



EXECUTIVE SUMMARY – WASHINGTON & AROOSTOOK COUNTIES

Modernizing Communications/Electric Utility Infrastructure

Introductory Section

Maine has seen increased effort around modernizing the communications and electric utility infrastructure through public and private sector investment. Aroostook and Washington counties, two sparsely populated and rural areas of the state, will benefit greatly from improvements to the broadband internet and electric infrastructure. Expanding broadband and power accessibility to even the most remote areas of the region will increase the region's ability to attract and retain businesses and residents alike.

In the broadband arena, the region has seen the implementation of projects to increase connectivity to even the most remote areas. There has been a parallel effort by larger broadband providers to increase the accessibility within their own networks. In addition, smaller providers, such as wireless internet providers, have connected to those networks to extend services beyond the reach of fiber. In addition, a few key initiatives have been put in place to direct money toward connecting Maine to high-speed internet such as the Maine School & Library Network and the ConnectMaine Authority (ConnectME).

Efforts to produce a reliable and sustainable electric utility infrastructure have been ongoing throughout the course of the GroWashington-Aroostook project. In 2013, a planning advisory group was brought together by Maine Public Service to analyze the most appropriate and economically sound plan to modernize and improve reliability of the electric transmission system in Aroostook County. There are currently three scenarios that the utility company is reviewing with the planning group and the Maine Public Utilities Commission (MPUC). One involves the addition of new in-region generation, another involves improving connections with New Brunswick, and the third involves connecting to ISO-New England. Washington County has made improvements to increase reliability of the infrastructure.



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Findings

In exploring the existence of projects to upgrade electric utility infrastructure, we found that significant, private investment has been made to modernize both the broadband and the electric utility infrastructure. Additionally, various stakeholders are working on initiatives to lower electric/energy costs and to increase broadband access throughout the region.

As part of the Downeast Reliability Project, the installation of a new transmission line creating redundancy for increased reliability to coastal Hancock and Washington counties was completed in 2012. Likewise, Maine Public Service's Reliability Solutions Planning Advisory Group was brought together to find the best solution to modernize and improve electric reliability and infrastructure in Aroostook County. In the meantime, Maine Public Service continues to upgrade to three-phase power, and is replacing decaying power poles in the county.

In-region generation capabilities have been expanded by private investment in several wind projects. Wind farms in Aroostook include Mars Hill, Oakfield (proposed), and Number Nine Mountain (proposed). In Washington, Wind farms projects include Stetson I and II. Maine's goals for wind power generation are 3GW of terrestrial wind development by 2020 and 5GW of offshore wind development by 2030; Maine's maximum load on the grid is only 2.8 GW. Legislation/policy in relation to wind power and other renewable energy projects may affect sustainability of present and future projects to modernize the electric utility infrastructure.

In relation to modernizing the broadband infrastructure, we have seen both private and government investment. The ConnectME Authority, with its goal to establish 90% broadband availability in Maine, has been the primary funding source behind the installation of "dark fiber" throughout the state. The Network Maine Council is a consortium of state agencies formed to support the role of the Department of Education in managing the Maine School & Library Network. The MSLN (supervised by MPUC) increased public access to the internet through upgraded connectivity of schools and libraries. The Three Ring Binder/Last Mile Initiative provided broadband access to the most remote areas. Private investment projects for the modernization of broadband include the Next Generation Network Upgrade, NETC, fiber to cell tower backhaul and cellular service infrastructure upgrade from 3G to 4G.

Stakeholders include FairPoint Communications, Time Warner Cable, Pioneer Wireless, St. John Valley Wireless, Maine Fiber Company, Aroostook Technologies, Axiom Technologies, US Cellular, Verizon Wireless, AT&T, GWI, Maine Public Service/ Bangor Hydro, Eastern Maine Electric Co-op, First Wind, and offshore wind developers.



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Analysis and Basic Conclusions

Eight percent of Maine households (50,000) do not have broadband access. The cost to build the infrastructure to reach them is \$60 million. The ConnectME goal of extending broadband infrastructure to remote areas did not prevent redundancy in placement of fiber. It delayed the upgrade of central offices (COs) by private investment. Instead, it was deferred to fund broadband expansion to remote areas. In addition, ConnectME supported the installation of “dark fiber” leaving the end-user to make significant financial investment to “light up” dark fiber. The Three-Ring Binder, Last Mile Initiative, Next Generation Network Upgrade to remote locations (mandated by MPUC), fiber to cell tower backhaul, NETC, and Maine School Fiber are all projects that have connected more locations throughout Aroostook and Washington counties. Cellular service infrastructure upgrades from 3G to 4G have increased fiber connections to and from cell tower sites creating significant availability of broadband regionwide.

Most of the cost of installing fiberoptic cable for broadband usage is not for the cable itself; but for the digging and placement of the cable. A “Dig-Once” policy would make the installation of broadband conduit a regular practice in road construction projects. This would also decrease the costs of deploying fiber, and eliminate the need for multiple excavations. Last legislative session, with the support of the Governor and the Governor’s Broadband Task Force, the Maine Legislature passed LD 876, “A Resolve To Establish a Working Group To Study Issues Relating to Broadband Infrastructure Deployment.” It is anticipated that a proposed “Dig Once” policy will be part of the group’s final recommendation when it reports back in the winter of 2014.

Missed opportunities abound. Maine has a Universal Service Fund (USF) for telephone service, collected by fees on telephone use, just as the federal government has. The Federal Communications Commission has redirected its USF from the subsidy of telephone landline extensions to broadband expansion. Maine has not taken this step with its own USF. Electric utility and broadband providers do not work in collaboration and are hesitant to share information on future upgrades due to the competitive nature of their respective industries. Private-public partnerships could potentially resolve infrastructure issues, yet, this tactic has been underutilized. For example, the private sector partnering with economic development to create a pool of money for businesses



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to access broadband in remote areas, would promote rural expansion and support the private sector.

Suggested Actions

- Support existing private investment to reach the 90% connectivity goal of ConnectME while utilizing resources effectively to reduce redundant placement of fiber.
- Work with all energy providers to collaborate on the electric utility infrastructure in order to reduce costs in northern and eastern Maine. Unify efforts to create a sustainable and efficient infrastructure.
- State government should consider developing and adopting a Dig-Once policy and re-direct the USF to subsidize broadband expansion.
- Create grants and loan programs for small businesses (in remote areas) that need financial support in order to connect to CO/ broadband access points.



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Implementation Already Occurring

- The Maine Public Utilities Commission voted to change the obligations FairPoint Communications must meet with respect to investing in the expansion of broadband in Maine. This will allow FairPoint to invest in upgrading the COs and increase broadband speeds.
- Time Warner Cable announced an initiative to spend over \$5 million in a number of the state's cities and towns. Customers in Maine will soon have more options for broadband internet and cable as Time Warner enters new markets through this expansion.
- State goals are pushing for more alternatives for energy and lowering costs.
- Maine Public Service is considering alternatives, including improving connections to New Brunswick, the potential for increasing regional generation, and the potential connection to ISO-NE.
- ConnectME is evaluating its success and failures and is bringing more money to the table to create incentive programs to increase access



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Additional resource needs

- In the case of both electric utility and broadband infrastructures, funds to implement improvements are the major resource needed.
- Funding to subsidize in-region-generation efforts and infrastructure to connect to all available grids would offset future costs of energy in our region by creating a competitive pricing situation.
- Funding to subsidize business connections to fiber, beyond that of the included distance from any CO, would expand business capacity in addition to the infrastructure.
- An assessment of the private investment that has been completed/planned must be conducted. A comparison of those efforts with legislation, government-supported initiatives, etc must be made. Efforts that are redundant, create obstacles for private investment, or are in direct-conflict need to be mitigated; likewise, efforts that support one another should be encouraged.