Key Questions for Respondents - Construction

EXPERIENCE

- Please discuss the respondent's corporate history and structure.
    - Please see the attached company history

- Please describe the respondent's experience building networks of this type and size. Please provide specifics.
    - Please see the attached project references

- Does the respondent have any previous case studies that could provide insight for the Committee? Can the respondent provide materials on any other municipal networks that have adopted the approach and/or best practices the respondent recommends?
    - There are two main options for providing a town-wide network; either fiber run directly to homes, or a wireless network. We have installed both types; fiber to the home in Leverett, MA and wireless in Greenfield, MA. Due to the low population density in New Marlborough, we would recommend fiber to the home as a more effective solution.

- Will the respondent use subcontractors?
    - Yes, for trenching and boring in conduits.

CONSTRUCTION

- What is the typical duration of a project like this and how would the ultimate timeline look, e.g. award => permit => make ready => construction to acceptance?
    - Pending an award and signed contracts, there would be 3-6 months for permitting, 1 year of make ready, and 1 year of construction to acceptance. Drop cables to the homes, ONTs (Optical Network Terminals), and underground work could begin during the make ready period.

- What actions can the Town of New Marlborough or the construction company take to reduce construction time?
    - Begin work on securing right of way and permitting before the project is awarded. Determine the cost effectiveness of buried cable versus aerial cables. Buried cables have a high upfront cost due to trenching and boring, but require little weather-related emergency maintenance and do not incur pole fees. Aerial cables are less expensive initially, but can become costly due to storm damage and ongoing pole fees.

- In the respondent's past experience, what has been the best way to structure the relationships between the town, network operator, construction company, and third parties for construction of the network?
    - It's best to try to limit the number of subcontractors involved in any one project area to reduce the likelihood of blame and finger pointing. The construction firm should self-perform as much work as possible.

- Can a builder construct the desired network without the previous selection of a network operator? Are there any issues or risks in approaching construction this way?

- While it is possible to build a network without the selection of a network operator, it is recommended that an operator is selected before the construction for proper planning of equipment that will provide for the optimal operation of their network.

TECHNICAL MODEL AND APPROACH

- Are there specific standards or manufacturers the respondent prefers or requires? Are there technical reasons for such preferences?
  - Corning and OFS fiber, TYCO Raychem FOSC Splice Closures, Corning & FIS Fiber Connectors/Pigtails, Corning indoor fiber enclosures, Calix ONTs, Capwave long range outdoor wireless access points and point to point radio devices.
  - All of the above products and manufacturers are considered to be leaders in their fields, they also are consistently high quality materials that are durable for long periods.

- What physical facilities are required for the network? What facilities can New Marlborough provide to reduce the cost and/or deployment time?
  - Designated space for network head-end equipment rooms, at least two locations on opposite ends of town. A laydown area located in town for the ongoing storage of vehicles, equipment, access to utilities.

Key Questions for Respondents – Maintenance

BUSINESS AND TECHNICAL MODEL

- Is the desired Four Functional Areas approach appropriate? If not, what other roles should be added or what roles should be combined?
  - The Four Functional Areas should work well.

- Should the town contract out maintenance as needed or have an ongoing service contract?
  - The first year of maintenance should be provided as a warranty by the firm that constructs the system. After that it is best to have one company signed to an on-call emergency contract. It makes the repairs more consistent and you don't have to wonder about who made a given repair.
- What kind of service life should be expected from network hardware (including embedded software)?
  - The cable should last for at least 25 years. The optical equipment usually has a 5-7 year lifespan.