MMG Budget Narrative Template

Applicant Name: ENMR Telephone Cooperative

Applicant Type: Single Entity

Proposed Period of Performance: Two Years

Total Project Costs: $103,404,714

Total Federal Grant Request: $49,858,624

Total Matching Funds (Cash): $0

Total Matching Funds (In-Kind): $53,546,090

Total Matching Funds (Cash + In-Kind): $53,546,090

Total Matching Funds (Cash + In-Kind) as Percentage of Total Project Costs: 51.78%.

ENMR Telephone Cooperative (ENMR), will adopt fiscally sustainable middle mile strategies and as a means of substantiating as much provides a full 20-year detailed financial analysis project model as additional support following the NTIA Financial pro-forma document. Furthermore, the detailed financial analysis provided depicts the middle mile project revenues are sufficient to support long-term provision and operation of the proposed middle mile facilities. It is this same detailed financial analysis that was provided by ENMR to the financial institution for evaluation and inclusion in the underwriting process to secure the commitment letter of credit supplied with the application.

The ENMR budget includes Middle Mile Infrastructure costs associated with implementing the proposed grant project components. ENMR is submitting this application as single entity but is working with sub-recipients, Delcom Inc. (Delcom) and Baca Valley Telephone Cooperative (Baca Valley) who will be contributing in-kind match to this application. ENMR will be performing all tasks detailed in this application and narrative below as well as incurring all the related costs. Upon the completion of the project in the committed two-year time period, ENMR will transfer the ownership of the application components in their respective service areas to Delcom and Baca Valley based on the agreement between these three parties signed on 29th of August 2011 as amended. ENMR, Delcom and Baca Valley entered an original agreement referenced for the purpose of an NTIA Broadband Technology Opportunities Program (BTOP) application submitted and subsequently awarded to ENMR. The details of the value associated with ENMR as an applicant and Delcom and Baca Valley as sub-recipients has been detailed in the Table of Funded Participants and Unfunded Collaborators in Section 3.2.

ENMR's application includes the following Capital Investment schedule:

Detailed Budget Justification Line Item	Description	Cost	Year 1	Year 2	Total
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	Capex Total:	$49,858,835.00	[redacted]	[redacted]	$49,858,835
	[redacted]	[redacted]			[redacted]
	[redacted]	[redacted]			[redacted]
	Total In-Kind Match:	$ 53,542,433.97			$53,542,434
				Combined Project Total:	$103,401,269

1. Administrative and Legal Expenses - [redacted]

The budget category includes [redacted] for external consultant assistance associated with application preparation; per NOFO requirements, this amount does not exceed the $50,000 limit and is considered reasonable by ENMR as it amounts to less than [redacted] of the total project cost. ENMR will be utilizing internal resources for operating the network, customer support and billing of services and is not seeking funding related to this.

2. Land, structures, rights-of-way, appraisals, etc. - [redacted]

The budget category includes a total of [redacted] for the acquisition of rights-of-way, permits and buildings. The proposed rights-of-way acquisition and permitting budget totaling [redacted] is estimated based on ENMR's costs in obtaining rights-of-way for fiber construction over the last several years and is summarized in Table 1 below for each route.

Plateau NTIA Middle Mile OPC

	Miles	ROW Total	Cost/Foot
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
TOTAL	[redacted]	[redacted]	

Table 1: RoW Cost Summary by Route

Of the [redacted] total in this category, [redacted] budgeted for the acquisition of buildings which would include generators, DC power plant, battery backup and ancillaries. The [redacted] for buildings includes $173,000 for each of two new locations: [redacted] ENMR intends to acquire land for these new locations outside the project funding request through general funds.

3. Relocation expenses and payments - [redacted]

ENMR is not requesting any costs associated with this category within our grant proposal.

4. Architectural and engineering fees - [redacted]

The proposed engineering fees of [redacted] are provided to include the post award professional engineering services required to complete the project. The post award engineering services of [redacted] are projected based on traditional engineering services provided in the USDA/RUS program which include project design, equipment engineering, outside plant staking, contracts, and outside plant construction. Each of these areas have specific details performed by the engineer to assist ENMR in procuring vendors and contractors as needed to complete the proposed project. The overall budgeted engineering fees are expressed as a percentage of the projected capital budget of all new builds and equipment project to be engineered, which would include buildings, electronics and fiber plant facilities. Table 2 below provides a summary of the OSP engineering, [redacted] costs for each route. Engineering costs for Buildings, [redacted] and Equipment, [redacted] are not directly associated with particular routes and are calculated as a percentage of the building/equipment costs.

Plateau NTIA Middle Mile OPC

	Miles	OSP Engineering	Cost/Foot
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
TOTAL	[redacted]	[redacted]	

Table 2: OSP Engineering Costs By Route

The project design involves taking the initial design and finalizes the design to prepare it for construction. These services will include coordination with agencies and 3rd party entities for completion of tasks directly associated to the engineering design and construction of the proposed project.

Equipment engineering services include identifying the various vendors and manufacturers capable of providing the necessary equipment needed to complete the project. The proposed project has two main types of equipment to procure: 1) IP/Routing equipment and 2) DWDM optical transport equipment. Engineering of these two equipment platforms will identify the technical requirements of each, establishing a request for information or request for proposal from vendors/manufacturers to respond how their product(s) can meet the technical requirements of the network. Engineering assists ENMR in selecting the appropriate solutions proposed and provides contract administration to procure the selected equipment. Equipment engineering services are provided on a unit fee basis as a percentage of the equipment purchased and on a time and expense basis.

Outside plant staking services is an on-site detailed engineering process where the fiber routes to be constructed are surveyed by the engineer and drawn on a set of construction sheets or "staking" sheets to identify the individual units needed to construct the project. This level of detail is utilized in the next engineering phase of contract administration. The staking of the project is a time-consuming element of the engineering process, as it provides the actual drawings, or maps, to be used by a contractor to build the fiber routes, as designed. Outside plant staking services are typically charged on a per mile rate basis.

Contract administration services are provided to prepare outside plant (OSP) plans & specifications in the form of a contract to be executed between ENMR and a proposed contractor. The engineer accumulates the individual units identified in the engineering staking process, along with the staking sheets themselves, and correlates those to a set of plans & specifications to be included in a contract format. The engineer assists ENMR in procuring a contractor through a bid process, or negotiations, and a contract is executed between ENMR and the contractor for the construction of the proposed fiber facilities. After construction is completed and all elements of the contract is complete, contract administration services will provide a close-out of the contract, which consists of a final tally of units placed, a final cost to be paid to the contractor, release of liens, a certification by the engineer and a final acceptance by ENMR. Contract administration services is typically provided on a fixed fee basis per contract.

Engineering construction services are provided in the form of providing on-site experienced engineering personnel to assist ENMR in providing oversight of the project, inspections of the contractor's work in relation to the plans & specifications and track the progress of the project for review of the billing of the contractor's services. Engineering services will include the preparation of as-built maps to provide to ENMR for operational purposes after the construction has been completed.

ENMR recognizes the value and importance of working as a team to implement the proposed broadband facilities and services for the ENMR network. Therefore, ENMR will be reinforcing and using existing relationships with state, local and tribal entities to assist in reviewing construction route areas and to assist in permitting construction. Additionally, ENMR will be utilizing an existing relationship with John Staurulakis, Inc. (JSI), to assist with engineering design and implementation of the proposed project. JSI has a long history of assisting telecommunications utilities and continues to provide equipment and OSP engineering services for numerous telecommunication utility companies. JSI is able to act as a full-service consulting firm, providing financial, engineering, management, regulatory, operational, and strategic assistance to ENMR. For this particular project, JSI will provide the necessary OSP and equipment engineering expertise to design and implement the proposed facility improvements. JSI's staff includes OSP design engineers, equipment engineers, contract administrators, OSP inspectors, and project management specialists necessary to design and manage project implementation for ENMR.

5. Other architectural and engineering fees - [redacted]

The proposed environmental study fees of [redacted] are budgeted as a percentage [redacted] of the OSP construction cost, based on recent projects completed near the proposed build areas by ENMR. These fees include all aspects related to environmental assessment activities and are summarized by route as shown below

Plateau NTIA Middle Mile OPC

	Miles	Environmental Assessments	Cost/Foot
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
TOTAL	[redacted]	[redacted]	

6. Project Inspection fees - [redacted]

ENMR is not requesting any costs associated with this category within our grant proposal.

7. Site work - [redacted]

ENMR is not requesting any costs associated with this category within our grant proposal.

8. Demolition and removal - [redacted]

ENMR is not requesting any costs associated with this category within our grant proposal.

9. Construction - [redacted]

Outside plant fiber construction costs of [redacted] are necessary to build the proposed fiber routes which will provide access to the unserved/underserved areas in the region, improve redundancy of ENMR's middle-mile transport and reduce latency. Construction of the proposed fiber facilities will be completed in accordance with the plans & specification prepared by the engineer, as described above. The proposed fiber construction will consist of 155.5 miles of buried plant design. This will provide the best protection for the fiber and extend its useful life well beyond its depreciable life. The construction of the fiber is planned to be placed primarily along existing, pre-disturbed road rights-of-way. Therefore, the costs projected are reflective of the methods necessary to complete the construction in this manner. The various buried construction methods will include a plow/trench placement, directional boring, rock excavation, and splicing of the fiber. Within each method, the contractor utilizes multiple different pieces of heavy equipment and operators, which is reflected in the different costs. The projections provided are based on recent experiences of similar projects within the area and the projected state of the industry at the time this project is planned to be implemented.

[redacted]

Plateau NTIA Middle Mile OPC

	Miles	Material	Construction Labor	Mat/Labor Total	Est. Tax OSP	OSP Total	Cost/Foot
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
TOTAL	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	

Table 2: OSP Construction Costs

ENMR has not yet determined the contractor that will be performing the outside plant construction work. ENMR will utilize contract administration services provided by their Engineer to prepare a contract and will go through a bid process or negotiation with multiple contractors to select and execute a contract for construction services. Based on the size of the proposed project, ENMR is anticipating having a single contract for the proposed construction projects.

ENMR's procurement policy requires a competitive bidding process utilizing a Request for Proposal (RFP) for all construction projects. The RFP process must identify a minimum of three (3) potential vendors and prepare and send the RFP to those identified potential vendors. RFPs are publicly solicited (advertised) and a firm-fixed-price contract (lump sum or unit price) is usually awarded to the responsible bidder whose bid, confirming with all the material terms and conditions of the RFP, is the lowest in price. RFPs include, at a minimum, the purpose of the contract with a brief description of the requirements, background history and necessity for the proposed contract, proposed starting date, the time period required for total performance, schedule of deliverables, method, and terms of payment, listing of any plans or drawings, vendor criteria, and reporting requirements.

10. Equipment - [redacted]

Equipment costs of [redacted] are included for IP/Routing equipment, [redacted] and DWDM optical transport equipment, [redacted] All POPs will include DWDM Add/Drop ROADM equipment. Additionally, in the majority of POPs, routing equipment will be deployed along with the DWDM equipment. Locations identified as "amps/regen" will consist of only DWDM amplification equipment due to the distance between some POPs in the proposed network.

[redacted]

[redacted]

The DWDM equipment costs are for use in connecting the routers at the POPs together as well as for providing Layer 1 type services such as wavelength-based transport services at the 10G, 100G and/or 400G level between POPs on the network. [redacted]

The pricing for the DWDM equipment is based on proposals received by ENMR in a request and proposal in the last 6 months. The first type of DWDM site is a "DWDM Add/Drop ROADM Node" site, wherein the system is connecting two or more "degrees/directions" and is capable of adding or delivering services needed for interconnect. The second type of DWDM site is an "amp/regen" site, wherein the equipment serves only to amplify the DWDM signal between POP locations due to the distance from site to site.

Maintenance and operation of the proposed IP/routing and DWDM equipment will be provided directly by ENMR and the subrecipients through existing technicians and engineering resources. All software and licenses necessary to operate and manage the proposed network have been included in the cost of the DWDM and IP/Routing equipment. While a specific software has not yet been identified, the cost is estimated based on pricing ENMR has obtained recently in a competitive RFP.

11. Miscellaneous - [redacted]

Miscellaneous category costs include ENMR and its sub-recipients' in kind-contributions of [redacted], of which [redacted] is for fiber contributed to the project and [redacted] is for space and power contributed to the project.

Regarding in-kind contributions, the proposed middle-mile project seeks to enable robust and resilient connectivity throughout much of the state of New Mexico and parts of Texas and Arizona as further described in the project narratives. In its long history, ENMR has created an extensive fiberoptic network. ENMR has committed to providing two (2) dark fibers 1,628.17

route miles to enable the establishment of this network. Additionally, ENMR subrecipients Delcom and Baca Valley Telephone Cooperative have committed to providing two (2) dark fibers over 517.27 and 105.4 route miles respectively to enable the establishment of this network. The route miles committed exclude any fiber constructed using the Broadband Technology Opportunities Program (BTOP) funds, so a total of 2,250.84 route miles are factored into the in-kind donation valuation. Together, these 2,250.84 miles of contributed fiber, which exclude any fiber funded with BTOP or any other Federally funded program, will be combined with the 155.5 miles of new-build fiber in this application to form the network.

In determining the value for this in-kind contribution of fiber, ENMR has taken the approach of utilizing market-based rates for a 20-year dark fiber IRU (Indefeasible Right of Use) as these fiber assets have an ongoing value that exceeds book value as well as ongoing maintenance requirements associated with ensuring the fiber is available as a service over the committed term. In evaluating market rates, ENMR has observed a range of pricing for dark fiber IRUs. These IRUs generally consist of several fees that may be presented as a lump sum: a component based on the number of fiber miles (strands * route miles), scheduled maintenance fees based on route miles and initial connection/splicing fees. Additional fees may be associated with unscheduled maintenance/damage. Utilizing this information, ENMR has determined that the value of the two (2) strands of dark fiber over 2,250.84 route miles to fall within a range of [redacted] and [redacted]. On the lower end of this range, the pricing was obtained from a proposal provided by an electric company for aerial fiber on a route for which they do not have commercial rights, the responsibility for which to obtain would fall to the lessee. ENMR has opted to provide a conservative estimate for the in-kind valuation close to the low end of this range despite having all the appropriate commercial rights in place on the routes. Please see below the calculation for the in-kind match for the fiber contributed by ENMR and subrecipients Delcom and Baca Valley Telephone

ENMR and its subrecipients are also contributing space and power within their points of presence for the equipment supporting this new network. In nineteen (19) locations which will include both DWDM (Dense Wave Division Multiplexing) and routing equipment, the network is anticipated to require use of most of a full rack. A full rack will be allocated to allow some space to grow. In twenty-seven (27) locations, which will include only DWDM Add/Drop ROADM equipment or DWDM amplification/regen equipment, a half rack is anticipated to cover the need.

In determining the value for this in-kind contribution of space and power, ENMR has taken the approach of utilizing market-based rates applied over a 10-year period as the space and power requirements are likely to change after such time due to technology refreshes. In evaluating market rates, ENMR has opted to utilize highly conservative rates which should be sufficient to cover estimated power and cooling requirements. This is estimated to be [redacted] per half rack of

space and [redacted] per full rack of space, resulting in a total space and power in-kind contribution of [redacted] Breakdown is shown below.

	$ [redacted]	$ [redacted]		
	Full Rack	Half Rack	Monthly Total	10-Year Total
[redacted]	[redacted]	[redacted]	$ [redacted]	$ [redacted]
[redacted]	[redacted]	[redacted]	$ [redacted]	$ [redacted]
[redacted]	[redacted]	[redacted]	$ [redacted]	$ [redacted]
				$ [redacted]

12. SUBTOTAL (sum of lines 1-11) - [redacted]

13. Contingencies - [redacted]

ENMR has allocated minimal contingency costs in our grant proposal to support permitting costs that may exceed the allocated budget.

14. SUBTOTAL (sum of lines 12-13) - [redacted]

15. Project (program) income - $0

16. TOTAL PROJECT COSTS - $103,404,714

The total cost of the project is $103,404,714. Of this, $49,858,624 consists of federal funds requested and $53,546,090 consists of in-kind contribution value. This results in a match percentage of 51.78%.