Blooming Grove Non-Wires Alternative Pre-Bid Webinar

17 January 2019

Agenda

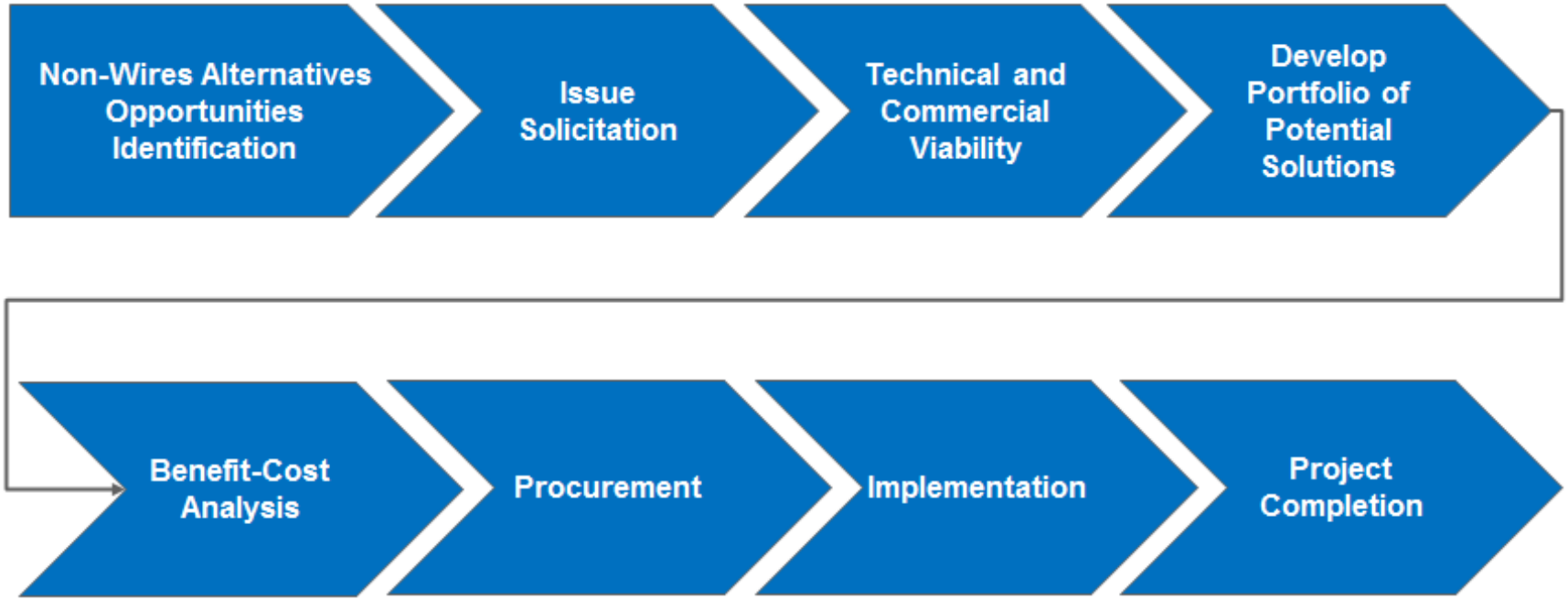
- Purpose
- O&R NWA Process
- Blooming Grove NWA Overview
- Description of Need
- Potential Solutions
- Information to Include in Bid
- Evaluation Criteria
- Proposal Response and Submittal Process
- RFP Schedule
- Next Steps: Clarification Questions

Purpose

- Through this webinar, O&R intends to:
  - Describe the O&R Non-Wires Alternatives (“NWA”) process
  - Provide an overview of the Blooming Grove NWA RFP
  - Discuss the evaluation criteria and process
  - Review next steps
- This webinar is not intended to:
  - Answer specific questions about the RFP or process
  - Discuss potential solutions in detail

O&R NWA Process

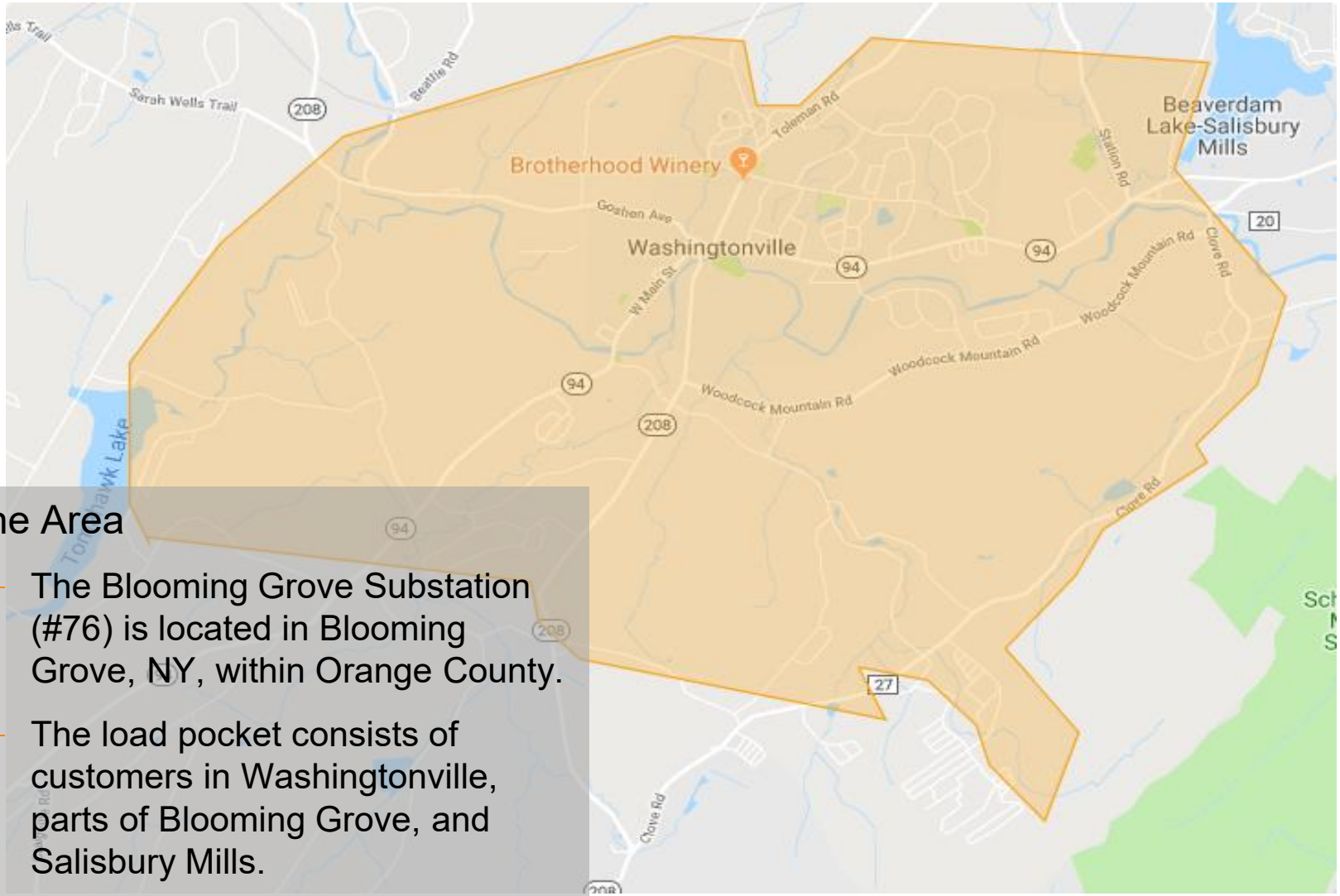
- The process shown below is an example of the high-level steps that occur during the NWA process, which includes the evaluation, procurement, and implementation of potential solutions.



Blooming Grove NWA Overview (1 of 2)

- The Objective
  - O&R proposes to implement the Blooming Grove (“BG”) NWA project to defer a capital infrastructure investment to meet short-term and long-term energy needs.
- The Need
  - The scope of the BG NWA will be to provide capacity on the portion of the local electric delivery system that does not have backup during the worst contingency scenario.
  - These capacity requirements will be incremented by a to-be-defined reliability factor, to provide equivalent reliability of the traditional solution.
- The Traditional Solution
  - O&R’s traditional solution would be to upgrade the existing single transformer bank with two (2) 35MVA, LTC banks in the same vicinity as the existing substation.

Blooming Grove NWA Overview (2 of 2)



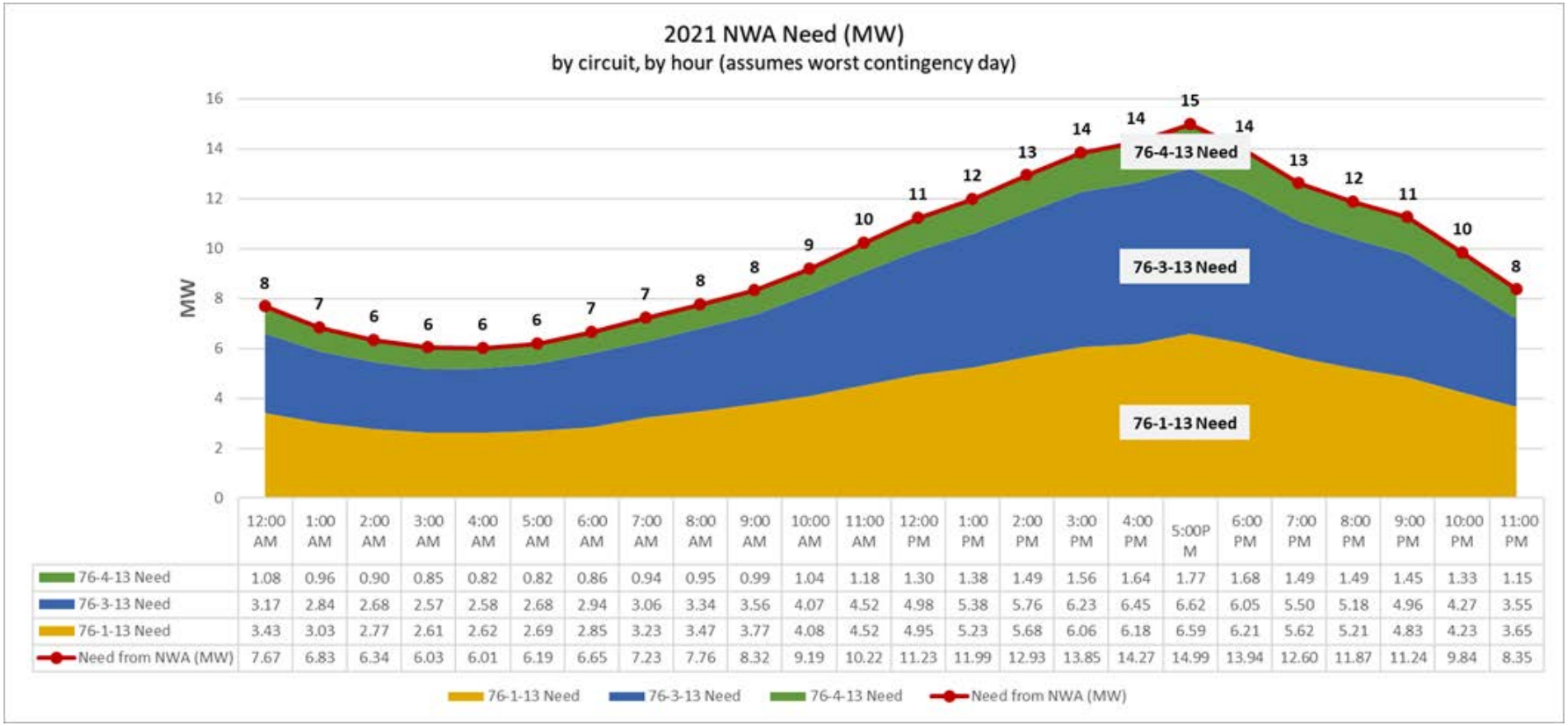
- The Area
  - The Blooming Grove Substation (#76) is located in Blooming Grove, NY, within Orange County.
  - The load pocket consists of customers in Washingtonville, parts of Blooming Grove, and Salisbury Mills.

Description of Need (1 of 4)

- The Blooming Grove substation serves four (4) circuits through a single bank 25 MVA 69/13.2 kV transformer
- In the event of a bank contingency, 21% of the load would have backup through switchable ties, until a mobile transformer could be installed, resulting in exceeding customer hours of interruption, and failure of the Company's design standards.
- The worst contingency is the loss of the single substation transformer bank.
  - Circuit 76-2-13 from Blooming Grove has 100% backup from its South Goshen and Chester ties.
  - Circuit 76-4-13, which feeds the Mountain Lodge area, has 50% backup from its ties to Monroe.
  - Circuits 76-1-13 and 76-3-13, and 50% of circuit 76-4-13 have no backup.

Description of Need (2 of 4)

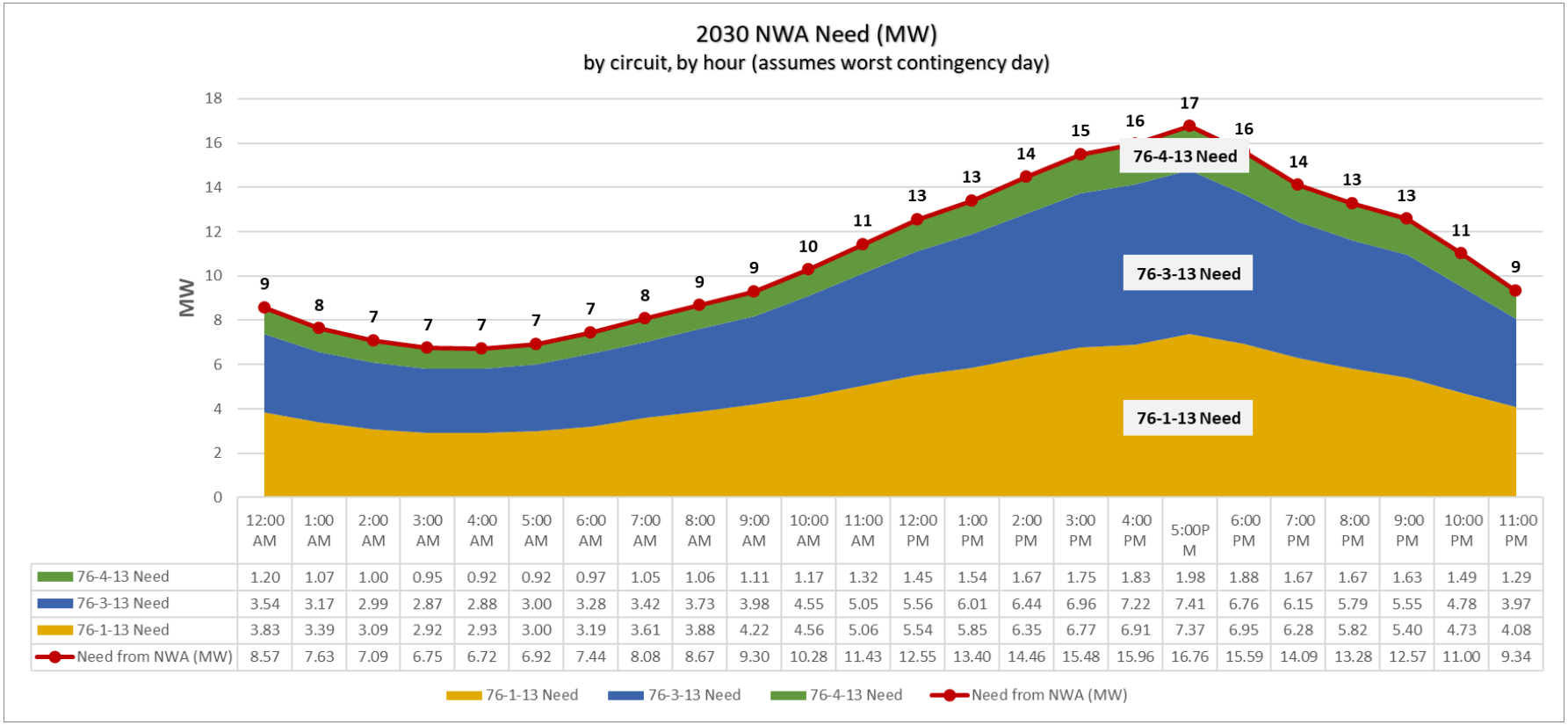
- **2021** Need, by circuit, by hour, on a worst contingency day.



	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
76-4-13 Need	1.08	0.96	0.90	0.85	0.82	0.82	0.86	0.94	0.95	0.99	1.04	1.18	1.30	1.38	1.49	1.56	1.64	1.77	1.68	1.49	1.49	1.45	1.33	1.15
76-3-13 Need	3.17	2.84	2.68	2.57	2.58	2.68	2.94	3.06	3.34	3.56	4.07	4.52	4.98	5.38	5.76	6.23	6.45	6.62	6.05	5.50	5.18	4.96	4.27	3.55
76-1-13 Need	3.43	3.03	2.77	2.61	2.62	2.69	2.85	3.23	3.47	3.77	4.08	4.52	4.95	5.23	5.68	6.06	6.18	6.59	6.21	5.62	5.21	4.83	4.23	3.65
Need from NWA (MW)	7.67	6.83	6.34	6.03	6.01	6.19	6.65	7.23	7.76	8.32	9.19	10.22	11.23	11.99	12.93	13.85	14.27	14.99	13.94	12.60	11.87	11.24	9.84	8.35

Description of Need (3 of 4)

- **2030** Need, by circuit, by hour, on a worst contingency day.



	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
76-4-13 Need	1.20	1.07	1.00	0.95	0.92	0.92	0.97	1.05	1.06	1.11	1.17	1.32	1.45	1.54	1.67	1.75	1.83	1.98	1.88	1.67	1.67	1.63	1.49	1.29
76-3-13 Need	3.54	3.17	2.99	2.87	2.88	3.00	3.28	3.42	3.73	3.98	4.55	5.05	5.56	6.01	6.44	6.96	7.22	7.41	6.76	6.15	5.79	5.55	4.78	3.97
76-1-13 Need	3.83	3.39	3.09	2.92	2.93	3.00	3.19	3.61	3.88	4.22	4.56	5.06	5.54	5.85	6.35	6.77	6.91	7.37	6.95	6.28	5.82	5.40	4.73	4.08
Need from NWA (MW)	8.57	7.63	7.09	6.75	6.72	6.92	7.44	8.08	8.67	9.30	10.28	11.43	12.55	13.40	14.46	15.48	15.96	16.76	15.59	14.09	13.28	12.57	11.00	9.34

Description of Need (4 of 4)

- Customer Breakdown
  - The Blooming Grove substation serves approximately 5,716 customers, the majority of which are residential.

***Table 2.5*: Customer Breakdown, by Circuit and Segment**			
Circuit	**Residential**	**Commercial & Industrial**	**Total**
76-1-13	1,667	85	1,752
76-2-13*	557	34	591
76-3-13	2,082	99	2,181
76-4-13	1,165	27	1,192
Total	5,470	246	5,716

**Informational only, not required to meet need.*

Potential Solutions (1 of 3)

- The RFP seeks an **alternative solution** which will solve a **contingency need**, in an area where a capital investment is needed to improve system **reliability** and **resiliency**.
- Alternatives may include the following DER: (a) Energy efficiency ("**EE**"), (b) Demand response ("**DR**"), (c) clean (i.e., gas fired and/or solar) distributed generation ("**DG**"), (d) energy storage ("**ES**"), and/or (e) **any combination** which may allow the Company to meet the stated need.
- The company will **leverage its existing EE and DR programs** to lower the amount of DER that needs to be procured.
  - The company may entertain proposed EE and DR solutions that have the potential to enhance its existing programs.

Respondents are encouraged to submit innovative, creative proposals for marketing, sales, financing, implementation, maintenance, contracting and pricing structures, and funding sources which will solve the contingency need, and maximize value to O&R's customers

Potential Solutions (2 of 3)

- Potential solutions will require operating a portion of the O&R's system as part of an **engineered microgrid**, which may:
  - Consist of group of interconnected loads and DER within a clearly defined electrical boundary,
  - Act as a single controllable entity with respect to the grid – isolated by automatic switching devices to be installed by O&R,
  - Connect and disconnect from the grid to enable operations in parallel with the existing system, or as an island.
- Vendor proposals **should demonstrate** that:
  - the solution will serve load on **three separate distribution feeders** (O&R anticipates DER at multiple locations)
  - the solution **meets** ANSI voltage, frequency, protection and synchronization **standards** for the **13.2kV system**
  - the solution is a balanced 3-phase approach, **connected to the overhead 13.2kV system**, **without incurring distribution system upgrades**
  - during a contingency event – the microgrid can **pick up load within 60 minutes** of notification by O&R.
  - the solution can synchronize and transfer load, **without customer interruption**, once O&R's system is restored
  - the microgrid controller can perform tests to ensure expected operations and **stable and reliable power flow**
  - the proposed **EMS** and **protection scheme**, should (a) **balance** generation with microgrid demand, (b) maintain adequate **frequency**, **voltage** (123V+/- 1%), and **power flow** (active and reactive) across the microgrid network in island mode, (c) meet **fault current requirements** (4000 to 7000 Amps) to operate the existing O&R protection equipment, (d) be capable of remote **M&C** and be **integrated into O&R's EMS and DSCADA systems**, and (e) be capable of **distinguishing internal from external system disturbances** to prevent nuisance tripping
  - if the solution includes a generator – **black start capability** should be included and should be able to **ramp to 60 Hz** and supply each microgrid load in sequence

Potential Solutions (3 of 3)

- For proposals including **Demand Response** services:
  - Please include (at a minimum):
    a) a **description of the markets**, such as one-to-four family homes, multifamily buildings, small commercial (e.g., retail stores, restaurants), large commercial (e.g., office buildings, industrial) and government or institutional (e.g., hospitals, hotels, schools, colleges), and
    b) the **applicable demand management measures** and **technologies** to be directed at each selected **market** or **customer segment**
    c) Please include an illustration of the **marketing** and **sales strategies** to capture the selected market or customer segment, and to deliver the demand reductions
  - Preference will be given to Respondents who have **pre-existing customer agreements** to deploy the solution.

Information to Include in Bids

- Responses should include:
  - **Methods** and **procedures** required to comply with technical, safety, and operational requirements for the interconnection and operation of equipment with O&R's electric delivery system,
  - For proposed renewable generation, verification that stated **demand reduction coincides with the Company's peak loading period**,
  - For demand reduction services, assurances that the **committed amount of measures will be installed**, and that the **committed in-service date for each measure will be met**,
  - **Data and methodologies** used to estimate demand reduction, annual kWh savings attributable to each measure/solution proposed, and methods/proposals to confirm measurement and verification of delivered demand reductions
  - Proposals which require deployment on **utility property or ownership models** involving utility ownership, or operation and maintenance, or both, by the Company
  - **Information which affect the community** (both positively and negatively) including, but not limited to, associated greenhouse gas ("GHG") emissions, waste streams and management, job creation potential and community disruption

Evaluation Criteria (1 of 2)

- Evaluation criteria will include but not be limited to:
  - **Proposal content:** comprehensive proposal which addresses the need.
  - **Viability:** extent to which the proposed solution would address the need.
  - **Functionality**: the extent to which the proposed solution would provide the needed load reductions
  - **Proposed NWA technology:** the maturity of DER technology being proposed, ability to scale that technology, and any potential risks in deploying the proposed technology, and planned mitigations for those risks.
  - **Project Timeline and Implementation Plan:** the ability to meet O&R's schedule and project deployment requirements,
  - **Respondent Qualifications:** Respondent's relevant experience and success providing these solutions to other locations, including references and documentation of results

Evaluation Criteria (2 of 2)

- Evaluation criteria will include but not be limited to:
  - **Price and reliability:** respondents should provide the pricing for the project broken down as follows:

DER solution	Size	Material Cost	Labor Cost	Admin Cost	Total O&R cost	Total Cost of the Project

    - Respondent should itemize and identify various items in each of the cost buckets, i.e., material cost components, labor cost components
  - **Applicability to REV:** supports the goals and objectives outlined in the REV proceedings
  - **Execution risk:** the expected ease of project implementation within the timeframe required (e.g., permitting, construction risks, operating risks)

Proposal Response and Submittal Process

- The following process should be used to submit proposals:
  - All proposals must be submitted through the Oracle RFQ System on or prior to the due date and time. Respondents who fail to submit by the due date and time will be unable to submit their proposals. Respondents are encouraged to upload their proposals well in advance of the closing time to avoid any potential issues.
  - Respondents must take the following actions to ensure acceptance of a proposal submission:
    1. Download the Blooming Grove NWA RFP, Non-Wires Alternative Questionnaire, and Supplier Enablement Template.
    2. Become enabled in the Oracle RFQ System* by submitting the following items to Michael Heaton (heatonm@coned.com) (a) W-9 form (version last updated), and (b) Supplier Enablement Template (Select 'Sourcing' under Oracle responsibility field). Please note: if a respondent has previously been enabled in the Oracle RFQ System as part of a separate bid event then they do not have to do it again, but should email Mike Heaton to notify him of participation interest for this RFP
    3. Receive Formal RFQ response request (will be same information downloaded from non-wires alternative website).
    4. Submit response and fully completed questionnaire to Oracle RFQ System prior to the deadline.

RFP Schedule

RFP Solicitation Milestones	Completion Date*
RFP Issued by O&R	December 28, 2018
Pre-bid conference call (see details below)	January 17, 2019 (1:00 pm EST)
Clarification questions due to O&R	January 24, 2019 (1:00 pm EST)
Responses to clarification questions due to bidders	February 6, 2019, 2019
Deadline to become enabled in O&R/Con Edison procurement system	February 21, 2019
Qualified proposals due to O&R	March 7, 2019 (3PM EST)

*O&R reserves the right to change any of the above dates.

Clarification Questions

- In order to ensure equal access to RFP information, O&R will accept, answer and respond to vendor questions according the following process:
- During the clarification period, Respondents should direct clarification questions via email to Michael Heaton, heatonm@coned.com, of O&R's/Con Edison's Supply Chain Department.
- The deadline for submitting clarification questions is 1:00 PM EST on Thursday, January, 24 2019.
  - O&R will have no obligation to evaluate late submissions, nor be responsible in any way for any consequences associated with late submissions
- All questions and answers deemed essential for the viable submission of a bid response will be publicly posted at **https://www.oru.com/en/business-partners/non-wires-alternatives**
  - Respondent's identities will be kept confidential.

Thank you.