A. Scope of Work

1. **Low-Level Design (OSP Turn-key Design)**

   - Fielding: Complete field survey utilizing Katapult. Each field team is comprised of a 2-man crew to ensure efficiency, productivity, safety, and less errors. GIS data is uploaded and shared with the design team in real time which contributing an additional level of QC to make sure all field data is captured. Katapult is also used to capture pictures and GPS coordinates of prosed equipment locations which provides a current image of the area topography of the site, and potential obstacles. Palni field team will adhere to all city safety policies while conducting fielding work.

   - Design:
     a. Provide Outside Plant (OSP) design and computer-aided design (CAD) drafting to create construction and permit drawings using design guidelines, material preferences, construction guidelines, agency needs and guidelines, field data, local GIS information, etc.

   - Permits:
     a. Develop a permit schedule and tracking system to identify permits with the longest processing time in order to avoid construction delays. Local entitlements and associated environmental review are responsibility of the city.

   - Traffic Control Plans (TCP):
     a. Submit TCPs for various areas and agencies according to the approving agency procedures.

   - Activities/Outcomes: See Appendix A for complete list of activities and outcomes.

   - Assumptions: Design shall be completed in AutoCAD/CAD. A PDF version of those drawings will be submitted. OSP conduit and fiber to be 100% underground.

2. **Project Management**

   A. Palni Project Manager (PM) will serve as liaison between Palni and the City. PM will manage all tasks, associated timelines, milestones, and provide monthly updates on the items listed in Statement of Work outlined in the City's request for proposals. The PM will work closely with Palni engineering staff to ensure the project stays on schedule and milestones are completed on-time. PM will also coordinate and manage communications with the city, including end of month status updates via video conference. Palni will notify City staff in advance of site visits, as well as check-in with city once on-site, and check-out when work is completed.

      Staff assistance will be required from the following departments:

      - Special Projects Manager – General direction, coordination, and collaboration.
      - Grant Coordinator – Process invoices and provide guidance on grant opportunities.
      - Finance Director – Assist with Business Model and Financing Strategy.

- Public Works Engineering – Provide available GIS data, assist with equipment locations, and review TCP.
- Contract Planner – Entitlements and environmental review
- IT System Lead – Review draft plans and provide input.

B. Activities/Outcomes:
- Monthly team updates and revised schedule.
- Monthly Invoice with Brief Narrative.
- Weekly Call with Project Manager to review milestones.
- PM will coordinate activities between the city and Palni.
- Will ensure network encompasses everything in RFP SOW
- Manage all Change in Plan (CIP) document.
- Ensure Work Plan and Milestones are met, see Figure 1 below.

C. Assumptions:
- Assumes a total of 6ea., 1-hour virtual meetings (May – September).

3. Electronics Design

A. The XGSPON network architecture will identify electronics for end-user's service, as well as placement of huts, location of passive cabinets serving the distribution areas, conduit/fiber sizes, backhaul circuits, and core electronics for upstream communications. Network architecture will include connection up to and including the home/business, as well as the internet service provider (ISP) interconnection with MCN.

B. Palni will create vendor RFPs to solicit competitive bids against the Bill of Materials created from architecture from the results of this SOW. (XGS 10G PON solution).

C. Activities/Outcomes:
- Draft and Final Network Architecture
- Bill of Materials for all electronics and passive network equipment
- Create Request for Proposal from two vendors.

D. Assumptions:
- Network to be designed as a XGSPON network.
- Network to be designed with MCN as the service provider.
- MCN is responsible for all Internet backhaul requirements.
- Project materials will be reviewed and approved before after design starts.
- Bill of Materials shall be provided in an Excel format.

4. Construction RFP Preparation

A. Palni will provide a draft of a Construction RFP that includes details necessary for a contractor to bid the project. Information will include, but not be limited to drawings, BOM's, construction guidelines, footages, TCP, defined distribution areas, and timelines.

B. Palni is available to address plan revisions and work with construction crews if a new solution is required, provided project begins upon approval of financing/grant, and is

within 6 months following acceptance of this SOW. If revisions are required, Palni team will provide expertise and recommendations to identify and support proposed construction.

C. Activities/Outcomes:
- List of Potential Contractors

D. Assumptions:
- City Preferred Format for Bid Ready Construction Packet

5. **Business Modeling**

A. Palni will provide pro-forma financial information in a spreadsheet format. The pro-forma that includes, but is not limited to, projected revenues and expenses adjusted for churn, take rate assumptions, expense savings associated with providing services to the city.

B. Pro-forma financial information will provide a clear view of the revenues and costs associated with operating a network, which will then inform financing strategy.

C. Activities/Outcomes:
- Development Pro-forma

D. Assumptions:
- MCN to serve as ISP

6. **Technical Assistance**

A. Palni team is available to remotely attend pre-proposal meeting with interested contractors and to respond to Requests for Information during the proposal process.

B. If revisions are required, construction team will provide expertise and recommendations to identify and support design/engineering solution.

C. Palni PM will provide input and support to the city team developing financing strategy.

D. Palni PM will provide input and support to City team developing grant applications for implementing project.

E. Activities/Outcomes:

- Attend Business Planning and Financing Strategy Meetings

- Provide grant writing support in terms of narrative related to technical aspects of project and peer review for consistency.

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7. **Project Administration**

A. All project data including, but not limited to: field data, design drawings, permit application, permit drawings, schedules, and potential change orders will be retained on a Palni internal server for 2 years after the completion of the project.

B. Communications with City staff, City Council, and the public:
- Communications will be managed by a single point of contact (SPOC): Palni Project Manager, Mitch Drake. The PM will serve as liaison between Palni and City staff. This SPOC approach provides for communications to be focused and documented. The following table represents key communications requirements, staff names and contacts, and method of communications.

Table 1 – Communications Matrix

Audience	Key Message	Channels	Date/Time	Owner
Broadband Project Team	Project Updates, Public Notifications	Email, Video Conference	Monthly – last working day	Palni PM
Special Projects Manager	Keep Informed and Collaborate	Email, Telephone, Video Conference	As needed	Palni PM
Grants Coordinator	Billing	Email, US Postal Service	Monthly	Palni PM
Public Works/Engineering	Keep Informed, TCPs, Easements ROW's	Email, Telephone, Video Conference	As Needed	Palni PM, Engineers
Finance	Business Plan, pro-forma questions	Email, Telephone, Video Conference	As Needed	Palni PM
Planning Consultant	Entitlements and Environmental Review	Email, Telephone, Video Conference	As Needed	Palni PM

A. Assumptions:
- Use of City Zoom account for virtual meetings