

CHAPTER 7: UTILITIES AND PUBLIC SERVICE

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Photo Source: http://www.lakesrpc.org/images/energy/hydro_ashland.jpg

7.1 OVERVIEW

When functioning properly, a community's infrastructure generally falls into the backdrop of everyday life. But when a roadway becomes impassable, a water pipe bursts, or a transformer station fails, we suddenly appreciate our reliance upon the utilities and public services underpinning our community's vitality. In planning for tomorrow, it is important to recognize that future development is often impacted by the location and availability of infrastructure services. This chapter assesses the current condition and potential future needs of Ashland's utility infrastructure.

Ashland's fundamental infrastructure includes electricity, potable water, sewage, solid waste disposal, roads, stormwater drainage and telecommunications. Electric, water, sewer and solid waste disposal are discussed in the Community Facilities Chapter of this Master Plan; thus, this chapter will not duplicate information already presented, but, instead, focus on future opportunities within those areas. Ashland's roads are addressed primarily in the Transportation Chapter. Roadway maintenance, which is carried out at both the state and local levels, involves the Ashland Public Works Department, whose operations are discussed in the Community Facilities Chapter. Thus, with these utilities and services addressed in other chapters, this chapter will focus significantly on telecommunications, and more specifically, broadband technology—an area that is currently receiving great national attention and resources.

7.2 WATER AND SEWER

Dating back to the 1890's when it first provided water to Ashland's downtown area, the Ashland Water and Sewer Department currently provides water and sewer service to approximately 1,500 people through approximately 550 connections in Ashland's downtown area. The Department is governed by a three-member Board of Commissioners that meets twice per month.

Consistently operating at a mere fraction (10-15%) of its capacity, the wastewater treatment plant, located at 96 Collins Street, is ready to receive significant expansion of service. In addition to the increased revenue such expansion would bring to the Town, significant environmental benefits have been associated with a shift away from on-site septic and toward municipal sewer. Moreover, higher density development associated with an increasingly vibrant town center is better supported through readily available municipal sewer and water service.

The vast excess capacity remaining at Ashland's wastewater facility presents several opportunities that could not only provide increased revenues, but also provide greater protection to the region's ground and surface water resources. Ideas that have been discussed in recent years include expansion of the sewer line to receive septage from neighboring towns as well as the construction of a dumping/receiving station that would allow for commercial septic maintenance operations to dump at the facility. Similarly, the town wells, located at 72

Cedar Lane, also have excess capacity and could provide service to additional customers should the department’s delivery network expand in the future.

In addition to Ashland’s town wells, the NH Department of Environmental Services lists several other public water systems within Ashland. Table 7.1 lists the public water systems reported as “active” by DES as of early 2012:

Table 7.1: Public Water Systems in Ashland

Name	Population Served	Connections
Ashland Water Department	1500	550
Rochester Shoe Tree	65	2
Ropewalk Services	290	124
Village at Riverbend	258	104

Water and Sewer Recommendations

- Develop a plan for best utilization of the wastewater treatment facility and community wells.
- Conduct research regarding feasibility of agreements with neighboring towns and/or private septic services.
- Periodically revisit wellhead protections to ensure water supply will remain unaffected by land use decisions made in the areas surrounding the supply aquifer.

7.3 STORMWATER

Today, stormwater is the single largest contributor to surface water quality degradation in the United States. Although communities like Ashland benefit from large expanses of open space, where precipitation is absorbed and naturally transported through the subsurface, stormwater management remains an important issue. Regardless of a community’s land-cover profile, the detrimental impacts of runoff can rapidly accelerate with each and every percentage-point-increase in impervious cover.

Protecting Ashland’s water resources from stormwater pollution will always involve collaboration between the public decision makers and workers and private landowners, as each holds an important role in overall land use decisions. Public decisions, like what type of roadway drainage to install or how to properly invest in stormwater infrastructure are recognized as important, but it also the daily decisions that are made on private parcels throughout the community that cumulatively can have equally significant impacts.

Providing long-term protection for Ashland’s surface and groundwater resources will require wise land use decisions and effective land use regulations. Currently, Ashland’s subdivision and site plan review regulations represent the bulk of local stormwater regulation. Additionally, state and federal regulations apply to certain types and sizes of projects and/or practices. Periodically examining the water quality and flood management protections provided by federal, state and local regulation—and determining whether those protections are

sufficient—is a necessary step in preventing unintended detrimental environmental consequences. Thus, maintaining an appropriate regulatory framework that deliberately and transparently guides private development will remain a vital and ongoing process.

Often, the costs associated with maintaining and improving stormwater infrastructure are viewed as prohibitive, particularly when compared with a multitude of other high-priority items within a town budget. Unlike the visible wear and tear that roads, power lines or other infrastructure elements incur, the degradation of a community’s stormwater system occurs out of sight and reveals itself in ways that may not be easily correlated, such as improper drainage or diminished water quality. A Capital Improvements Plan should include consideration of the life span of stormwater infrastructure and the costs associated with its upkeep and improvement.

Stormwater Recommendations

- Include stormwater infrastructure maintenance and improvement when developing a Capital Improvements budget.
- Many New Hampshire towns have decided to create comprehensive stormwater regulations beyond those commonly found in subdivision and site-plan-review ordinances. Currently, Lakes Region Planning Commission is working with other towns in the region to examine existing stormwater regulation and identify potential changes to more effectively protect soil and water resources. Similarly, Ashland should revisit existing regulation and consider any necessary changes.
- Research the possibility of developing a stormwater utility as a way to effectively assign and recapture the true financial costs of soil and water quality protection and flood control.
- Maintain contact with New Hampshire’s Departments of Transportation and Environmental Services regarding federal and state grant opportunities for stormwater projects.

7.4 ELECTRIC

In 1917, Ashland’s Electric Department was created when the Town raised \$50,000 to buy a hydrogeneration plant on the Squam River. Though some things have changed since then, the Department continues to supply Ashland residents with consistent power at highly competitive rates.

Currently, the Ashland Electric Department supplies power to all but three homes in Ashland. While the department could likely handle additional customers, expansion of service beyond the town boundary would open the Department up to additional regulations and additional fees, resulting in higher prices for customers.

Governed by a three-member Board of Commissioners, the Electric Department’s interface with the Ashland’s Municipal Government is minimal. Ashland’s municipal properties receive the same service and rates as other customers, however, upkeep and operation of streetlights

are provided by the Electric Department as a payment in lieu of taxes. In 2011, the monetary value of the streetlight service was approximated at \$41,000.

Starting in 2012, Ashland Electric has entered a six-year power purchase contract that will stabilize low rates for the duration of the agreement. Ashland does not anticipate utilizing its own hydrogenation plant in the near future because the turbines are worn out and in need of replacement. Nonetheless, Ashland does continue to provide a portfolio containing at least 20% renewable (mostly hydrogeneration).

Electric Recommendation

- Develop an energy committee or energy commission to examine energy efficiency and renewable energy opportunities and to pursue grant and loan opportunities that offer long-term benefit to the community. The committee or commission should work with the Electric Department to pursue projects that could be integrated with the Department's current operations and delivery systems.

7.5 SOLID WASTE DISPOSAL

In 1965, the average American generated just under three pounds of solid waste each day. Just 25 years later, in 1990, that number had increased by over 50% to over 4.5 pounds/day (<http://www.epa.gov/osw/nonhaz/municipal/>), roughly where it remains today. While much of that increased generation has been offset by recycling, increased overall volumes of solid waste have created significant challenges. As exhibited through countless successful municipal recycling programs, effective waste stream management can protect the environment, offer economic benefit and provide energy-efficiency and/or renewable-energy opportunities.

Today, Ashland can share its own recycling success story: In 2010 the Town brought in around \$36,000 in revenue from selling recycling materials. Just one year later that number had spiked to \$46,000, an increase of over 25%. This success can be attributed in part to Ashland's Department of Public Works that effectively manages the waste stream, but also to the citizens of Ashland who have made conscious behavioral decisions resulting in increased percentages of the waste stream going into stockpiles of revenue-generating raw materials instead of into landfills. Now is an appropriate time to build on this momentum and not only continue increasing revenues from recycled materials, but to also look for new opportunities for reducing waste and protecting the environment.

Table 7.2 provides a summary of materials processed through Ashland's Transfer Station in 2011:

Table 7.2: 2011 Ashland Transfer Station Exports

Recycled Materials (tons)			
Shingles	44.8	Glass	48.7
Aluminum Cans	3.2	PETE Plastic	10.3
Steel Cans	8.2	HDPE Plastic	3.9
Other Metals	41.8	Newspaper	18.5
Electronics	5.8	Mixed Paper	32.31
Cardboard	39.0		
Other Materials (tons)			
Trash	571	Construction Debris	228

Solid Waste Disposal Recommendations

- Investigate options such as “pay-as-you-throw” that incentivize reduction and recycling. While many communities, including Ashland, have rejected such proposals in recent years, it may someday become desirable to place the financial burden of solid waste disposal upon the shoulders of those who generate the waste. Not only does this incentivize recycling, which would remain free, but it also alleviates some strain on the town budget, where such expenditures as tipping fees are recaptured indiscriminately through property taxes.
- Periodically meet with surrounding municipalities to determine whether increased efficiencies and cost savings may be achieved through expanded regional partnerships. Ashland is currently a member of the Pemi-Baker Solid Waste District. This and other opportunities to develop partnerships should be fully explored.
- Conduct outreach and education to promote increased recycling and responsible disposal of household hazardous wastes. The Household Hazardous Waste collection days that Ashland and the Pemi-Baker Solid Waste District have sponsored provide one example of positive, effective outreach.
- Work with local schools to increase awareness and make the transfer station a real-world classroom for scientific and social research.
- Provide a location for a “Swap Shop” where community members may circulate unwanted items that likely have value to others. Benefits of swap shops include money savings for users, decreased waste stream and decreased demand for the production of new items in favor of extended use of existing items.

7.5 TELECOMMUNICATIONS & BROADBAND

Harnessed effectively, broadband connectivity will be a key driver of...jobs and wages growth. Broadband technologies will be the roads and railways of the 21st century, generating the next wave of economic expansion. Just as transport opened up new economic horizons in the last century, advanced communication networks will pave the way for productivity gains across global economies in the new century (http://www.archive.dcita.gov.au/2007/12/bag_report/chap1).

At the heart of today's expansion of telecommunications capabilities is the rapidly improving area of broadband technology. High speed broadband access creates economic development opportunities, increases the potential of business and industry, provides greater educational opportunities to people of all ages, improves the ability of emergency responders and government officials to effectively do their jobs and generally improves the lives of all citizens.

While the commercial benefits of improved internet are frequently discussed, the importance of high speed internet in education, health care and government are also important aspects for consideration by municipal policy makers and administrators. Increasingly, young adults are entering a job market that demands familiarity with digital literacy and a society that communicates through networked digital devices.

In terms of benefit to the community, improved internet contributes to better schools, more reactive medical care professionals, and a more responsive government. However, high speed broadband availability is often hindered by factors such as low population densities and geographical barriers. Frequently, it is not a prudent financial investment for internet service providers to extend the necessary "last mile" broadband infrastructure to homes and businesses in remote locations. Although New Hampshire stands at the nation's forefront in terms of broadband adoption, many opportunities and challenges remain in an ongoing effort to keep up with the needs of increasingly powerful internet-driven applications and processes.

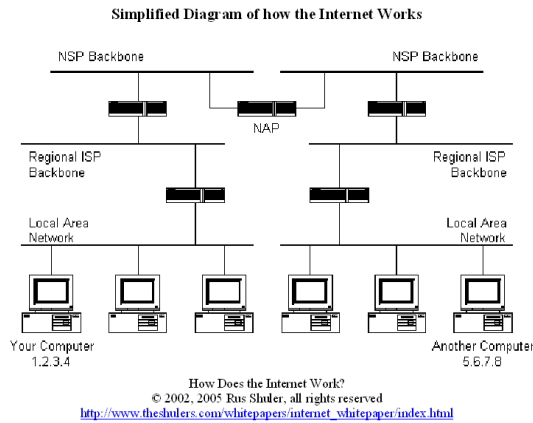
7.6.1 BROADBAND TECHNOLOGY

The term *broadband* denotes "a type of high-speed data transmission in which the bandwidth is shared by more than one simultaneous signal." This technology far exceeds the old "narrowband" technology which used telephone lines for a dial-up connection of about 56 kbps. Today, broadband is hundreds of times faster than narrowband and measured in megabits per second rather than kilobytes per second. While New Hampshire has yet to define broadband, Table 7.3 provides examples of some states' definitions of broadband, as reported by the NH Department of Resources and Economic Development in 2008:

Table 7.3: Examples of Other States' Broadband Definitions

State Name	State definition of broadband
Kentucky	Uses the original FCC definition of 200 kbps in one direction.
Maine	The ConnectME Authority has a definition of 500 kbps.
Maryland	Not clearly defined.
Massachusetts	A connection that can deliver 1 Mbps download speed, and does include satellite.
Vermont	The Vermont Telecommunications Authority ("VTA") has set a goal of having broadband speeds of 1.5 Mbps by 2010. ¹

Information is transmitted over the internet from its source to the end user in three general steps – from its source to the internet backbone to middle mile infrastructure and finally to last mile infrastructure. The internet backbone refers to the main trunk “super highway” connections of the Internet, which is made up of a large collection of interconnected



commercial, government, academic and other high-capacity data routes and routing devices that carry data across the US and the rest of the world. The middle mile portion of the broadband network essentially connects the main trunk lines to the local Internet Service Provider’s (ISP) central exchange location, also referred to as a telecom hotel. From there, the ISP uses the last mile (sometimes referred to as the first mile) to deliver broadband over cable or telephone lines to its final destination at the subscriber’s home or business. The term “last

(or first) 100 feet” is used occasionally to describe a fourth and final link in the process – the connection from the utility pole into the subscriber’s home or business.

7.6.2 CURRENT STATUS OF BROADBAND IN NEW HAMPSHIRE

Compared with the rest of the country, New Hampshire is ahead in terms of percent of households with broadband access. In 2010, the National Telecommunications and Information Administration (NTIA) reported that 73% of New Hampshire residents had broadband access at home, considerably higher than the 62% reported nationally. Nonetheless, a divide still exists between urban and rural communities here in New Hampshire. Additionally, minorities and lower income households also lag behind the national average in terms of broadband adoption.

In New Hampshire, access problems to broadband most commonly lie in the middle and last mile segments. More remote communities frequently lack middle mile infrastructure, meaning that broadband lines are not present in the town and access is unavailable. It is also common that many communities have middle mile infrastructure, but large segments lack last mile connections. In many places it may not make financial sense for service providers to extend broadband lines to individual homes in moderately to sparsely populated areas, resulting in large areas with no wired service. These two problems are common in many smaller New Hampshire communities and must be addressed.

In its 2008 *State of New Hampshire – Broadband Action Plan*, New Hampshire recognized that maintaining its consistent ranking among the most liveable states in the country, it would need to keep pace with its neighbors’ emphasis on telecommunication infrastructure. The planning process behind the report uncovered twenty-five broadband action items which could all be completed within three years. Specific action items that are relevant to Ashland

are identified within the recommendations section. In addition to these action items, the Plan arrived at the following five general findings:

- In today's world, broadband is a critical infrastructure for both businesses and citizens. The challenge of ensuring that the State of New Hampshire's citizens and organizations have adequate levels of broadband to compete in the 21st century economy will require a consistent and sustainable framework that will include: evaluating best practices, encouraging public-private partnerships where necessary, and understanding both the supply (deployment challenges) and demand (usage of broadband to spur further deployment) dynamics in the State.
- The State is well positioned to compete in the New Economy. The State of New Hampshire when compared to its more rural neighbors fairs well in most indices with regards to technology capacity, innovation, and digital communications. Overall the State is more comparable to its southern neighbor and other top ranking states.
- Leadership on broadband issues can be improved, however; there is not a lack of effort in the broadband issue. The Department of Resources and Economic Development (DRED), the State's Telecommunications Advisory Board (TAB), and others have worked hard to ensure that broadband is an issue that must be addressed in New Hampshire. To this end, the State needs to evaluate the feasibility of creating a centralized, leadership function to ensure that broadband initiatives and projects are well coordinated.
- State Government has opportunities to realize cost savings and improve operational efficiencies that could help alleviate some of the current budget challenges. These include, but are not limited to, an increased utilization of broadband technologies such as videoconferencing, and an opportunity to upgrade State communications technologies.
- Goodwill has been created through this process that should be leveraged and maximized going forward. In conducting this effort, DRED and its representatives have met with and heard from over 350 people representing citizens, businesses, broadband providers, local and state government, and non-profits from healthcare, education, and other fields.

In 2009, following up on the State's report, the Lakes Region Comprehensive Economic Development Strategy New Development Subcommittee piloted a report by SHS Consulting (SHS) which set its focus on "benchmarking and information gathering" with a goal to "identify an approach that will serve as a platform for the development of a detailed regional broadband expansion action plan".

The SHS report issued the following recommended activities for the communities in the region and for the Lakes Region Planning Commission (LRPC), which SHS felt was the appropriate point-of-contact for regional broadband discussions and initiatives:

1. Organization: It is important for LRPC to put a structure in place to represent the region as a single point of contact and resource; acting as facilitator, coordinator, project manager, town representative and advocate. Regions with a unified voice and

structured approach will receive priority over individual organizations and towns competing for funding and programs.

2. Last mile: The mid-mile appears to have adequate redundancy and capacity. Focus studies and planning on the last mile which appears to be the regional broadband expansion bottleneck.
3. Alignment: Develop a marketing plan to educate, engage, and organize communities and other stakeholders; this is a process that requires unity.
4. Aggregation: Aggregate and map demand by town and geographic area utilizing Federal Communications Commission (FCC) broadband tiers. FairPoint has committed to expand and upgrade its network and plans to utilize a demand aggregation program as a prioritization tool. The question is if LRPC wants to partner with FairPoint or work individually. LRPC should explore the option of partnering with FairPoint. A productive arrangement should go beyond the trade of demand information for an infrastructure deployment prioritization vote. It would be reasonable to expect that LRPC will have access to a map of demand pockets highlighting the areas that are not currently on FairPoint's expansion schedule to use during discussions with other carriers (example: CATV & wireless providers).
5. CATV Engagement: Develop a matrix of the expansion requirement terms of the individual town CATV contracts. Couple the findings with the demand aggregation results above rolled up to a regional level in order to leverage the bargaining position relative to network upgrades and expansions.
6. Inventory: Create an inventory and possibly map the private networks serving businesses within the region. Identify opportunities for satisfying demand highlighted during the aggregation process through the utilization of excess capacity. For instance, SHS recently learned that New Hampshire Electric Co-op (NHEC), the electric utility serving a substantial part of the LRPC area, has completed feasibility and planning studies for a major telecommunications infrastructure upgrade project throughout its service area from northern Coos County to Rockingham County including most of the Lakes Region. The wide-area telecommunication network consists of microwave and fiber optic links and are planned to be independent of existing commercially available managed services. NHEC is anticipated deployment of the first elements of the project in 2009 and is actively engaged in evaluating opportunities for telecommunications sharing arrangements with other utilities as well as public and private entities.
7. Regulations: Review master plans, policies and ordinances with an eye toward identifying and addressing issues impacting broadband expansion.

Tracking: FairPoint has a responsibility to report its progress to the Public Utilities Commission and appears to be open to sharing its region-specific plans. To the extent possible, LRPC should be engaged in the prioritization of upgrades within the area and implement a process to monitor and track progress.

7.6.3 BROADBAND FOR EVERYONE

In 2011, through its “Internet Essentials” program, Comcast provided low-cost broadband to an estimated 160,000 low-income Americans (41,000 families). Recently, other companies, including Time Warner, have developed similar programs, which, like the Comcast program, will also provide reduced-cost computers to qualifying families. In Ashland, where over 10% of families live below the poverty line (US Census 2005-2009); such a program should be actively publicized.

7.6.4 BROADBAND RECOMMENDATIONS

- Utilize the Cable Franchise Agreement negotiation process as an opportunity to leverage expansion of cable infrastructure, which would inherently have a positive impact on reach of improved broadband service
- Aggregate Demand – Develop a working group with other communities in the region to identify pockets of demand that will be attractive to providers.
- Expand availability of public internet. Easy, consistent access to computers with internet during all times of day will help ensure that all members of the community are able to benefit from opportunities offered through advanced telecommunications.
- Increase demand for higher-quality internet by educating the public about the economic and social benefits of increased bandwidth.
- Form a telecommunications committee to uphold ongoing efforts to:
 - Improve the quality of Ashland’s telecommunications network,
 - Orient the public with expanded internet use through outreach and education, and
 - Engage in discussions with providers, policy-makers, and surrounding communities to uncover and develop opportunities for improved telecommunications.

Following is a list of action items from the 2008 NH Broadband Plan that may pertain to Ashland:

- Provide incentives for last mile deployment in unserved and underserved areas.
- Foster a cooperative relationship with broadband vendors.
- Engage local government in developing and supporting broadband initiatives.
- Evaluate State government opportunities.
- Support efforts to provide all libraries, schools, and town halls with a broadband connection.
- Develop broadband and digital literacy awareness programs.

7.6.5 TELEPHONE AND CABLE TELEVISION

Landline Service

In the 1990s, the Ashland Planning Board paved the way for Verizon to potentially offer phone, internet and TV services to the town through new lines and connection boxes. The infrastructure is available for the build-out of the other services, cable television and Internet. Currently, FairPoint offers phone and internet service to its Ashland customers. FairPoint has

indicated that with the burgeoning technology, they will be able to provide television through its lines in the near future.

Cell Phone Service

Cell phone use is on the rise. According to the Center for Disease Control Statistics Department, 16% of the US population uses cell phones as their sole communication device. Lower income families are relying on their cell phones more than any other segment of the New Hampshire population (Huffington Post).

Currently, Ashland has one tower with two providers (Verizon and U.S. Cellular). The tower was constructed by Verizon on town-owned land, for which the town receives an annual rental fee. Additional towers exist in Plymouth and in New Hampton, but no cell towers in the Holderness (Route 3) corridor. Therefore, cell phone service is limited in the town due to many factors, including the physical limitations of the only tower, the location of the tower, and its height. Cell reception still requires unblocked views of the towers.

To increase the viability and range of cell coverage in Ashland, additional, taller cell towers would have to be placed within the viewshed areas on the ridge lines of the surrounding hills. Such locations would likely bring forth issues of environmental and aesthetic impact and would therefore require significant public discussion.

Ashland zoning regulations allow the placement of cell towers only within the Industrial and Commercial Zones, presently negating the possibility of locating towers in the Rural or Rural Residential Zones where the towers would produce a better signal.

Cable Television Service

Currently, the Town of Ashland and Time Warner Cable are negotiating a new contract. The current cable provider, Time Warner Cable, has been fulfilling the conditions of the previous Adelphia contract. Adelphia's holdings were split up by the FCC and Time Warner was chosen to have the Ashland-Plymouth-Holderness area, while the neighboring town of New Hampton was awarded to Comcast.

Time Warner supplies the Ashland School and the Town Library with free cable and internet service.

The following consumer issues surfaced through a community cable survey and hearings conducted in 2011:

- Channels/Market Area — Currently Ashland is located in the Burlington, VT, market area (as set by the FCC). In the past, Boston stations were available to Ashland residents, but the Vermont stations exercised their rights to override the Boston channels. In order for the townspeople of Ashland to receive the Boston stations, they must petition the FCC to change the market area to include the Boston stations.
- Service / Pricing — Tier Plans, Voice over Internet Protocol (VoIP) and Internet bundles are available through Time Warner. The townspeople have expressed their

concerns about the rising cost of their cable bills and have questioned why they cannot pick and pay for just the channels they watch.

- Franchise Fees — The Town has the legal right to add a franchise fee charge to cable subscribers' bills. This fee would be paid by the individual subscriber, collected by the cable provider and then returned to the town. However, a previous Select board voted to not charge a user franchise fee.
- Community Access Channels — Currently, there are two local community access cable television channels. Recently, the Board of Selectmen contracted with Pemi-Baker Community Access Media (pbCAM) to record and broadcast the Board of Selectmen's meetings, thus providing an additional avenue for townspeople to become informed about their local government. Franchising fees could provide additional resources to produce other local programming.

Telephone and Cable Television Recommendations

- Require telecommunications providers to keep their infrastructure current with cutting-edge technology in order to allow the townspeople to meet their growing information and communication needs.
- Work with surrounding communities to maximize leverage when negotiating new cable franchise agreements.

7.7 Glossary

CATV – Cable Television

DRED – Department of Resources and Economic Development

FCC – Federal Communication Commission

ISP - Internet Service Provider

NTIA – National Telecommunications Information Administration

pbCAM – Pemi Baker Community Access Media

SHS – SHS Consulting

TAB – Telecommunications Advisory Board

VoIP – Voice over Internet Protocol