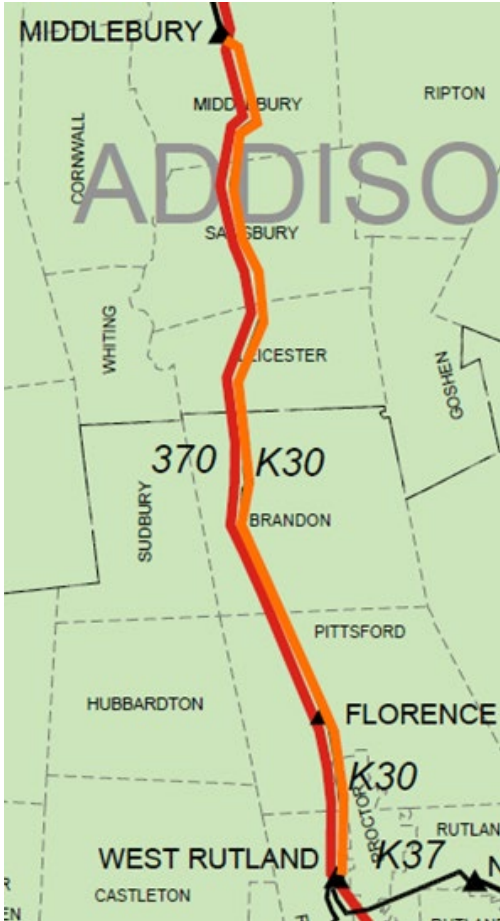
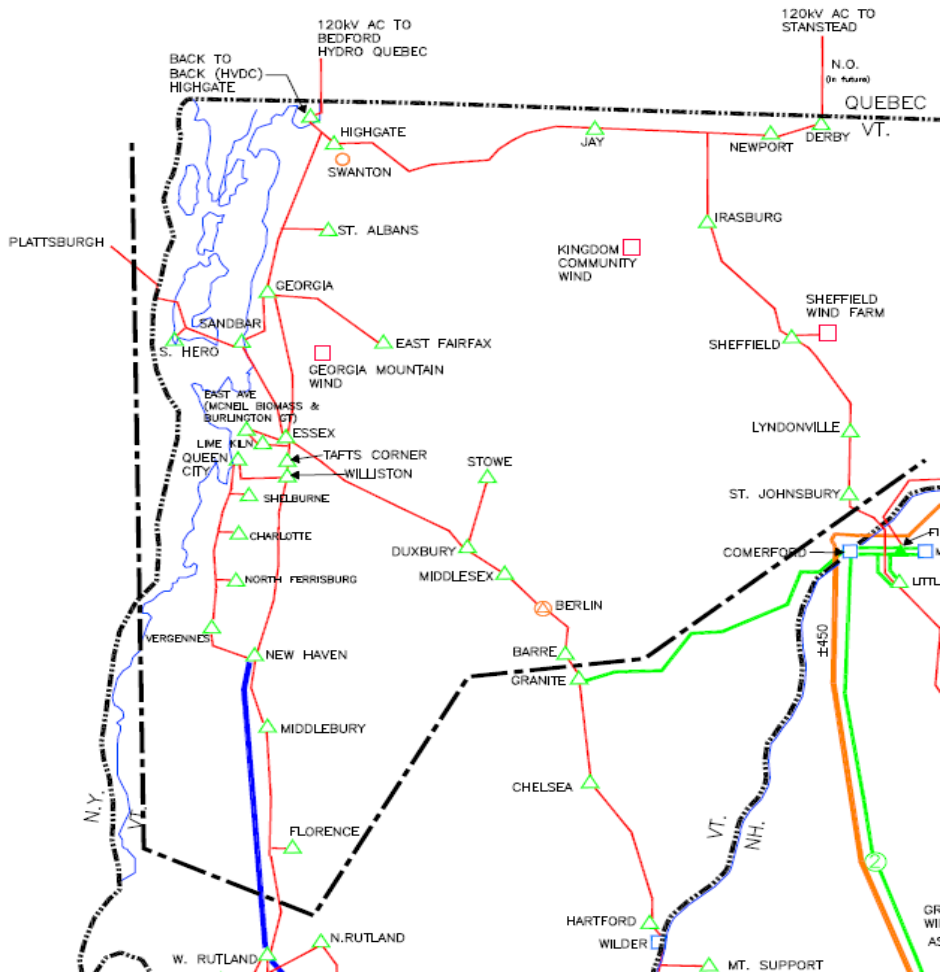


Northern Vermont area of concern



POLICY SCENARIO 2033

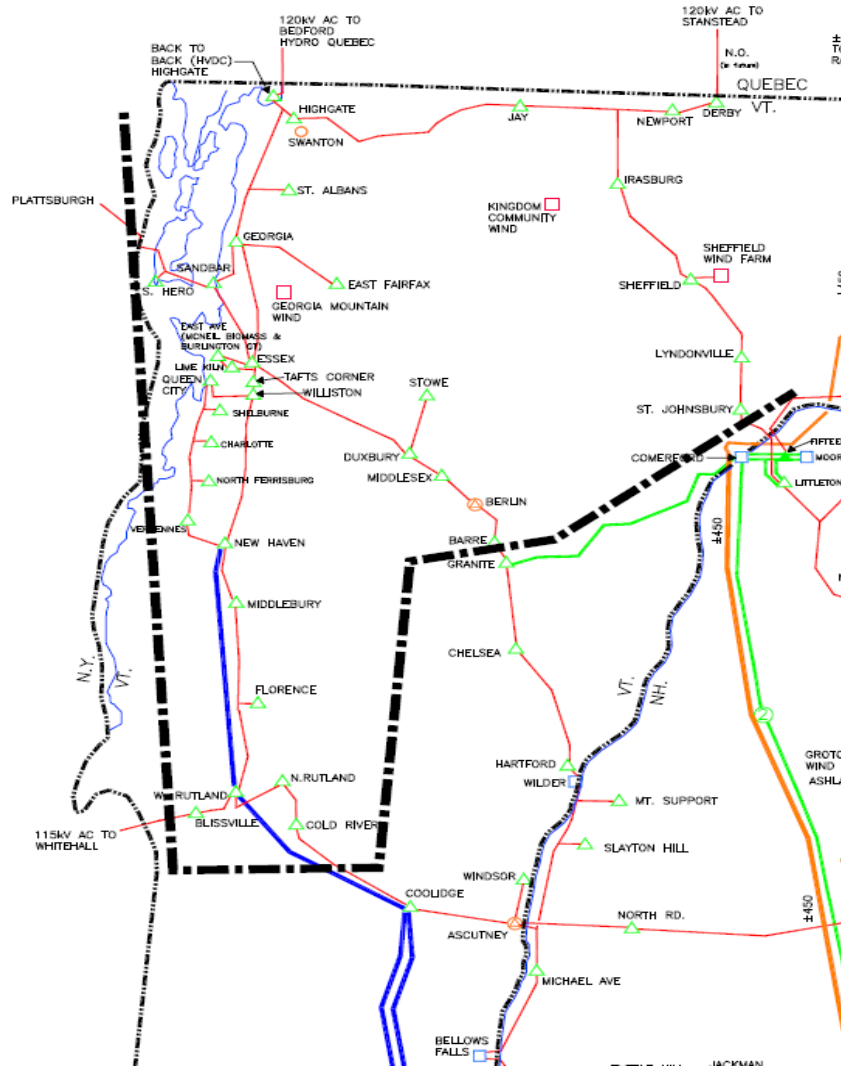
Northwest Vermont area of concern



- N-1-1 contingencies causing thermal overload
- Affected transformer: Middlebury
- Rebuild West Rutland to Middlebury 115 kV line
- Timing is 2029 based on summer forecast
- NTA: 80 MW of load reduction in northwest area by 2033. Grows over time

POLICY SCENARIO 2033

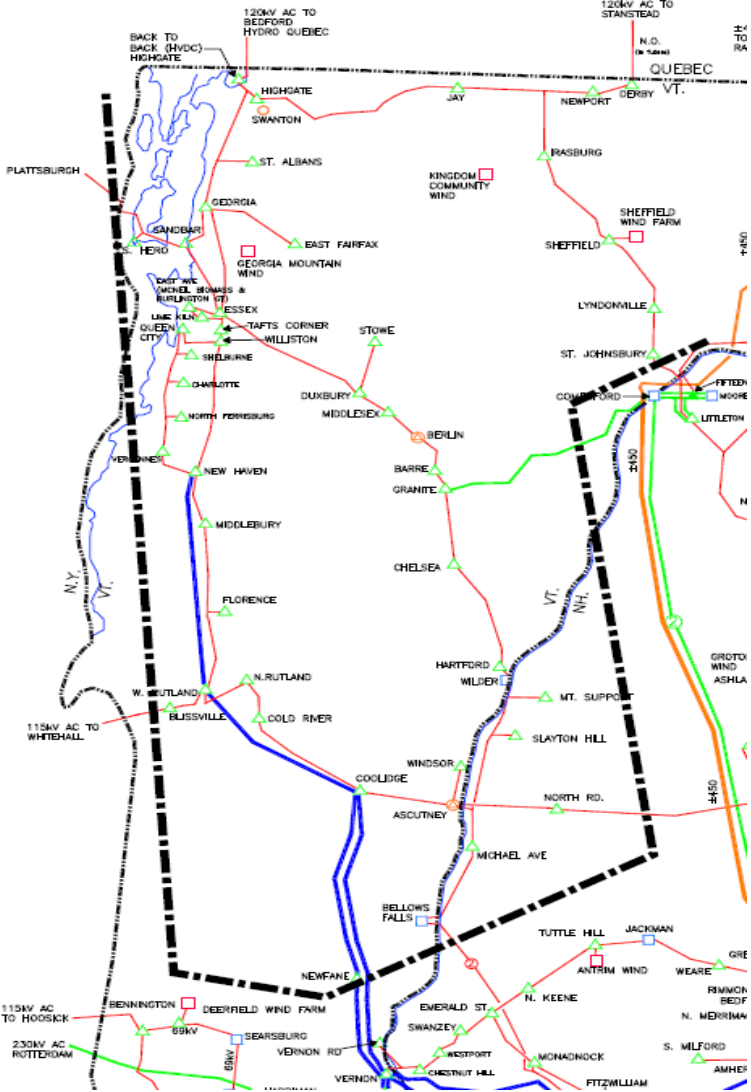
Central Vermont area of concern



- N-1-1 contingencies causing thermal overload
- Affected transformers: North Rutland, Cold River, Windsor
- Rebuild Coolidge - Cold River - North Rutland 115 kV line
- Timing: 2034 based on summer forecast
- NTA: Keep load below 2033 load level in central area

POLICY SCENARIO 2033

Southern Vermont area of concern

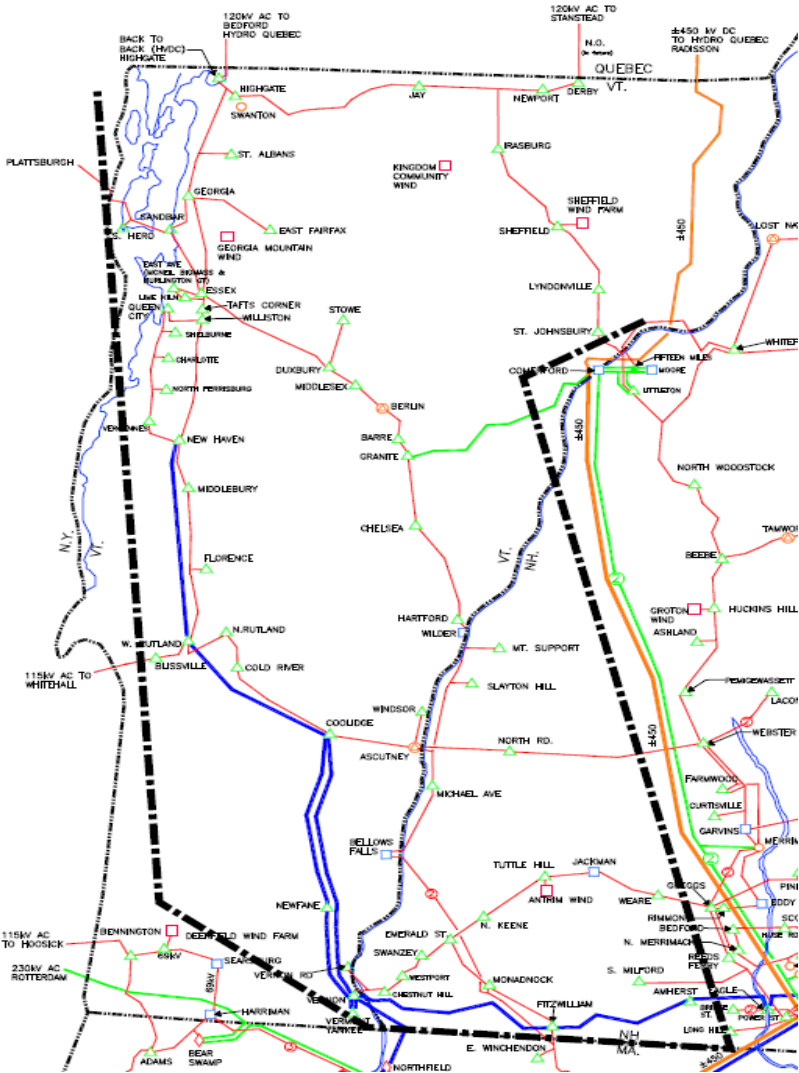


- N-1-1 contingencies causing thermal overload
- Affected transformer: GMP Vernon Road 115/46 kV
- Rebuild NGRID Bellows Falls-Ascutney Tap 115 kV line and GMP Vernon Road to Newfane 46 kV
- Timing: 2034 based on summer expected forecast
- NTA: Keep load below 2033 load level in central area



POLICY SCENARIO 2033

Vermont area of concern



- N-1-1 contingencies causing thermal overload
- Install a new 345 kV line between Vernon and Eversource Northfield, MA
- Timing: 2034 based on summer forecast
- NTA: Keep Vermont load below 2033 load level



Bulk System result summary – Policy Scenario

SUMMARY OF BULK SYSTEM REGIONAL GROUPING & TRANSMISSION SOLUTIONS	TRANSMISSION PROJECT ESTIMATED COST	SCREENED IN OR OUT OF FULL NTA ANALYSIS	LEAD & AFFECTED DISTRIBUTION UTILITIES
Northern area <ul style="list-style-type: none"> N-1-1 contingencies causing overload & voltage collapse exposure Install a new 115 kV line between Essex and Williston Affected transformers: Queen City, Tafts Corner, Barre Need date is 2032 based on winter expected forecast 	\$120M Three X \$11M	Screened In 75 MW of load reduction in northern area by 2033 Grows over time	<i>Lead:</i> GMP Affected: All VT
Northwest area – includes northern area <ul style="list-style-type: none"> N-1-1 contingencies causing thermal overload Rebuild West Rutland to Middlebury 115 kV line Affected transformer: Middlebury Need date is 2029 based on summer expected forecast 	\$215M \$13M	Screened In 80 MW of load reduction in northwest area by 2033 Grows over time	<i>Lead:</i> GMP Affected: All VT
Central area – includes northwest area <ul style="list-style-type: none"> N-1-1 contingency causing thermal overload Rebuild Coolidge - Cold River - North Rutland 115 kV line Affected transformers: North Rutland, Cold River, Windsor Need date is 2034 based on summer expected forecast 	\$185M Three X \$13M	Screened In Keep load below 2033 load level in central area Grows over time	<i>Lead:</i> GMP Affected: All VT
Southern area – includes central area <ul style="list-style-type: none"> N-1-1 contingency causing thermal overload Rebuild NGRID Bellows Falls-Ascutney Tap 115 kV line and GMP Vernon Road to Newfane 46 kV Affected transformer: GMP Vernon Road 115/46 kV Need date is 2034 based on summer expected forecast 	No VELCO estimate	Screened In Keep load below 2033 load level in southern area Grows over time	<i>Lead:</i> GMP Affected: All VT, NGRID
State of Vermont <ul style="list-style-type: none"> N-1-1 contingency causing thermal overload Install new 345 kV line between Vernon & Eversource Northfield, MA Affected transformers: Bennington Need date is 2034 based on summer expected forecast 	\$5M for VELCO portion \$13M	Screened In Keep load below 2033 load level in Vermont Grows over time	<i>Lead:</i> GMP Affected: All VT, Eversource

