

LAKES REGION BROADBAND PARTNERSHIP

Technology Plan Summary

Axiom has partnered with the four-community coalition of Windham, Gray, Standish and Raymond to produce a fiber optic backbone extension from the 3 Ring Binder through the region. The communities see this infrastructure planning as an avenue to attract federal dollars for a regionally transformative infrastructure project, grow the local economy, create a competitive edge with other parts of Maine and beyond and to bring high-speed connectivity to residential neighborhoods over time.

Because of the nature of the area, demand for reliable, super-fast internet is increasing every day. The Lakes Region has already done an initial study of options with TILSON that this planning document builds on. In addition, strong regional interest has emerged, including St. Joseph's College and the Cumberland County Commissioners, to see something done to address the lack of Broadband connectivity in the region. A fiber optic backbone is the first step to meeting the ever-increasing demand for better connectivity.

This planning document was based on several critical concerns of the Lakes Region Broadband Committee:

- Fiber Optic connections in the region, while available, were not being made available by internet service providers at an affordable price, especially for small businesses, and only in limited areas
- There was not enough competition to drive pricing down, and many felt the one or two providers available to any given location were not responsive to the overall needs of the region
- As a major economic driver for the state, this region wanted to build on its success and be a viable option for businesses looking to relocate, perhaps attracting different types of businesses that need high capacity, highly reliable internet connections
- A strong feeling that the communities wanted to take control of their own destiny

There are several advantages to this project that are not immediately obvious.

- Open Access- this fiber would be open to any provider, increasing the likelihood of competitive pricing and potentially more choices
- Residential home connections- this fiber passes many dense neighborhoods that will have the opportunity to connect to fiber- increasing speeds and reliability to the home- not just businesses along the route
- Business Opportunities- Creating an environment for high capacity internet users to locate along the fiber line
- Municipal and School connectivity- Helps enhance community connectivity and efficiency

The plan is built to help the region control a key piece of infrastructure and therefore help them eliminate the problems of current connectivity. It is clear that for the region to improve its internet speeds and reliability, they will need to incentivize providers by creating a level playing field of fiber optic infrastructure. The providers could then build a better business case and bring much higher levels of service to the region. This goal is the key idea for building a network that is owned by the municipalities, and remains “open access” to allow all providers to operate on the network.

Because the network is fiber optic, it allows for unlimited speeds and unrivaled reliability over many years. Other technologies, DSL, co-ax cable and wireless while important, do not have the same attributes that can rival a fiber connection.

Once fiber optic connectivity is established across the communities, it will make it easier for providers to build off of the fiber and bring this connectivity to other parts of the community. Creating a network that is controlled by the municipality or regional entity allows for a gatekeeper approach to the fiber, where access, pricing, speed levels and service levels are all able to be included in negotiated access to the network. This gives the owner much more opportunity to control the offerings in favor of the consumer.

Total cost of project: \$2,869,800

Fiber Materials	\$913,422
Fiber Labor	\$598,828
Licensing and Make Ready	\$306,650
Replacement Poles (10%)	\$333,000
New Utility Poles	\$ 9,000
Regen Hardware	\$224,400
Customer Premise Hardware & Installation	\$485,500

Cost estimates for running “dark fiber” along individual routs are listed below. Dark fiber is simply the fiber cable on which broadband service has yet to be deployed.

Fiber Segments

3 Ring Binder to North Windham (Route 302)

The first leg of the project will connect to the 3 Ring Binder (BLUE line) at the corner of Route 114 and Route 35 and bring the fiber up Route 35 to North Windham at the corner of Route 35 and Route 302.

Total Cost of Trunk Fiber \$323,561.60

Windham Route 302 at 35 to Windham Public Works & Public Safety

This route will bring fiber service from the Route 302/35/115 intersection to the Windham Public Works building on Windham Center Road, and to the Windham Public Safety Building on Route 202, providing additional fiber access to Windham Town Hall and the High School/Middle School/Primary School complex.

Total cost of this segment: \$270,847.60

St. Joseph's College loop/Whites Bridge Road

One of the major employers and economic drivers in the region has expressed interest in a alternative path of fiber connectivity that would secure their network in case of an emergency outage or break on the primary path of their internet connection. St. Joseph's College is a significant internet user in the region, and as their reliance and needs exponentially increase, a secondary path of fiber that would ensure continuous operations would be a key outcome of the overall fiber project.

Budget for Route 35 to Whites Bridge- \$175,439.60
Budget for Route 302 to Whites Bridge- \$ 44,269.20
Total \$219,708.80

North Windham to Gray (Route 115)

Running along Route 115 from the corner of Route 115 and Route 302, this segment of the project would be built to primarily bring fiber optic service into Gray's downtown, giving Gray economic development opportunities for this area of the community, and a first leg to build fiber optic connections into other parts of town.

Total Budget cost: \$370,291.60

Gray Downtown to School

The extension of the fiber to the school offers the opportunity to build off ramps that could serve high-density neighborhoods with a Fiber-to-the-Home (FTTH) solution that would bring world-class connectivity to these residential neighborhoods. This opportunity could also defray the cost of the trunk fiber build if an internet provider would develop a business model to serve these residential communities as part of the project.

Cost of serving school from the downtown: \$83,112.80

Route 302-fiber path from corner of Route 35 in Windham to Route 85 in Raymond

In many ways, this route might be the most challenging to construct, while also offering an opportunity to serve one of the most robust commercial districts in Cumberland County with fiber optics.

Cost of segment: \$254,385.20

Raymond Route 85 to Schools

This extension would run up Route 85 to serve the elementary and middle schools, as well as the Raymond Town Hall.

Total cost of segment: \$200,856

Raymond Main Street to Public Safety

Once fiber is constructed to Route 85, this would give Raymond the opportunity to build fiber to Main Street, Route 121 that would serve the Public Safety building and homes and businesses along the route.

Total cost of this segment: \$85,260.40