

Town of Mt. Desert Scoping Meeting

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July 14, 2015



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Project Background

- The Town of Mt. Desert has engaged Tilson to study options to improve broadband coverage in the community.
- Tilson has worked with several Downeast communities on broadband planning projects in the past including Ellsworth and Bar Harbor.
- We are currently working with Swans Island, Frenchboro, and the Cranberry Islands



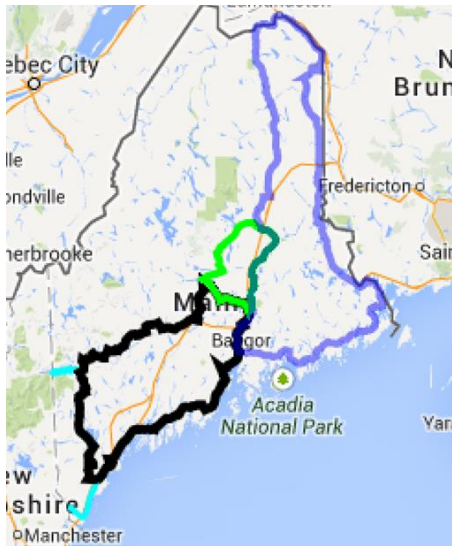
Today's Agenda

- Introductions
- Background on the study
- Discussion of community goals and description of how technology might meet those goals
- Questions about connectivity in the village areas

About Tilson

- Tilson is a 100 person, information technology, professional services and network construction company.
 - We plan networks and build networks

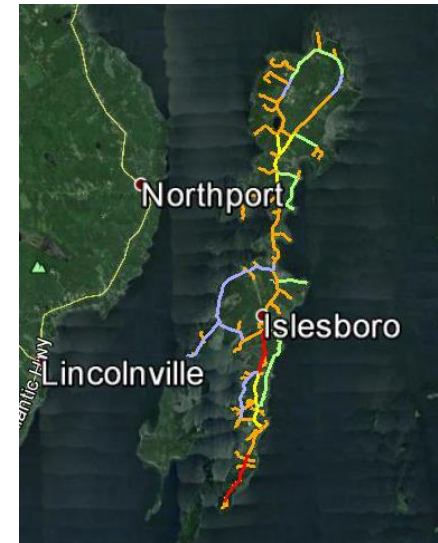
Maine Fiber Company
Three Ring Binder



Central Maine Power
Smart Meter Network



Islesboro Maine
Fiber to the Home Plan



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BROADBAND BASICS



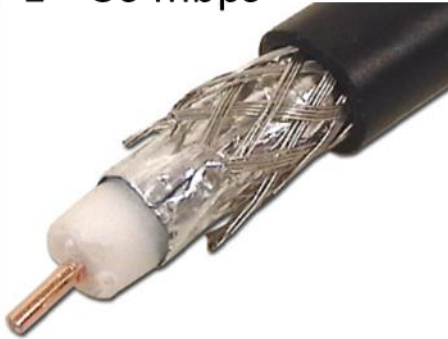
Defining Broadband

- The term “Broadband” does **NOT** refer to one technology
- Broadband is a general term that refers to any communications technology that carries data at speeds in excess of a statutory threshold (measured in bits per second)
- The FCC defined this threshold as 4 mbps download and 1 mbps upload (4/1) prior to July 2014
- In July, 2014 it announced plans to increase the threshold to 25 mbps download and 3 mbps upload
- The ConnectME Authority defines broadband as a 10 mbps down and 10 mbps up.
 - So the regulatory authorities do not agree on the threshold

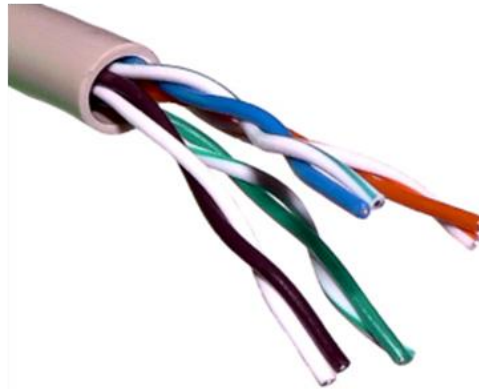


What are Telecom Technologies?

Coaxial Cable
1 – 30 mbps



Copper Wire
0.75 – 6 mbps



Wireless (Cellular)
2 – 100 mbps (4G)



Commercial Satellite
200 kbps – 2 mbps



Fiber Optic Cable
Up to 1 Tbps



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How Much Bandwidth do I Need

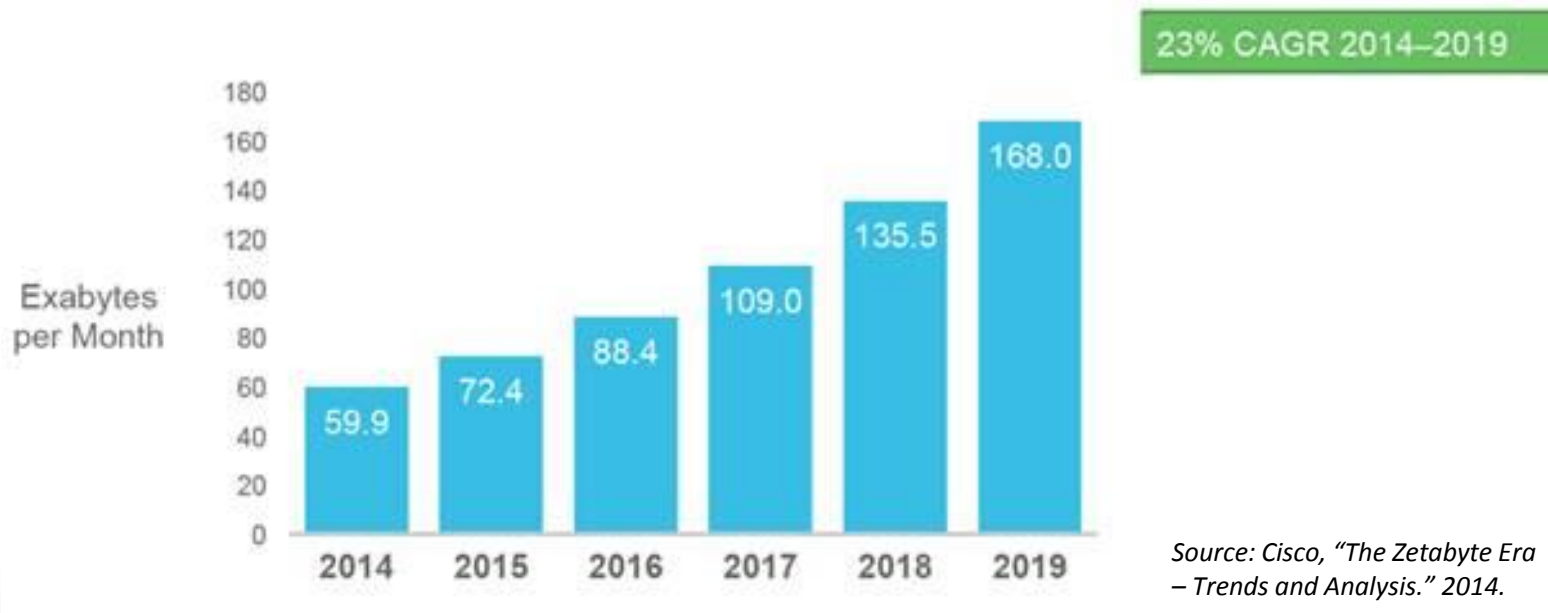
	Light Use (Email, Web Surfing Basic Video)	Normal Use (Basic use plus high demand functions i.e. video streaming , conferencing, HD video)	High Use (Basic use plus multiple high demand functions)
1 user on 1 device (laptop, tablet, gaming console)	2 – 4 mbps	3 – 6 mbps	6 – 15 mbps
2 users on 2 devices at a time	2 – 4 mbps	3 – 6 mbps	6 – 15 mbps
3 users on 3 devices at a time	3 – 6 mbps	6 – 15 mbps	15 mbps or more
3 users on devices at a time	3 – 6 mbps	6 – 15 mbps	15 mbps or more



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America Needs More Bandwidth

- Many trends are placing a higher and higher burden on our home bandwidth
 - More internet enabled devices per household
 - Growing prevalence of video content relative to image content
 - Shift from local computing to cloud computing
 - Higher definition videos and images
 - Growth of “over the top programming” such as Netflix and Hulu



PROJECT OVERVIEW



Project Timeline

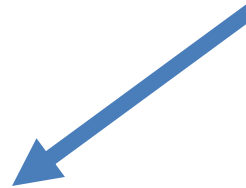
Task	Due Date
Kickoff Meeting (aka Scoping Meeting) Meet in Mt. Desert with the broader community to review scope of work and align project expectations.	Day 1
Define Broadband Objectives Share results of meetings with community stakeholder. Articulate goals and define the broadband objectives for the Town.	Day 7
Conduct Asset Inventory and Gap Analysis Provide overview of broadband assets in town including fiber, copper, Wifi, and Cellular infrastructure.	Day 28
Network Design and Cost Estimate Deliver high level network design and cost estimate, including all make ready, labor, and materials.	Day 45
Business Model Consulting/Review and Acceptance Tilson will submit a final report that will include a description of economic benefits and an overview of business model options. This will be followed by one in person meeting to discuss business model recommendations.	Day 60



Project Approach

- Goal: provide the community with a plan to obtain the telecommunications infrastructure that it needs to fulfill its vision for itself.
- Step 1 – What’s available right now?
 - Services
 - Infrastructure
- Step 2 – What kind of community do you want to be?
- Step 3 – Do the available broadband infrastructure and offerings meet your goals? If not..
- Step 4 – Propose solutions that meet those goals
 - Technological
 - Institutional

We are here
today



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Define Community Objectives

- What kind of community do we want to be?
 - How can broadband help us achieve that?
- Examples of community goals for a broadband project
 - We want to attract new young families.
 - We want to empower small businesses to compete nationally and internationally.
 - We want our citizens to access educational opportunities on line.
 - We want to attract new, small businesses to the Town of Mt. Desert
 - We want access to the full suite of digital media and entertainment.
 - We want another video option besides satellite providers.



Identify Broadband Solutions that Align with Objectives

- Examples of potential solutions include:
 - Public private partnership that provides optical service (fiber) to homes and businesses
 - Advanced wireless solutions (4G LTE and microwave)
 - Partnerships with existing providers that access low cost capital and provide service guarantees.
 - Incentives to cable companies to expand or bring services to Mt. Desert Island.
 - Expand the scope of the municipal electric utility



WHAT DO THESE SOLUTIONS LOOK
LIKE?



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Network Designs (Ex: Block Island, RI)

1) FTTH



Advantages

- 1) Unlimited Speeds
- 2) Very Discrete
- 3) Resilient and durable

Disadvantages

- 1) High Capital Costs
- 2) Some home installation necessary

Capital Cost	\$4.3M
Operational Cost	\$355k-\$652k
Speeds	1 Gbps
Who Pays	Private, Public or Hybrid

2) Hybrid Fiber/Wireless



Advantages

- 1) Less expensive
- 2) Potential improvement for cell coverage

Disadvantages

- 1) Partially weather dependent reliability
- 2) Variable speeds
- 3) Similar operating costs
- 4) Visually intrusive
- 5) Drawback of needing four towers

Capital Cost	\$1.4M
Operational Cost	\$312k-\$568k
Speeds	30 – 100 mbps
Who Pays	Private, Public or Hybrid



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Business Model Options

#	Who funds?	Structure	Network Owner	Taxes	Operator	Operating Risk	Revenue
1	Private Carrier	Private Carrier	Private Carrier	Yes	Private Carrier	Private Carrier	Private Carrier
2	Town & Private Carrier	Public Private Partnership	Public Private Partnership	Maybe	Private Carrier -Under Contract	Private Carrier	PC/PPP (PC gets paid First)
3	Town	Municipal (non-profit or government)	Town	No	Town or Contractor	Town	Town
4	Town	Municipal Lease	Contractor	No	Contractor	Town	Town
5	Town and Non-Profit	501(c)(3) or equivalent	Non-Profit	No	Non-Profit or Contractor	Non-Profit	Town (after non-profit and contractor costs)



COMMUNITY VISION



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Community Goals

- What are the objectives of your community's comprehensive plan in the next 10 years?



Areas where Broadband is not needed?



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Priority buildings/institutions

- Where in the town is increased broadband connectivity most needed?



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Public Areas

- What are the areas in town that would be served by free WiFi?

Network Funding

- Would the town be interested in partially or wholly funding a network municipally or communally?

Business Entities

- What are the business entities in town?
- What are their needs/challenges?
- How are they currently being met?

CURRENT BROADBAND SERVICE



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Current Broadband Service

- What is your community receiving currently in terms of Broadband service?

Type	Provider	Service Quality
Voice		
Video		
Internet		
Cellular		
Public WiFi		



Areas of Need

- Which Town areas/institutions have the greatest need for increased connectivity?
- For each of the following, how are they being served currently?
- What does each need to be better served?

Local Schools

Needs	Current Service	Service Goals

The Library

Needs	Current Service	Service Goals

Town Hall

Needs	Current Service	Service Goals

Public Safety (Fire/Police)

Needs	Current Service	Service Goals



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Businesses

Business	Needs	Current Service	Service Goals



Residents

Needs	Current Service	Service Goals



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Doctor's Offices

Needs	Current Service	Service Goals



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Town Park

Needs	Current Service	Service Goals