Middle Mile Broadband Infrastructure Program Response

Development Authority of the North Country
in partnership with National Grid (U.S.)

Applicant Name: Development Authority of the North Country

Applicant Type: Economic Development Authority

Proposed Period of Performance: 2 Years

Total Project Costs: $24,450,000

Total Federal Grant Request: $14,547,750

Total Matching Funds (Cash): $9,902,250

Total Matching Funds (In-Kind): $0

Total Matching Funds (Cash + In-Kind): $9,902,250

Total Matching Funds (Cash + In-Kind) as Percentage of Total Project Costs: 40.5%

DANC attests to adopt fiscally sustainable middle-mile strategies. This will be accomplished based on several factors. DANC has over 18 years of experience operating a financially sound middle mile network. As shown in the past three year's audited financial statements (as attached to the application), the Telecom Division has a positive Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA). It has been able to finance all capital costs with operating cash; it is debt-free. DANC's Board of Directors has authorized a "Restricted Assets," or reserve account, to assure sufficient capital on-hand in the event of an emergency or operational issue. As of March 31, 2022, the audited financial statements show the reserve balance at $8,995,968. Annually, the Board budgets $95,000 for emergency maintenance and $145,000 for routine fiber maintenance. As a NYS Public Authority DANC does not pay taxes on the network which reduces operating costs. The projected revenue for the new routes to be built exceeds the costs of operations. The assumed revenue sources are from last-mile internet service providers for accessing the cable, plus revenue from the anchor institutions and cell tower providers. The pro-forma model is very conservative and shows positive cash flow. This middle-mile project will be operated consistent with DANC's overall network and will be fiscally-sustainable based upon the factors listed above.

1. Administrative and Legal Expenses - $ 42,500

Activity	Total Time	Rate	Total Cost
Grant Management activities	250 hours	$100 per hour	$25,000
Legal Fees	71 hours	$250 per hour	$17,750

Grant Management Activities ($25,000) – Staff time estimated 250 hours @ $100 per hour, Director of Regional Development, to complete mandatory grant management activities such as completing reports, responding to audit requirements, conducting budgetary activities, and other activities as required by the grantor. These activities are necessary to meet the reporting and compliance requirements of the grant program. DANC staff rates change annually on 4/1.

Legal Fees ($17,500) – estimated 60 hours @ $250 per hour to develop service agreements with Internet Service Providers, community benefit agreements with municipalities where central offices will be located, MOUs between the various organizations involved in the grant, and to review all grant documents.

Federal funds will be used to pay for administrative and legal expenses.

2. Land, structures, rights-of-way, appraisals, etc. - $ 0

No land, structures or right-of-way is being acquired. We are adding 9 new interconnection points but those will be placed in existing municipal locations to keep the cost of new interconnects down.

3. Relocation expenses and payments - $ 0

No relocation expenses and payments.

4. Architectural and engineering fees - $ 960,000

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
Survey(s)	Miles	$4,000	195	$780,000
Railroad Easement/CADD Drawings	Item	$15,000	12	$180,000

Survey(s): NY State Department of Transportation requires a survey of the pole locations on New York State Roads. This project contemplates constructing fiber on 195 miles of right-of- way along NY State Roads. The NY State DOT requires these poles to be surveyed. Our average cost per mile to complete the survey for a project of this scope is $4,000 per mile times the 195 miles equals $780,000.

Railroad Easement/CADD Drawings: The hiring of engineers is needed to develop CADD drawings and obtain easements for railroad crossings. The project proposed to cross 12 railroad crossings. Each railroad crossing requires an easement plus CADD drawing (if underground) at an average cost of $15,000 per crossing.

Federal funds will be used to pay for architectural and engineering fees.

5. Other architectural and engineering fees - $ 0

Not Required.

6. Project Inspection fees - $ 0

Not Required.

7. Site work - $ 0

There will be no site work.

8. Demolition and removal - $ 0

There will be no demolition and removal.

9. Construction - $ 20,206,412

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
Engineering	Hours	$150.00	1,369	$205,384
Project Management	Hours	$150.00	2,675	$401,284
Make-Ready	Mile	$25,032	344	$8,611,008
Fiber Construction	Foot	$4.10	1,816,320	$7,446,912
Fiber Cable	Foot	$1.95	1,816,320	$3,541,824

Almost 83.4 percent of this grant application is for the construction of 344 miles of middle mile fiber cable in northern NY State. The primary construction requirements include:

Engineering: Engineering consists of: final route design for each of the 12 project segments, GIS collection of pole data and route information, developing construction prints and specifications, developing RFP/IFB for construction projects, and overseeing the construction. This work is estimated to take approximately 1,369 hours at $150/hour. Federal funds portion is $205,384.

Project Management: Project management consists of managing and tracking all make-ready construction including: coordinating with pole owners, hiring engineering firms to complete pole surveys, preparing bids for make-ready construction, overseeing make-ready work, and following up on any post inspection requirements. Project management is estimated at approximately 2,675 hours at $150/hour. Federal funds portion is approximately $1,284 .

Make-Ready: Make-ready consists of: collecting pole data, hiring an engineering firm to evaluate work that needs to be done on the existing poles to make room for the new cable, hiring contractors to perform the work, and hiring engineering firms to do a post inspection to assure the work was completed as designed. The project is 344 miles at $25,032 cost per mile for make-ready. Federal funds portion is $8,611,008.

Fiber Construction: The fiber construction includes all construction materials (excluding the cost of fiber), labor, and equipment mobilization to properly construct the fiber cable. The entire project, with the exception of a few miles in Syracuse, is aerial so an average cost per foot of $4.10 is used to build 1,816,320 feet of fiber. In Syracuse DANC will lease existing conduit. Federal funds portion is $7,207,593.

Fiber Cable – This includes the purchase of a 144 strand single mode SMF28e+ cable for the project. The latest price DANC has been quoted is $1.95/foot. Federal funds portion is $3,541,824.

10. Equipment - $ 1,025,000

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
Ethernet Switches	Item	$65,000	9	$585,000
DWDM Electronics	Item	$110,000	4	$440,000

Ethernet switches: 9 new Cisco ASR 560's, or equivalent, at $65,000 per node in each of the 9 new Central Offices. This equipment allows local customers to interconnect to the existing network at 100 Gbps. See attached network schematic for details of how the Ethernet switches will interconnect to the network.

DWDM Electronics: 4 new Infinera XTM 3000 nodes at $110,000 per node integrating them to the existing network. DANC currently uses the Infinera platform in its network. See attached DWDM schematic for details.

Federal funds will be used to fund the equipment purchases.

11. Miscellaneous - $ 606,150

Description	Unit Basis	Unit Cost	Number of Units	Total Cost
DC Power Plants	Item	$22,050	9	$198,450
Fire Suppression	Item	$12,500	9	$112,500
Generator	Item	$21,000	9	$189,000
Air Conditioning	Item	$11,800	9	$106,200

Miscellaneous includes the costs to build out the 9 new interconnection points. DANC places its Central Offices (CO's), or interconnect points, in municipal buildings. However, while the space DANC uses is existing space, it still requires additional work to bring the space to Telecordia standards. Purchases include: 9 new DC power plants including back-up batteries at a cost of $22,050 per CO; fire suppression at $12,500 per CO; a small

emergency generator with auto start capability at $21,000 per CO; and a wall mounted air conditioning unit at $11,800 per CO.

Federal funds will be used to fund the equipment purchases.

12. SUBTOTAL (sum of lines 1-11) - $ 22,840,312

13. Contingencies - $ 1,609,688

The total contingencies amount to approximately 6.5% of the project. The contingency budget is based on the cost per foot for construction and construction related materials including fiber cable. Current pricing for the fiber construction and materials is being used, however, in recent months there has been increases to the costs of fiber cable and construction. The 6.5% contingency is based on the assumption that costs will continue to increase.

14. SUBTOTAL (sum of lines 12-13) - $ 24,450,000

15. Project (program) income - $ 0

No project income will be earned.

16. TOTAL PROJECT COSTS - $ 24,450,000 ($14,547,750 federal/$9,902,250 match)