

Infrastructure and Services

**An Element of *Sustainable Berkshires*,
Long-Range Plan for Berkshire County**

Adopted 3.20.14



SUSTAINABLE BERKSHIRES
Community Strategies For A Sustainable Future

Sustainable Berkshires is a project of the
Berkshire Regional Planning Commission.



**Berkshire
Regional
Planning
Commission**

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INTRODUCTION

Infrastructure has been defined as “the basic structural foundation of a society or enterprise; roads, bridges, sewers, etc. regarded as a country's economic foundation”. Many organizations are also using the term civil infrastructure to describe this type of built asset to distinguish it from other forms of infrastructure such as computer networks. Municipal infrastructure, a distinct portion of civil infrastructure, includes those assets managed by municipalities. These typically include, but are not restricted to, the following classes of assets: buried utilities, roads, transit systems, bridges, and water/sewage treatment plants. Some jurisdictions are responsible for a variety of buildings (i.e. police stations, fire stations, and schools). Typically, one identifying aspect of municipal infrastructure is the diversity of assets in any one organization. That is, bridges may predominate in one municipality, whereas it could be roads or water/sewage treatment plants in another.

Municipal services refer to basic services that residents of a community expect the local government to provide in exchange for the taxes which citizens pay. Basic city services may include sewer, water, streets, schools, fire department, police, ambulance, and other health department issues and transportation. City governments often operate or contract for additional utilities like electricity, gas and cable television.

PUBLIC WATER SUPPLY

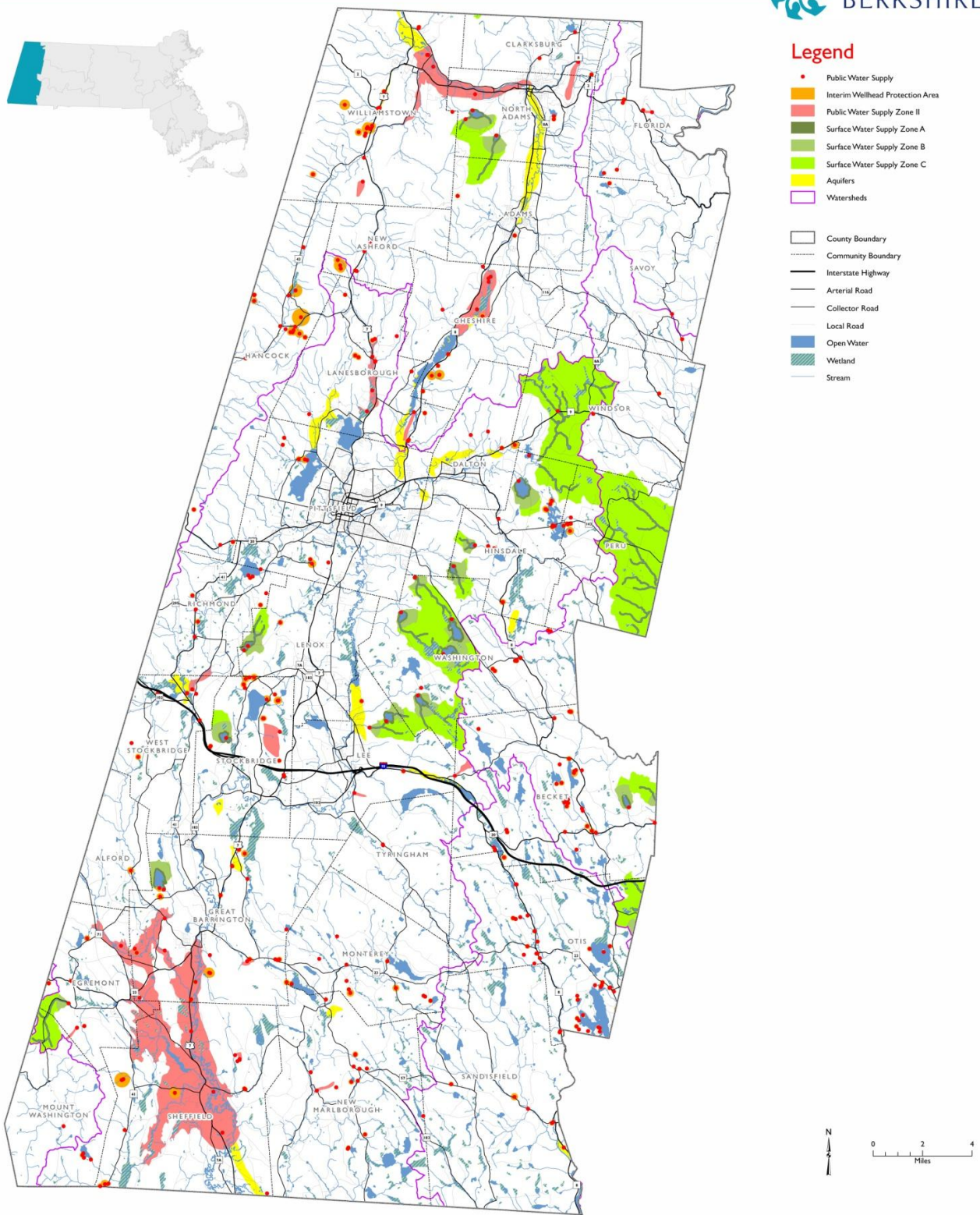
In the Berkshires, most densely settled areas are served by a public water supply system. Half, or sixteen, of the communities in the region supply municipal water to all or a portion of their community. There are currently five private water companies supplying small neighborhoods or portions of towns. Public water allows a safe and reliable water supply source and encourages growth in those parts of town served by the system. A Water Supply Map is included on the following page.

A public water supply in the State of Massachusetts is defined as a water supply system with 15 or more service connections or regularly serving an average of at least 25 people daily at least 60 days each year. These public water supplies may be owned and operated by the municipality or privately owned. Municipal systems are managed by a municipality or a fire or water district and serve the community.

Public water systems are defined as Community Water Systems (CWS) or Non-Community Water Systems (NCWS). A Community Water System is a public water system that serves at least 15 service connections used by year-round residents or serves 25 year-round residents. Non-community water systems are either a Transient Non-Community System (TNC) or Non-Transient Non-Community (NTNC). Transient Non-Community Systems are those systems that typically serve travelers and other transients and serve at least 25 people for at least 60 days per year, typically not the same 25 people per day. Non-Transient Non-Community Systems (NTNC) serve at least 25 people each day at least 6 months a year but not year round (e.g. a workplace). Water system definitions are important because different levels of water treatment, water supply protection and water quality monitoring are required for the different systems.

The Federal Safe Drinking Water Act is the main federal law that ensures the quality of Americans' drinking water. Under the Act, the U.S. Environmental Protection Agency (EPA) sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The Safe Drinking Water Act was originally passed by Congress in 1974 to protect public

WATER SUPPLY



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This map was created by the Berkshire Regional Planning Commission and is intended for general planning purposes only. This map shall not be used for engineering, survey, legal, or regulatory purposes. MassGIS, MassDOT, BRPC or the communities may have supplied portions of this data.

health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, reservoirs, springs, and ground water wells. (The Act does not regulate private wells which serve fewer than 25 individuals.)

The City of Pittsfield is the largest water supplier in the region. Drawing from five reservoirs in the surrounding communities, Pittsfield experiences a demand of approximately 14 million gallons per day. Water is pumped from the reservoirs, undergoes treatment, and is delivered through an extensive network of pipes to most of the homes and businesses in Pittsfield.

Water supply service and water main extension policies can affect the location, type, and density of new development. Communities with the capacity to expand service and defined extension policies can attract certain types of development. In Pittsfield, the developer assumes water main extension costs and the lines become part of the municipal water distribution system. Residents who later choose to connect to the system can pay a hookup fee.

Table IS1: Municipal Water Supplies in the Berkshires

Town	Source	% of Population Served	Base Water Use 2012 MGD*
Adams Fire Department	GW	90%	1.94
Cheshire			
Cheshire Water Department	GW	30%	0.4
Hutchinson Water Company	GW	3.5%	.06
Pine Valley Mobile Home	GW	1.5%	0.02
Clarksburg			
Briggsville Water District	GW	7%	0.0065
Dalton Fire & Water District	GW and S	94%	1.90
South Egremont Water Commission	S	24%	0.09
Great Barrington			
Great Barrington Fire District	GW	52%	1.20
Housatonic Water Works Company	S	35%	0.36
Hinsdale Department of Public Works	S	61%	0.11
Lanesborough Fire & Water District	GW	74%	0.55
Lee Water Department	S	90%	1.10
Lenox Water Department	S	88%	1.58
North Adams Water & Sewer	S	95%	2.03
Pittsfield Department of Public Utilities	S	100%	14.19
Sheffield Water Company	GW	61%	0.00
Stockbridge Water Department	S	75%	0.31
West Stockbridge Sewer & Water Commission	GW	78%	0.04
Williamstown Water & Sewer Department	GW	83%	0.96

GW = Ground Water S = Surface Water

*MGD = Million Gallons per Day

The Massachusetts Geographic Information Systems (GIS) data for public water suppliers shows a total of 246 separate supplies with a total of 395 sources throughout the region. Of these sources, 116 are Community Water Supplies with 86 originating as ground water and 30 as surface water. The remaining 279 water supplies are Non-Community Water Supplies with 236 being Transient Non-Community and 43 existing as Non-Transient Non-Community supplies. Within each town there are also non-municipal suppliers who maintain Non-Community Water Systems. These Non-Community Systems generally serve restaurants, campgrounds, motels, condominiums, and schools. Because they serve fewer people, they are permitted to withdraw less than municipal suppliers.

The Water Management Act (M.G.L. c. 21G) became effective in March 1986. The Act authorizes the Massachusetts Department of Environmental Protection (MassDEP) to regulate the quantity of water withdrawn from both surface and groundwater supplies. The purpose of these regulations (310 CMR 36.00) is to ensure adequate water supplies for current and future water needs. The Water Management Act (WMA) consists of a few key components, including a registration program and a permit program.

Protection of reservoirs and the land surrounding them is of great importance. Direct protection of drinking water supplies at the state level is limited to regulations of general application such as permits for large discharges to groundwater, registration of major new groundwater withdrawals under the Water Management Act, and a number of regulations protecting public drinking water wells including landfill ban, wellhead protection, and septic system regulations. Title 5, the only state regulation with protection provisions for reservoirs, mandates that new on-site sewage disposal systems be sited at least 400 feet from reservoirs.

Six communities in the region have established groundwater protection zoning districts. These districts usually encompass the “Zone II”, the principal area where rain and surface water recharge the aquifer. The actual Zone II recharge area can only be determined through an engineering study which is fairly costly to conduct. An “interim wellhead protection district” is often assumed for regulatory purposes, constituting a circular area around the wellhead with a half-mile radius of wells pumping 100,000 gallons per day. Title 5, the state sanitary code, bans septic systems in the Zone II and requires one acre of land per four-bedroom house in a Zone II area.

Groundwater protection zoning bylaws usually ban outright certain activities that are likely to pollute aquifers such as underground storage tanks, salt storage, and the use of solvents. The Massachusetts Appeals Court in the past has upheld a refusal to permit a gas station in a secondary recharge area of a public well on the grounds that protection of groundwater is a valid public interest. Protection of drinking water supplies is a local task, but requires a more regional approach where the source, aquifer or watershed occurs in a community different than the service area or in more than one community. Decisions regarding upgrades to existing systems or extensions of water mains affect the pattern of future development. Poor planning of development, as well as existing land use practices, also have the ability to negatively impact water supplies. Development within wellhead areas, heavy use of fertilizers, failing septic systems, and applications of road salts are just a sampling of the threats to a clean water supply on which we all depend.

PRIVATE ON-SITE WATER SUPPLY

In communities with no public water supply, water for individual users is obtained from wells or springs. Individual wells are located throughout the region, in densely populated areas as well as in rural locations, and are susceptible to the same pollutants as public and municipal water supplies. Drilled and dug wells are susceptible to contamination from various sources, especially on-site septic systems. Regulations for private wells require a 50-foot setback from the septic tank and a 100-foot setback from the leaching field.

Private wells are critical to many home and business owners throughout the region. Contamination can result in health risks and costly remediation. As with public groundwater supplies, pollution prevention is the best strategy. Education is the single most important factor in keeping these private wells safe and clean.

WASTEWATER TREATMENT

Municipal sewer service in the region is important to the health and safety of the population and the environment. Sewers protect ground and surface waters from harmful pathogens and ensure that wastewater is cleansed before being discharged back to the environment. Sewers also allow for dense development and high concentrations of inhabitants in village centers and in cities that would not be possible without the use of a centralized sewer system. Economic growth and development, to some degree, is also dependent on the existence and proximity of sewer infrastructure as some businesses and industries generate large volumes of wastewater. Due to the high cost of installing sewers, existing sewer lines often determine the location, size, and/or type of potential business and industry.

There have been numerous improvements to the infrastructure and treatment facilities over time as technologies have advanced. Replacement of aging lines is common, as are upgrades to treatment facilities. Increasingly, municipalities are becoming aware of the importance of maintaining good infrastructure to safeguard water quality. Many have initiated Inflow and Infiltration (I&I) studies to detect leaking and damaged lines and have installed leak detection systems. Combined sewer overflow (CSO), once a problem in many communities, has been, or is being corrected.

There are eight municipally owned wastewater treatment plants in the Berkshire region and one district owned facility, the Hoosac Water Quality District plant in Williamstown. Of the nine wastewater treatment plants in the region, seven utilize extended aeration systems, while the West Stockbridge facility utilizes rotating biological contactors to cleanse wastewater. The Otis plant, the smallest facility in the Berkshires, utilizes a trickling filter system. Upgrades to facilities continue throughout the region. Homes and businesses not served by municipal sewer service rely on on-site sewage disposal systems.

Much of the land in the Berkshires is unsuitable for on-site septic systems due to the nature and composition of the soils. As a result, the region is experiencing a number of failed septic systems that have the potential to contaminate the environment. To upgrade these systems is costly. Some communities, such as Hinsdale, have chosen to extend sewer service to critical areas where failing systems are a problem. This is a special concern to lake communities where a high density of homes around lakes is common and inadequate/poor treatment is affecting the health of the lake.

In Massachusetts, wastewater treatment facilities are licensed and regulated through MassDEP and by the United States Environmental Protection Agency through the National Pollution Discharge

Elimination System (NPDES) permitting process. To ensure adequate removal of solids and destruction of harmful pathogens, wastewater must be treated before it is discharged to ground or surface waters. There are three categories of wastewater to be treated: municipal sewage, domestic septage, and industrial wastewater.

Most municipal systems in the Berkshires are operating under capacity, with average monthly flows ranging from 2% to 100% of design capacity. The Hoosac Water Quality District (HWQD) in Williamstown is at 100% of design capacity. During large storms, because the sanitary and stormwater systems are combined, sewage and stormwater are often discharged into the Hoosic River untreated. Each wastewater treatment facility is required as a condition of its discharge permit to begin plans for expansion when influent loading rates reach 80% of the facility's design capacity for 90 days.

Many communities with public sewers rely on aging sewer lines. Due to the high cost of maintaining and upgrading infrastructure, lines are generally upgraded only on an as needed basis, often after a break or leak. Several communities have initiated Inflow and Infiltration (I & I) testing to isolate problem areas and initiate the process of repairing damaged pipes throughout the region. Many towns have initiated their own I & I studies to identify CSO's and illegal hookups of sump pumps and roof drains.

In several communities, sewer lines are connected to storm drains resulting in unnecessary burdening of the treatment facility. During heavy storms a portion of the sewer/storm water mixture is discharged directly into the nearest river to prevent overloading of the facility. This CSO presents problems throughout the region but especially in Williamstown and North Adams, resulting in overtaxing of the treatment facility.

The byproducts of wastewater treatment are sludge (the dewatered solids) and the treated water. Both must be disposed of according to standards set by the State. Sludge may be land applied, landfilled, or incinerated. No sludge is incinerated in the region, but the Hoosic Water Quality District ships sludge out of state to be incinerated. Stockbridge maintains its own sludge landfill, expected to close in the next several years. The Town of Otis plans to compost their sludge. Treated wastewater can be disposed of through spray irrigation on a specially designated area or it may be discharged directly into the waterways. All of the wastewater treatment facilities discharge directly into the Housatonic River, the Hoosic River, or the West Branch of the Farmington River.

The availability of wastewater treatment infrastructure can play a major role in regard to potential new development. Many municipalities that have public sewer service encourage growth in parts of town where public sewer service exists. However, communities run the risk of exceeding the capacity of their sewage treatment systems if development is not controlled through planning. At times, investment in or expansion of wastewater infrastructure may be incompatible with existing community growth plans. The placement of sewers may be necessary to remediate existing water quality problems, but their installation may lead to inappropriate development and, as an unforeseen result, a worsening of water quality problems.

PRIVATELY OWNED ON-SITE WASTEWATER TREATMENT

Although much of the region is poorly suited for on-site sewage disposal because of soil or slope constraints, many residences are served by private on-site septic systems. Serving mainly rural and outlying areas of the region, on-site disposal systems serve approximately 30% of the total housing units.

Proper design, construction, and maintenance are important to keep these systems functioning properly. Initial siting of systems is equally important, especially in areas of poor soil and where sensitive resource areas exist, as septic systems can potentially contribute to ground and surface water pollution.

Title 5 of the Massachusetts Environmental Code regulates on-site sewage disposal. Revised in 1995, the regulations set minimum requirements for siting, construction, inspection, upgrade, and expansion of on-site systems. Local health boards may adopt more strict requirements than required by Title 5 where safe conditions require it. Local boards may also waive requirements. Setbacks for the construction of new systems are 50 feet from wetland resource areas, 100 feet from wells, and 400 feet from reservoirs. The regulations also mandate that all new and upgraded systems be sited upon four feet of naturally occurring pervious material. This is important, as it does not permit systems to be built on fill installed over ledge, as is common in other states. Title 5 mandates that systems be inspected prior to a change in use or transfer of a property.

Changes to Title 5 also approved the use of innovative and alternative (I/A) technologies for regular, provisional and remedial use as well as for piloting purposes. Traditional systems allow pollutants such as nitrogen and phosphorus to pass through the leaching facility, potentially degrading ground and surface water supplies. Alternative systems, unlike traditional systems, can achieve minimal standards for secondary treatment, ensuring a cleaner effluent into the soil by making use of bacterial processes that reduce nitrogen in wastewater. An example of a popular innovative and alternative system is the composting toilet.

While each alternative technology approved under the Title 5 regulations has its own unique method for sewage treatment, all seek to reduce the amount of pollutants and pathogens discharged into the environment. Use of an alternative system in a nitrogen sensitive area, such as a wellhead protection area, or in a location where drinking water supply and on-site disposal are serving both the facility and residence, might improve overall environmental benefits.

EDUCATION

As home to the first free public school system in the nation, Massachusetts has a long, established commitment to the provision of education. Dating from 1647, the Bay Colony required that upon the settlement of 50 or more families in an area, a schoolmaster had to be appointed.

Each community in Berkshire County provides the opportunity for public elementary and secondary education, though not all have school buildings in their community. There are single town school districts, school unions of several towns, and regional school districts overseeing the education of the region's children. Municipalities or districts that have become part of the School Choice program also can accept (on a space available basis) students from outside the district who choose to attend. Elected or appointed school boards govern all public school districts and unions.

There are 18 academic school districts and 1 charter school district in the region. Four regional school districts provide PK-12 grade education, while two regional school districts provide PK-6 and 7-12. The 6 regional school districts serve 21 communities. Lee, Lenox, North Adams and Pittsfield offer PK-12 and another 7 communities offer PK-6, PK-8, K-6 or K-8. Eight communities maintain tuition agreements with neighboring districts for secondary school. In addition, there are three school unions within the county in which multiple districts share a single superintendent and administrative offices.

Table IS2: Berkshire County School Districts

Academic & Charter Districts	Type	Grade Level	District Members	Tuition Agreements
Adams-Cheshire Regional	Regional School District	PK-12	Adams & Cheshire	Savoy (7-12)
Berkshire Arts and Technology Charter	Charter School District	6-12	N/A	N/A
Berkshire Hills Regional	Regional School District	PK-12	Great Barrington, Stockbridge & West Stockbridge	Richmond (9-12) Otis & Sandisfield (7-12)
Central Berkshire Regional	Regional School District	PK-12	Becket, Dalton, Hinsdale, Peru, Washington & Windsor	N/A
Clarksburg	School District	K-8	Clarksburg	N/A
Farmington River Regional	Regional School District	PK-6	Otis & Sandisfield	N/A
Florida	School District	PK-8	Florida	N/A
Hancock	School District	PK-6	Hancock	New Lebanon, NY (7-12)
Lanesborough	School District	K-6	Lanesborough	N/A
Lee	School District	PK-12	Lee & Tyringham	Otis & Sandisfield (7-12)
Lenox	School District	PK-12	Lenox	Richmond (School Choice 9-12)
Mount Greylock Regional	Regional School District	7-12	Lanesborough, & Williamstown	New Ashford
Northern Berkshire Regional Vocational	Vocational/Technical	9-12	N/A	N/A
North Adams	School District	PK-12	North Adams	Clarksburg & Florida (9-12)
Pittsfield	School District	PK-12	Pittsfield	Richmond (9-12)
Richmond	School District	PK-8	Richmond	Hancock & New Ashford
Savoy	School District	PK-5	Savoy	N/A
Southern Berkshire Regional	Regional School District	PK-12	Alford, Egremont, Monterey, New Marlborough & Sheffield	Mount Washington,
Williamstown	School District	PK-6	Williamstown	N/A

- Northern Berkshire School Union #43 - Clarksburg, Florida, Savoy, & Monroe Bridge
- Shaker Mountain School Union #70 – Hancock, Richmond & New Ashford
- School Union #71 – Lanesborough, New Ashford & Williamstown

Vocational educational programs are available in the region at McCann Technical High School (Northern Berkshire Vocational District), at Taconic High School, and through the Southern Berkshire Educational Collaborative serving students in communities and school districts in the southern and south-central part of the county. Most Berkshire school districts also participate in the “school choice” program, allowing students from other communities to attend their schools, on a space available basis. In addition to public schools the region is home to twenty-two private day and/or boarding schools, including Christian School programs, parochial schools, and one Jewish-affiliated school. Several private schools offer special needs or alternative programs.

The State provides Foundation funding, a major funding mechanism for K-12 education. The Foundation Formula lags far behind the true costs of providing such education.

Higher Education

Four post-secondary schools are located in the region. Berkshire Community College in Pittsfield offers a wide range of courses leading to an Associate’s Degree. Massachusetts College of Liberal Arts (formerly North Adams State College), also public, offers programs leading to a Bachelor’s degree. Two private colleges are situated in the region: Simon’s Rock College of Bard in Great Barrington (offering a two-year program geared to younger college ready students), and Williams College in Williamstown (Bachelor’s; Master’s degrees).

In addition, the region’s residents also have access to a number of educational institutions within commuting distance, including the University of Massachusetts at Amherst, Springfield Technical Community College and Westfield State University. Several colleges are located in southern Vermont, the Albany-Troy-Schenectady area to the west in New York, and in Hartford, Connecticut.

The region’s cultural institutions also play a significant role in serving the learning and educational needs of its citizens, and contribute favorably to the area’s quality of life. Tanglewood is host to the Boston Symphony Orchestra and its summer music institutes and offers numerous musical programs. Museums, such as the Norman Rockwell Museum in Stockbridge, the Berkshire Museum in Pittsfield and Massachusetts Museum of Contemporary Art (MassMOCA) in North Adams offer lectures, workshops and training in the arts. Additionally, the Berkshire Athenaeum and other libraries within the County play an important role in serving the public through their book, music, and other collections, and Internet connections.

EDUCATIONAL FACILITIES

Since the early 1990’s, the Commonwealth has embarked on a statewide effort to reform and improve education, including the physical facilities and curriculum, as well as the educational performance of Massachusetts students. Since 1948, the Commonwealth of Massachusetts has had a funding program to assist communities with their school facility needs with state reimbursement of costs.

The desire to retain community character, often symbolized by older public buildings such as schools, town halls, and libraries—while meeting modern needs for more space, handicapped accessibility, and necessary renovation or upgrades—presents a difficult situation for citizens and voters. While cost-savings may be an attractive incentive to consolidate schools or consider regionalization, many parents and other citizens lament the abandonment of the local or “neighborhood” school. Their reasons are many and varied: loss of community character and tradition; loss of direct control and financial control

of their children's education; concerns about the impersonal effects of larger schools and increased time spent in transport.

Modernizing older schools to reflect changes in technology and teaching with new emphasis on "lifetime" learning have placed a substantial burden on communities struggling to control and stabilize the property tax rate. Communities in the region must engage in serious discussion about alternatives to enhance provision of educational opportunity for all children throughout the region and investigate options for meeting and sharing the costs. As the state continues to press for improvements in educational facilities available to children and improved performance from them, citizens and taxpayers regionally must play a role in finding and funding solutions.

The Massachusetts Comprehensive Assessment System (MCAS) tests are scheduled to be replaced beginning with the 2014/15 school year by a set of assessments developed by the Partnership for Assessment of Readiness for College and Careers (PARCC). PARCC is a multi-state consortium working together to develop a common set of K-12 assessments in English and math anchored in what it takes to be ready for college and careers. These new K-12 assessments will build a pathway to college and career readiness by the end of high school, mark students' progress toward this goal beginning in grade 3, and provide teachers with timely information to inform instruction and provide student support. The PARCC assessments will be ready for states to administer during the 2014-15 school year. PARCC states have committed to building a K-12 assessment system that:

- Builds a pathway to college and career readiness for all students,
- Creates high-quality assessments that measure the full range of the Common Core State Standards,
- Supports educators in the classroom,
- Makes better use of technology in assessments, and
- Advances accountability at all levels.

POLICE, FIRE & EMERGENCY RESPONSE

Police Departments

Within Berkshire County a few towns do not have police service and several hill towns contract with the state police. The majority of the communities in the region maintain a small police force with a police chief. In some communities the police force may be made up of the police chief and single full-time officer, while others have part-time officers. The Cities of Pittsfield and North Adams have larger departments, while Dalton, as an example, has approximately 10 officers.

Fire Departments

Career firefighters include full-time uniformed firefighters with paid benefits jobs as fire fighters. Volunteer firefighters include any active part-time (call or volunteer) firefighters. Volunteer firefighters may receive no pay at all, be paid on an hourly, or a per-call basis. Volunteer fire fighters typically have jobs and careers outside of fire fighting. Active volunteers are defined as being involved in fire fighting. According to the National Fire Protection Association US Fire Department Profile 2012, of the total number of firefighters in the nation 31% were career firefighters, while 69% were volunteers. Most of the career firefighters (72%) are in communities that protect 25,000 or more people. Most of the volunteers (95%) are in departments that protect fewer than 25,000 people and almost half are located in the small, rural departments that protect fewer than 2,500 people. In Berkshire County all of the

communities maintain all volunteer fire departments except for the Cities of Pittsfield and North Adams and the Town of Lenox.

Emergency Response

Ambulance service is operated by the City of North Adams and the Towns of Adams, Becket, Dalton, Hinsdale, Lanesborough, Lee, Lenox, New Marlborough, Otis, Richmond, Sandisfield, Windsor, and Village (Williamstown). Ambulance service is also operated out of Southern Berkshire. The City of Pittsfield contracts with private companies (County and Action) for ambulance service.

COMMUNICATION AND INFORMATION SERVICES

Broadband access to the Internet is increasingly seen as critical for economic growth, job creation, global competitiveness, and enhanced quality of life. Yet the United States lags behind many advanced countries in the adoption and quality of broadband. A Broadband Map is included on the following page.

Only about two-thirds of Americans have broadband service at home. In Massachusetts, for example, 32 towns lack any broadband service; less than 10 percent of households in another 91 towns have broadband service. The problems are particularly severe in the western part of the state.

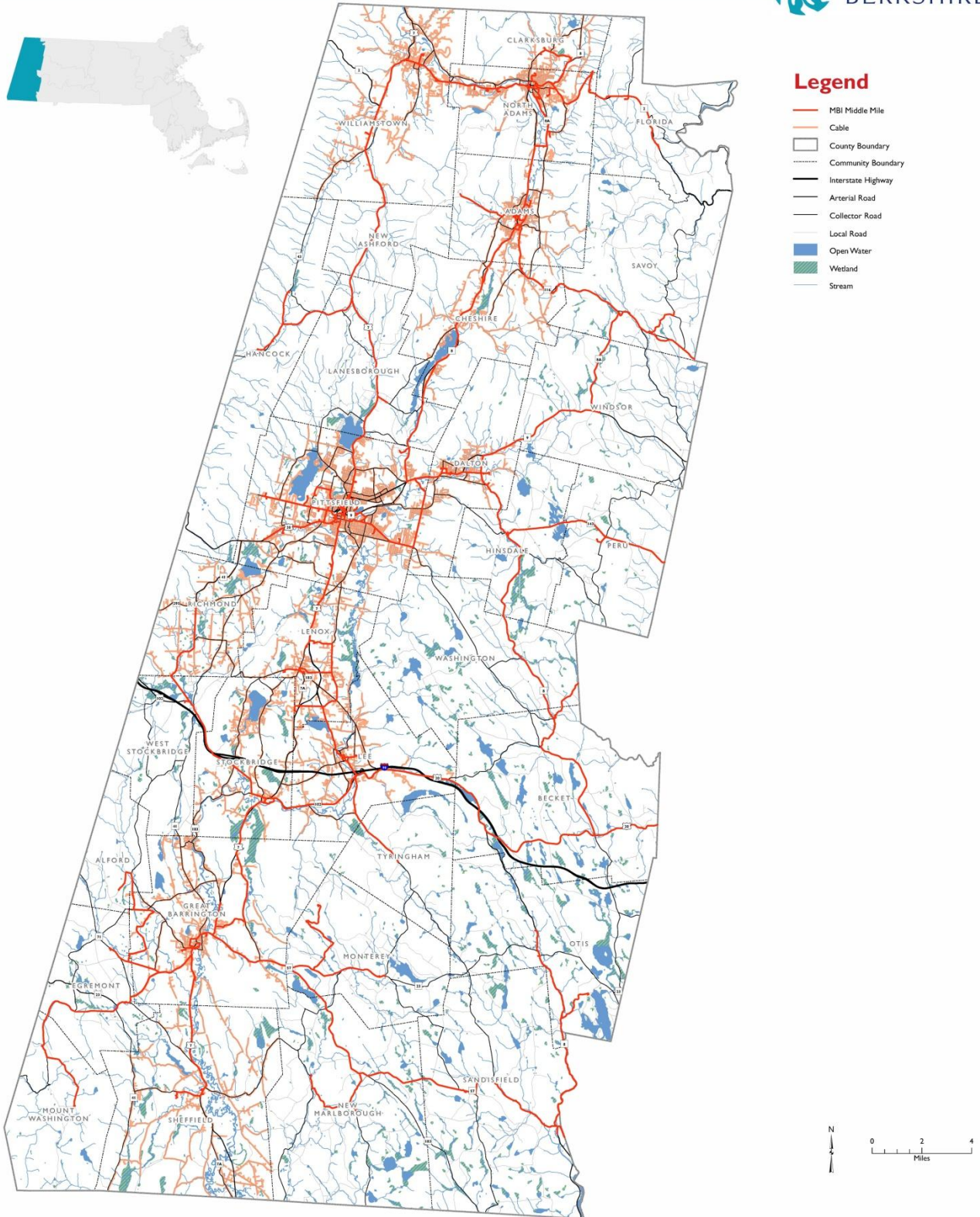
Legislation signed in 2008 aims to deploy new broadband infrastructure and expand existing services in the Commonwealth. The Broadband Act created the Massachusetts Broadband Institute (MBI) and provided funds to construct critical infrastructure. Plans included a \$71 million, 1,100-mile, open-access fiber-optic network – the so-called middle mile – to begin bridging the digital divide in western Massachusetts. Every municipality in Berkshire County now has access to the MBI network.

As that construction has wrapped up late in 2013, the need remains to develop a sustainable business model to build the “last mile” – that is, access to individual households and businesses – and provide affordable service to customers.

Western Mass Connect

The Berkshires is home to a growing number of new media, arts and entertainment, and resort companies that depend on advanced communications and information services to sustain and grow their businesses. Robust broadband services are also increasingly vital for education, health and local government to function and provide routine and specialized services. In 1997, The Berkshire Regional Planning Commission, in collaboration with the Massachusetts Technology Collaborative (MTC), was asked by the Berkshire Legislative Delegation to develop an action plan for enhancing regional telecommunications infrastructure. A task force of local business, education and community leaders was assembled to assess advanced telecommunications infrastructure in the region. With funds provided by MTC, the task force established the Berkshire Connect project to examine and assess the current communications challenges in the region, and to propose a strategy for enhancing the telecommunications and information infrastructure. Berkshire Connect identified that the region’s telecommunications infrastructure was ill equipped to handle the burgeoning demand for high-speed data communications resulting from the advent of the internet. Drawing on support from a team of technical experts and economic development strategists from the MTC, Western Mass Connect, which evolved from Berkshire Connect and a similar effort in Franklin County, coordinated the development of an advanced communication infrastructure, which resulted in the passage of the 2008 Broadband Act.

BROADBAND



1/16/2014



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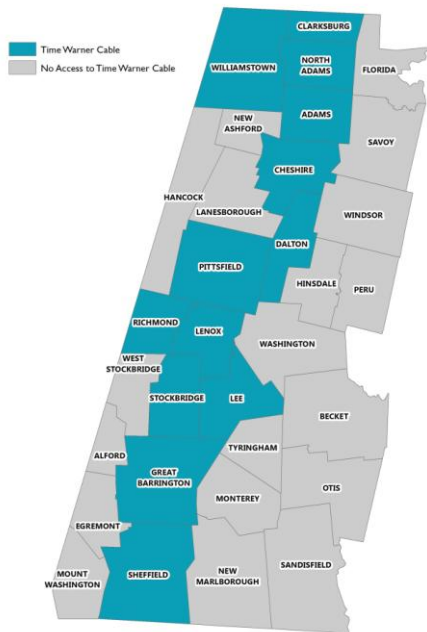
This map was created by the Berkshire Regional Planning Commission and is intended for general planning purposes only. This map shall not be used for engineering, survey, legal, or regulatory purposes. MassGIS, MassDOT, BRPC or the communities may have supplied portions of this data.

The Berkshires, with its distinctive assets and emerging knowledge based industry cluster, will be poised to realize the economic and social benefits of participation in this wealth-generating sector. The ultimate goal is to enhance the Berkshire's information infrastructure to:

- Increase its attractiveness as a place to live, work, and play.
- Support the development of new business and enhance the competitiveness of existing ones.
- Provide greater access to education, health, and other public information services.

Telephone, Broadband and Wireless Communication

Figure ISI: Time Warner Broadband



Source: BRPC, 2013

One major local exchange carrier (Verizon) and one independent phone company (Cornerstone) currently serve the Berkshires with land-line telecommunications service. While Cornerstone serves the Town of Richmond and provides fiber telecommunications town-wide, the Verizon system primarily utilizes copper wires which are not adequate to provide broadband to the level needed to provide adequate levels of service even for routine usage and which are deteriorating due to age. Verizon has primarily utilized DSL service to provide residential level broadband but that is increasing subject to unacceptable deterioration of service levels and quality and is fast approaching obsolescence due to the rapid expansion of broadband needs by customers. While 27 of 32 cities and towns have DSL service, in many more rural towns the coverage of even that very limited technology is very limited and most of the population is reduced to dial-up internet access which is totally inadequate for current needs.

Time Warner provides broadband service to the 13 communities it serves (see map) through its "Roadrunner" service. About 46% of the road miles in the region are served by cable with internet capability. Up to date cable TV infrastructure currently provides a reasonable level of broadband service for a "typical" residential or small business consumer. It is limited by its asymmetrical nature in that download speeds (into the premises) are much faster than upload speeds (out of the premises). For consumers who are conducting work which requires symmetrical speeds (such as digital media producers who are collaborating with others perhaps on the other side of the world), cable is currently a limited technology. For all consumers, as broadband use becomes more and more intensive, cable will possibly begin to meet its technological limits, as has happened with DSL, within a few years.

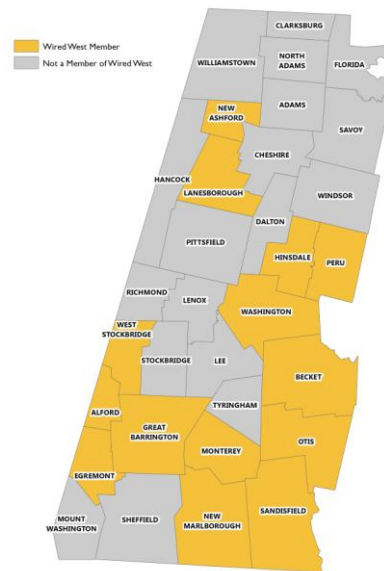
Providing robust broadband services to all homes and businesses requires "last mile" solutions which Verizon has indicated it will not build in the Berkshires for the foreseeable future. Time Warner has built-out what it intends to build in the region, leaving 54% of the road miles (and the homes and businesses along those roads) and 19 towns without service. Various wireless technologies have been utilized in several communities to try to provide broadband service but due to limitations of the technology and the topography and dense vegetation of the Berkshires, none has proven to be more than partially successful. In response to this lack of service, existing or planned, 41 towns across western Massachusetts, including 14 in the Berkshires, formed the Wired West Cooperative, utilizing

municipal light plant legislation dating from 1891, in order to design, construct and operate a municipally owned and controlled “fiber to the home” last mile network in its member communities.

Cellular service in the region is provided by AT&T, Sprint and Verizon Wireless. Coverage is somewhat widespread but there are significant gaps in a few of the more rural communities. Providers have been providing increased 4G LTE service with only a few more rural areas without service.

Cellular service is important to the region. Also important is the impact telecommunications towers can have on scenic resources such as ridge tops. The 1996 Federal Telecommunications Act preserved the rights of communities through their zoning powers to regulate telecommunications towers. However, communities cannot “zone out” these towers but may pass bylaws that govern siting, setbacks, height, and liability. Most Berkshire communities have wireless telecommunications bylaws, although most need to be brought up to date with most recent federal legislative requirements.

Figure IS2: Wired West Members



Source: Wired West, 2013

EXISTING TRANSPORTATION SYSTEM

Roads & Streets

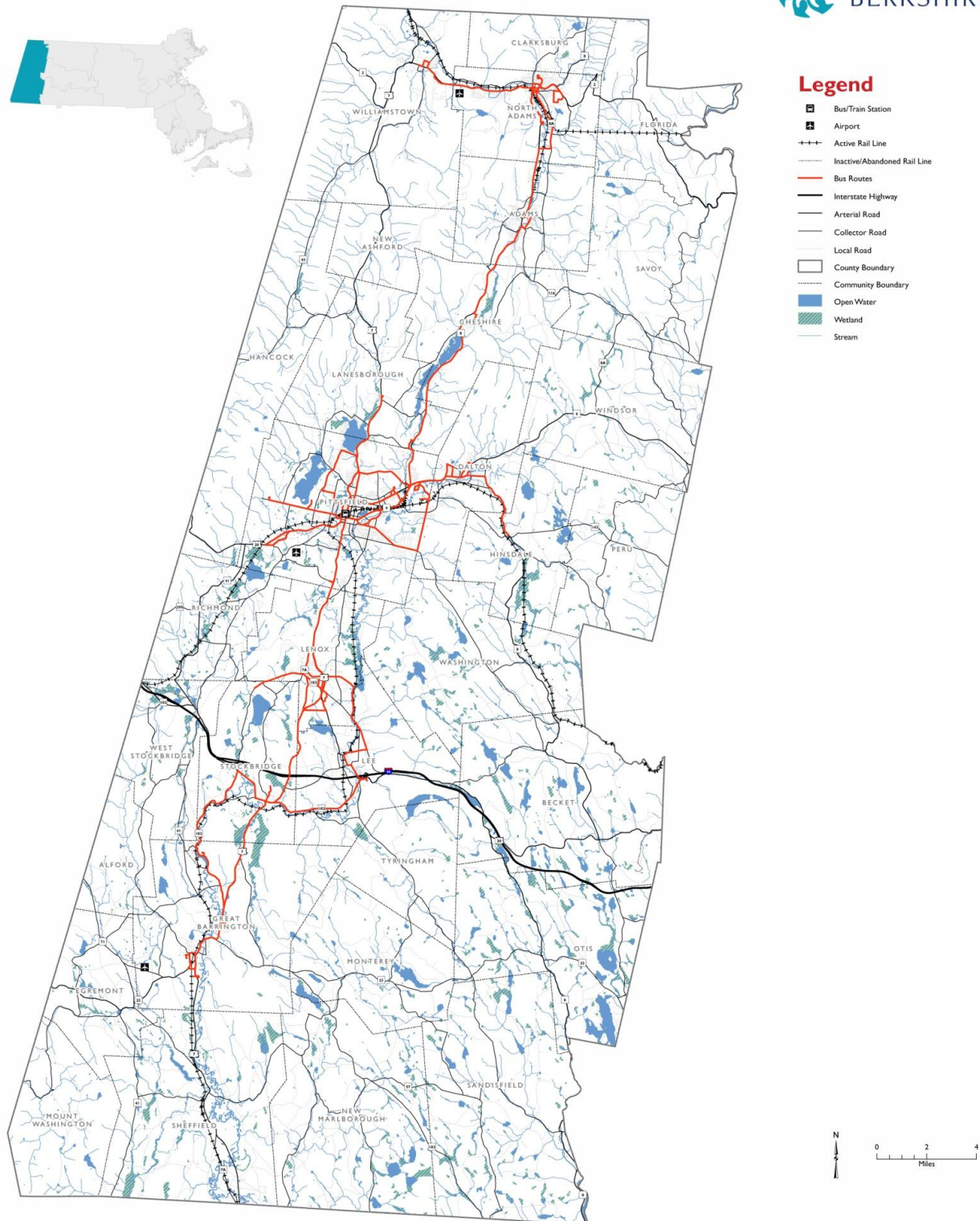
The transportation network in Berkshire County consists of almost 4,300 miles of state and local roads, 431 bridges, and 127 traffic signals. A map of the Transportation Infrastructure is included on the following page. Some 10% of the highways are classified as arterials which carry more than half of all vehicular traffic. It is estimated that the highway system serves about 600,000 vehicle trips per day which travel about 3,000,000 vehicle-miles per day. The vehicle-miles of travel consist of about 85% autos, 15% trucks, and less than 1% buses.

National statistics indicate a recent and major decline in the level of personal travel because of the ‘downsized’ national economy and relatively high fuel cost. The National Highway travel Survey indicates an annual VMT per licensed driver of 10,084 in 2009, down from 11,890 in 2001. A comparison of traffic data for 2006 and 2009 collected at permanent count stations in Berkshire County reveals a 20 percent decrease in traffic, which is consistent with the overall national decline.

Public Transportation

Public Transportation is an important public service, particularly for those without access to an automobile or for those persons where typically an automobile is a disproportionately high expense compared to their income; the poor, young, elderly and disabled. Public transportation was an extensive component of the Berkshire County transportation system, however, the post World War II boom in the use of the personal automobile, the closures of many large scale industrial complexes, and the diversification of the Region’s economy have rendered ridership stagnant. Public transportation has been revitalized with the investment of public operating and capital acquisition subsidies through the

TRANSPORTATION INFRASTRUCTURE



Berkshire Regional Transit Authority (BRTA) which currently operates fourteen regular bus routes, running Monday through Saturday, in 12 communities.

The fixed route service is established though the Berkshires' most populated areas, but the remaining transit problems in the region are limited service frequency and availability due to funding limitations. Paratransit is an option for expanding the service areas and can include chair-cars, taxis and slight deviations of standard buses from fixed routes. There are a number of problems with these special paratransit services such as the sufficient availability of these services to meet the demand; restrictions as to type of trips provided and client eligibility; inefficiencies resulting from the lack of coordination of services and funds; and competition of publicly subsidized services with private carriers.

Rail Freight

Presently, the maintenance of rail service in Berkshire County is of importance primarily for freight. While the main east-west lines have been rehabilitated, the secondary feeder lines are in poor condition with about 10 MPH speed limits. Not only is speed affected, but derailments are of safety concern in those communities traversed by the railroads. In addition, some bridge height clearances are below standards. These conditions create transportation problems for those industries in the region which must ship by rail. Efforts to re-establish passenger rail service along the Housatonic Rail corridor will result in track, bridge and crossing improvements to this feeder line.

Passenger Rail

Inter-city rail passenger service continues being provided daily by AMTRAK on its "Lakeshore Limited" route from Boston to Chicago through Pittsfield. Unfortunately, while the service could be useful for trips to Boston for shopping or business, the schedule is such that one cannot travel to Boston and spend the day there and return, but must remain overnight. The trains are also at times behind schedule by an hour or more.

Efforts are underway to re-establish service between Pittsfield and New York City on the Housatonic Rail corridor. BRPC is conducting a feasibility study that is focused on the siting of rail stations and the State legislature is considering funding appropriations for capital improvements to this rail corridor. There is also interest in expanding efforts to improve service on the Boston to Albany corridor with current state efforts focused only from Boston to Springfield.

Airports

There are three airports in the region. Two airports are publicly operated municipal airports which are located in the cities of North Adams and Pittsfield, and one privately owned airport is in Great Barrington. The Pittsfield Municipal Airport, a regional general aviation airport, offers business and casual travel access to the region via private and chartered aircraft ranging from single engine piston to multi-engine private jet. Improvements to this airport have recently been completed to increase the length of the runway to 5,790 feet and improve safety by removing obstructions from approach and departure routes and expanding runway safety areas to meet current FAA requirements.

Transportation Demand

The social and economic characteristics of a region set the basic present and future conditions for transportation demand. A Traffic Volume Map is included on the following page. Analysis of alternative

growth scenarios for the region indicates that the most likely future regional growth pattern could generally be characterized as continued de-concentration of population and employment. The growth of the Berkshires is within the limits of a relatively small and slowly growing economy. Recent trends in development patterns in the region have been that development continues to spread away from the traditional population and employment centers of the region. Land use controls to reduce that dispersal are generally not in place. Dispersal and decentralization are likely to continue without major changes in land use control efforts.

Despite an anticipated limited growth future for the region, the need for repair and maintenance of highways and local roads will be high. No significant projects that add highway capacity are anticipated. Additionally, the demographic change of a significant increase in elderly population will require that transportation alternatives be provided for this population group.

INFRASTRUCTURE & SERVICES THROUGH THE SUSTAINABILITY LENSES

Economic Development

- Protecting our drinking water makes good economic sense. Water is easy to contaminate but difficult and expensive to clean up. Once water becomes contaminated, it must be treated or an alternate source of water must be found. This is expensive and causes the water system to pass on this expense to the consumer. Contaminated water deters new businesses and industry from forming in the community.
- The economic and environmental well-being of the region depends in part upon the ability of the transportation system to efficiently and reliably link workers to jobs, students and teachers to educational institutions, visitors to attractions and goods and services to customers.
- America's economic future depends in large part on the quality of our nation's public education. Education increases productivity, sparks innovation, and boosts our economic competitiveness. In a globally competitive environment, we can't afford to have a poorly educated workforce.

Social Equity and Capital

- Protecting drinking water makes good public health sense. Water is necessary to all living things. It makes up approximately 70% of the human body's weight and plays a role in its functions, such as digestion and cooling. Without clean drinking water, we could not survive. If the drinking water is contaminated, many health risks can result: bacteria can result in illnesses such as hepatitis or cholera; a component of gasoline, benzene, is known to be a carcinogen; lead causes kidney, liver, and nerve damage as well as pregnancy risks.
- The National Academy of Public Administration (NAPA) put forth the following definition for social equity in public administration: "The fair, just and equitable management of all institutions serving the public directly or by contract; and the fair and equitable distribution of public services, and implementation of public policy; and the commitment to promote fairness, justice and equity in the formation of public policy."

Environmental Stewardship

- States report that nonpoint source pollution is the leading remaining cause of water quality problems. The effects of nonpoint source pollutants on specific waters vary and may not always be fully assessed. However, we know that these pollutants have harmful effects on drinking water supplies, recreation, fisheries and wildlife.
- Climate affects the design, construction, safety, operations, and maintenance of transportation infrastructure and systems. The prospect of a changing climate raises critical questions regarding how alterations in temperature, precipitation, storm events, and other aspects of the climate could affect the nation's roads, airports, rail, transit systems, pipelines, ports, and waterways.
- Protecting drinking water makes good environmental sense. In the past, people thought that if we buried chemicals in the ground they would disappear. This is now a proven fallacy that has resulted in dire consequences for our environment. Everything we put into the environment accumulates. If one person pours diesel fuel on an ant bed, he or she may feel that no harm is being done to the environment. However, if everyone pours diesel fuel on their ant beds, we have a large scale problem. One gallon of used oil can

contaminate one million gallons of water. Contamination can take years to clean up and not all ground water contamination can be treated successfully with current technology. This is why pollution prevention is crucial.

INFRASTRUCTURE & SERVICES PLANNING PROCESS

The goals and policies set forth in this document were identified through a multifaceted public involvement process that engaged municipal, non-profit organizations, community leaders, and the public in a strategic discussion of the role and vision for the future state of the infrastructure within the region and the region's ability to deliver quality services now and into the future.

Survey

An online survey was created to determine key issues regarding infrastructure and services within the region and identify common themes across the region. The survey was distributed to the mayors, town administrators, town managers, select board chairs, town planners and public works commissioners/superintendents. Nineteen of the thirty-two communities responded and responses were received from a broad array of communities from the largest to some of the most rural. Regardless of community size, many of the same issues are experienced in every community throughout the region.

Stakeholder Group

A stakeholder group of eight community representatives including town administrators, town managers, select board chairs, town planners and public works commissioners/superintendents met to help develop the Key Issues & Challenges and Goals of the Infrastructure & Services element of the plan. In addition, the stakeholder group was provided with draft materials to review background information and develop and refine goals, policies and strategies.

Consortium

Once key issues and challenges had been identified through the survey and stakeholder group they were summarized and presented to the regional Consortium guiding the overall planning process for initial discussion. BRPC then provided draft goals and policies for consideration and discussion at a second meeting. Goals, policies, and strategies were then further refined for public review and comment.

Public Open House

Two open house events were organized and held in Great Barrington and Pittsfield to present the draft goals and policies for public review and comment. These also highlighted maps of water supply, traffic volume, transportation and communication infrastructure.

INFRASTRUCTURE & SERVICES VISION

Vision: *Berkshire County residents and businesses are able to rely on safe and quality roads, water, schools and emergency services. Infrastructure is operated and maintained without an undue financial burden on the communities and their residents through proactive planning and budgeting. Residents enjoy a quality of life in which they feel their health safety is protected by a robust police force, firefighters, and emergency responders. The region is served by state of the art telecommunications and is innovative in its approach to the latest technologies and approaches to deliver the highest caliber services in the most efficient way possible.*

ACHIEVING THE VISION

This vision will be achieved through the collaborative action of the public and private sectors, with residents, businesses and municipal governments working in tandem to pursue and implement strategic actions in two main areas as relates to infrastructure and services:

1. **Finance Friendly Infrastructure & Services.** This section discusses the costs associated with maintaining, operating, replacing and upgrading infrastructure as well as the costs of services ranging from delivery of safe drinking water to the public school system. Both traditional and non-traditional approaches are discussed. In addition, all potential sources of revenue are considered regardless of whether they can be utilized to fund infrastructure and services projects as the money generated can offset what would otherwise be part of the municipal budget and makes that money available to infrastructure and services projects.
2. **Providing Quality Infrastructure & Services.** This section discusses the various types of infrastructure and the wide array of services that are necessary to protect health and safety and provide for the best possible quality of life. Quality infrastructure and services are an integral part of the quality of life. This section discusses actions that can help to enhance quality of life by providing the highest quality infrastructure and services.

1. FINANCE FRIENDLY INFRASTRUCTURE & SERVICES

In most communities there are constant demands for new or expanded services. In some cases these demands arise because state and federal laws mandate spending in certain areas — education, recycling, handicap accessible buildings, or sewer treatment facilities, for example. In other communities demographic changes fuel demands by residents for new or improved services. The competition for municipal budget dollars is likely to continue. As the demand for services has grown, so have municipal operating budgets. In other words, local governments have been called upon to provide an ever expanding range of services without a significant increase in real revenue.

Good financial management requires coordinating the expertise and individual efforts of numerous municipal boards, committees and officials. Because there is constant competition for budget dollars, it is essential that the various officials in municipal government work together to achieve good financial management. The changing nature of local government services and the increasing complexity of service delivery require that they work more closely than ever before. This includes sharing information and resources so joint solutions can be developed and implemented successfully.

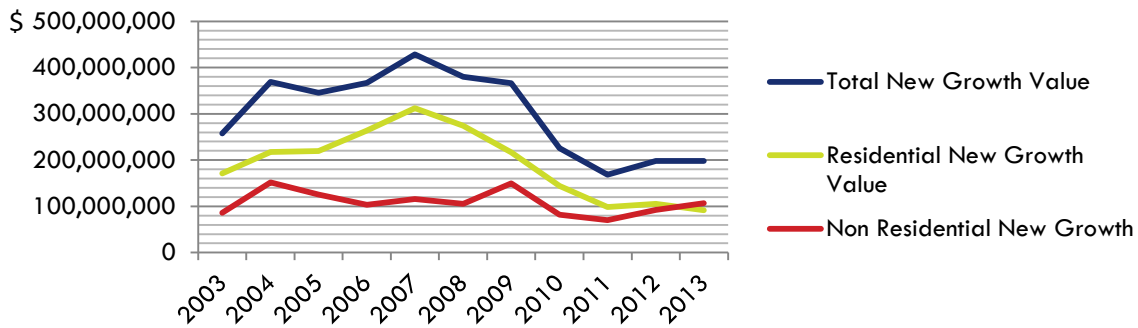
SOURCES OF LOCAL REVENUES

Municipal revenues are a fundamental part of local government's overall financial picture. In Massachusetts, municipal revenues that support local spending on education, public safety, physical infrastructure and other public services are obtained through one of four types of revenue sources. These revenue components are the property tax levy, state aid, local receipts and other sources.

The implementation of Proposition 2½ in the early 1980's limited the amount of revenues that localities could generate from the property tax levy. In spite of this limitation, however, statewide the property tax continues to generate more than half of all local revenues. Generally, state aid represents slightly more than a quarter of all revenues, followed by local receipts and available funds (free cash and other reserves).

Property Tax Levy

The property tax levy is the revenue a city or town raises through real and personal property taxes. In 1981, Massachusetts voters approved Proposition 2½, which caps a community's annual property tax levy. This cap is referred to as the levy limit, which increases annually by 2½ percent, plus allowable certified new growth. However, after rising for most of the early 2000's, new growth dropped dramatically from its peak in 2007 to its lowest level in the last decade in 2011. Residential new growth made up the majority of this decline as non residential new growth has remained steady for the most part. Residential growth dropped over 70% over the last 6 years, averaging 17% per year.

Figure IS3: Massachusetts Property Tax New Growth, 2003 - 2013

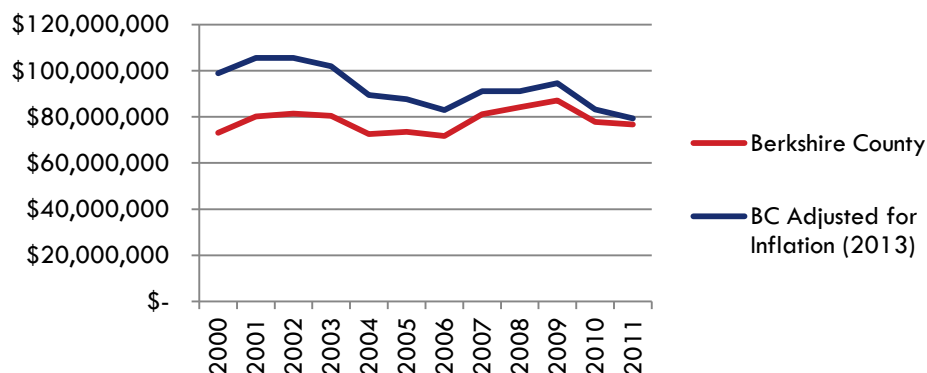
Source: Massachusetts Department of Revenue

The levy limit cannot exceed an overall levy ceiling of 2½ percent of the full and fair cash value of taxable property in the community. However, an exception is provided in which a municipality can permanently increase its levy limit through a successful override referendum. Alternatively, municipalities can choose to temporarily levy above their levy limit through a successful debt or capital outlay expenditure exclusion referenda.

State Aid

The state aid portion of local revenues is aid allocated by the state directly to cities and towns. This aid is distributed through the Cherry Sheet programs. Cherry Sheet aid is made up of distributions, reimbursements and offset items. Distributions provide funds to each municipality according to various formulas. Reimbursements provide funds to cities and towns for all or part of the costs incurred for certain programs or services. Offset items are amounts that constitute categorical aid, i.e., funds that must be spent for specific municipal programs.

State aid to Berkshire County communities declined in 2003 before leveling off and then beginning a slow climb in 2006. Since 2009, the trend has again declined. When adjusting for inflation, state aid has not rebounded to 2000 levels and is, in fact, at the lowest level in more than a decade.

Figure IS4: Berkshire County State Aide, 2000 - 2011

Source: Massachusetts Department of Revenue

Local Receipts

Local receipts are just that; revenue generated at the local level from a variety of sources other than property taxes. Some of the most common local receipts are excise taxes; regulatory fees (fines,

licenses, and permits); user fees (charges for water, sewer and garbage services); departmental revenues and investment income. Local receipts are paid into the community's general fund unless earmarked for a specific departmental use in compliance with state statute.

Other Revenues

Other revenues include those that do not fall into one of the other three categories. Among the more common types of revenues in this category are: free cash, stabilization funds, overlay surplus and other reserves.

UNDERSTANDING TRUE COST

Costing Municipal Services

Costing is a management and policymaking tool that assists a community to determine all the revenues and costs (i.e., direct costs, indirect costs and capital expenditures) of a given service. Costing is a management and policymaking tool that helps to answer questions like:

- What is the full cost of collecting and disposing of trash in your community? How much does it cost to provide fire protection?
- What would it cost to increase service levels? How much could be saved by reducing services?
- If you charge fees for municipal services, what percentage of the cost of service do they cover? Under what circumstances fees should be increased?
- Could some municipal services be provided more efficiently by private firms?

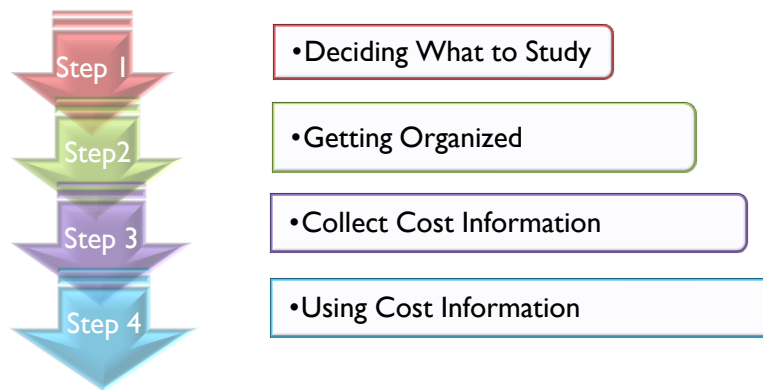
The purpose of costing a service is not simply to collect data, but to provide municipal managers and officials with information they can use to make management and budgetary decisions such as the following.

- Determine the full cost of providing a service
 - Determine direct and indirect costs
 - Determine operating subsidies from the tax levy
- Analyze the efficiency of a service
- Set fees and charges that will recover costs
- Establish process for annual review of revenues, costs and fees

Costing differs from traditional municipal budgeting and accounting in three ways:

1. Costing looks at the **cost of all resources** used to provide services rather than expenditures made to operate municipal departments;
2. Costing includes **all** costs of providing a service, not just those found in the budget or financial reports of the department responsible for the service;
3. Costing focuses on the **cost** of the resources used to provide a service **during a given period of time**, regardless of when cash disbursements are made to purchase these resources.

The costing process has four major steps, each of which is explained by a series of questions and answers.



Asset Management

In infrastructure systems, such as water and wastewater systems, an "asset" is a component of a facility with an independent physical and functional identity and age (e.g., pump, motor, sedimentation tank, main). The renewal and replacement of these assets is a constant and ongoing task. Asset management is an approach which has gained recognition all across the world—and across all infrastructure heavy sectors—for its effectiveness in maximizing the value of capital as well as operations and maintenance expenditures.

Asset management is also used in other sectors where infrastructure needs to be managed for the long term, such as in the transportation and housing sectors. Some leading communities are adopting cross-sector asset management programs where infrastructure investments are coordinated and prioritized holistically across the different infrastructure areas.

Asset management is a framework being widely adopted as a means to pursue and achieve sustainable infrastructure. It is the practice of managing infrastructure capital assets to minimize the total cost of owning and operating them while delivering the desired service levels. Asset management can assist communities to maintain a desired level of service for each asset at the lowest life-cycle cost. Lowest life-cycle cost refers to the best appropriate cost for rehabilitating, repairing or replacing an asset. A high-performing asset management program incorporates detailed asset inventories, operation and maintenance tasks, and long-range financial planning to build system capacity, and it puts systems on the road to sustainability.

Each utility is responsible for ensuring that its system stays in good working order, regardless of the age of components or the availability of additional funds. Asset management programs with good data—including asset attributes (e.g., age, condition and criticality), life-cycle costing, proactive operations and maintenance (O&M) and capital replacement plans based on cost-benefit analyses—can be the most efficient method of meeting this challenge.



EXAMPLE INDUSTRY DEFINITION FOR ASSET MANAGEMENT:

A management paradigm and body of management practice applied to the entire portfolio of infrastructure assets at all levels of the organization seeking to minimize the total costs of acquiring, operating, maintaining and renewing assets:

- Within an environment of limited resources
- While continuously delivering the service levels customers desire and regulators require
- At an acceptable level of risk to the organization

While there is a wide range of benefits that can be achieved through asset management, here are some examples of outcomes that can be realized:

- Prolonging asset life and aiding in rehabilitation, repair and replacement decisions through efficient and focused operations and maintenance
- Meeting consumer demands with a focus on system sustainability
- Setting rates based on sound operational and financial planning
- Budgeting focused on activities critical to sustained performance
- Meeting service expectations and regulatory requirements
- Improving responses to emergencies
- Improving the security and safety of assets
- Reducing overall costs for both operations and capital expenditures

Asset management is centered on a framework of five core questions, which provide the foundation for many asset management best practices:

1. What is the current state of my assets?
2. What is my required "sustainable" level of service?
3. Which assets are critical to sustained performance?
4. What are my minimum life-cycle costs?
5. What is my best long-term funding strategy?

Asset management is a scalable approach that can be implemented by systems of any size. Whether running a small drinking water system serving 50 customers or the transportation systems of the largest cities, asset management provides the means to put in place a long-term plan that will sustain these systems and the services that they provide.

Capital Improvement Plans & Community Facilities Plans

With ongoing needs to acquire, build and/or replace capital assets and infrastructure, it is best to establish a plan that will operate within the community's resources. A capital plan should include the following.

- Define expenditures considered capital requests
- Prepare an inventory of capital needs and update annually
- Prioritize these capital needs using established criteria
- Present a comprehensive capital budget and multi-year capital program annually
 - Inform the public about the community's capital needs
 - Propose method of payment (current revenue, available reserves, debt or debt excluded from the limits of Proposition 2½)
 - Identify deferred maintenance due to financial constraints

The Department of Revenue's Division of Local Services developed a manual to assist Massachusetts municipalities in carrying out their responsibilities in planning, financing and implementing capital improvements. According to the manual, a capital improvements program (CIP) is "a blueprint for planning a community's capital expenditures and is one of the most important responsibilities of local government officials". A CIP coordinates community planning and financial capacity as well as physical development.

A capital improvements program is composed of two parts -- a capital budget and a capital program. The capital budget is the upcoming year's spending plan for capital items (tangible assets or projects that

cost at least \$10,000 and have a useful life of at least five years). The capital program is a plan for capital expenditures that extends five years beyond the capital budget.

A complete, properly developed CIP has the following benefits:

- Facilitates coordination between capital needs and the operating budgets.
- Enhances the community's credit rating, control of its tax rate, and avoids sudden changes in its debt service requirements.
- Identifies the most economical means of financing capital projects.
- Increases opportunities for obtaining federal and state aid.
- Relates public facilities to other public and private development and redevelopment policies and plans.
- Focuses attention on community objectives and fiscal capacity.
- Keeps the public informed about future needs and projects.
- Coordinates the activities of neighboring and overlapping units of local government to reduce duplication.
- Encourages careful project planning and design to avoid costly mistakes and help a community reach desired goals.

LONG-TERM PLANNING

Good planning methods promote efficient and effective municipal spending by providing a framework to focus financial and staff resources where they are most needed. These methods facilitate the sustainability of municipal infrastructure which, in turn, maintains a certain level of provided services.

Methods for planning and defining municipal infrastructure needs have been identified as a useful best practice for achieving sustainable infrastructure. Planning for, and defining, infrastructure goals can assist in coordinating infrastructure needs and municipal finance priorities. Integrated planning can shape and influence the plan for optimal rehabilitation of infrastructure. Planning and defining methods can also manage the demand on infrastructure through the establishment of good programs to change user behavior (i.e., promoting alternative transportation such as public transit, cycling, or rail to manage road infrastructure demand, or water conservation programs to manage water demand).

Good planning methods promote efficient and effective municipal spending by providing a framework to focus financial and staff resources where they are most needed. Long-term planning is an important component to facilitate the sustainability of municipal infrastructure which, in turn, maintains a certain level of provided services. The key to successful long-term planning includes developing, analyzing, communicating and presenting the needs for infrastructure and integrating them within all aspects of municipal decision making. Therefore, it is necessary to incorporate economic, social and environmental considerations into the long-term, strategic planning for infrastructure.

Educate the Public

Many municipalities have realized the added value in public participation in decision making through committees, workshops, surveys and other avenues of involvement, which leads to increased awareness of municipal responsibilities and support of municipal goals. Municipalities are doing this to varying degrees, which may be partly in response to an identified need by the public for municipal government transparency and accountability in decision making.

Shared Services, Consolidation, Regionalization & Privatization

As the costs of government services soar faster than available revenues, local governments may struggle to provide essential services in their city or town. Engaging in collaborative activities can prove to be beneficial for cities and towns as they confront the challenges of maintaining critical services and managing limited resources. Regionalization offers a solution for how cities and towns can not only achieve economies of scale but also deliver local services more effectively and efficiently.

With 351 cities and towns spanning the Commonwealth, there are countless opportunities for municipalities to work together. Such collaboration can lead to benefits, including the preservation of important local services. The Report of the Massachusetts Regionalization Advisory Commission includes examples of existing successful collaborations, an analysis of the current status of regionalization in Massachusetts, and the status of regionalization in other select states. The report also offers a set of recommendations that, individually or collectively, will help municipalities move forward with new collaborations. While some recommendations may suggest little or no involvement outside of local government, some other recommendations may call for state government or other entities to act as a facilitator to develop intermunicipal partnerships across local services in the Commonwealth.



WHAT IS REGIONALIZATION?

According to the Report of the Massachusetts Regionalization Advisory Commission, “regionalization” is often applied to partnerships in a variety of forms that support local government service delivery. There are many partnership models: informal “handshake” arrangements between two or more municipalities, multiple municipalities partnering through more formal intermunicipal agreements with one city or town assuming a lead role, municipal and school district partnerships, “uploading” of local services to another level of government, full-scale regionalization of a local service, such as K-12 education, even state-assisted establishment of programs available to all municipalities through the state procurement system.

There are many benefits to regionalization and sharing services, including:

- **Increased cost savings:** The most recognizable benefit is the cost savings municipalities can achieve by regionalizing and sharing services. For example, a regular school transportation joint bid on behalf of multiple school districts could result in savings of hundreds of thousands of regional school transportation costs over the course of the current contract terms. This project has also realigned the contracts of all participating districts so that a single joint bid can yield more savings in coming years.
- **Greater access to basic, professionalized and specialty services:** Regionalizing library services, for example, could result in benefits such as increased access to professional staff in specialized fields such as a children’s librarian or reference librarian. In some cases, regionalizing library services may lead to greater access for general library services if such services are limited in a small community. For example, the Town of Washington does not have a public library; however, through a signed, written agreement, Washington will purchase public library service for its residents from the neighboring Town of Becket.
- **Municipalities can more easily meet their mandated responsibilities:** As cities and towns struggle with the impacts of revenue loss and increased service responsibilities, there is a growing interest in the potential benefits of public health regionalization. Regionalization has been identified as a

solution for helping local boards of health meet the mandated responsibilities of performing critical duties related to the protection of public health, such as a coordinated, professional response to providing H1N1 vaccinations.

Overcoming challenges and obstacles that may impede municipalities from collaborating can encourage regionalization in Massachusetts. The significance of each of the obstacles varies, as do the methods of removing them. Some of the more notable obstacles and barriers include:

- **Human resources:** Cities and towns may be challenged by issues related to human resources within their local departments. Some issues may include how to reconcile civil service status, seniority, or benefits between cities and towns that want to consolidate or share services. These issues are not exclusive to union employees.
- **Cost to conduct feasibility:** In order to consider regionalizing local services, cities and towns may have to conduct a feasibility study just to determine the potential benefits of a shared service or regional function. However, though this analysis is necessary to determine whether or not a particular regional initiative is feasible, municipalities do not have the financial resources available to conduct this analysis.
- **Financial resources:** Some municipalities do not have the financial resources available to cover the up-front costs associated with collaboration or service sharing. Sometimes municipalities will not see an immediate return on their investment. These financial dynamics may impede municipalities from entering into collaborations.
- **In 2001,** County voters rejected a council of governments structure to replace the obsolete county government which would have enhanced mechanisms for regional service delivery. With that rejection, each municipality usually provides all services to their residents. While retaining all control locally, that leads to increased service inefficiencies and resulting higher taxes.

Most opportunities for regionalization follow a confluence of events that in many ways force cities and towns to consider sharing services. Among these events are reduced revenues, increased demand for services, and rising costs. However, several “stand alone” opportunities for regionalization include:

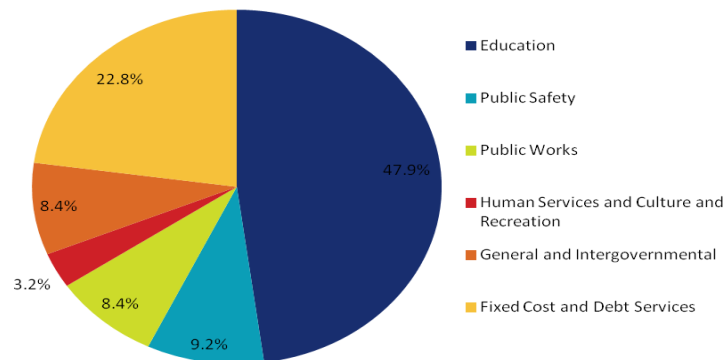
- **Immediately regionalize new programs as they emerge:** Upon creating a program, there is an opportunity to structure the program so that it encourages regionalization. A new program like the Green Communities Program can be crafted with the intent for municipalities to regionalize, therefore eliminating the potential barriers inherent in previously existing programs and services
- **Taking advantage of expiring contracts:** If neighboring municipalities face expiring contracts then the timing presents a great opportunity for the municipalities to work together on a new contract. For example, Quincy, Braintree, and Weymouth joined forces to increase their negotiating power when they engaged in the procurement of solid waste collection services. By entering into a shared contract, all three municipalities enhanced their revenue stream from recycling and scrap metal beyond what they could have achieved on their own and benefited from price stabilization through a nine-year contract.

BUDGETING

Since the passage of Proposition 2½ in 1980, municipal budgeting in Massachusetts has been revenue driven. This means that the ability to maintain or increase a community's level and/or quality of services is dependent on its revenues and careful planning. Therefore, at the start of the annual budget process, a community should review its four major revenue sources — tax levy, state aid, local estimated receipts and available funds — before entertaining departmental spending requests.

While some people see signs that the economy is beginning to recover on the national level, most economists agree that local jurisdictions are still in decline and will continue to be so, at least in the short term. County and municipal budgets tend to lag behind the general economy and continuing foreclosures are slowing the recovery of property tax revenues, which are the backbone of local agency funding. Faced with these budget realities, the current model for service delivery—which has been with us for the last 50 years—is already starting to change, and will be forced to continue to change dramatically and rapidly in the next 3–5 years.

Figure IS5: Average Berkshire County Municipal Budget Breakdown



Source: Massachusetts Department of Revenue, 2012

Traditional Approaches

Municipal Levy Limits

Raising the tax levy to the full levy limit rather than leaving excess levy capacity is a strategy for raising revenue that must be considered. The levy amount, which is the amount a community can raise through the property tax, can be any amount up to the levy limit. It is important to note that as long as a community levies no more than its levy limit, there is no restriction on the dollar increase or percentage increase in its levy from year to year. Proposition 2½ restricts increases in the levy limit, not the levy. A community is permitted to tax up to its levy limit, even if it must raise its levy by a large percentage over the previous year's levy. Communities with excess capacity may wish to consider increasing the tax levy to the full levy limit in order to raise additional funds to maintain important municipal infrastructure. However, before giving serious consideration to raising the levy limit, communities may also wish to consider whether their residents are tax burdened. For the purposes of this plan "tax burdened" is defined by calculating the percent of median household income that is spent on property tax and comparing with statewide averages. Based on data collected as of the writing of this plan, few communities in the region have significant excess

capacity. In some communities that have excess capacity an increase in the levy limit would result in tax burden or would result in an increased tax burden on an already burdened community.

User Fees

As a result of recent fluctuations in state aid and the depletion of local reserves, communities have become more aware of local receipts as a source of needed funds. Local receipts include a variety of excises, user fees, charges, and other revenues. Some are dictated by statute (i.e., motor vehicle excise, hunting license and firearms permits) while others may be negotiated (i.e., investment income and in-lieu-of-tax payments). Still other local receipts are established through the adoption of an ordinance or bylaw. However, among all categories, user fees typically offer communities the greatest potential for revenue gain.

A fee is an amount charged for a service to individuals who use or benefit from it. A fee may be imposed when a local government provides a particular service (i.e., police detail) issues a permit or license (i.e., building permit, dog license), or offers a benefit (i.e., recreational programs).

Much of the legal authority for specific municipal fees is found in MGL Ch. 140. However, absent statutory authority, municipalities can still establish fees and charges as long as the three-prong test set out in *Emerson College v. Boston*, 391 Mass. 415 (1984) is met.

- A fee must be charged for a particular service which benefits the party paying the fee in a manner not shared by other members of society. In other words, a fee may not be charged for general services that are mandatory or supplied to the public at large, such as police protection.
- A fee must be paid by choice, that is, the person paying the fee must have the option of not utilizing the service, thereby avoiding the charge.
- A fee must be collected not to raise revenues, per se, but to compensate the governmental entity for its expenses in providing the services. This has been interpreted to mean that a fee cannot exceed the cost to provide the service that is provided.

As a practical matter, local officials are faced with many considerations when deciding whether or not to implement or increase fees. These include, but are not limited to, the legal authority (e.g., general laws, special legislation and home rule powers) to charge a fee, the attitudes of citizens and political leaders towards fees, and the cost. To start, before proposing new local charges or increases, a community should review its current user fees in accordance with formal guidelines.

Dedicated Accounts

State and local governments use three broad categories of funds: *governmental* funds, *proprietary* funds and *fiduciary* funds.

Governmental funds include the following.

General fund. This fund is used to account for general operations and activities not requiring the use of other funds.

Special revenue (or *special*) funds are required to account for the use of revenue earmarked by law for a particular purpose. State and federal fuel tax revenues require special revenue funds, because federal and state laws restrict these taxes to transportation uses.

Capital projects funds are used to account for the construction or acquisition of fixed assets such as buildings, equipment and roads. Depending on its use, a fixed asset may instead be financed by a special revenue fund or a proprietary fund. A capital project fund exists only until completion of the project. Fixed assets acquired and long-term debts incurred by a capital project are assigned to the government's *General Fixed Assets* and *Long-Term Debts*.

Debt service funds are used to account for money that will be used to pay the interest and principal of long-term debts. Bonds used by a government to finance major construction projects, to be paid by tax levies over a period of years, require a debt service fund to account for their repayment. The debts of special assessment and proprietary funds are serviced within those funds, rather than by a separate debt service fund.

Special assessment funds account for public infrastructure improvements financed by special levies against property holders. Sidewalk and alley repairs often rely on special assessments.

Proprietary funds include the following:

Internal service funds are used for operations serving other funds or departments within a government on a cost-reimbursement basis. A printing shop, which takes orders for booklets and forms from other offices and is reimbursed for the cost of each order, would be a suitable application for an internal service fund.

Enterprise funds are used for services provided to the public on a user charge basis, similar to the operation of a commercial enterprise. Water and sewage utilities are common examples of government enterprises.

Fiduciary funds are used to account for assets held in trust by the government for the benefit of individuals or other entities. An employee pension fund, created to provide retirement benefits for its employees, is an example of a fiduciary fund. Financial statements may further distinguish fiduciary funds as either *trust* or *agency* funds; a trust fund generally exists for a longer period of time than an agency fund.

Enterprise Funds

The enterprise fund statute, M.G.L. c.44, § 53F½, was initially enacted in 1986. Before then, communities used special revenue funds authorized by various general laws or special acts to separately account for their business type services. These special revenue funds were limited, however, with regard to the services and costs covered. The funds were most commonly authorized for water, gas and electric utility departments and used primarily to account for annual operating costs, not the indirect costs, capital improvements or fixed assets of the service. Only Massachusetts cities and towns may adopt an enterprise fund pursuant to M.G.L. c.44, § 53F½. Regional school, vocational-technical school and/or special purpose districts may not adopt an enterprise fund, unless permitted by special legislation.



WHAT IS AN ENTERPRISE FUND?

An enterprise fund gives communities the flexibility to account separately for all financial activities associated with a broad range of municipal services. It establishes a separate accounting and financial reporting mechanism for municipal services for which a fee is charged in exchange for goods or services. Revenues and expenses of the service are segregated into a fund with financial statements separate from all other governmental activities. (See Uniform Massachusetts Accounting System (UMAS) chapter 12 for more information including illustrative journal entries).

Enterprise funds may be established, “for a utility, health care, recreational or transportation facility.” A community may not establish enterprise funds for normal government operations or services such as public safety, inspectional services or cemeteries.

Advantages of an enterprise fund include that it:

- Identifies a total service cost – Consolidating direct operating, direct capital, and indirect costs (e.g., enterprise-related costs appropriated in the General Fund operating budget) helps a community to readily identify a total service cost and determine funding sources. The total service cost may also include a subsidy from the General or other fund or a reimbursement from the enterprise fund to other funds for subsidized costs incurred in the two full, immediately prior fiscal years.
- Provides useful management information – Consolidating revenues, expenses and operating performance of the fund provides a community with useful decision making information regarding user charges and fees and a subsidy if necessary. The community can also include the enterprise fixed assets and infrastructure as assets and recognize the annual depreciation of these assets in audited financial statements.
- Retains investment income and surplus – All investment earnings and any operating surplus (actual revenues in excess of estimates and appropriations in excess of expenses) are retained in the enterprise fund rather than closed to the General Fund at fiscal year-end. Surplus certified by the Director of Accounts as available is called “retained earnings”. Retained earnings require appropriation by the community’s legislative body and have certain other use restrictions as will be noted in these guidelines.

Non-traditional Approaches

Community Preservation Act (CPA)

The Community Preservation Act (CPA) is a smart growth tool that helps communities preserve open space and historic sites, create affordable housing, and develop outdoor recreational facilities. CPA also helps strengthen the state and local economies by expanding housing opportunities and construction jobs for the Commonwealth’s workforce, and by supporting the tourism industry through preservation of the Commonwealth’s historic and natural resources.

Municipalities must adopt CPA by ballot referendum. CPA allows communities to create a local Community Preservation Fund for open space protection, historic preservation, affordable housing and outdoor recreation. Community preservation monies are raised locally by cities and towns through the imposition of a surcharge of not more than 3% of the tax levy against real property or by cities allocating funds.

The CPA statute also creates a statewide Community Preservation Trust Fund, administered by the Department of Revenue (DOR), which provides distributions each year to communities that have adopted CPA. These annual disbursements serve as an incentive for communities to pass CPA.

Each CPA community creates a local Community Preservation Committee (CPC) upon adoption of the Act, and this five-to-nine member board makes recommendations on CPA projects to the community’s legislative body.

Property taxes traditionally fund the day-to-day operating needs of safety, health, schools, roads, maintenance, and more. But until CPA was enacted, there was no steady funding source for preserving and improving a community's character and quality of life. The Community Preservation Act gives a community the funds needed to control its future.

Green Communities

In 2008, Massachusetts enacted the Green Communities Act (S.B. 2768) and created the Green Communities Division within the Department of Energy Resources (DOER) to support Massachusetts communities towards a sustainable future, specifically in terms of energy use.

The Green Communities Division offers educational, technical, and networking support to the states' communities. In addition, they provide financial incentives. The Green Communities Grant Program offers funding for communities investing in energy efficiency upgrades and policies, renewable energy technologies, energy management systems and services, and demand side reduction programs.

To be eligible, communities first must apply for and achieve official designation as a "Green Community." The basic steps required for this designation include:

- Stipulate "as-of-right" siting for renewable energy (or alternative energy) generation, manufacturing, or research and development (via ordinance)
- Provide for expedited application and permitting processes for those facilities sited in "as-of-right" designated locations
- Reduce energy use by 20% in 5 years
- Adopt a policy and procure only fuel-efficient vehicles
- Establish requirements to minimize life-cycle energy costs for new construction (suggested route for achieving this step is via adoption of "Stretch Code." See the program website for more information).

The Green Communities Division provides several model ordinances and guides and is staffed with energy experts to help communities take these steps to earn designation. As of September 2012, there are 103 officially designated Green Communities in Massachusetts. At the time of designation, the Green Communities Division will inform municipalities of its grant amount, which is based on the available funds, number of applications and a grant formula. Then, the Green Community is invited to submit a grant application for the grant amount.

Stormwater Utility

Massachusetts municipalities are authorized under Massachusetts General Laws to establish a stormwater management authority, empowering them to charge fees to property owners, just as traditional utilities are allowed to charge fees for electricity, drinking water, and sewer services (MGL Chapter 40 Section 1A, Chapter 40A Section 5, Chapter 44 Section 53F-1/2,



WHAT IS A STORMWATER UTILITY?

A stormwater utility, operating much like an electric or water utility, may collect fees related to the control and treatment of stormwater that can be used to fund a municipal stormwater management program.

and Chapter 83 Section 16). The concept of establishing a drainage service fee, whether administered under a new stormwater utility entity or existing department, has proven to provide a stable and equitable source of financing for stormwater programs.

There are three basic methods that stormwater utilities use to calculate service fees: equivalent residential unit (ERU), intensity of development (ID), and equivalent hydraulic area (EHA). These are sometimes modified slightly to meet unique billing requirements. Impervious area is the most important factor influencing stormwater runoff and is therefore a major element in each method.

OPPORTUNITIES AND CHALLENGES

Expense to Maintain and Operate Existing Infrastructure and Provide Services

Changing Regulations, Requirements and Technologies

How do we pay for the upgrades that come with changing regulations, requirements and technologies? Many communities are struggling to pay for infrastructure upgrades that are required by state or federal laws and regulations. Our communities struggle to keep up with new technologies simply because of the hefty price tag that is associated with them. Despite the potential benefits arising from advances in technology, new requirements are at times driven by these same technological advances and communities are hard pressed to keep up with the associated costs.

Preventative Maintenance vs. Rehabilitation

Some communities struggle to conduct routine and preventative maintenance or scheduled infrastructure upgrades because much of the budget and manpower is focused toward larger rehabilitation or emergency projects. Rehabilitating infrastructure, such as roads, needs to be balanced with capital routine and preventative maintenance proactively through budgeting and planning. The longer infrastructure goes without routine and preventive maintenance measures the less likely it is that preventive maintenance will remain a valid option. As time goes by, more and more of the infrastructure will need more extensive rehabilitation. Unfortunately, many of our communities have limited budgets and are unable to get ahead with preventative maintenance and, in some cases, keep up with routine maintenance. Instead, each year limited funds must be allocated to the infrastructure that is in the most desperate need for repair. These repairs are typically costly since limited or no preventative maintenance could occur prior to the infrastructure moving to the top of the list for rehabilitation. In other cases, the squeaky wheel gets the grease. Many communities can only afford a combination of one or two large rehabilitation projects combined with routine (not preventative) maintenance.

Climate Change

Climate change is resulting in more frequent, higher intensity storms, more flooding related damages, more ice damage, increased frequency of power outages, more frequent high heat days, and potential unknown impacts. The full extent of the impact of climate change remains to be seen. However, the region has already felt the impact of more frequent severe storms causing flooding and road/bridge/culvert washouts. Many of our communities that were already struggling to keep up

with routine maintenance and one or two rehabilitation projects a year are now addressing blown out culverts, bridges with scour damage, and damaged roads, etc. In some cases, the same culvert has blown out on multiple occasions. These issues are exacerbated by limitations in funding, particularly when funding only allows for replacement “in-kind”, as well as sometimes challenging permitting requirements. Many of our communities would like to be more proactive to address the potential effects of climate change before infrastructure fails. How is this accomplished?

Prohibitive Expense Associated With Extending or Expanding Infrastructure and Services

Capital Budgets/Enterprise Funds/Revenue

Some of our communities have added sewer lines, especially around the lakes. Are there other communities that would like to add/expand infrastructure, such as adding/extending sewer or water or taking ownership of private roads, but don't have a funding mechanism for these larger projects? Many communities are not able to conduct long term planning for capital projects and have not established enterprise funds with reserves for maintenance.

Many communities have been financially strapped for a number of years. Each budget season they are faced with the dilemma of whether they will need to make tough choices such as cutting teachers, police officers or firefighters. In these times where finances are already tight, will finances get even tighter with a declining population and the potential loss of commercial, manufacturing, and infrastructure as a result of the declining population?

GOALS, POLICIES, AND STRATEGIES

GOAL IS1: Ensure that long-term planning initiatives include the maintenance, operation and eventual replacement of existing infrastructure.

Policy IS1.1: Engage in a proactive planning process in all aspects of infrastructure planning including both new development and routine maintenance.

Strategy A: Institute Proactive Asset Management Programs

Municipal and regional goals of establishing and delivering certain levels of service may be achieved through effective and sustainable management of the varying infrastructure systems. Developing a proactive long-term plan for infrastructure asset management can result in a sustainable system ensuring the well-being of the community, environment and future generations. The general scope of such an asset management plan consists of three major items:

- Assessment of the existing assets (i.e., roads, culverts, pipes, etc.),
- Evaluation of levels of service the asset will meet, and
- Summary of efforts necessary to meet the desired level of service.

Following the completion of these items, a Capital Improvement Plan can be developed and life-cycle cost and benefit-cost analyses can be utilized during project planning. An asset-based analysis can also quantify the gap between projected needs and revenues.

Strategy B: Understand the True Cost of Services

Fully understand the true cost of services, as well as existing and potential sources of revenue to meet these costs. Understanding the true cost of services can inform the budget process, establish

user fees, and support grant funding efforts. It can also help to constrain demand for services, allocate scarce services, and signal when the value of a service is such that new investment is warranted.

Strategy C: Adopt Community Facilities Plans and Capital Improvement Programs

Adopting both Community Facilities Plans and Capital Improvement Programs can be a critical part of the process of understanding the long-term facilities needs across all municipal functions and true cost of services and can help to establish a long term budget projection.

Strategy D: Plan Ahead in Response to Changing Environmental Conditions

- Plan ahead in response to changing environmental conditions to lessen financial losses and property damage incurred by municipalities, businesses and private citizens.
- Identify and prioritize improvements of road crossings most vulnerable to flooding in an effort to reduce the impacts of severe storm events. Improve the response and repair of damaged road crossings during and after severe flood events so that repair work is conducted in a manner that reduces the risk of future flood damage while also protecting ecosystem function and wildlife movement. This requires improved communication between FEMA, MEMA, DEP, DOT and local officials. This includes the establishment of clear guidelines that local DPWs should follow regarding pre-disaster planning and post-disaster reporting and construction.
- Prioritize culvert and bridge projects which include proper sizing of stormwater systems in regional transportation funding decisions.

Strategy E: Establish Dedicated Maintenance and Replacement Accounts for Infrastructure Projects

Future maintenance costs, as well as eventual replacement costs, must be considered when planning rehabilitation, replacement, expansion and new development. However, consideration alone is not enough. Mechanisms to support the costs of maintenance need to be established.

The Boston Society of Civil Engineers (BSCES) worked with local stakeholders to identify the Commonwealth's infrastructure needs and develop specific Action Steps outlined in the report "Raising the Grade in Massachusetts". In order to succeed in Raising the Grade in Massachusetts, BSCES identified actions that must be taken to change the current mindset in the planning, design, and funding of our infrastructure. Establishing dedicated maintenance accounts is an action step outlined in the report and can be conducted at the regional and local level.

GOAL IS2: Ensure that the maintenance and operation of existing infrastructure occurs in the most cost effective way possible and that the expansion of new infrastructure does not impose an undue financial burden on governmental resources and taxpayers.

Policy IS2.1: Encourage different ways of providing municipal services where it will lead to cost savings, efficiencies and/or more sustainable and natural use of resources, such as appropriate regionalization and consolidation.

Strategy A: Educate the Public on the True Value and Cost of Services

Educate the public on the true value and cost of services, and the need for adequate funding.

Understanding the true cost of services can inform the budget process and result in greater acceptance of user fees. It can also help to constrain demand for services, allocate scarce services, and signal when the value of a service is such that new investment is warranted.

Strategy B: Educate Communities about and Further Utilize the Mutual Aid Model

Educate communities about and further utilize the Mutual Aid model including investigating extending the model to additional services. Massachusetts has adopted an opt-in format for its statewide mutual aid law. Once a community has opted in they can send and/or request assets from any other community within the Commonwealth that has also opted into the agreement. This agreement answers questions surrounding liability, workers compensation, payment for use of resources etc. This agreement can be activated for any public safety incident/event.

In addition, the Public Works Mutual Aid Agreement is very similar to the Statewide Mutual Aid Agreement; however it does differ in three areas. The first is that it can be used for everyday use. The second is that there is an advisory board to answer questions. The third is that it can be used out of state as long as the communities are contiguous to a Massachusetts community that has opted in.

Strategy C: Expand the Regional Group Purchasing Program

The regional group purchasing program leverages the purchasing power of the participating municipalities to obtain discounts from vendors based on the collective buying power of the members. Members participate based on their purchasing needs and their level of confidence in what should be competitive pricing negotiated through group purchasing. Consideration should be given to consolidating the municipal group purchasing program and that used by schools in the region, and expanding these to include group purchasing for special public districts in the region. Expanding the scope of Regional Group Purchasing should be investigated, including for school transportation services, energy, information technology, and a wide variety of supplies and equipment which are commonly used across all local governments, public schools, and special districts.

Strategy D: Explore Cost Savings through Shared Services and Equipment

There are numerous examples of municipalities across the nation exploring the sharing of public works equipment. There are established protocols for the sharing of certain types of equipment, without cost to the borrowing municipality. Safeguards are in place to ensure the proper use of the equipment and to cover accidental damages, but the basic concept is that the benefits of sharing equipment outweigh the risks and that all participating communities will ultimately benefit through the savings that will be realized by not purchasing or leasing equipment.

There are three basic options open to local government for the sharing of services/ personnel. These include the sharing for a fee of current, full-time or part-time personnel; the joint contracting of personnel; and/or the issuance of a shared Request for Proposal for services.

Strategy E: Refine the Message about the Option to Consolidate Services and/or Districts

- Refine the message about consolidation of services and/or districts to address negative perceptions and reduce the fear of the unknown.
- Repetitive education for select boards.
- Consider a pilot consolidation project that can be used as a model for success.

Strategy F: Explore the Potential to Privatize Functions of Municipal Government

Privatization can come in multiple forms including the creation of special districts or subcontracts for services provided by private entities. Special districts should be carefully considered to insure that inefficiencies do not result and that the lines of communication between the district and the municipality remain open. Subcontracting with a private entity allows the municipality additional

control as the private entity provides services to the municipality and the municipality then passes the services on to the user rather than the private entity engaging directly with the user.

Strategy G: Consider Purchasing Streetlights from the Utility

Consider purchasing streetlights from the utility as allowed under MGL C.164 s.34A. When streetlights are owned and maintained by the electric utility, cities and towns are paying not only for the power to light the lights, but also for maintenance and upkeep of the lights, as well as rental costs for the utility poles on which the lights are located. Municipalities currently pay the utility company a standard rate (tariff) that includes the price of the lighting service and power costs, set by the Department of Public Utilities. Owning the streetlights can trim some of that cost. Municipalities can reduce street lighting costs by purchasing the lights from the utility company at a price equal to the cost of the lighting minus any depreciation. An alternative tariff is set without the fixture service costs and with different rates for different types of lighting, including newer, more energy efficient lights. In 2013, approximately 70 communities in Massachusetts have already purchased their street lights and have seen savings of between 15 and 70 percent on their lighting costs.

Strategy H: Explore Green Communities Designation

Explore opportunities for cost savings through increased energy efficiency including the Green Communities designation. The Green Communities Designation and Grant Program has helped 110 cities and towns earn Green Community designation. Once designated as a Green Community, communities are eligible to seek state grants. By 2013, more than \$20 million dollars from Green Community grants has been awarded to those 110 communities. In addition to receiving eligibility for state grants, the energy activities conducted by Green Communities can reduce municipal costs by reducing energy use in municipal and school buildings, establishing power purchase agreements that enable financially attractive renewable energy generation, and adopting the latest building codes.

Strategy I: Create Metrics for Efficiency in Various Categories of Municipal Spending

Performance metrics measure an organization's activities and performance. A performance metric is that which determines an organization's behavior and performance. It should support a range of stakeholder needs from citizens to employees. While traditionally many metrics are finance based, inwardly focusing on the performance of the organization, metrics may also focus on the performance against customer requirements and value. Developing performance metrics usually follows a process of establishing critical processes/customer requirements, identifying specific, quantifiable outputs of work, and establishing targets against which results can be scored.

Policy IS 2.2: Fully utilize sources of revenue available through traditional funding resources.

Strategy A: Investigate Potential User Fees

Investigate potential user fees to ensure that the cost of service is being met to the maximum extent possible. User fees for municipal services may generate revenue for municipalities and their utility commissions, but they are equally important as prices for those services. Pricing services based on the extent of usage and the costs that are associated with that usage can lead to efficient production and consumption of the service and efficient allocation of the service when capacity limits are reached. It can also help to guide investment on an efficient basis. Therefore, a first principle for efficiency in municipal services is to apply user fees that represent a price for incremental use of the service.

Policy IS 2.3: Support innovative and stable sources of funding to supplement traditional funding resources which have become limited or are no longer available.

Strategy A: Work Legislatively to Develop Modifications to Solve the Structural Financial Problems Confronting Local Governments Including Increases in Health Care Insurance, Unfunded Retiree Benefit Costs, Pension Costs, the Foundation Formula for Education and to Fully Fund Unfunded Mandates.

The solution to many of the financial problems facing municipalities will require a coordinated effort with state and federal legislators to change the “business as usual” approach to deal with new problems.

Strategy B: Work with the Federal and State Legislative Delegations for Increased Funding

- Work with the State legislative delegation and the administration to restore local side to 2001-2002 levels.
- Work with the Federal and State Legislative Delegations for increased funding for key infrastructure, energy, and sustainability accounts that can be used for maintenance of infrastructure.
- Explore maintaining and expanding all potential sources of revenue to keep up with current costs.
- Foster a partnership between public investment planning and implementation activities and the private sector.
- Explore tolls, VMT, fare increases, Public-Private Partnerships and a State Infrastructure Bank as potential sources of revenue.
- Fully fund the State Payment in Lieu of Taxes (PILOT) and Regional School Transportation programs and maintain a regular funding stream.
- Review various dedicated funding streams and specific state budget allocations, such as sales tax, to establish regional equity in allocation of state funds.
- Increase funding for the Massachusetts Drinking Water State Revolving Fund (SRF) and the Massachusetts Water Pollution Abatement Trust (MWPAT).
- Establish a new “Water Preservation Fund” or “Blue Communities Act” to provide a new sustained revenue stream to assist cities and towns in their water, waste water, and stormwater infrastructure investments.

Strategy C: Promote Local Option Sales Tax for Infrastructure Improvements

Promote legislation to allow a local option sales tax for infrastructure improvements. Thirty-seven states have some sort of sales tax sharing arrangement with their local governments. In thirty-two states it takes the form of a local general sales tax or local option sales tax (LOST). A LOST is typically a 1% tax added to the state sales tax that is subject to approval by local voters after it has been authorized by the state legislature. LOST revenue can be used for general or specific purposes and can go into the general fund or special revenue fund that is earmarked for limited purposes.

Massachusetts is one of fourteen states that do not have a local general tax on retail items.

Massachusetts allows very little “add on” sales tax revenue to be collected at the local level through local option sales taxes. While the Commonwealth does allow for selective sales tax on restaurant meals and accommodations these local option revenues do not make up for local aid cuts in the budget, and create serious disparities between municipalities based on the number of restaurants and hotels within their borders.

Strategy D: Implement the Transportation Finance Recommendations of the 2012 Berkshire Regional Transportation Plan

The 2012 Berkshire Regional Transportation Plan contains eight recommendations regarding transportation finance, including replacing the fixed per gallon gas tax, allowing local or regional sales taxes for transportation, “forward funding” the BRTA, work to receive equitable distribution of the

one cent statewide sales tax dedicated to the MBTA, exploring District Improvement Financing, reinstituting tolls on the Western Turnpike (accomplished in 2013), pursuing transportation financing from other federal sources, and seeking more federal investment in the Berkshires.

Strategy E: Assist Local Communities in Programming Funds for Local Street Improvements

Assist local communities in programming their own funds for local street improvements outside of the Federal-Aid program or System and advocate for additional Chapter 90 funds. Communities should establish pavement management systems to cost-effectively allocate road maintenance funding and should have asset management programs in place for all transportation infrastructure.

Strategy F: Explore District Improvement Financing (DIF)

Explore District Improvement Financing strategically for economic development including for transportation infrastructure projects. District Improvement Financing (DIF) is an economic tool that promotes redevelopment by use of public/private partnerships. DIF works by channeling tax dollars into targeted redevelopment districts.

A city or town wishing to utilize DIF must first designate a development district and a corresponding development program. The development program spells out the goals of the district and the means to achieve them. The program identifies such things as planned construction and planned infrastructure. Once a district and program have been certified, the city or town has the ability to use various tools to implement the program. These include acquiring land, constructing or reconstructing improvements (such as buildings, roads, schools and parks), incurring indebtedness and pledging tax increments and other project revenues for repayment of these debts.

DIF provides opportunities to redevelop areas in ways which can lead to increased property values, increased tax revenue, improved infrastructure, enhanced transportation services, increased housing supply, new jobs and an overall improvement in quality of life for the inhabitants of the city or town. DIF provides financial benefits to developers as well, by providing infrastructure and surrounding amenities to support their projects. Early public funding takes the initial burden off the developer and minimizes risk.

Strategy G: Explore the Community Preservation Act

Explore the Community Preservation Act as a mechanism to raise local funds and match them with dollars from the state Community Preservation Fund. The Community Preservation Act (CPA) allows communities to create a local Community Preservation Fund for open space protection, historic preservation, affordable housing and outdoor recreation. Community preservation monies are raised locally through the imposition of a surcharge of not more than 3% of the tax levy against real property, and municipalities must adopt CPA by ballot referendum.

The CPA statute also creates a statewide Community Preservation Trust Fund, administered by the Department of Revenue (DOR), which provides distributions each year to communities that have adopted CPA. These annual disbursements serve as an incentive for communities to pass CPA.

Property taxes traditionally fund the day-to-day operating needs of safety, health, schools, roads, maintenance, and more. The CPA generates additional funding specifically for community preservation and enables a community to dedicate the more traditional funding sources to day-to-day operating needs.

Strategy H: Create Regional Fund for Project Development

Create a regional project initiatives and design fund to develop projects far enough to be eligible and competitive for grants.

2. PROVIDING QUALITY INFRASTRUCTURE & SERVICES

Infrastructure and services are crucial to supporting various land use, neighborhood, economic development and open space initiatives. The health of an area is determined by its supporting infrastructure. All aspects from roads to public safety to education facilities need to be managed to meet the vision of creating a vibrant community with a high quality of life. Providing quality infrastructure and services is integral to meeting quality of life objectives. For the region to grow into a place of excellence for business and residents, it must provide safe, comfortable, and convenient ways to get around. As we strive toward providing the highest quality infrastructure and services it will be important to invest in the region and encourage the use of innovative approaches to improve management, reduce costs, leverage funding, and create jobs.

TRANSPORTATION

Transportation and land use strongly affect each other because transportation provides the ability to reach the different goods, services, activities and destinations associated with land uses. Transportation is integral to all of the other subjects covered in this Plan, such as our natural environment, our economy, where we live, and our quality of life. New and improved roads can make remote areas accessible and influence market factors to promote development. Transportation access is one of the most critical factors for new manufacturing and industrial plant locations. Local zoning controls and community character significantly influence demands for transportation. Individual mobility is essential for enhancing opportunities across all socio-economic profiles in our region. Overall, coordinating transportation and land use is essential to achieving regional and local quality-of-life standards.

A comprehensive, multi-modal Regional Transportation Plan (RTP) for Berkshire County was prepared in 2012 and will begin an update process in late 2014. The RTP's purpose is that various transportation projects are consistent with the area's overall development policies. Additionally, the projects within the RTP must be coordinated with one another to provide an effective and balanced transportation system which makes efficient use of available funds. The RTP considers both long-range, large-scale projects as well as short-range, lower-cost projects. The following summary focuses on transportation issues and policies. The complete RTP contains more detail, data, and analysis.

Transportation Goals and Objectives

Over the years, transportation goals and objectives for the Berkshires have evolved through a number of efforts by the BRPC and the Berkshire Metropolitan Planning Organization (MPO). There is generally widespread support and agreement for the goals of our transportation system as identified by the 2012 RTP. They include: Protect Sensitive Environments and Open Space; Preserve and Enhance Community Livability; Enhance Regional Economic Development; Promote Efficient Land Use Development and Transportation System Management; Maintain and Improve the Mobility and Accessibility of the Transportation System; and Improve Transportation Safety and Security.

Accomplishing these goals will require implementation of recommended initiatives called for in the RTP including enhancing transit service and extending service hours; providing adequate and sustainable

funding for local communities to maintain roads in a state of good repair; planning and construction of the Ashuwillticook rail trail extensions; increasing regional access to the Turnpike and other arterial highways that promote the economic development through freight and goods movement and tourism; re-establishing passenger rail service on the Housatonic rail corridor and enhancing existing east-west Amtrak service; and mitigating both environmental and climate change impacts on our transportation network.

Transportation Problems

Overall Problems and Approaches

There are, at any one time, a number of deficiencies or inadequacies of varying degrees in any transportation system. The Berkshire MPO is tasked with studies and attempts to resolve transportation deficiencies in order to achieve a safer, more efficient and convenient transportation system. The numerous existing problems and issues are grouped in the following way to assist in understanding the larger picture:

- Problems for Traffic
- Problems from Traffic
- Access Barriers for Economic Activity
- Personal Mobility Obstacles
- Inadequate Funding to Maintain or Improve Transportation Systems and Facilities

Problems for Traffic

There have been relatively few changes to the Berkshires' highway system since the mid twentieth century. Transportation, however, has changed a great deal over this time period. The changes include a significant increase in the number of cars available within households, and a continued increase in average daily vehicle miles driven through 2007, until peaking. Since peaking, vehicle miles traveled has remained level.

The lack of improvements to the overall transportation system and increase in traffic result in sporadic congestion and decreased reliability in travel times due to weather conditions or other unexpected delays. Congestion in the Berkshires is most noticeable in downtowns, such as Lee, Pittsfield, and Adams. Car and truck drivers experience delays due to the limits of road capacity, pedestrians, parked cars, sharp corners and areas without passing opportunities. Increasing roadway capacity in the region's downtowns is complicated and expensive because of existing development. Access management techniques like driveway consolidation and connecting parking areas can help preserve limited roadway capacity.

The mountains and valleys that make the Berkshires beautiful also make transportation difficult. Hills slow traffic and particularly for trucks. This is frustrating for truckers and also for drivers who cannot pass them. The overall impact of traffic congestion, limited roadway capacity, sprawling development, and topographic constraints is impaired access through and within the region, particularly for trucks.

Problems from Traffic

The residents and visitors to our downtowns experience negative impacts from the traffic in their communities. These main downtown streets are also state highways that carry the majority of the

region's traffic. Through traffic can create conflicts for local drivers, pedestrians, and bicyclists, whether pulling a car out of a driveway or trying to walk across a street.

Traffic impacts downtowns in several ways. Traffic can make walking or bicycling for short trips less feasible, unsafe and less pleasant. Traffic is noisy. Gas and diesel engines pollute the air. When traffic is perceived as a problem on main roads, knowledgeable drivers use alternate routes on residential neighborhood streets or local rural roads not intended for heavy use. Increased impacts from traffic, particularly an increase in truck traffic, should be anticipated.

Access Barriers for Economic Activity

The transportation network impacts the economy of the Berkshires in a number of ways. Existing businesses are negatively affected by sporadic traffic delays. Secondly, economic development prospects are discouraged from locating in the area because of limited access to the highway system. Manufacturers are discouraged by the limitations of the transportation system, most importantly the Berkshires' limited access to the interstate highway system (I-90) and other major regional arterials. Tourism is also negatively impacted as a result of congestion from weekend visitors during peak visitation periods like the 4th of July weekend and fall foliage season.

Personal Mobility Obstacles

The cost of owning and maintaining a personal vehicle is not within the means of many households in the Berkshires. For example, 18% of North Adams households do not own a vehicle. Hour-long fixed route headways and a limited fixed route network are symptoms of a transit service in need of additional funding to provide enhanced service and access. BRTA's hours of service are also limited so that night shift and weekend workers are unable to ride the bus to their place of employment. Increased hours of operation, flexible fixed route operations, paratransit to expand the service area, and Sunday operations are potential solutions to expand public transportation and provide personal mobility options should additional funding become available. In developing the next RTP, attention will be given to updating public transportation providers' capital and operating needs.

Inadequate Funding to Maintain or Improve Transportation Systems or Facilities

The 2012 RTP provides insight to the needed maintenance and improvements to transportation infrastructure in Berkshire County. Over \$2 billion is identified for new or reconstruction projects and approximately \$250 million is needed for repaving projects over the next 20 years. The funding needed to maintain or improve the roadways far exceeds what is provided. On an annual basis, Berkshire County is allocated \$6 million in federal funds and the state provides a total of \$8 million in Chapter 90 funds to our 32 communities for road projects. A portion of the state's sales tax (1%) collected from Berkshire County residents goes directly to MBTA. It is estimated that this 1% portion of the sales taxes equates to \$27 million annually. Directing this portion of the sales tax back to Berkshire County would provide an adequate and sustainable funding source. Other potential options include increases in both state and federal aid to our region, modifications to funding formulas to increase amounts available to localities and the MPO or increased use of innovative funding mechanisms such as TID's or other land value enhancement capture.

EDUCATION

A publicly provided K–12 education is a fundamental service provided by municipal government and the community is often quick to express outrage when they feel it is not being offered at an acceptable level of excellence. Although not often discussed as such, this outrage is generated in large part by concerns that have economic roots. Parents worry over the quality of the schools their children attend because a good primary and secondary education is essential to the success of their child's transition from high school to higher education or the labor market. Homeowners, even if they do not have children in public schools, are anxious about the quality of local public schools because they know the direct positive effect it has on the resale value of their property. Finally, business owners recognize that a quality K–12 education makes the workers they employ more productive.

POLICE, FIRE & EMERGENCY RESPONSE

Mutual Aid

In emergency services, mutual aid is an agreement among emergency responders to lend assistance across jurisdictional boundaries. This may occur due to an emergency response that exceeds local resources, such as a disaster or a multiple-alarm fire. Mutual aid may be ad hoc, requested only when such an emergency occurs. It may also be a formal standing agreement for cooperative emergency management on a continuing basis, such as ensuring that resources are dispatched from the nearest fire station, regardless of which side of the jurisdictional boundary the incident is on. Agreements that send closest resources are regularly referred to as "automatic aid agreements".

Mutual aid extends beyond local response. Massachusetts is among several states that have statewide mutual aid systems. The Commonwealth of Massachusetts has three types of mutual aid agreements: Intrastate, Interstate and International Agreements. All Mutual Aid agreements utilized by the Commonwealth fit into these three categories. There is also a statewide Fire Mobilization Plan to support firefighting efforts.

Massachusetts has adopted an opt-in format for its statewide mutual aid law. Once a community has opted in they can send and/or request assets from any other community with the Commonwealth that has also opted into the agreement. This agreement answers questions surrounding liability, workers compensation, payment for use of resources etc. This agreement can be activated for any public safety incident/event. The agreement is Massachusetts General Law Chapter 40 Section 4J.

Large municipalities typically have enough fire and emergency medical services resources to handle large local incidents. However, in the case of multiple alarm fires, mass casualty incidents (MCIs) or large-scale hazardous material incidents, that municipality may call in resources from surrounding towns to either respond directly to the incident scene or take up quarters in their fire and EMS stations and respond to other incidents in that city or town when local crews are handling a protracted incident.

Other agreements are common in small towns that have either no resources or limited resources. In these cases, local crews are capable of handling small incidents themselves, but in the case of larger incidents, surrounding municipalities will be called in along with the local resources upon initial dispatch. For instance, local fire and EMS departments will typically handle fire alarm activations and automobile

crashes while reports of structure fires will cause the automatic dispatch (automatic aid) of surrounding towns.

Volunteer Fire Departments

Career firefighters include full-time uniformed firefighters with paid benefits jobs as fire fighters. Volunteer firefighters include any active part-time (call or volunteer) firefighters. Volunteer firefighters may receive no pay at all, be paid on an hourly, or a per-call basis. Volunteer fire fighters typically have jobs and careers outside of fire fighting. Active volunteers are defined as being involved in fire fighting. According to the National Fire Protection Association US Fire Department Profile 2012, of the total number of firefighters in the nation 31% were career firefighters, while 69% were volunteers. Most of the career firefighters (72%) are in communities that protect 25,000 or more people. Most of the volunteers (95%) are in departments that protect fewer than 25,000 people and almost half are located in the small, rural departments that protect fewer than 2,500 people. In Berkshire County all of the communities maintain all volunteer fire departments except for the Cities of Pittsfield and North Adams and the Town of Lenox.

Since 1986, the number of career firefighters in the U.S. has gone up quite steadily from 237,750 in 1986 to 345,950 in 2012 for an overall increase of 45%. However when the rates of career firefighters per 1,000 people protected for mostly or all career departments are examined, the rates do not increase but stay in a range of 1.52 to 1.77 career firefighters per 1,000 people protected. Essentially what this means is that even though the number of career firefighters has gone up, the number of people protected by career firefighters has also gone up as the population in the U.S. has increased.

The number of volunteer firefighters in the US declined in the late 1980s and in early 2000s, each time returning to the same level soon after. In 2005-2009, the number of volunteer firefighters in the US was stable at a level slightly higher than any previously recorded. However in 2010-2012, the number of volunteers fluctuated and when the rates of volunteer firefighters per 1,000 people protected for mostly or all volunteer departments are examined, the rates show a downward trend.

US fire departments protecting less than 25,000 people had a wide range in median rates of volunteer firefighters per 1,000 persons, which reflects the fact that it takes a minimum number of firefighters to staff a department regardless of community size. Since volunteer firefighters are usually available on a part-time basis only, it takes more volunteers to ensure an adequate response to each alarm.

Departments that protect less than 25,000 people, and are comprised mostly of volunteers, tended to have an increase in the percentage of volunteer firefighters age 40 and up as the population decreased. In departments that protect fewer than 2,500 people, 33.9% of the volunteer firefighters were age 50 and up.

WATER, WASTEWATER & STORMWATER

Water

According to the Massachusetts Department of Environmental Protection (MassDEP), the public water supplies in Massachusetts are among the best in the country, and they are subject to the most stringent government standards in the world. To protect your health, both the U.S. Environmental Protection Agency (EPA) and MassDEP maintain exacting standards. MassDEP requires local water suppliers to

perform ongoing tests for the presence of bacteria, lead and other heavy metals, herbicides and pesticides, and industrial solvents. If testing reveals an exceedance of a federal standard, the water supplier is required to notify customers through local news media. If bacteria or chemicals are found in levels that pose a threat to public health, the water supply is treated to remove the contaminants or taken out of service if the problem can't be solved immediately.

Wastewater

Wastewater treatment plants range from small privately-owned facilities treating sanitary wastewater from a housing development to large regional facilities treating millions of gallons a day of sanitary and industrial wastewater. Plants owned by municipalities are commonly called Publicly-Owned Treatment Plants, or POTWs. In cooperation with local and federal authorities, MassDEP regulates many types of wastewater treatment plants.

Stormwater

Stormwater is rainwater and melted snow that runs off streets, lawns, and other sites. When stormwater is absorbed into the ground, it is filtered and ultimately replenishes aquifers or flows into streams and rivers. In developed areas, however, impervious surfaces such as pavement and roofs prevent precipitation from naturally soaking into the ground. Instead, the water runs rapidly into storm drains, sewer systems, and drainage ditches and can cause:

- Downstream flooding
- Stream bank erosion
- Increased turbidity (muddiness created by stirred up sediment) from erosion
- Habitat destruction
- Changes in the stream flow hydrograph (a graph that displays the flow rate of a stream over a period of time)
- Combined sewer overflows
- Infrastructure damage
- Contaminated streams, rivers, and coastal water

Traditional stormwater management design has been focused on collecting stormwater in piped networks and transporting it off site as quickly as possible, either directly to a stream or river, to a large stormwater management facility (basin), or to a combined sewer system flowing to a wastewater treatment plant.

Low impact development (LID) and wet weather green infrastructure address these concerns through a variety of techniques, including strategic site design, measures to control the sources of runoff, and thoughtful landscape planning. LID aims to restore natural watershed functions through small-scale treatment at the source of runoff. The goal is to design a hydrologically functional site that mimics predevelopment conditions. Wet weather green infrastructure encompasses approaches and technologies to infiltrate, evapotranspire, capture, and reuse stormwater to maintain or restore natural hydrologies.

The Public Works Mutual Aid Agreement

The Public Works Mutual Aid Agreement is very similar to the Statewide Mutual Aid Agreement; however it does differ in three areas. The first is that it can be used for everyday use. The second

is that there is an advisory board to answer questions. The third is that it can be used out of state as long as the communities are contiguous to a Massachusetts community that has opted in. The agreement is Massachusetts General Law Chapter 40, Section 4K.

NPDES Phase II

In 1990, the United States Environmental Protection Agency (EPA) promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) stormwater program. The Phase I program for municipal separate storm sewer systems (MS4s) requires operators of “medium” and “large” MS4s, that is, those that generally serve populations of 100,000 or greater, to implement a stormwater management program as a means to control polluted discharges from these MS4s. The Stormwater Phase II Rule extends coverage of the NPDES stormwater program to certain “small” MS4s but takes a slightly different approach to how the stormwater management program is developed and implemented.

A small MS4 is any MS4 not already covered by the Phase I program as a medium or large MS4. The Phase II Rule automatically covers on a nationwide basis all small MS4s located in “urbanized areas” (UAs) as defined by the Bureau of the Census (unless waived by the NPDES permitting authority), and on a case-by-case basis those small MS4s located outside of UAs that the NPDES permitting authority designates.

Operators of regulated small MS4s are required to design their programs to:

- Reduce the discharge of pollutants to the “maximum extent practicable” (MEP);
- Protect water quality; and
- Satisfy the appropriate water quality requirements of the Clean Water Act.

The Phase II Rule defines a small MS4 stormwater management program as a program comprising six elements that, when implemented in concert, are expected to result in significant reductions of pollutants discharged into receiving waterbodies. The six MS4 program elements, termed “minimum control measures,” are:

1. Public Education and Outreach
2. Public Participation/Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control
6. Pollution Prevention/Good Housekeeping

The Phase II program for MS4s is designed to accommodate a general permit approach using a Notice of Intent (NOI) as the permit application. The operator of a regulated small MS4 must include in its permit application, or NOI, its chosen BMPs and measurable goals for each minimum control measure.

CLIMATE CHANGE

Weather and climate play a significant role in people's health. Changes in climate affect the average weather conditions that we are accustomed to. Warmer average temperatures will likely lead to hotter days and more frequent and longer heat waves. This could increase the number of heat-related illnesses and deaths. Increases in the frequency or severity of extreme weather events such as storms could increase the risk of dangerous flooding, high winds, and other direct threats to people and property.

Warmer temperatures could increase the concentrations of unhealthy air and water pollutants. Changes in temperature, precipitation patterns, and extreme events could enhance the spread of some diseases.

The impacts of climate change on health will depend on many factors. These factors include the effectiveness of a community's public health and safety systems to address or prepare for the risk and the behavior, age, gender, and economic status of individuals affected. Impacts will likely vary by region, the sensitivity of populations, the extent and length of exposure to climate change impacts, and society's ability to adapt to change.

Although the United States has well-developed public health systems (compared with those of many developing countries), climate change will still likely affect many Americans. In addition, the impacts of climate change on public health around the globe could have important consequences for the United States. For example, more frequent and intense storms may require more disaster relief and declines in agriculture may increase food shortages.

The frequency and intensity of extreme precipitation events is projected to increase in some locations, as is the severity (wind speeds and rain) of tropical storms. These extreme weather events could cause injuries and, in some cases, death. As with heat waves, the people most at risk include young children, older adults, people with medical conditions, and the poor. Extreme events can also indirectly threaten human health in a number of ways. For example, extreme events can:

- Reduce the availability of fresh food and water.
- Interrupt communication, utility, and health care services.
- Contribute to carbon monoxide poisoning from portable electric generators used during and after storms.
- Increase stomach and intestinal illness among evacuees.
- Contribute to mental health impacts such as depression and post-traumatic stress disorder (PTSD).

Climate Change Affects Human Health and Welfare

In 2008, the U.S. Global Change Research Program produced a report that analyzed the impacts of global climate change on human health and welfare. The report finds that:

Many of the expected health effects are likely to fall mostly on the poor, the very old, the very young, the disabled, and the uninsured.

Climate change will likely result in regional differences in U.S. impacts, due not only to a regional pattern of changes in climate but also to regional variations in the distribution of sensitive populations and the ability of communities to adapt to climate

Stormwater & Roadway Impacts



Local public works superintendents are reporting an increase in road failures due to overwhelmed culverts, road washouts, eroded ditches, undercut road bases, and overtopped bridges. DPWs typically replace damaged culverts and road crossings with new ones similar in design and size to the old ones to minimize cost and permitting. New gravel and stone armoring are brought to the site to replace soil that was washed away and to shore up the eroded sections of failed roadway.

The scientific community is largely in agreement

that climate change is altering the weather and precipitation patterns of the northeastern region of the U.S. Warmer late winter temperatures will result in more rain-on-snow storm events, leading to higher spring melt flows, which typically are already the highest flows of the year. Data from USGS streamflow gages across the northeast show a clear increase in flow since 1940, with an indication that a sharp “stepped” increase occurred in the 1970s. This is despite the fact that much of the land area within many New England watersheds has been reforested, and this type of land cover change would tend to reduce, rather than increase, flood peaks.

Studies have also reported increases in precipitation, with the increases being observed particularly in categories characterized as heavy and extreme storm events. These events are expected to increase both in number and in magnitude. Some scientists predict that the recurrence period for extreme storm and flood events will be significantly reduced, with some projecting that the 10-year storm may more realistically have a recurrence interval of 6 years, a 25-year storm may have a recurrence interval of 7.5-14 years, and the 100-year storm may have a recurrence interval of 49 years. Widespread severe storm events and resulting flooding of 2005, 2006, 2010, and 2011 in Massachusetts seem to support the theory that recurrence times are being reduced.

Most existing public works infrastructure in the state is decades or, in many instances, more than a century old. It was simply not designed to accommodate the increase in storm flows resulting from new development and climate change. A 2010 analysis of the culverts within the Oyster River Watershed in New Hampshire predicts that approximately 1/3 of the culverts in the watershed are undersized to pass increases in precipitation from new development and climate change, and that the majority of these culverts were in high-gradient, low-order streams. Further, 5% of culverts in the watershed are already undersized for the *TP-40* event to which they should have been designed.

Ice Events

Patterns of precipitation and storm events, including both rain and snowfall are also likely to change. However, some of these changes are less certain than the changes associated with temperature. Projections show that future precipitation and storm changes will vary by season and region. Some regions may have less precipitation, some may have more precipitation, and some may have little or no change. The amount of rain falling in heavy precipitation events is likely to increase in most regions, while storm tracks are projected to shift pole-ward. Climate models project the following precipitation and storm changes.



- Global average annual precipitation through the end of the century is expected to increase, although changes in the amount and intensity of precipitation will vary by region.
- The intensity of precipitation events will likely increase on average. This will be particularly pronounced in tropical and high-latitude regions, which are also expected to experience overall increases in precipitation.
- The strength of the winds associated with tropical storms is likely to increase. The amount of precipitation falling in tropical storms is also likely to increase.

- Annual average precipitation is projected to increase in some areas and decrease in others.

High Heat Days

Heat waves can lead to heat stroke and dehydration, and are the most common cause of weather-related deaths. Excessive heat is more likely to impact populations in northern latitudes where people are less prepared to cope with excessive temperatures. Young children, older adults, people with medical conditions, and the poor are more vulnerable than others to heat-related illness. The share of the U.S. population composed of adults over age 65 is currently 12%, but is projected to grow to 21% by 2050, leading to a larger vulnerable population.

Climate change will likely lead to more frequent, more severe, and longer heat waves in the summer (see 100-degree-days figure), as well as less severe cold spells in the winter. A recent assessment of the science suggests that increases in heat-related deaths due to climate change would outweigh decreases in deaths from cold-snaps.



Urban areas are typically warmer than their rural surroundings. Climate change could lead to even warmer temperatures in cities. This would increase the demand for electricity in the summer to run air conditioning, which in turn would increase air pollution and greenhouse gas emissions from power plants. The impacts of future heat waves could be especially severe in large metropolitan areas. For example, in Los Angeles, annual heat-related deaths are projected to increase two- to seven-fold by the end of the

21st century, depending on the future growth of greenhouse gas emissions. Heat waves are also often accompanied by periods of stagnant air, leading to increases in air pollution and the associated health effects.

COMMUNICATIONS

The Internet has replaced traditional phone service as the most essential communications utility in the country, and is now as important as electricity was 100 years ago. Truly high-speed wired Internet access is critical to innovation, economic growth, social communication, and the country's competitiveness.

The "digital divide" is a recent theme which refers to the fact that millions of people in the U.S., mostly in the poorest and most rural communities, don't have access to affordable broadband service. In general, there are three types of wired networks that serve America's phone, cable, and Internet consumers. Copper wire (traditional phone lines, DSL, slow speeds); cable (faster speeds, mostly for downloading); and fiber (potentially unlimited speeds, data is transmitted through pulses of light). The term broadband refers to the wide bandwidth characteristics of a transmission medium and its ability to transport multiple signals and traffic types simultaneously. The medium can be coax, optical fiber, twisted pair or wireless. In contrast, baseband describes a communication system in which information is transported across a single channel. Being digitally connected means communications can improve

people's lives on the job, in their personal lives, and unite people with disabilities. Broadband empowers people with disabilities and removes barriers that keep them from participating in everyday activities.

Information Access

There is no doubt we live in an information society, and broadband puts all types of information within a few keystrokes away. Whether this is training for a new skill, a new language, or completing an online course – broadband facilitates the access of information in many different forms.

Economic Development

Businesses need broadband to compete on a global level, and seek out high speed broadband access when choosing to grow their business. High speed access accelerates business development, and provides new opportunities for innovation, expansion, and e-commerce. Communities that connect their residents create wealth and attract business investments.

Public Safety

Broadband enables interoperable broadband public safety networks, which connect first responders in an emergency, and allow emergency workers to communicate across disparate networks, between jurisdictions, and across different agencies – critical capabilities at the scene of an emergency. Police, fire, and emergency medical personnel can react to crises quickly, fostering cooperation among numerous public safety agencies.

High speed Internet improves victim to responder communications by enabling instantaneous digital transmissions to and from members of a connected community.

Healthcare

Telemedicine has become an important element of efficient healthcare delivery, which promotes better patient care, and even saves lives. With medical costs rising, and the availability of insurance limited, the cost saving benefits of telemedicine are also important.

Broadband facilitates efficiency in healthcare delivery and creates opportunities for doctors and healthcare specialists to work together as a virtual team – with specialists located in any part of the world. A family practitioner in a small rural town can send medical images of a patient, to a specialist in any part of the world for an instant expert consultation. Test results from a hospital emergency room or laboratory can be sent to radiologist or doctor in seconds, making rapid diagnosis a reality.

Doctors are also now sending prescriptions directly from their offices to pharmacies, greatly reducing errors, with automatic checking for interactions.

Education

Broadband Internet access levels the playing field when it comes to educational resources. Children in inner city neighborhood, affluent homes, and farm communities can all access the same resources. Textbook materials can be complemented with online resources, and children can access all of these materials from school and home.

Telecommuting

Broadband enables people to work from home, saving time and expenses. Employers have been encouraging this concept to save overhead expenses and improve employee satisfaction.

SmartGrid

SmartGrid technology enables homeowners to monitor energy usage in real time, and adjust usage patterns to save energy costs and aid in conservation efforts

OPPORTUNITIES AND CHALLENGES

Addressing and Meeting the Needs of a Changing and Aging Population

We are losing population and the highest population losses are among 20-32 year olds. We can therefore expect to have an older population, as our population ages, baby boomers move into retirement age, and 20-32 year olds continue to migrate out. Our needs can expect to change in order to address the needs of an aging population. However, with fewer 20-32 year olds it is reasonable to expect that our pool of emergency responders will dwindle. This may be felt more dramatically in those communities that rely on volunteers. In addition, if we continue the status quo development or if we continue to see trends where our rural communities are experiencing the most growth, we can expect development patterns with very low densities that stretch scarce resources even further.

Reaching the Rural Areas and Travel to and from Metro Areas

Bus service and other forms of public transportation are not accessible to many of the region's rural residents.

The Berkshire Regional Transit Authority operates fourteen regular bus routes running Monday through Saturday. There is no Sunday service. Communities served with fixed route service include Adams, Dalton, Great Barrington, Hinsdale, Lanesborough, Lee, Lenox, North Adams, Pittsfield, Stockbridge and Williamstown. For many of the routes, the earliest service is 5:45AM and the latest service is approximately 7PM, although some busses run until nearly 10PM on a limited basis. This limits the ability of those that rely on the bus network to work 3rd shift or overnight shifts. The remaining BRTA member communities (24 Berkshire communities are BRTA members) receive paratransit service for qualified individuals. BRTA also assists local communities with obtaining vans that operate as Council on Aging shuttles.

There is no commuter rail via Metro North to New York City from Berkshire County. The nearest stations are in New York State or Connecticut. Travel on Amtrak from Berkshire County to Albany on and further west or south or Boston is limited to one train a day traveling to and from each city. There is one train that leaves Boston at 11:55AM and arrives in Pittsfield at 3:36PM. The schedule of the Amtrak trains from Pittsfield to Boston and Pittsfield to Albany make it impossible to travel from Pittsfield and return on the same day.

Berkshire County residents have access to Peter Pan regional bus service. Residents in Pittsfield can access Boston, Providence, New York City, and thirteen other destinations on the Peter Pan bus. Peter Pan buses make stops in several Berkshire County communities.

Is there a demand for expanding the service area and/or operational frequency of any of these public transportation options? Are there improvements to rider information systems and other on-board amenities that will help increase ridership?

Changing Role of the Education System

Schools will always be in demand but the student population is dwindling and teaching positions may be harder to fill as the region's population declines and ages. The per student cost of operating the schools increases when fewer students are enrolled in the same number of schools. Will we be able to afford it? Is the revenue keeping up with inflation?

Some of our more rural communities are already struggling to keep their schools open. A high quality education system is an important component of the quality of life. If there is a desire to stem the population loss or attract new people (particularly between the ages of 25-32) it will be critical to offer a quality education.

Workforce training may be equally important in stemming the population loss. One of the main factors businesses consider when deciding where to relocate or expand is the available pool of college-educated and skilled workers. It will be important to offer a trained, skilled workforce for business and industry to relocate or start-up in Berkshire County. In addition, when people are required to migrate away from the Berkshires to receive training there is always the risk that they won't come back to Berkshire County.

There are potential opportunities that the region could take advantage of. Schools could be used for K-12 during the day and for workforce training in the evening. Schools could partner with non-profits that provide compatible community services including after school programs. Schools could enter into public-private partnerships to open underutilized areas of school buildings for day care or other compatible services.

The increasingly smaller size of the middle and high schools negatively impacts their ability to provide a breadth of education experiences that serves the entire school population. This is exacerbated by the separation of technical training in high school from the college prep track (in the case of some districts, they are totally separated by being in the tech school districts). This doesn't meet the needs of many students and ignores the work force development issues of the region.

Meeting the Needs of People in a Changing Climate

In addition to maintaining physical infrastructure in the face of climate change, it will be important to provide services and meet needs that are predicted to change. It is predicted that along with more frequent high intensity storms and more frequent flooding, we can also expect to experience more ice events rather than snow events and more high heat days. Ice storms are dangerous winter storm conditions that often result in power outages and treacherous driving conditions. High heat days may require the need to provide cooling shelters or other services that we have little to no experience in providing and will strain limited resources more. This may be especially critical since much of our population is spread out in rural, low density areas and we have a high percentage of people 65 years or older, which are particularly vulnerable/sensitive. These are just some of the impacts of climate change that will change the demands and need for services. What other impacts can we expect to experience from climate change? Can they be predicted and can we prepare for them?

Cooperative Operation of Services

There is an opportunity to standardize the cost of service from providers through the cooperative operation of services. Regionalization of services is both an opportunity and a challenge. The model of group purchasing can be expanded into other areas.

Regionalization can be an excellent solution for providing many different services efficiently and cost effectively. Regionalization projects can be successfully conducted for everything from emergency dispatch to waste management. There are three basic forms of regionalization: mutual aid agreements, shared service agreements, and regional districts.

Under mutual aid agreements, local governments agree to lend services to one another, usually without requiring any payment. The most common mutual aid agreements are made for emergency services, and are often used by municipal police and fire departments. Such agreements involve multiple municipalities agreeing to loan services to each other in the event of an emergency. Two new Massachusetts laws were enacted to create a statewide framework for the provision of mutual aid assistance in the case of a public safety or public works incident.

Shared Service Agreements are more formal contractual relationships to share goods or services. Shared service agreements can take several forms:

- 1) a municipality or host agency acts as lead and provides defined services or goods to one or more towns for an agreed-upon price;
- 2) a municipality or host agency provides services and goods to another town(s) on an as-needed basis, or
- 3) two or more municipalities jointly plan, finance and provide services or purchase goods for use by all municipalities within the region ("joint service" model).

Shared service agreements can be created using formal legal contracts or Chapter 40, Section 4A, the intermunicipal agreement law, as guidance. The distinguishing factor in these types of arrangements is that one municipality is ultimately responsible for the personnel, goods or services that are being shared with other municipalities.

Several Massachusetts General Laws (M.G.L.) provide for the creation of various types of special districts including but not limited to police and fire districts. Municipalities can also pursue special legislation for the creation of such a district. Two distinguishing factors about regionalization through a special district are: 1) a new legal entity is created to provide the municipal service at a regional level, and 2) the M.G.L. set forth the authorization, creation and governance model of the new regional district.

Demand for Telecommunications, Cell Service and Broadband

Broadband is essential to businesses and organizations today. Without broadband access, our region's businesses cannot effectively compete and our regional economy suffers. This is especially the case in the Berkshires which attracts very creative and independent people and small businesses who tend to prefer to be located throughout the region, even in its more remote and rural areas. Ubiquitous broadband will allow the region's existing businesses to stay and expand in the region, and also make the region more attractive to prospective businesses.

Cellular telephone coverage is also important. For many of our residents and small businesses, who operate out of remote locations or who are conducting business across the region, the gaps in cellular phone coverage are a major impediment to conducting their business. If the situation were simply a few small spots of inadequate coverage, it might be less critical but significant portions of the region lack adequate coverage. The siting of cellular phone facilities has always been somewhat contentious and the lack of good information only leads to increased frustration, both by the providers and by the public and communities, as they try to locate new facilities to fill in significant service gaps.

More focus is needed for shared services and technologies necessary for Next Generation 9-1-1 and emergency communications. Organizations involved in 9-1-1, emergency communications, and emergency medical response are recently beginning to accelerate their demand for broadband networks, and the services and applications made possible by broadband. Private sector developments in high-speed, wireless communications technology have presented public safety with a platform to enhance information sharing and communications during emergencies and day-to-day operations. Through broadband technology, public safety users can have the ability to connect rapidly and securely with personnel and emergency responders in neighboring communities.

An additional significant problem is that the changes in demand are escalating so rapidly due to changes in technology that there is a constant pressure on the current telecommunications infrastructure. Even communities with currently reasonable levels of service, primarily through cable TV, will see a failure in that infrastructure to meet significant needs in a very few years. Much of this problem already exists with Verizon DSL service which is still considered to be “broadband” by some important federal agencies, such as USDA and the FCC (although the latter is reviewing its standard for what is considered “broadband”). “Broadband” providers routinely over-report the speeds of their networks and the amount of coverage, particularly Verizon.

GOALS, POLICIES, AND STRATEGIES

Goal IS3: Develop a transportation system that affords mobility for all, provides appropriate access to employment, housing, services and recreation areas, is protective of the environment, enhances community livability, and operates safely.

Policy IS3.1: Maintain and improve the mobility and accessibility of the transportation system.

Strategy A: Maintain the Region’s Existing Transportation System through Asset Management Programs and Efficient Allocation of Transportation Resources

Regular maintenance of the transportation infrastructure is critical to providing mobility and accessibility. Limited resources must be allocated in the most efficient way possible. Asset management programs can assist communities to understand their assets, set level of service goals and conduct life cycle analysis which can help determine preferable maintenance and reconstruction strategies.

Strategy B: Promote Expanded Public Transportation Options and Ridership Campaigns

Enhancing livability for all requires public transportation options that provide access to employment, housing and services. Ridership campaigns are an important component to foster expanded services.

Strategy C: Incorporate Pedestrian and Non-Motorized Needs into Projects and Asset Management Programs, and Seek to Implement Improvements which Improve Community Walkability and Bikeability

Non-motorized travel is beneficial for health, the environment and lessening traffic congestion. Truly walkable urban communities may be considered more economically vibrant than their drivable suburban neighbors.

Strategy D: Protect and Improve the Performance of the Existing Transportation Facilities

Identify operational and management strategies to protect and improve the performance of the existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods utilizing techniques such as corridor access management.

Policy IS3.2: Provide appropriate access to employment, housing, services and recreation areas.

Strategy A: Serve Critical Regional Economic Development Needs

Overcome the region's lack of access to the Interstate highway system by planning an expedited access route from I-90 to Pittsfield and further north. Examine opportunities for intermodal freight transfers. Expand freight and passenger rail service and associated infrastructure requirements. Alleviate congestion on major freight routes.

Strategy B: Mitigate the Impacts of Traffic, Particularly Trucks, on Downtowns and Neighborhoods

Divert traffic to the most appropriate routes through communities and implement measures in specific areas that best accommodate the mixture of pedestrians, parking and through traffic. Consider how best to protect pedestrians and bicyclists and maintain community quality, while also meeting traffic needs. Improved directional and informational signing, traffic calming, increased use of transit instead of cars, and enforcement of pedestrian and vehicle traffic laws, particularly in more congested or developed areas, are all components of mitigation.

Strategy C: Review Transit Routes and Availability Regularly to Achieve Effective and Efficient Service between Neighborhoods, Employment and Shopping Centers, and Community Facilities and Services

Transit usage on existing routes and reconsideration of development trends and locations in the region should be reviewed on a regular basis with adjustments made as usage and development dictate. Increased use of scenario planning regarding routes and level of service should be utilized to estimate what changes or improvements may be most effective and efficient.

Policy IS3.3: Conserve the environment and mitigate the harmful impacts of our transportation system to it.

Strategy A: Increase the Use of Alternative Modes of Transportation, Reducing Production of Greenhouse Gases and Other Pollutants

Increased frequency and hours of service for transit, as well as implementing technology enhancements to promote transit ridership, is critical in increasing use of alternative modes of transportation. Within more developed areas, increasing the sidewalk/pedestrian and bicycle network and properly maintaining it should be priorities. Establishing land use regulations which promote increased development densities in more developed areas, where transit, walking and

bicycling are more feasible and have the greatest effect on reducing greenhouse gases, and not promoting growth and development in much more rural areas are appropriate tools.

Strategy B: Design Transportation Improvements to Accommodate Climate Change

The State's stormwater standards need to be brought up to date in order to better design for climate change. Stormwater design for road and bridge projects should accommodate expected climate change. Critical links which are at high risk should be identified and both operational and improvement plans to maintain those links or provide appropriate alternatives should be developed. To the extent possible, consideration of the need to facilitate migration of vulnerable species northward and upward should be included in project planning and design. Routine roadway maintenance programs should be evaluated to consider increased ice and severe storm events and increased summer temperatures. Vegetation plans for projects should consider species which are suited to projected climate changes.

Strategy C: Utilize Environmental Mitigation Techniques such as Low Impact Development and Protection of Wildlife Crossings

Incorporate low impact development techniques into transportation facility and project designs. Develop a program of stormwater improvements for existing facilities and incorporate techniques into those. Incorporate wildlife crossing considerations into project designs. Proactively identify priority areas to incorporate both low impact development and wildlife crossing considerations.

Policy IS3.4: Manage, maintain, and enhance the transportation system as necessary to maintain safety.

Strategy A: Monitor on an Ongoing Basis Accident Data and Focus Planning and Funding on Areas with Higher than Average Rates of Accidents

Keep the region's highway safety analysis up-to-date, identifying the locations or corridors with the highest accident rates. Work with all law enforcement agencies to report all accidents and to improve the accuracy of accident reporting, including incorporating GPS and in-car reporting technology. Use high accident locations as criteria in establishing priorities for highway improvement funding. Maintain safety studies as an annual work item in the transportation planning program.

Strategy B: Encourage Projects that Promote a Shared, Safe Transportation System

Encourage projects, designs and initiatives that promote a shared, safe transportation system for bicyclists, motorists, transit users and pedestrians.

Goal IS4: Provide public schools that offer a high quality education for all of the region's children and adequate school facilities and equipment to serve every community.

Policy IS4.1: Work with the school departments and school boards to better utilize resources, including infrastructure, in a cost effective manner.

Strategy A: Hold a Summit for School Departments, School Boards and Municipal Officials

Hold a summit for school departments, school boards and municipal officials and establish a mechanism for regular dialogue. School budgets are a significant component of municipal budgets often approaching or exceeding 50% of the total budget. However, there is no forum for regular dialogue between municipal officials and schools boards or departments at a municipal or regional level. A forum for regular dialogue would enable municipal officials and school departments to identify common issues and objectives and seek collaborative solutions.

Policy IS4.2: Work constructively with the region's school districts to monitor and forecast school service demand based upon actual and predicted growth.

Strategy A: Participate in the Development of, and Share Demographic Information about, Population Estimates

All of the larger communities in Berkshire County are experiencing population loss. Many communities are already grappling with low student enrollment and rising education costs. Working constructively to develop and share data is an important first step toward identifying potential problems and viable solutions that work toward the best interests of the majority.

Strategy B: Explore Creative Alternatives to Meet the Changing Needs of the Region

Explore creative alternatives for providing adequate school infrastructure to meet the changing needs of the region. There is a cost associated with the operation and maintenance of school buildings, along with salaries, health insurance, desks, supplies, etc. With reductions in state aid and declining student enrollment creative alternatives need to be considered to ensure that the needs of the students and the community are met without resulting in a fiscal burden. Creative alternatives may include sources of grant funding, grant application across school districts, shared resources, equipment or technology, and shared use of school buildings for compatible uses where allowed by state law.

Policy IS 4.3: Work with all available resources to gain additional state aid through the updating of the Foundation Formula, Special Education reimbursements and Chapter 70 (regional school district transportation) funding.

Strategy A: Update the Foundation Formula for School Funding

Work cooperatively with School Superintendents, School Committees and the legislative delegation to have the State update the Foundation Formula. This is increasingly important in order to deal with the significant changes in school populations occurring across the region, the needs for increased technical education in order to meet work force needs, and to protect the financial stability of local governments.

Strategy B: Restructure Special Education Reimbursements

Given the small size of most municipalities and school districts in the County, special education needs can create unreasonable and unexpected strains on school (and municipal) budgets. Develop a shared risk fund at a regional or statewide level to spread the financial risk across all districts.

Strategy C: Seek Full Funding for Regional School District Transportation Funding

Work cooperatively with the Administration and Berkshire legislators to achieve full funding on an ongoing basis for regional school district transportation costs. The State promised full funding for this purpose several decades ago in order to promote establishment of regional schools but has not followed through on that commitment. That lack of follow-through by the State is one of the primary impediments to discussions about further regionalization efforts which are needed to deal with projected continued declines in enrollments across the region.

Goal IS5: Ensure that the region has the necessary services, facilities, equipment, and manpower required to provide for all public health, safety and emergency needs.

Policy IS5.1: Assure that all areas of the region have the highest level of police coverage, fire protection, and emergency medical service (EMS), at the lowest possible cost, to meet existing and future demand.

Strategy A: Identify Gaps in Service, Equipment and Supplies across all of the Region's Fire Departments

Work with both career and volunteer fire departments to identify gaps in service, equipment and supplies and seek both traditional and non-traditional funding to support all of the region's fire departments.

Strategy B: Maintain Mutual Aid or Mutual Assistance Agreements

Maintain mutual aid or mutual assistance agreements with local fire departments to ensure an adequate response in the event of a major fire, fire in areas with limited capacity, or other emergencies.

Strategy C: Expand the Mutual Aid Model

Expand the mutual aid model to create efficiencies through the use of shared equipment whenever possible without compromising public safety.

Strategy B: Develop a Regional Campaign to Recruit Volunteer Firefighters

According to the National Volunteer Fire Council, recruitment and retention is one of the biggest challenges facing volunteer fire departments today. Volunteers comprise 70% of our nation's fire service, and it is critical that we keep the volunteer fire service strong now and in the future. A regional campaign to actively recruit new members for volunteer fire departments can address the issue on a regional scale, reduce redundancy and increase efficiency.

Strategy C: Support Training Costs

Support the establishment of a volunteer fire department assistance program in Massachusetts similar to that in Texas. The Texas Legislature created the Rural Volunteer Fire Department Assistance Program, which provides \$12.8 million per year in grants for equipment and training. The Program is a cost-share program funded by the Texas State Legislature. It provides funding to rural volunteer fire departments for the acquisition of firefighting vehicles, fire and rescue equipment, protective clothing, dry-hydrants, computer systems and firefighter training.

Grants and subsidies for training could be utilized by both police and career fire departments as well. Subsidies for training could defray the costs associated with certification requirements and the associated personnel expense.

Strategy D: Evaluate Police Service Based on Existing and Future Needs

Monitor and report police statistics, as appropriate, and population projections for the purpose of evaluating police service based on existing and future needs.

Goal IS6: Adjust as necessary to a changing climate to continue to protect health and safety as well as property and infrastructure and provide services based on the needs and demands of the residents in the county.

Policy IS6.1: Consider the expected and potential impacts of climate change in the permitting and design of new projects and redevelopment.

Strategy A: Require On-Site Storage and Pre-Treatment of Stormwater

Develop bylaws that require on-site storage and pre-treatment of stormwater. Consider the projected impacts of global warming on storm frequency and severity and incorporate higher stormwater design standards for all highway and bridge reconstruction and new construction projects.

Strategy B: Account for Anticipated Climate Change in the Design of New Projects

Design new projects to accommodate the increased frequency and severity of storms that are anticipated as a result of climate change. Local public works superintendents are reporting an increase in road failures due to overwhelmed culverts, road washouts, eroded ditches, undercut road bases, and overtopped bridges. Warmer late winter temperatures will result in more rain-on-snow storm events, leading to higher spring melt flows, which typically are already the highest flows of the year. Studies have also reported increases in precipitation, with the increases being observed particularly in categories characterized as heavy and extreme storm events. These events are expected to increase both in number and in magnitude.

Most existing public works infrastructure in the state is decades or, in many instances, more than a century old. They were simply not designed to accommodate the increase in storm flows resulting from new development and climate change. Many culverts are undersized to pass increases in precipitation from new development and climate change.

Policy IS6.2: Encourage proactive planning to reduce the loss of life, property, infrastructure, and environmental and cultural resources from natural disasters.

Strategy A: Maintain Up-to-Date Hazard Mitigation and Comprehensive Emergency Management Plans

All communities should have up-to-date Hazard Mitigation and Comprehensive Emergency Management Plans on file with Massachusetts Emergency Management.

Strategy B: Increase State and Federal Funding for Preparedness and Mitigation Planning

The federal and state governments should increase funding for preparedness and mitigation planning and actions at the local level in order to reduce escalating response and recovery costs.

Strategy C: Support and Implement the Goals of the Regional Hazard Mitigation Plan

The Berkshire Regional Planning Commission (BRPC) has developed a regional multijurisdictional hazard mitigation plan that outlines actions that each of our communities can take to reduce the impact of these natural disasters when and if they occur later, by taking action before the disaster strikes. The plan was prepared in accordance with the federal Disaster Mitigation Act of 2000. The purpose of the plan is to mitigate potential damage from those natural hazards that are deemed to be a threat to the Berkshire region. The Plan contains goals and objectives for developing the Plan, an assessment and inventory of natural hazard risks, a vulnerability analysis based on the geographic location of critical infrastructure and facilities, and an existing protections matrix. Through a

discussion with local officials, the Multi-Hazard Community Planning Team and the public, a list of hazard mitigation actions and projects was developed for future implementation.

Goal IS7: Maintain adequate water, wastewater and stormwater facilities and subsurface infrastructure.

Policy IS7.1: Maintain wastewater collection and treatment systems, upgrade as necessary to mitigate current deficiencies, and improve to keep pace with changing technologies and demands.

Strategy A: Maintain, Upgrade and Improve Wastewater Collection Systems

Continue to implement programs to upgrade the wastewater collection system to mitigate existing deficiencies and accommodate the needs of the region in the present and into the future.

Policy IS7.2: Maintain a stormwater management program that minimizes flood hazards and protects water quality by employing watershed-based approaches that balance environmental, economic and engineering considerations.

Strategy A: Comply with the National Pollutant Discharge and Elimination System (NPDES) Phase II Permit Requirements

Comply with the National Pollutant Discharge and Elimination System (NPDES) Phase II permit requirements as determined by the U.S. Environmental Protection Agency.

Strategy B: Ensure that the Region's Drainage Systems are Adequately Maintained

Develop protocols and funding mechanisms that ensure the adequate maintenance of the region's drainage system to minimize flood hazards and protect water quality while maintaining the maximum level of service and life expectancy of the infrastructure.

Strategy C: Reduce Stormwater Runoff and Protect Water Quality

Pursue effective and efficient approaches to reducing stormwater runoff and protecting water quality.

Strategy D: Ensure Ability to Manage Stormwater during Peak Flows

Establish policies that needed repairs and replacements are adequate to deal with expected peak storm events.

Policy IS7.3: Maintain adequate water supply, storage facilities, and delivery system to serve the needs of existing and future residents and businesses.

Strategy A: Monitor and Forecast Water Demand Based Upon Actual and Predicted Growth

Monitor water usage and population to project future water needs. Compile data to function as indicators of the rate of population loss/growth, development activity, and other factors that result in demands for transportation, infrastructure, and services. Identify existing or potential constraints or deficiencies of other infrastructure in meeting existing and projected demand.

Goal IS8: Make high-speed internet access available to all areas in the region and support the enhancement of the wireless telecommunications and broadband internet network and enable new economic opportunities.

Policy IS8.1: Completion of middle mile fiber optic network and all CAI(s) are connected to the network.

Strategy A: Provide Support to Municipalities in Contracting with a Service Provider to Provide Internet Service to their CAI(s)

Cost savings may be achieved if municipalities cooperate in a purchasing internet services. To facilitate this group purchase of service support needs to be provided to municipal officials.

Policy IS8.2: Last mile high speed broadband internet service to all areas of the region.

Strategy A: Support Government Funding for the Build Out of the Last Mile Network

A critical need remains to fund the “last mile” – that is, access to individual households and businesses – and provide affordable service to customers.

Strategy B: Support the Construction of the Last Mile Network to all Areas of the Region

Once funding is secure, it will still be important to support construction of the “last mile” and provide access to individual households and businesses – and provide affordable service to customers.

Strategy C: Support the WiredWest Municipal Lighting Plant Cooperative

Support the WiredWest municipal lighting plant cooperative to build out the last mile network and/or to provide services on the network.

Policy IS8.3: Take advantage of new economic opportunities relating to the new high speed broadband.

Strategy A: Pursue the Creation of at Least One Technology Park Focused on the Availability of the High Speed Broadband Infrastructure in the Berkshires

Broadband infrastructure has become critical infrastructure for the new modern age with its significance compared to the significance of electricity. Most businesses need high-speed Internet service to remain competitive and nearly all jobs in the United States are located in areas with at least basic wired or wireless broadband service.

Strategy B: Market the High Speed Broadband Capability of the Region

The region, which was once underserved in terms of broadband, has made significant advances. The region now has “capacity” that until recently was not available. Marketing the capacity and availability of this infrastructure is an important part of the region’s economic development and long-term sustainability.

Strategy C: Actively Recruit Technology Dependent Businesses to the Region

Actively recruit technology dependent businesses to the region (computer companies, software companies, media arts, etc.).

Goal IS9: Utilize a holistic approach toward infrastructure and services that accounts for regional impacts and needs now and into the future.

Policy IS9.1: Consider both short term and long term regional impacts when managing infrastructure and services and work toward improved efficiency.

Strategy A: Investigate Utilizing Municipal Performance Management to Improve Efficiencies across a Variety of Municipal Departments and Functions

- Design new workload and efficiency measures to help departments improve performance management efforts
- Change data coding to allow for better data analysis
- Increase inter- and intra- municipality collaboration on best practices and problem solving
- Help municipal employees to learn new technical or software skills, including ways to reduce data entry inefficiency and improve accuracy

Goal IS10: Invest in the Region as a hub of innovation in fields such as of water, wastewater, and stormwater management, using the academic, technical, and professional expertise to support innovation, and to pilot successful treatment alternatives.

Policy IS10.1: Encourage the use of innovative approaches to the management of water, wastewater and stormwater to improve management, reduce costs, leverage funding, and create jobs.

Strategy A: Work toward Reducing Regulatory Barriers to Innovation

Identify and develop mechanisms for negotiating regulatory barriers to innovation.

Strategy B: Implement the USEPA's Integrated Planning Framework Approach

Implement the USEPA's Integrated Planning Framework approach to ensure compliance with NPDES Phase II and clean water requirements in a cost-effective, sustainable manner.

Strategy C: Reduce Obstacles to Innovative New Technologies

Reduce obstacles to innovative new technologies that hold the potential to reduce capital and maintenance costs in addition to providing environmental benefits.

IMPLEMENTATION

On March 20, 2014, the Berkshire Regional Planning Commission adopted the entire Sustainable Berkshires plan, which is comprised of eight elements:

- Economy
- Housing and Neighborhoods
- Climate and Energy
- Conservation and Recreation
- Local Food and Agriculture
- Historic Preservation
- Infrastructure and Services
- Land Use

The new regional plan, including the goals, policies and strategies set forth in this element, will be implemented by a variety of actors over the next decade. The plan contains numerous strategies, some of which are longer-term or “big ticket” items that will take some time and planning; others are already underway or can be implemented immediately. As a regional plan, this is a non-regulatory document whose main purpose is to set a cohesive strategy for the Berkshire region to align actions, priorities, and investments to yield the greatest benefit to the region.

Because implementation will be an active and evolving process over the next decade, the implementation strategy for all eight elements is contained under separate cover to allow it to be used as a working document. Updates to the elements will occur as needed over time to reflect major needs and trends of the region. However, the Implementation addendum to the plan is an administrative document that will serve three functions:

1. A schedule of implementation timeframes, responsible parties, and potential funding sources to be used or pursued;
2. A tracking mechanism for implementation actions taken over time to record progress as it is made; and
3. A planning tool to help the Commission and its other implementation partners pull out certain strategies to pursue in one or three-year action plans to help focus effort and achieve results.

In addition to the implementation addendum, a number of data points will be tracked over time to measure change in certain metrics. These metrics were selected based on available data that relates to the goals and strategies called for in each element. The metric reports will be openly available online through BRPC’s Berkshire Benchmarks program website (www.berkshirebenchmarks.org).

Appendices

Infrastructure and Services Element

A: Infrastructure and Services Forums

APPENDIX A: INFRASTRUCTURE & SERVICES FORUMS

FORUM SUMMARY

As part of the process for the Infrastructure and Services element of *Sustainable Berkshires* open forums were held on February 11, 2014 in Great Barrington Massachusetts and February 12, 2014 in Pittsfield Massachusetts to discuss the current status and future directions for infrastructure and services in Berkshire County. Six members of the public attended each forum.

The forums were conducted in an open house format. Inasmuch as land use is inextricably linked with infrastructure and services, these forums were combined with the Land Use element of *Sustainable Berkshires*. Large size maps of existing conditions and posters with the proposed Goals, Policies and Strategies were available for people to review at their own pace. Attendees were provided with “post it” notes to provide comments about the material presented. BRPC staff members were available to provide greater information about the topic as well as available for questions and discussions. Snapshots for the elements were also available in printed form.

The following comments were received:

Infrastructure and Services:

- Support was indicated for using innovative approaches for water management, waste water management and stormwater management
- Support was expressed for complete high speed internet service and wireless services throughout the county as essential for regional economic development
- At the same time, caution was expressed about the unintended consequences of providing high speed broad band internet service to all areas of the region, such as increasing the pressure for new residential development
- A suggestion was made to offer land use education to area schools as a way to encourage greater ownership of land use actions by municipal officials over the long term
- In addition to providing alternative modes of transportation, a suggestion was made to improve the promotion of those routes and enhance and facilitate interconnections between various transportation modes
- Support was indicated for complementary bikeway access for all funded road construction projects

Land Use:

- Support was indicated regarding prevention of fragmentation of undeveloped land
- A suggestion was made to limit the length of driveways and limit the building footprint as a way to limit fragmentation and minimize the ecological impact of development
- Support was indicated for land use strategies that maintain the natural heritage of the region as well as the aesthetic character
- A comment was made that land use practices have a profound effect on energy use
- Support was shown for dark sky bylaws because light pollution is an issue of concern

Adjustments were made to the Goals, Policies and Strategies, as appropriate, as a result of the forums.

