APPENDIX 17C: SOUTHWEST REGION PLANNING COMMISSION, MONADNOCK REGION FUTURE: A PLAN FOR SOUTHWEST NEW HAMPSHIRE (EXCERPT) (2015)

MONADNOCK REGION FUTURE: *A Plan for Southwest New Hampshire*

2015

Prepared by Southwest Region Planning Commission

Upgrade Water Infrastructure

- Many of our Region's drinking water and wastewater systems are aging and there is limited funding available to support necessary maintenance and upgrades. Most of the Region's wastewater treatment plants were originally built during the 1970s and 1980s, with only 3 having been built during the past 20 years. The majority of these plants are using 50% or more of their available flow capacities, with one using 90% of its available flow capacity. As such, many of these wastewater treatment plants are due to be upgraded, repaired, or replaced in the near future.
- Capital improvement plans can help communities manage the costs for upgrades; however, many are finding it difficult to keep up with their repair needs. The estimated cost of wastewater treatment upgrades, new sewers, and sewer rehabilitation work needed in the Region over the next 10-20 years is \$47,300,000.¹ In addition, the ability to detect and analyze contaminants has increased over time, leading to more regulatory requirements and the need for costly infrastructure upgrades.

Reduce Energy Costs

- Energy costs in the Region, particularly for electricity, gasoline and home heating fuel, are some of the highest in the nation. These high costs can place companies in the Region at a disadvantage to other parts of the nation and world.
- Long winter heating seasons, generally long commute times of workers, and distances from more concentrated urban markets are some of the contributing factors to these high energy costs. Given the current lack of local, renewable energy alternatives and the limited capacity of existing natural gas pipelines in the state, energy costs are likely to be of increasing concern in the years to come.

Expand the Offering of Child and Elder Care Services

- Support services such as high quality and affordable child and elder care are part of the infrastructure needed for economic development in the Region. These services broaden economic opportunities by enabling parents and caregivers to work.
- Childcare receives little public subsidy and depends primarily on parent fees to cover costs. This creates a price structure too low to support the quality of care we may desire and too high for many parents to afford.
- As our population grows older, the need for more care options and support services for seniors and caregivers will likely increase.

Undertake Asset Management

- With limited state or federal funding available, the Region's communities will be pressed to identify cost-effective and practical solutions to meet its mounting infrastructure needs. One opportunity available to communities to is undertake an asset management program. Broadly defined, asset management is a systematic process of deploying, operating, maintaining, upgrading and disposing of assets cost-effectively.
- Asset management can be a tool to develop capital improvements budgets that more accurately reflect the replacement costs and life expectancy schedule of various infrastructure in a community. It involves inventorying the location and conditions of assets such as roads, culverts, bridges, wells, sewer lines, etc., prioritizing assets, and developing a plan to rehabilitate and replace these assets as needed.

In New Hampshire the average annual cost of full-time child care for an infant in a licensed child care center is **41%** of a single mother's median family income, compared to **12%** of married couple's family income.

RAILROAD SQUARE: FROM BROWNFIELD TO THRIVING DOWNTOWN DESTINATION

Upon its closure in 1983, the once vital and bustling Railroad Yard in Keene turned to a nearly deserted brownfield, useful only as a public parking lot. The City of Keene purchased the historic parcel in 1988 with the hopes of one day revitalizing it. In 1997, the City organized the property as a Tax Increment Financing District (TIF), to encourage investment and create a source of revenue for utility upgrades. However, as the years passed, bricks crumbled, weeds permeated, and the lot became an eyesore to the downtown community. Nearly a decade later, the City issued a request for proposals on ideas and designs for redeveloping the space.

That's when the Monadnock Economic Development Corporation (MEDC) stepped in. A previous environmental assessment showed that the area was contaminated with various chemicals left over from its railroad days. MEDC had an idea – they proposed the development of an entirely new Railroad Square neighborhood, complete with housing, access to medical and social services, employment, office and retail space, transportation, a hotel, and restaurants.

The City liked the idea, and allowed MEDC to purchase the property in 2006. The first order of business was the site assessment and cleanup, which was funded by the Southwest Region Brownfields Assessment Program administered by SWRPC and the NH Department of Environmental Services (DES) Brownfields Cleanup Revolving Loan Fund. Following remediation efforts, the project was divided into three phases, two of which have been completed.

Phase I included the creation of the Marriot Courtyard Hotel, Railroad Square Senior Housing, the 51 Railroad Square building (which houses Nicola's Trattoria), business suites and medical offices, and the rehabilitation of the former Wright Silver Polish building. Phase II included the development of the Monadnock Food Co-Op, with additional infrastructure improvements. Phase III, which is set to begin in 2015, will incorporate high-end rental apartments, commercial space, veteran housing, and additional parking.

The project has been supported by CDBG funding, Green Gap Funding LLC, state tax credits, U.S. Department of Agriculture (USDA) Rural Development loans, and financing from the NH Business Finance Authority, along with private investments and other sources. MEDC President, Jack Dugan, notes that although the project's financing collaboration was monumental in the success of the site's redevelopment, it was the desire and commitment of community members that made it possible.

Millions of dollars of new tax revenue, over 150 new jobs, and an investment in a healthy future were generated through this project. Permeable pavement, the maintenance of the bike trail, a Silver LEED certified hotel, and a recreational green space complete with a small outdoor stage, all contribute to the prosperity and vitality of the downtown community.



"We wanted to create a vital, healthy extension of the downtown Keene community. You do that by bringing people closer together." - Jack Dugan, President, Monadnock Economic Development Corporation

Goal II: A competitive and prospering regional economy will create diverse opportunities for current and future residents and workers.

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Objective A: Ensure that the Region's residents and workers have access to the education, skills, and support services necessary to thrive.

Objective B: Retain, grow, and attract a diverse base of business and industry that provides opportunities for growth and workforce development.

Objective C: Maintain high quality infrastructure that will safely and reliably connect people with and provide convenient access to employment, goods, services, and other resources within and outside of the Region.

WHAT YOUR COMMUNITY CAN DO TO HELP BUILD A PROSPEROUS ECONOMY:

BUILD A SKILLED & EDUCATED WORKFORCE

- ✓ Support programs that connect youth and other ages and abilities with apprenticeship and internship opportunities.
- ✓ Collaborate with businesses, educational institutions, and other partners to help meet workforce training needs.
- ✓ Ensure the availability of affordable and accessible educational opportunities for all levels of learners including early childhood education.
- ✓ Strengthen training programs that focus on the needs of the Region's leading industry clusters.
- Expand and support programs that match workers and employers based on available skills and needs.
- ✓ Establish incentives to attract, retain and support young professionals and skilled workers.

RETAIN, GROW, & ATTRACT BUSINESS

- ✓ Develop programs and/or facilities that support small and emerging businesses such as business incubators, maker spaces, shared commercial kitchens, etc.
- ✓ Share and/or jointly procure resources and materials such as electricity with local businesses and organizations.
- Pursue projects and funding to revitalize under-utilized or vacant properties or buildings.
- ✓ Consider utilizing tools such as the NH Community Revitalization Tax Credit (RSA 79-E), the formation of an Economic Revitalization Zone (RSA 162-N), Brownfields Assessment Grants, CDBG, NH CDFA loans, etc.
- ✓ Support programs like Monadnock SCORE that provide technical assistance to local businesses and entrepreneurs.
- ✓ Develop and implement strategies to market and promote the Region and/or your community to attract new businesses and skilled workers.
- ✓ Support or develop opportunities to strengthen and promote the creative economy, agriculture/working landscape, tourism, and manufacturing sectors.

MAINTAIN ADEQUATE INFRASTRUCTURE

- ✓ Identify and advocate for community transportation needs and pursue funding solutions which may include the New Hampshire Ten Year Transportation Improvement Plan, federal funding programs, vehicle registration fees, etc.
- ✓ Pursue multi-town coordination and collaboration on shared infrastructure needs such as sewer and water, sidewalks, schools, transfer stations, etc.
- ✓ Support efforts to expand the availability and quality of broadband infrastructure through local broadband planning.
- ✓ Adopt programs to strategically maintain and upgrade municipal infrastructure and facilities such as tax increment financing, asset management, capital improvement plans, etc.
- ✓ Support opportunities for diversifying energy supplies including renewable resources such as biomass, solar, wind, etc.
- ✓ Ensure the availability of affordable child and elder care programs including evening services as well as services near employment centers.

STEWARDSHIP

STEWARDSHIP

The quality and accessibility of the Monadnock Region's natural and cultural resources are an important component of how many residents and visitors define quality of life. When asked, "What do you like best about where you live?" residents frequently describe attributes of the Region's landscape - scenic beauty, productive farms and forests, lakes and ponds, Mount Monadnock, etc. They also make mention of the unique historic and cultural features that shape our sense of place and community identity. These rich and varied resources serve not only as links to the past, but contribute to our economic prosperity and overall quality of life.

Yet, with this appreciation comes concern for the protection and sound management of these assets. As a rural area, we have not experienced the same degree of development and growth as other parts of Southern New Hampshire. We are fortunate to have abundant natural resources and well preserved historic features. However, these assets should not be taken for granted.

If our resources were to disappear or degrade, much of what is valued about the Region would be threatened. There would also be significant impacts on public health and the regional economy. For these reasons and many others, it is important to care for and protect our natural and cultural resources to ensure that future generations can experience the same benefits from them as we do today.

This section of the Plan provides an overview of the significant conditions, trends, and issues facing the Region's diverse natural and cultural resources. It goes on to highlight strategies for communities, organizations, and others to consider in addressing these challenges at the regional and local level, and it addresses opportunities for regional coordination and action.



FRAGMENTATION AND DEVELOPMENT

Throughout the population boom of the 1960s-1980s, the Region faced tremendous development activity, most of which was in the form of single family houses. These new homes, businesses, parking lots, roads, etc. often fragmented and replaced valuable forests, wetlands, and agricultural lands - resources that provide important wildlife habitat, protect water and air quality, and have substantial economic value. New development also impacted the look and feel of historical villages and rural roadways.

Although the Region's population is not growing as rapidly as it did in previous decades, our resources are still vulnerable to the impacts of land use activities and development. Of the 49,300 acres of prime farmland and farmland of statewide importance in the Region, 8% are developed, and 11% are conserved from future development. These agricultural soils, which are mostly flat and clear of forest, are most vulnerable to development pressure. In 2012, there were 62% fewer acres of land in farms and 1,150 fewer farms in Cheshire County than there were in 1940.

FIGURE 8. STATUS OF IMPORTANT AGRICULTURAL SOILS IN THE SOUTHWEST REGION



WATER QUALITY

Non-point source pollution is the primary cause of water quality impairments in the Region and contributes to over 90% of water pollution in New Hampshire. It occurs when water from rainfall or snowmelt picks up and carries pollutants on the surface of the ground into lakes, rivers, and groundwater. Pollutants can include chemicals (e.g. pesticides, petroleum), nutrients (e.g. phosphorous and nitrogen from fertilizers or faulty septic systems), pathogens (e.g. E. coli from animal wastes), sediment, etc.

Although some of these substances are naturally occurring, they can have negative impacts on aquatic life in high concentrations. According to NH DES the most common impairments to aquatic life in the Region are low pH, low dissolved oxygen, and increasing levels of total phosphorus and chlorophyll-a. Low pH is often caused by acidic compounds, mostly from the burning of fossil fuels, which are deposited from the atmosphere into surface waters. Low dissolved oxygen and high levels of total phosphorus and chlorophyll-a are typically caused by excessive inputs of nutrients, such as phosphorus and nitrogen. These nutrients can cause algae in lakes and ponds to grow faster than the ecosystem can handle. Eventually, as excess algae die off and decompose, the dissolved oxygen that aquatic life need to survive decreases.

FIGURE 9. COMMON IMPAIRMENTS TO AQUATIC LIFE BY WATERBODY TYPE

Туре	Area	#1	#2	#3	#4	#5
	Southwest Region	рН	Dissolved oxygen	*Chlorophyll-a	*Phosphorus (Total)	Non-Native Aquatic Plants
Lake	-0		saturation			
	NH	рН	Dissolved oxygen saturation	*Chlorophyll-a	*Phosphorus (Total)	Non-Native Aquatic Plants
Divor	Southwest Region	рН	Oxygen, Dissolved	Benthic-Macro- invertebrate Bioassesments (Streams)	Aluminum	Fishes Bioassessments (Streams)
River	NH	рН	Oxygen, Dissolved	Aluminum	Dissolved oxygen saturation	Benthic-Macro- invertebrate Bioassesments (Streams)

*Indicates a tied rank on a given row; Table Source: NH Department of Environmental Services, 2014

AIR QUALITY

An air pollutant of concern in the Region is particulate matter, which is the term used for a mixture of solid or liquid particles in the atmosphere. Very fine particulate matter (PM 2.5), less than 2.5 microns - far smaller than the width of human hair, can deeply penetrate the lungs affecting the health of people with heart and lung conditions or breathing difficulties. Over the past few years there have been documented increases in PM 2.5 in the Keene area during the winter. NH DES has targeted smoke from wood burning as a significant contributor to this issue.

While the Keene area currently meets national air quality standards for small particle pollution, there have been instances when these standards are exceeded, particularly on calm, cold winter nights. Exceedance of these standards could result in serious economic impacts including stricter permitting and costly controls on industry emissions.

INVASIVE SPECIES

By outcompeting native species and disrupting ecological processes, invasive species can have severe environmental and economic impacts. Non-native plant and animal species can reduce wildlife habitat, impact water quality, stress and reduce agricultural and forest crops, damage personal property and cause health problems. They can also be incredibly difficult and costly to control.

Invasive insect species of serious concern to our Region's forests include the Asian longhorned beetle, the emerald ash borer, and the hemlock woolly adelgid. Since 2001, more than 50% of the Southwest Region's municipalities have confirmed hemlock woolly adelgid infestations, which can weaken and kill trees. As of 2011, there were 9 water bodies in the Southwest Region with known infestations of invasive aquatic plant species. By far, the most widespread of these is variable milfoil, which has infested approximately 64 water bodies in the state.



FIGURE 10. AVERAGE DAILY PATTERN FOR PM 2.5 FOR OCTOBER 2008

Source: NH Department of Environmental Services Air Resources Division



Above right: Milfoil infestation in a lake; Above left: Hemlock woolly adelgid infestation.

CHANGING CLIMATE

By the end of the century, the Region's landscape may look very different from what it looks like today. Changes to the climate such as increased temperatures and precipitation are expected to greatly impact the Southwest Region's natural systems. Between 1970 and 2012, the Region experienced an average annual increase of minimum winter temperatures of 0.17°F or a total increase of 7.14°F above the minimum over the 42 year period. Historical data shows that since 1895 the average annual temperature in the Region has increased slightly more than 1°F over a century's time. Precipitation has also increased over time. According to data reported since 1970, rain precipitation in the Region is growing at an annual rate of 0.20 inches, or approximately 8.5 more inches per year in 2012 compared to 1970.

According to a 2014 study by the University of New Hampshire's (UNH) Sustainability Institute, these trends are expected to continue and in some cases accelerate. The study forecasts that by 2099 there may be 53 more days during the year that will reach temperatures greater than 90°F in Keene. The number of days that will reach below freezing could decrease by 48 days. The same study suggests that the Region is expected to have between 6 and 8 more extreme precipitation events of four-inches or more in 48 hours per



FIGURE 11 PROJECTED CHANGE IN # OF EXTREME TEMPERATURE DAYS FOR KEENE, NH

decade. Between 1980 and 2009, Keene averaged only 1.5 four-inch precipitation events in 48 hours per decade. Because so many systems are tied to climate, these predicted changes will have a wide-ranging impact on where plants and animals live, food production, and the availability and use of water. For example, a change in the usual timing of rains or temperatures can affect when plants bloom and fruit, when insects hatch or when streams are at their fullest.

Although some species may flourish due to longer growing seasons and more abundant carbon dioxide, many of our native tree species, including spruce, fir, pine, maple, beech, and birch, are not expected to survive in a warmer climate and are predicted to migrate north. In addition, scientists anticipate the in-migration of new invasive pests, plants and insects, which could cause management problems and costs for area farmers and local gardeners as well as the potential introduction of chemicals such as pesticides, herbicides and insecticides into our soils and groundwater.

ECONOMIC & SOCIAL IMPLICATIONS

The value of our Region's natural ecosystems and cultural resources is vast. These features play an important role in sustaining quality of life and wellbeing, establishing both local and regional identity, and in attracting visitors to our Region. However, the issues described here could have an impact on their quality and availability and, potentially, severe economic repercussions.

Numerous studies have tried to calculate the economic importance of these resources. A study conducted in 2002 determined that just four uses of New Hampshire's surface waters - boating, fishing, swimming, and drinking water supply - contribute up to \$1.5 billion annually in total sales to the state's economy, and that surface waters boost property tax revenue statewide by an estimated \$247 million per year. A 2002 study by the Clean Water Network estimates that the economic value of New Hampshire's wetlands, which help purify water, trap sediments, protect against floods, and recharge both surface and ground waters, to be approximately \$1.2 billion annually.

The Region's economy, which relies on seasonal changes for recreation and tourism, could be significantly impacted if climate predictions are realized.

Source: Climate Change in Southern NH: Past, Present & Future, UNH Sustainability Institute, 2014

Stewardship

Winter recreation opportunities such as skiing, snowmobiling, ice fishing and skating are important to the Region. Increased warming trends are expected to limit and even threaten the continuance of these activities. Additionally, the loss of fall foliage as certain tree species migrate north could greatly impact the tourism industry and the revenue associated with foliage visitors, which is estimated to be approximately \$292 million annually statewide.

CARING FOR OUR IMPORTANT RESOURCES

Given the diversity of interests and values related to our landscape, establishing collective priorities for resource conservation and management is a challenge. Priorities range from maximizing the commodity value of resources to ensuring the availability of clean air and water to preserving scenic views and rural character. Management strategies must balance meeting an array of needs and uses for our resources and natural systems with protecting them from current and future threats (e.g. loss of biodiversity, development pressure, and the impacts of a changing climate).

To be effective, multiple strategies should be employed from inventorying and monitoring to implementing best management practices to placing land in conservation. There can be no one-size-fits-all approach to managing and protecting these resources; especially, given their widespread geographic distribution.

Inventory & Monitor Resources

Having an understanding of the availability and condition of resources is an important component of stewardship. Without this information, it would be difficult to plan for or make management decisions. Routine inventorying and monitoring can help communities and others acquire knowledge of the location, abundance, and condition of resources. This data can serve as a reference point against which past and future trends, as well as the condition of resources from other areas, can be compared and measured. Some of the ways inventorying and monitoring can be useful tools in the Region for resource management are described in the next sections.



Inventory Resource Availability and Conditions

- Inventories provide information that is fundamental for making wellinformed management decisions. An inventory is a process of gathering and recording information about a particular resource or resources at a specific point in time. This data can help determine where resources are located and dispersed, what types of stressors might be impacting them, how they compare to resources located in other areas, etc.
- A natural resource inventory (NRI) is a tool to identify and describe naturally-occurring resources in a community, watershed, or region. A comprehensive NRI is typically comprised of inventory maps that show the location and extent of existing resources (e.g. forests, surface water, shoreline, agricultural soils, wildlife, etc.) and related features. It also includes associated data such as the acreage of particular resource features, the standards and scale used for inventorying resources, and a written report that provides a descriptive summary of each resource inventoried, and summarizes the project's goals, findings and



recommendations. Many communities in the Region have completed an NRI and SWRPC completed an NRI for the Region in 2003. These documents can serve as the basis for land conservation planning and can be used in local planning and zoning.

Inventories of historic and cultural resources, such as older buildings, barns, stone walls, and historic sites, can be used to inform and guide preservation efforts. A historic resource survey involves collecting and recording information about existing historic buildings and sites in a community, and are considered a first step in documenting historic resources for planning purposes. This type of survey is needed to list a site(s) on the State or National Registers of Historic Places. Surveys typically include detailed descriptions of the resource, photographs, and field notes on age, setting and geographical location. Some communities, in partnership with the NH Division of Historical Resources and the Historic Agricultural Structures Advisory Committee, have undertaken surveys of historic agricultural structures such as barns, silos, poultry houses, etc.

Conduct Routine Monitoring

- While an inventory provides data for a point in time, ongoing monitoring provides information for establishing baseline conditions and identifying long term trends. Routinely collecting and analyzing information about the quality of the Region's resources allows for early detection of changes in resource condition and enhances the ability to tract potential problems to their source.
- Aside from prevention, early detection is one of the most effective management strategies for invasive species, nonpoint source pollution, and other resource issues. State agencies and organizations rely heavily on data collected by volunteers in the Region to survey and monitor forests and surface waters for invasive species. In addition, volunteers routinely collect and share samples from surface waters with NH DES and partner organizations to help determine long-term water quality trends. This data can be used to identify where improvements or protection efforts might be needed or most helpful.





- Although the Region is keeping pace with sampling its water bodies as compared to the rest of the state, there is a long way to go before there is a complete picture of water quality. Within the Region, 39% of lakes and 35% of rivers have some data available from water quality testing and monitoring. Additional sampling will help improve the understanding of water quality in the Region.
- Within the Region, air quality has been monitored since the 1960s. NH DES, who operates a network of air quality monitors throughout the state including stations in Peterborough and Keene, measures levels of ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, particulate matter, and a number of other pollutants in the outdoor (ambient) air. The data collected from these sites are sent to the U.S. Environmental Protection Agency (EPA) for evaluation to determine pollutant trends and to see if levels of pollutants exceed air quality standards.

Protect & Conserve Important Resources

Some resources need to be protected from certain human activities development in order to maintain their integrity, ecological processes, and/or cultural values. Inventories and monitoring can help identify which resources or areas in the Region are most sensitive or vulnerable to these activities, and which warrant protection. There are multiple ways a community, organization, or others can protect natural or cultural resources. The sections below describe some of the methods currently employed in the Region for preserving the quality and value of important resources.

Conserve Important Resources

Conservation measures such as easements and land acquisitions ensure the long-term protection of important and/or valuable natural resources including wildlife habitat, working landscapes, vegetated riparian corridors, etc. A conservation easement is a legal agreement between a Approximately 23% of the Region's land is currently in conservation through ownership by natural resource agencies, conservation organizations, municipalities or by permanent conservation easement.

landowner and a land trust, such as the Monadnock Conservancy, or a government agency that permanently limits future uses of the land in order to protect its natural resources. Often, landowners with conservation easements are still allowed to manage and use their land, and they can also sell it or pass it on to heirs. However, any future owner must abide by the permanent restrictions spelled out in the easement. In addition to conservation easements, land can also be donated or purchased to be used permanently for conservation purposes.

- Approximately 23% of the Region's land is currently in conservation through ownership by natural resource agencies, conservation organizations, municipalities or by permanent conservation easement. This land is distributed across the Region with large segments in the areas encompassing Pisgah State Park in Chesterfield, Hinsdale, and Winchester; portions of the Wapack Range in Sharon, Temple, New Ipswich, Peterborough, and Greenfield; Mount Monadnock, and its host towns of Dublin, Marlborough, Jaffrey, and Troy; and the Town of Stoddard. Six towns in the Region have 40% or more of their total land area in conservation. These include Chesterfield, Gilsum, Richmond, Stoddard, Surry, and Westmoreland.
- Regional approaches to conservation are important for coordinating large, un-fragmented tracts of land; ensuring connectivity among important wildlife habitat; and, protecting resources that cross municipal jurisdictions. Organizations like the Monadnock Conservancy and the Harris Center for Conservation Education can play a role in helping to coordinate regional conservation efforts.
- Similar to conservation easements, a preservation easement can be used to protect a historic, archaeological, or cultural resource. With a preservation

easement, the owner of a significant historic or cultural property grants a second party, such as a qualifying local board or non-profit historical organization, the right to protect and preserve the historic and architectural features of the property.

- Good land conservation does not end with the acquisition of the property or an easement. When property is placed in conservation it is important to plan for and identify resources to support long-term stewardship and management of the land or resource. Stewardship responsibilities can include monitoring and enforcing the provisions of an easement, evaluating the appropriate use of a property (recreation, timber, harvesting, farming, etc.), and managing the impact of public use of townowned lands.
- Aside from private donations, common sources of funding for conservation efforts include the Land Use Change Tax (LUCT), federal and state programs such as the USDA's Natural Resource Conservation Service and the NH Land and Community Heritage Investment Program (LCHIP), and municipal conservation programs. The LUCT is money paid to a municipality when land that was enrolled in the current use assessment program is removed from current use to be developed.
- The current use program (NH RSA 79-A:7) is a tax relief strategy aimed at making it easier for landowners to keep open space undeveloped and to conserve agricultural and forest lands. Land in current use is taxed on its income-producing capability, instead of being taxed at its real estate market value. If this land is taken out of current use and is developed, the property owner must pay a use-change penalty, which is typically a sum relative to the amount of tax revenue lost during the years the land was in current use and 316 acres were removed from current use, which generated an estimated \$111,473 in LUCT.

CALIFORNIA BROOK NATURAL AREA: A CASE STUDY IN CONSERVATION & ECONOMICS



Selling a conservation easement to a land trust was not part of the plan when Forecastle Timber, LLC, bought its first property in Chesterfield, New Hampshire, in 2004. But when the Monadnock Conservancy made an offer to purchase an easement on nearly 400 acres of Forecastle's new acquisition, they listened with interest. Monadnock Conservancy was one of several organizations working to conserve the California Brook Natural Area, a 9,000-acre swath of undeveloped forest and wetlands linking the City of Keene with Pisgah State Park. The land trust purchased the easement, funded in part by LCHIP, in 2006.

"As long-term investors, our approach is to conduct regular but infrequent timber harvests, ensuring that the volume of timber removed does not exceed long-term natural growth," said Forecastle's Phil Blake. "We found that the conservation easement and the Monadnock Conservancy's goals were quite compatible with our own," added Blake. The easement was designed to ensure the land remains available for sustainable timber management and wildlife habitat, among other ecological values.

The transaction was so successful that the Monadnock Conservancy and Forecastle partnered on a similar project on adjacent land being sold by the Colony family in 2012. With significant potential for residential development, the Colony property carried a larger price tag. "Not being in the development business, we could never have afforded to buy the land if not for the Monadnock Conservancy's simultaneous purchase of a conservation easement," explained Phil Blake. "The easement provided the missing piece of the puzzle." Public funding for the easement was critical, not only from LCHIP, but also from NH DES and the Town of Chesterfield.

According to Chris Loomis, supervising forester on Forecastle's 2013 harvest of the Colony property, the economic benefits of the harvest extended far beyond Forecastle's profits. Before the harvest, a log landing and an access road were built using locally sourced gravel and stone. Two foresters were involved in planning and supervising the harvest, which utilized a local family-owned logging company and kept five employees busy full-time performing harvesting, processing, and trucking duties. Wood was trucked across the state, including to a log yard in Winchester, biomass power plants in Concord and Springfield, a wood pellet manufacturer in Jaffrey, and a lumber mill in New London. Finally, the Town of Chesterfield benefited as well in the form of more than \$3,500 in timber tax paid to the municipality at the time of the harvest. With the undeveloped Forecastle property demanding little in municipal services or similar expenses, this tax revenue to the Town was almost entirely profit.

To date the Monadnock Conservancy has protected one-third of the California Brook Natural Area, nearly all of which remains available for sustainable forestry. Another project is currently underway to protect another 688 acres in the corridor, and the Conservancy and Forecastle Timber are discussing opportunities to apply their successful model to future acquisitions.

-Case study and photos courtesy of The Monadnock Conservancy

Stewardship

Many communities in the Region have benefited from LCHIP to acquire and conserve land and cultural resources. LCHIP is an independent state authority (NH RSA 277-M) that makes matching grants to communities and non-profits in the state to conserve and preserve New Hampshire's most important natural, cultural, and historic resources. Since the program started in 2000, over 260,000 acres of land have been conserved and 142 historic structures have been preserved or revitalized statewide.

Adopt and Enforce Policies & Regulations

- Communities can protect sensitive resources from potentially harmful land uses by establishing conservation zoning overlay districts and/or adopting land use regulations that prohibit or restrict development and certain activities in critical natural resource areas such as drinking water or wellhead areas, wetlands, shorelands, wildlife corridors, etc. The Innovative Land Use Planning Techniques handbook produced by NH DES provides guidance and includes model regulations for communities to consider in their efforts to protect resources such as groundwater and surface water, wildlife habitat, wetlands, and agricultural soils.
- Ordinances and regulations are most effective when local officials and residents adequately understand the restrictions they impose and the reasons for doing so. It is also important to have adequate resources to support enforcement of these regulations. Enforcement can be especially challenging in communities where there is limited staff or a full-time code enforcement officer present.
- Some communities have chosen to modify their land use regulations to support the retention or encouragement of agricultural activities and open space. For example, some communities have reduced or removed impediments to home-based businesses or accessory dwelling units, which can be critical to farm operations. Communities might also consider exempting agricultural signs, which are typically temporary signs that change with the season and crop availability, from local sign ordinances. A community could develop and adopt ordinances such as an agricultural conservation district or a right-to-farm ordinance that are sensitive to the

unique needs of farm businesses, seek to protect areas of the community that are well suited for agriculture, and help to minimize conflicts between incompatible uses.

- Local land use regulations can also be a tool for protecting historic and cultural resources. There are three different types of historic districts that communities could adopt to protect historic character in a specific area. These include a National Register historic district, which is initiated at the local level but ultimately approved by the state and federal government; a locally designated historic district, which is typically a zoning overlay district that is administered by a local citizen commission that approves exterior alterations, new construction and demolition in the district; and, a neighborhood heritage district, which is also a zoning district but operates under more flexible, less stringent standards.
- Communities might also consider adopting a demolition review ordinance, which can help prevent the loss of historically and architecturally significant buildings. While this ordinance, which is adopted as an amendment to the building code, does not prevent demolition, it does provide for a delay period. This allows additional time for a community to evaluate the significance of the building, meet with the owner to discuss options, hold a public hearing, document the structure, and explore alternatives. Communities have a great deal of flexibility in creating this type of ordinance and can draft it to reflect local concerns and conditions. For instance, the City of Keene's demolition review ordinance requires that qualifying buildings be photographically documented prior to demolition and encourages the salvage of significant architectural features.

Promote the Use of Best Management Practices

Best Management Practices (BMPs) are techniques and strategies that have been proven effective at reducing or preventing the pollution or impairment of natural resources. BMPs are available for most land use activities that might impact natural resources, specifically water resources, and can be either voluntary or mandatory depending on the site. For example, forestry BMPs include a wide range of recommended



Above photo: Peterborough Town House walkway prior to 2008 LID installation; Below photo: Peterborough Town House walkway following 2008 LID installation of rain garden and pervious brick walkway.

techniques that can be used before, during, and after logging operations to protect water quality, wildlife habitat, soil integrity and other aspects of the forests. There are BMPs for agricultural practices, stormwater management, invasive species removal, roadway maintenance including road salt application, erosion and sediment control, etc.

- Low Impact Development (LID) is a set of stormwater BMPs that strives to reduce the impact of built areas and promote the natural movement of water within an ecosystem or watershed. Instead of conveying and treating stormwater off-site using conventional infrastructure such as pipes, LID focuses on techniques to infiltrate, filter, store, evaporate and detain rainfall close to its source. Common LID BMPs include: rain gardens, permeable pavements, vegetated roofs, and rainwater harvesting.
- Communities have the opportunity to encourage the use of LID by requiring it in land use regulations, and implementing demonstration projects. Often, elements of municipal ordinances, such as minimum roadway widths, parking requirements, and curb and gutter design, can conflict with LID principles. Local regulations can be modified to allow for and encourage LID best practices and techniques in the design and development of lots and streetscapes.
- A few municipalities in the Region have implemented noteworthy LID projects. In 2008, Peterborough completed a stormwater improvement and LID demonstration project in its downtown. This project incorporates LID techniques such as rain gardens, infiltration beds, and pervious brick sidewalks, to address nonpoint source pollution and stormwater concerns, and to protect the water quality of the nearby Contoocook River as well as important drinking water aquifers located downstream from the project.
- There are numerous resources available for both public and private land owners and others seeking to implement BMPs. State agencies such as NH DES, NH Division of Forests and Lands, NH Fish and Game Department as well as the National Resource Conservation Service and the University of

Stewardship

New Hampshire Cooperative Extension are a few of the organizations that have published BMP guidance and reference materials in New Hampshire.

Enhance Awareness & Education

- Education and outreach are important to helping residents understand the economic, cultural, and environmental importance of caring for our natural and historic features. Having an understanding of how human and land use activities impact the quality and availability of resources, especially those that we rely on for daily living, is one of the best ways to ensure their protection and management.
- Even the best plans and/or regulations cannot succeed without community participation and cooperation. Public outreach and education on the importance of resource protection and management is essential. Outreach efforts should effectively communicate the importance and benefits of protecting resources and inspire citizens to action and behavior change.
- Communities in the Region can help raise awareness about ways residents and businesses can help protect natural resources and preserve historic and cultural features by sharing information on their websites and in community newsletters. This information can include links to guidance materials prepared by state agencies or other organizations and can include BMPs and other ways residents and businesses can be good stewards of resources in their background, community, or Region.

"Clean air is a basic requirement to a healthy life. The outreach campaign was created to help people understand the issue and provide advice about proper wood-burning, the primary contributor to wintertime air pollution in our Region."

-Henry Underwood, GIS Technician / Planner, Southwest Region Planning Commission

GREATER KEENE AIR QUALITY CAMPAIGN

When the nights get cold and frost begins to form, many residents of the Region turn to their trusty woodstove for heat. Wood burning in New England is a tradition, and for many, the spicy smell of wood smoke conjures memories of sitting by a warm fire. Yet, buried in this scent is fine particulate matter (PM 2.5 for short), which can pose significant environmental, economic and health concerns.

PM 2.5 refers to the mixture of very fine particles smaller than 2.5 microns in size - far smaller than the diameter of a human hair. These particles are small enough to enter the blood stream through the lungs, which can cause a myriad of health effects, especially for those with chronic respiratory diseases such as asthma, emphysema and bronchitis.

For most areas, wood smoke is rarely seen as an issue because the climate and topography allow it to blow away before it affects anyone. However, on cool, calm winter nights in valley communities, such as Keene, an overhead layer of warm air can trap colder air, along with wood smoke and other pollution, close to ground.

NH DES, who routinely monitors air quality throughout the State, knew they needed to address this issue when elevated PM 2.5 levels were observed in Keene. In 2012, they formed a partners group with SWRPC, Cheshire Medical Center, Keene State College, the Greater Monadnock Public Health Network, and the City of Keene to respond to the issue. The group recognized the important role public awareness and education could play in mitigating PM 2.5. If residents burned wood more efficiently it could reduce the amount of wood smoke produced. Together, these partners designed and implemented the Greater Keene Air Quality Education and Outreach Campaign.

The Campaign's core message, "burn the right wood; use the right stove; and burn the right way," is a reminder to those with wood-fueled stoves, boilers, and furnaces to burn only dry/seasoned firewood in a clean, efficient appliance. The Campaign has spread this message by creating an informational website; distributing flyers, door tags, and pamphlets; facilitating community discussions, presentations, and interviews; gaining substantial media coverage via newspapers, radio, and cable TV; and enhancing awareness of the Air Quality Index and Air Quality Action Days. And the work hasn't stopped there - the Partners Group, along with local businesses and community members continue to cultivate more research and awareness about air quality in and around the City of Keene.

Coordinate and Plan for Resource Management

Planning for natural and cultural resources within the Region and communities is important for many reasons. It is an opportunity to identify and develop goals and objectives as well as a direction for the use and management of important resources. It is also an opportunity to educate and inform residents about the history, availability, and conditions of certain resources. Included below are some considerations for communities and others in their efforts to plan for resources at varying scales.

Develop Management Plans

- Communities can support the management, conservation or protection of natural and cultural resources by developing visions, goals, and objectives for these resources in their local master plans. Through powers granted by NH RSA 674:2, municipalities can dedicate sections of their master plan to natural resources, cultural and historic resources, energy, etc. By including clear goals for the management of certain resources in the master plan, a community can establish the direction and authority needed to implement certain strategies or ordinances to protect and care for resources locally.
- Plans focused on the management of certain resources, such as open space or watershed management plans, can be developed in addition to master plan chapters. Often these documents identify goals and action items for the purpose of creating, protecting, and/or maintaining desired conditions for the resource whether it be a field, forest, river, lake, watershed, etc. The process of developing these plans can involve multiple partners including municipalities, landowners, local and state agencies, and the general public.
- It is important to plan for and manage some resources at a regional or multijurisdictional scale. Resources that cross municipal boundaries and are a part of a larger network such as rivers, watersheds, large tracts of forests and wildlife habitat warrant consideration at a larger scale and a more

comprehensive planning effort. However, it can be challenging to collaborate with multiple jurisdictions and diverse stakeholders.

Form Advisory Committees

- Advisory committees can support and facilitate ongoing monitoring of and planning for natural resources in communities and the Region. For example, lake associations, which are voluntary organizations composed of people who own land on or near a lake, provide a forum for residents to raise concerns related to the lake, become educated about problems, and work towards solutions.
- Communities have the ability to form a number of different types of advisory committees and commissions including those focused on conservation, open space, energy, historic and agricultural resources. While the roles and duties of these committees vary, each serves to explore and better understand the availability and condition of certain resources in a community and to advocate for their protection and wise management.



Above photo: Town of Jaffrey Energy Committee

Goal III: The Region's natural, historic, and cultural resources will be cared for and protected for the use and enjoyment of present and future generations.

This property is protected by a CONSERVATION EASEMENT held by the Objective A: Inventory and monitor the Objective B: Preserve and protect the availability and condition of natural, integrity and availability of important cultural, and historic resources within the sthrough resources conservation, Region. and the use of best regulation, management practices.

Objective C: Manage natural, cultural, and historic resources through planning and collaboration among communities, organizations, and landowners in the Region.

WHAT YOUR COMMUNITY CAN DO TO HELP STEWARD NATURAL AND CULTURAL RESOURCES:

INVENTORY & MONITOR RESOURCES

- ✓ Develop natural resource inventories to identify important naturally occurring resources within communities.
- ✓ Inventory important historic and cultural resources such as buildings, structures, sites, and objects.
- ✓ Monitor and assess the quality of surface water resources in the Region and expand efforts to water bodies not currently monitored.
- ✓ Inventory and evaluate the locations and adequacy of public access to outdoor recreation resources.
- ✓ Support programs that prevent the introduction of and reduce the impacts of invasive species and diseases.

PROTECT & CONSERVE IMPORTANT RESOURCES

- ✓ Develop and implement conservation strategies that protect and manage the Region's natural resources such as prime agricultural soils, open space, important forest soils, shorelands, and wildlife habitat.
- ✓ Adopt policies or regulations that protect natural resources and systems (e.g. groundwater protection, stormwater management, steep slope protection, visual resource protection, etc.).
- ✓ Adopt policies or regulations that protect historic and cultural resources (e.g. demolition review ordinances, neighborhood heritage districts, scenic road designation, etc.).
- ✓ Help landowners, communities, and others implement Best Management Practices through outreach, education, and demonstration projects in areas such as forestry, agriculture, water quality, waste management, stormwater management etc.
- ✓ Support programs to generate revenue for the protection of important natural resource features such as open space, working landscapes, wildlife habitat, etc.

COORDINATE & PLAN FOR RESOURCE MANAGEMENT

- ✓ Encourage multi-town collaboration for the management, protection and use of natural resources (e.g. developing watershed management and non-point source pollution plans).
- ✓ Promote land and resource protection through means such as open space and land conservation plans, historic preservation plans, agricultural commissions, etc.
- ✓ Incorporate climate adaptation and mitigation strategies as part of natural resource planning and management.



PREPAREDNESS

The Southwest Region, like much of New Hampshire, celebrates its Yankee heritage and related qualities of independence and self-sufficiency. Residents are used to New England's variable weather and the hardships of long winters - shoveling, plowing, heating, potential power outages, etc. Communities have trained volunteers and plans in place to respond to emergency and disaster situations. Neighbors help neighbors in need.

However, extreme storm events and flooding in the most recent decade have caused unprecedented damage to some areas of the Region, and raised questions about our resilience to unforeseen threats. Extreme rainfall events in 2005 (Alstead) and 2006 (Keene and surrounding communities) brought severe flooding resulting in costly road washouts, property damage, and loss of life. Similarly, the Ice Storm of 2008 took down power lines, disrupted economic activity, and left many without heat, hot water, electricity, and the ability to communicate with others for days.

Events such as these tested the preparedness of our residents and communities and have compelled us to consider our capacity for responding to and enduring natural and manmade disasters and potential emergencies. For example, if travel and trade were restricted, would we have sufficient supplies of food, fuel or other materials needed to survive? Is our infrastructure vulnerable to increased flooding or severe storm events? Questions of this nature are important to consider in our efforts to plan for the future. Although we cannot be resilient to everything, we cannot afford to be complacent. Preparedness for disasters and emergencies is critical to our Region's public health, safety, and security.

This section of the Plan examines opportunities to enhance our Region's resilience to a range of planned and unplanned events. It also provides an overview of significant trends and challenges that might impact preparedness in the Region.



SEVERE WEATHER & CLIMATE CHANGE

Extreme weather events like heat waves, storms, and floods have increased over the past decade in the Southwest Region. According to the Federal Emergency Management Agency (FEMA), there were 13 severe storms and flooding events in the Region declared as Major Disasters between 2003 and 2012. Statewide, there have been 32 Major Disaster declarations since 1953, 53% of which have occurred since 2000.

These storms have caused significant damage to property, roadway infrastructure, and other utilities, costing millions to repair. Although they have not been unequivocally connected to climate change, at the very least, these events are examples of what climate scientists predict we can expect to happen more frequently in the Region.



FIGURE 12. COST OF EXTREME WEATHER IN NEW HAMPSHIRE

ENERGY RELIANCE

Southwest Region households are among the most dependent on petroleum in the nation, with more than 65% of households using fuel oil as their primary source for home heating. This heavy reliance on non-renewable and imported energy sources for heating, transportation and other important applications has made the Region vulnerable to changes in its supply and price.

In addition, the state of New Hampshire has become increasingly reliant on natural gas to produce electricity, despite limited pipeline capacity. In January of 2014, there were times when more than 75% of the natural gas powered electricity generation facilities in New England were not running, as the available fuel supply was being consumed for heating purposes.



Source: U.S. Energy Information Administration

Source: NH Department of Environmental Services

A 2012 study by ISO New England, the independent manager of New England's electricity grid, found that under typical operating conditions, existing natural gas infrastructure in New England is sufficient to meet electric power system demand from only 2014-2017. This, coupled with the anticipated closure of Vermont Yankee and other nuclear facilities, raises concerns for the long-term stability and reliability of the electric system.

AVAILABLE FOOD SUPPLY

Over the past century, our ability to provide the most basic need of our citizens - that of food, has weakened to the point where the Southwest Region and the rest of New Hampshire now relies on outside sources for 96% of the food we consume. In addition, our delivery chain has become dependent on petroleum, an imported fuel source that is susceptible to sudden price increases or supply shortfalls. If there were an unforeseen break in our food supply lines, the Region would be left with about four days of nutrition on supermarket shelves.



Above photo: Empty shelves in the produce section of supermarket, Market Basket, just one week after an employee strike prompted food distributors to stop delivery of fresh produce to the stores in 2014.

INFECTIOUS DISEASES

Infectious diseases represent an ongoing threat to the health of people everywhere, including those in the Southwest Region. Over the past few decades, there have been several emerging infectious diseases that have taken the health community by surprise including SARs, H1N1, lyme disease, eastern equine encephalitis (EEE) and the West Nile virus. Since 1980, approximately one to three new infectious diseases have been identified each year, while others have re-emerged or have developed resistance to available treatments.

Although not every infectious disease has major public health implications, a few have resulted in global pandemics, causing significant loss of life, economic losses, and interruptions in trade and travel. The flu alone contributed to between 3,000 and 49,000 deaths each year in the United States from 1976 to 2006.

As the Region's population ages and climate changes, the risk and potential impacts of an infectious disease pandemic might increase. It's estimated that 90% of seasonal flu-related deaths and more than 60% of seasonal flu-related hospitalizations in the country each year occur in people 65 years and older. In addition, increased heat, rain, and humidity as a result of climate change can create conditions conducive for disease-carrying vectors such as mosquitos and ticks to come into closer contact with humans in the Region.

ECONOMIC & SOCIAL IMPLICATIONS

Failing to prepare for the challenges described above and others could cost the Region significantly more than if it were to invest in disaster prevention and preparedness measures. According to the U.S. Department of Homeland Security, failing to prepare for extreme weather events has cost the United States \$1.15 trillion in economic losses from 1980 to 2010, and could cost another trillion in coming years. Investments in pre-disaster mitigation strategies such as adopting floodplain standards and hazard mitigation plans, and preparedness strategies such as maintaining reliable emergency communications systems and having evacuation plans, cost local governments

Preparedness

significantly less than recovery. A 2005 study of FEMA's disaster mitigation grants, found that for every \$1 invested in hazard-mitigation activities, the United States economy saves \$4 in societal losses from future disasters.

The costs of disasters are only anticipated to grow as our infrastructure becomes more vulnerable with age and as storm events become more frequent and severe. Over the past two decades, the annual cost of natural disasters in the United States has doubled, growing from \$15.6 billion to \$31.25 billion each year. According to the U.S. Global Change Research Program, future impacts of climate change project national economic losses on the order of \$1.2 trillion through 2050.

ENHANCING REGIONAL RESILIENCE & PREPAREDNESS

It would seem to take more than a village to respond to the types of events described in the previous sections; yet, most disasters and emergencies are experienced locally, at the community level. Given that resources are limited in the wake of an emergency, it is likely that communities will be the first to respond and may be on their own for hours or potentially days before help arrives from regional, state and/or federal sources. In these hours, towns must look to themselves and their neighbors for answers and assistance. For this reason and others, it is imperative that communities build preparedness and local response capabilities as well as overall resilience in advance of a disaster or emergency.

There are many factors that influence a community's resilience - or rather the ability to prevent or withstand and recover from natural or manmade disasters, public health emergencies and other crises. Resilience involves developing the capacity to account for and mitigate vulnerabilities, establishing strong social networks, considering preparedness and mitigation in local planning efforts, reducing negative health consequences, and rapidly restoring community functions.

While many communities in the Southwest Region have in place plans and trained volunteers to respond to a disaster or emergency, building resilience

For every \$1 invested in hazard-mitigation activities, the United States economy saves \$4 in societal losses from future disasters, according to a 2005 study of FEMA's disaster mitigation grants.

is an ongoing task. To improve resilience within the Region, we must routinely assess our capacity to meet the needs of our population in the event of an emergency; enhance local and regional planning for potential disasters and emergencies; and, ensure that we have sufficient and reliable infrastructure to access food, water, shelter, and other necessities and to maintain channels of communication.

Assess Existing Capacity

Part of preparedness is knowing the type of risks and hazards we might face as a Region and assessing our degree of vulnerability or exposure to them. It also involves understanding our capacity for responding to and dealing with these events, including our ability to meet basic needs such as supplying food and water, shelter, health care, heat, electricity, communications, etc. The sections below explore considerations for communities and regional organizations in assessing their capacity to either prevent or withstand and recover from natural and man-made hazards.

Examine Resource Availability

Having an understanding of the Region's potential and current capabilities for storing and supplying materials such as nutritious food, safe drinking water, heat and electricity, medicine, etc. from nearby sources is critical to building resilience. If travel and trade were restricted, how would we access food, fuel or other materials needed to survive? Do we have the necessary infrastructure to process, transport, and store these supplies even if they were available? These are important questions to consider in studying community readiness to either short or long term disaster or emergency situations. It is estimated that grocery stores in the Region have less than a week's supply of food on hand and there are few sources of fuel available within the Region. Organizations like the Monadnock Farm to Community Coalition (MFCC), Cheshire County Conservation District (CCCD), Cheshire County government, and others have been working on projects to enhance the Region's food security by supporting increased agricultural production and efforts to build the infrastructure needed to transport and process food products such as warehouses, commercial kitchens, etc. Others in the Region might consider undertaking similar efforts to enhance local food and energy security.

Evaluate Response Capabilities

In the event of an emergency evacuation, communities have the obligation to provide shelter space and food for evacuees. For larger scale events, it is important to consider undertaking a study of regional evacuation capabilities and shelter capacity to better understand how prepared the Region is for a disaster or hazard event that has region-wide impacts. Generally, schools and faith based institutions, such as churches, are the relied-upon options for shelter facilities in a community since they often offer space and facilities such as kitchens, bathrooms, emergency generators, etc. Although identifying and planning for these facilities is typically the responsibility of the municipality, a regional study could aid in improving the understanding of how well these shelters can accommodate the needs of larger diverse populations and of response efforts.

"Having food security in the future is going to be very important. The work that MFCC does - providing accessible, affordable healthy foods to all people - supports a better future. It just makes a lot more sense for us to be as strong as we can be locally."

--Roe-Ann Tasoulas, Coalition Coordinator, Monadnock Farm to Community Coalition

BUILDING REGIONAL FOOD SECURITY

"Across the board, people are very passionate about food and about it being local. They're invested and enthusiastic about having a sustainable and accessible future for generations," describes Roe-Ann Tasoulas, the coordinator for the Monadnock Farm and Community Coalition (MFCC). The MFCC is working towards building and supporting a robust and reliable local food system by facilitating discussion, collaboration, and implementation of effective programs, projects, and policies within Monadnock Region communities.

In 2007, the Cheshire County Conservation District (CCCD) began hosting open forums to explore the issues and barriers farmers, educators, businesses, and community members face in the Region related to local agriculture. What stemmed from these discussions was a myriad of off-shoot organizations dedicated to promoting and advocating for local food production and distribution. These include the Keene Farmer's Market, the Monadnock Food Cooperative, Monadnock Menus, and the MFCC, to name a few.

Today, the MFCC consists of 44 members, a Board of Directors and one fulltime staff person. Since forming, the MFCC has developed and adopted a 3year strategic plan. One facet of this plan is the formation of working groups, which are focused on supporting community action on specific subjects, like policy making and education. For example, the Farm-to-School working group discusses the business of food programs in the Region and how to better teach healthy eating habits to people of all ages. Tasoulas notes, "Poor health is taxing on our healthcare system, which affects our regional economy. Eating local food means eating healthy, and communities with strong agriculture contribute to a more resilient economy."

The MFCC is reliant on partnerships and community participation to achieve its goals. "As a non-profit, there's only so much time, money, and energy to accomplish goals, so collaboration is where it's at!" comments Tasoulas. Into the future, the MFCC is hoping to continue building their regional presence as a hub for information on local agriculture, farming, education, and resources. The public is encouraged to attend any of their various quarterly meetings, which are held in locations around the Region.

- Continuing to recruit and train volunteers of diverse ages and abilities is vital to sustaining local emergency management efforts such as firefighting, emergency medical response, search and rescue, etc. In the Southwest Region, communities are reliant on citizen volunteers to respond to emergencies. Taking time from family life and work to undergo training and duty time can be a challenge for many volunteers. Yet, it is unlikely that our small communities will acquire the funding and resources necessary to meet their emergency response needs without volunteer support. In addition, the need for these skilled volunteers is anticipated to increase as our population grows older.
- It is important to understand how prepared and capable communities are for meeting the needs of diverse, vulnerable populations in times of disaster. Vulnerable populations refers to groups that may not feel they can comfortably or safely access and use the standard resources offered in a disaster response or recovery effort. These groups may include but are not limited to individuals with physical limitations, developmental disabilities, mental illness, Limited English Proficiency, medical or chemical dependencies, etc.
- Addressing the great diversity of special health and medical concerns of vulnerable populations, language and cultural barriers, and other life circumstances in an emergency presents many challenges for emergency management professionals and volunteers. However, the more prepared emergency managers are for handling these needs in advance, the more successful the response and recovery effort will be. Preparedness can involve attending trainings on this topic, becoming better informed of the types and locations of vulnerable populations living in a community, and reaching out to these groups in advance of a disaster or emergency to better understand their needs. The Greater Monadnock Public Health Network, in partnership with the Region's major hospitals, recently developed a guide for healthcare providers and community partners in the Southwest Region on how to interact with vulnerable populations in emergencies or disasters.



Above photo courtesy of Monadnock Buy Local.

Plan for Disaster Mitigation & Response

In order to protect critical infrastructure and strengthen the Region's response to disasters and emergencies, planning for hazard mitigation and emergency response is a critical and oftentimes necessary task. These plans provide a framework to reduce impacts to lives, property and the economy from future disasters and can provide a strategy for response efforts in a town. In addition to plan development, communities can plan for events by ensuring that emergency management professionals and volunteers receive adequate training and access to resources.

Develop & Implement Plans

- In order to be eligible for certain types of non-emergency disaster assistance, local governments must develop hazard mitigation plans that are approved by FEMA. Hazard mitigation planning is a process to identify risks and vulnerabilities associated with natural and man-made disasters, and to develop long-term strategies for protecting people and property from future hazard events. The process, which involves a team of community members and typically takes between six and ten months, results in a mitigation plan that offers a framework for developing feasible and cost-effective mitigation projects. In New Hampshire, the Department of Homeland Security and Emergency Management provides technical assistance to communities developing these plans.
- Within the Region, every community has developed a hazard mitigation plan. However, a community must review and revise an existing plan to reflect changes in development, priorities, and progress in local mitigation efforts every five years to continue to be eligible for FEMA mitigation project grant funding.
- SWRPC has been helping communities develop hazard mitigation plans since 1999. SWRPC developed the first natural hazard mitigation plans to be approved by the state of New Hampshire.



Above photo: Damage to a private driveway in Greenfield from the April 2007 storm and floods; Below photo: Mountain View Road in Temple during the April 2007 flood event.

Preparedness



Above photo: Stoddard Emergency Operations Plan Committee; Below photo: Greenville, NH Fire Station

- While a hazard mitigation plan outlines strategies to avoid or minimize impacts from certain natural or man-made hazards, an emergency operations plan (EOP) describes the basic mechanisms and structures by which a town would respond to potential or actual emergency situations. The purpose of an EOP is to initiate coordination and sustain an effective local response to disasters and emergency situations. It provides the basis for coordinating actions prior to, during, and after any type of disaster.
- During times of disaster, there are many agencies and organizations involved in responding to the needs of the community and affected populations. There must be a plan for coordinating services and materials. The EOP represents a town's best intentions for dealing with disasters within the framework of community-wide cooperation and statewide coordination. This document, which is developed with the assistance of local officials and community members, identifies a number of support functions such as transportation, communications, search and rescue, food and water, energy, etc. to be addressed by a community in an emergency situation as well as the roles of local government, community organizations and institutions, mutual aid resources, etc.
- An important preparedness measure that communities might consider in their planning efforts is to identify adaptation and/or mitigation strategies for climate change. In addition to the New Hampshire Climate Action Plan, there are resources from within the Region that communities can refer to in their efforts to plan for climate change. These documents include the City of Keene's 2004 Local Climate Action Plan as well as their 2007 climate adaptation plan, "Adapting to Climate Change: Planning a Climate Resilient Community." Resources focused on the Region include the Southwest Region Natural Resource Plan, which is included in the Appendix of this Plan, and the Monadnock Sustainability Action Plan.

Build Regional Response Capacity

The impacts of emergencies and disasters can be significantly reduced if local authorities are well prepared. In the Southwest Region, the Greater Monadnock Regional Public Health Network (GMPHN) provides leadership and coordination to improve the readiness of partners to mount an effective response to public health emergencies and threats. GMPHN works closely with hospitals, municipal emergency management directors, and other governmental, public health, and health care entities to plan for public health emergencies and ensure the provision of public health, medical, and behavioral health services before, during, and after an incident.

- GMPHN coordinates efforts to recruit, train, and deploy a volunteer Medical Reserve Corps (MRC) during public health emergencies. The MRC supports local emergency responders to provide emergency public health services throughout the Region. MRC volunteers include medical, public health, and general professionals.
- The Community Emergency Response Team (CERT) program educates people about disaster preparedness and trains them in basic disaster response skills, such as fire safety, search and rescue, and disaster medical operations. Using their training, CERT members can assist others in their neighborhood or workplace following an event and can take a more active role in preparing their community.
- When emergencies happen, CERT members can give critical support to first responders, provide immediate assistance to victims, and organize spontaneous volunteers at a disaster site. CERT members can also help with non-emergency projects that help improve the safety of the community.
- Another vital resource is Southwestern NH District Fire Mutual Aid (SWNHFMA), which provides fire and emergency medical services to 90 fire departments spread across New Hampshire, Vermont, and Massachusetts. 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. SWNHFMA's dispatch center is in Keene.

Enhance Critical Infrastructure Resilience

Critical infrastructure are the assets, systems and networks vital to the security, public health and safety of the Region. Examples of these systems include transportation, water and wastewater, energy, emergency management, health care, agriculture, stormwater, and telecommunications. Communities and residents rely on them to access essential services and functions such as power for our homes, businesses, and hospitals; food and clean drinking water; communication with family, friends, and others.

The resilience of critical infrastructure is intricately linked with the overall resilience of a community. Therefore, protecting these systems against disruptions and adverse impacts is an important component of preparedness and hazard mitigation. Some strategies for communities and other partners to consider to reinforce the resilience of critical infrastructure to potential threats are discussed below.

Reduce Vulnerability

- Communities can identify how potential threats and disaster scenarios might impact some of the Region's infrastructure by inventorying the condition of publically-owned assets, facilities and systems. Having an understanding of the degree of susceptibility or exposure of critical infrastructure to threats, such as extreme weather, aging or failing infrastructure, and acts of terrorism, can help communities undertake more targeted risk management or hazard mitigation activities. Developing and maintaining an asset management program, as described in earlier in this Plan in the Economic Prosperity chapter, can be a tool for communities in this effort.
- One of the most pressing threats to infrastructure in the Region is extreme storms and flooding. However, much of our stormwater and roadway infrastructure such as culverts and bridges, which are aging or in need of repair, does not have the capacity to handle the extreme storms and flooding we've experienced in recent years. Ongoing and future changes

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to climate have the potential to compound these risks and could have a major impact on infrastructure, and associated maintenance costs.

- Some communities in the Region have participated in assessments of their culverts and bridges to better understand how vulnerable this infrastructure is to the impacts of increased storm events and flooding. Data collected from these assessments is shared with NH DES and NH DOT, and can be used to help identify, prioritize, and replace or retrofit infrastructure that is inadequate or undersized. These agencies, in collaboration with other entities, have developed guidelines and protocol to ensure these assessments are completed in a standardized manner. In the Southwest Region, organizations like the Nature Conservancy, Trout Unlimited, SWRPC, and others have worked within communities and watersheds to complete these assessments.
- An important component of reducing critical infrastructure vulnerability is ensuring system redundancy. Redundancy is a property of a system that allows for alternate options, choices, and substitutions under stress. In other words, if one component of a system fails, there is a backup option available as a method to insure against system failure or loss of functionality. In the event of an emergency, it is especially important to ensure that there is redundancy in communications systems such as telephone, radio or Internet infrastructure, and in energy systems that generate and transmit electricity.
- The Region and its communities should explore innovative ways to increase energy independence and security in the Region. While many communities and residents have been installing renewable energy systems and technologies, the Region is still largely dependent on imported natural gas and oil for powering our buildings and vehicles. Even if there were a transition to renewable resources, the Region does not yet have the infrastructure or technology in place to ensure reliable storage and transmission capacity in the event of an emergency. However, some parts of the country have been building microgrids to increase reliability and diversification of energy sources at a local scale. A microgrid is a smallscale, local energy grid with control capacity, meaning it can disconnect

from the traditional grid and operate autonomously. It can be powered by distributed generators, batteries, and/or renewable resources. While these systems are relatively new and not without their challenges, they are a potential solution to improving the redundancy and reliability of energy systems in the event of outages.

Undertake Mitigation Efforts

Communities can integrate hazard mitigation concepts into existing and future community infrastructure projects. Before repairing, replacing existing or building new infrastructure it is important to ensure the new designs or repaired structures can withstand challenges posed by climate and disaster-related stressors. For example, if a culvert fails during a flooding event, it might have been undersized for that particular water channel. Instead of replacing the culvert in-kind, it might warrant resizing or upgrading the culvert to better fit site conditions and handle future storm events. NH DES has adopted guidelines for communities and others to consider in installing stream crossing such as culverts.



Above photo: SWRPC intern measures culvert dimensions as part of a town culvert assessment.

PETERBOROUGH DIVERSIFIES ENERGY SUPPLY WITH SOLAR



The sun is shining on Peterborough, and the Town plans to take advantage of it. In 2007, Peterborough's Board of Selectmen voted to reduce the municipal carbon footprint by 5% by 2010. This measure prompted a number of projects to diversify the Town's energy sources. A small solar panel was installed to power pedestrian lights; new biomass pellet boilers were installed in municipal buildings, including the newly built wastewater treatment facility (WWTF), to reduce heating costs; and, wind renewable energy credits were purchased to offset emissions. These efforts resulted in a 60-70% fossil fuel use reduction over a seven year period. Yet, Peterborough had greater aspirations.

The Town wanted to reduce the energy dependence of its WWTF - a significant and costly consumer of electric power. It began working with Borrego Solar, a company based in Lowell, Massachusetts, to install a 1 megawatt capacity solar array on the 5 acres of land next to the WWTF, the site of decommissioned wastewater lagoons. This array would generate enough electricity to power the WWTF as well as other municipal buildings. Once completed, it will be the state's largest solar power facility.

Because the energy produced from the solar array would be fed into the electric grid, there was a question of whether the existing infrastructure could accommodate this additional power. Also, prior to any activity, the proposal had to be approved by NH DES and USDA Rural Development. Following approval from these entities, and discussions with Public Service of New Hampshire (PSNH) about power options, the Town worked with Borrego Solar to pursue funding.

In May of 2013, Peterborough received a \$1.2 million grant from the New Hampshire Public Utilities Commission (PUC) and Borrego Solar agreed to fund the rest of the project. Borrego Solar agreed to lease the land from the Town for a 20-year period. The Town would be the site's only customer, purchasing the entire 1,189,058 kilowatt hours (kWh) of electricity produced for \$0.08 per kWh. This price is less expensive than the \$0.07 per kWh they pay to PSNH, because it doesn't include the distribution fees paid on conventional electricity, which raises the price up to \$0.14 per kWh.

The Town stands to save between \$12,000 and \$25,000 a year on energy costs, which equates to a 20 year savings of between \$240,000 and \$500,000. The next phase for the project is to clean and fill in the abandoned lagoons. If the project were to follow its anticipated timeframe, the solar installation will be completed sometime in 2015. The Town hopes that this project will encourage other communities to invest in the benefits of renewable energy.

Above photo: Borrego solar array at the landfill in Ludlow, MA; Below photo: A conceptual plan for Peterborough WTTF solar array.

Preparedness





Goal IV: The Region will be prepared for and have the capacity to withstand and recover from the impacts of natural and manmade hazards and other emergency situations.



Objective A: Routinely assess the capacity of the Region to meet the needs of its population in the event of an emergency or disaster.



Objective B: Prepare for disaster mitigation and emergency response through local planning and training. Hosmer Lot



Objective C: Ensure that the Region's critical infrastructure is capable of withstanding the impacts of potential threats and/or disasters.

WHAT YOUR COMMUNITY CAN DO TO BUILD RESILIENCE:

ASSESS EXISTING CAPACITY

- ✓ Assess the ability to supply critical resources such as food, shelter, water, energy, and medical supplies in the event of an emergency or natural disaster.
- ✓ Routinely assess the capacity of communities for emergency preparedness by maintaining local Emergency Operations Plans, conducting periodic table top exercises, etc.
- ✓ Assess the capacity of communities to assist and respond to the needs of vulnerable populations in the event of an emergency.
- ✓ Identify and assess vulnerability to disruptions in the supply of energy such as brownouts, black outs, and energy shortages.
- ✓ Assess the capacity of suitable emergency shelter.

PLAN FOR MITIGATION & RESPONSE

- ✓ Integrate climate adaptation and mitigation strategies into planning efforts including hazard mitigation, emergency operations, and community master plans.
- Raise awareness of the resources available to support communities in the event of emergencies (e.g. volunteer emergency response support teams).
- Develop recovery plans for post-disaster situations.
- ✓ Increase education and awareness on potential impacts of severe weather events and climate variability, and on ways to plan and prepare for these impacts.
- Establish and support programs that involve youth in volunteer firefighting and emergency response services.
- ✓ Utilize the NH Geological Survey's analysis of fluvial geomorphology and erosion hazards to inform local planning in activities such as capital improvement programming and hazard mitigation planning.

ENHANCE CRITICAL INFRASTRUCTURE RESILIENCE

- ✓ Assess the vulnerability of road-stream crossing infrastructure such as roads and bridges to the impacts of flooding and severe storms.
- ✓ Strengthen efforts to develop a local food hub by establishing the required processing and warehousing facilities and the transportation systems needed to support it.
- ✓ Maintain reliable and diverse communications capabilities including broadband and communication devices not dependent on electricity such as ham radios.
- ✓ Plan for modes of transportation that address issues of increasing importance such as energy uncertainty, climate change, public health, etc.
- ✓ Explore opportunities to diversify energy resources and to enhance energy independence.

IMPLEMENTATION



IMPLEMENTATION

To support and advance the goals and objectives identified in this Plan, a number of strategies were identified. These strategies are projects and programs that could be implemented at either the community or regional scale by a range of stakeholders including municipal boards and committees, businesses, institutions, nonprofit organizations, human service agencies, and others. The tables on the following pages include these action items, which are categorized by the Plan's theme areas of community vitality, economic prosperity, stewardship, and preparedness, as well as the by the Plan's objectives.

While the Plan includes strategies and content that address the needs of the Region at the time of writing, it is intended to be a dynamic document that is periodically revisited and updated to address conditions and recognize opportunities that were unforeseen at the time of its development.

Each of the tables includes a list of topic areas (e.g. housing, transportation, environment, economy, history/culture, engagement, public health) to which the strategies might be related. A closed circle indicates the topic area that the strategy is most closely aligned with, and an open circle indicates a topic area that the strategy might have a secondary impact or influence. For example, improving the energy efficiency of housing in the Region can have a direct impact on the environment, by reducing carbon emissions and the demand for fossil fuels, and on housing, by improving the quality and affordability of the housing stock. There is also a secondary impact on the economy, as energy improvements could lead to cost savings for occupants of these homes.

Also included in the tables is a list of potential partners that could help play a role in the implementation or facilitation of related strategies. The list of partners specified is not intended to be comprehensive nor is it definitive. Many of these partners are organizations or institutions from within the Region, there are also state agencies and organizations identified.



GOALS & OBJECTIVES

Goal I. The Region's communities will be vibrant and affordable places for people of all ages and abilities to live, work and recreate.

Goal II. A competitive and prospering regional economy will create diverse opportunities for current and future residents and workers.

Goal III. The Region's natural, historic, and cultural resources will be cared for and protected for the use and enjoyment of present and future generations.

Goal IV. The Region will be prepared for and have the capacity to withstand and recover from the impacts of natural and manmade hazards and other emergency situations.

- •**Objective 1a**. Ensure the supply of diverse housing types that meet the needs and preferences of multiple generations, diverse abilities, and a range of income levels.
- **Objective 1b**. Provide safe and convenient options for people of all ages, abilities and income levels to access goods, services and places of employment, education, health care, etc.
- **Objective 1c.** Promote opportunities for social and civic engagement that foster relationship building and community involvement among a variety of sectors and populations.
- Objective 2a. Ensure that the Region's residents and workers have access to the education, skills, and support services necessary to thrive.
- •Objective 2b. Retain, grow, and attract a diverse base of business and industry that provides opportunities for growth and workforce development.
- Objective 2c. Maintain high quality infrastructure that will safely and reliably connect people with and provide convenient access to employment, goods, services and other resources within and outside of the Region.
- •Objective 3a. Inventory and monitor the availability and condition of natural, cultural and historic resources within the Region.
- •**Objective 3b.** Preserve and protect the integrity and availability of important resources through conservation, regulation and the use of best management practices.
- •**Objective 3c.** Manage natural, cultural and historic resources through planning and collaboration among communities, organizations, and landowners in the Region.
- **Objective 4a.** Routinely assess the capacity of the Region to meet the needs of its population in the event of an emergency or disaster.
- **Objective 4b.** Prepare for disaster mitigation and emergency response through local planning and training.
- **Objective 4c.** Ensure that the Region's critical infrastructure is capable of withstanding the impacts of potential threats and/or disasters.

Implementation

	Obj	jective 1 a. Expand Housing Options								
					Top	oic A	٨rea			
	ID	Strategy	Housing	Transportation	Environment	Economy	History/Culture	Engagement	Public Health	Potential Partners
ĒV	i.	Offer incentives to promote housing that is diverse in size and tenure, affordable, and/or energy efficient.	•		0	0				
א ו ב פ	ii.	Consider establishing funding mechanisms to support the development of new or the maintenance of existing affordable housing units.	•			0				
212	iii.	Support educational and financial assistance opportunities for first-time homebuyers.	•			0				Municipal Boards and
	iv.	Consider innovative land use approaches [1] such as performance standards, flexible zoning, environmental characteristics zoning, and others described in NH RSA 674:21.	•	0	0					Committees; Heading for Home; Southwestern
	v.	Enhance awareness of and respond to the need for the availability of transitional housing and emergency shelters for homeless individuals and families.	•						ο	Community Services; Keene Housing; SWRPC;
	vi.	Enhance awareness of housing trends including the needs of residents of all ages, incomes, etc.	•			0			0	Southwestern NH Home Builders & Remodelers
	vii.	Review and consider revising land use regulations and building codes to address barriers to affordable, energy efficient, and flexible [2] housing.	•		0	0				Association; Local Banks and Lending Institutions;
	viii.	Expand the availability of affordable and adequate rental housing.	•			0				NH Housing; NH
	ix.	Repair or rehabilitate residential structures to be more energy efficient and/or accommodate the needs of the elderly or persons with disabilities.	•		0				0	Community Development Finance Authority;
	x.	Support the adaptive reuse of buildings and lots near village centers to promote affordable and diverse housing options as well as mixed-use development.	•	0	0	0			0	Monadnock Energy Resource Initiative
	xi.	Encourage innovative lending options for homebuyers (e.g. location-efficient mortgages and energy-efficient mortgages).	•	0	0	0				
	xii.	Consider forming municipal housing commissions [3] and participating in multi-town and/or regional housing coalitions.	•							
	Unde	er NH RSA 674:16, municipalities have the authority to implement innovative approaches to land use regulation. A list of example	e inno v	ative	land u	ise co	ntrols	and	asso	ciated descriptions is included in
2]	Flexi	ible housing is housing that can adjust to the changing needs of the user and accommodate new technologies as they emerge. F to either a non-related tenant or a family member and thereby reduce the costs of ownership. As the family size increases or its no	=lexible eeds c	e hous hange	ing is e, the c	usual dwellin	ly des ig can	igned be re	to pe confi	rmit surplus space to be rented gured.
]	Mun	icipalities have the authority to establish housing commissions pursuant to NH RSA 673:4-c. The powers of housing commiss	ions ai	re des	cribec	d in N⊦	IRSA	674:	44-i.	

Ob	jective 1b. Enhance Access to Goods, Services, and Other Destinations								
				Тор	ic A	rea			
ID	Strategy	Housing	Transportation	Environment	Economy	History/Culture	Engagement	Public Health	Potential Partners
i.	Preserve mobility on major state highways through municipal land use planning best practices (e.g. access management, land use regulations, coordination with NH Department of Transportation on driveway permits, multi-town coordination, etc.).		•		0				Municipal Boards and Committees; Monadnock Region Transportation
ii.	Support the development of a model policy for streets that accommodates multiple users such as vehicles, bicycles, pedestrians, transit, etc.		•	0				0	Management Association; Monadnock
iii.	Support programs that promote ridesharing, vanpooling, carsharing, etc.		•	0				0	Regional Coordinating
iv.	Develop and implement plans and projects that support innovative parking practices (e.g. bicycle parking, shared parking, maximum parking limits, etc.).		•		0				Council for Community Transportation; SWRPC;
٧.	Support and expand programs that offer services for healthy aging and aging in place (e.g. ServiceLink, Monadnock at Home, Monadnock RSVP, etc.).	0	0					•	SWRPC Transportation Advisory Committee;
vi.	Improve the capacity of volunteer driver networks (e.g. increase service areas, hours of availability, number of drivers, etc.).		•				0	0	Transportation
vii.	Consider the development of a cooperatively owned transportation system (i.e. a system that is owned and managed by the people who use its services).		•					0	Healthcare, Hospice and Community Services:
viii.	Improve access to air and rail transportation hubs (e.g. intercity buses, taxi services, car rental services, etc.).		•		0				American Red Cross; Healthy Monadnock
ix.	Improve options for individuals to access goods and services from home as well as the opportunity to work from home (e.g. telehealth, online education, delivery services, telecommuting, etc.).		•		0			0	2020; Monadnock at Home; Monadnock RSVP; NH Department of
x.	Examine the feasibility of a centralized, coordinated transportation support system for improving regional passenger transportation (e.g. regional call/dispatch center, regional transportation coordinator, service garage, multimodal transportation hub(s), etc.).		•		0			0	Transportation; NH Department of Environmental Services

Obj	ective Ic. Promote Social and Civic Engagement										
ID	Strategy	Housing	Transportation	Environment	Economy	History/Culture	Engagement	Public Health	Potential Partners		
i.	Incorporate opportunities in educational programming for hands-on learning through community service.					0	•				
ii.	Support and expand programs that facilitate the sharing of skills, services, and experiences between people of different ages, abilities, and incomes (e.g. time banks, service exchanges, community gardens, etc.).				0	0	•	0	Municipal Boards and		
iii.	Increase employer supported or sponsored volunteerism (e.g. compensatory time for volunteering, sponsor a community service day, etc.).				0		•		Committees; Educational Institutions; Local		
iv.	Develop opportunities for community board members to receive training and technical assistance on relevant topics such as community governance, land use planning, economic development, conservation, etc.						•		Businesses; Monaanock RSVP and Volunteer Center; People's Service Exchange: Chambers of		
٧.	Actively recruit and support diverse representation on local government boards and committees (e.g. different ages, ethnicities, genders, incomes, experiences, etc.).						•		Commerce; Civic Groups/Associations		
vi.	Support existing and establish new events that bring together people of all ages (e.g. old home festivals, contra dances, community performances, etc.).						•	0			
vii.	Utilize community buildings and outdoor spaces to support additional activities and programs such as fitness classes, workshops, community gardens, etc.						•	0			

Oł	jective 2a. Develop and Attract a Skilled Workforce								
ID	Strategy	Housing	Transportation	Environment d	Economy a i	History/Culture a	Engagement	Public Health	Potential Partners
i.	Expand and support apprenticeship and internship programs for youth and other age groups.				•		0		Educational Institutions;
ii.	Strengthen training programs that focus on the needs of the Region's leading industry clusters.				•				Local Businesses; Hannah Grimes;
iii.	Expand and support programs that match workers and employers based on available skills and needs.				•				Regional Center for Advanced
iv.	Strengthen coordination and collaboration among businesses, educational institutions and other partners to meet workforce training needs.				•		0		Manufacturing; Monadnock SCORE;
v.	Ensure the availability of affordable and accessible educational opportunities for all levels of learners including early childhood education.				•				Chambers of Commerce

Ob	ective 2b. Retain, Grow, and Attract Business and Industry										
	Topic Area										
n ID	Strategy	Housing	Transportation	Environment	Economy	History/Culture	Engagement	Public Health	Potential Partners		
i.	Encourage the sharing and joint procurement of resources and goods among municipalities, institutions, businesses, and other partners.				•		0		Hannah Grimes; Monadnock Makers:		
ii.	Recognize and support the role of the Region's agricultural sector.			0	•				Discover Monadnock;		
iii.	Support programs that focus on business retention, expansion, and recruitment.			-	•				Local Businesses;		
iv.	Support the ongoing efforts of entities that promote economic prosperity (e.g. Monadnock Economic Development Corporation, chambers of commerce, Monadnock Buy Local, Hannah Grimes Center for Entrepreneurship, etc.).				•				Monadnock Arts Alive!; Monadnock Farm to Community Coalition;		
٧.	Promote and expand programs and facilities that support small and emerging businesses (e.g. incubators, maker spaces, shared commercial kitchens, etc.).				•				Monadnock Economic Development Corporation: SWRPC:		
vi.	Develop and implement marketing strategies that promote the Region.				•				Keene Young		
vii.	Strengthen the local manufacturing sector.				٠				Professionals Network;		
viii.	Raise awareness about wages in the Region in comparison to cost of living.				•				Chambers of Commerce;		
ix.	Encourage community revitalization projects such as the rehabilitation of under-utilized buildings.				•				Business Incubators; Municipal Boards and		
х.	Recognize and support the role of the Region's creative economy sector.				٠	0			Committees; NH		
xi.	Establish incentives to attract, retain, and support young professionals.				٠				Department of Cultural		
xii.	Provide financial and technical assistance to local businesses.								Resources; NH		
									Agriculture		

Obj	ective 2c. Maintain Adequate Infrastructure									
Topic Area										
ID	Strategy	Housing	Transportation	Environment	Economy	History/Culture	Engagement	Public Health	Potential Partners	
i.	Expand the availability and quality of broadband infrastructure, especially in unserved and underserved areas.				•				Municipal Boards and	
ii.	Promote tools that help municipalities strategically maintain and upgrade municipal infrastructure and facilities (e.g. tax increment financing, asset management, capital improvement plans, etc.).				•			0	SWRPC Transportation Advisory Committee; Southwest Region	
iii.	Establish municipal and/or multi-town broadband committees to plan for the expansion and development of broadband infrastructure.				•		0		Broadband Stakeholder Group: Monadnock	
iv.	Identify and advocate for community transportation needs and pursue funding solutions, which may include the New Hampshire Ten Year Transportation Plan, federal funding programs, vehicle registration fees [4], etc.		•		0				Region Transportation Management Association: Monadnock	
V.	Strengthen multi-town collaboration and coordination on shared infrastructure needs such as sewer, water, sidewalks, schools, transfer stations, police and fire stations, etc.				•		0	0	Regional Coordinating Council for Community Transportation	
vi.	Maintain and modernize public and private water infrastructure to meet current and future needs (e.g. wells, water/sewer lines, dams, treatment facilities, culverts, etc.).				•			0	Municipalities; Monadnock Economic	
vii.	Support and develop an adequate, affordable, diversified energy supply including local resources such as biomass, solar, wind, etc.			•	0				Development Corporation; NH	
viii.	Identify funding mechanisms to upgrade wastewater and water treatments facilities.				•			0	Department of	
ix.	Support and develop a well-maintained and diversified transportation system to sustain and grow regional and local economies (e.g. highways, bridges, trails, transit, park and ride lots, sidewalks, airports, rail, etc.).		•		0				Transportation; NH Department of Environmental Services;	
x.	Expand affordable licensed child and elder care programs including evening services as well as services near employment centers.				•			ο	U.S. Department of Agriculture Rural Development	
xi. Unde	Improve the condition and availability of pedestrian and bicycle infrastructure. Ir NH RSA 261:153 a municipality may vote to collect an additional motor vehicle registration fee up to \$5.00 for the purpose of fu	nding	• , who l	ly o r ir	n part.	impro	veme	O ents ir	the local or regional	
trans	portation system including roads, bridges, bicycle and pedestrian facilities, parking and intermodal facilities and public transportation	tion.	, ,		,					

Оbj	ective 3a. Inventory and Monitor Resources									
		Topic Area								
ID	Strategy	Housing	Transportation	Environment	Economy	History/Culture	Engagement	Public Health	Potential Partners	
i.	Monitor and assess the quality of surface water resources in the Region and expand efforts to water bodies not currently monitored.			•	0			0	Municipal Boards and Committees; Lake	
ii.	Inventory and evaluate the locations and adequacy of public access to outdoor recreation resources.			•	0			0	Associations; River Advisory Committees;	
iii.	Develop natural resource inventories to identify important naturally occurring resources within communities.			•					Cheshire County Conservation District;	
iv.	Inventory important historic and cultural resources such as buildings, structures, sites, and objects.					•			UNH Cooperative Extension; NH	
v.	Support programs that prevent the introduction of and reduce the impacts of invasive species and diseases.			•	0			0	Department of Environmental Services; Monadnock Conservancy; The Harris Center: SWRPC	

Obj	ective 3b. Protect and Conserve Important Resources								
ID-	Strategy	Housing	Transportation	Environment do	Economy	History/Culture e	Engagement	Public Health	Potential Partners
i.	Develop and implement conservation strategies that protect and manage the Region's natural								
	resources such as prime agricultural soils, open space, important forest soils, shoreland areas, and			•					Monadnock
	wildlife habitat.								Conservancy; The Harris
ii.	Support programs to generate revenue for the protection of important natural resource features								Center; Municipal Boards
	such as open space, working landscapes, wildlife habitat, etc.			•					and Committees; SWRPC;
iii.	Adopt policies or regulations that protect natural resources and systems (e.g. groundwater			•	0			0	NH Department of
	protection, stormwater management, steep slope protection, visual resource protection, etc.).			•	Ŭ			Ŭ	Environmental Services;
iv.	Incorporate low impact stormwater management techniques and principles into streetscape			•				0	NH Office of Energy and
	design.			Ŭ				Ŭ	Planning; Cheshire
۷.	Improve energy efficiency of the built environment.	0		٠	0				County Conservation
vi.	Manage, store, and dispose of solid and hazardous waste in a safe and environmentally sound			•				0	District; UNH Cooperative
	manner.								Extension; NH Land and
vii.	Identify funding mechanisms to enhance and expand stormwater management initiatives.			•	0				Community Heritage
viii.	Adopt policies or regulations that protect historic and cultural resources (e.g. demolition review				о	•			Investment Program;
	ordinances, neighborhood heritage districts, scenic road designation, etc.).								Society for the Protection
ix.	Help landowners, communities, and others implement Best Management Practices through								of NH Forests; NH
	outreach, education, and demonstration projects in areas such as such as forestry, agriculture,			•					Department of
	water quality, waste management, and stormwater management etc.								Agriculture; NH
X.	Identify opportunities to convert waste to energy resources.			•	0			0	Department of Cultural
Xİ.	Identify funding mechanisms to support historic and cultural preservation efforts.					•			Kesources
xii.	Expand access to renewable energy resources.			•	0				

ОЬј	iective 3c. Coordinate and Plan for Resource Management								
				Тор	oic A	rea			
ID	Strategy	Housing	Transportation	Environment	Economy	History/Culture	Engagement	Public Health	Potential Partners
i.	Expand awareness of air quality issues such as small particle air pollution.			•	0			0	Municipal Boards and
ii.	Raise awareness of the value of working landscapes to our environment, economy, and heritage.			●	0	0			Committees; Monadnock Farm to Community
iii.	Promote land and resource protection through means such as open space and land conservation plans, historic preservation plans, agricultural commissions [5], etc.			•				0	Coalition; Cheshire County Conservation
iv.	Continue to support and develop activities that promote agricultural practices to younger								District; Monadnock
	generations (e.g. farm-to-school initiatives, school gardening programs, adult farm schools and apprenticeships).			•		0			Conservancy; SWRPC; Monadnock
٧.	Promote low-impact tourism opportunities that feature the Region's natural and cultural resources								Sustainability Network;
	(e.g. expanded camping opportunities, tours of local farms/working landscapes, and activities along the Region's waterways)			•	0	•			Monadnock Travel
vi.	Raise awareness about climate change.			•	0			0	Monadnock: Educational
vii.	Incorporate climate adaptation and mitigation strategies as part of natural resource planning and management.			•	0			0	Institutions; NH Department of
viii.	Encourage multi-town collaboration for the management, protection and use of natural resources (e.g. developing watershed management and non-point source pollution plans, etc.).			•			0	0	Environmental Services; NH Department of Agriculture; NH Department of Resources and Economic Development

Оbj	ective 4a. Assess Existing Capacity								
				Тор	oic A	rea			
ID	Strategy	Housing	Transportation	Environment	Economy	History/Culture	Engagement	Public Health	Potential Partners
i.	Assess the ability to supply critical resources such as food, shelter, water, energy, and medical supplies in the event of an emergency or natural disaster.				0			•	Greater Monadnock Public Health Network
ii.	Assess the capacity of communities to assist and respond to the needs of vulnerable populations in the event of an emergency.							•	Cheshire Medical Center; Monadnock Community
iii.	Assess the capacity of suitable emergency shelter.							•	Hospital: Municipal
iv.	Routinely assess the capacity to respond to a range of public health emergencies such as pandemic outbreaks and mass casualty events.						0	•	Boards and Committees; SWRPC: Southwest
v.	Identify and assess vulnerability to disruptions in the supply of energy such as brownouts, black outs and energy shortages.			0				•	Mutual Aid; Council for Healthier Communities:
vi.	Routinely assess the capacity of communities for emergency preparedness by maintaining local Emergency Operations Plans, conducting periodic table top exercises, etc.						0	•	Emergency Management Facilities; NH Department of Homeland Security and Emergency Management

Obj	ective 4b. Plan for Mitigation and Response Efforts								
ID	Strategy	Housing	Transportation	Environment <mark>do</mark>	Economy	History/Culture 8	Engagement	Public Health	Potential Partners
i.	Establish and support programs that involve youth in volunteer firefighting and emergency response services.						•	•	NH Department of
ii.	Utilize the NH Geological Survey's analysis of fluvial geomorphology and erosion hazards to inform local planning in activities such as capital improvement programming and hazard mitigation planning.			•				0	Homeland Security and Emergency Management; Greater
iii.	Increase education and awareness on potential impacts of severe weather events and climate variability and ways to plan and prepare for these impacts.			•	0			0	Health Network;
iv.	Integrate climate adaptation and mitigation strategies into planning efforts including hazard mitigation, emergency operations, and community master plans.			•			0	•	SWRPC; Monadnock
٧.	Encourage multi-town coordination in developing evacuation plans.						0	٠	Transition Keene:
vi.	Raise awareness of the resources available to support communities in the event of emergencies (e.g. volunteer emergency response support teams).				0		0	•	Emergency Management
vii.	Develop recovery plans for post-disaster situations.				0			•	r demaes

Objective 4c. Enhance Critical Infrastructure Reslience									
ID	Strategy	Housing	Transportation	Environment <mark>d</mark>	Economy a	History/Culture 👼	Engagement	Public Health	Potential Partners
i.	Maintain reliable and diverse communications capabilities including broadband and communication devices not dependent on electricity such as ham radios.				•			•	Monadnock Farm to Community Coalition;
11.	Plan for modes of transportation that address issues of increasing importance such as energy uncertainty, climate change, health, etc.		•		0			0	SWRPC; Municipalities; Greater Monadnock
iii.	Strengthen efforts to develop a local food hub by establishing the required processing and warehousing facilities and the transportation systems needed to support it.		0	•	•			0	Public Health Network; Emergency Management Facilities; Southwest Mutual Aid; PSNH; NH Department of Environmental Services; NH Department of Transportation