

Maine Broadband Community Planning - Precertification Checklist

Completed by

Town of Cranberry Isles Broadband Communications Working Group

1. Create a Community Broadband Team

Member Names & Titles/Roles:	Member Contacts:
Thomas Powell, Primary Point Person, Chair of Working Group; Pastor, Sternman, Former IT Analyst, year-round resident on Great Cranberry Island	mailtompowell@gmail.com
Rosalie Kell, Secretary of Working Group; Nonprofit Executive Assistant, tele-worker, year-round resident on Great Cranberry	rosaliekell@gmail.com
Skip Stevens, College Professor, tele-worker, year-round resident on Islesford	thismansart@gmail.com
Ingrid Gaither, Librarian, year-round resident on Great Cranberry Island	ingridgaither@yahoo.com
Katelyn Damon, Town Public Safety Coordinator, year-round resident on Islesford	Katelyn@cranberryisles-me.gov
Jim Fortune, support to the working group; Administrative Assistant to the Selectmen	james@cranberryisles-me.gov

2. Hold at least one Community Broadband Meeting

Date	Event/Milestone	Participants	Result
Summer 2015	Tilson Technology initiated Broadband Feasibility Study for Islands contracted by Island Institute	Tilson conducted a survey of year-round and summer property owners	Answered questions for the Tilson Broadband Study
7-16-15	Community Broadband Meeting	Tilson facilitated meeting with approx. 40 community members present	Developed community goals for the Tilson Broadband Study

Summer/Fall 2015	Tilson staff reached out FairPoint, the only incumbent internet service provider for Cranberry Isles; and Redzone, which only provides service via old legacy wireless nodes	Neither FairPoint nor Redzone representatives attended the community meetings. See below for communication since.	Current infrastructure and potential improvements were determined for the Tilson Broadband Study.
11-19-15	Maine Island Broadband Conference	5 of the 70 participants were community members	Experts in the field presented on panels Community broadband team identified Action steps outlined Phil Lindley stated Pre-Certification was met for Planning Grant. Following the conference, the broadband team was designated as Town of Cranberry Isles (TCI) Broadband Communications Working Group (Working Group or the group)
12-9-15	Island Institute press conference to release the Tilson Broadband Study	Incumbent providers and public were invited	Results for Cranberry Isles begins on page 8: www.islandinstitute.org/resource/broadband-study-maine-shore-islands
12-17-15	TCI Broadband Communications Working Group First Meeting	Group Members	Discussed next steps following Island Broadband Conference, identified resources.
1-12-16	Meeting with incumbent provider FairPoint	Group Chair and Island Institute staff	Understanding of planned upgrades on Great Cranberry, of necessary infrastructure design for Islesford, and of necessary construction on Sutton.
Communication with FairPoint continues; however, the current internet access does not meet the island's current or future needs as it is slow, inconsistent and not available for everyone. Currently, only DSL is available at variable speeds of less than 3mbps for download and less than 1mbps for upload and only in some places on Great Cranberry, and no DSL is available on Islesford or Sutton. The planned upgrades will provide only 15mbps download to only an estimated 77% of the premises on Great Cranberry (none planned for other areas of Cranberry Isles).			
1-18-16	Working Group meeting	Group members	Discussed Fairpoint meeting and identified co-working spaces as potential for islands.
2-12-16	Meeting with FairPoint	Group Chair and Island Institute	Progress toward infrastructure design for Islesford, potential conversations with Emera Maine regarding undersea cable that would have to be replaced in order to offer DSL, and

			investigation of potential wireless technology for backhaul and to connect three islands. Broadband Team will draft Community Broadband Summary to share next time.
FairPoint estimates over \$450,000 would be required to expand 15mbps service to most premises.			
2-27-16	Meeting with Redzone	Group Chair	Redzone to produce a preliminary review of potential coverage for Cranberry Isles
While Redzone believes that it would be possible to offer new LTE wireless nodes on the Cranberry Isles, under current market forces Redzone will not develop a detailed infrastructure/engineering design and cost estimate let alone a financial model. The preliminary review indicated that only 74% of premises would be covered.			
3-3-16	Working Group meeting	Group members	Rescheduled Feb. Meeting, discussed wireless options more in depth. Concentrated discussion on Islesford needs.
3-31-16	Working Group meeting	Group members	Monthly Meeting, approved pursuing ConnectME grant with Selectmen's permission.
4-5-16	TCI Selectmen's Meeting	Selectmen, the group, approx. 6 residents and town officials	TCI Broadband Working Group received approval to pursue ConnectME planning grant.
4-7-16	Meeting with Redzone	Island Institute staff	Under its current business plan, Cranberry Isles is not a priority area for upgrading/expanding Redzone service.
Redzone would require, and may pursue with Island Institute, the development of a public-private partnership model before Redzone would produce infrastructure/engineering designs, meeting specific community needs/goals, with corresponding financial models. These are required before communities can commit resources toward constructing infrastructure, and community commitment is required before Redzone will prioritize construction.			

3. Identify Key Documents/Existing Efforts

Current uses of this internet access include entertainment, internet-based communication (friends, neighbors, community organizations, businesses, other governmental communication, etc.), education (courses, homework) from the library connection, and employment work (business, telecommuting). These uses are extremely limited with the current lack of broadband. Currently TCI municipal offices are using old legacy Redzone Wireless nodes. We currently are unable to make available all town agendas, recordings, and minutes on a website.

There is currently no local or regional economic development plan. The TCI Comprehensive Plan was last updated in March 2010. With a federal/state grant, TCI currently subsidizes a special commuter boat to ferry commuters to the mainland. TCI understands that internet access is an economic development tool needed to sustain island communities. The Cranberry Isles Realty Trust is a nonprofit organization that works to attract and retain year-round families, and much of their work includes identifying

potential employment opportunities. Pursuing internet access improvements would be aligned with their work as well.

There is no cable franchise agreement.

The Island Institute has established a contract with Axiom Technologies to provide digital curriculum training such as workshops for businesses on-island. TCI Broadband Working Group's mission includes providing digital literacy programs of interest to islanders, such as training in accounting software. Public wifi is available at the Cranberry House and the library on Great Cranberry. Cranberry Isles would like to pursue better connection for the school and library on Islesford.

There are no tax increment financing or other economic development grants for Cranberry Isles.

There is no municipal electric company. We are served by Emera Maine.

4. Identify potential Community Anchor Institutions

Community anchor institutions include:

- Ashley Bryan School, Islesford
- Islesford Neighborhood House, Islesford
- Islesford Neighborhood House Library, Islesford
- Islesford Volunteer Fire Department, Islesford
- Longfellow School, Great Cranberry
- Great Cranberry Island Historical Society/Cranberry House, Great Cranberry
- Ladies Aid Society, Great Cranberry
- Great Cranberry Library, Great Cranberry
- Great Cranberry Volunteer Fire Department, Great Cranberry
- Cranberry Isles Realty Trust, Great Cranberry and Islesford
- Heliker-LaHotan Foundation, Great Cranberry

Commercial institutions include:

- Islesford Artists, Islesford
- Islesford Dock Restaurant, Islesford
- Spurling Design, Islesford
- Winters Work Gifts and Crafts, Islesford
- Cranberry Isles Fisherman's Co-Op, Islesford
- Hitty's Café, Great Cranberry
- Cranberry Island Boatyard, Great Cranberry
- Newman and Gray Boatyard, Great Cranberry
- The Whale's Rib Gifts of Maine and Art Gallery, Great Cranberry

Telecommuting is an area of employment dependent upon fast, reliable broadband, and telecommuting was a major community goal identified in the Tilson Study. The option of telecommuting would allow more families to live on the Cranberry Isles year-round, increasing our school and community numbers. Extending the stay of seasonal residents would also boost the local economy.

5. Create a Vision Statement

Our vision is to attract and enable families to live on the Cranberry Isles by improving broadband. This is part of a broader community effort that can be seen in the work of our affordable housing initiative (Cranberry Isles Realty Trust) and the support the town has devoted to our Island K-8 schools. The TCI Broadband Communications Working Group is tasked with researching and developing options to improve broadband service and access within the Town of Cranberry Isles.

Broadband access would provide the residents of the Cranberry Isles the ability to pursue education through distance learning, to seek employment opportunities through telecommuting, to improve business competitiveness through engaging with potential customers. Internet-based video communication required for many of these activities is not possible without broadband. Internet access for residents helps ensure that students can complete homework assignments at home, instead of on the steps of a closed library. Improved internet access would certainly increase the number of job opportunities. Residents are already investigating options for co-working spaces on-island. With improved broadband, seasonal residents could stay longer, some even becoming year-round residents, and thus contributing to the local economy.

Public internet connection was another major goal identified in the 2015 Tilson Study: With additional bandwidth, anchor institutions could increase the number and quality of public wifi locations. Currently organizations and individuals only have very expensive options for still poor internet access. Our libraries, schools, and telemedicine systems would all benefit from a clear option for broadband that didn't require dedicated T1/T3, which for our islands suffers loss of speed due to distance from the carrier-owned equipment that originates that service. Currently residents obtain medical care only off-island, except for the telemedicine efforts of the Maine Sea Coast Mission provided to Islesford. Broadband access will help support and potentially expand telemedicine access.

Since the 2015 Broadband Conference, the Working Group has also identified historical and cultural goals for community enrichment: Broadband access would enable community organizations, such as the Cranberry House, to better share our rich history and promote community gatherings.

The 2010 Comprehensive Plan supports efforts to pursue broadband for economic development and growing the number of year-round residents. In 2007, residents identified inadequacy of internet access as a hindrance to employment opportunities, with over 58% surveyed stating that improving high-speed internet access needed attention. In 2008, the selectmen committed resources to improving internet access on Great Cranberry and at the schools and libraries. The Comprehensive Plan requires calls for the selectmen to periodically assess internet access needs. The results of the 2015 Tilson Study show that the current internet access is not meeting the needs of residents or the community's goals. Now the TCI Broadband Communications Working Group has been authorized to develop options for improving internet access for all of Cranberry Isles.

Round One Community Planning Grant Application

Due Date: April 15, 2016

1. **Date:** 4/14/2016
2. **Submitting Community:** The Town of Cranberry Isles
3. **Grant Amount Requested:** \$35,396
4. **Community Project Point of Contact:**
(Please include: Name, Title, Address, Telephone Number, and E-mail Address.)

Tom Powell
Chair of the Town of Cranberry Isles Broadband Communications Working Group
Great Cranberry, Cranberry Isles, ME 04625
603-957-6646
tompowell@gmail.com

5. **Party Who Prepared Application:**
(Please include: Name, Title, Address, Telephone Number, and E-mail address).

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6. **Executive Summary of the Project:**

In September 2015, Tilson conducted a broadband planning study for the Cranberry Isles and 11 other year-round island communities for the Island Institute. The project addressed many of the planning activities covered in this grant, and has already yielded positive results for the community. Cranberry Isles held follow-up discussions with FairPoint about leveraging their existing fiber on the island, which resulted in FairPoint's recent commitment to upgrade its fiber-fed remote terminal with faster DSL and carrier Ethernet service on Great Cranberry. However Islesford, the more populous year inhabited island on the town, will remain underserved without even basic DSL service.

This project will focus on developing specific network designs for Islesford and Sutton Island that will be the basis of town-decision making for funding and near term implantation. The planning will place heavy emphasis on leveraging the optical service on Great Cranberry island, and performing operating models incorporating costs, subscribers and price. Sutton island, which has summer-only residents, will be evaluated as a separate module. This project will also address digital inclusion, which was not in the original 2015 study.



Cranberry Isles Application for ConnectME Broadband Planning Grant

1. Project Plan – 25 points

1.1. Provide documentation of project management plan.

The Town of Cranberry Isles is composed of five islands off the coast of Mt. Desert Island (MDI). Two of the islands – Great Cranberry and Islesford, are inhabited year round. According to the 2000 US Census, the year round population is 141 residents (47 on Great Cranberry and 94 on Islesford). Summer population swells to about 250 on Great Cranberry, 600 on Islesford and 26 on Sutton Island.

In September 2015, Tilson conducted a broadband planning study for the Cranberry Isles and 11 other year-round island communities for the Island Institute. The project addressed many of the planning activities covered in this grant, and was at least partially successful in that it initiated discussions with FairPoint about leveraging their fiber footprint on Great Cranberry to make relatively low-cost improvements in the DSL infrastructure there. In fact, FairPoint has recently given verbal commitment to upgrade the fiber-fed remote terminal with faster DSL and carrier Ethernet service.

Islesford, where the majority of Cranberry Isles' residents live, is lagging behind the service on Great Cranberry, and lacking service meeting the current state and federal definitions of broadband. FairPoint has no current plans to upgrade service on Islesford. The highest Internet speeds available on the Islesford are at the combined school and library (2.8 Mbps symmetrical via T-1s) and on parts of the island via mobile phone. Sutton Island residents rely on mobile phone and legacy Redzone wireless connections where available.

This project plan will address planning activities not initially covered in the earlier Island Institute study, plus developing specific network designs for Islesford and Sutton Island. The results of this plan will support the selection of a publicly supported solution that maximizes adoption.

Broadband Needs and Goals: In 2015, community input was taken to develop broadband-related community goals for Cranberry Isles. For the second round of planning, Tilson will both expand and refine the needs and goals in two ways. First, Tilson will expand the community goals by soliciting input from collaborating community institutions directly. These include the Mount Desert Island Regional School System, Maine Sea Coast Mission (telemedicine), Cranberry Isles Realty Trust (affordable housing), local businesses, etc. Second, Tilson will prioritize broadband goals on Islesford.

The portion of the work will be initiated with a kick-off meeting in the Cranberry Isles during the summer season. At this meeting, Tilson will introduce the project, summarize the work that's been done, and focus



on developing a list of collaborating institutions, and discuss broadband priorities. The target month for this meeting will be July, when residency is at its peak.

Broadband Service and Asset Inventory: Tilson has conducted a survey of existing broadband service and assets on Great Cranberry and Islesford. Tilson will augment its past work with the following components:

- Documenting Fairpoint's timeline for the Great Cranberry remote terminal upgrade and obtaining Internet access pricing for its Carrier Ethernet product (for potential use in an Islesford solution).
- Making a determination of the operational and contractual feasibility of sharing the current 100/100 Mbps connection at the school on Great Cranberry with the school on Islesford
- Identifying locations of known nearby open access networks on MDI
- Identifying locations of registered telecommunications towers in the area
- Identifying potential locations for a network hubs and wireless antennae

Digital Inclusion: Tilson will conduct the digital inclusion work on both Great Cranberry and Islesford. This work will include the following components:

- An inventory of the publicly available free broadband, plus FairPoint's existing low-cost options
- A description of current or planned low income broadband subsidies
- Incorporation of a discussion of subsidies for low income residents during the community's broadband prioritization discussion
- Incorporation of a discussion of digital literacy goals during the community's broadband prioritization discussion
- Evaluation of current or potential public computer access on Great Cranberry and Islesford

Gap Analysis: Tilson will articulate the gaps between Islesford's prioritized goals and existing service. Using its industry knowledge, Tilson will develop a list of viable infrastructure enhancements that will close that gap.

Network Solutions: This part of the project plan will focus on creating wireless and hybrid wireless/fiber designs that fulfill the unmet operating requirements, and on exploring the incumbent providers willingness to upgrade their current service.

As part of the 2015 report, Tilson designed a fiber local access network for Islesford. The capital cost estimate of the design included drops and electronics for the design, but it did not specify a specific backhaul solution (i.e. connecting Islesford to the Internet backbone). Tilson will outsource the design of wireless backhaul and a wireless local access network to Axiom. Axiom's wireless backhaul design will be paired with Tilson's fiber design for the hybrid/wireless solution.

There are two incumbent facilities-based providers on Islesford that currently offer legacy solutions. Redzone has a low-speed wireless offering using unlicensed spectrum, and FairPoint has T-1s to the



town building via its copper infrastructure (there is no DSL on Islesford). Tilson will meet with both providers to explore their willingness to upgrade these services with wireless LTE and DSL technology. If Redzone and FairPoint are willing to upgrade their services, Tilson will ask the companies for the business terms under which they are willing to perform the upgrades. In addition, Tilson will hold discussions with the Maine School and Library Network to understand the feasibility of sharing the 100Mbps connection on Great Cranberry with Islesford and/or Sutton.

Overview of Local Regulations: The Town of Cranberry Isles Broadband Communications Working Group will develop a list of local regulations that may impact siting or a telecommunications shelter, a telecommunications tower, or digging in the public right of way.

Deliverable Preparation: Tilson will work to prepare the final deliverable, as described below. Tilson’s lead contact will manage the work conducted by The Town of Cranberry Isles Broadband Communications Working Group and Axiom to ensure a cohesive end-product.

Wrap-Up Meeting: Tilson will hold a wrap-up meeting to discuss the findings of the study and discuss next steps for implementing a solution. Tilson will conduct the meeting on Great Cranberry or MDI. If possible, the meeting will be streamed live for connected residents to participate real-time or view at a later date.

1.2. Provide the timeline to complete the proposed community plan deliverable.

Project Plan Item	Month				
	Jul	Aug	Sept	Oct	Nov
Kick-Off Meeting	x				
Needs, Goals, Collaboration Opportunities	x	x	x		
Broadband Service and Asset Inventory	x	x			
Digital Inclusion Work	x	x			
Gap Analysis				x	
Network Solutions		x	x		
Business Model Review			x	x	
Local Regulations Review		x	x	x	
Vendor Meetings			x	x	
Final Deliverable					x
Wrap-Up Meeting					x

2. Plan Deliverables –20 points

2.1. Provide narrative addressing how the items A – F below will be addressed in the final plan delivered to the community.

Tilson will deliver one final report containing all the plan deliverables. The overarching goal of the report will be to:



- Align future investment with community goals;
- Minimize the cost of deployment;
- Speed up implementation;
- Maximize future adoption; and
- Develop documentation that will increase transparency, result in a publicly supported solution, and assist in public or private financing.

The report will be an output of the project plan work, and at a minimum, contain the deliverables as defined in sections A-F below.

A. Define local broadband needs and goals.

The Tilson final report will contain a section on broadband needs and goals. This portion of the report will combine the previously documented 2015 input with the newly gathered community collaboration and prioritization opportunities. Digital inclusion will be referenced, but will be called out in a separate section.

This section will include a list of operational requirements. The number of end users will be identified by type, e.g. business/residential, CAIs, seasonal/year round, by town, etc. Where appropriate, Tilson will prioritize operational requirements by location, speed, redundancy, etc.

B. Inventory existing broadband infrastructure assets within the municipality, municipalities or regions.

The final report will contain a section addressing existing service and assets. This information will be delivered with maps and supporting text outlining:

- Planned FairPoint enhancements on Great Cranberry;
- MDI open access fiber routes;
- Registered area telecommunications towers;
- Potential existing locations for a network hub;
- Options for extending the Great Cranberry school and library service.

C. Include a gap analysis defining the additional broadband infrastructure necessary to meet identified needs and goals.

The final report will contain a section defining gaps in service, and may contain maps. It will contain a list of viable infrastructure options to close the gas, with detailed pros and cons of each option.

D. Include one or more potential network designs, cost estimates, operating models and potential business models based on input from broadband providers operating within the municipality,



municipalities or region and any other parties that submit a network design solution in the course of developing the plan to address any broadband gaps identified in paragraph C. and

The final report will contain network design section. The deliverables under this section include:

- For a the hybrid fiber/wireless design and wireless designs –
 - Network Map
 - Capital cost estimate
 - Operating cost estimate, including wholesale and retail service quotes, if possible
 - Financial model for Islesford with up to two operating scenarios with variations in price, adoption and subsidy
 - One financial model for Sutton Island
- The goal of this design is to give Cranberry Isles designs that it can use as the basis for town decision-making, funding solicitations and implementation. A Sutton Island design will be broken out separately.

E. Include an assessment of all municipal procedures, policies, rules and ordinances that have the effect of delaying or increasing the cost of broadband infrastructure deployment.

Tilson will include the list, compiled by The Town of Cranberry Isles Broadband Communications Working Group, of the procedures, polices, rules and ordinances that might negatively affect broadband deployment

F. Digital Inclusion

The final report will contain a digital inclusion section on work performed by Tilson. The deliverables are further described below.

• Affordable Internet – Cost continues to be a major barrier to broadband adoption. Applicants will need to address “ability to pay” rather than “willingness to pay.” Applicants should realize the role that persistent poverty plays in shaping people’s abilities to access and use computers and the Internet. www.pewinternet.org/2015/12/21/home-broadband-2015

- **Describe how community will address providing affordable internet options.**
 - An inventory of the publicly available free broadband, plus FairPoint’s existing low-cost options
 - A description of the low-income broadband and current or expected future broadband subsidies (e.g. Lifeline)
 - Incorporation of subsidies for low income residents into the community’s broadband goal setting process
 - Assessment of the current and proposed future free public internet access (e.g. the school and library Wi-Fi)



- **Affordable Equipment – Low-cost or free computers are often just as important as having access to low-cost or free Internet options, particularly for people in low-income communities. PC’s for Maine www.pcsformaine.org has embraced this reality by refurbishing older computers donated by businesses in Maine and making them available to low-income people and non-profit organizations at a free to reduced cost.**

- **Describe how community will expand the availability of affordable equipment to low-income residents.**

- Tilson will evaluate current and potential public computer access on both Great Cranberry and Islesford (e.g. use of computers at the K-12 schools and libraries).
- Where possible, Tilson will draw comparisons between the well-connected library on Great Cranberry with the poorly connected library on Islesford.
- Tilson will summarize the PCs for Maine subsidized equipment available to the Cranberry Isles

- **Digital Literacy Training – Computer Skills Training /Digital Literacy Training plays a critical role in technology and workforce development training. It is vital to addressing business development needs and skill inadequacies. The need for improved digital literacy skills heightens as companies seek to grow, increase workflow efficiencies, and compete in changing industry. Digital Literacy has shown to be a catalyst for employer engagement and is a path to additional conversations about educational and workforce skills training. <http://2010-2014.commerce.gov/news/fact-sheets/2011/05/13/fact-sheet-digital-literacy>**

- **Describe how community will teach people to use technology.**

- Currently islanders have the opportunity to host digital education workshops instructed by Axiom Education and Training Center as developed with and contracted by the Island Institute.
- Tilson will interview residents to evaluate the adoption and effectiveness of the current digital literacy service on the islands.
- The summary will include recommended changes to the plan, if appropriate.

- **Public Computer Access – Increasing Public Access Computing allows residents to access technology in places in which they feel comfortable and supported is essential. These spaces can also complement digital literacy classes that are often offered in the same location. In Maine, most public libraries have public computer access, as well as computer labs for public use.**

www.maine.gov/msl/libs/directories/wireless.shtml

- **Describe how community will increase public computer access locations.**

- Currently available is the mobile computer lab that accompanies digital education workshops instructed on-island by Axiom Education and Training Center.
- Tilson will inventory existing public computer access, and make recommendations for any additional locations that are consistent with the community needs and goals.
- Where possible, Tilson will draw comparisons between the well-connected library on Great Cranberry with the poorly connected library on Islesford.

3. Value Added Collaborations– 20 points



3.1. Describe how the broadband community planning grant may generate improvements to community strength through collaborating in such areas as economic development, education, employment, governmental services, health care, public safety or other regional community oriented activities.

The final report will contain a section separately outlining potential added collaborations. As part of the project plan, Tilson will have engaged supporting community institutions in order to fully develop the community needs and goals. These institutions include the Maine School and Library Network, the Mount Desert Island Regional School System, public safety, the Maine Sea Coast Mission, the Island Institute, local businesses, and the Cranberry Isles Realty Trust.

In this portion of the deliverable, Tilson will outline potential collaboration opportunities that include network infrastructure and cost sharing, K-12 education support, telemedicine and emergency communication.

4. Budget – 15 points

4.1. Submit budget aligned to significant Project Plan milestones, costs and tasks.

Significant Milestone Tasks	Cost	% of Total Cost
Kick-Off (Inc. Travel)	\$4,078	12%
Goals, Collaboration, Inventory, Digital Inclusion, Gap	\$6,840	19%
New Wireless Designs	\$12,000	34%
Business Model, Reg. Review, Vendor Mtgs, Deliverable Prep	\$8,400	24%
Wrap-Up Meeting (Inc. Travel)	\$4,078	12%
Total	\$35,396	100%

5. Overall Financial Feasibility – 15 points

5.1. Describe the contractor’s experience relevant to proposed project.

Tilson is a multi-service technology firm that works with nonprofits, private enterprise and governments as they seek to improve and upgrade their communications networks. Tilson’s in-house consulting team leverages this experience to help communities throughout New England create a broadband roadmap that will help achieve their economic development goals. Over the past two years, Tilson has conducted broadband feasibility study projects for 25 municipalities, 20 of them in Maine. These feasibility projects have helped communities articulate their goals and equipped them with key information needed to gain public support for a self-directed solution.

Tilson has helped several communities take the next step by crafting public-private partnerships between municipalities, network operators, and Internet service providers. Tilson has implementation projects underway in Islesboro, ME, New Shoreham, RI and Ellsworth, ME.



Tilson prides itself in offering clients objective advice on technologies, potential partners, and partnership structures. Because Tilson does not provide or resell broadband services, there is no conflict of interest that might bias the firm's view as it counsels clients on the tradeoffs of various technologies, potential service providers or operating models for a network. In addition, through Tilson's work in network deployment and past consulting projects, the consulting staff have relationships with most of Maine's service providers and are well informed of the latest developments in technology and public policy.

5.2 Provide a description of contractor's financial viability by submitting balance sheet and income statements for the project and applicant financial statements. Confidential financial information may be submitted and should be so marked and submitted in a separate file.

Tilson Technology LLC, "Tilson," is a privately held company that was incorporated in the State of Maine in 1996. Tilson employs 160 people, and serves a diversified client base that includes federal, state and local governments and private customers across its network deployment and consulting practices. Tilson has submitted its confidential financial documentation demonstrating its financial viability to the ConnectME Authority directly in a folder marked "Confidential."¹

5.2. Provide a description of team member's background and roles.

5.2.1. Principal point of contact.

Liza Quinn, Tilson
lquinn@tilsontech.com
207-358-7459

5.2.2. Team member bios and role in planning project.

Liza Quinn, Principal Point of Contact

Liza brings her background in energy, telecommunications and town planning to her role as a Senior Consultant at Tilson. In the energy sector she worked with power producers and utilities to lower their cost of service and increase revenues. She also worked on teams to secure project and corporate financing, and provide analytical support to acquisitions and divestitures. Liza's telecommunications background started with cost modeling, pricing and transactional support of wholesale services, and progressed to a role as a general manager of a \$77 million colocation services business unit providing space, power, security, and interconnection services to large telecommunications customers. At Tilson, Liza has worked with federal, state and local clients on broadband planning, partner selection, community engagement, and business model analysis. She holds an AB from Dartmouth College and an

¹ The "Community Broadband Planning Grant Clarification Items" document dated March 18th, 2016 stated that the intent of section 5 was to "ascertain the community contractor's experience, financial viability, point of contact, team member bios and roles." However, the final text asks for applicant financial statements. After further clarification from ConnectME, applicant will provide supplemental financial information as necessary.



TILSON

MBA and an MFS from Yale University. She has taught Macroeconomics at SMCC has was on the Cape Elizabeth Planning Board for several years.



TILSON

Nick Bournakel, Writing Support

Nick is a Senior Consultant in Tilson’s Energy and Broadband Group. Nick possesses a background steeped in regulatory analysis and business and has significant experience working with government agencies at both the state and federal level. At Tilson, Nick has worked with several municipalities, meeting with community leaders and residents to develop broadband plans for the towns of Bar Harbor and Mount Desert in Maine, as well as 13 Maine offshore island communities. He has previously worked as an independent consultant with a variety of clients in the cleantech sector and provided market and regulatory analysis for clients. Nick holds a BA in Philosophy from Bates College, as well as a JD from the University of Maine School of Law.

Brenden DeAndrade, Analytical Support

Brenden is an Associate Consultant in Tilson’s Energy and Broadband Group. Brenden joined Tilson after working for five years at Verizon, where he held several positions with successively increasing responsibility in network engineering and operations support as a business analyst. At Verizon, Brenden performed project management and business analysis in a fast-paced, dynamic environment that required cross-functional coordination. This work included frequent coordination with municipalities on network operational issues. Brenden has a Bachelor of Science from the University of Massachusetts and is working towards his Master of Business Administration at Northeastern University.

John Costa, Network Design

John is a Senior Outside Plant Engineer at Tilson. John brings expertise in field engineering, in particular, knowledge regarding siting, and radio frequency engineering. John has worked with many municipalities throughout New England, supporting the work of Tilson’s broadband group in providing communities with telecom asset inventories, as well as high level fiber designs and cost estimates for these communities. Prior to Tilson, John worked as a Network Engineering Manager for the Maine Fiber Company as well as a Senior Manager of OSP planning and alternate access for FairPoint Communications.

5.2.3. Provide proof of support and endorsement from the participating local municipalities.

In December 2015, the Selectmen authorized the Town of Cranberry Isles Broadband Communications Working Group. On April 5, 2016, the Selectmen granted the Group approval to pursue a Planning Grant. Further, the Group members include two town officials.

5.2.4. Provide the names of local officials and community representatives that will be directly involved as members of the team.

Jim Fortune, Municipal Support to the Group; Administrative Assistant to the Selectmen

Thomas Powell, Chair of the Group (on-island/applicant point of contact); Pastor, Sternman, Former IT Analyst, year-round resident on Great Cranberry Island

Rosalie Kell, Secretary of the Group; Nonprofit Executive Assistant, tele-worker, year-round resident on Great Cranberry

Skip Stevens, College Professor, tele-worker, year-round resident on Islesford



Ingrid Gaither, Librarian, year-round resident on Great Cranberry Island

Katelyn Damon, Town Public Safety Coordinator, year-round resident on Islesford

Stephenie MacLagan or Bri Warner -- Economic Development, The Island Institute

6. Past Performance – 5 points

6.1. Provide documentation demonstrating contractor's past performance in executing grant funded programs.

In addition to Tilson's extensive past performance in community-funded (as opposed to grant funded) broadband planning in Maine and other parts of New England, Tilson has worked as a contractor or sub-contractor for state and federal grant-funded recipients. Three examples for past performance on grant-funded projects are detailed below:

BTOP Grant: The Three Ring Binder, Maine Fiber Company. The three ring binder is a 1,100 mile fiber optic project designed to deliver high-speed broadband connectivity to rural communities throughout Maine. Costing roughly \$32 million, the project received \$25 million in BTOP funding and was supplemented by private investment. The Maine Fiber Company engaged Tilson to serve as owner's project manager of the construction. Tilson oversaw all aspects of the deployment, including managing pole licensing, construction, adds/moves/changes, testing, and network troubleshooting. The three-ring binder was completed in 2012 on budget and ahead of schedule.

BTOP Grant: The MassBroadband Institute, MassBroadband 123 Project. The MassBroadband 123 (MBI123) Project is a 1,300 mile fiber optic project designed to bring broadband service to the rural regions of Central and Western Massachusetts. Costing nearly \$90 million, the project leveraged \$45 million in BTOP funds and equal matching funds from the State of Massachusetts. The project links almost 1,400 community anchor institutions through a middle mile fiber network. Tilson served as the Project Manager through the Planning, Implementation, Monitoring and Closeout of the MassBroadband 123 project, overseeing the various project vendors and subcontractors, performing the actual construction and implementation of the project. Tilson project managed all vendors throughout the process in a complex Middle Mile Fiber Optic Buildout encompassing various stakeholders, including a large variety of Community Anchor Institutions (CAI's), Points of Interconnect (POI), and various Facility Owners on the project.

State Broadband Initiative Grant: Broadband Rhode Island. Tilson was as a sub-contractor of a National Telecommunications Information Agency (NTIA) State Broadband Initiative grant in the state of Rhode Island. Tilson assessed existing broadband and telecommunications infrastructure in two communities, and compared the community's available service to the rest of the state. As part of the grant, the Tilson team conducted broadband planning for the Block Island's Town of New Shoreham, which resulted in New Shoreham's decision to pursue a FTTH network operated by a private partner.



Please see **Appendix A** for **Axiom's past performance**.



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Provide three client references. Choose from below

Client: Town of New Shoreham, RI
Project Name: Broadband Plan and Network Designs Study
Contact Name/Title: Nancy Dodge, Town Manager
Address: 16 Old Town Road, P.O. Box 220
New Shoreham, RI 02807
Phone: (401) 466-3210
Email: townmanager1@new-shoreham.com

Client: Island Institute
Project Name: Maine Off-Shore Islands Broadband Study
Contact Name/Title: Briana Warner, Economic Development Director; Stephenie MacLagan, Economic Development Associate.
Address: 386 Main Street Rockland, ME 04841
Phone: (207) 701-1576; (207) 745-3371
Email: bwarner@islandinstitute.org; smaclagan@islandinstitute.org

Client: Windham Economic Development Corporation
Project: High Speed Broadband Planning in the Lakes Region
Contact: Tom Bartell, Executive Director
Address: 8 School Rd Windham, ME 04062
Phone: 207-892-1936
Email: thbartell@windhammaine.us

Please see **Appendix B** for **Axiom's** references.



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Appendix A: Axiom Bios

Susan Corbett, CEO

Ms. Corbett is the Chief Executive Officer of Axiom Technologies. She is responsible for the fiscal management of Axiom, has written numerous grants for broadband development, and works closely with economic development organizations and rural organizations. Ms. Corbett has over 30 years' experience in business and financial management, managed \$5 million dollars in grant funding and oversaw the fiduciary and reporting responsibilities for Axiom's Dept. of Commerce \$1.4 million NTIA grant award for the "Washington County Employment & Education through Sustainable Broadband Adoption" project.

Under Ms. Corbett's direction, Axiom Technologies has received the 2010 Maine Development Foundation "Champion of Economic Development Award"; in 2010 was the Recipient of a Senate Congressional Record and in 2011 received Coastal Enterprises, Inc. "Founders Award" and the 2011 and 2014 Machias Bay Area Chamber of Commerce's "Business of the Year" award. Axiom's CEO Susan Corbett received the 2010 MaineBiz "Woman to Watch Award" and was recognized by Bangor Daily News in 2011 as "1 of 11 People to Watch in 2011" and in 2011 was awarded Women Impacting Public Policy's "Technology Innovator of the Year" for the State of Maine.

In 2014, Ms. Corbett formed a non-profit, the Axiom Education & Training Center answering the call for more digital literacy, adult education, work force development, and STEM education for our youth in Washington County and throughout Maine.

Mark Ouellette, President & COO

Mr. Ouellette is the President and Chief Operating Officer of Axiom Technologies. Mark was hired to increase the capability at the senior management level. The vision was to put Axiom on a growth path to a statewide presence and to handle the day-to-day operations. This has allowed Susan to take a true CEO role, setting the overall agenda and becoming a true ambassador for Axiom both in Maine and nationally. Both Susan and Mark have the same vision and passion for the company. As a next step, Mark is transitioning into a 50% ownership position which will solidify the senior management team and create a stable duo as they begin to execute Axiom's three year growth plan.

Prior to joining Axiom, Mr. Ouellette was the Executive Director of Mobilize Maine; a statewide asset based economic development initiative. In this role he facilitated regional activities to create economic strategies and opportunities to grow Maine's economy. Previously, he also served as Director of the Office of Business Development for the Maine Department of Economic and Community Development where he oversaw the state's business attraction and retention activities. Mark also has an extensive federal background, having worked for over 12 years as a Congressional Aide and Chief of Staff to 1st District Congressman Tom Allen.

Kim Emerson, MTCRE, MTCWE, MTCTCE, Senior Network Engineer

Mr. Emerson is a Network Systems Engineer, has over 18 years of IT experience, and is experienced in a multitude of operating systems. He attended University of Maine at Machias, and continued his education and training to best serve Axiom's network. Mr. Emerson oversees advanced projects involving Axiom's current wireless technologies, DSL and fiberoptic build-outs. He also has extensive experience in designing,



implementing and managing business networks. He is experienced in Microsoft Office products, Microsoft Adobe Photoshop, Adobe Professional, Microsoft FrontPage, Dreamweaver CS3, Windows 95 –Windows 7 Professional, Windows Server OS from NT -2008 Unix/Linux, Active Directory, Microsoft Exchange, Ubiquiti OS and Mikrotik RouterOS. Mr. Emerson is also proficient in the following programming Languages: Perl/CGI, HTML, JavaScript, SQL, CSS and ASP. Mr. Emerson has completed training and received certification to administer and deploy the Mikrotik RouterOS platform.

Ian Sawyer, MTCRE, MTCWE, MTCTCE, Senior Network Engineer

Mr. Sawyer has 15 years of experience in Customer Support and the IT industry. He is a “jack of all trades” and is utilized throughout Axiom’s entire operation. He has a strong Customer Support background, Network Management, Wireless, DSL and Fiberoptic Installations and Computer Repair. He is a graduate of Washington County Community College and is a CompTIA A+ Certified Technician. He is experienced in all Windows Operating Systems, Networking, including routers, hubs, switches and cabling, and Firewalls, Malware, and Anti-Virus Software.

Jeremy Manning, Senior Field Engineer

Mr. Manning has been employed by Axiom Technologies since 2009. He serves as Axiom’s Senior Field Engineer and is involved in all of Axiom’s deployments, including extensive knowledge of TVWS. He is nationally certified climber and has several climbers in which he oversees. In addition, Mr. Manning serves as Axiom’s chief Safety Officer. He has a technology background and has been a carpenter and builder for over 15 years. Mr. Manning has been instrumental to the Axiom Team in tower build projects and works closely with Town Officials, Planning Board members and Code Enforcement Officers.



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Appendix B: Axiom Past Performance on Grant-Funded Projects

Employers' Initiative Program – Funded through the John T. Gorman Foundation, Adult Education classes, High School Completion, College Transitions, Digital Literacy classes, WorkReady training, Technology Assessments and Industry-Specific training are offered at the business location. The goal is to increase the educational attainment of our workforce by decreasing the barriers to education. Other partners include the University of Maine at Machias and Washington County Community College.

Downeast STEM Hub – The Maine Math & Science Alliance, funded with a grant from the National Science Foundation, has named Machias and the surrounding communities (3 school districts) as the 4th of 5 STEM Hubs in Maine. The Downeast STEM Hub will target 600-800 students from ages 10-18. AETC will be promoting “Family STEM Education”.

iPad Lending Library – Funded through the Maine Community Foundation, AETC has a lending library of 10 iPads to loan to students to connect to their instructors.

WorkReady – Funded through the CF Adams Foundation, AETC is currently researching offering WorkReady (soft-skills training) to high school students in Washington County. This program will work closely with area businesses.