



Budget Narrative

Applicant Name: Executive Office of the State of West Virginia

EasyGrants Number: 2762

Organization Type (from Question 1D on BTOP application): State Agency

Proposed Period of Performance: 3 Yrs

Total Project Costs: \$ 159,823,296

Total Federal Grant Request: \$ 126,323,296

Total Matching Funds (Cash): 0

Total Matching Funds (In-Kind): \$33,500,000

Total Matching Funds (Cash + In-Kind): \$33,500,000

Total Matching Funds (Cash + In-Kind) as Percentage of Total Project Costs: 21%

1. Administrative and legal expenses

0

2. Land, structure, rights-of-way, appraisals, etc.

0

3. Relocation expenses and payment

0



4. Architectural and engineering fees

- . The SF 424 C identifies \$23,639,999 in Federal BTOP Funds requested for architectural and engineering fees. In addition, WV will add \$5,000,000 in kind to this area for a total of \$28,639,999. By nature, the execution of this grant requires significant architecture and engineering efforts. Incorporated in this portion of the funding are the design fees for each of the middle mile broadband nodes supporting the identified anchor tenants. Embodied within the overall system design (for the entire state) is the build out of **twelve (12)** additional towers, radios, microwave and additional related items that facilitate the operation of the microwave backbone. **It must be noted that each tower site will have two associated microwave hops (incoming and outgoing) with related equipment.** Safety requirements are also inherent within the architectural phase. This involves design of towers and related networks. Further, the grant requires an open architecture – effectively causing additional design and architectural fees to ensure compliance with the actual intent of the middle mile – that is to afford connection to all last mile requirements. Fiber build out is inherent with this middle mile grant and the design of fiber is especially difficult in West Virginia due to the mountainous terrain and geography. The State of West Virginia is continuing construction of its system as funds are available. **Associated costs relating in Architectural and Engineering are for design, including architecture of towers, sizing, grounding, license of associated peripherals associated with towers and engineering efforts directly associated with the MPLS middle mile solution – to ensure the optimum success. For instance, an overall statewide architecture will dictate priority order (based on BTOP guidance) of both associated tower services and middle mile fiber solutions.**

On the “Detail of Project Costs” spreadsheet are two line items noted as Project Management Engineering. The one noted at \$26692 at 1063 units is the basic application for a total cost of \$28,373,956, is derived by taking the projected overall Architectural and Engineering costs and by dividing by the total units.

The second line item noted as Project Management Engineering is the cost we believe will be required by in-house (as directed by the broad band implementation team) to validate the cost, design, applicability and practicality of the primary engineering effort. This relates to a single cost of \$26,403.

BTOP funds:	\$ 23,639,999
In Kind:	\$ 5,000,000
Total:	\$ 28,639,999

Please see that attached documents for the cash and inkind matching information.



5. Other architectural and engineering fees

- 0

6. Project inspection fees

- 0

7. Site work

0

8. Demolition and removal

0

9. Construction

- Actual construction cost funded by BTOP is expected to be around \$49,094,657 in Federal Funds. In addition, WV will add \$21,810,000 in-kind for a total of \$70,904,657 for this area. This construction is the physical build out of the telecommunications portion using the MPLS contract of the overall statewide design. The microwave portion of the backbone requires construction of **twelve (12)** 300plus foot towers with sufficient grounding, concrete, support wiring, electrical connectivity, and so forth. Each tower has gigantic holes dug with concrete supports poured in each of the holes. **Typically, the noted holes are five (5) ft in diameter and thirty-five (35) foot deep. Occasionally, the hole size may change depending on tower height, ground type (rock, shale, etc.), and terrain.** This provides the foundational support for the towers. This cost is derived on experience from construction of previous microwave systems, towers, and MPLS build out. Many portions of the State's tower and microwave network that are either build or under construction are essential to the successful completion of the network.

On the associated spreadsheet, labeled "Detail of Project Costs" the line item noted "Fiber Special Construction" at a unit cost of \$43,549 at a quantity of 1063 is the cost of the total outlay of fiber to anchor tenants as specified in this middle mile approach.



The second line item noted as “Mobile Kit to install/test/validate” is a single mobile kit that will be used during the validation and assurance process to ensure bandwidth sufficiency, reliability, integrity, etc. This mobile kit will be used by in-house technicians to ensure installers/vendors meet the scope of work directly related to bandwidth to each anchor.

BTOP funds: \$49,094,657

In Kind: \$21,810,000

Total Const: \$70,904,657

10. Equipment

- Equipment (funded by federal BTOP grant) cost is expected to be approximately \$53,588,640. WV will place \$2,690,000 in kind for a total of \$56,278,640 in this area. This cost is based on actual contracts with minimal inflation cost built in. This includes the steel, buildings, generators, wiring, safety features, radios, microwave, and other related materials necessary for the microwave portion of the backbone. Further, the telecommunications portion of the build out requires switches, hubs, power supplies, power conditioners, etc to construct the equipment. **As noted , the routing equipment provides the hardware and software solutions that ensure appropriate levels of broadband are distributed to the noted middle-mile pipes. The routing is necessary to ensure the proper network paths. Dependant upon the volume of traffic on a middle mile line, both structured and multi-path routing techniques are necessary. As this middle mile solution parlays to the last mile solutions (not included in this request), business processes of the anchor tenants becomes vastly dependant upon the broadband services; therefore correct routing is essential to ensure adequate performance while minimizing downtime**

Note on the spreadsheet labeled “Detail of Project Costs” two separate line items noted as routers/switches/ etc. The line item for 1052 units with a unit cost of 30,845 for a total of \$32,448,940 is the primary routers/equipment associated with this project. These are necessary to control bandwidth ensuring a smooth and reliable network..

The second line item of 1 router light (without full gamut of peripherals) at \$29,700 will be used for the primary programming/testing/monitoring/etc of installed and functional routers. Further, it will be the primary router system to “troubleshoot” problem area within the operation of the system. The router light will be fully functional and integral to overall success of this middle mile solution.

BTOP Funds: \$53,588,640

In Kind: \$ 2,690,000

Total Equip: \$ 56,278,640



11. Miscellaneous

- The federal BTOP portion of BTOP miscellaneous is \$0; however, WV in kind will be \$4,000,000 for an area total of \$4,000,000. The miscellaneous costs are costs that are currently being expended or planned to be expended to further expand the network and make the system as robust as possible. These costs include utility bills, equipment, road maintenance and construction, buildings, switches, supplies, etc. that are supplied by various partners of the State in the utilization of the Interoperable Radio Project (microwave).

BTOP funds: \$ 0

In Kind: \$4,000,000

Tot Misc: \$4,000,000

In-Kind:

Following is a detailed itemization of the total in-kind with funding sources from which the in-kind is derived.

Item 1 is funding from the WV Legislature in 2008. During that year, Governor Manchin recommended and the Legislature provided two separate appropriations of \$10,000,000 each for a total of \$20,000,000. From that original 20 mil, remaining funding is \$9,090,000 that has not yet been obligated for any purchases. Noted on the "2008 General Revenue Money" spreadsheet, all items used for this match are with project dates ending in 2010/2011 making them fully eligible for this grant. For additional clarification, please note that this funding will be used to provide towers, microwave, engineering, etc for the towers associated with the BTOP WV Broadband and Interoperable Radio initiative.

2010= \$5,000,000

2011= \$4,090,000

5 yr total = \$9,090,000

Item 2 shows the WV Legislature provided the WV Broadband Council \$5,000,000 for Broadband initiatives. The current contract to Kimball Associates is \$2,610,240 for the Kimball contract and related consultant



services directly related to WV Broadband. This commitment leaves \$2,389,760 for additional BTOP in-kind.

2010= \$2,610,240

2011= \$2,389,760

5 yr total = \$5,000,000

Item 3 is \$2,690,000 that purchased a switch for the interoperable radio system in WV. This switch and the host radio system fully intertwine with the BTOP grant. The switch will be brought on line during the execution phase of this grant. Funding for the switch was from the WV State Police.

2010 = \$2,690,000

5 yr total = \$2,690,000

Item 4 is for \$1,800,000 9-1-1 annual funding for a total of 4 years providing \$7,200,000 in kind for the BTOP. Further funding of \$1,000,000 for a total of 5 years provides a total of \$5,000,000 for the BTOP. Total available from this source is \$12,200,000 in kind for five years.

2010 = \$2,800,000

2011 = \$2,800,000

2012 = \$2,800,000

2013 = \$2,800,000

2014 = \$1,000,000

5 yr total = \$12,200,000

Item 5 denotes proven fees directly related to tenants of towers on the radio system. A conservative, but proven \$52,000 annually may be expected in the area of rental fees. This amount will not decrease and in fact, may increase as noted in year 5, as the amount depicted will go from \$52,000 to \$62,000 for a total BTOP in-kind of \$270,000.

2010 = \$52,000

2011 = \$52,000

2012 = \$52,000

2013 = \$52,000

2014 = \$52,000

5 yr total = \$270,000

Item 6 is power charges paid by the State on owned towers. This proven amount is currently \$50,000 annually and should remain at or over that amount during the 5-year time noted on the spreadsheet for an overall total of \$250,000 in-kind.



2010 = \$50,000
 2011 = \$50,000
 2012 = \$50,000
 2013 = \$50,000
 2014 = \$50,000
 5 yr total = \$250,000

Item 7 is for a 5 year (years 1 and 2 are conservative known amounts and the only years considered for the BTOP) conservative total of \$4,000,000. This funding is from local and state government for upgrades, installations, towers, utilities, etc that will expand communications networks.

2012 = \$3,000,000
 2013 = \$1,000,000
 5 yr total = \$4,000,000

Summary:

Item 1	WV Legislature	\$ 9,090,000
Item 2	WV Legislature (BB initiatives)	\$ 5,000,000
Item 3	WV State Police Switch	\$ 2,690,000
Item 4	9-1-1 & Tower Assistance Funds	\$ 12,200,000
Item 5	Tower Rental Collection	\$ 270,000
Item 6	Power Charges – pd by State	\$ 250,000
Item 7	Local/State Upgrades	\$ 4,000,000
Total	In-Kind	\$ 33,500,000

Grand Summary:

Federal BTOP Funding: \$126,323,296
 In-Kind (detailed above): \$ 33,500,000



Project Total: \$ 159,823,296

Addendum

- If indirect costs (i.e., indirect, overhead, general and administrative, facilities and administration, etc.) and/or fringe benefits are included in the budget, please provide a copy of your existing Negotiated Indirect Cost Recovery Agreement (NICRA), if available. If the NICRA is applied accordingly in the budget, there is no need to justify the costs. If a NICRA is not available or is not consistent with the rates/calculations in the budget, please provide an explanation of how the amounts were calculated. Please clearly list the manner in which indirect costs are calculated in the budget.

APPLICANT'S NAME

Executive office of the State of West Virginia

BUDGET INFORMATION - Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.

COST CLASSIFICATION	a. Total Cost	b. Matching Funds (Cash)	c. Matching Funds (In-Kind)	d. Federal Funding Request (Columns a-b-c)
1. Administrative and legal expenses	\$0	\$0	\$0	\$0
2. Land, structures, rights-of-way, appraisals, etc.	\$0	\$0	\$0	\$0
3. Relocation expenses and payments	\$0	\$0	\$0	\$0
4. Architectural and engineering fees	\$28,639,999		\$5,000,000	\$23,639,999
5. Other architectural and engineering fees	\$0	\$0	\$0	\$0
6. Project inspection fees	\$0	\$0	\$0	\$0
7. Site work	\$0	\$0	\$0	\$0
8. Demolition and removal	\$0	\$0	\$0	\$0
9. Construction	\$ 70,904,657		\$21,810,000	\$49,094,657
10. Equipment	\$56,278,640		\$2,690,000	\$53,588,640
11. Miscellaneous	\$4,000,000	\$0	\$4,000,000	\$0
12. SUBTOTAL (add #1 through #11)	\$159,823,296	\$0	\$33,500,000	\$126,323,296
13. Contingencies	\$0	\$0	\$0	\$0
14. SUBTOTAL (add #12 and #13)	\$159,823,296	\$0	\$33,500,000	\$126,323,296
15. Project (program) income	\$0	\$0	\$0	\$0
16. TOTAL PROJECT COSTS (subtract #15 from #14)	\$159,823,296	\$0	\$33,500,000	\$126,323,296
FEDERAL FUNDING				
17. Federal assistance requested, calculated as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.			Enter eligible costs from line 16a Multiply X 20%	\$31,964,659