

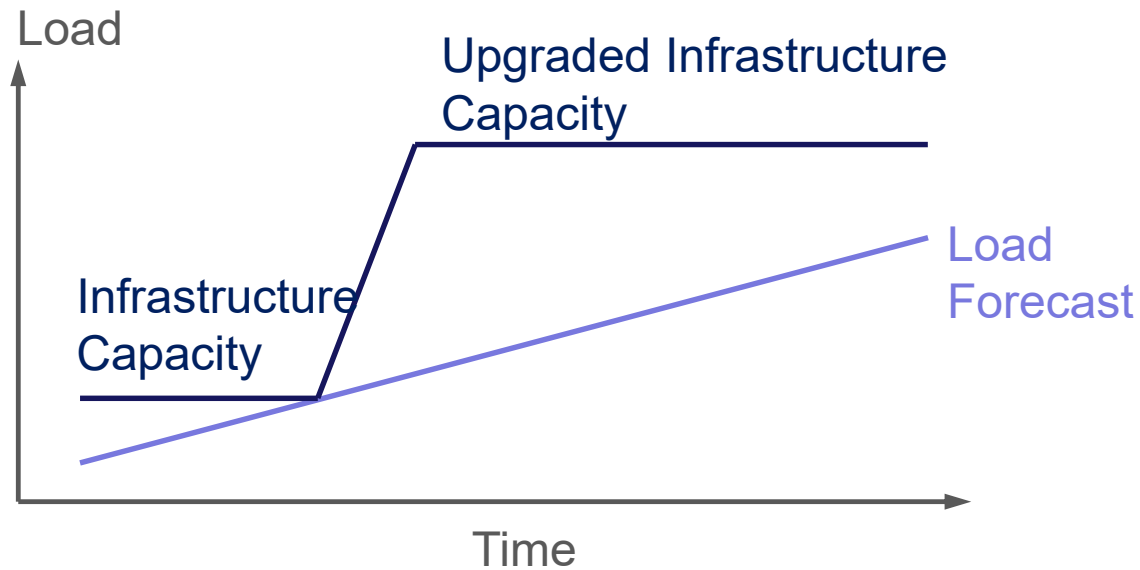
Non-Wires Solutions: Lessons Learned and Insights for Future Projects

Building Energy NYC

October 4, 2018

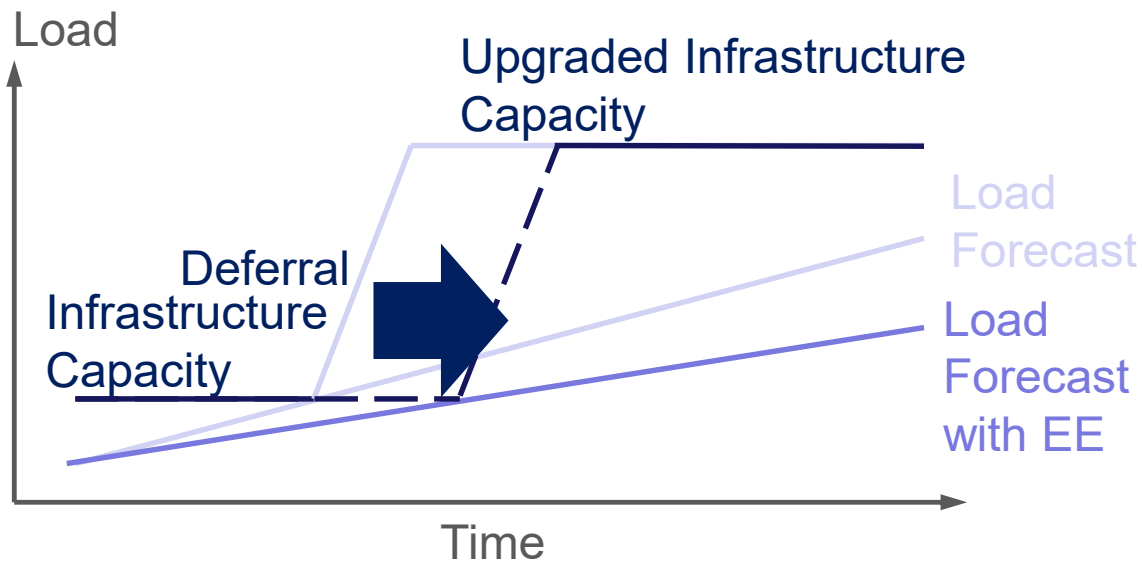
Non-Wires Solutions

- Traditional approach: build capacity based on forecast



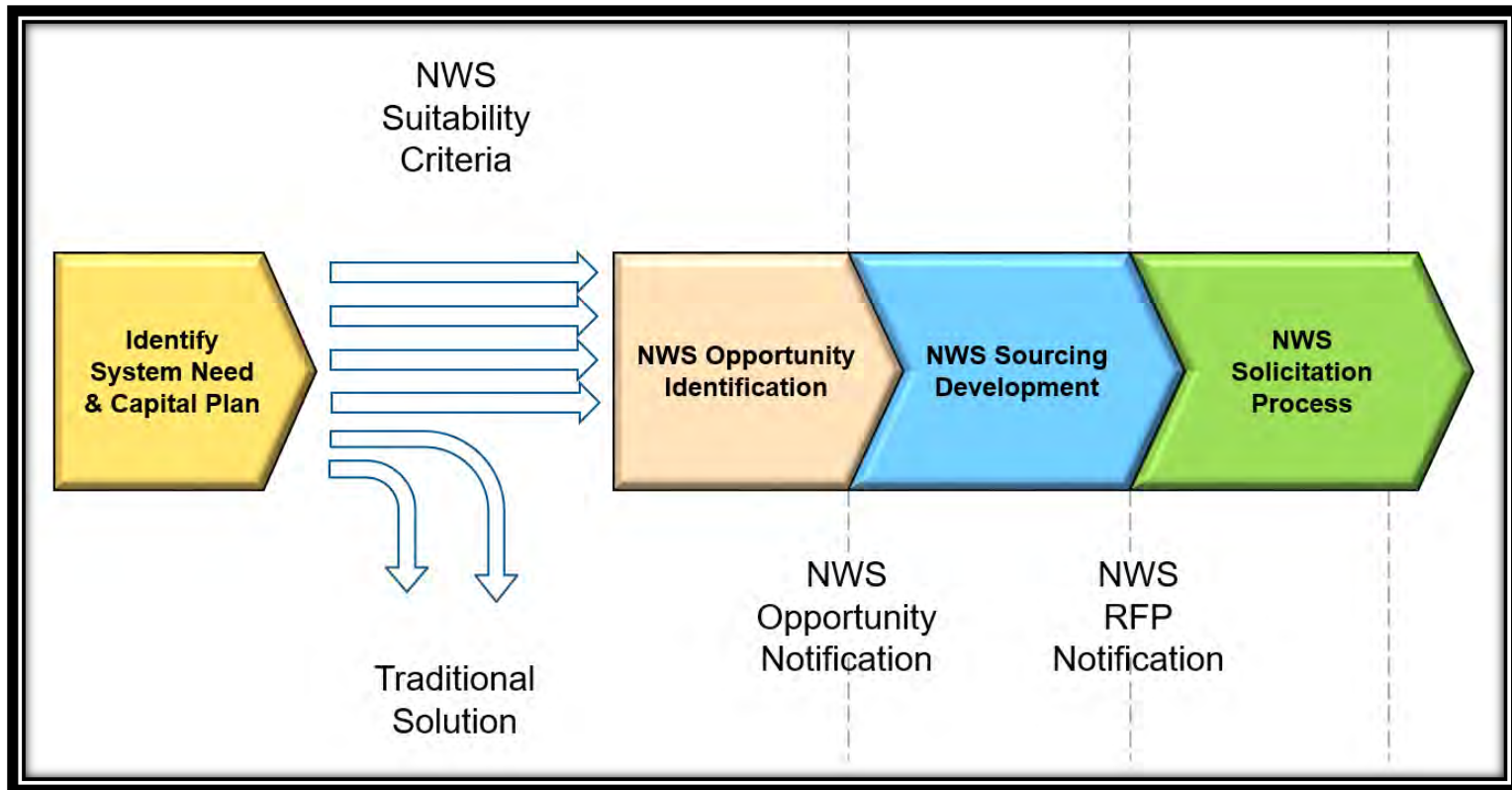
Non-Wires Solutions

- Non-wires solution approach: lower forecast through EE/DM to defer upgrade



Non-Wires Solutions Identification

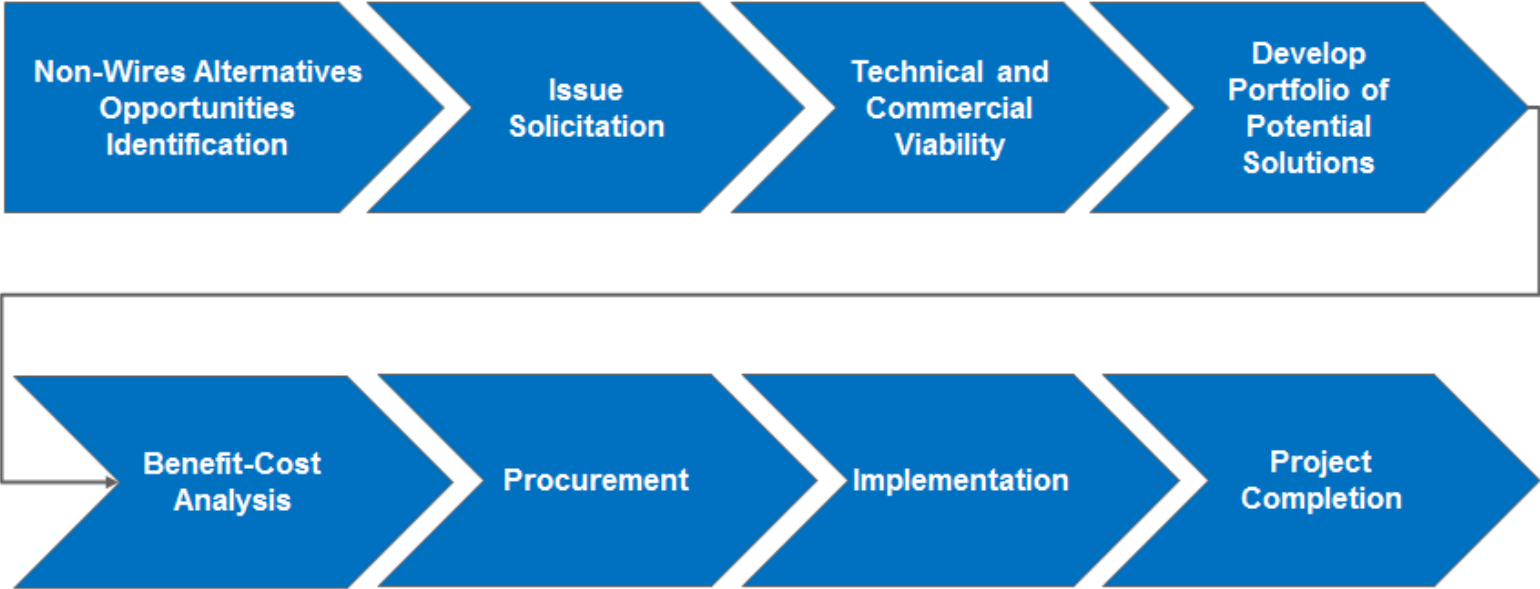
Planning Process and Sourcing Overview



Con Ed/ORU Suitability Matrix

Criteria	Potential Elements Addressed	
Project Type Suitability	Project types include Load Relief and also those projects containing Load relief and Reliability. Other categories have minimal suitability and will be reviewed for potential modifications due to State policy or technological changes.	
Timeline Suitability	Large Project (Projects that are on a major circuit or substation and above)	36 to 60 months
	Small Project (Projects that are feeder level and below)	18 to 24 months
Cost Suitability	Large Project (Projects that are on a major circuit or substation and above)	No cost floors for large scale projects
	Small Project (Projects that are feeder level and below)	Greater than or equal to 450k

High Level Non-Wires Process





EVERYTHING MATTERS



Non-Wires Solutions

Damei Jack

Manager

Customer Energy Solutions

About Consolidated Edison

	Customers	Infrastructure	Service Territory
Electric	3.3 million	One of the largest underground systems in the world	All 5 boroughs and Westchester County
Gas	1.1 million	4,333 miles of gas mains and services	3 out of the 5 boroughs and Westchester County
Steam	1,760	Largest district steam system in the world	Manhattan below 96 th Street



NWS Project Status Summary

Projects	Market Solicitation	Current Status
BQDM Program		Under Implementation
Columbus Circle	RFP Closed	Vendor Engagement
Water Street	RFP Closed	Implementation/Vendor Engagement
Plymouth Street	RFP Closed	Vendor Engagement
West 42 nd St	RFP Closed	Under Review
Flushing Project	RFP Closed	Not a candidate for NWS
Hudson Feeder Project	RFP Closed	Not a candidate for NWS
Newtown Project	RFP Closed	Responses under review
Parkchester	Q4 2018	Pending RFP Release
Chelsea	Q4 2018	Pending RFP Release

Promoting Non-Wires Solutions to the Market

Non-Wires Solutions

Non-wires solutions have the potential to reduce customers' electric bills, improve reliability, and defer capital infrastructure. We've identified several opportunities to create such change.

Responses to RFP questions can be found below.

Projects	Current Status	Documents
Primary Feeder Relief - Columbus Circle	RFP closed. Under evaluation.	RFP Questionnaire
Primary Feeder Relief - Hudson	RFP closed. Will not proceed.	RFP Questionnaire
Water Street Cooling Project	RFP closed. Under evaluation.	RFP Questionnaire
Primary Feeder Relief - Williamsburg	RFP closed. Under evaluation.	RFP Questionnaire
Cable Crossings (Flushing)	RFP available	RFP Questionnaire
Plymouth Street Cooling Project	RFP closed. Under evaluation.	RFP Questionnaire
Load Transfer W 42nd	RFP available	RFP Questionnaire
W. 65th Street #1	Project deferred due to decrease in the projected load	Project Description
Glendale Project	BQDM Auction rules available	2019 BQDM Program Extension Auction Requirements 2019 BQDM Program Agreement 2019 BQDM Program FAQs
Yorkville Crossing	No longer a candidate	Project Description

Related Information

- [RFP CLARIFICATION QUESTIONS \(PDF\)](#)
- [NON-WIRES ALTERNATIVES PROGRAM AGREEMENT \(PDF\)](#)
- [NON-WIRES ALTERNATIVES PROGRAM AGREEMENT-ADDENDUM](#)
- [NON-WIRES SOLUTIONS WEBINAR \(PDF\)](#)
- [SUPPLIER ENABLEMENT TEMPLATE \(XLSX\)](#)
- [EO 2022 SPECIFICATION \(PDF\)](#)

Con Edison Hosting Capacity Web Application

Hosting Capacity Visualization | Non-Wires Solutions

Find address or place

Non-Wires Solutions Network

Borough: Queens
Network: Richmond Hill - QN

Non-Wires Solutions Project
Glendale (BQDM)
Solicitation status: Active
Needed By: 2019
Project Description

Zoom to

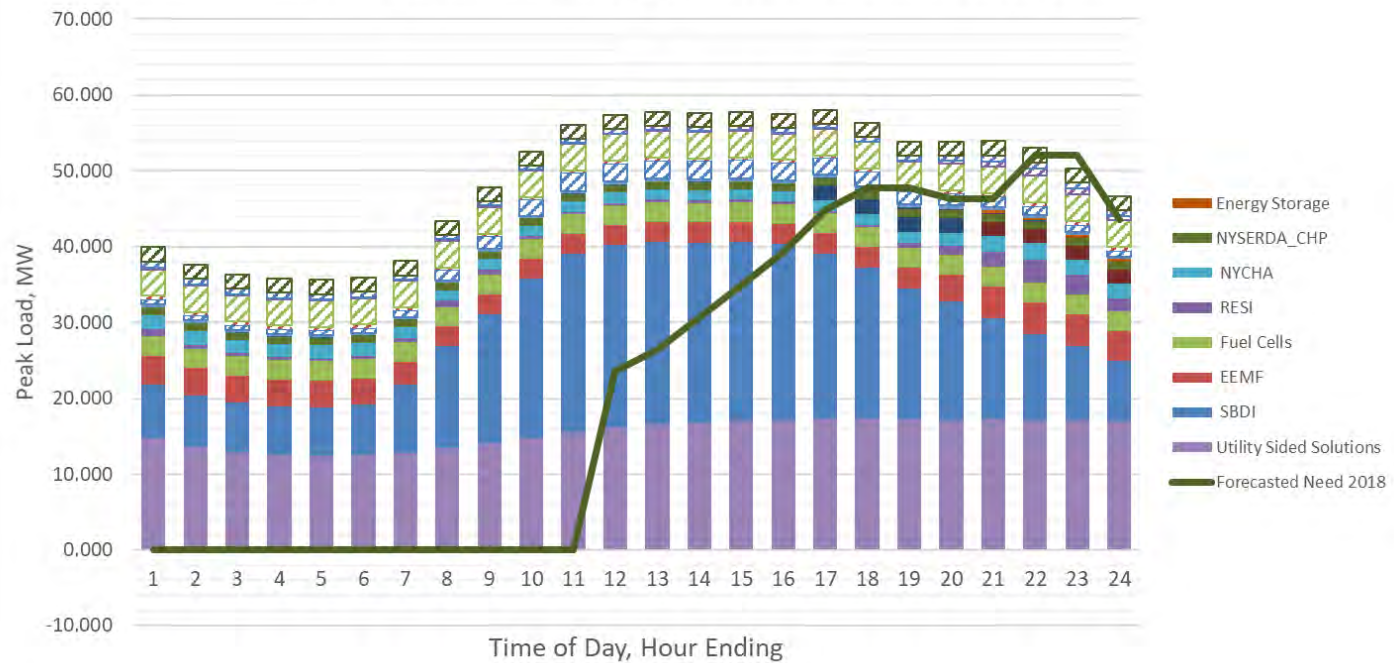
Brooklyn-Queens Demand Management Program (“BQDM”)

- Peak growth in 3 networks in Brooklyn-Queens
- Would require ~\$1 billion in capital upgrades
- In 2014 Con Edison authorized to spend \$200 million through 2018 to enable deferral of upgrade
- In 2017 Con Edison authorized to extend BQDM Program timeline



BQDM Program: Portfolio Approach is Key

BQDM Program Portfolio



- ### Key Considerations
- ✓ Ensure reliability
 - ✓ Customer experience
 - ✓ Diversified portfolio
 - ✓ Integration of diverse technologies

Multi-Technology Installation at Affordable Housing Facility

DER technologies installed at an affordable housing facility include:

- 300kW/1200kWh Li-ion Battery
- 400 kW Fuel Cell
- 390 kW Solar



Multi-Technology Installations at Brooklyn Hospital

- **3.1 MW Fuel Cells**
- **1.2 MW Combined Heat & Power**
- **0.13 MW Energy Efficiency (Lighting)**



Energy Efficiency Across Various Customer Segments

Residential Lighting Direct Install

- Door-to-door canvassing efforts in the BQDM zone to offer Residential (1-4 family) customers **no cost** LED lighting upgrades.
- This is a “street sweep” effort: canvassers will be walking the neighborhoods, knocking on doors, offering upgrades.



Commercial



Multi-family



INCENTIVES
STILL
AVAILABLE

BQDM PROGRAM'S RISKS TO EXECUTION

Lessons Learned: Non-Financial Risks Persist

Risks → Resources ↓	Customer Acquisition	Electric Inter-connection	Gas Inter-connection	City Planning or Buildings Department	Fire Department New York	Budgetary Cycle and/or Lead Time
CHP	Medium	Medium	Medium	Medium	Medium	High
Fuel Cells	High	Medium	Medium	High	Medium	Medium
Demand Response	High	Medium	Medium	Medium	High*	Medium
Battery	High	Medium	N/A	High	High	High
Thermal Storage	High	Medium	N/A	Medium	Low	High
Solar	High	Medium	N/A	Low	Low	Medium
Energy Efficiency	Medium	N/A	N/A	Low	N/A	Medium
Residential EE	High	N/A	N/A	Low	N/A	High
Public Entity EE	Low	N/A	N/A	Low	N/A	High
C&I EE	Medium	N/A	N/A	Low	N/A	Medium

Knowledge applied to future programs



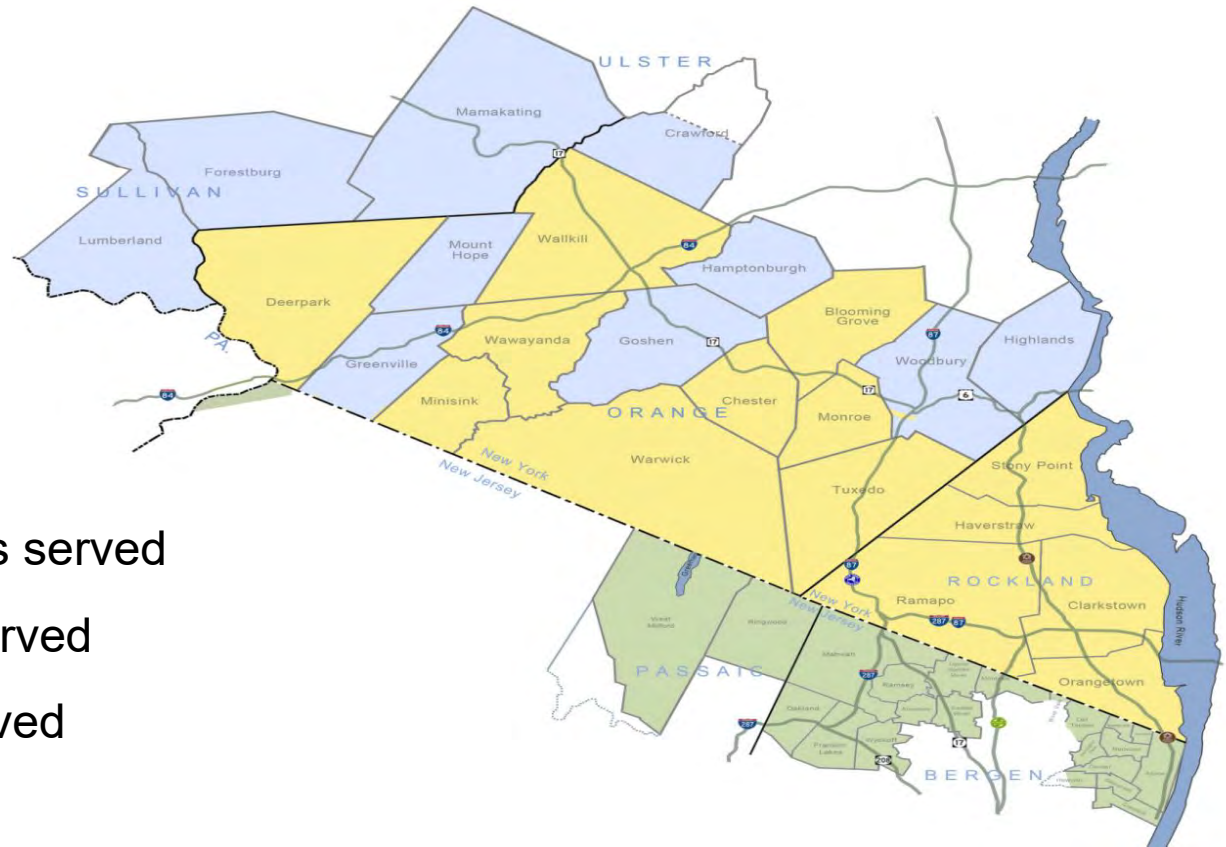
Orange & Rockland

Non-Wires Alternatives

4 October 2018

Brian Picariello
Project Manager

Orange & Rockland (O&R) Service Territory



- **305k** electric customers served
- **133k** gas customers served
- **1,350** square miles served
- **1,200+** employees

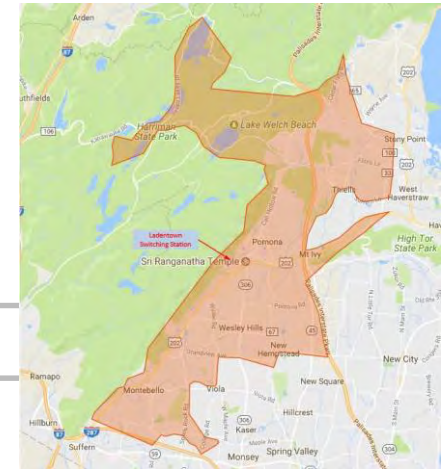
O&R has identified 7 NWA opportunities

Project/Name Description	Project Type	Required Load Relief	Need-by Date	Estimated RFP Timing
Monsey	Load Relief / Reliability	2.5 - 3MW	2021	Evaluating
Pomona	Load Relief	<6 MW	2025	Evaluating
West Haverstraw	Reliability	5 MW	2021	Evaluating
Blooming Grove	Load Relief / Reliability	15.5 MW	2021	Developing RFP
Sterling Forest (Tuxedo Park)	Load Relief / Reliability	746 kW	2021	Q3-2019
West Warwick	Load Relief / Reliability	7 MW	2022	Q3-2019
Mountain Lodge Park (Blooming grove)	Load Relief / Reliability	280 kW	2022	Q4-2019

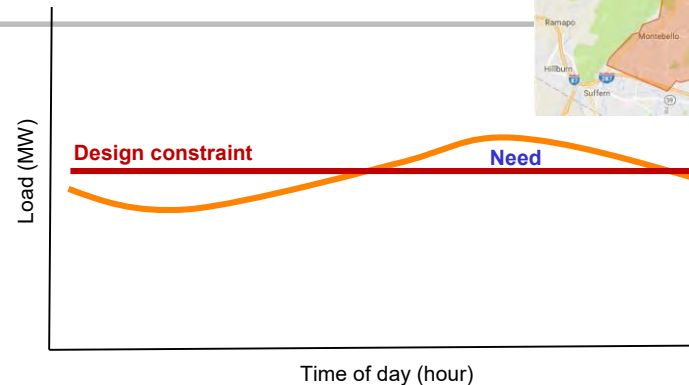
Pomona: Provide contingency support, and up to 6 MW of peak load reduction

- **Traditional:** Substation + associated T&D infrastructure
- **Non-Wires Alternative:** Meet need through
 - **1.5 MW** of energy efficiency (EE) + demand response (DR)
 - **4.5 MW** of distributed energy resources (DERs)

Pomona Load Pocket



Pomona Load Profile



Pomona: 1.5 MW will be achieved through Energy Efficiency and Demand Response

• Progress:

- Achieved **1.2 MW** of reduction through O&R's Small Business Direct Install (**SBDI**)
- Achieved **340 kW** of reduction through O&R's Bring You Own Thermostat (**BYOT**)
- Achieved **370 kW** of reduction (May-Sep, 2018) through O&R's Commercial System (**CSR**P) and Distribution System (**DSRP**) Relief Programs



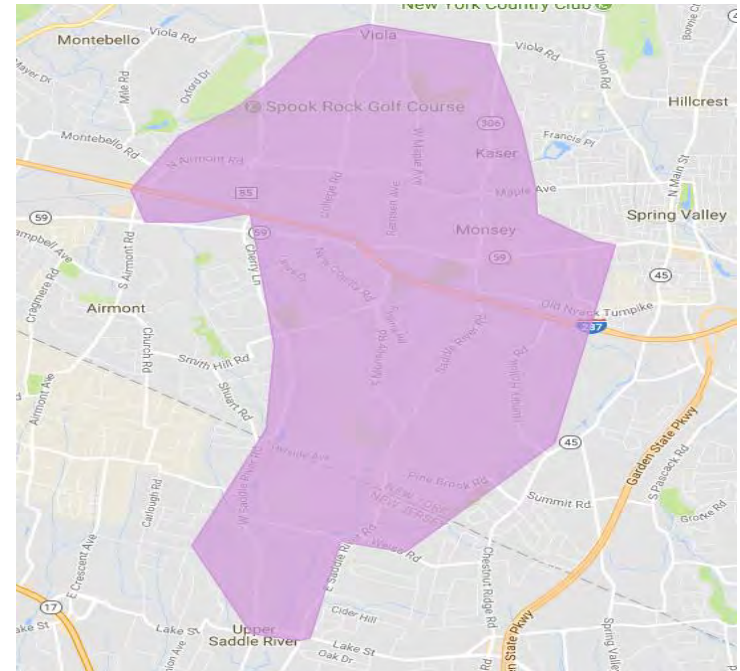
• Next Steps:

- Leverage **SBDI** funds to assess opportunity at existing sites
- Implement targeted **BYOT** DR program
- Continue to recruit eligible customers for **CSR**P and **DSRP**

Monsey: Provide contingency support on 2 banks and 3 circuits

- **Need:**
 - **Traditional:** Substation + distribution infrastructure
 - **Non-Wires Alternative:** EE + DR + ES
- **Progress:**
 - Bids received, evaluation continues
 - BCA approved by PSC
- **Next Steps:**
 - Award vendor for ES, execute contract
 - Implement EE and DR measures
 - Assess need, adjust as required

Monsey Load Pocket



The NWA programs are supplemented by the adoption of efficiency measures through the **My ORU Store**

Offerings

- 190 products
- 10 categories
- Home services
- Instant rebates
- Co-rebates with water utility
- Buyer guides / live chat



Lessons Learned

- Improved internal coordination
- Request for proposals
 - Pricing options allow for flexibility in BCA, and developing business models
 - Clear delineation of included costs/benefits, to identify opportunities to partner
- EE customer acquisition
 - New customer segments require increased marketing activities
 - Activities include town halls and toll-free services to validate/communicate offerings

Thank you.
Contact us.



conEdison

www.coned.com/nonwires

Damei Jack

JackDa@coned.com

212-460-2098



Orange & Rockland

www.oru.com/nonwires

Brian Picariello

picariellob@oru.com

845-577-3182

Con Edison and O&R Insights for Future Projects

- Visit non-wire pages for most up to date information on non-wire opportunities
- Provide as much detail requested for the market solicitations
- Use supplemental data provided to determine feasible projects in the area
- Ensure alignment with years that load relief is needed
- Cost-effectiveness impacts project selection
- Projects are developed using a technology-agnostic approach

Questions