OMB Number: 4040-0004
Expiration Date: 12/31/2022

Application for Federal Assistance SF-424

*** 1. Type of Submission:**
- [ ] Preapplication
- [X] Application
- [ ] Changed/Corrected Application

*** 2. Type of Application:**
- [X] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: Completed by Grants.gov upon submission.

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Connect Maine Authority

* b. Employer/Taxpayer Identification Number (EIN/TIN): 30-1257225

* c. Organizational DUNS: 8314532580000

d. Address:

* Street1: 24 State St

Street2:

* City: Augusta

County/Parish:

* State: Maine

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 04330

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

* First Name: Peggy

Middle Name:

* Last Name: Schaffer

Suffix:

Title: Executive Director

Organizational Affiliation: Connect Maine Authority

* Telephone Number: 207-624-9849

Fax Number:

* Email: peggy.schaffer@maine.gov

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

A. State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

National Telecommunications and Information Admini

11. Catalog of Federal Domestic Assistance Number:

11.031

CFDA Title:

Broadband Infrastructure Program

*** 12. Funding Opportunity Number:**

NTIA-BROADBAND-INFRASTRUCTURE-PROGRAM-21

* Title:

BROADBAND INFRASTRUCTURE PROGRAM

13. Competition Identification Number:

NTIA-BROADBAND-INFRASTRUCTURE-PROGRAM-21

Title:

Broadband Infrastructure Program

14. Areas Affected by Project (Cities, Counties, States, etc.):

Maine | Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Connect Maine Authority Statewide Broadband Infrastructure Application

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: District 1

* b. Program/Project: District 1 & 2

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 1/1/22

* b. End Date: 12/31/22

18. Estimated Funding ($):

* a. Federal	$28,097,295
* b. Applicant	$5,187,869
* c. State	
* d. Local	
* e. Other	
* f. Program Income	
* g. TOTAL	$33,285,164

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- [ ] a. This application was made available to the State under the Executive Order 12372 Process for review on .
- [ ] b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- [X] c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

- [ ] Yes
- [X] No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

- [X] ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:	
* First Name:	Sara
Middle Name:	
* Last Name:	Hekmaty
Suffix:	
* Title:	Innovation Capture Manager
* Telephone Number:	201-726-4344
Fax Number:	
* Email:	shekmaty@tilsontech.com
* Signature of Authorized Representative:	Completed by Grants.gov upon submission.
* Date Signed:	Completed by Grants.gov upon submission.

ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009
Expiration Date: 02/28/2022

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant:, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29) U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statue(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statue(s) which may apply to the application.

PREVIEW Date: Aug 16, 2021Workspace ID: WS00772937 Funding Opportunity Number: NTIA-BROADBAND-INFRASTRUCTURE-PROGRAM-21

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.

14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).

18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Completed on submission to Grants.gov	Innovation Capture Manager
APPLICANT ORGANIZATION	DATE SUBMITTED
Connect Maine Authority	Completed on submission to Grants.gov

SF-424D (Rev. 7-97) Back

OMB Number: 4040-0008
Expiration Date: 02/28/2022

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. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	$ 1,357,500	$ 0	$ 1,357,500
2. Land, structures, rights-of-way, appraisals, etc.	$ 0	$ 0	$ 0
3. Relocation expenses and payments	$ 0	$ 0	$ 0
4. Architectural and engineering fees	$ 4,158,419	$ 0	$ 4,158,419
5. Other architectural and engineering fees	$ 0	$ 0	$ 0
6. Project inspection fees	$ 584,581	$ 0	$ 584,581
7. Site work	$ 290,620	$ 0	$ 290,620
8. Demolition and removal	$ 0	$ 0	$ 0
9. Construction	$ 14,713,986	$ 0	$ 14,713,986
10. Equipment	$ 12,035,519	$ 0	$ 12,035,519
11. Miscellaneous	$ 144,539	$ 0	$ 144,539
12. SUBTOTAL *(sum of lines 1-11)*	$ 33,235,164	$ 0	$ 33,285,164
13. Contingencies	$ 343,752	$ 343,752	$ 0
14. SUBTOTAL	$ 33,628,916	$ 343,752	$ 33,285,164
15. Project (program) income	$ 0	$ 0	$ 0
16. TOTAL PROJECT COSTS *(subtract #15 from #14)*	$ 33,628,916	$ 343,752	$ 33,285,164

FEDERAL FUNDING

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.	Enter eligible costs from line 16c Multiply X 84.41387 %	$ 28,097,295

FORM **CD-511**
(REV 1-05)

U.S. DEPARTMENT OF COMMERCE

CERTIFICATION REGARDING LOBBYING

Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, 'New Restrictions on Lobbying.' The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Commerce determines to award the covered transaction, grant, or cooperative agreement.

LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over $100,000 or a loan or loan guarantee over $150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying.' in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

* NAME OF APPLICANT

Connect Maine Authority

* AWARD NUMBER

* PROJECT NAME

Connect Maine Statewide Broadband Application

Prefix: | * First Name: Sara | Middle Name: Kelley

* Last Name: Hekmaty | Suffix:

* Title: Innovation Capture Manager

* SIGNATURE: Completed by Grants.gov upon submission.

* DATE: Completed by Grants.gov upon submission.

A. Executive Summary

The ConnectMaine Authority and its partners request $28,097,295 in NTIA grant funding to build fiber broadband infrastructure to 14,838 unserved addresses in rural Maine. The Broadband Infrastructure Program would allow the state and its Internet service provider partners to construct fiber to the premise infrastructure in areas the private sector find to be cost prohibitive. The public private partnership and federal funding will allow regional ISPs to expand their fiber-based footprints into some of the most rural unserved areas in the state.

Section 905 (d) of the COVID Relief Bill signed into law on December 27, 2020, allocates $300 million for broadband infrastructure grants to be administered by the U.S. Department of Commerce and the National Telecommunications and Information Administration. The State of Maine has formed an entity eligible for program participation, a covered partnership between the state, three Maine towns, and three providers of fixed broadband service. The covered partnership is applying to fund seven covered broadband projects in rural Maine. Each project is competitively and technologically neutral and all but one project would provide service to 100% unserved addresses within proposed eligible service areas. The one project unable to connect 100% of unserved locations does serve 98.5% of unserved locations within the Eligible Service Area while connecting 4,016 unserved households, 387 unserved businesses and 42 unserved community anchor institutions. Overall, the seven projects connect 99.8% of unserved addresses within their eligible service areas.

The State of Maine, ConnectMaine Authority is pleased to be the lead applicant on this NTIA Broadband Infrastructure Program grant proposal. This application is a culmination of years of work by rural Maine communities, Internet service providers and the State of Maine to bring high quality broadband service to these rural areas. The demand for better broadband has only increased with the pandemic, and people in these communities are among the worst served in the state for broadband, with many not even having access to reliable cell service.

According to the U.S. Census bureau and based on the 2010 Census, "*Maine and Vermont were the most rural states, with 61.3 and 61.1 percent of their populations, respectively, residing in rural areas*."[1] While other states may have more uninhabited territory, a higher percentage of their population reside in urbanized areas. The majority of Mainers live in rural Maine.

Maine was one of the first states in the country to develop a community broadband planning program. We have had over 200 communities participate in the process since 2016. The pandemic added urgency to these efforts as better access for school, work, telehealth, staying in touch with friends and relatives all became virtual. This application unites communities from across the state, and their efforts to drive better service to their area. It is because of the engagement of these communities and their ability to identify coverage gaps, do crowdsourced speed testing, identify business needs, health care needs, education needs and to connect with potential providers that ConnectMaine has been able to organize an application that brings coverage from the mountains to the sea in this single application.

The Maine Legislature approved the operation of the ConnectMaine Authority with the goal of expanding broadband access in the most rural, unserved areas of the state with little to no prospect of service from a traditional provider alone without a subsidy. This grant application will enable ConnectMaine to achieve that goal and bridge the digital divide in parts of rural Maine.

[1] https://www.census.gov/newsroom/releases/archives/2010_census/cb12-50.html

B. Covered Partnership

The covered partnership includes the state of Maine, the towns of Somerville, Washington and Isle Au Haut, and Internet service providers Consolidated Communications, Axiom Technologies and LCI Fiber Optic Network.

The lead applicant in the covered partnership is the ConnectMaine Authority, a public instrumentality of Maine state government whose mission is to facilitate the universal availability of broadband to all Maine households and businesses and help them understand the valuable role it can play in enriching their lives and helping their communities thrive. The ConnectMaine Authority conducts rulemaking to incorporate statutory changes made by the state legislature. The ConnectMaine Authority is a board consisting of seven voting members. Duties of the Authority include:

- Establish criteria defining unserved and underserved areas
- Promote use of broadband service
- Support broadband investment
- Facilitate state support of deployment of broadband infrastructure
- Collect and disseminate information; and
- Administer funds

As executive director, Peggy Schaffer manages the Authority's rulemaking efforts, investment decisions and policy recommendations. Peggy was the Small Business Advocate for the Secretary of State's office and served as the Co-chair of the Maine Broadband Coalition, a statewide group advocating for high-speed broadband. Peggy was the Chief of Staff in the Senate Majority Office and the Senate President's office. Peggy also worked as the lobbyist for the Department of Economic and Community Development where she helped develop and implemented many of the State's key economic initiatives under Governor Angus King and Governor John Baldacci.

Covered partnership member Axiom Technologies has designed and constructed over 100 access points connecting over 2,500 square miles in one of America's most challenging terrains — rural Maine. Axiom continues to innovate and uses a combination of solutions including fiber, wireless, DSL, and TV white space. The Axiom projects applied for here are for a fiber to the premise solution. Axiom Technologies was incorporated in 2004 and is headquartered in the town of Machias, in Washington County, Maine.

Mark Ouellette is the President of Axiom with responsibility for overseeing and growing Axiom's internet and wireless businesses. Mr. Ouellette has held several senior leadership positions in Maine. Previously, Mr. Ouellette was the Executive Director of Mobilize Maine, where he worked with regions across the state to help develop and implement measurable, private sector economic development strategies. Before that, Mr. Ouellette served as Director of Business Development for the State of Maine. Earlier, he served as Chief of Staff to U.S. Representative Tom Allen. Mr. Ouellette has 20 years of economic and community development experience. He has a strong track record of successfully writing and securing federal, state, and foundation grants. Most recently, he was pivotal to receiving Axiom's premiere Microsoft grant award to provide internet access to homes in Washington County, Maine, using TV white space.

Covered partnership member LCI Fiber Optic Network is a division of the LTC Family of Companies, which also includes the Lincolnville Telephone Company and Tidewater Telecom. Founded in 1904, LTC has been serving the telecommunication needs in Midcoast Maine for over 100 years. Now with approximately 50 employees, LTC operates out of its state-of-the-art Network Operations Center in Nobleboro, Maine. The secure servers, data center, digital switching hub, engineering department, network monitoring services, technical support division, installation crews, and customer service center are all in the Midcoast facility. They also maintain a facility in Lincolnville that houses technical crews

who serve the greater Camden, Rockport, Lincolnville, Northport and Belfast area. LTC owns and maintains thousands of miles of phone and fiber optic broadband lines in Maine.
LCI Fiber Optic Network is the largest provider of fiber to the premises (FTTP) service in Coastal Maine. LCI and LTC are family owned by the Manning family with Shirley Manning as President and Owner, Randal Manning as VP Engineering and Operations, and Rick Manning as VP Engineering and Business Development.

Covered partnership member Consolidated Communications provides data, internet, voice, managed and hosted, cloud and IT and TV services. Consolidated Communications began trading on the NASDAQ under ticker symbol CNSL in 2005. Consolidated Communications was founded as the Mattoon Telephone Company in 1894 in Mattoon, Illinois. In 1924, the company became the Illinois Consolidated Telephone Company (ICTC) and acquired telephone companies in the region. In 1984, Consolidated Communications, Inc. (CCI) was formed as the parent company of ICTC. In 1997, CCI merged with McLeodUSA but was purchased back in 2002 by ICTC Chairman and President Richard A. Lumpkin and investors. The company name was then changed to Consolidated Communications. In July 2017, Consolidated Communications acquired FairPoint Communications, expanding the company's service area to 24 states, including Maine.

Spearheading this partnership for Consolidated is Erik Garr. Mr. Garr brings more than 25 years of experience in communications and financial services. Garr was director of strategy and operations at Google Cloud and served as director of Google Fiber where he launched five new markets across the southeast region and managed the business in its entirety in North Carolina. Garr was a principal at PricewaterhouseCoopers, LLP and served a one-year appointment at the FCC as general manager of the National Broadband Plan. Garr holds a master's degree in public policy from the University of Chicago and a bachelor's degree in political science from the University of Michigan.

Covered partnership members including the towns of Somerville, Washington and Isle au Haut are all small communities in Rural Maine. Axiom Technologies is the only provider who has been willing to help create municipally owned networks that would bring universal service at an affordable price in these areas. Because of tight competition for limited state funding ConnectMaine invited them to join in this application and will be providing a 10% match for these communities.

The table of covered partnership members, and key personnel resumes are included on the following pages.

B.i. Table of Funded Project Participants and Unfunded Informal Collaborators

Organization Name	Address	Administrative Role	Scope	Funding Requested
Axiom/ Somerville Maine	3 Water Street, Machias, ME 04654	Applicant	Co-applicant - ISP Provider and Political Subdivision	$1,441,711
Axiom/ Washington Maine	3 Water Street, Machias, ME 04654	Applicant	Co-applicant - ISP Provider and Political Subdivision	$2,690,027
Axiom/ Isle au Haut Maine	3 Water Street, Machias, ME 04654	Applicant	Co-applicant - ISP Provider and Political Subdivision	$1,109,975
ConnectMaine Authority	59 State House Station Augusta, ME 04333	Applicant	Lead Applicant - Political Subdivision	$1,298,000
Consolidated Communications/ Blue Hill	5 Davis Farm Portland, ME 04103	Applicant	Co-applicant - ISP Provider	$9,830,985
Consolidated Communications/ Farmington	5 Davis Farm Portland, ME 04103	Applicant	Co-applicant - ISP Provider	$4,888,725
Consolidated Communications/ Rangeley Lakes	5 Davis Farm Portland, ME 04103	Applicant	Co-applicant - ISP Provider	$3,651,625
LCI Fiber Optic Network/ Jefferson	133 Back Meadow Rd Nobleboro, ME 04555	Applicant	Co-applicant - ISP Provider	$3,186,247

B.ii. Resumes of Key Personnel

Peggy Schaffer
ConnectMaine Authority Executive Director

Responsibilities: As executive director, Peggy Schaffer manages the Authority's rulemaking efforts, investment decisions and policy recommendations. Reporting to the ConnectMaine Authority's seven member board, the executive director represents the Authority in state and federal policy matters, leading the development and implementation of broadband programs, and supporting deployment of broadband in part by seeking grant funds. The executive director also oversees an assistant director who facilitates broadband mapping, coordinates deployment and promotion efforts, administers funds and supports board functions.

Experience Summary: Peggy Schaffer served as the Co-chair of the Maine Broadband Coalition, a statewide group advocating for high speed broadband. She also worked as the lobbyist for the Department of Economic and Community Development where she helped develop and implement many of the State's key economic initiatives under both Governors King and Baldacci.

Work History:
ConnectMaine Authority, State of Maine
2019 – Present
Executive Director, Manage the Authority's rulemaking efforts, investment decisions and policy recommendations, Awarded $1,250,000 grant from Northern Border Regional Commission, set up two other investment strategies, implemented comprehensive broadband intelligence platform for broadband deployment efforts

Secretary of State's Office, Augusta, Maine
2013 – 2019
Small Business Advocate, Serve as an independent voice for Maine small businesses within our state's regulatory system

Maine Broadband Coalition, Augusta, Maine
2015 – 2019
Co-Chair, Lead advocacy on high-speed internet service statewide

Maine State Senate Majority and President's Office, Augusta, Maine
2006 – 2010
Chief of Staff

Maine Department of Economic and Community Development, Augusta, Maine
1998 – 2006
Legislative Liaison, Lobby for DECD, helped develop and implemented many of the State's key economic initiatives, helped create Maine's Research and Development infrastructure

Education:
Thomas College, Waterville, Maine
2002 – 2004
Master of Business Administration

University of Maine at Augusta, Augusta, Maine
1986 – 1990
B.S., Public Administration

J. ERIK GARR
President – Consumer Small Business Consolidated Communications

Responsibilities: Leads Consolidated's sales, marketing, and operations for residential and small business customers. Develops go-to-market strategy for its fiber build expansion plans.

Experience Summary: Experience working for regulated incumbent local exchange carriers, Google Fiber and the Federal Communications Commission.

Consolidated Communications
2021 - present
President – Consumer Small Business
Leads Consolidated's sales, marketing, and operations for residential and small business customers.
Develops go-to-market strategy for its fiber build expansion plans.

Frontier Communications
2019 - 2020
Fiber Strategy Leader
Provided strategic advice and counsel to Chief Customer Officer and Chief Marketing Officer regarding Frontier's transformation and restructuring. Supported customer service function for a better customer experience.

GOOGLE
2015 - 2019
Director - Strategy and Operations - Google Cloud
Selected to join a new team working in the CEO's office to help improve and scale one of the fastest growing and highest profile Google businesses.

General Manager- Google Fiber North Carolina
Responsible for over 150 employees and contractors across sales, business operations, local government relations, customer service, engineering, construction, and network maintenance in the top performing portion of Google Fiber's portfolio. Designed a sales acquisition program that achieved the market leading position within 18 months in 80% of the neighborhoods served by Google Fiber.

Regional Director - Google Fiber Sales and Business Operations
Built and led a team of over 30 Googlers and up to 45 sales contractors, with matrix responsibility over another 75 Googlers to plan and launch five new markets.
Lead five successful market launches across the Southeast, doubling the number of Google Fiber active markets in one year.

Federal Communications Commission
2009 - 2010
General Manager, National Broadband Plan, which provides an ambitious roadmap to shift up to $16 billion in Universal Service funding to more directly support broadband in unserved areas, to free up 500 Mhz of spectrum to support the next generation of mobile broadband.

Education:
The University of Chicago
2003 - 2005
Master's in public policy, Harris School of Public Policy

The University of Michigan

1988-1993
BA with High Honors in Political Science

Alan Hinsey
Director of Marketing, Sales and Communications – LCI Fiber Optic Network

Responsibilities: General oversight and responsibility for ensuring successful execution of all community outreach efforts, including coordinating with all citizens' groups, media and municipal officials for all large network projects for LCI Fiber Optic Network.

Experience Summary: Successfully managed the community outreach, sales and communication efforts for 6 ConnectME grant projects and the federal CARES broadband expansion project.

Work History:

LCI Fiber Optic Network
Oct. 2016 – present
Dir. Marketing, Sales & Communications

VStv, LLC
Sept. 2013 – Oct. 2016
General Mgr/Executive Producer

Knox/Waldo Regional Economic Devel. Council
Nov. 2000 – Sept 2013
Founder & Director

Gov. Angus King Admin.
June 1995 - July 2000
Director of the Bureau of Labor Standards

Education:

Blackburn College -- Carlinville, IL.
BA Political Science

Univ. of Illinois at Springfield, IL
Graduate Work in Public Administration

Univ. of Illinois – Champaign, IL
Executive Development Academy

Bowling Green State University -- Bowling Green, OH
Master of Arts

Duke Univ., School of Pub. Policy - Durham, NC
Leadership Development Academy

MARK OULETTE
President, Axiom Technologies

Responsibilities: Concentrated Axiom team for sustained growth by aligning mission with revenue initiatives, reduced expenses by 25% and creating and expanding new lines of business

Experience Summary: A seasoned, well-organized manager who works well as part of a team or independently. A track record of maintaining effective working relations with co-workers and diverse groups to successfully negotiate solutions between conflicting parties. Strong ability to work in a multi-tasking, high-pressure work environment.

Work Experience:

Axiom Technologies
2015- Present
President & CEO
In charge of all major strategic decisions of business. Key decision maker on all operational day to day functions of business. Representative of company in a variety of settings in and out of stat. Point person on strategic financial relationships

Mobilize Maine
2011- 2015
Executive Director
Working closely with the federally designated economic development directors to deliver a statewide asset-based economic development initiative to all regions of the state. Part of all major strategic decision making around the Mobilize Maine initiative. Executed Mobilize Maine in Greater Portland and Southern Maine by forming core private sector led leadership teams to guide the initiative in those regions.

Office of Business Development, Maine Department of Economic and Community Development
2009- 2011
Director Augusta, Maine
Fostered business growth, expansion and retention throughout the state. Directed 16 employees and two major functional areas, small business assistance and business development. Oversaw $1.5 million budget. Conceived and executed a major reorganization of my department. Testified before the legislature, represented and spoke on behalf of the Governor and the department

Congressman Tom Allen, U.S. House of Representatives Portland, Maine
2006-2009
Chief of Staff

2004-2006
District Director

2002-2004
Director of Economic Development & Special Projects

EDUCATION:
University of Southern Maine
1990 - 1994
BA, History

C. Covered Project Description

C.i Project Name: LCI/Jefferson

Services Provided: Broadband Internet, voice and television

Speed / Tiers & Prices:

- 50 x 10 Mbps: $49.95
- 100 x 20 Mbps: $69.95
- 50 x 50 Mbps: $89.95
- 100 x 100 Mbps : $109.95; O.P.E.N. ™ for Business services available (100 x 100 Mbps to 1 Gig)
- O.P.E.N. View TV – Tier 1: 50+ popular cable channels, plus all Maine local stations, and 100 hrs. of cloud DVR recoding per mo. - beginning at $78.76/mo
- Unlimited local phone and 1,000 mins long distance (Continental US) - $20.00/mo

Technical Details:

A 10 Gig XGS-PON fiber optic network with be deployed over approx. 57 rural miles in Jefferson, Maine to make high speed broadband available to 625 unserved homes. The entire network will be fed by LCI's triple-leg redundant internet sourcing (NYC, Boston & Halifax) on its fully owned and maintained fiber optic transmission backbone. One new CO facility will be constructed in Jefferson to serve as the distribution hub for this project.

The 625 unserved homes passed are a part of a larger town-wide project. LCI and the Town of Jefferson plan to extend Fiber to the Home (FTTH) service to 100% of all addresses in Jefferson. There are 1,437 potential subscribers in Jefferson (approx. 104 road miles) – the unserved portion consists of 625 addresses on approx. 57 road miles.

The existing LCI Fiber Optic Network serves thousands of subscribers in Midcoast Maine, both in its ILEC and CLEC areas. A portion of the 40 gig backbone transmission network owned and maintained by LCI runs through the heart of Jefferson providing redundant connections to the ILEC territories that LCI serves on either side of the Town of Jefferson. LCI will extend this robust fiber optic transmission backbone to feed a Central Office to be built in Jefferson as a distribution hub that will provide direct fiber to the premise service to the 625 unserved locations in Jefferson. The "future proof" fiber optic technology, once in place, will be completely scalable and expandable to meet the broadband needs of this area for the foreseeable future.

Cost Details:

- Total project cost: $3,540,274
- Amount requested: $3,186,247
- Matching funds: $354,027 – 10.4% (10% match before contingency removed)

Why Assistance is Needed: This project is not feasible relying on private equity only. A CAPEX subsidy is required in order to meet business model requirements.

C.ii Project Name: Axiom/Somerville

Services Provided: Broadband Internet and interconnected voice

Speed / Tiers & Prices:

- 25/25Mbps $54.99
- 50/50Mbps $69.99
- 100/100Mbps $94.99
- 500/500Mbps $129.99
- 1000/1000Mbps $169.99

Technical Details:

The Adtran fiber optic equipment being deployed in Somerville will bring a dedicated fiber connection (home run) to each home and business from the Central Office equipment. Access to best-in-class reliability and supporting speeds of up to 1Gbps of symmetrical service are highlights of a system that will rival any FTTP system in the United States.

The system is designed with 1:32 splitters and capable of handling future growth in new homes or businesses expected in the community and is considered future proof for the next 20 years or more. The system is designed with 1:32 splitters and capable of handling future growth in new homes or businesses expected in the community and is considered future proof for the next 20 years or more. The system architecture will have limited ports capable of delivering 10Gbps (XGS-PON) of service to the right premise equipment, and that can be expanded with upgrades to the electronics and home equipment in the future, as needs/demand dictate.

Cost Details:

- Total project costs: $1,601,901
- Amount requested: $1,441,711
- Matching funds: $160,190 – 10.4% (10% match before contingency removed)

Why Assistance is Needed: Because of the rurality of the project, 10.8 homes per mile, the project would not be viable without substantial subsidy.

C.iii Project Name: Axiom/Isle Au Haut

Isle au Haut is a small island about 6 miles off the coast of Stonington, Maine and is only accessible by daily ferry. Isle au Haut has a year round population of 70 or so and is a tourist destination for visitors to Acadia National Park, of which roughly half the island belongs to. Isle au Haut is determined to keep its vibrancy and year round population and sees internet access as a primary need to meet that objective. Current provider TDS has not done enough to keep up with the demand and the Broadband committee on the island would like to take control of their own destiny by creating a fiber optic network and to own the network so that Isle au Haut would have control over the lifeline to the mainland. Isle au Haut has partnered with an experienced island ISP in Axiom and the goals are aligned to bring this critical infrastructure to our island.

Services Provided: Fiber optic home run system that will deliver internet service and VOIP telephone service.

Speed / Tiers & Prices:

- 25/25Mbps for $59.99
- 50/50Mbps for $69.99
- 100/100Mbps for $109.99

Technical Details:

Because of its remote island location a point to point wireless solution will be required to provide backhaul internet. We anticipate SAF radios at 6GHz and/or 11GHz to create space diversity and increased reliability. A 100Ft free standing tower is needed on the island and we expect to use Rohn Tower. A location has been tentatively determined at a high point on the island and a path analysis has been conducted and is attached, as well as the microwave path back to a tower in Stonington. Once on the island we expect to construct a CO at the base of the towner and distribute a home run fiber system to each island resident.

The Adtran fiber optic equipment being deployed on Isle Au Haut will bring a dedicated fiber connection (home run) to each home and business from the Central Office equipment. Access to best-

in-class reliability and supporting speeds of up to 1Gbps of symmetrical service (G-PON) are highlights of a system that will rival any FTTP system in the United States. The system is designed with 1:32 splitters and capable of handling future demand in new homes or businesses and is considered future proof for the next 20 years or more.

Cost Details:

- Total project costs: $1,233,305
- Amount requested: $1,109,975
- Matching funds: $123,330 – 10.5% (10% match before contingency removed)

Why Assistance is Needed: With the expense of a tower and so few residents, this project would not be viable without 100% support from both the state and federal government.

C.iv Project Name: Axiom/Washington

The Town of Washington supports a municipal owned network with a trusted ISP partner who will operate the system on our behalf. While the town has been meeting for well over a year to determine the best way forward to provide better internet connectivity, having Axiom, an operator in business for over 18 years, and familiar with operating municipal owned networks in several other Maine locations gives us great confidence that this is the right approach for our community. Axiom is well versed on doing all network monitoring, technical support, including both telephone and field support at the home, billing and all other aspects of network operations and management.

Services Provided: Residential and business internet connectivity, VOIP telephone service

Speed / Tiers and prices:

- 25/25Mbps $54.99
- 50/50Mbps $69.99
- 100/100Mbps $94.99
- 500/500Mbps $129.99
- 1000/1000Mbps $169.99

Technical Details:

The Adtran fiber optic equipment being deployed in Washington will bring a dedicated fiber connection (home run) to each home and business from the Central Office equipment. Access to best-in-class reliability and supporting speeds of up to 1Gbps of symmetrical service (G-PON) are highlights of a system that will rival any FTTP system in the United States. The system is designed with 1:32 splitters and capable of handling future growth in new homes or businesses expected in the community and is considered future proof for the next 20 years or more. The system architecture will have limited ports capable of delivering 10Gbps (XGS-PON) of service to the right premise equipment, and that can be expanded with upgrades to the electronics and home equipment in the future, as needs/demand dictate.

Cost Details:

- Total project costs: $2,988,919
- Amount requested: $2,690,027
- Matching funds: $298,892 – 10.3% (10% match before contingency removed)

Why Assistance is Needed: Washington is a rural community that in many ways has been left behind. Recently at a special town meeting, over 75 people showed up to vote 75-0 to proceed with planning and implementing a broadband project to cover the whole town, recognizing that no provider will come and invest in a small community like ours. We want to take control of our own destiny and owning the internet infrastructure will allow us to do that. Because we are so rural, a significant grant will be the only way for us to build this project.

C.v Project Name: Consolidated/Blue Hill

Services Provided: Broadband Internet and interconnected voice.

Speed / Tiers & Prices:

- 50M/50M - 1 year rate = $35/ 2nd year rate = $55 / 3+ year rate = $55
- 250M/250M - 1 year rate = $60 / 2nd year rate = $85 / 3+ year rate = $85
- 1G/1G - 1 year rate = $70 / 2nd year rate = $95 / 3+ year rate = $95

Technical Details:

Internet Service is a broadband service CCI offers using its Fiber-to-the-Premise (FTTP) network and 10 Gigabit Symmetrical Passive Optical Networking (XGS-PON) Technology capable of initially delivering services between 50M to 1G symmetrically. Our XGS-PON will be scalable to 10G symmetrical and has a 1/32 split. FTTP allows Consolidated Communications to better compete by offering our business and residential customers next generation voice, data and possible future video products, including higher bandwidth offerings, ultra-high-speed Internet access, networking, multiple voice lines, teleconferencing and video applications. Components include:

- Optical Network Terminal (ONT) – Generates laser pulses of light to transmit communications signals. The Light is converted into electrical signals within Optical Network Terminal (ONT) and reverts back from electrical signals into light when traversing the network from the customer premise to the ONT.
- Optical Splitters are used in the network to aggregate multiple customers through a fiber connection back to the Optical Line Terminal or electronics.
- Fiber Distribution Cabinets will be required to house the Optical Splitters and connect fibers from the Remote Terminal or the Central Office (located at 59 Park Street in Bangor) to the distribution fibers that serve the customers.
- A FTTP solution would require Fiber Distribution Cabinets to be placed on poles where applicable. These cabinets are generally 19”x13”x8”.
- XGS-PON Network components in our central office and core network.

Cost Details:

- Total project costs: $11,339,899
- Requested amount: $9,830,985
- Matching funds: $1,508,914 – 13.3%

Why Assistance is Needed: Without federal financial assistance it is not feasible to create a business plan to support the project.

C.vi Project Name: Consolidated/Rangeley Lakes

Services Provided: Broadband Internet and interconnected voice

Speed / Tiers & Prices:

- 50M/50M - 1 year rate = $35/ 2nd year rate = $55 / 3+ year rate = $55
- 250M/250M - 1 year rate = $60 / 2nd year rate = $85 / 3+ year rate = $85
- 1G/1G - 1 year rate = $70 / 2nd year rate = $95 / 3+ year rate = $95

Technical Details:

Internet Service is a broadband service CCI offers using its Fiber-to-the-Premise (FTTP) network and 10 Gigabit Symmetrical Passive Optical Networking (XGS-PON) Technology capable of initially delivering services between 50M to 1G symmetrically. Our XGS-PON will be scalable to 10G symmetrical

and has a 1/32 split. FTTP allows Consolidated Communications to better compete by offering our business and residential customers next generation voice, data and possible future video products, including higher bandwidth offerings, ultra-high-speed Internet access, networking, multiple voice lines, teleconferencing and video applications.

Components

- Optical Network Terminal (ONT) – Generates laser pulses of light to transmit communications signals. The Light is converted into electrical signals within Optical Network Terminal (ONT) and reverts back from electrical signals into light when traversing the network from the customer premise to the ONT.
- Optical Splitters are used in the network to aggregate multiple customers through a fiber connection back to the Optical Line Terminal or electronics.
- Fiber Distribution Cabinets will be required to house the Optical Splitters and connect fibers from the Remote Terminal or the Central Office (located at 59 Park Street in Bangor) to the distribution fibers that serve the customers.
- A FTTP solution would require Fiber Distribution Cabinets to be placed on poles where applicable. These cabinets are generally 19”x13”x8”.
- XGS-PON Network components in our central office and core network.

Cost Details:

- Total project costs: $5,295,205
- Amount requested: $3,651,625
- Matching funds: $1,643,580 – 31%

Why Assistance is Needed: Without federal financial assistance it is not feasible to create a business plan to support the project.

C.vii Project Name: Consolidated/Farmington

Services Provided: Broadband Internet and interconnected voice

Speed / Tiers & Prices:

- 50M/50M - 1 year rate = $35/ 2nd year rate = $55 / 3+ year rate = $55
- 250M/250M - 1 year rate = $60 / 2nd year rate = $85 / 3+ year rate = $85
- 1G/1G - 1 year rate = $70 / 2nd year rate = $95 / 3+ year rate = $95

Technical Details:

Internet Service is a broadband service CCI offers using its Fiber-to-the-Premise (FTTP) network and 10 Gigabit Symmetrical Passive Optical Networking (XGS-PON) Technology capable of initially delivering services between 50M to 1G symmetrically. Our XGS-PON will be scalable to 10G symmetrical and has a 1/32 split. FTTP allows Consolidated Communications to better compete by offering our business and residential customers next generation voice, data and possible future video products, including higher bandwidth offerings, ultra-high-speed Internet access, networking, multiple voice lines, teleconferencing and video applications. Components include:

- Optical Network Terminal (ONT) – Generates laser pulses of light to transmit communications signals. The Light is converted into electrical signals within Optical Network Terminal (ONT) and reverts back from electrical signals into light when traversing the network from the customer premise to the ONT.
- Optical Splitters are used in the network to aggregate multiple customers through a fiber connection back to the Optical Line Terminal or electronics.

- Fiber Distribution Cabinets will be required to house the Optical Splitters and connect fibers from the Remote Terminal or the Central Office (located at 59 Park Street in Bangor) to the distribution fibers that serve the customers.
- A FTTP solution would require Fiber Distribution Cabinets to be placed on poles where applicable. These cabinets are generally 19"x13"x8".
- XGS-PON Network components in our central office and core network.

Cost Details:
Total project costs: $6,331,413
Funding requested: $4,888,725
Matching funds: $1,442,688 – 22.8%
Why Assistance is Needed: Without federal financial assistance it is not feasible to create a business plan to support the project.

D. Proposed Service Areas

D.i Project Name: LCI/Jefferson

Lincoln County population: 34,634
Proposed Project Area:

Jefferson is a small sparsely populated town in interior Lincoln County, Maine, comprised of only 1,437 households located on over 104 miles of rural roads. Spectrum (Charter Communications) is offering coax cable to provide Internet & TV to 812 households in Jefferson. LCI currently offers Fiber to the Home (FTTH) broadband, live streaming video and phone to 80 households in Jefferson. The remaining 625 households in Jefferson are unserved (all receiving below 25 x 3 Mbps). The 57 miles of road where these 625 addresses are located are the most rural, hard to access portions of the town (see KMZ mapping attached). These roads are the most sparsely populated roads in town, and many are short dead-end runs that are extremely costly to build fiber optics to – and extremely costly to maintain.

Without subsidies, such as federal broadband grants, it is not feasible for a company like LCI, or the taxpayers of Jefferson, to build out and maintain a robust fiber optic network for these unserved homes and businesses. The 57 miles of roads in Jefferson where the 625 unserved households are located is a sparsely populated, mostly wooded region. There are numerous small farms and pastures in the area as well.

% Unserved Served	Households	Businesses	Anchor Institutions
100	619	4	2

D.ii Project Name: Axiom/Somerville

Lincoln County population 34,634
Proposed Project Area:

Somerville is a tiny town on the edge of Lincoln County. This community has had stalwart broadband planning group in place for over four years. They are not near any middle mile fiber and have diligently worked to bring universal affordable connections to a community with very little capacity to raise its own funding through their small tax base. Raising the property taxes one mil in Somerville raises only $52,000. Understanding it was impossible to raise their own funds to bring better service, the town has issued several RFPs to find a partner. Axiom Technologies is the only provider who has been willing to help create a municipally owned network that would bring universal service at an affordable price. They have been unsuccessful obtaining USDA ReConnect Funds, and because of tight

competition for limited state funding ConnectMaine invited them to join in this application and will be providing a 10% match for this community.

% Unserved Served	Households	Businesses	Anchor Institutions
100	330	0	4

D.iii Project Name: Axiom/Isle Au Haut

Knox County population: 39,772

Proposed Project Area:

Isle Au Haut - Maine has 14 year round islands that are "unbridged." These islands are a particular challenge for high-speed broadband because of their geography. Island communities are the most remote, with the greatest need for a high quality broadband connection for schools, health care, businesses, emergency services and better electricity usage management. Without broadband many of these island populations will shrink to be unsustainable, and a way of life for many will be lost. The Island Institute undertook one of the first community planning and assessment projects for the islands about seven years ago. With that information, several islands have succeeded at attracting federal, state or private funding. This grant continues that effort with projects on Isle Au Haut, about 6 miles off the Blue Hill Peninsula. These islands are only accessible by sea or air and have a ferry service provided by the State of Maine to connect them to the mainland.

% Unserved Served	Households	Businesses	Anchor Institutions
100	204	0	1

D.iv Project Name: Axiom/Washington

Knox County population: 39,772

Proposed Project Area:

Washington is a rural community that in many ways has been left behind. Recently at a special town meeting, over 75 people showed up to vote 75-0 to proceed with planning and implementing a broadband project to cover the whole town, recognizing that no provider will come and invest in a small community like ours. We want to take control of our own destiny and owning the internet infrastructure will allow us to do that. Because we are so rural, a significant grant will be the only way for us to build this project.

% Unserved Served	Households	Businesses:	Anchor Institutions
100	819	2	5

D.v Project Name: Consolidated/Blue Hill

Hancock County population: 54,987

Proposed Project Area:

The Blue Hill Peninsula project proposes to serve 4,534 unserved/non-RDOF locations in Penobscot, Blue Hill, Deer Isle, Brooksville, Castine, Sedgwick, Brooklin and a small portion of Stonington using our Fiber-to-the-Premise (FTTP) network technology capable of delivering services up to 10G symmetrically.

- The fiber-to-the-premises technology will offer faster, highly reliable, broadband connectivity, which will significantly boost the Internet speeds currently available in many areas of the Blue Hill Peninsula.
- It will provide high speed internet access to the [insert # here] locations utilizing XGS PON technology capable of delivering services up to 10G symmetrically.

- As initially rolled out, the proposed network will offer residential locations services up to 1G/1G symmetrical to meet the current demand for bandwidth, but also provides the capacity for 10G service and positions Blue Hill residents to fulfill their growing future bandwidth demands.
- Consolidated engineers and builds its network to fulfill future bandwidth demands for all proposed customers at all locations at the speed levels below. This provides growth for the useful life of the fiber network, typically 20-25 years.
- The network will provide high reliability with no data caps or throttling of data

% Unserved Served	Households	Businesses	Anchor Institutions
100	4415	69	50

D.vi Project Name: Consolidated/Rangeley Lakes

Franklin County population: 30,198

Proposed Project Area:

Rangeley Lakes sits on the far northwest corner of Maine in the middle of Maine's Appalachian Mountains and surrounded by lakes. Consolidated proposes to build a Fiber-to-the-Premise (FTTP) network, capable of delivering services up to 10G symmetrically. The fiber-to-the-premises technology will offer faster, highly reliable, broadband connectivity, which will significantly boost the Internet speeds currently available in many areas of Rangeley Lakes. The project will serve 3,869 locations in Rangeley, Rangeley Plantation, Dallas Plantation and Sandy River Plantation that are not served at 25/3 today.

% Unserved Served	Households	Businesses:	Anchor Institutions
100	3823	35	11

D.viii Project Name: Consolidated/Farmington

Franklin County population: 30,768

Proposed Project Area:

The project will serve 4,445 unserved locations in Farmington, Temple, New Sharon, Industry, Wilton, Mercer, New Vineyard, Starks and Strong that are not served at 25/3 today. The Town of Farmington is Maine's foremost four-season destination and gateway to the western mountains. Maine's 3-Ring Binder, middle-mile dark fiber, runs through Farmington, but costs of building last-mile fiber have prevented universal service. County-wide broadband planning has been going on for four years. The town of Farmington itself is mostly served, and hasn't been included in infrastructure project proposals, even though there are areas just outside of "town proper" that are unserved. The additional communities being covered by this project include areas that have had a difficult time finding a provider willing to expand service because of their rurality, despite the communities being engaged in an active community planning effort.

% Unserved Served	Households	Businesses	Anchor Institutions
98.5	4016	387	42

D. Proposed Service Area: Lists of Census Blocks

Lists of census blocks for the seven proposed service areas are included as an attachment named List of Census Blocks, and will include census blocks for the following project areas:

- **D.i Project Name:** LCI/Jefferson
- **D.ii Project Name:** Axiom/Somerville
- **D.iii Project Name:** Axiom/Isle Au Haut

- **D.iv Project Name:** Axiom/Washington
- **D.v Project Name:** Consolidated/Blue Hill
- **D.vi Project Name:** Consolidated/Rangeley Lakes
- **D.vii Project Name:** Consolidated/Farmington

E. Statutory Funding Priorities

(1) Covered broadband projects designed to provide broadband service to the greatest number of households in an eligible service area;

In all proposed funded service areas, every effort was made to maximize the number of unserved homes included in the project within eligible service areas. Since eligible service areas are defined as census blocks, the perimeters of proposed funded service areas were designed to also correspond to census block boundaries. Due to other factors that are often taken into account when designing broadband networks and service areas, such as the location of utility pole infrastructure, geographic considerations such as mountains and rivers and the locations of central office wire centers, the borders of proposed funded service areas do not always follow census block boundaries, but attempts were made to include 100% unserved addresses within all affected census blocks. Six of the seven proposed funded service areas connect 100% of unserved locations within the eligible service area and the seventh proposed funded service area connects 98.5% of unserved locations.

(2) Covered broadband projects designed to provide broadband service in an eligible service area that is wholly within any area other than:
(i) a county, city, or town that has a population of more than 50,000 inhabitants; and
(ii) the urbanized area contiguous and adjacent to a city or town of more than 50,000 inhabitants;

All proposed projects are designed to bring gigabit capable fiber based broadband service to unserved addresses within eligible service areas. All but one of the proposed funded service areas are within rural counties with fewer than 50,000. One project, Blue Hill, is in Hancock County Maine which has a population just over 54,000. Population aside, most of Hancock County Maine is very rural, the proposed funded service area is unserved and the proposed projects would connect 100% of unserved locations within the proposed funded service area.

(3) Covered broadband projects that are the most cost-effective, prioritizing such projects in areas that are the most rural;

Even though all of the proposed funded service areas are within very rural parts of Maine, most of the addresses can be reached by co-applicant Consolidated Communications, an Incumbent Local Exchange Carrier which is either the utility pole owner or has existing utility pole attachments with messenger strand installed. This will greatly reduce the cost of and requirement for make ready work and construction costs. It will also reduce the time needed for deployment. The service areas proposed by non-incumbent co-applicants will require make ready work but Axiom and LCI are experienced regional operators very familiar with constructing fiber networks in rural Maine.

(4) Covered broadband projects designed to provide broadband service with a download speed of not less than 100 megabits per second and an upload speed of not less than 20 megabits per second; and

All projects proposed in this application are based on using the XGS-PON standard using a 1:32 split fiber architecture. XGS-PON is capable of 10Gbps symmetrical connections and theoretically can be split up to 1:256. Use of a 1:32 split will allow symmetrical download and upload speeds of well over 1Gbps to each end user.

(5) Any other covered broadband project that meets the requirements of this NOFO.

The projects proposed in this application will provide qualified broadband service to unserved addresses within eligible service areas in rural Maine.

Additionally, NTIA is interested in ensuring that any broadband infrastructure deployed under this grant program will have the ability to evolve, sustain, and scale for future advanced services that will also be important to the U.S. economy.

As detailed in Section D: Scalability, all networks proposed here designed to be XGS-PON networks capable of 10Gbps symmetrical service designed with a 1:32 split. This architecture is extremely scalable and will accommodate increased bandwidth demands over time without any major network upgrades.

F. Evaluation Criteria

F.i Project Purpose and Benefits

Project Beneficiaries:

The ConnectMaine covered partnership includes ISP Providers Consolidated, Axiom, LCI, and local government entities in Washington, Somerville and Isle de Haut. All partnership members are co-applicants, and therefore recipients of project funds. The projects proposed by ConnectMaine will benefit currently unserved residents, anchor institutions, and local business owners in the Maine towns of Jefferson, Somerville, Washington, Isle de Haut, and the towns and surrounding communities of Farmington, Blue Hill, Rangeley Lakes. In particular, project beneficiaries will include those currently unable to work from home and those currently unable to school at home due to bandwidth constraints. These projects will bridge the digital divide and allow residents of these towns to participate in the digital economy.

Level of Impact:

The transformative projects proposed by ConnectMaine will bring affordable Internet access of symmetrical gigabit and even greater speeds to more than 14,838 addresses across Maine. The project will benefit 100% of the unserved addresses in six of the seven proposed funded service areas, and 98.5% in the seventh. The level of impact is hard to measure because these projects will allow residents previously unserved with broadband Internet to finally participate in the digital economy, to take or retain jobs that permit remote working, to participate in distance learning programs and to utilize telehealth programs instead of driving from their rural communities to regional health care facilities. The level of impact will truly be significant, to residents and to the local economies.

Service Area Level of Need:

According to the U.S. Census bureau and based on the 2010 Census, “Maine and Vermont were the most rural states, with 61.3 and 61.1 percent of their populations, respectively, residing in rural areas.” While other states may have more uninhabited territory, a higher percentage of their population reside in urbanized areas. The majority of Mainers live in rural Maine. Six of the seven proposed funded service areas would connect 100% of unserved locations, and one would connect 98.5% of unserved locations. The level of need within proposed funded services areas is at the highest level, completely unserved locations currently with access only to dial-up, oversubscribed DSL running on aging copper telephone lines and expensive satellite Internet access with data caps. Residents in these communities currently cannot participate in the digital economy on a level playing field with most other Americans, if at all. These facts, coupled with the increased urgent need due to the ongoing coronavirus pandemic, strongly suggest that our proposed project areas will greatly benefit from the tools, resources, and potential job growth that fiber-based infrastructure will provide.

Affordability:

As of the date of this application submission, the proposed areas have been unable to acquire high bandwidth connectivity because building out to these addresses is not economically feasible. These rural locations require a Capex subsidy in order for Internet service providers to afford to construct broadband infrastructure to them. With that infrastructure subsidy in place, the Internet service provider co-applicants can provide affordable broadband Internet access in multiple tiers of service (listed in Section C). Prices for all tiers of access are reasonable and in line or competitive with average national rates for similar broadband speeds. All Internet service provider co-applicants currently

participate in either the USAC Lifeline program, E-Rate program or the FCC's Emergency Broadband Benefit program and they will provide access to those service subsidies to their new customers within the proposed funded service areas.

F.ii Project Viability

Technical Approach, Capacity, Performance:

All networks proposed here are XGS-PON networks capable of 10Gbps symmetrical service designed with a 1:32 split. This architecture is extremely scalable and will accommodate increased bandwidth demands over time without any major network upgrades. The XGS-PON standard allows up to a 1:256 split, and though that is rarely or even done many service providers do utilize a 1:64 split when deploying XGS-PON. By limiting the split to 1:32, on a 10Gbps symmetrical network, the network capacity, performance and scalability has been taken into consideration during this preliminary design and conceptualization phase. As bandwidth demands increase over time the network will have the capacity to accommodate without substantial or costly upgrades.

Organizational Capability:

The ConnectMaine Authority is a public instrumentality of Maine state government whose mission is to facilitate the universal availability of broadband to all Maine households and businesses and help them understand the valuable role it can play in enriching their lives and helping their communities thrive. Our board consists of 7 members. The ISP Providers included in our covered partnership include an Incumbent Local Exchange Carrier29943 and a member of a family of telecommunications companies established in Maine in 1904, making the youngest of our co-applicants, established in 2004, the newcomer to the group with 17 years in business. The covered partnership's ISP co-applicants have deep telecommunications experience, expertise, and maintain a significant footprint in Maine.

F.iii Project Budget and Sustainability

Reasonableness of Budget:

The costs proposed for this project are based on past performance project actuals, existing supplier quotes and standard or discounted industry rates. Constructing fiber infrastructure in rural Maine can be costly and great efforts were taken to prepare project budgets with reasonable and efficient cost factors. One co-applicant is a utility pole owner with existing infrastructure installed lashed to messenger strand and the new fiber deployments may be able to be installed on the existing messenger strand, providing a relatively cost efficient construction method. While the other two co-applicants are not pole owners they have significant regional experience with rural fiber network construction and maintain efficient construction practices. It is also worth noting that three of the seven proposed funded service areas are proposed with a match in excess of 10%.

Sustainability of the Project:

Although these projects would not occur without NTIA funding, they are all sustainable once capitalized, as demonstrated in the attached revenue and expense projections. Designs are future proof and scalable as communities grow and demand increases. Constructing fiber to the premise infrastructure in unserved areas typically yields a rather high adoption rate. Recently constructed fiber to the home networks in rural western Massachusetts, built by private providers using a combination of state, municipal, private and CAF II auction funds, are experiencing adoption rates in the 80% range. With the effects of the coronavirus pandemic on remote working and distance learning adoption and revenue on

the networks within the proposed funded service areas is reasonably anticipated to be robust allowing for network sustainability, even for these very rural networks.

Leverage of Non-Federal Resources:
ConnectMaine will provide a minimum of a 10% match for the three proposed projects involving municipal co-applicants (Isle au Haut, Somerville and Washington). Co-applicant LCI Fiber Optic Network will provide a 10% match for their proposed project in Jefferson. Consolidated Communications will provide matching funds in excess of 10% for all three of their proposed projects including a 13.3% match for Blue Hill, a 31% match for Rangeley Lakes and a 22.8% match for Farmington.

F.iv Expected Outcomes

The key goal of ConnectMaine's proposed projects will be to directly connect residents, local businesses, and anchor institutions to infrastructure via direct fiber. 14,232 unserved households will be served, 113 unserved anchor institutions will be served, and 493 unserved businesses will be served. Immediate benefits for end users include improved Internet access and what that allows in this day and age: remote working options, distance learning and telehealth options. Somewhat longer term benefits include improved real estate values to the extent that if someone chooses to or needs to sell their house it will actually be saleable, unlike homes without broadband access currently are, and new residents may be willing to move into the communities because of the improved broadband access, contributing to the communities' economic development and long term economic viability. Ultimately, the expected outcomes are expected to be a bridging of the digital divide in these seven communities, allowing them the ability to participate in the digital economy on a level playing field with their fellow Americans.

G. Scalability

All networks proposed in this application are based on use of XGS-PON (10Gbps PON) with a 1:32 split. XGS-PON provides a symmetrical 10Gbps circuit, 10Gbps upstream and 10Gbps downstream. While XGS-PON can be used with a split architecture up to 1:256, all co-applicants are proposing use of a 1:32 split for scalability. As bandwidth usage increases over time some PON networks will need to be modified from a higher split ratio such as 1:128 to a lower one such as 1:32 in order to accommodate the increased demand. The networks proposed here are designed to be built not only with enough fiber strands to accommodate a 1:32 split, plus spare strand capacity, but with an initial 1:32 split so no major network upgrades will be required.

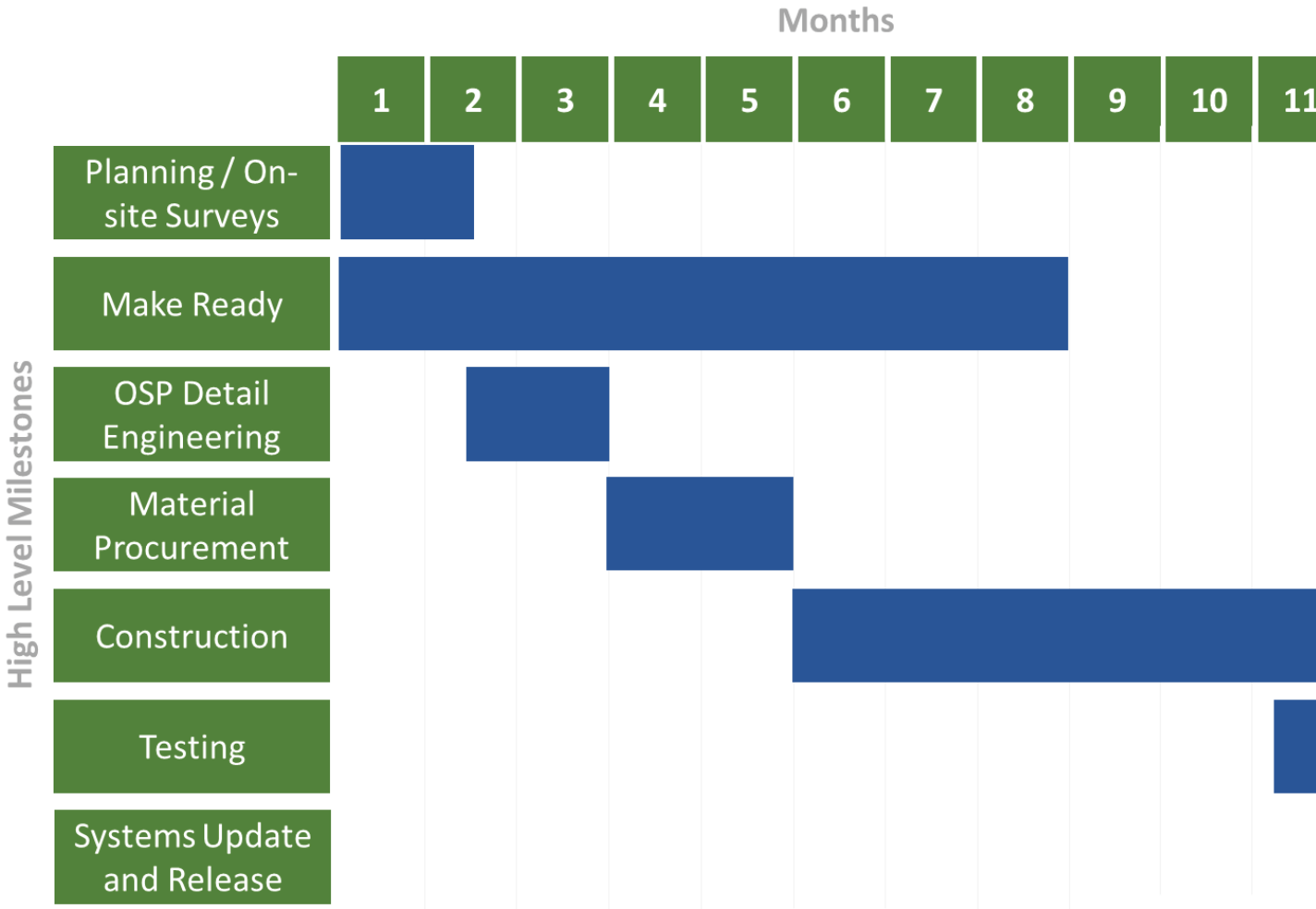
H. Project Plan

ConnectMaine proposes an aggressive 12 month schedule for all projects. This schedule assumes immediate availability of supplies, as well as prompt environmental and permitting approvals.

The following is a high level view of the project plan.

- Project Kick-Off
  - Project Scope
- Project Planning
- Status / Informational Meetings
- Make Ready
- Core Services Construction and/or Provisioning
- Implementation Management
  - Order Processing
  - Configuration and Addressing Needs
  - Site installation scheduling
  - Site test and turn up
- Overall Project Tracking
  - Escalation of any problems
- Project Completion and Follow-up

A high-level milestone schedule is illustrated on the following page.


Months
1
2
3
4
5
6
7
8
9
10
11
High Level Milestones
Planning / On-site Surveys
Make Ready
OSP Detail Engineering
Material Procurement
Construction
Testing
Systems Update and Release

I. Environmental and Historic Preservation

I.i Proposed Project Area

It is important to note that the overwhelming majority of infrastructure required to complete the proposed projects would be installed on existing utility poles, above ground, in existing easements in the public rights of way.

Area maps for each project are included on the following page. Physical project areas are in rural areas of Maine, adjacent to some rivers, lakes, wetlands, farms, pastures, and forest lands. There are no protected lands or resources within the project areas. Project areas consist largely of developed lands, placing aerial utility facilities in the public right of way and following existing communication paths.

We expect a fairly robust environmental review for siting the tower on Isle au Haut. The federal requirements as well as state requirements will need to be met. Axiom, our partner on this project has sited towers on other Maine islands and has familiarity with all major components of federal processes, including SHPO, THPO and FCC registration. Because the site chosen is on land that is being used for a solar array that the town constructed, no major environmental concerns have been uncovered and are not anticipated. The map of the microwave path is attached. The site of the tower construction on the island is on electrical coop owned land and is being cleared to install a solar array

Very little ground disturbance is anticipated. Construction will address a small gap in poles and new pole installation in Somerville, however this will also occur on the public right of way, and is not expected to cause any environmental impact. Maine Department of Transportation contact has been initiated and no environmental impacts are expected.

I.ii NEPA / NHPA Compliance

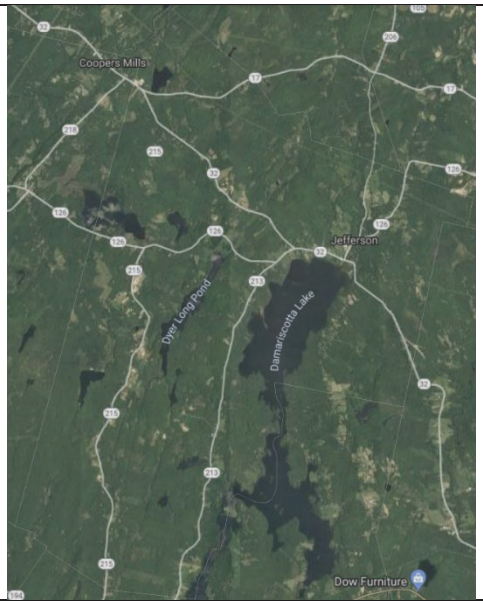
ConnectMaine will comply with all requirements of both National Environmental Policy Act and the National Historic Preservation Act. All Covered Partnership members are familiar with 7 CRF 1970-Environmental Policies and Procedures and intend to complete a Site and Route Environmental Questionnaire, per Federal guidelines. This includes a review of Floodplains, Wetlands, Farmland Protection Policy Act, Threatened and Endangered Species and SHPO and THPO provisions.

Three of the seven proposed projects will be an overlash of fiber to existing messenger strand. Most other installations will be constructed on new messenger strand that will be installed on existing utility poles. Equipment will be placed in owned buildings or within existing right of way. As a result, ConnectMaine has no reason to believe that there is the potential of either environmental or historic preservation issues.

I.iii Applicable Documentation

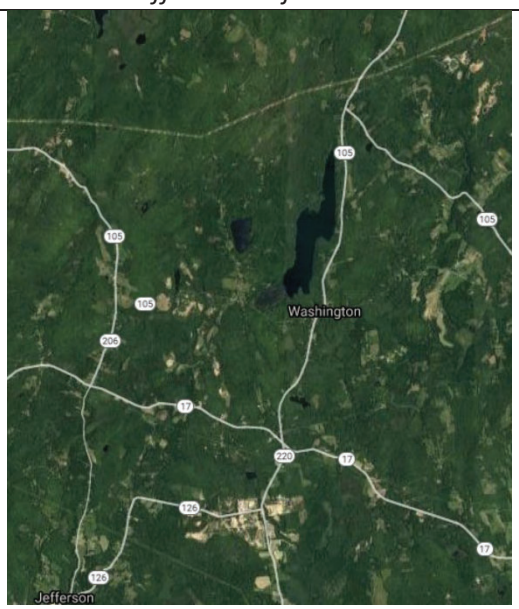
For gaps in utility poles being used for aerial fiber construction such as in the Somerville project, the Maine Department of Transportation has been contacted. A formal review process will be undertaken should the project be funded. The rest of the project consists of placing facilities along existing right of way and in existing buildings, away from protected lands, therefore no environmental or historic preservation impacts are expected. For areas in the vicinity of tribal lands, we have attached the results of SHIPO and Tribal review as supplemental documentation. Please note that there were no findings by any of the tribes or in the SHIPO report.

I. Environmental and Historic Preservation: Maps



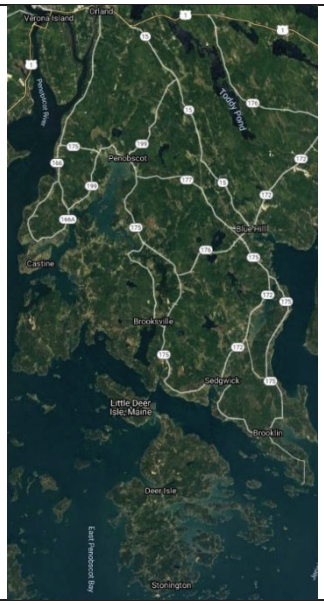
Jefferson Project Area

Somerville Project Area

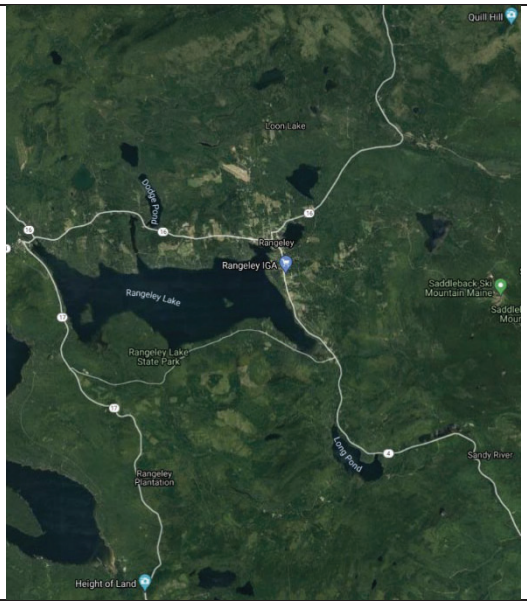


Washington Project Area

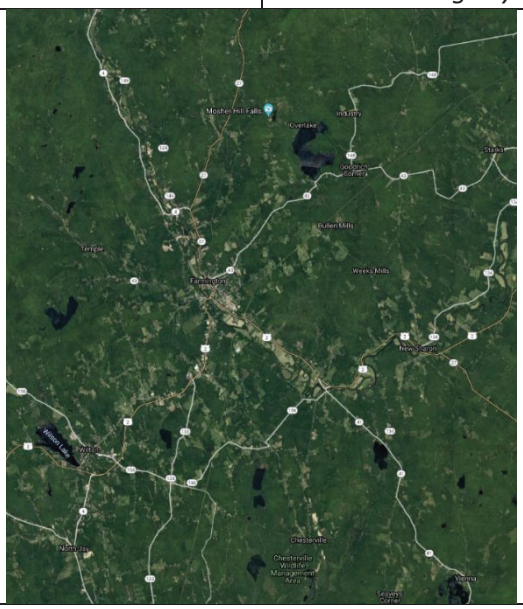
Isle Au Haut Project Area



Blue Hill Project Area



Rangeley Lakes Project Area



Farmington Project Area

J. Support Received

Only one member of the covered partnership has received support, as described in the NTIA NOFO. Co-applicant, ISP provider, and ILEC serving vast areas in rural Maine, Consolidated received high-cost universal service support provided under section 254 of the Communications Act of 1934 (47 U.S.C. 254). Most recently, Consolidated has received support through the Connect America Fund II support (CAF II) for certain census blocks identified in this project. The CAF II support that Consolidated has received in the past was only to provide at 10/1 Mbps and expires at the end of the year.

Partner / Member	State Support	Agriculture		Section 254	ARRA	Education	Other
		Title VI Rural Elect. Act of 1936	ReConnect Program				
ConnectMaine	None	None	None	None	None	None	None
Washington	None	None	None	None	None	None	None
Isle Au Haut	None	None	None	None	None	None	None
Somerville	None	None	None	None	None	None	None
Axiom	None	None	None	None	None	None	None
LCI	None	None	None	None	None	None	None
Consolidated	None	None	None	*CAF II model based support for 10/1 Mbps Exp. 12/2021	None	None	None

K. Labor Standards

ConnectMaine will verify compliance with all labor standards, according to each covered partner policy as follows:

Axiom along with Somerville, Isle Au Haut, Washington municipalities will require compliance with Davis Bacon or regional prevailing wages for all contract construction labor and subcontractors.

For the Jefferson project, LCI will comply with all State and Federal Labor laws, ensuring that permanent employee hires will receive the full protection of workplace safety and health regulations, wage and hours laws, overtime pay provisions, and workers compensation. Full-time permanent employees of LCI on this project will be paid at or above the prevailing wage rate for our industry in Maine, and contractors secured for this project will also be required to ensure that, at a minimum, prevailing wages are paid to their employees and that they too are in compliance with all State and Federal labor laws.

For the Blue Hill, Farmington, and Rangeley projects, Consolidated will incorporate strong labor standards. Consolidated Communications currently has collective bargaining agreements with its outside plant and call center personnel that ensure wages at or above the prevailing wage. Additionally, to the extent Consolidated engages outside contracting resources for the project, Consolidated Communications commits to engaging local and regional labor resources when available and paying prevailing wages for the Project.

TOWN OF SOMERVILLE
72 Sand Hill Road
Somerville, Maine 04348
207-549-3828

RECEIVED
MAR 25 2020
By 04158-20

3/11/2020

Christi A. Chapman-Mitchell
Deputy SHPO, Grants
Maine Historic Preservation Commission
55 Capitol Street
Augusta, ME, 04333-0065

Subject: Notification of Intent to Initiate Section 106 Review | Somerville Connect | Somerville, ME

Dear Christi Chapman-Mitchell:

The Town of Somerville plans to seek financial assistance from the Rural Utilities Service (RUS), under its ReConnect Program for 'Somerville Connect', a fiber to the home broadband initiative.

If RUS elects to fund the Somerville Connect project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800. Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review.

In accordance with this blanket delegation, The Town of Somerville is initiating Section 106 review on behalf of RUS. In delegating this authority, RUS is advocating for the direct interaction between its borrowers and the State Historic Preservation Office (SHPO). RUS believes this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties earlier in project planning.

The Town of Somerville proposes that the area of potential effects (APE) for the referenced project consists of aerial fiber being built onto pre-existing utility poles throughout the entirety of the municipal boundaries. The geographic scope of the APE will not be final until a determination is made by RUS pursuant to 36 CFR § 800.4(a)(1).

At the direction of RUS, The Town of Somerville has notified and is seeking information about possibly affected historic properties in the APE from the following Indian tribes – Penobscot Nation and the Aroostook Band of Micmacs.

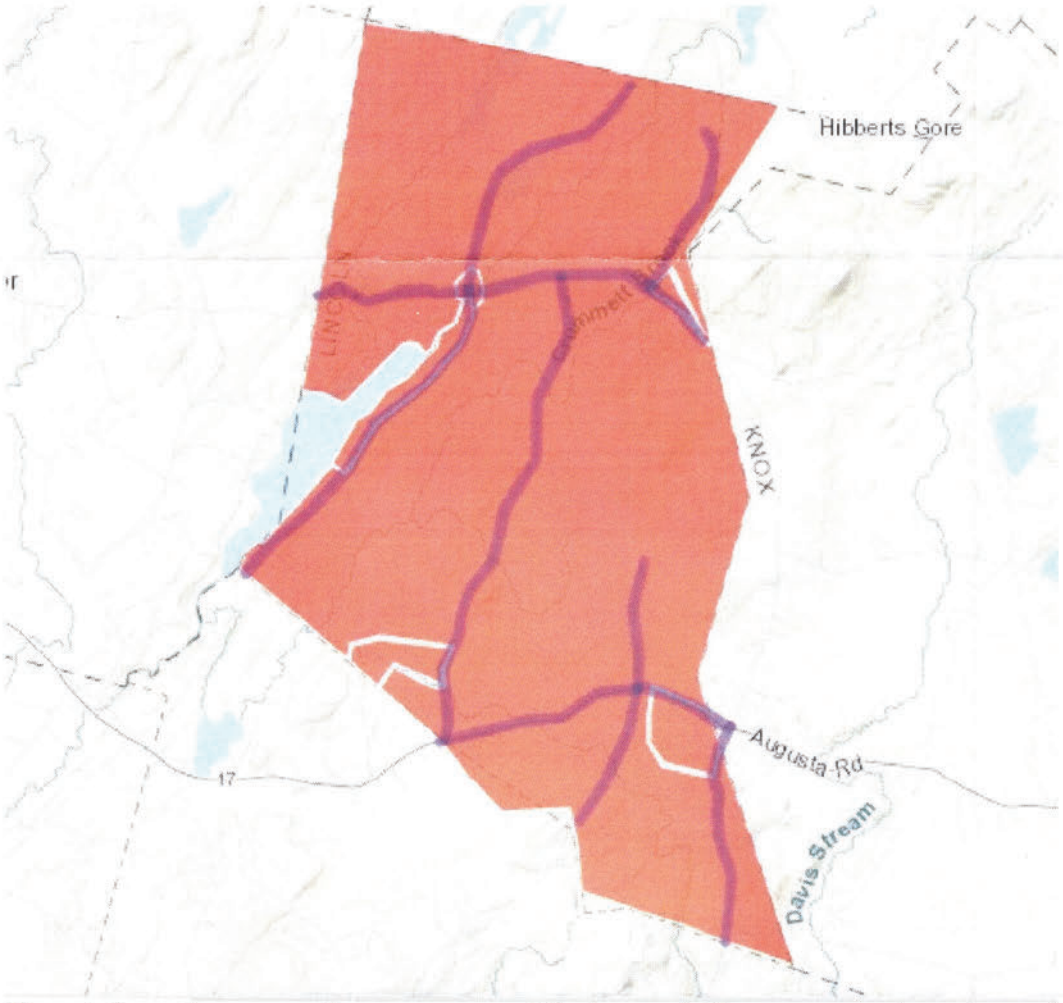
Please review the project and enclosed maps. After completing your review, please provide The Town of Somerville with your recommendation(s) about whether or not study of the APE is needed to identify affected historic properties. If you recommend study, please explain the nature and scope of the proposed investigation specifically in reference to those factors identified in 36 CFR § 800.4(b)(1).

Submit your recommendations within thirty (30) days of your receipt of this request to:
Town of Somerville c/o Christopher Johnson, 72 Sand Hill Rd, Somerville, ME 04348 or by email firstselectman@somervillemaine.org. If no timely response is received, The Town of Somerville will

notify RUS so the federal agency may determine how to proceed with Section 106 review in accordance with 36 CFR § 800.3(b)(4).

Should you have any questions, please contact the above mentioned contact. You may also contact RUS directly. If you wish to do so, please submit your request to ReConnectEnvironmental@usda.gov

Please reference the below map for an overview of the project.



The red shows the proposed coverage area while the purple lines represent the major roads that will have fiber constructed on them.

Sincerely,

Christopher N. Johnson

Christopher Johnson
First Selectman
Town of Somerville, Maine

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking as defined by Section 106 of the National Historic Preservation Act Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney

Kirk F. Mohney,
State Historic Preservation Officer
Maine Historic Preservation Commission

4/1/2020
Date

MHPC # 0458-20

PENOBSCOT NATION
CULTURAL & HISTORIC PRESERVATION
12 WABANAKI WAY, INDIAN ISLAND, ME 04468

CHRIS SOCKALEXIS – TRIBAL HISTORIC PRESERVATION OFFICER
E-MAIL: chris.sockalexis@penobscotnation.org

NAME	Christopher Johnson
ADDRESS	Town of Somerville 72 Sand Hill Road Somerville, ME 04348
OWNER'S NAME	Town of Somerville
TELEPHONE	(207) 549-3828
EMAIL	firstselectman@somervillemaine.org
PROJECT NAME	Somerville Fiber to the Home Project
PROJECT SITE	Somerville, ME
DATE OF REQUEST	March 11, 2020
DATE REVIEWED	April 13, 2020

Thank you for the opportunity to comment on the above referenced project. This project appears to have no impact on a structure or site of historic, architectural or archaeological significance to the Penobscot Nation as defined by the National Historic Preservation Act of 1966, as amended.

If there is an inadvertent discovery of Native American cultural materials during the course of the project, please contact my office at (207) 817-7471. Thank you for consulting with the Penobscot Nation Tribal Historic Preservation Office with this project.

Chris Sockalexis, THPO
Penobscot Nation

A. Executive Summary

The ConnectMaine Authority and its partners request $28,097,295 in NTIA grant funding to build fiber broadband infrastructure to 14,838 unserved addresses in rural Maine. The Broadband Infrastructure Program would allow the state and its Internet service provider partners to construct fiber to the premise infrastructure in areas the private sector find to be cost prohibitive. The public private partnership and federal funding will allow regional ISPs to expand their fiber-based footprints into some of the most rural unserved areas in the state.

Section 905 (d) of the COVID Relief Bill signed into law on December 27, 2020, allocates $300 million for broadband infrastructure grants to be administered by the U.S. Department of Commerce and the National Telecommunications and Information Administration. The State of Maine has formed an entity eligible for program participation, a covered partnership between the state, three Maine towns, and three providers of fixed broadband service. The covered partnership is applying to fund seven covered broadband projects in rural Maine. Each project is competitively and technologically neutral and all but one project would provide service to 100% unserved addresses within proposed eligible service areas. The one project unable to connect 100% of unserved locations does serve 98.5% of unserved locations within the Eligible Service Area while connecting 4,016 unserved households, 387 unserved businesses and 42 unserved community anchor institutions. Overall, the seven projects connect 99.8% of unserved addresses within their eligible service areas.

The State of Maine, ConnectMaine Authority is pleased to be the lead applicant on this NTIA Broadband Infrastructure Program grant proposal. This application is a culmination of years of work by rural Maine communities, Internet service providers and the State of Maine to bring high quality broadband service to these rural areas. The demand for better broadband has only increased with the pandemic, and people in these communities are among the worst served in the state for broadband, with many not even having access to reliable cell service.

According to the U.S. Census bureau and based on the 2010 Census, “Maine and Vermont were the most rural states, with 61.3 and 61.1 percent of their populations, respectively, residing in rural areas.”[1] While other states may have more uninhabited territory, a higher percentage of their population reside in urbanized areas. The majority of Mainers live in rural Maine.

Maine was one of the first states in the country to develop a community broadband planning program. We have had over 200 communities participate in the process since 2016. The pandemic added urgency to these efforts as better access for school, work, telehealth, staying in touch with friends and relatives all became virtual. This application unites communities from across the state, and their efforts to drive better service to their area. It is because of the engagement of these communities and their ability to identify coverage gaps, do crowdsourced speed testing, identify business needs, health care needs, education needs and to connect with potential providers that ConnectMaine has been able to organize an application that brings coverage from the mountains to the sea in this single application.

The Maine Legislature approved the operation of the ConnectMaine Authority with the goal of expanding broadband access in the most rural, unserved areas of the state with little to no prospect of service from a traditional provider alone without a subsidy. This grant application will enable ConnectMaine to achieve that goal and bridge the digital divide in parts of rural Maine. The table of covered partnership members is included on the following page.

[1] ttps://www.census.gov/newsroom/releases/archives/2010_census/cb12-50.html

Table of Funded Project Participants and Unfunded Informal Collaborators

Organization Name	Address	Administrative Role	Scope	Funding Requested
Axiom/ Somerville Maine	3 Water Street, Machias, ME 04654	Applicant	Co-applicant - ISP Provider and Political Subdivision	$1,441,711
Axiom/ Washington Maine	3 Water Street, Machias, ME 04654	Applicant	Co-applicant - ISP Provider and Political Subdivision	$2,690,027
Axiom/ Isle au Haut Maine	3 Water Street, Machias, ME 04654	Applicant	Co-applicant - ISP Provider and Political Subdivision	$1,109,975
ConnectMaine Authority	59 State House Station Augusta, ME 04333	Applicant	Lead Applicant - Political Subdivision	$1,298,000
Consolidated Communications/ Blue Hill	5 Davis Farm Portland, ME 04103	Applicant	Co-applicant - ISP Provider	$9,830,985
Consolidated Communications/ Farmington	5 Davis Farm Portland, ME 04103	Applicant	Co-applicant - ISP Provider	$4,888,725
Consolidated Communications/ Rangeley Lakes	5 Davis Farm Portland, ME 04103	Applicant	Co-applicant - ISP Provider	$3,651,625
LCI Fiber Optic Network/ Jefferson	133 Back Meadow Rd Nobleboro, ME 04555	Applicant	Co-applicant - ISP Provider	$3,186,247

C. Covered Project Budget

C.i Budget Narrative: LCI/Jefferson

Jefferson is a small sparsely populated town in interior Lincoln County, Maine, comprised of only 1,437 households located on over 104 miles of rural roads. Spectrum (Charter Communications) is offering coax cable to provide Internet & TV to 812 households in Jefferson. LCI currently offers Fiber to the Home (FTTH) broadband, live streaming video and phone to 80 households in Jefferson.

The remaining 625 households in Jefferson are unserved (all receiving below 25 x 3 Mbps). The 57 miles of road where these 625 addresses are located are the most rural, hard to access portions of the town (see KMZ mapping attached). These roads are the most sparsely populated roads in town, and many are short dead-end runs that are extremely costly to build fiber optics to – and extremely costly to maintain. Without subsidies, such as federal broadband grants, it is not feasible for a company like LCI, or the taxpayers of Jefferson, to build out and maintain a robust fiber optic network for these unserved homes and businesses.

The 57 miles of roads in Jefferson where the 625 unserved households are located is a sparsely populated, mostly wooded region. There are numerous small farms and pastures in the area as well

A 10 Gig XGS-PON fiber optic network with be deployed over approx. 57 rural miles in Jefferson, Maine to make high speed broadband available to 625 unserved homes (internet, voice over fiber, and LCI's own live streaming video). The entire network work will be fed by LCI's triple-leg redundant internet sourcing (NYC, Boston & Halifax) on its fully owned and maintained fiber optic transmission backbone. One new CO facility will be constructed in Jefferson to serve as the distribution hub for this project.

The 625 unserved homes passed are a part of a larger town-wide project. LCI and the Town of Jefferson plan to extend Fiber to the Home (FTTH) service to 100% of all addresses in Jefferson. There are 1,437 potential subscribers in Jefferson (approx. 104 road miles) – the unserved portion consists of 625 addresses on approx. 57 road miles.

The existing LCI Fiber Optic Network serves thousands of subscribers in Midcoast Maine, both in its ILEC and CLEC areas. A portion of the 40 gig backbone transmission network owned and maintained by LCI runs through the heart of Jefferson providing redundant connections to the ILEC territories that LCI serves on either side of the Town of Jefferson. LCI will extend this robust fiber optic transmission backbone to feed a Central Office to be built in Jefferson as a distribution hub that will provide direct fiber to the premise service to the 625 unserved locations in Jefferson. The "future proof" fiber optic technology, once in place, will be completely scalable and expandable to meet the broadband needs of this area for the foreseeable future.

A 100% FTTH buildout plan has been developed for all 1,437 potential subscriber locations in the Town of Jefferson. 625 of those potential subscriber locations are within the NTIA "unserved" category. The total project cost to bring a minimum build-out standard of 100 x 100 Mbps fiber to the premise service to those 625 locations is $3,540,274.

- Total project will cost: $3,540,274
- NTIA would provide 89.6% funding: $3,186,247
- LCI will provide 10.4% match: $354,027 (10% match before contingency removed)

The detailed breakdown of the NTIA Grant application portion is:

Over-lash Const. per mile is $20,000 x 5.41 Fiber transmission miles	$108,200
Over-lash Const. per mile is $20,000 x 19.53 Copper miles	$390,600
Strand & Over-lash Const. per mile is $25,000 x 32.10 Unserved miles	$802,500

Make Ready is $400 per pole x 1,059 poles	$423,720
Central Office construction, equipment, and labor cost	$500,000
Drop, ONT, Splicing & install labor per subscriber is $1,200 x 625	$750,000
Admin/Legal fees at 2% of total	$ 59,500
Project Inspection fees at 2% of total	$ 59,500
Engineering fees at 10% of total	$297,502
Contingencies at 5% of total	$148,752
Project Total	**$3,540,274**

This budget is based on past performance project actuals, and supplier quotes.

C.ii Budget Narrative: Axiom/Somerville

Somerville is a tiny town on the edge of Lincoln County. This community has had stalwart broadband planning group in place for over four years. They are not near any middle mile fiber and have diligently worked to bring universal affordable connections to a community with very little capacity to raise its own funding through their small tax base. Raising the property taxes one mil in Somerville raises only $52,000. Understanding it was impossible to raise their own funds to bring better service, the town has issued several RFPs to find a partner. Axiom Technologies is the only provider who has been willing to help create a municipally owned network that would bring universal service at an affordable price. They have been unsuccessful obtaining USDA ReConnect Funds, and because of tight competition for limited state funding ConnectMaine invited them to join in this application and will be providing a 10% match for this community.

The Adtran fiber optic equipment being deployed in Somerville will bring a dedicated fiber connection (home run) to each home and business from the Central Office equipment. Access to best-in-class reliability and supporting speeds of up to 1Gbps of symmetrical service (G-PON) are highlights of a system that will rival any FTTP system in the United States. The system is designed with 1:32 splitters and capable of handling future growth in new homes or businesses expected in the community and is considered future proof for the next 20 years or more. The system architecture will have limited ports capable of delivering 10Gbps (XGS-PON) of service to the right premise equipment, and that can be expanded with upgrades to the electronics and home equipment, as needs/demand dictate.

- Total project will cost: $1,601,901
- NTIA would provide 89.6% funding: $ $1,441,711
- ConnectMaine will provide 10.4 % match: $160,190 (10% match before contingency removed)

Capital Budget	Unit ($)	Total ($)
CO Room at Somerville Elementary School (in-kind voted on 4-20-21)	$50,000	In kind
Project Mgmt & Design (Axiom in-kind)	$35,000	In kind
Pole Licensing (est.)	CCI formula	$32,039
Make Ready	$167,620	$167,620
Utility Pole Replacement/new pole placements	$1,500	$111,000
Central Office Equipment & Materials (Axiom)	-	$109,057
Project Engineer (Ind. PE for town)	$8,000	$8,000

Flagging	$15,000	$15,000
Materials (Fiber build including unserved drops)	-	$394,030
Labor	-	$705,155
Contingency (potential price increases anticipated with material acquisition)	-	$60,000
Somerville Connects Broadband Network Capital Project		$1,601,901
Axiom in-kind		*$35,000*
Town in-kind commitment - CO physical space		*$50,000*
State Funds (10%)		$164,190
Federal request		**$1,441,711**

The budget is built on a careful desktop and on-the-ground ride out of the project. Detailed costing of all materials and equipment has been completed, including strand counts and mapping of all truck and drops to each home. All elements have been vetted and detailed equipment and materials lists can be provided as necessary or desired.

CO Room at Somerville Elementary School- The town has determined that an unused room in the schoolhouse will save cost and be an ideal centralized location for the fiber equipment. It will require minimal refit, but those costs are included in the contraction budget items in the central office equipment and materials.

Project Management and Design- The project design and management cost were accounted for through a previous planning grant that the project received in 2020.

Pole licensing fee- This is the estimated fee, based on a per pole formula. This fee to Consolidated Communications- the pole licensing administrator for the state of Maine will initiate the make ready process by undertaking a "ride out" that administratively coordinates all pole attachers to determine cost to make the poles ready to accept the new fiber line.

Make Ready- Final cost of make ready will be determined once a formal application is submitted and the cost of moving the existing lines, and/or determining pole replacements has been completed. Under statutory rule, Consolidated Communications and the utility have up to 6 months to complete the make ready work. The budget line item associated with this cost is an estimation based on initial assessments.

Utility pole Replacement/placement- This line item is also an estimation and includes a blend of new pole construction required to fill in a gap in poles on Crummett Mountain Road, and the potential for replacements that might be determined during the pole licensing ride out process. Typically pole need replacement if they are aged and unsafe to add any additional stress of a new fiber cable or if they are too short to provide the necessary clearance (24") between attachers.

Central Office equipment and materials-

Regen Cost			
Relay rack, DC Power Plant, AdTran TA5000 Chassis	1	$17,093.50	$17,093.50
AC Power Installation	1	$5,000.00	$5,000.00
Juniper Router - MX204	1	$19,196.00	$19,196.00
AdTran 8-port XGS-PON card w/ optics (4187518F42)	2	$12,585.00	$25,170.00
AdTran 8-port GPON card w/ optics (4187503G2)	2	$6,749.00	$13,498.00
Generator, Transfer Switch, Propane Tank	1	$15,000.00	$15,000.00
Heat Pump - Installed	1	$5,000.00	$5,000.00

UPS - SU1000RTXL2UN		2	$ 1,200.00	$2,400.00
PDUMH20ATNET & cords/adapters		2	$ 600.00	$1,200.00
EXFO XGS-PON Power Meter and Tester		1	$5,500.00	$5,500.00
Total	**$109,057.50**			

Project Engineer- The town has identified a PE with the appropriate credentials to complete both a mid-construction check and a final sign off on the construction project.

Flagging- it is anticipated that flagging will be required in certain intersections to ensure the safety of crews working on installing the fiber cable on the utility poles.

Materials- These are the materials of the main fiber trunk construction.

Labor is the cost of people needed to complete construction. The attached Somerville budget justification spreadsheet contains a detailed breakdown of cost for Material and Labor sections.

Contingency- We have included a small contingency to account for potential estimation overruns and for anticipated cost increases in material pricing.

C.iii Project Name: Axiom/Isle Au Haut

Isle au Haut is a small island 6 miles off the coast of Stonington, Maine and is only accessible by daily ferry. Isle Au Haut has a year round population of 70 or so and is a tourist destination for visitors to Acadia National Park, of which roughly half the island belongs to. Isle Au Haut is determined to keep its vibrancy and year round population and sees internet access as a primary need to meet that objective. Current provider TDS has not done enough to keep up with the demand and the broadband committee on the island would like to take control of their own destiny by creating a fiber optic network and to own the network so that Isle Au Haut would have control over the lifeline to the mainland. Isle Au Haut has partnered with an experienced island ISP in Axiom and the goals are aligned to bring this critical infrastructure to our island.

Because of its remote island location a point to point wireless solution will be required to provide backhaul internet. We anticipate SAF radios at 6GHz and/or 11GHz to create space diversity and increased reliability. A 100Ft free standing tower is needed on the island and we expect to use Rohn Tower. A location has been tentatively determined at a high point on the island and a path analysis has been conducted and is attached, as well as the microwave path back to a tower in Stonington. Once on the island we expect to construct a CO at the base of the towner and distribute a home run fiber system to each island resident. The Adtran fiber optic equipment being deployed on IaH will bring a dedicated fiber connection (home run) to each home and business from the Central Office equipment. Access to best-in-class reliability and supporting speeds of up to 1Gbps of symmetrical service (G-PON) are highlights of a system that will rival any FTTP system in the United States. The system is designed with 1:32 splitters and capable of handling future demand in new homes or businesses and is considered future proof for the next 20 years or more.

- Total project will cost: $1,233,305
- NTIA would provide 89.5% funding: $1,109,975
- ConnectMaine will provide 10.5% match: $123,330 (10% match before contingency removed)

Capital Budget	Unit ($)	Total ($)
Pole Licensing (est.)		$12,283
Make Ready		$60,800
Utility Pole Replacement/new pole placements	$1,500	$45,600

CO Regen hardware+ utility hut		$260,153
Tower cost		$117,000
Radio cost		$103,583
Construction materials + labor		$418,686
Barging		$20,000
Customer Premise Equipment	-	$29,000
Customer Prem Drop cable + Install	-	$52,200
Project management and Engineering		$54,000
Contingency (potential price increases anticipated with material acquisition)	-	$60,000
Total Cost of Project		$1,233,305
State Funds (10%)		$123,330
Federal request		**$1,109,975**

The budget is built on a careful desktop and on-the-ground assessment that was completed. Detailed costing of all materials and equipment has been completed, including strand counts and mapping of all truck and drops to each home.

Pole licensing fee- This is the estimated fee, based on a per pole formula.

Make Ready- Final cost of make ready will be determined once a formal application is submitted and the cost of moving the existing lines, and/or determining pole replacements has been completed. It's possible that the local electrical coop will allow for free attachments reducing the overall budget. The co-op will be approached if this application is awarded.

Utility pole Replacement/placement- This line item is also an estimation and includes a 5% pole replacement budget at $1500 per pole.

CO-We anticipate siting a telco hut at the base of the tower. Detailed CO budget provided as an attachment.

Tower cost- Cost to construct tower includes site work for a concrete base to support a 100' free standing Rohn lattice tower that is specked to handle the wind and ice conditions expected on a island in Maine. Detailed budget attached.

Radio cost- the two radios needed to broadcast and accept signal on both the island and mainland. Detailed budget attached.

Materials- These are the materials of the main fiber trunk construction. A detailed BOM is included as an attachment.

Barging- Barging will be required for all materials. This is an estimated cost, anticipating that the new tower and crane to erect tower will be costly, plus all additional materials, vehicle transport, etc.

Customer premise equipment - AdTran ONT plus other materials to connect homes to the network.

Customer Premise drop cable cost + the cost of installing the customer premise equipment. Drop cable is the span of cable from the closest utility pole to the side of the home.

Project Management- Overseeing and ensuring "as built" meet specifications in construction contract.

Contingency- We have included a small contingency to account for potential unanticipated overruns.

C.iv Project Name: Axiom/Washington

Washington is a rural Maine community that in many ways has been left behind. Recently at a special town meeting, over 75 people showed up to vote 75-0 to proceed with planning and implementing a broadband project to cover the whole town, recognizing that no provider will come and invest in a small community like ours. We want to take control of our own destiny and owning the internet infrastructure will allow us to do that. Because we are so rural, a significant grant will be the only way for us to build this project.

The Town of Washington supports a municipal owned network with a trusted ISP partner who will operate the system on our behalf. While the Town has been meeting for well over a year to determine the best way forward to provide better internet connectivity, having Axiom, an operator in business for over 18 years, and familiar with operating municipal owned networks in several other Maine locations gives us great confidence that this is the right approach for our community. Axiom is well versed on doing all network monitoring, technical support, including both telephone and field support at the home, billing and all other aspects of network operations and management.

The Adtran fiber optic equipment being deployed in Washington will bring a dedicated fiber connection (home run) to each home and business from the Central Office equipment. Access to best-in-class reliability and supporting speeds of up to 1Gbps of symmetrical service (G-PON) are highlights of a system that will rival any FTTP system in the United States. The system is designed with 1:32 splitters and capable of handling future growth in new homes or businesses expected in the community and is considered future proof for the next 20 years or more. The system architecture will have limited ports capable of delivering 10Gbps (XGS-PON) of service to the right premise equipment, and that can be expanded with upgrades to the electronics and home equipment in the future, as needs/demand dictate.

- Total project will cost: $2,988,919
- NTIA would provide 89.7% funding: $2,690,027
- ConnectMaine will provide 10.3% match: $298,892 (10% match before contingency removed)

Capital Budget	**Unit ($)**	**Total ($)**
CO Hut or refurbish room TBD		$62,500
Project Management (5% of total project cost)		$132,650
Pole Licensing (est.)	CCI formula	$67,428
Make Ready		$287,800
Utility Pole Replacement/new pole placements	$1,500	$43,170
Central Office Equipment & Materials	-	$187,500
Customer premise equipment		$103,250
Customer premise installation		$309,750
Flagging	-	$15,000
	-	
Contingency (potential price increases anticipated with material acquisition)	-	$75,000
Washington Broadband Network Capital Project		$2,988,919
State Funds (10%)		$298,892
Federal request		**$2,690,027**

The budget is built with VETRO, a proven modeling tool that Axiom uses for all of its cost estimation of projects. Costing of all materials and equipment has been completed, including strand counts and mapping of all truck and drops to each home. All elements are contained in a detailed BOM that has been provided as part of the application.

CO Room at Washington Fire Station- The town has determined that an unused room in the fire station should be considered as well as a stand-alone telco hut. Both would be on town-owned land and a final determination will not be made until the project is approved and a detailed analysis of each location can be fully compared and priced to determine functionality and savings.

Project Management- The project design and management cost will help pay for overseeing the project, making additional detailed design and engineering determinations and ensuring the project is built to specifications.

Pole licensing fee- This is the estimated fee, based on a per pole formula. This fee to Consolidated Communications- the pole licensing administrator for the state of Maine will initiate the make ready process by undertaking a "ride out" that administratively coordinates all pole attachers to determine cost to make the poles ready to accept the new fiber line.

Make Ready- Final cost of make ready will be determined once a formal application is submitted and the cost of moving the existing lines, and/or determining pole replacements has been completed. Under statutory rule, Consolidated Communications and the utility have up to 6 months to complete the make ready work. The budget line item associated with this cost is an estimation based on initial assessments.

Utility pole Replacement/placement- This line item is also an estimation and includes a blend of new pole construction required to fill in a gap in poles on Crummett Mountain Road, and the potential for replacements that might be determined during the pole licensing ride out process. Typically pole need replacement if they are aged and unsafe to add any additional stress of a new fiber cable or if they are too short to provide the necessary clearance (24") between attachers.

Central Office equipment and materials-

Regen Cost			
Relay rack, DC Power Plant, AdTran TA5000 Chassis	1	$17,093.50	$17,093.50
AC Power Installation	1	$5,000.00	$5,000.00
Juniper Router - MX204	1	$19,196.00	$19,196.00
AdTran 8-port XGS-PON card w/ optics (4187518F42)	2	$12,585.00	$25,170.00
AdTran 8-port GPON card w/ optics (4187503G2)	2	$6,749.00	$13,498.00
Generator, Transfer Switch, Propane Tank	1	$15,000.00	$15,000.00
Heat Pump - Installed	1	$5,000.00	$5,000.00
UPS - SU1000RTXL2UN	2	$ 1,200.00	$2,400.00
PDUMH20ATNET & cords/adapters	2	$ 600.00	$1,200.00
EXFO XGS-PON Power Meter and Tester	1	$5,500.00	$5,500.00
Total	$109,057.50		

Customer premise equipment- includes an outside box to accept the fiber, a cutover to copper ethernet and the installation of an ONT inside of the house.

Customer premise installations- This is the labor needed to complete 413 estimated installs.

Flagging - it is anticipated that flagging will be required in certain intersections to ensure the safety of crews working on installing the fiber cable on the utility poles.

Materials - The attached Washington budget justification spreadsheet contains a detailed breakdown of cost for Material.

Contingency - We have included a small contingency to account for potential estimation overruns and for anticipated cost increases in material pricing.

C.v Project Name: Consolidated/Blue Hill

The Blue Hill Peninsula project proposes to serve 4,534 unserved/non-RDOF locations in Penobscot, Blue Hill, Deer Isle, Brooksville, Castine, Sedgwick, Brooklin and a small portion of Stonington using our Fiber-to-the-Premise (FTTP) network technology capable of delivering services up to 10G symmetrically.

- The fiber-to-the-premises technology will offer faster, highly reliable, broadband connectivity, which will significantly boost the Internet speeds currently available in many areas of the Blue Hill Peninsula.
- It will provide high speed internet access to the [insert # here] locations utilizing XGS PON technology capable of delivering services up to 10G symmetrically.
- As initially rolled out, the proposed network will offer residential locations services up to 1G/1G symmetrical to meet the current demand for bandwidth, but also provides the capacity for 10G service and positions Blue Hill residents to fulfill their growing future bandwidth demands.
- Consolidated engineers and builds its network to fulfill future bandwidth demands for all proposed customers at all locations at the speed levels below. This provides growth for the useful life of the fiber network, typically 20-25 years.
- The network will provide high reliability with no data caps or throttling of data

Internet Service is a broadband service CCI offers using its Fiber-to-the-Premise (FTTP) network and 10 Gigabit Symmetrical Passive Optical Networking (XGS-PON) Technology capable of initially delivering services between 50M to 1G symmetrically. Our XGS-PON will be scalable to 10G symmetrical and has a 1/32 split. FTTP allows Consolidated Communications to better compete by offering our business and residential customers next generation voice, data and possible future video products, including higher bandwidth offerings, ultra-high-speed Internet access, networking, multiple voice lines, teleconferencing and video applications. Components include:

- Optical Network Terminal (ONT) – Generates laser pulses of light to transmit communications signals. The Light is converted into electrical signals within Optical Network Terminal (ONT) and reverts back from electrical signals into light when traversing the network from the customer premise to the ONT.
- Optical Splitters are used in the network to aggregate multiple customers through a fiber connection back to the Optical Line Terminal or electronics.
- Fiber Distribution Cabinets will be required to house the Optical Splitters and connect fibers from the Remote Terminal or the Central Office (located at 59 Park Street in Bangor) to the distribution fibers that serve the customers.
- A FTTP solution would require Fiber Distribution Cabinets to be placed on poles where applicable. These cabinets are generally 19”x13”x8”.
- XGS-PON Network components in our central office and core network.

- Total project will cost $11,339,899
- NTIA would provide 86.7% funding: $9,830,985
- Consolidated will provide 13.3% match: $1,508,914

Consolidated's overall budget for the project is $11,339,899. This budget includes placing central office equipment, upgrading the Consolidated Core in the project area and placing fiber distribution hubs (FDHs), fiber, fiber drops and customer premise equipment.

The budget for the Consolidated Communications project on the Blue Hill Peninsula consists of $4,385,000 in central office equipment upgrades. This central office equipment budget includes the cost of placing central office equipment (TA 5000s) in four (4) central offices on the Blue Hill Peninsula ($775,000). The central office equipment figure also includes core upgrades to Consolidated's network in the area ($3,610,000). This amount includes Cisco NCS540 routers and the associated transport equipment to support the rings that serve the area. Of the total central office equipment budget, Consolidated estimates approximately $877,000 in engineering costs, $1,754,000 in equipment and material costs, and $1,754,000 in labor costs to install all the required equipment.

The Consolidated Communications budget for the Blue Hill Peninsula also includes $280,000 for fiber distribution hubs (FDHs) and that amount Consolidated breaks out into $56,000 in engineering costs, $112,000 in labor costs, and $112,000 in equipment costs to place the FDHs.

Finally, the Consolidated budget for the Blue Hill Peninsula Project includes both aerial fiber and underground fiber, although the majority of the fiber is aerial. Consolidated estimates approximately $4,820,476 in aerial fiber costs for 1,285,460 feet of fiber using Consolidated's aerial fiber cost assumption of $3.75 per foot. The budget also includes $331,650 in buried fiber costs, and this is based on an estimated 21,670 feet of buried fiber at approximately $15.00 per foot. Like the figures above Consolidated assumes about 20% of the cost of placing fiber is related to engineering work ($964,095 for aerial and $66,330 buried) and 40% each to labor and material ($1,928,190/each for aerial and $132,060 for conduit).

Consolidated's costs also include customer location fiber drops and customer premise equipment (Optical Network Terminals - ONTs). Consolidated assumes $832 per location for customer drops and assumes a 40% take rate, based on the number of locations served by this project Consolidated estimates the total cost for customer drops and ONTs at $1,508,914. Consolidated assumes $250 of the $832 – or approximately 30% is equipment cost (fiber and ONTs), and the rest is labor costs.

C.vi Project Name: Consolidated/Rangeley Lakes

Rangeley Lakes sits on the far northwest corner of Maine in the middle of Maine's Appalachian Mountains and surrounded by lakes. Consolidated proposes to build a Fiber-to-the-Premise (FTTP) network, capable of delivering services up to 10G symmetrically. The fiber-to-the-premises technology will offer faster, highly reliable, broadband connectivity, which will significantly boost the Internet speeds currently available in many areas of Rangeley Lakes. The project will serve 3,869 locations in Rangeley, Rangeley Plantation, Dallas Plantation and Sandy River Plantation that are not served at 25/3 today.

Internet Service is a broadband service CCI offers using its Fiber-to-the-Premise (FTTP) network and 10 Gigabit Symmetrical Passive Optical Networking (XGS-PON) Technology capable of initially delivering services between 50M to 1G symmetrically. Our XGS-PON will be scalable to 10G symmetrical and has a 1/32 split. FTTP allows Consolidated Communications to better compete by offering our business and residential customers next generation voice, data and possible future video products, including higher bandwidth offerings, ultra-high-speed Internet access, networking, multiple voice lines, teleconferencing and video applications.

Components

- Optical Network Terminal (ONT) – Generates laser pulses of light to transmit communications signals. The Light is converted into electrical signals within Optical Network Terminal (ONT) and

reverts back from electrical signals into light when traversing the network from the customer premise to the ONT.
- Optical Splitters are used in the network to aggregate multiple customers through a fiber connection back to the Optical Line Terminal or electronics.
- Fiber Distribution Cabinets will be required to house the Optical Splitters and connect fibers from the Remote Terminal or the Central Office (located at 59 Park Street in Bangor) to the distribution fibers that serve the customers.
- A FTTP solution would require Fiber Distribution Cabinets to be placed on poles where applicable. These cabinets are generally 19”x13”x8”.
- XGS-PON Network components in our central office and core network.

- Total project will cost $5,295,205
- NTIA would provide 69% funding: $3,651,625
- Consolidated will provide 31% match: $1,643,580

Consolidated Communication’s overall budget for the Rangeley Lakes Region project is $5,295,205. This budget includes placing central office equipment, and placing fiber distribution hubs (FDHs), fiber, fiber drops and customer premise equipment.

The budget for the Consolidated Communications project on the Blue Hill Peninsula consists of $165,000 in central office equipment upgrades. This central office equipment budget includes the cost of placing central office equipment (TA 5000) in the Rangeley central offices as well as a power upgrade for the central office ($140,000). The central office equipment figure also includes core upgrades to Consolidated’s network in the area ($25,000). This amount includes Cisco NCS540 routers and the associated transport equipment to support the rings that serve the area. Of the total central office equipment budget, Consolidated estimates approximately $33,000 in engineering costs, $66,000 in equipment and material costs, and $66,000 in labor costs to install all the required equipment.

The Consolidated Communications budget for the Rangeley Lakes Region Project also includes $28,000 for fiber distribution hubs (FDHs) and that amount Consolidated breaks out into $5,600 in engineering costs, $11,200 in labor costs, and $11,200 in equipment costs to place the FDHs.

The Consolidated budget for the Rangeley Lakes Region Project includes both aerial fiber and underground fiber, although the majority of the fiber is aerial. Consolidated estimates approximately $2,843,625 in aerial fiber costs for 758,300 feet of fiber using Consolidated’s aerial fiber cost assumption of $3.75 per foot. The budget also includes $615,000 in buried fiber costs, and this is based on an estimated 41,000 feet of buried fiber at approximately $15.00 per foot. Like the figures above Consolidated assumes about 20% of the cost of placing fiber is related to engineering work ($568,725 for aerial and $123,000 buried) and 40% each to labor and material ($1,137,450/each for aerial and $246,000 for conduit).

Consolidated’s costs also include customer location fiber drops and customer premise equipment (Optical Network Terminals - ONTs). Consolidated assumes $832 per location for customer drops and assumes a 40% take rate, based on the number of locations served by this project Consolidated estimates the total cost for customer drops and ONTs at $1,643,580. Consolidated assumes $250 of the $832 – or approximately 30% is equipment cost (fiber and ONTs), and the rest is labor costs.

C.viii Project Name: Consolidated/Farmington

The project will serve 4,335 unserved locations in Farmington, Temple, New Sharon, Industry, Wilton, Mercer, New Vineyard, Starks and Strong that are not served at 25/3 today. The Town of

Farmington is Maine's foremost four-season destination and gateway to the western mountains. Maine's 3-Ring Binder, middle-mile dark fiber, runs through Farmington, but costs of building last-mile fiber have prevented universal service. County-wide broadband planning has been going on for four years. The town of Farmington itself is mostly served, and hasn't been included in infrastructure project proposals, even though there are areas just outside of "town proper" that are unserved. The additional communities being covered by this project include areas that have had a difficult time finding a provider willing to expand service because of their rurality, despite the communities being engaged in an active community planning effort.

Internet Service is a broadband service CCI offers using its Fiber-to-the-Premise (FTTP) network and 10 Gigabit Symmetrical Passive Optical Networking (XGS-PON) Technology capable of initially delivering services between 50M to 1G symmetrically. Our XGS-PON will be scalable to 10G symmetrical and has a 1/32 split. FTTP allows Consolidated Communications to better compete by offering our business and residential customers next generation voice, data and possible future video products, including higher bandwidth offerings, ultra-high-speed Internet access, networking, multiple voice lines, teleconferencing and video applications. Components include:

- Optical Network Terminal (ONT) – Generates laser pulses of light to transmit communications signals. The Light is converted into electrical signals within Optical Network Terminal (ONT) and reverts back from electrical signals into light when traversing the network from the customer premise to the ONT.
- Optical Splitters are used in the network to aggregate multiple customers through a fiber connection back to the Optical Line Terminal or electronics.
- Fiber Distribution Cabinets will be required to house the Optical Splitters and connect fibers from the Remote Terminal or the Central Office (located at 59 Park Street in Bangor) to the distribution fibers that serve the customers.
- A FTTP solution would require Fiber Distribution Cabinets to be placed on poles where applicable. These cabinets are generally 19"x13"x8".
- XGS-PON Network components in our central office and core network.

- Total project will cost: $6,331,413
- NTIA would provide 77.2% funding: $4,888,725
- Consolidated will provide 22.8% match: $1,442,688

Consolidated's overall budget for the project is $6,331,413. This budget includes placing central office equipment, upgrading the Consolidated Core in the project area and placing fiber distribution hubs (FDHs), fiber, fiber drops and customer premise equipment.

The budget for the Consolidated Communications project in the Farmington area consists of $170,000 in central office equipment upgrades. This central office equipment budget includes the cost of placing central office equipment (TA 5000s) in the central office in Farmington ($170,000). Of the total central office equipment budget, Consolidated estimates approximately $34,000 in engineering costs, $68,000 in equipment and material costs, and $68,000 in labor costs to install all the required equipment.

The Consolidated Communications budget for the Farmington Area also includes $220,000 for fiber distribution hubs (FDHs) and that amount Consolidated breaks out into $44,000 in engineering costs, $88,000 in labor costs, and $88,000 in equipment costs to place the FDHs.

Finally, the Consolidated budget for the Farmington Area Project includes both aerial fiber and underground fiber, although the majority of the fiber is aerial. Consolidated estimates approximately $4,206,675 in aerial fiber costs for 1,121,780 feet of fiber using Consolidated's aerial fiber cost

assumption of $3.75 per foot. The budget also includes $292,050 in buried fiber costs, and this is based on an estimated 19,470 feet of buried fiber at approximately $15.00 per foot. Like the figures above Consolidated assumes about 20% of the cost of placing fiber is related to engineering work ($841,335 for aerial and $58,410 buried) and 40% each to labor and material ($1,682,670/each for aerial and $116,820 for conduit).

Consolidated's costs also include customer location fiber drops and customer premise equipment (Optical Network Terminals - ONTs). Consolidated assumes $832 per location for customer drops and assumes a 40% take rate, based on the number of locations served by this project Consolidated estimates the total cost for customer drops and ONTs at $1,442,688. Consolidated assumes $250 of the $832 – or approximately 30% is equipment cost (fiber and ONTs), and the rest is labor costs.

C.ix Project Name: ConnectMaine

As lead applicant ConnectMaine will have responsibility for administration of all seven projects including reporting and compliance. To accomplish this with limited staff, ConnectMaine will utilize trusted and expert consultants who are familiar with program requirements. ConnectMaine estimates that consultants will be utilized for a period of 18 months to cover the period of performance and a period of time thereafter for reporting and project close out. Total Administrative costs are based on an anticipated hourly rate, per consultant, over an 18 month period. ConnectMaine is also seeking pre-application expenses of $50,000.

- Total Program Administrative Costs: $1,248,000
- Total pre-application expenses: $50,000
- NTIA would provide: $1,298,000

D. Additional Information

Due to the nature of our covered partnership, ConnectMaine acknowledges that different ISP partners are submitting cost information in different formats and at various level of detail. If any portion of this application is determined to be ineligible or if any additional information is required, it is our hope that the NTIA will reach out to ConnectMaine so that we can cure any deficiencies, or make adjustments so that the greatest possible impact may still be made for our as many of our state residents as possible. Thank you for this opportunity to work with the NTIA.

Blue Hill Peninsula:

- **Blue Hill:**
  - OSP:
    - ~(340,890) feet of fiber estimate to be required for build
      - Sizes to be determined at time of detail engineering
      - Will range from 12-Fiber, 72, 144, 288 and 432
      - Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
      - Conduit size for ~(7810) feet to be determined at time of detail engineering – 4'' or 2'' common
    - (7) Fiber Distribution Hubs
      - Sizes to be determined at time of detail engineering
      - 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed
      - Central Office 432 FDH to be placed
      - Vendor TBD – Commscope and Corning used currently
  - Central Office:
    - Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service
      - TA5K 8X 10G/10G XPON OLT Modules
      - Associated Switch Modules and common cards
      - 10G Uplink Cards
      - Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with detail engineering
    - Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub
      - Fujitsu Flashwave 9500 ROADM for transport
      - IOF Fiber between offices will be augmented as required
      - (8) total nodes covers all of BHP WC's
    - Power: ABB DC Power Plant with T-Box rectifiers
      - Existing DC power plant is not sufficient and is manufactured discontinued
    - HVAC: Bard cooling unit to satisfy additional heat load of new gear
- **Castine:**
  - OSP:
    - ~(368,060) feet of fiber estimate to be required for build
      - Sizes to be determined at time of detail engineering
      - Will range from 12-Fiber, 72, 144, 288 and 432
      - Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
      - Conduit size for ~(4620) feet to be determined at time of detail engineering – 4'' or 2'' common
    - (10) Fiber Distribution Hubs
      - Sizes to be determined at time of detail engineering
      - 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed
      - Central Office 864 FDH to be placed
      - Vendor TBD – Commscope and Corning used currently
  - Central Office:

        - Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service
            - TA5K 8X 10G/10G XPON OLT Modules
            - Associated Switch Modules and common cards
            - 10G Uplink Cards
            - Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with detail engineering
        - Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub
            - Fujitsu Flashwave 9500 ROADM for transport
            - IOF Fiber between offices will be augmented as required
            - (8) total nodes covers all of BHP WC's
- **Deer Isle:**
    - OSP:
        - ~(429,990) feet of fiber estimate to be required for build
            - Sizes to be determined at time of detail engineering
            - Will range from 12-Fiber, 72, 144, 288 and 432
            - Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
            - Conduit size for ~(2860) feet to be determined at time of detail engineering – 4'' or 2'' common
        - (8) Fiber Distribution Hubs
            - Sizes to be determined at time of detail engineering
            - 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed
            - Central Office 432 FDH to be placed
            - Vendor TBD – Commscope and Corning used currently
    - Central Office:
        - Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service
            - TA5K 8X 10G/10G XPON OLT Modules
            - Associated Switch Modules and common cards
            - 10G Uplink Cards
            - Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with detail engineering
        - Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub
            - Fujitsu Flashwave 9500 ROADM for transport
            - IOF Fiber between offices will be augmented as required
            - (8) total nodes covers all of BHP WC's
        - Power: ABB DC Power Plant with T-Box rectifiers
            - Existing DC power plant is not sufficient and is manufactured discontinued
        - HVAC: Bard cooling unit to satisfy additional heat load of new gear
- **Sedgwick:**
    - OSP:
        - ~(189,970) feet of fiber estimate to be required for build
            - Sizes to be determined at time of detail engineering
            - Will range from 12-Fiber, 72, 144, 288 and 432

        - Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
        - Conduit size for ~(9790) feet to be determined at time of detail engineering – 4'' or 2'' common
    - (7) Fiber Distribution Hubs
        - Sizes to be determined at time of detail engineering
        - 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed
        - Central Office 864 FDH to be placed
        - Vendor TBD – Commscope and Corning used currently
- Central Office:
    - Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service
        - TA5K 8X 10G/10G XPON OLT Modules
        - Associated Switch Modules and common cards
        - 10G Uplink Cards
        - Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with detail engineering
    - Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub
        - Fujitsu Flashwave 9500 ROADM for transport
        - IOF Fiber between offices will be augmented as required
        - (8) total nodes covers all of BHP WC's

- **Stonington:**
- OSP:
    - ~(28,380) feet of fiber estimate to be required for build
        - Sizes to be determined at time of detail engineering
        - Will range from 12-Fiber, 72, 144, 288 and 432
        - Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
- Central Office:
    - Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub
        - Fujitsu Flashwave 9500 ROADM for transport
        - IOF Fiber between offices will be augmented as required
        - (8) total nodes covers all of BHP WC's

Farmington:

- OSP:
    - ~(1,165,890) feet of fiber estimate to be required for build
        - Sizes to be determined at time of detail engineering
        - Will range from 12-Fiber, 72, 144, 288 and 432
        - Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
        - Conduit size for ~(22,440) feet to be determined at time of detail engineering – 4'' or 2'' common
    - (20) Fiber Distribution Hubs
        - Sizes to be determined at time of detail engineering

- 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed
- Central Office 1296 FDH to be placed
- Vendor TBD – Commscope and Corning used currently

- Central Office:
  - Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service
    - TA5K 8X 10G/10G XPON OLT Modules
    - Associated Switch Modules and common cards
    - 10G Uplink Cards
    - Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with detail engineering

Rangeley:

- OSP:
  - ~(429,990) feet of fiber estimate to be required for build
    - Sizes to be determined at time of detail engineering
    - Will range from 12-Fiber, 72, 144, 288 and 432
    - Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
    - Conduit size for ~(35,400) feet to be determined at time of detail engineering – 4'' or 2'' common
  - (11) Fiber Distribution Hubs
    - Sizes to be determined at time of detail engineering
    - 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed
    - Central Office 864 FDH to be placed
    - Vendor TBD – Commscope and Corning used currently
- Central Office:
  - Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service
    - TA5K 8X 10G/10G XPON OLT Modules
    - Associated Switch Modules and common cards
    - 10G Uplink Cards
    - Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with detail engineering
  - Power: ABB DC Power Plant with T-Box rectifiers
    - Existing DC power plant is not sufficient and is manufactured discontinued

NTIA Grant - Jefferson, Maine (625 Unserved addresses) Bill of Materials (Summary)			
Customer Premise			
ONTs			$173,502
Routers			$94,028
ONT Power Cables			$2,310
Splice Tray and Misc.			$51,075
Warranties			$25,402
Labor and misc. equip			$403,683
		Total	$750,000
Pole Make Ready	(1059 poles)	Total	$423,720
OSP			
Splitters and Equip			$88,652
OSP fiber (57.04 miles), drop cable, snaps & labor			$1,212,648
		Total	$1,301,300
CO Equip & Labor			
E7s			$2,388
ER7 - 2 10G AXOS			$87,955
OIM 10 GE Transport			$5,107
OIM 10 PON			$82,250
Warranties			$2,324
CO Jumpers, switches, etc.			$11,772
CO Racks, etc.			$44,553
Batts, breakers, misc. equip			$19,689
Power/ Batt install labor			$11,120
CO Building, transport, install			$102,832
CO install labor			$130,010
		Total	$500,000
Admin/Contingencies			
Admin/Legal fees	2%		$59,500
Project Inspect fees	2%		$59,500
Engineering fees	10%		$297,502
Contingencies	5%		$148,751
		Total	$565,254
		PROJECT TOTAL	**$3,540,274**

Organization Name	Total Project Cost	Contingency	Allowable Project Costs	Match Amount	Funding Requested	HH Served	Match Percentage	Total Cost per Premise	Grant Funds Cost per Premise
Axiom/Somerville Maine	$1,601,901	$60,000	$1,541,901	$160,190	$1,441,711	334	10 39%	$4,616.47	$4,316.50
Axiom/Washington Maine	$2,988,919	$75,000	$2,913,919	$298,892	$2,690,027	826	10 25%	$3,527.75	$3,256.69
Axiom/Isle au Haut Maine	$1,233,305	$60,000	$1,173,305	$123,330	$1,109,975	205	10 51%	$5,723.44	$5,414.51
LCI Fiber Optic Network/Jefferson	$3,540,274	$148,752	$3,391,522	$354,027	$3,186,247	625	10.44%	$5,426.44	$5,098.00
Consolidated Communications/Blue Hill	$11,339,899		$11,339,899	$1,508,914	$9,830,985	4534	13.31%	$2,501.08	$2,168.28
Consolidated Communications/Farmington	$6,331,413		$6,331,413	$1,442,688	$4,888,725	4445	22.79%	$1,424.39	$1,099.83
Consolidated Communications/Rangeley Lakes	$5,295,205		$5,295,205	$1,643,580	$3,651,625	3869	31.04%	$1,368.62	$943.82
ConnectMaine Authority	$1,298,000		$1,298,000	--	$1,298,000	--	--		
TOTAL	**$33,628,916**	**$343,752**	**$33,285,164**	**$5,531,621**	**$28,097,295**	**14,838**	**15.53%**	**$2,243.24**	**$1,893.60**
							15.53% avarage match* (*calculated after contingency removed)	Average cost per premise, total funding including Match	Average cost per premise, grant funding only

424C Total (Total allowable costs):	**$33,285,164**
Total Match	**$5,531,621**
Averaged Match Percentage	**15.53%**
Funding Requested	**$28,097,295**
Total Premises	**14,838**
Total Cost per Premise	**$2,243.24**
Grant Funds Cost per Premise	**$1,893.60**

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Pa	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses		$ -	
2. Land, structures, rights-of-way, appraisals, etc.	$ -	$ -	$ -
3. Relocation expenses and payments	$ -	$ -	$ -
4. Architectural and engineering fees Total	$1,966,197.00	$ -	$1,966,197.00
5. Other architectural and engineering fees	$ -	$ -	
6. Project inspection fees	$ -	$ -	
7. Site work	$ -	$ -	
8. Demolition and removal	$ -	$ -	
9. Construction Total	$4,987,908.00		$4,987,908.00
10. Equipment	$4,385,794.00		$4,385,794.00
11. Miscellaneous		$ -	
12. SUBTOTAL (sum of lines 1-11)	$11,339,899.00		$11,339,899.00
13. Contingencies		$ -	
14. SUBTOTAL	$11,339,899.00	$ -	$11,339,899.00
15. Project (program) income		$ -	
16. TOTAL PROJECT COSTS (subtract #15 from #14)	$11,339,899.00	$ -	$11,339,899.00

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share	13.31% Match of $1,508,914	**$9,830,985**

Condolidated Communications: Blue Hill Peninsula - Total Project Costs: $11,339,899

OSP:
~(340,890) feet of fiber estimate to be required for build · Sizes to be determined at time of detail engineering · Will range from 12-Fiber, 72, 144, 288 and 432 · Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering · Conduit size for ~(7810) feet to be determined at time of detail engineering – 4'' or 2'' common (7) Fiber Distribution Hubs · Sizes to be determined at time of detail engineering · 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed · Central Office 432 FDH to be placed · Vendor TBD – Commscope and Corning used currently
Central Office:
Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service · TA5K 8X 10G/10G XPON OLT Modules · Associated Switch Modules and common cards · 10G Uplink Cards · Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub · Fujitsu Flashwave 9500 ROADM for transport · IOF Fiber between offices will be augmented as required · (8) total nodes covers all of BHP WC's Power: ABB DC Power Plant with T-Box rectifiers · Existing DC power plant is not sufficient and is manufactured discontinued HVAC: Bard cooling unit to satisfy additional heat load of new gear

Condolidated Communications: Blue Hill Peninsula - Castine

OSP:
~(368,060) feet of fiber estimate to be required for build · Sizes to be determined at time of detail engineering · Will range from 12-Fiber, 72, 144, 288 and 432 · Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering · Conduit size for ~(4620) feet to be determined at time of detail engineering – 4'' or 2'' common (10) Fiber Distribution Hubs · Sizes to be determined at time of detail engineering · 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed · Central Office 432 FDH to be placed · Vendor TBD – Commscope and Corning used currently
Central Office:
Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service · TA5K 8X 10G/10G XPON OLT Modules · Associated Switch Modules and common cards · 10G Uplink Cards

- Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with

Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub

- Fujitsu Flashwave 9500 ROADM for transport
- IOF Fiber between offices will be augmented as required
- (8) total nodes covers all of BHP WC's

Power: ABB DC Power Plant with T-Box rectifiers

- Existing DC power plant is not sufficient and is manufactured discontinued

HVAC: Bard cooling unit to satisfy additional heat load of new gear

Condolidated Communications: Blue Hill Peninsula - Deer Isle

OSP:

~(429,990) feet of fiber estimate to be required for build

- Sizes to be determined at time of detail engineering
- Will range from 12-Fiber, 72, 144, 288 and 432
- Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
- Conduit size for ~(2860) feet to be determined at time of detail engineering – 4'' or 2'' common

(8) Fiber Distribution Hubs

- Sizes to be determined at time of detail engineering
- 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed
- Central Office 432 FDH to be placed
- Vendor TBD – Commscope and Corning used currently

Central Office:

Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service

- TA5K 8X 10G/10G XPON OLT Modules
- Associated Switch Modules and common cards
- 10G Uplink Cards
- Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with

Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub

- Fujitsu Flashwave 9500 ROADM for transport
- IOF Fiber between offices will be augmented as required
- (8) total nodes covers all of BHP WC's

Power: ABB DC Power Plant with T-Box rectifiers

- Existing DC power plant is not sufficient and is manufactured discontinued

HVAC: Bard cooling unit to satisfy additional heat load of new gear

Condolidated Communications: Blue Hill Peninsula - Sedgwick

OSP:

~(189,970) feet of fiber estimate to be required for build

- Sizes to be determined at time of detail engineering
- Will range from 12-Fiber, 72, 144, 288 and 432
- Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering
- Conduit size for ~(9790) feet to be determined at time of detail engineering – 4'' or 2'' common

(7) Fiber Distribution Hubs

- Sizes to be determined at time of detail engineering

- 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed
- Central Office 864 FDH to be placed
- Vendor TBD – Commscope and Corning used currently

Central Office:

Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service

- TA5K 8X 10G/10G XPON OLT Modules
- Associated Switch Modules and common cards
- 10G Uplink Cards
- Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with

Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub

- Fujitsu Flashwave 9500 ROADM for transport
- IOF Fiber between offices will be augmented as required
- (8) total nodes covers all of BHP WC's

Condolidated Communications: Blue Hill Peninsula - Stonington

OSP:

~(28,380) feet of fiber estimate to be required for build

- Sizes to be determined at time of detail engineering
- Will range from 12-Fiber, 72, 144, 288 and 432
- Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering

Central Office:

Core: (2) Cisco NCS540 Routers at each node for associated ring for 100G backhaul to Ellsworth hub

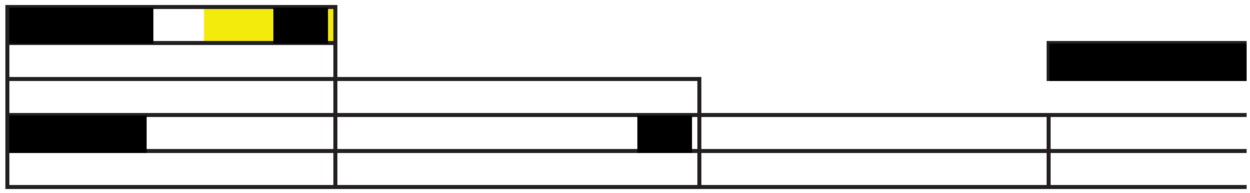
- Fujitsu Flashwave 9500 ROADM for transport
- IOF Fiber between offices will be augmented as required
- (8) total nodes covers all of BHP WC's

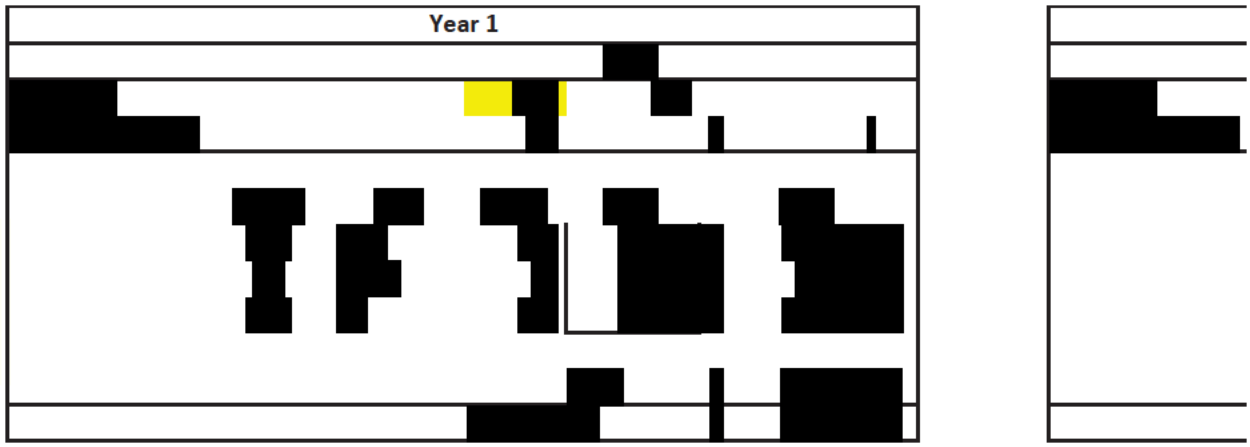
Architectural and engineering fees Total
CO Equipment
Core:Routers and Transport
Fiber and Conduit
FDH
Construction Total
CO Equipment Labor
Core:Routers and Transport Labor
Fiber and Conduit Labor
FDH Labor
Drop and ONT Labor
Equipment
CO Equipment
Core:Routers and Transport
Fiber and Conduit
FDH
Drops and ONT
TOTAL PROJECT COSTS

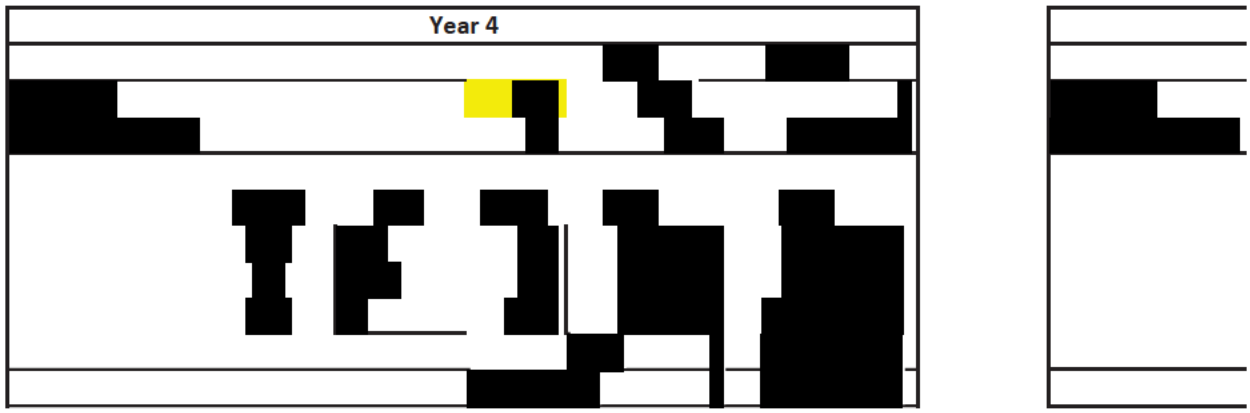
ı detail engineering

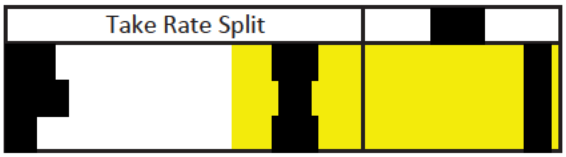
	$1,966,197.00
$	155,000.00
$	722,000.00
$	1,033,197.00
$	56,000.00
	$4,987,908.00
$	310,000.00
$	1,444,000.00
$	2,066,394.00
$	112,000.00
$	1,055,514.00
	$4,385,794.00
$	310,000.00
$	1,444,000.00
$	2,066,394.00
$	112,000.00
$	453,400.00
	$11,339,899.00

5 Year Revenue Model





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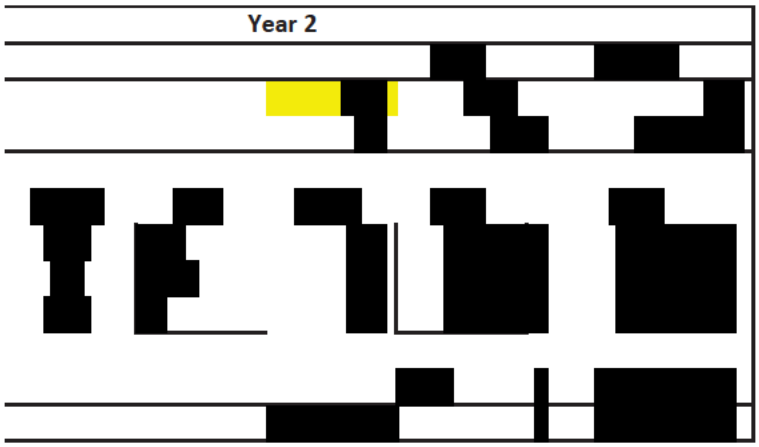
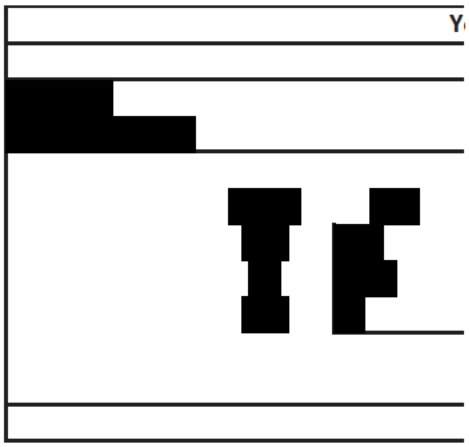
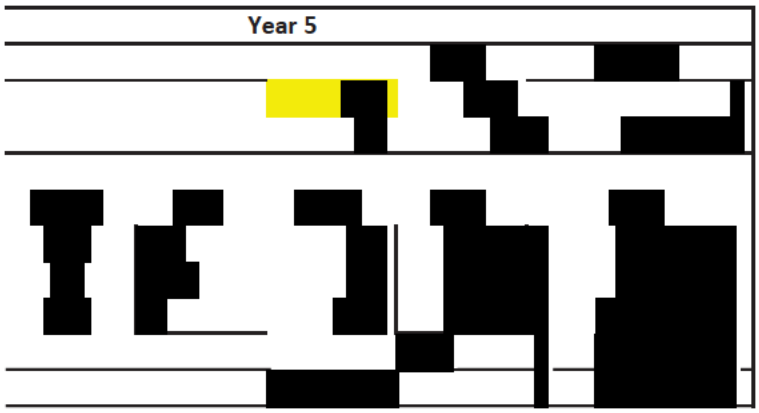
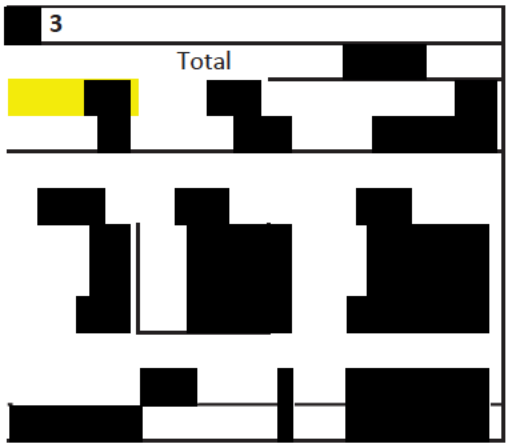

Year 2




Year 5


3
Total

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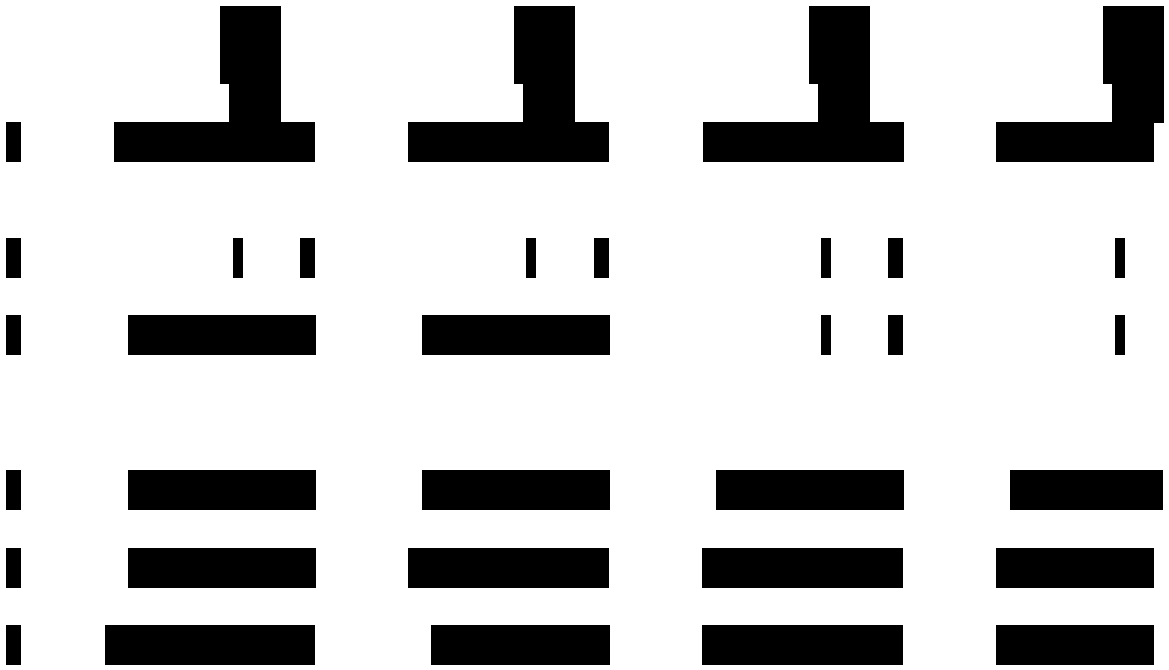

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CONFIDENTIAL Consolidated Communications

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses		$ -	
2. Land, structures, rights-of-way, appraisals, etc.	$ -	$ -	$ -
3. Relocation expenses and payments	$ -	$ -	$ -
4. Architectural and engineering fees Total	$977,745.00	$ -	$977,745.00
5. Other architectural and engineering fees	$ -	$ -	$ -
6. Project inspection fees	$ -	$ -	$ -
7. Site work	$ -	$ -	$ -
8. Demolition and removal	$ -	$ -	$ -
9. Construction Total	$2,965,372.00		$2,965,372.00
10. Equipment	$2,388,296.00		$2,388,296.00
11. Miscellaneous	$ -	$ -	$ -
12. SUBTOTAL (sum of lines 1-11)	$6,331,413.00		$6,331,413.00
13. Contingencies		$ -	
14. SUBTOTAL	$6,331,413.00	$ -	$6,331,413.00
15. Project (program) income		$ -	
16. TOTAL PROJECT COSTS (subtract #15 from #14)	$6,331,413.00	$ -	$6,331,413.00

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share	22.79% Match of $1,442,688	$4,888,725

Condolidated Communications: Farmington - Total Project Costs $6,331,413

OSP:
~(1,165,890) feet of fiber estimate to be required for build · Sizes to be determined at time of detail engineering · Will range from 12-Fiber, 72, 144, 288 and 432 · Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering · Conduit size for ~(22,440) feet to be determined at time of detail engineering – 4'' or 2'' common (20) Fiber Distribution Hubs · Sizes to be determined at time of detail engineering · 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed · Central Office 1296 FDH to be placed · Vendor TBD – Commscope and Corning used currently
Central Office:
Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service · TA5K 8X 10G/10G XPON OLT Modules · Associated Switch Modules and common cards · 10G Uplink Cards · Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with

Architectural and engineering fees Total	
CO Equipment	
Fiber and Conduit	
FDH	
Construction Total	
CO Equipment Labor	
Fiber and Conduit Labor	
FDH Labor	
9d. Drop and ONT Labor	
Equipment	
CO Equipment	
Fiber and Conduit	
FDH	
Drops and ONT	
TOTAL PROJECT COSTS	

ı detail engineering

	$977,745.00
$	34,000.00
$	899,745.00
$	44,000.00
	$2,965,372.00
$	68,000.00
$	1,799,490.00
$	88,000.00
$	1,009,882.00
	$2,388,296.00
$	68,000.00
$	1,799,490.00
$	88,000.00
$	432,806.00
	$6,331,413.00

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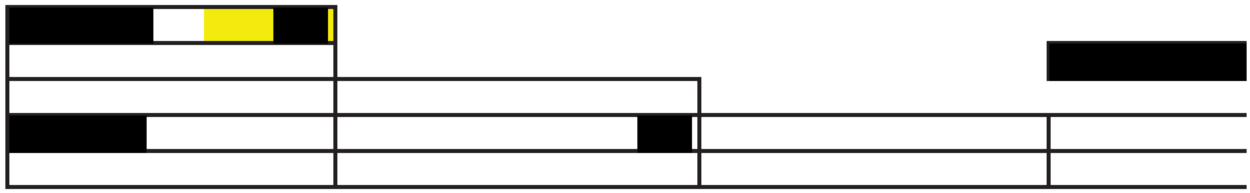
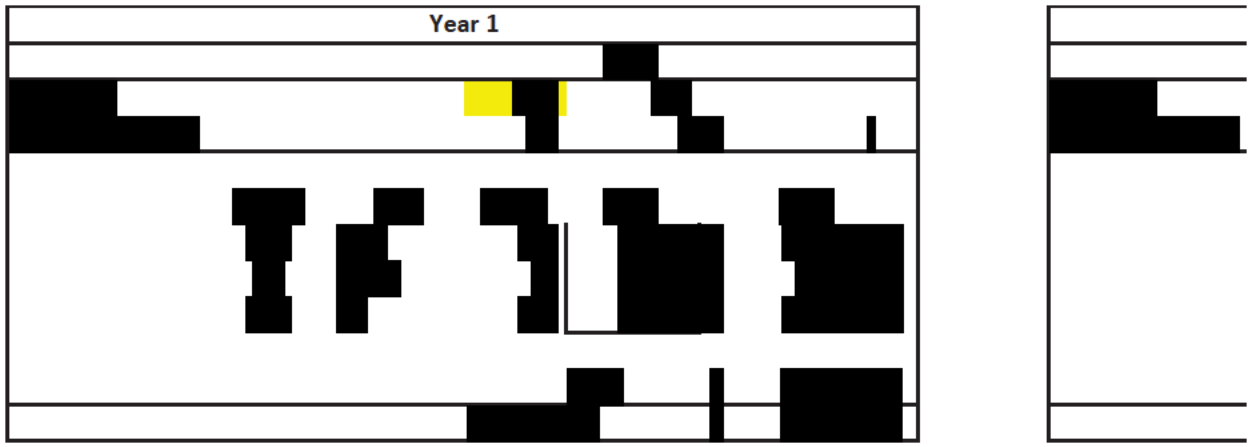
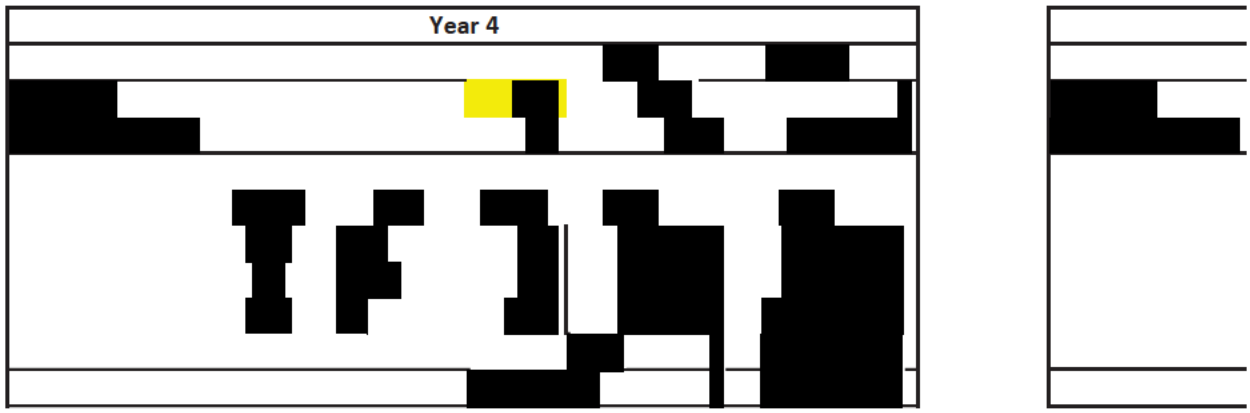
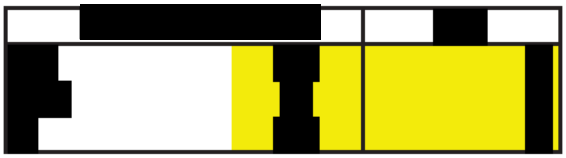
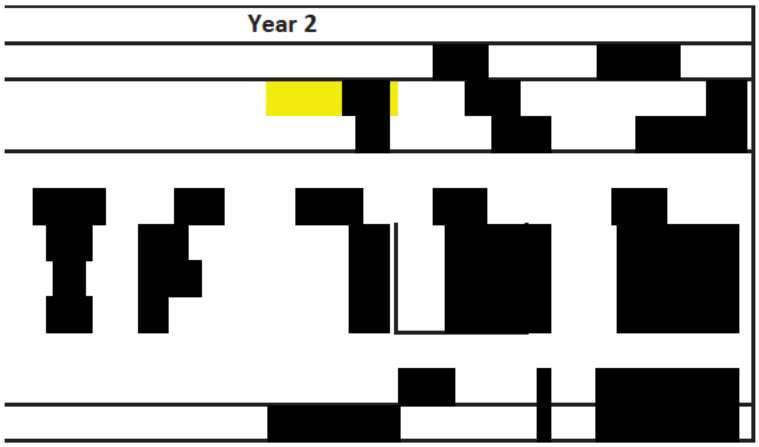
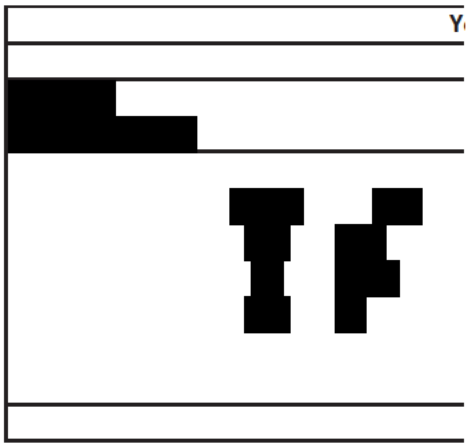


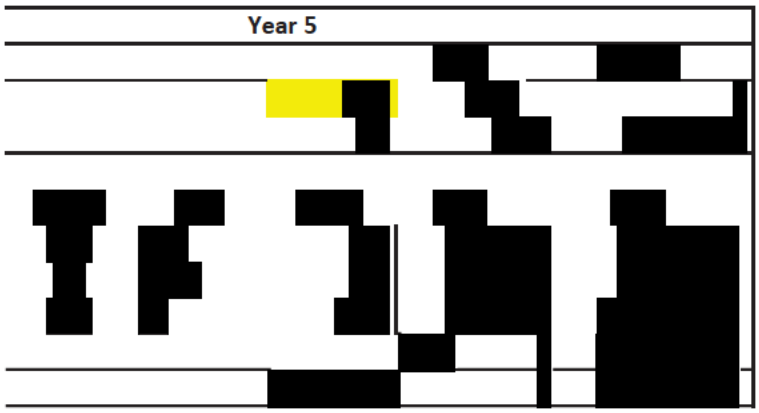


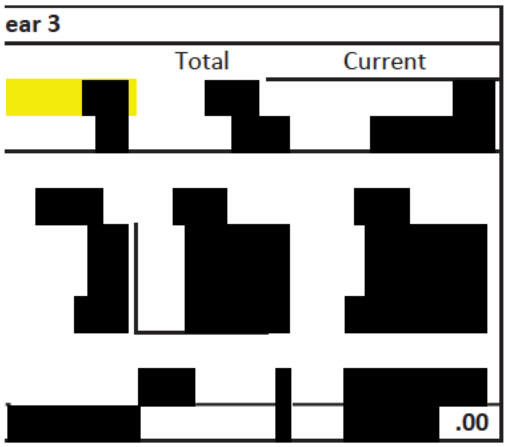





Year 2




Year 5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2022

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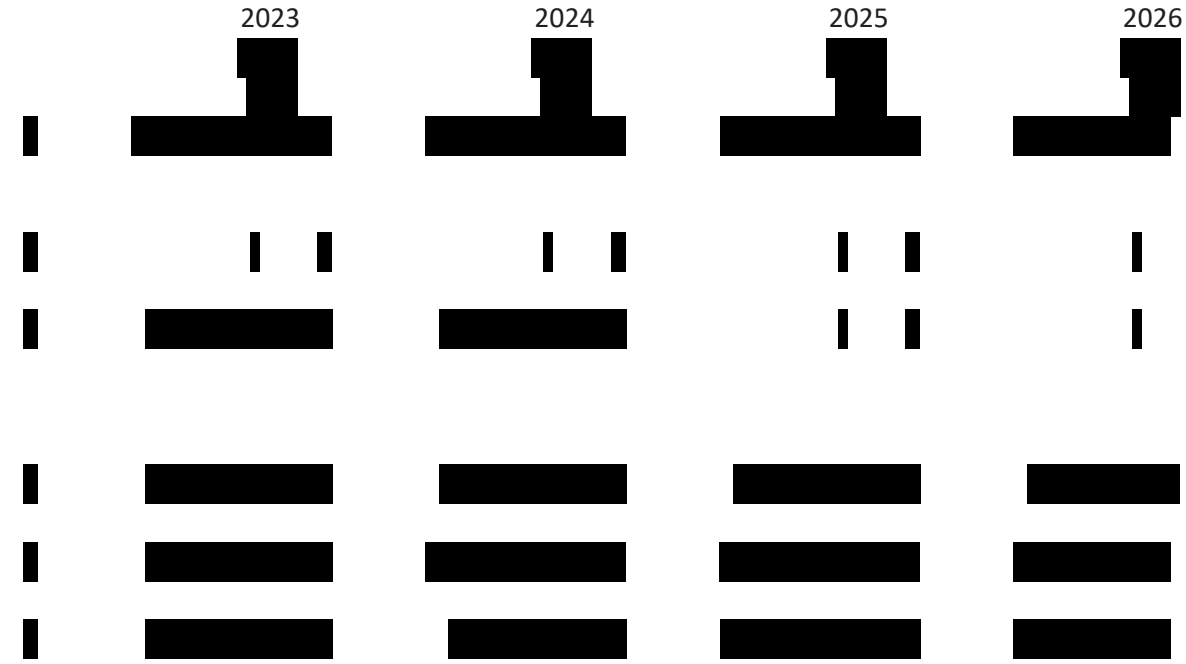

2023
2024
2025
2026

CONFIDENTIAL

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses		$ -	
2. Land, structures, rights-of-way, appraisals, etc.	$ -	$ -	$ -
3. Relocation expenses and payments	$ -	$ -	$ -
4. Architectural and engineering fees Total	$730,325.00	$ -	$730,325.00
5. Other architectural and engineering fees	$ -	$ -	$ -
6. Project inspection fees	$ -	$ -	$ -
7. Site work	$ -	$ -	$ -
8. Demolition and removal	$ -	$ -	$ -
9. Construction Total	$2,608,186.00		$2,608,186.00
10. Equipment	$1,956,694.00		$1,956,694.00
11. Miscellaneous	$ -	$ -	$ -
12. SUBTOTAL (sum of lines 1-11)	$5,295,205.00		$5,295,205.00
13. Contingencies	$ -	$ -	$ -
14. SUBTOTAL	$5,295,205.00	$ -	$5,295,205.00
15. Project (program) income	$ -	$ -	$ -
16. TOTAL PROJECT COSTS (subtract #15 from #14)	$5,295,205.00	$ -	$5,295,205.00

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share	31.04% Match of $1,643,580	**$3,651,625**

Condolidated Communications: Rangeley - Total Project Costs $5,295,205

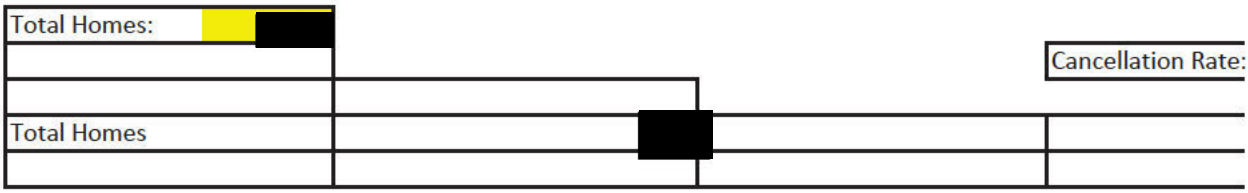
OSP:
~(429,990) feet of fiber estimate to be required for build · Sizes to be determined at time of detail engineering · Will range from 12-Fiber, 72, 144, 288 and 432 · Aerial terminals, pedestals, splice closures, strand to be determined at time of detail engineering · Conduit size for ~(35,400) feet to be determined at time of detail engineering – 4'' or 2'' common (11) Fiber Distribution Hubs · Sizes to be determined at time of detail engineering · 432 FDH's most common, but some Fiber Distribution Areas may have a 288 FDH placed · Central Office 864 FDH to be placed · Vendor TBD – Commscope and Corning used currently
Central Office:
Access: One Adtran Total Access 5000 Shelf to provide XGS PON Service · TA5K 8X 10G/10G XPON OLT Modules · Associated Switch Modules and common cards · 10G Uplink Cards · Minor material including associated Fuse panels, LGX panels, fiber ties and jumpers to be determined with Power: ABB DC Power Plant with T-Box rectifiers · Existing DC power plant is not sufficient and is manufactured discontinued

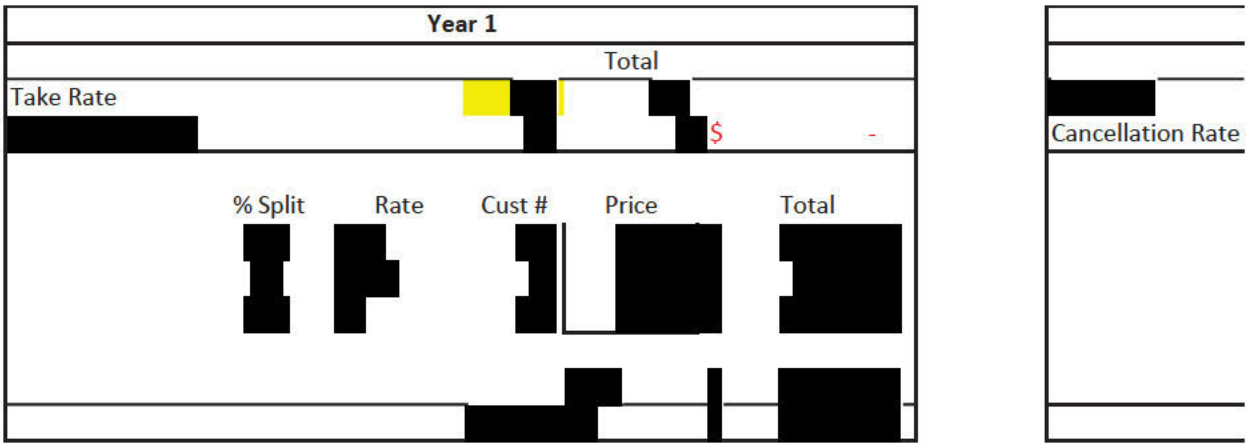
Architectural and engineering fees Total
CO Equipment
Fiber and Conduit
Core Upgrades: Routers and Transport
FDH
Construction Total
CO Equipment Labor
Fiber and Conduit Labor
Core Upgrades Labor
FDH Labor
Drop and ONT Labor
Equipment
CO Equipment
Fiber and Conduit
Core Upgrades
FDH
Drops and ONT
TOTAL PROJECT COSTS

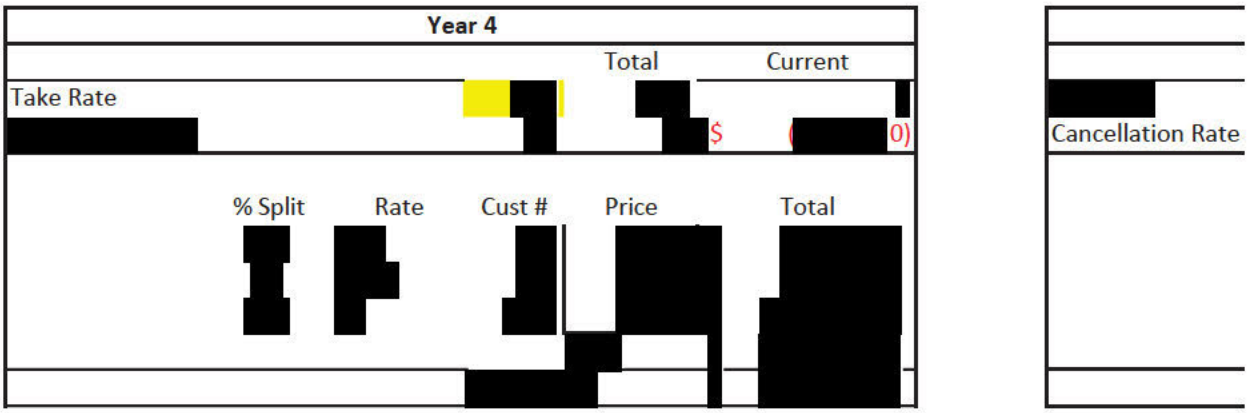
ı detail engineering

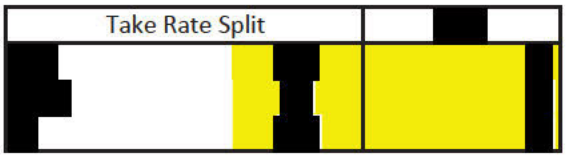
	$730,325.00
$	28,000.00
$	691,725.00
$	5,000.00
$	5,600.00
	$2,608,186.00
$	56,000.00
$	1,383,450.00
$	10,000.00
$	11,200.00
$	1,147,536.00
	$1,956,694.00
$	56,000.00
$	1,383,450.00
$	10,000.00
$	11,200.00
$	496,044.00
	$5,295,205.00

5 Year Revenue Model





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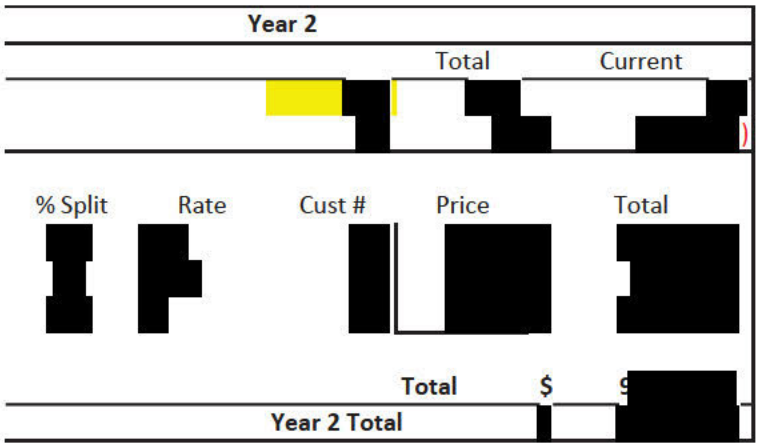
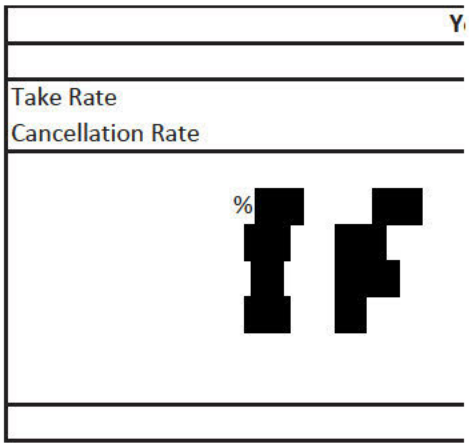
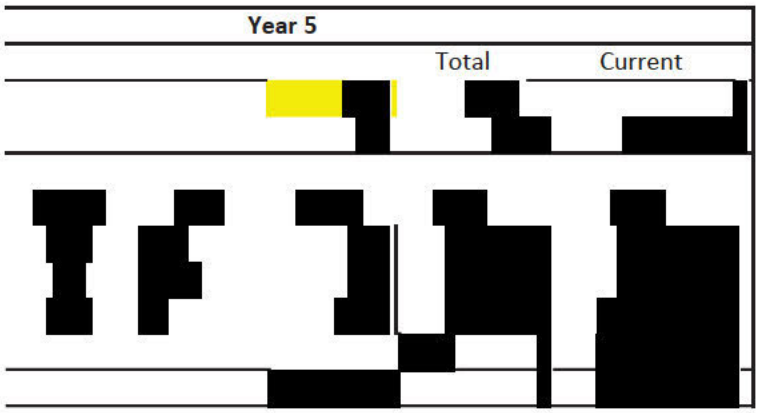
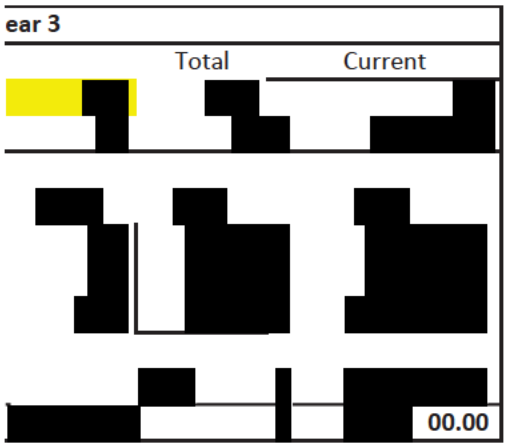

Year 2
Total
Current
% Split
Rate
Cust #
Price
Total
Total
$
Year 2 Total


Take Rate
Cancellation Rate
%


Year 5
Total
Current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Total
Current
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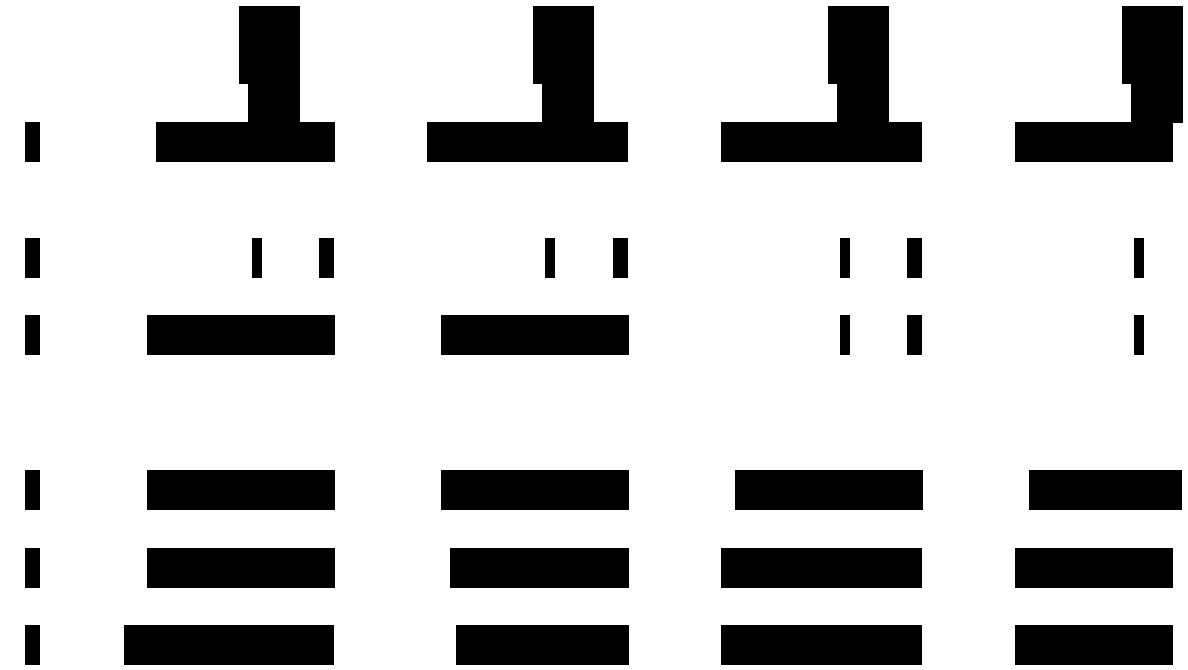
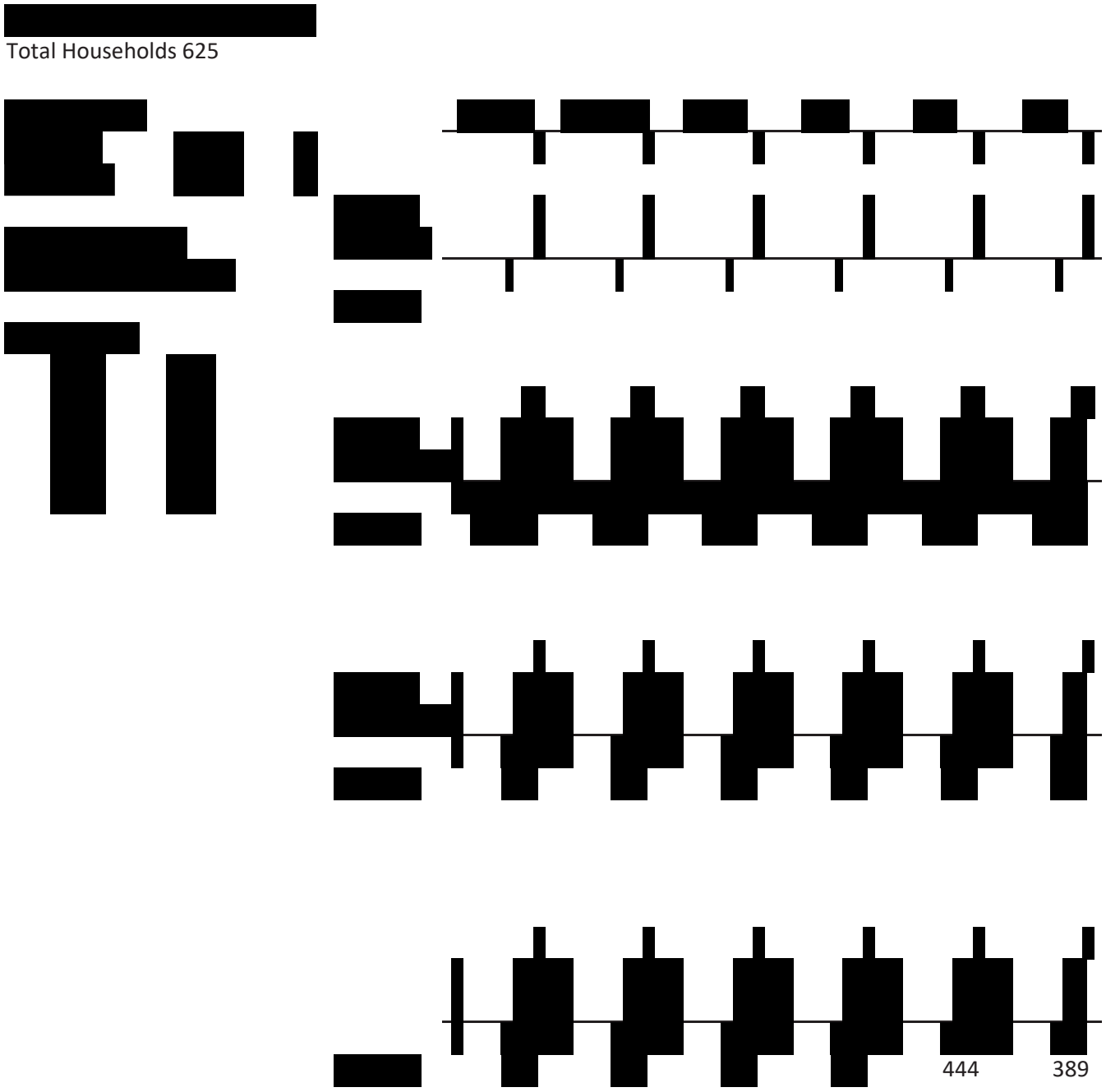
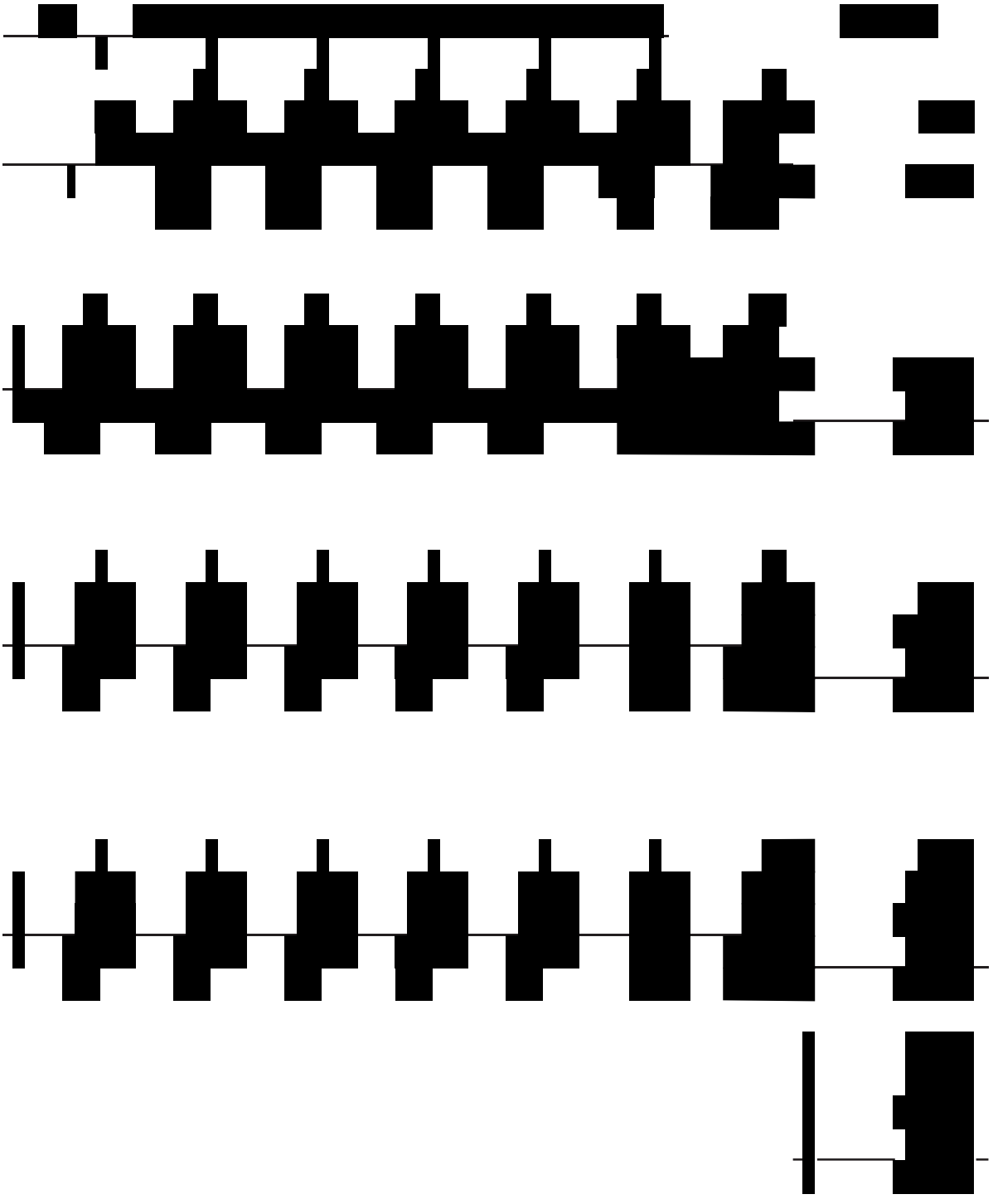


COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Par	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	$ 59,500.00	$ -	$ 59,500.00
2. Land, structures, rights-of-way, appraisals, etc.	$ -	$ -	$ -
3. Relocation expenses and payments	$ -	$ -	$ -
4. Architectural and engineering fees	$ 297,502.00	$ -	$ 297,502.00
5. Other architectural and engineering fees	$ -	$ -	$ -
6. Project inspection fees	$ 59,500.00	$ -	$ 59,500.00
7. Site work	$ -	$ -	$ -
8. Demolition and removal	$ -	$ -	$ -
9. Construction	$ 1,725,020.00	$ -	$ 1,725,020.00
10. Equipment	$ 1,250,000.00	$ -	$ 1,250,000.00
11. Miscellaneous	$ -	$ -	$ -
12. SUBTOTAL (sum of lines 1-11)	$ -	$ -	$ -
13. Contingencies	$ 148,752.00	$ -	$ 148,752.00
14. SUBTOTAL	$ -	$ -	$ -
15. Project (program) income	$ -	$ -	$ -
16. TOTAL PROJECT COSTS (subtract #15 from #14)	$ -	$ -	$ -
	$ 3,540,274.00	**$ -**	**$ 3,391,522.00**

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share	10.44% Match of $354,027 (10% Match before Contingincies removed).	**$3,186,247**


Total Households 625
444
389


2022
2023
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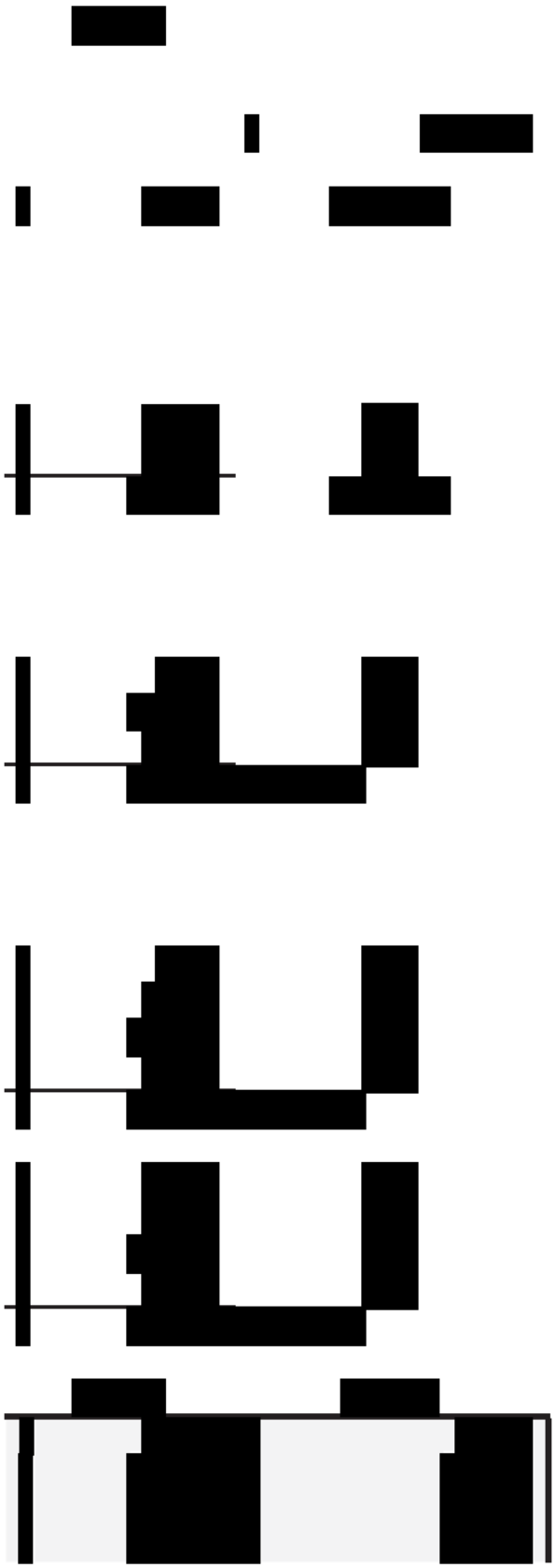
2025

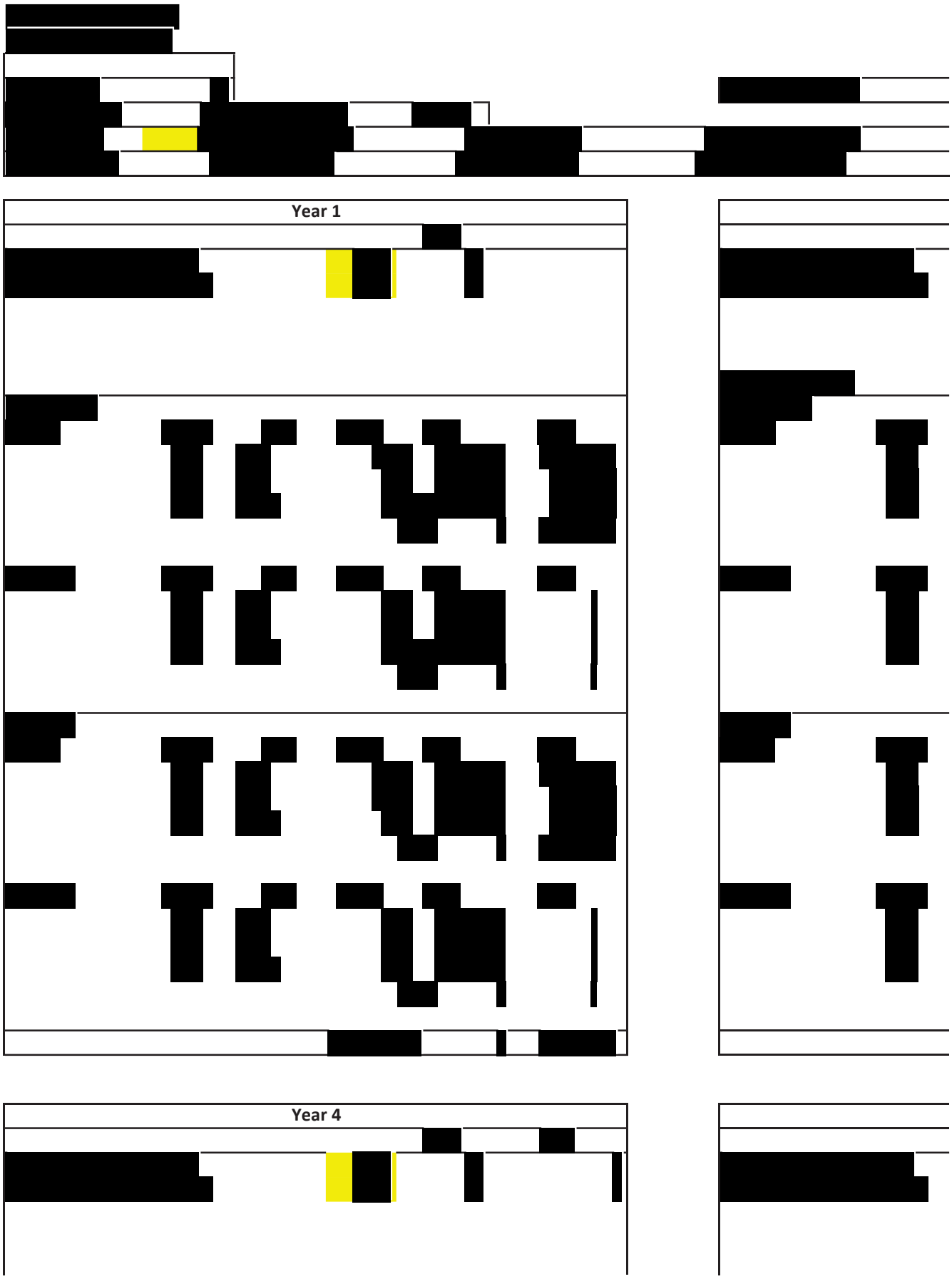
2026



NTIA Grant - Jefferson, Maine (625 Unserved addresses) Bill of Materials (Summary)			
Customer Premise			
ONTs			$173,502
Routers			$94,028
ONT Power Cables			$2,310
Splice Tray and Misc.			$51,075
Warranties			$25,402
Labor and misc. equip			$403,683
		Total	$750,000
Pole Make Ready	(1059 poles)	Total	$423,720
OSP			
Splitters and Equip			$88,652
OSP fiber (57.04 miles), drop cable, snaps & labor			$1,212,648
		Total	$1,301,300
CO Equip & Labor			
E7s			$2,388
ER7 - 2 10G AXOS			$87,955
OIM 10 GE Transport			$5,107
OIM 10 PON			$82,250
Warranties			$2,324
CO Jumpers, switches, etc.			$11,772
CO Racks, etc.			$44,553
Batts, breakers, misc. equip			$19,689
Power/ Batt install labor			$11,120
CO Building, transport, install			$102,832
CO install labor			$130,010
		Total	$500,000
Admin/Contingencies			
Admin/Legal fees	2%		$59,500
Project Inspect fees	2%		$59,500
Engineering fees	10%		$297,502
Contingencies	5%		$148,752
		Total	$565,255
		PROJECT TOTAL	**$3,540,274**

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for	c. Total Allowable Costs (C
1. Administrative and legal expenses	$ -	$ -	$ -
2. Land, structures, rights-of-way, appraisals, etc.	$ -	$ -	$ -
3. Relocation expenses and payments	$ -	$ -	$ -
4. Architectural and engineering fees	$ 54,000.00	$ -	$ 54,000.00
5. Other architectural and engineering fees	$ -	$ -	$ -
6. Project inspection fees (pole licensing + make reac	$ 118,683.00	$ -	$ 118,683.00
7. Site work (for Tower)	$ 12,000.00	$ -	$ 12,000.00
8. Demolition and removal	$ -	$ -	$ -
9. Construction	$ 366,374.00	$ -	$ 366,374.00
10. Equipment	$ 602,248.00	$ -	$ 602,248.00
11. Miscellaneous	$ 20,000.00	$ -	$ 20,000.00
12. SUBTOTAL (sum of lines 1-11)	$ -	$ -	$ -
13. Contingencies	$ 60,000.00	$ -	$ 60,000.00
14. SUBTOTAL	$ -	$ -	$ -
15. Project (program) income	$ -	$ -	$ -
16. TOTAL PROJECT COSTS (subtract #15 from #14)	$ 1,233,305.00	$ -	$ 1,173,305.00

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share	10.51% Match of $123,330 (10% Match before Contingincies removed).	$1,109,975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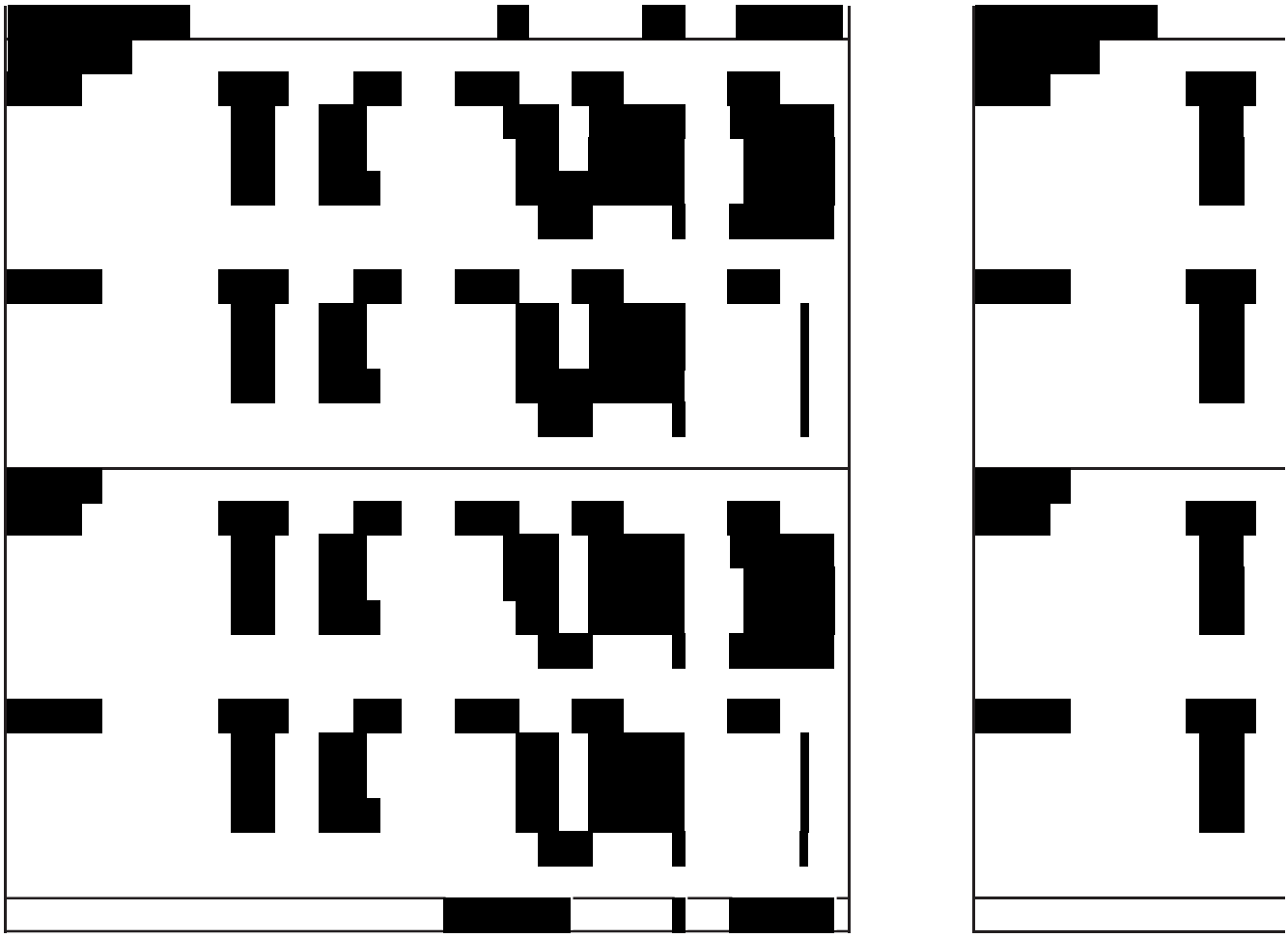
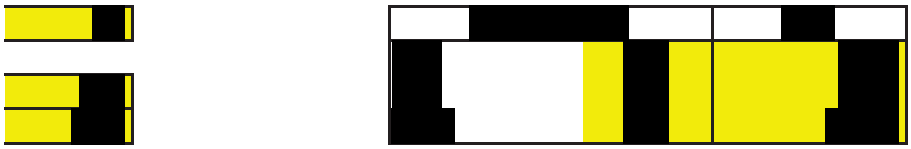
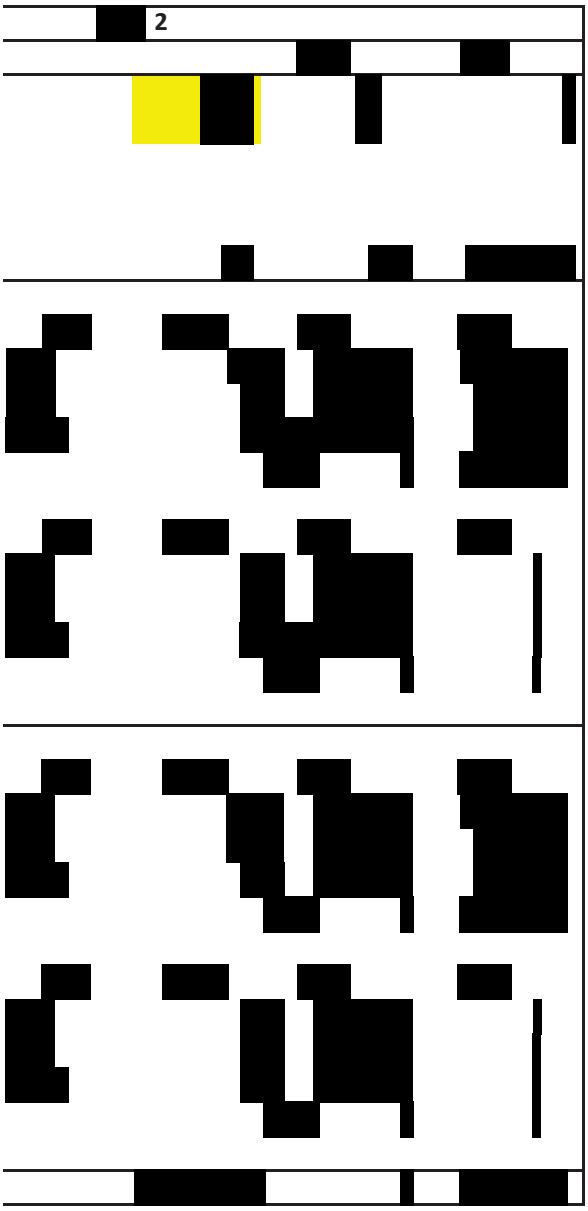
Year 4



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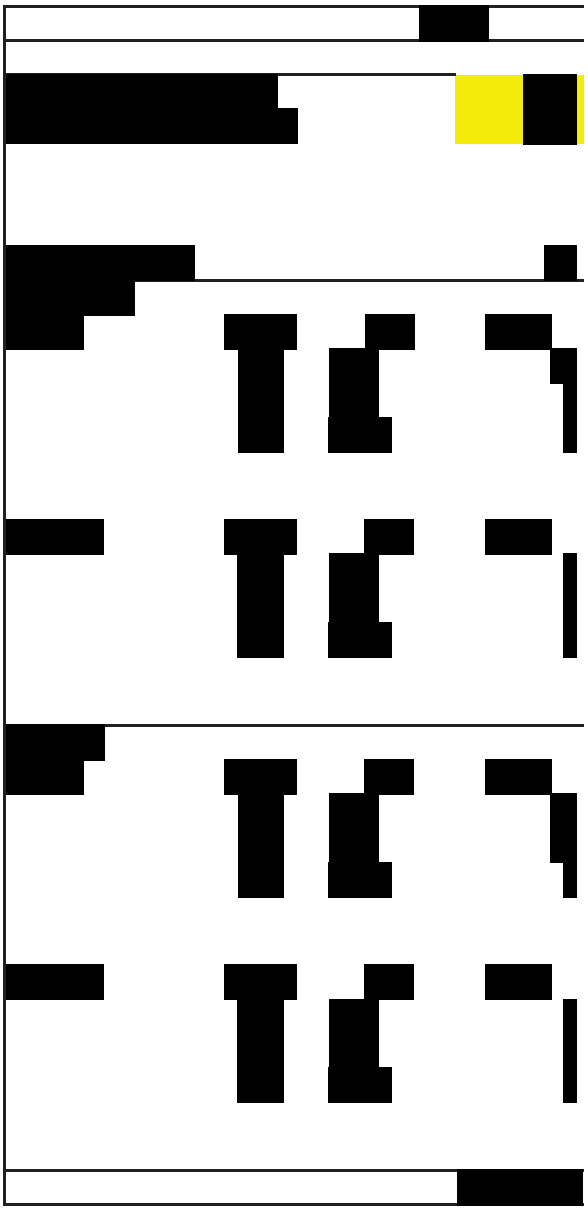
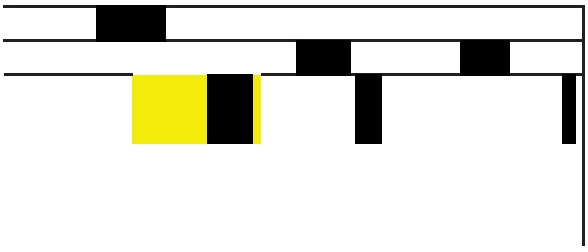
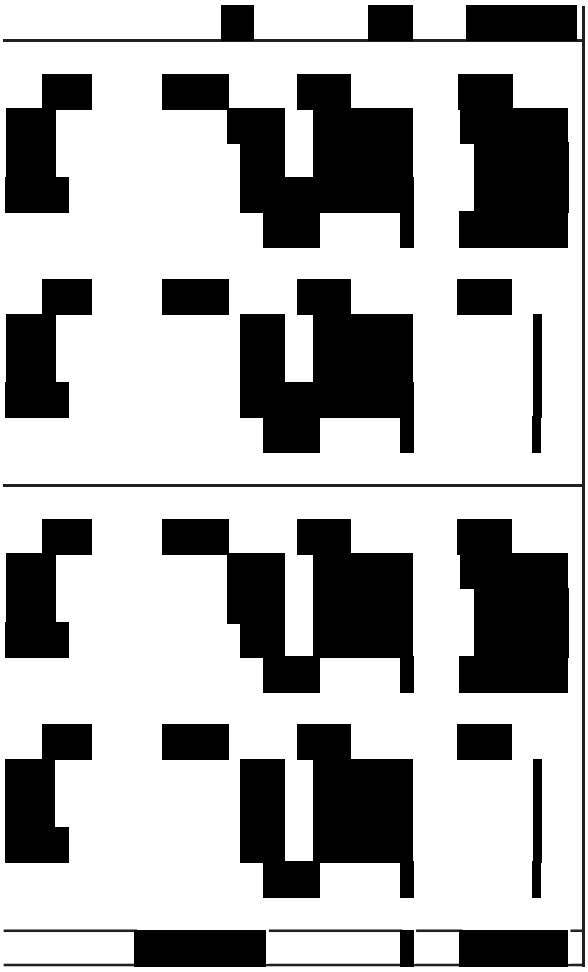
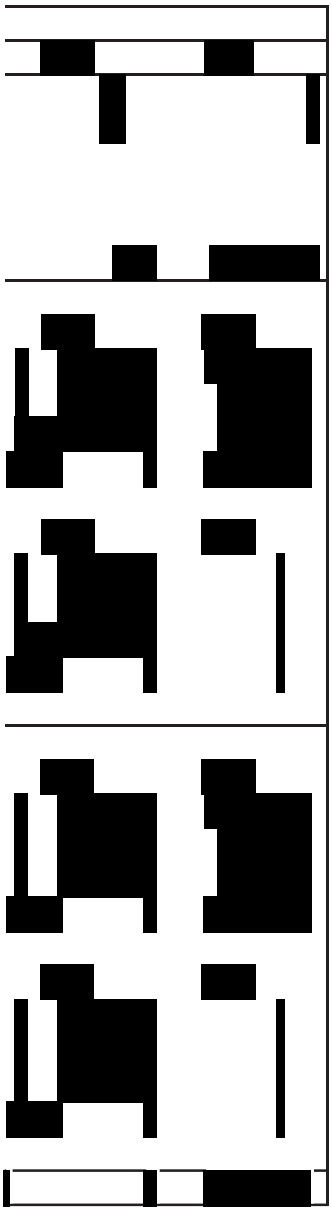








VETRO FiberMap Bill of Material (BOM) Report

Project Name	Isle Au Haut
Plan Name	
Date	7/20/21
Fiat	US Dollar

Fiber Cables

	Part Number	Material Count	Labor Count	Material Rate	Material Rate Unit	Material Cost	Labor Rate	Labor Rate Unit	Labor Cost	Subtotals
72 Strand Singler	072ZU4-T4F22D2	6465.15	6465.15	$ 0.67	per foot	$ 4,331.65	$ 1.50	per foot	$ 9,697.73	$ 14,029.38
144 Strand Singl		26120.71	26120.71	$ 1.16	per foot	$ 30,300.02	$ 1.50	per foot	$ 39,181.06	$ 69,481.08
288 Strand Singl		7800.57	7800.57	$ 1.98	per foot	$ 15,445.12	$ 1.50	per foot	$ 11,700.85	$ 27,145.97
12 Strand Singler		13627.44	13627.44	$ 0.38	per foot	$ 5,178.43	$ 1.50	per foot	$ 20,441.16	$ 25,619.59
48 Strand Singler		3708.37	3708.37	$ 0.55	per foot	$ 2,039.60	$ 1.50	per foot	$ 5,562.55	$ 7,602.15
									Sub Total	$ 143,878.17

Network Points

	Part Number	Quantity	Material Rate	Material Rate Unit	Material Cost	Labor Rate	Labor Rate Unit	Labor Cost	Subtotals
FOSC 450C - 14		14	$ 475.00	per unit	$ 6,650.00	$ 4,320.00	per unit	$ 60,480.00	$ 67,130.00
FOSC 450D - 28		7	$ 545.00	per unit	$ 3,815.00	$ 8,640.00	per unit	$ 60,480.00	$ 64,295.00
FOSC 450A - 12		21	$ 190.00	per unit	$ 3,990.00	$ 360.00	per unit	$ 7,560.00	$ 11,550.00
FOSC 450A - 48		3	$ 205.00	per unit	$ 615.00	$ 1,440.00	per unit	$ 4,320.00	$ 4,935.00
FOSC 450B - 72		4	$ 380.00	per unit	$ 1,520.00	$ 2,160.00	per unit	$ 8,640.00	$ 10,160.00
								Sub Total	$ 158,070.00

Equipment

	Part Number	Quantity	Material Rate	Material Rate Unit	Material Cost	Labor Rate	Labor Rate Unit	Labor Cost	Subtotals
								Sub Total	0

Duct

	Part Number	Material Count	Labor Count	Material Rate	Material Rate Unit	Material Cost	Labor Rate	Labor Rate Unit	Labor Cost	Subtotals
									Sub Total	0

Strand

	Part Number	Material Count	Labor Count	Material Rate	Material Rate Unit	Material Cost	Labor Rate	Labor Rate Unit	Labor Cost	Subtotals
Guy Strand/Wire 3/8"		57722.24	57722.24	$ 0.41	per foot	$ 23,666.12	$ 0.50	per foot	$ 28,861.12	$ 52,527.24
									Sub Total	$ 52,527.24

Nonnetwork Points

Part Number	Quantity	Material Rate	Material Rate Unit	Material Cost	Labor Rate	Labor Rate Unit	Labor Cost	Subtotals
Sno-shoe 16" w/ Strand Mount	49	$ 46.80	per unit	$ 2,293.20	$ 150.00	per unit	$ 7,350.00	$ 9,643.20
							Sub Total	$ 9,643.20

Hardware

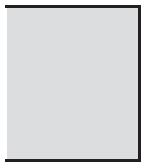
Part Number	Quantity	Material Rate	Material Rate Unit	Material Cost	Labor Rate	Labor Rate Unit	Labor Cost	Subtotals
Guy Strand 1/4 1 EHS1-4	304	$ 69.00	per unit	$ 20,976.00	$ 50.00	per unit	$ 15,200.00	$ 36,176.00
Fiber Bracket	304	$ 10.50	per unit	$ 3,192.00	$ 50.00	per unit	$ 15,200.00	$ 18,392.00
							Sub Total	$ 54,568.00
							Total	$ 418,686.61

Pole Licensing	$ 12,283.20			1	2756	104	
Make Ready (Est)	$ 60,800.00						
Pole Replacement (Est)	$ 45,600.00						
Regen Hardware	$ 260,153.00						
Tower Costs	$ 117,000.00						
Radio costs	$ 103,583.00						
Barging Cost	$ 20,000.00						
Customer Premise Equipment	$ 34,850.00						
Customer Premise Drop Cable	$ 26,000.00						
Customer Premise Installation	$ 20,349.19						
Project management	$ 54,000.00						
Contingency	$ 60,000.00						
Grand Total	$ 1,233,305.00	$ 1,109,974.50	$ 123,330.50				

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for P	c. Total Allowable Costs (Col
1. Administrative and legal expenses	$ -	$ -	$ -
2. Land, structures, rights-of-way, appraisals, etc.	$ -	$ -	$ -
3. Relocation expenses and payments	$ -	$ -	$ -
4. Architectural and engineering fees	in-kind	$ -	in-kind
`	$ -	$ -	$ -
6. Project inspection fees	$ 8,000.00	$ -	$ 8,000.00
7. Site work	$ 278,620.00	$ -	$ 278,620.00
8. Demolition and removal	$ -	$ -	$ -
9. Construction	$ 705,155.00	$ -	**$ 705,155.00**
10. Equipment	$ 503,087.00	$ -	**$ 503,087.00**
11. Miscellaneous	$ 47,039.00	$ -	$ 47,039.00
12. SUBTOTAL (sum of lines 1-11)	$ -	$ -	$ -
13. Contingencies	$ 60,000.00	$ -	$ 60,000.00
14. SUBTOTAL	$ 1,601,901.00	$ -	$ 1,601,901.00
15. Project (program) income	$ -	$ -	$ -
16. TOTAL PROJECT COSTS (subtract #15 from #14)	$ 1,601,901.00	$ -	$ 1,541,901.00

17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share	10.39% Match of $160,190 (10% Match before Contingencies removed).	$1,441,711

ımns a-b)



SOMERVILLE FTTH PROJECT — **MATERIAL / LABOR ESTIMATE**

MATERIALS

TYPE	LINEAR	20% SLACK	TOTAL	ORDER QTY	PRICE	TOTAL
2CT	62000	12400	74400	75000	$0.20	$15,000.00
12CT	24702	4940.4	29642.4	35000	$0.36	$12,600.00
24CT	19180	3836	23016	25000	$0.40	$10,000.00
48CT	54920	10984	65904	70000	$0.52	$36,400.00
72CT	21381	4276.2	25657.2	30000	$0.67	$20,100.00
144CT	17845	3569	21414	25000	$1.20	$30,000.00
288CT	28228	5645.6	33873.6	35000	$2.06	$72,100.00
576CT RIB	7667	1533.4	9200.4	10000	$4.35	$43,500.00
SNAP 24"	228	CORNING		228	$275.00	$62,700.00
SNAP 36"	37	CORNING		37	$400.00	$14,800.00
450B	2	COMMSCOPE		1	$290.00	$290.00
450D	10	COMMSCOPE		10	$455.00	$4,550.00
B TRAY	4	COMMSCOPE		2	$20.00	$40.00
D TRAY	34	COMMSCOPE		34	$36.00	$1,224.00
SPL SLEEVE	3000	COMMSCOPE		3000	$0.30	$900.00
RIB SLEEVE	1200	COMMSCOPE		1200	$1.25	$1,500.00
CO FDP	1	CLEARFIELD		1	$22,000.00	$22,000.00
ONT W/PIGTAIL	316	CORNING		316	$45.00	$14,220.00
		5% EXTRA				
1/4" STRAND	173923	8696.15	182619.15	185000	$0.27	$49,950.00

POLES	AGL 40%	STR 60%
960	384	576

TYPE	QTY	UOM		ORDER QTY	PRICE	TOTAL
10" BOLT	220	PER		220	$1.78	$391.60
12" BOLT	625	PER		625	$1.89	$1,181.25
14" BOLT	100	PER		100	$1.98	$198.00
16" BOLT	25	PER		25	$2.15	$53.75
NUT	2000	PER		2000	$0.26	$520.00
WASHER	2000	PER		2000	$0.24	$480.00
STR CLMP	580	PER		580	$3.98	$2,308.40
AGL CLMP	384	PER		384	$4.75	$1,824.00
SLIP ON	50	PER		50	$3.59	$179.50
SCREW ON	75	PER		75	$2.98	$223.50
BACK STRP	384	PER		384	$2.68	$1,029.12
RAM HEAD	25	PER		25	$4.50	$112.50
BUGNUTS	2500	PER		2500	$0.32	$800.00
LASH WIRE	150	1600' ROLL		150	$31.00	$4,650.00
DELTEC	20000	PER FT		20000	$0.32	$6,400.00
HEADS	25000	PER		25000	$0.20	$5,000.00
SPACERS	6000	PER		6000	$0.12	$720.00
FIBER TAGS	1500	PER		1500	$2.25	$3,375.00
TAPE	200	PER ROLL		200	$2.90	$580.00
WEAVERS	400	PER		400	$1.89	$756.00
SPLIT BOLT	400	PER		400	$2.25	$900.00
#6 GRD WIRE	2	500' REEL		2	$250.00	$500.00
ANCHORS	25	PER		0	$125.00	$0.00
PREFORMS	1000	PER		1000	$1.80	$1,800.00
STR SPLICE	100	PER		100	$2.65	$265.00
SNWSHOE	80	PER SET		80	$68.00	$5,440.00
GUY GRD	384	PER		384	$4.20	$1,612.80
DROP CLMP	1000	PER		1000	$0.84	$840.00
SPAN CLMP	310	PER		310	$0.88	$272.80
JHOOK	310	PER		310	$0.42	$130.20

LABOR

CODE	UOM	QTY
STRAND	PER FT	174000
LASH	PER FT	193000
LASH ADD	PER FT	0
DOWNGUY	PER	384
OVERHEAD	PER	87
ANCHOR	PER	0
PULL FIBER	PER FT	0
ROD&ROPE	PER FT	0
SLACKLOOP	PER	80
DROP	PER FT	50000
UG DROP	PER FT	12000
NEW ENCL	PER	11
CO FDP	PER	5
FIBER SPLICE	PER	2638
OTDR TRC	PER	620
SNAP	PER	265
ONT W/SPLICE	PER	220
CPE	PER	220
PROJECT MGR	PROJECT	0
AS-BUILT	PROJECT	0
DESIGN	PROJECT	1
FREIGHT	PROJECT	1
CO BUILD	PROJECT	1
MAKE READY	PROJECT	1
FLAGGING	PROJECT	1

CONTINGENCY
$60,000.00

MISC.
$47,039.00

MATERIALS
$456,304.62

LABOR
$1,038,557.38

TOTAL LABOR AND MATE
$1,601,901.00

PHOOK	310	PER		310	$0.52	$161.20
CLIPS	5000	PER		5000	$0.13	$650.00
MULE TAPE	4	1000' REEL		4	$269.00	$1,076.00

RATE	*TOTAL*
$0.50	$87,000.00
$1.00	$193,000.00
$0.00	$0.00
$50.00	$19,200.00
$125.00	$10,875.00
$0.00	$0.00
$0.00	$0.00
$0.00	$0.00
$150.00	$12,000.00
$1.00	$50,000.00
$1.25	$15,000.00
$200.00	$2,200.00
$3,000.00	$15,000.00
$35.00	$92,330.00
$10.00	$6,200.00
$250.00	$66,250.00
$155.00	$34,100.00
$314.00	$69,080.00
$0.00	$0.00
$0.00	$0.00
$8,000.00	$8,000.00
$4,500.00	$4,500.00
$60,202 38	$60,202.38
$278,620.00	$278,620.00
$15,000 00	$15,000.00

RIALS

[redacted]

[redacted]

[redacted])

FY23 #	FY23	FY24 #	FY24	FY25 #	FY25	FY26 #
[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]	[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]	$0.00	0
	$[redacted]		[redacted]		[redacted]	
	[redacted]		[redacted]		[redacted]	
	[redacted]		[redacted]		[redacted]	
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	[redacted]		[redacted]		[redacted]	
	[redacted]		[redacted]		[redacted]	
[redacted]		[redacted]		[redacted]		[redacted]

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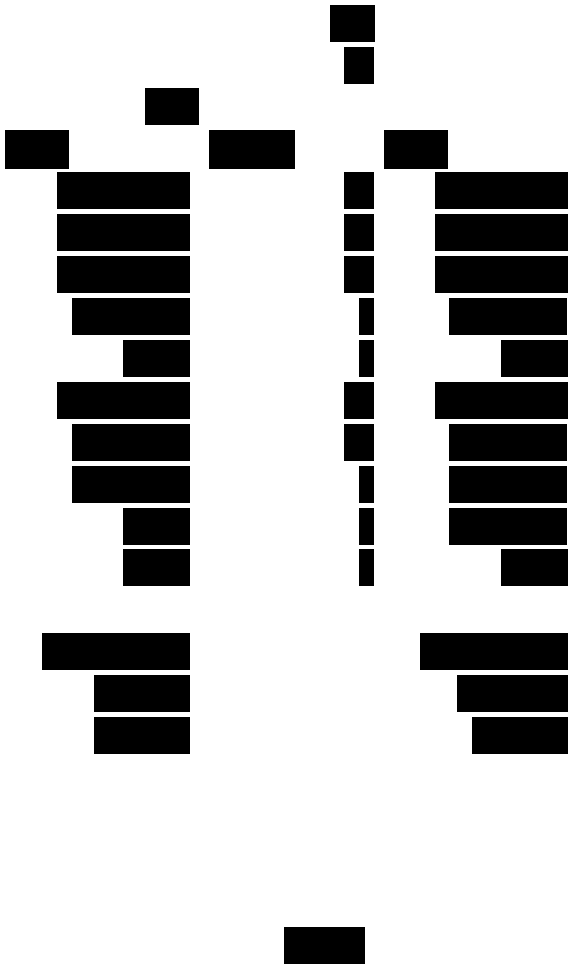


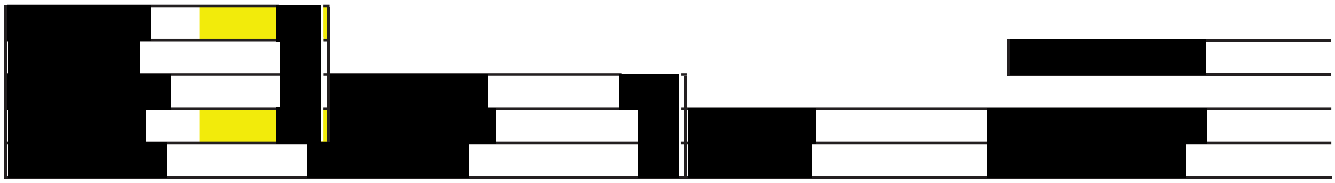
COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable
1. Administrative and legal expenses	$ -	$ -
2. Land, structures, rights-of-way, appraisals, etc.	$ -	$ -
3. Relocation expenses and payments	$ -	$ -
4. Architectural and engineering fees	$ 132,650.00	$ -
5. Other architectural and engineering fees	$ -	$ -
6. Project inspection fees (pole make ready and licen	$ 398,398.00	$ -
7. Site work	$ -	$ -
8. Demolition and removal	$ -	$ -
9. Construction	$ 1,355,971.00	$ -
10. Equipment	$ 949,400.00	$ -
11. Miscellaneous	$ 77,500.00	$ -
12. SUBTOTAL (sum of lines 1-11)	$ -	$ -
13. Contingencies	$ 75,000.00	$ -
14. SUBTOTAL	$ -	$ -
15. Project (program) income	$ -	$ -
16. TOTAL PROJECT COSTS (subtract #15 from #14)	$ 2,988,919.00	$ -

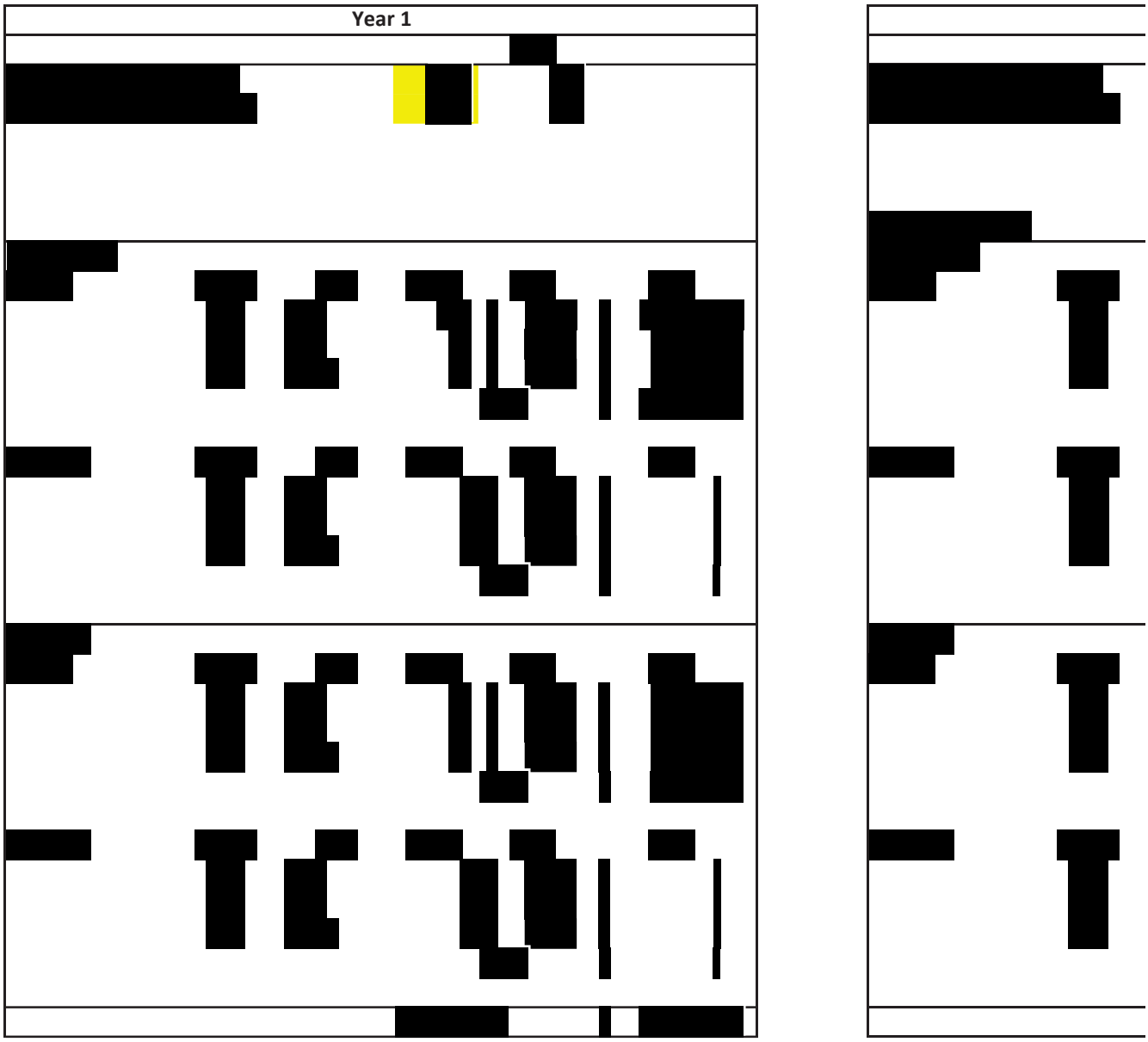
17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share	10.25% Match of $298,892 (10% Match before Contingencies removed).

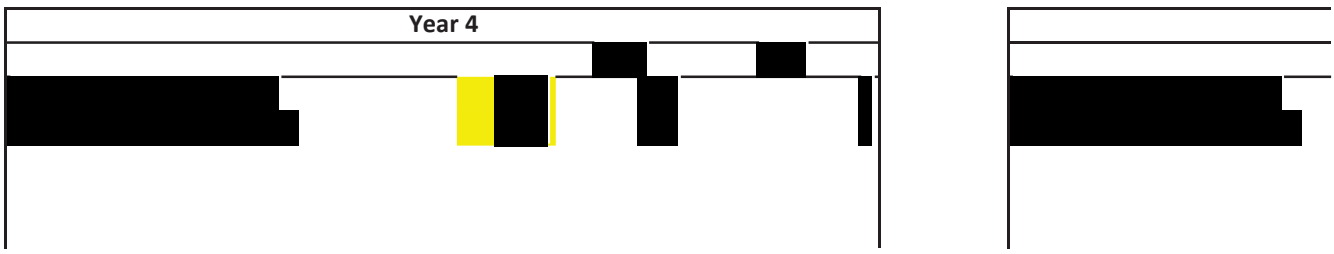
c. Total Allowable Costs (Columns a-b)
$ -
$ -
$ -
$ 132,650.00
$ -
$ 398,398.00
$ -
$ -
$ 1,355,971.00
$ 949,400.00
$ 77,500.00
$ -
$ 75,000.00
$ -
$ -
$ 2,913,919.00

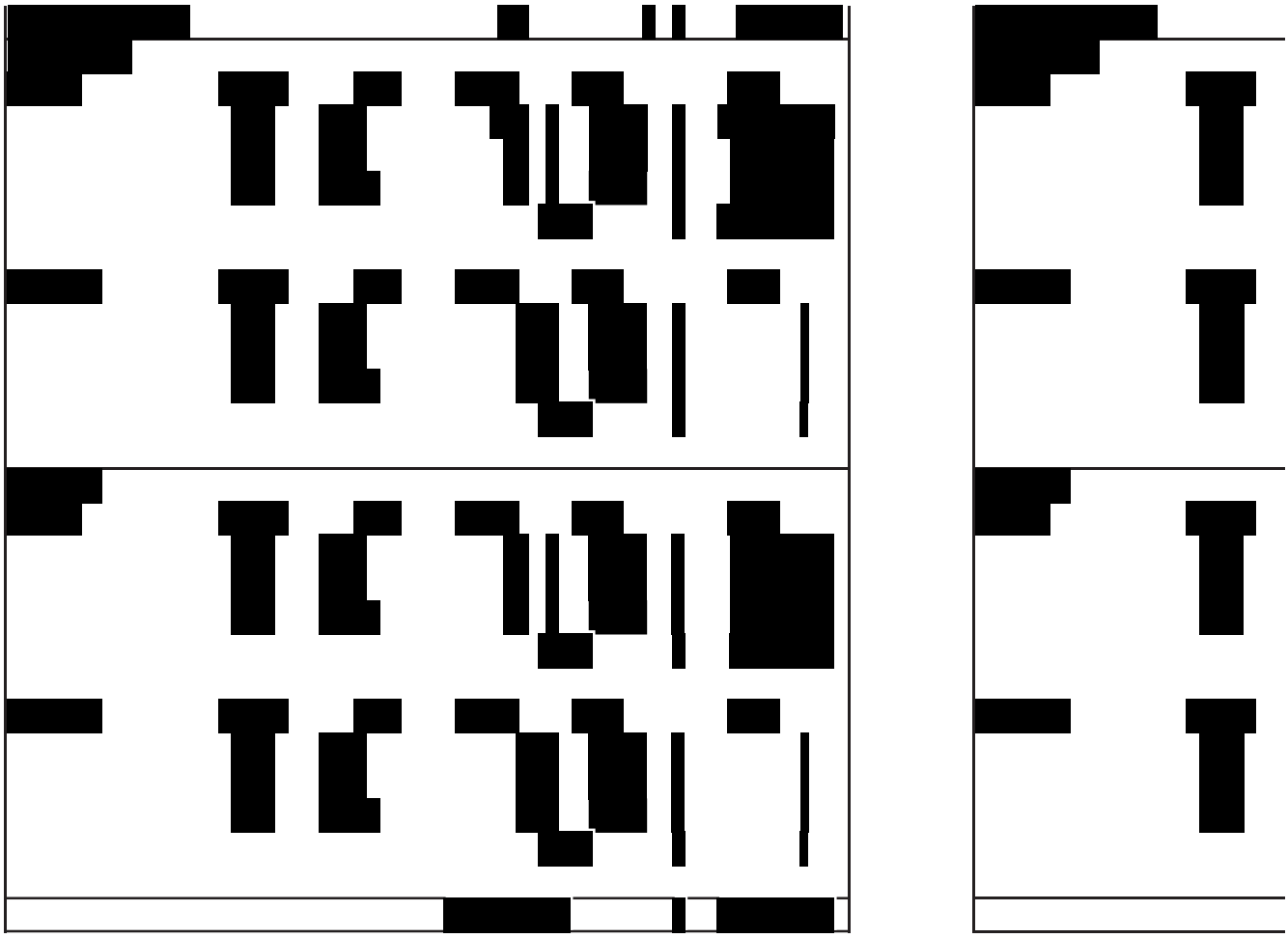
$2,690,027

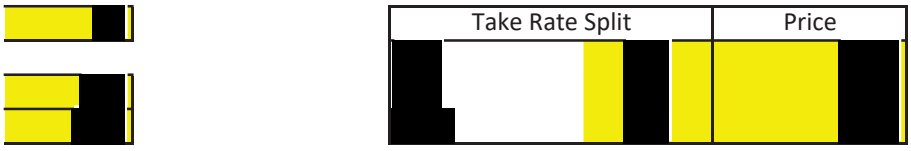
[redacted]

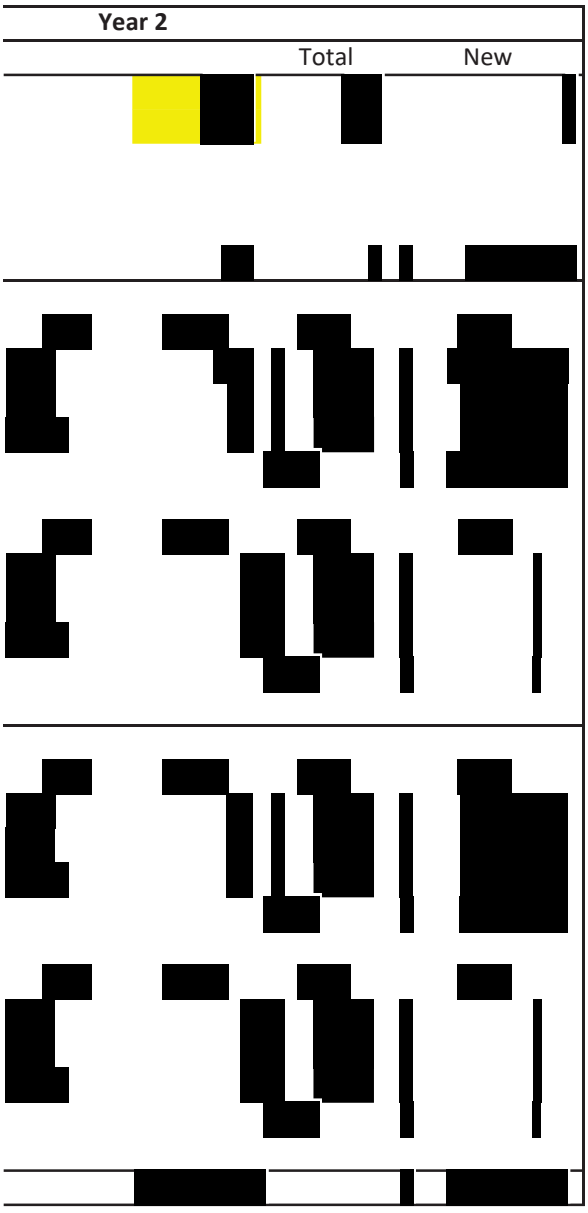


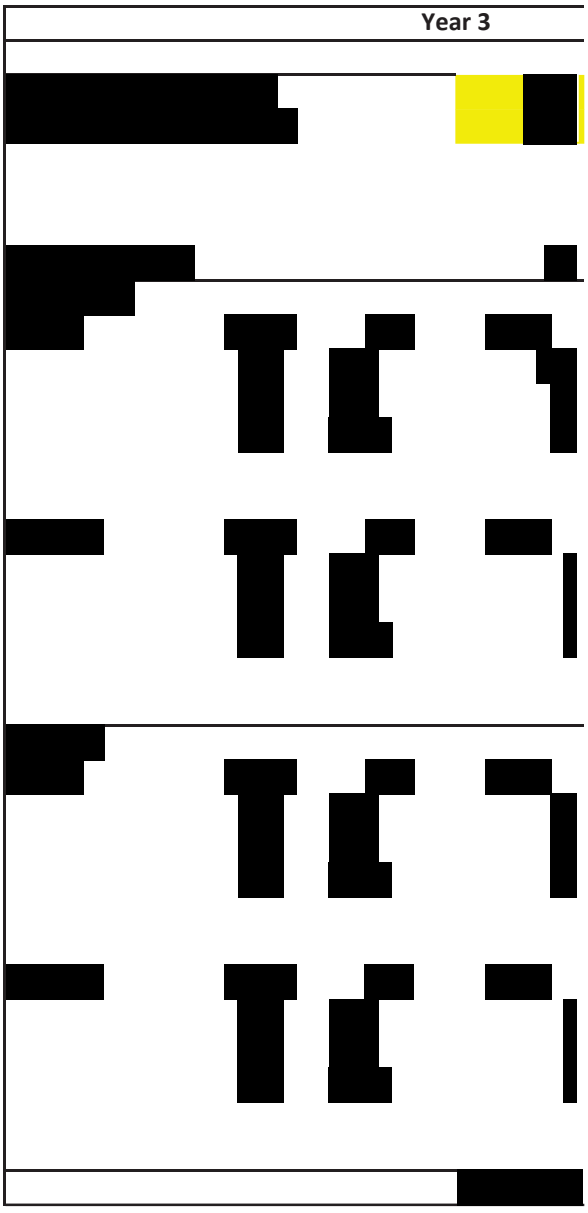


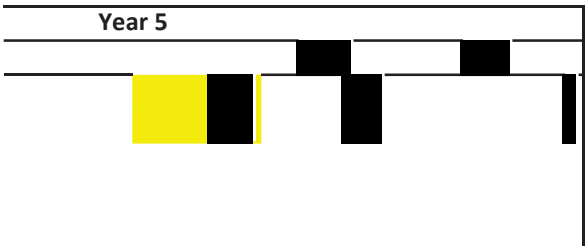





Take Rate Split
Price


Year 2
Total
New


Year 3


Year 5

[redacted] $ [redacted]

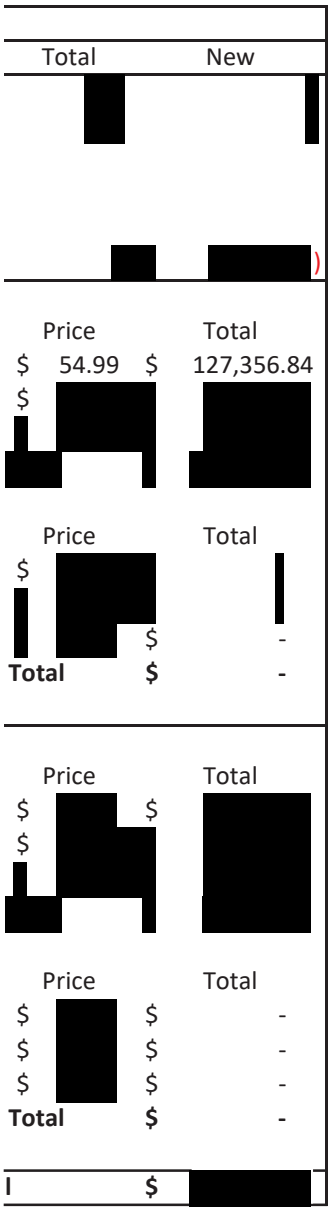
Rate	Cust #	Price	Total
[redacted]	[redacted]	[redacted]	[redacted]
	Total	**$**	

Rate	Cust #	Price	Total
[redacted]	[redacted]	[redacted]	-
	Total	**$**	**-**

Rate	Cust #	Price	Total
[redacted]	[redacted]	[redacted]	[redacted]
	Total	**$**	

Rate	Cust #	Price	Total
[redacted]	[redacted]	$	-
	Total	**$**	**-**

Year 5 Total	**$**	[redacted]


Total
New
)
Price
Total
$ 54.99 $ 127,356.84
$
Price
Total
$
$ -
Total $ -
Price
Total
$ $
$
Price
Total
$ $ -
$ $ -
$ $ -
Total $ -
I $

Washington, Maine BOM

Fiber Cables

		Subtotals		
288 Strand Singlemode	$	237,136.06		
12 Strand Singlemode	$	128,631.30		
24 Strand Singlemode	$	185,068.52		
48 Strand Singlemode	$	114,667.90		
72 Strand Singlemode	$	64,015.68		
Sub Total			$	729,519.46

Network Points

		Subtotals		
FOSC 450A - 12	$	24,200.00		
FOSC 450A - 24	$	35,490.00		
FOSC 450A - 48	$	24,675.00		
FOSC 450D - 288	$	183,700.00		
FOSC 450B - 72	$	12,700.00		
Sub Total	$			280,765.00

Strand

		Subtotals		
Guy Strand/Wire 3/8"				
	$	-		$288,829.88

Materials

Materials		Subtotals		
Sno-shoe 16" w/ Strand Mount				
	$	-		$24,206.40

Hardware

		Subtotals		
Guy Strand 1/4 150'	$	171,250.00		
Fiber Bracket	$	87,059.00		
Sub Total			$	258,309.00

Total $1,581,621.24

Central Office

TA5000 Chassis & Rack	$	32,596.67
SFPs	$	2,240.00
OLT Combo Card w/ Combo Optics	$	59,776.00
Spare SCM	$	686.00
Spare SM40	$	5,114.00
Spare Fan Card	$	520.00
Spare Router	$	3,500.00
Spare rectifiers	$	2,426.68
Spare fan filter	$	87.00
Support Package on AdTran gear	$	9,333.34
Mosaic Subscriber Insight	$	4,920.00
Device Manager	$	5,225.00
AdTran Training	$	11,200.00
Site Router	$	14,909.85
Prefab Telco Hut	$	62,500.00
Local Contractors	$	15,000.00
Generator purchase, install (includes LP tank and plumbing), and all electrical work - service install, panel w/ lightning supression, generator tie-in, etc.	$	22,000.00
Professional Services - AdTran and Juniper Turn-Up	$	15,606.83
Uniterruptable Power Supply for 120VAC equipment	$	2,400.00
Total CO budget	$	270,041.37

Additional Budget items

Pole Licensing		$67,386.83
Make Ready (Est)		$287,800.00
Pole Replacement (Est)		$43,170.00
Regen Hardware + CO	$	270,041.37
Customer Premise Equipment	$	103,250.00
Customer Premise Installation	$	309,750.00
Customer Premise Drop Cable	$	103,250.00
Project Management Fee	$	132,650.00
Flagging	$	15,000.00
Contingency	$	75,000.00
Total add'l budget	$	1,407,298.20
Main Fiber trunk build	$	1,581,621.24

TOTAL BUDGET	$	2,988,919.44

CONNECTMAINE

ConnectMaine Authority Members: Nick Battista, Jasmine Bishop, Fred Britain, Susan Corbett, Heather Johnson, Jeff Letourneau, Liz Wyman

ConnectMaine Letter of Commitment
NTIA Broadband Infrastructure Program
September 9, 2021

To Whom it May Concern:

ConnectMaine is the State Authority charged with bringing affordable broadband to all of Maine. Our state strategic plan goal for ubiquitous connectivity is that at least 95% of the state will be connected to a high-quality broadband connection by 2025. We know that broadband is central to the economic and community development of the state for education, health care, business support and growth, job creation, climate change and equity. The partnerships and collaboration this application presents is a key element to fulfilling that strategy.

Since ConnectMaine was founded in 2006, we have had a small amount of funding to expand broadband. We understood the importance of this infrastructure, particularly the "upspeed" for Maine to have the ability to create and "talk" to the world. For that reason, in 2015 we created a build standard that required all projects funded with ConnectMaine funding to provide at least a 10mbps download speed and a 10 mbps upload speed. This has led to most of the projects funded by ConnectMaine to be a fiber to the premise build. This year the ConnectMaine board continued that leadership role by defining broadband service as 100mbps symmetrical service. This will ensure that what gets built in Maine, with state funds, is scalable into the foreseeable future.

Maine also recognized with our limited resources it was critical to get communities engaged in this conversation and started a community planning process in 2016. We have over 200 communities across the state working towards a solution for better broadband, including every community represented in this grant application. The work of these community lead efforts has laid the fertile ground for funding opportunities that are now on the horizon.

The ability to bring federal money, match by state and private funds to serve almost 15,000 people from one end of the state to another is evidence of this successful collaboration between the states, communities, and private companies. This combination is central to Maine's strategy of expanding high quality broadband service to 95% of Mainers in the next four years.

ConnectMaine is thrilled to be able to play the leading role in bringing this application together, and, if successful, to ensure its implementation and compliance with all the federal requirements. We provided funding to match the community projects from our small annual budget as part of this commitment.

We have also put in place a rigorous verification and validation process for all Maine's infrastructure grant dollars. That process will continue for these funds, should Maine's application be successful.

CONNECTMAINE

ConnectMaine Authority Members: Nick Battista, Jasmine Bishop, Fred Britain, Susan Corbett, Heather Johnson, Jeff Letourneau, Liz Wyman

ConnectMaine thanks the NTIA for the opportunity to be able to bring all the work we have been doing as a state together in this application. We believe it is representative of the successful strategy Maine has pursued for the last five years to bring broadband to every corner of Maine.

Peggy Schaffer,

Director, ConnectMaine

VIA ELECTRONIC SUBMISSION
National Telecommunications Information Association Grant Office
Washington DC

Dear Project Director:

Consolidated Communications is proud to partner with the Connect Maine Authority to bring world class, fiber optic connectivity solutions to unserved residents in the Blue Hill Peninsula of Maine.

Founded in 1894 in rural Mattoon, Illinois, Consolidated has a long history of supporting connectivity across the country. We offer customers a wide range of telecommunications products from internet and voice to enterprise data security and cloud services – all supported by a dedicated team, including over 650 Maine-based employees.
The Connect Maine Authority selected Consolidated through an RFI process. Consolidated has engaged with the Connect Maine Authority on past projects. We also have extensive experience supporting municipally led efforts across the country and specifically in Northern New England. As an example, we currently have public private partnerships with 15 communities across New Hampshire and 3 in Maine.

Consolidated also brings decades of expertise in broadband engineering, construction and operations, as well as its existing, in-region infrastructure (poles, overlash rights, etc.) to this partnership. In addition to the proposed homes presented for funding in this request, Consolidated will already be working to connect underserved homes in the district as part of its recently confirmed Rural Digital Opportunity Fund (RDOF) awards. In effect, this partnership represents a shovel-ready opportunity that will be able to address the needs of the Blue Hill Peninsula in a cost effective, sustainable, and expedient manner.

The infrastructure that Consolidated Communications has proposed as part of this application provides future-proof connectivity for residents of the Blue Hill Peninsula, easily able to deliver upwards of 1G of symmetric service to every resident and scalable to 10G with no additional last mile network investment other than upgraded customer premises equipment. Consolidated has also committed to prices for these residents which match its prices throughout the state of Maine and nationally. This will allow residents in the Blue Hill area to receive the same high quality, fiber to the premise service for the same price, regardless of their geography. Given the nature of our fiber network, residents will be able to achieve their goals, whatever their connectivity requirements, from online schooling and working from home, to telehealth and streaming. We are also committed to partnering with the Connect Maine and the Blue Hill Peninsula to provide, promote, and educate consumers on these services and how they can improve their lives.

Thank you for considering what we believe to be a strong partnership and proposal.

Sincerely,

Erik Garr
President, Consumer and Small Business
Consolidated Communications

VIA ELECTRONIC SUBMISSION
National Telecommunications Information Association Grant Office
Washington DC

Dear Project Director:

Consolidated Communications is proud to partner with the Connect Maine Authority to bring world class, fiber optic connectivity solutions to unserved residents in the Farmington area of Maine.

Founded in 1894 in rural Mattoon, Illinois, Consolidated has a long history of supporting connectivity across the country. We offer customers a wide range of telecommunications products from internet and voice to enterprise data security and cloud services – all supported by a dedicated team, including over 650 Maine-based employees.

The Connect Maine Authority selected Consolidated through an RFI process. Consolidated has engaged with the Connect Maine Authority on past projects. We also have extensive experience supporting municipally led efforts across the country and specifically in Northern New England. As an example, we currently have public private partnerships with 15 communities across New Hampshire and 3 in Maine.

Consolidated also brings decades of expertise in broadband engineering, construction and operations, as well as its existing, in-region infrastructure (poles, overlash rights, etc.) to this partnership. In addition to the proposed homes presented for funding in this request, Consolidated will already be working to connect underserved homes in the district as part of its recently confirmed Rural Digital Opportunity Fund (RDOF) awards. In effect, this partnership represents a shovel-ready opportunity that will be able to address the needs of the Farmington area in a cost effective, sustainable, and expedient manner.

The infrastructure that Consolidated Communications has proposed as part of this application provides future-proof connectivity for residents of the Farmington, easily able to deliver upwards of 1G of symmetric service to every resident and scalable to 10G with no additional last mile network investment other than upgraded customer premises equipment. Consolidated has also committed to prices for these residents which match its prices throughout the state of Maine and nationally. This will allow residents in the Farmington area to receive the same high quality, fiber to the premise service for the same price, regardless of their geography. Given the nature of our fiber network, residents will be able to achieve their goals, whatever their connectivity requirements, from online schooling and working from home, to telehealth and streaming. We are also committed to partnering with the Connect Maine and the Farmington area to provide, promote, and educate consumers on these services and how they can improve their lives.

Thank you for considering what we believe to be a strong partnership and proposal.

Sincerely,

Erik Garr
President, Consumer and Small Business
Consolidated Communications

VIA ELECTRONIC SUBMISSION
National Telecommunications Information Association Grant Office
Washington DC

Dear Project Director:

Consolidated Communications is proud to partner with the Connect Maine Authority to bring world class, fiber optic connectivity solutions to unserved residents in the Rangeley Lakes Region of Maine.

Founded in 1894 in rural Mattoon, Illinois, Consolidated has a long history of supporting connectivity across the country. We offer customers a wide range of telecommunications products from internet and voice to enterprise data security and cloud services – all supported by a dedicated team, including over 650 Maine-based employees.

The Connect Maine Authority selected Consolidated through an RFI process. Consolidated has engaged with the Connect Maine Authority on past projects. We also have extensive experience supporting municipally led efforts across the country and specifically in Northern New England. As an example, we currently have public private partnerships with 15 communities across New Hampshire and 3 in Maine.

Consolidated also brings decades of expertise in broadband engineering, construction and operations, as well as its existing, in-region infrastructure (poles, overlash rights, etc.) to this partnership. In addition to the proposed homes presented for funding in this request, Consolidated will already be working to connect underserved homes in the district as part of its recently confirmed Rural Digital Opportunity Fund (RDOF) awards. In effect, this partnership represents a shovel-ready opportunity that will be able to address the needs of the Rangeley Lakes Region in a cost effective, sustainable, and expedient manner.

The infrastructure that Consolidated Communications has proposed as part of this application provides future-proof connectivity for residents of the Rangeley Lakes Region, easily able to deliver upwards of 1G of symmetric service to every resident and scalable to 10G with no additional last mile network investment other than upgraded customer premises equipment. Consolidated has also committed to prices for these residents which match its prices throughout the state of Maine and nationally. This will allow residents in the Blue Hill area to receive the same high quality, fiber to the premise service for the same price, regardless of their geography. Given the nature of our fiber network, residents will be able to achieve their goals, whatever their connectivity requirements, from online schooling and working from home, to telehealth and streaming. We are also committed to partnering with the Connect Maine and the Rangeley Lakes Region to provide, promote, and educate consumers on these services and how they can improve their lives.

Thank you for considering what we believe to be a strong partnership and proposal.

Sincerely,

Erik Garr
President, Consumer and Small Business
Consolidated Communications

Office of Selectmen

P.O. Box 71
Town of Isle au Haut, Maine 04645

August 11, 2021

National Telecommunications and Information Administration
U.S. Department of Commerce
Washington, DC

Re: Commitment Letter

Dear NTIA Officials:

The Town of Isle au Haut has been working on improving and expanding internet service across the island for many years. This opportunity will bring much needed connectivity to parts of the island that often see speeds of less than 2/1Mbps. With a municipally owned system we can better take control and provide affordable world class connectivity to the community, especially to the 50 or so hardy souls who call the island their year-round home. Axiom is a well-known island ISP in the State of Maine who provides or is set to provide service on Cranberry Isles, Cliff Island, Chebeague Island and next year on Monhegan Island.

The system being built for us will offer a significantly upgraded FCC licensed microwave link from the mainland that will bring over 1Gbps of bulk bandwidth to the island. This will connect to a Fiber to the Home (FTTH) system that will be scalable, reliable and bring symmetrical speeds well above what the island can receive now. The fiber optic system being deployed in our community will bring a dedicated fiber connection to each home. Access to best-in-class reliability and supporting speeds of up to 1Gbps of symmetrical service (G-PON) are highlights of a system that will rival any FTTH island system in the United States. The system is capable of handling future growth in new homes by supplying 200% of additional anticipated capacity needs and upgrades beyond that provided by software upgrades. This system is considered future proof for the next 20 years or more.

This network will be designed as a "home run" system where each home will have a dedicated fiber delivered from the Central Office. Home run systems allow for future needs and maximum privacy with emerging telehealth and on-line education while creating a "fiber pipe" that can deal with all the communications needs including data, phone, and streaming content. This is a generational solution that will provide capable infrastructure for Isle au Haut to create new opportunities for full time and seasonal residents, visitors, and businesses, while also attracting new families to the island.

Please do not hesitate to reach out with any questions about our project.

Sincerely,

Peggi Stevens
First Selectperson
Town of Isle au Haut

Charlie Hopkins
For the Isle au Haut Broadband Committee

Letter of Commitment

To NTIA Broadband Infrastructure Grant Program:

The following letter will serve as LCI Fiber Optic Networks' formal commitment to fully design, build, and maintain the Fiber to the Home network needed to serve 625 currently unserved addresses in Jefferson, Maine.

Our plan is to deploy a 10 Gig fiber optic network over approx. 57 rural miles in Jefferson, Maine to make high speed broadband available to 625 unserved homes (internet, voice over fiber, and LCI's own live streaming video). The entire network work will be fed by LCI's triple-leg redundant internet sourcing (NYC, Boston & Halifax) on its fully owned and maintained fiber optic transmission backbone. One new CO facility will be constructed in Jefferson to serve as the distribution hub for this project.

LCI will fully commit its staff (network engineers, outside plant crews, installation techs, customer service reps, and administrative support staff) as well as the qualified contractors and consultants needed to complete all of the objectives for the Jefferson Maine project as described in the NTIA grant application.

Sincerely,

Randal Manning

Randal Manning

V.P. of Engineering & Operations

TOWN OF SOMERVILLE
72 Sand Hill Road
Somerville, Maine 04348
207-549-3828

8-10-2021

To Whom it May Concern,

The Town of Somerville is very committed to building a quality and competitive municipal broadband network to serve the community for decades to come. We realize we're not experienced at constructing, operating and maintaining FTTH networks, but we have taken the time to plan and understand what doing so entails. Which is why the Broadband Committee selected Axiom Technologies in early 2020 as our experienced technical partner through an RFI process. Together we designed and planned the project, and have negotiated draft Construction and Franchise contracts with Axiom that have been reviewed by the town lawyer and been reviewed by Selectmen. The agreements are ready to be finalized and executed by the Board of Selectmen once project funding is secured.

Town residents have now voted twice to support our project to create a Municipal FTTH broadband network to provide service to all people and businesses in town who wish it. Realizing that success also depends upon that internet service being broadly affordable, the Broadband Committee drafted an affordability plan based on demographic and survey data, which provides a subsidy for low income qualified subscribers. In addition to donations made to our Broadband fund for those subsidies, we have planned to maintain those subsidies, and pay other costs for insurance, pole attachment fees, and building a capital fund for future improvements out of the town's share of gross revenues under the negotiated franchise agreement.

The Board of Selectmen and voters in Somerville have repeatedly made commitments to advance the project. In March 2020 and April 2021 voters authorized pursuing grants, authorized levels of borrowing, and authorized the Board of Selectmen to enter into agreements for this purpose.

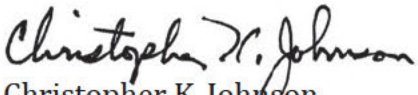
Further, the town has voted to dedicate the town owned former Town Office room at the Somerville Elementary School to be the Central Office for the municipal broadband network.

Voters approved in June 2021 the formation of a five (5) member Municipal Broadband Board, contingent upon construction of a municipal broadband network commencing, that will oversee execution of the broadband franchise agreement, provide fiscal management of the Broadband Reserve fund and Broadband Affordability fund, including specific affordability fund criteria and subsidy amounts; conduct the periodic review of the performance of the technology provider to operate and maintain the town's broadband network; periodically review and consider changes in service terms and conditions, including the monthly price of available internet options; and make such proposals for change as it deems appropriate to the Board of Selectmen for approval.

In March/April 2021, the Broadband Committee prepared and circulated a new survey to confirm community interest in and support of a municipal broadband network. 121 people completed the survey, from 111 unique premises. Among these unique premises only 28% were satisfied with their present internet service, and **87.2% said yes to "Do you want high-speed, reliable internet that will be stable for decades to come, to which anyone can subscribe?"**

If successful in securing funding, the project will be the culmination of a multi-year effort to satisfy needs for quality Broadband as identified in the Town of Somerville Comprehensive Plan adopted in 2018. For a small rural community where the median household income is $10,000 less than the county and state median and the percentage of Somerville's families in poverty is approximately double that of the county and state, the cost of building the project is way beyond our reach. We cannot do it alone, and yet we know just how important it is to our future, providing equal opportunities for our students, workers and businesses to participate in a modern economy, and modern society. **NTIA assistance is essential to making this popular and important vision become our reality.**

Sincerely,



Christopher K. Johnson
Chair, Somerville Board of Selectmen

(207) 845-2897
(207) 845-2131 fax

http://www.washington.maine.gov

Town of Washington
P.O. Box 408
Washington, ME 04574

August 10, 2021

National Telecommunications and Information Administration

U.S. Department of Commerce

Washington, DC

Re: Commitment Letter

Dear NTIA Officials,

The Town of Washington, Maine is excited to be partnered with Axiom on a municipally owned network that will bring state-of-the-art fiber optic internet to our small, rural town (pop. 1527, 2010 census). Without the support of both the State of Maine and federal resources, it is very likely we would be left behind.

The system being built for us will offer unrivaled scalability, reliability and symmetrical speeds that will give each home in our community up to 1G/1G of service. The fiber optic system being deployed in our community will bring a dedicated fiber connection to each home and business from the Central Office equipment., consisting of industry recognized brands that have proven capability. Access to best-in-class reliability and supporting speeds of up to 1Gbps of symmetrical service (G-PON) are highlights of a system that will rival any FTTP system in the United States. The system is capable of handling future growth in new homes or businesses expected in the community and is considered future proof for the next 20 years or more. The system architecture will also have limited ports capable of delivering 10Gbps (XGS-PON) of service to the right premise equipment, and that can be expanded with upgrades to the electronics and home equipment in the future, as needs/demand dictate.

This network will be designed as a "home run" system where each home will have a dedicated fiber delivered from the CO. All fiber lines will be run over existing utility poles. Home run systems allow for future needs and maximum privacy with emerging telehealth and on-line education while creating a "fiber pipe" that can deal with all the communications needs including data, phone, and streaming

content, while creating a generational solution that will provide capable infrastructure for the Town of Washington to create new opportunities for residents, visitors, and businesses.

Please do not hesitate to reach out with any questions about our project.

Sincerely,

Wesley Daniel

Board of Selectmen

Town of Washington

August 17, 2021

National Telecommunications and Information Administration
U.S. Department of Commerce
Washington, DC 20230

Dear NTIA,

I am writing to express Axiom's commitment to the projects enclosed in this application. As an internet service provider since 2004, with 17 years of experience delivering and operating networks in rural Maine, we are proud to partner with the three communities of Somerville, Washington, and Isle au Haut, Maine on fiber broadband projects that they will own, and Axiom will operate on their behalf.

This model has been successfully implemented in other communities and we look forward to delivering world-class reliable fiber broadband that will rival any system in the United States providing up to a symmetrical Gig of service to 100% of the homes in the designated service areas with the potential to scale to 10G/10G service in the future. These three communities lack basic internet connectivity and understand its importance to their future vibrancy and viability as small rural communities.

It is with this in mind that the design of the system was done so to ensure that every home in all three communities would have the same access to the speeds and reliability- equal access to all. Second, the systems are designed as home run, giving each home its own designated fiber, right back to the Central Office equipment, eliminating any sharing of bandwidth and intermingling of data transmission that can make systems less secure. And last, the system is designed with enough capacity to ensure that it is futureproof for 20 or likely more years- giving the communities a generational investment into their future.

Axiom's experience in building, maintaining and operating systems- and our commitment to operate publicly owned broadband infrastructure make us a trusted partner with what we expect to be wildly popular internet connectivity to rural parts of our state. Should you have any questions, do not hesitate to contact me at mark@connectwithaxiom.com.

Sincerely,

Mark Ouellette
CEO