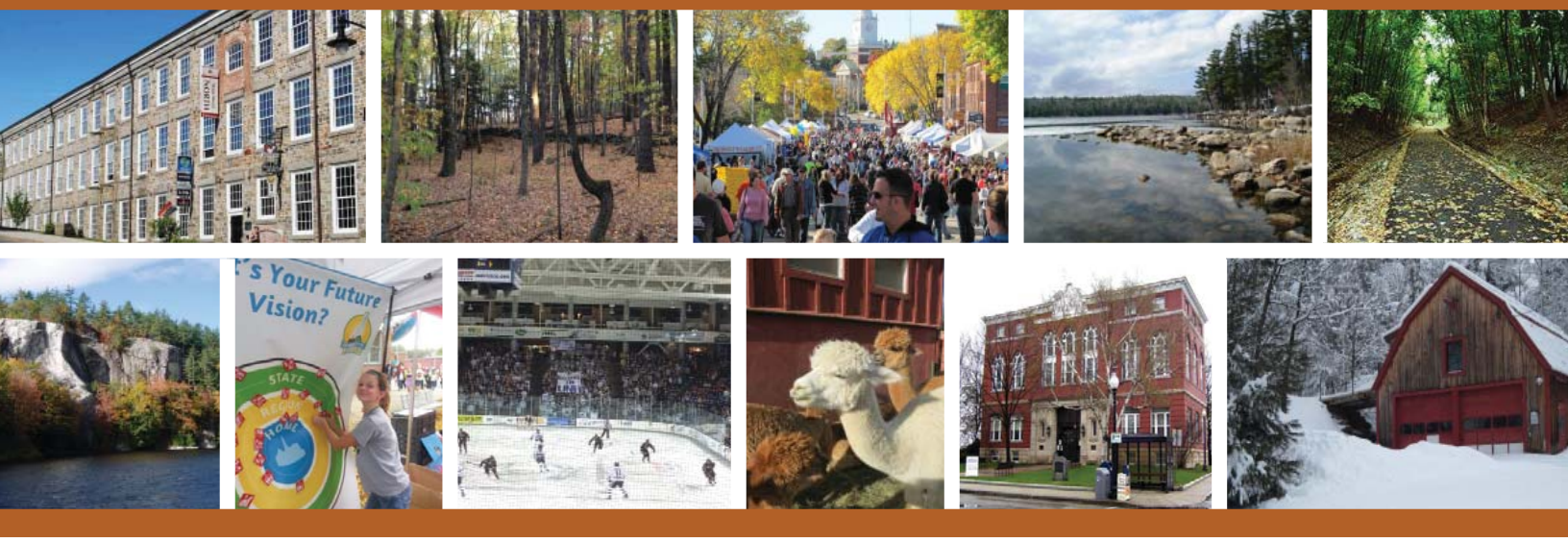
Local Solutions for the Strafford Region



Regional Master Plan

Adopted January 2015

Strafford Regional Planning Commission

Strafford Regional Planning Commission

18 Municipalities
3 Counties
1 Region

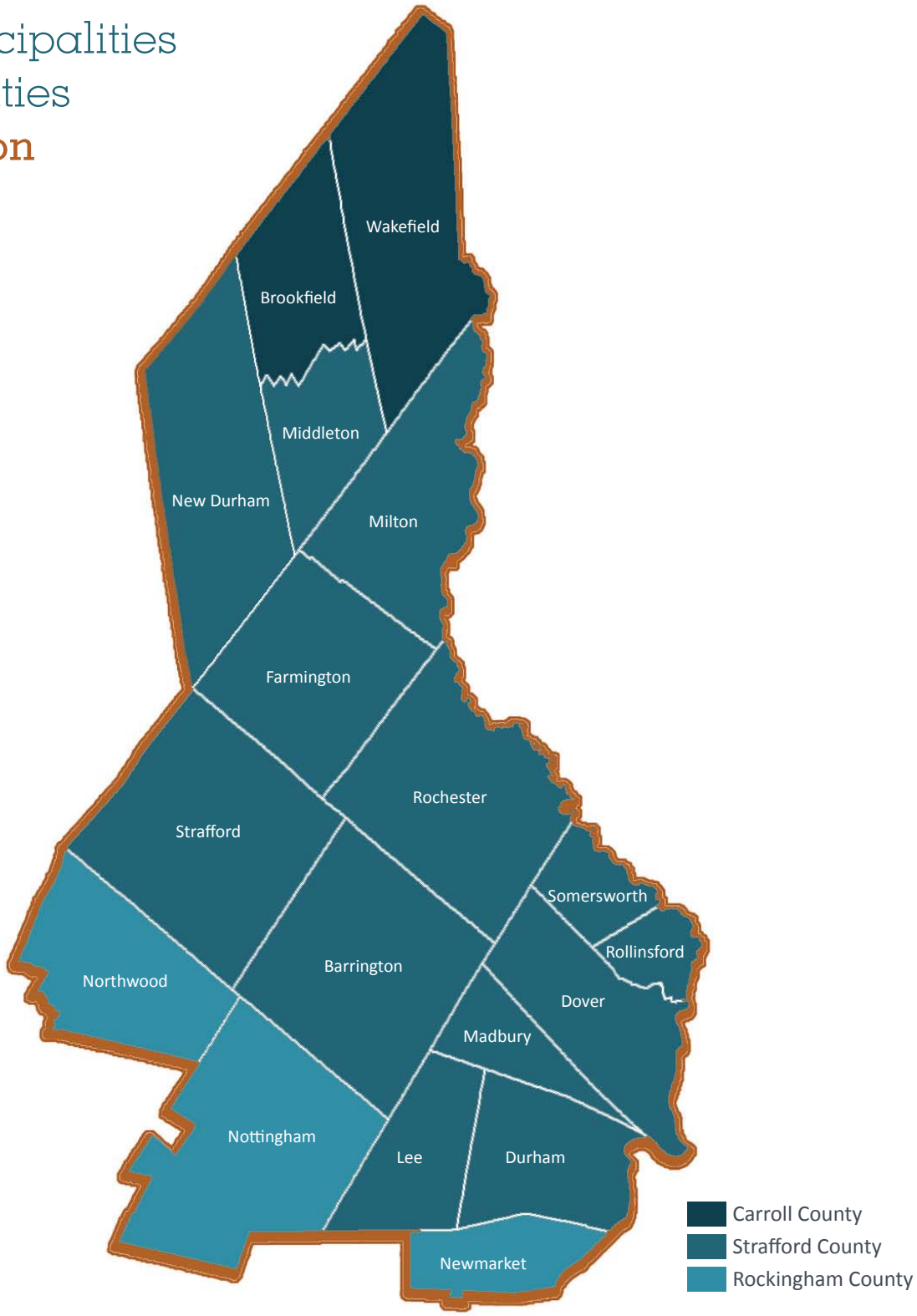


Figure 1. Municipalities in the Strafford region

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Partners & Acknowledgments

Local Solutions for the Strafford Region is an effort of the Strafford Regional Planning Commission (SRPC) and a number of partners, stakeholders, community members, municipal staff, and other planning and community professionals. This process could not have been completed without the assistance and support from these individuals over the last three years (February 2012 - January 2015). The Commission would like to take this opportunity to thank all of those involved with the project.

Staff

Staff developed the Regional Master Plan, including the contents of *Technical Appendices* and *Telling Our Story,* working together to ensure cohesiveness among the plan components. During the three year process staff tasks included research, writing, formatting, outreach, marketing, and editing. Staff also coordinated with the other eight New Hampshire regional planning commissions and participated on the statewide Technical Advisory subcommittees.

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Special Thanks To:

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Michelle Mears, Regional Planner 2010-2013


SRPC Staff, 2013 Annual Meeting, Rochester


SRPC Staff, 2014 Annual Meeting, Madbury

Strafford Regional Planning Commission staff greatly appreciates the efforts and contributions of the volunteers who supported this project. Staff would like to thank the Advisory Team, reviewers and advisors, and SRPC Commissioners for the assistance and guidance they provided during the process of writing the Regional Master Plan.

Advisory Team

Strafford Regional Planning Commission relied heavily on their Advisory Team to guide the overall process of this Regional Master Plan update. This group provided assistance with outlining the appendices; recommending data metrics; reviewing materials; conducting outreach events; and multiple other areas. The Advisory Team met as needed to review and comment on staff progress related to the Master Plan efforts. The following individuals served on the Advisory Team:

Victoria Parmele, Town of Northwood, SRPC Commissioner & Executive Committee Vice Chair
Samuel Reid, City of Dover, Prior SRPC Chair
John Scruton, Town of Barrington, Town Administrator
Christine Soutter, City of Somersworth, Economic Development Manager

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SRPC Commissioners

The SRPC Commissioners participated in the development of **Local Solutions for the Strafford Region** throughout the duration of the project. Commissioners provided input on Regional Master Plan content; presented at Commissioner's meetings, reviewed technical appendices, and served as the voting body that approved the Regional Master Plan at the end of the process.

Barrington
Anthony Gaudiello

Brookfield
Edward Comeau
Vacant

Dover
Tom Clark
Joshua Cote
Marcia Gasses
Tony McManus

Durham
Wayne Burton
Richard England
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Vacant (2)

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Caren Rossi

Madbury
Thomas Burbank
Thomas Crosby

Middleton
Lou Vita
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Milton
Vacant (2)

New Durham
Terry Chabot
Dot Veisel

Newmarket
Eric Botterman
Janice Rosa

Northwood
Scott Martin
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Nottingham
Dirk Grotenhuis

Rochester
Rick Healey
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Kenn Ortmann

Rollinsford
Patrick Carroll
Edmund Jansen Jr.

Somersworth
William Connor
Brian Tapscott
Vacant

Strafford
Donald Coker
Vacant

Wakefield
Steve Brown
Vacant

Strafford County
George Maglaras

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Local Solutions for the Strafford Region was made possible by the Sustainable Communities Regional Planning Grant from the U.S. Department of Housing and Urban Development, as well as additional funding from Healthy Eating Active Living (HEAL) and local match from SRPC voluntary membership dues.


Photo Credit: Marcia Gasses

Vision for the Future

The Strafford Region is distinguished by its high quality of life – characterized by vibrant downtown communities, strong economies, coastal areas, and forested landscapes. The region offers excellence in education, health, and civic engagement while providing equitable access to transportation options, housing choices, and recreation opportunities.

Barrington, NH

Photo Credit: UNH Campus Rec

Introduction

This section includes information about the Regional Master Plan purpose and process.

Purpose

Comprehensive regional planning improves quality of life at the individual and community level.

As one of nine regional planning commissions (RPCs) in the state, Strafford Regional Planning Commission (SRPC) is required to complete a regional master plan every five years. The existing Strafford Regional Master Plan was last updated in 2005.

As defined by RSA 36:45, the duty of the regional planning commission is to:

> *…prepare a coordinated plan for the development of the region, taking into account present and future needs with a view toward encouraging the most appropriate use of land, such as for agriculture, forestry, industry, commerce, and housing; the facilitation of transportation and communication; the proper and economic location of public utilities and services; the development of adequate recreational areas; the promotion of good civic design; and the wise and efficient expenditure of public funds.*

Quality of Life

SRPC's fundamental mission is to plan and act in a manner that achieves sustainable development and thereby improves quality of life. **Local Solutions for the Strafford Region** is SRPC's guide for implementing this mission.

Strategic regional planning is a process for examining current environmental, social, economic, and structural conditions in a region and for considering future changes in order to identify actions that will sustain or enhance quality of life for its residents. While some factors informing this process can be regarded individually, successful implementation requires careful consideration of the interactions among them.

Use of the Plan

SRPC envisions that this plan will serve as a resource and guide for the communities that comprise the Strafford Region. This plan will aid communities in their efforts to:

- Update and refine local planning documents and regulations
- Comply with evolving state and federal regulations
- Prioritize and fund projects and improvements
- Identify opportunities for collaboration with neighboring communities
- Balance development and natural resource protection
- Continue to foster a high quality of life in the region

Bike-Walk to Work Day

Photo Credit: SRPC Staff

Process

The planning process included:

- Research
- Outreach
- Interviews
- Data analysis
- Collaboration

Background

Along with the eight other RPCs in the state, SRPC received Sustainable Communities Regional Planning Grant funding from the Department of Housing and Urban Development (HUD) to complete the planning processes of writing a regional master plan. The Nashua Regional Planning Commission will compile data and trends gathered for each RPC's regional master plan into a Statewide Snapshot. This project began in January 2012 and will be completed January 31, 2015.

The planning processes used for the Strafford Regional Master Plan included various forms of research, outreach, data analysis, and collaboration.

SRPC used the input received during the outreach process to guide the development of the Technical Appendices included in this plan by working closely with the residents, workforce, visitors, and organizations of the Strafford region, as well as other partners, stakeholders, and statewide organizations. In addition to completing a lengthy analysis of existing regional plans and municipal master plans, SRPC reviewed close to 3,300 comments that were received during 27 outreach events. The information gleaned through this approach guided the creation of vision statements for each Technical Appendix of Local Solutions for the Strafford Region.

SRPC Staff hear from Newmarket residents

Photo Credit: Cynthia Copeland

Outreach

SRPC attended 27 different outreach events across the region and received approximately 3,300 comments from over 1,340 participants. This was an important component of the Regional Master Plan process.

Residents, employees, and visitors shared what they like about the Strafford Region and what they thought could be improved. SRPC reviewed and analyzed comments and identified common themes that emerged. Comments were then coded and tallied by theme. This information helped SRPC staff gain a sense of what was important to citizens in the region. Results of this outreach process are summarized in the *Telling Our Story* section of this document.

Outreach Events

Newmarket Heritage Festival
September 22, 2012 | Newmarket

Dover Apple Harvest Day
October 6, 2012 | Dover

Seacoast Business Expo
October 18, 2012 | Durham

NH Local Government Center Conference
November 15, 2012 | Concord

Gerry's Food Pantry Turkey Day
November 15, 2012 &
November 26, 2013 | Rochester

Rochester Area Senior Center Luncheon
January 23, 2013 | Rochester

St. Anthony's Senior Luncheon
January 25, 2013 | Wakefield

Winter Farmer's Market
January 26, 2013 | Rollinsford

Greater Wakefield Resource Center
February 7, 2013 | Wakefield

University of New Hampshire
February 5-7, 2013 | Durham

Winter Farmer's Market
March 23, 2013 | Rollinsford

Great Bay Half Marathon
April 6, 2013 | Newmarket

COAST Bus Outreach
April 2-16, 2013 | Somersworth, Rochester

Catapult Young Professionals
April 24, 2013 | Portsmouth

McConnell Center Blood Drive
May 2, 2013 | Dover

Rochester Armed Forces Day
May 18, 2013 | Rochester

SAU Outreach
May 31, 2013-June 10, 2013 Nottingham, New Durham, Northwood, Farmington, Milton, Madbury, Lee, Durham, Barrington, Strafford

Newmarket Blood Drive
June 7, 2013 | Newmarket

Middleton Yard Sale
June 22, 2013 | Middleton

Northwood Bean Hole Bash
July 27, 2013 | Northwood

Loyal Order of the Moose Blood Drive
July 29, 2013 | Dover

Dover Apple Harvest Day
October 5, 2013 | Dover

Brookfield Town Coffee Hour
December 7, 2013| Brookfield

Milton Town Board Joint Meeting
April 28, 2014 | Milton

Promoting Tourism in the Moose Mountain Region
September 25, 2014 &
October 23, 2014 | Wakefield

27 outreach events
1,343 participants
3,300 comments

1 Transportation Survey

2 Community Assistance Events

5 Community Events

2 Town Meetings

2 School Events

3 Blood Drives

2 Farmer's Markets

4 Community Festivals

3 Senior Luncheons

1 Young Professionals Luncheon

2 Expos

Master & Regional Plan Analysis

New Hampshire's Livability Principles provided a lens through which to view and organize the goals and visions from municipalities in the region.

During the initial visioning process, it was important to understand the progress that had been made towards reaching previously identified regional goals.

To do so, SRPC reviewed the 2005 Strafford Regional Planning Commission Regional Master Plan and examined current master plans from each of the eighteen communities within the Strafford region. During this analysis, SRPC staff extracted and categorized goals and visions from each town and city using New Hampshire's livability principles. These six principles include: Transportation and Housing Choices; Natural Resources Functions and Quality; Equity and Engagement; Traditional Settlement Patterns; Community and Economic Vitality; and Energy Efficiency and Green Building. Additionally, SRPC staff examined each community's overall vision statement. The product of this effort was a comprehensive matrix containing the goals and visions of each municipality organized within the context of the livability principles (see Appendix A).

This process was repeated to analyze eight regionally adopted plans. These plans are displayed on the following page. A summary of the results of the planning document analysis is included in Appendix B.

Municipality Master Plans

Adopted Master Plans and chapter updates from each municipality in the Strafford region were reviewed. Links to these plans can be found below.

Strategic Master Plan Update, Barrington, New Hampshire, March 30, 2004

Town of Brookfield, NH, Master Plan: Toward the Year 2020, May 8, 2006

City of Dover, NH, Master Plan, 2007

Town of Durham, NH, Master Plan 2000

Farmington Master Plan, 2005, Farmington, NH

2006 Lee Master Plan, Lee NH

Town of Madbury, New Hampshire, Master Plan: Toward the Year 2010

Town of Middleton Master Plan

Town of Milton Master Plan

Town of New Durham, New Hampshire, Master Plan: Toward the Year 2020

Town of Newmarket Master Plan August 2001, Amended April 2013

2004 Master Plan Update, Northwood, NH

Nottingham 2011 Master plan, Nottingham, NH

City of Rochester Master Plan, 2008

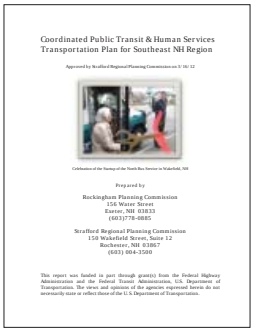
Rollinsford, NH Master Plan, 2005

Master Plan Update, Somersworth, New Hampshire, 2010

Strafford, NH 2002 Master Plan

Wakefield, NH Master Plan 2010

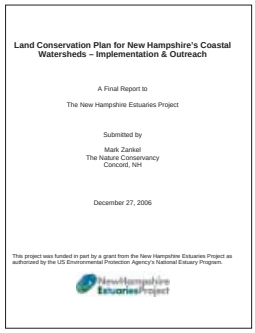
Regionally Adopted Plans



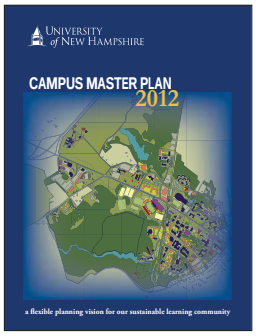
Coordinated Public Transit & Human Services Transportation Plan for Southeast NH Region

Healthy Eating & Active Living Action Plan for New Hampshire March 2008

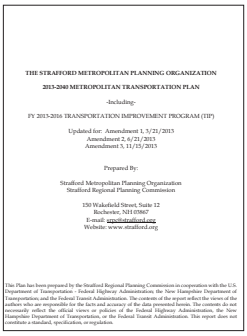
Pitscataqua Region 2010 Comprehensive Conservation and Management Plan



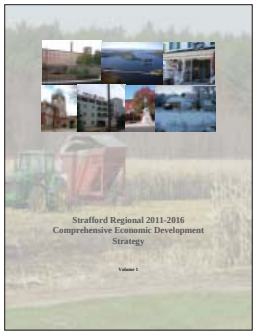
The Land Conservation Plan for New Hampshire's Coastal Watersheds (2006)



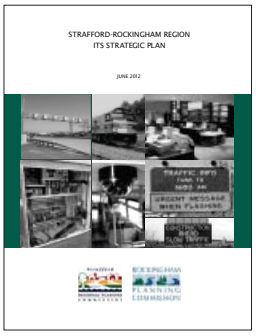
University of New Hampshire- 2004 Master Plan & 2012 UNH Master Plan Update



The Strafford Metropolitan Planning Organization 2013-2040 Metropolitan Transportation Plan



Strafford Regional 2011-2016 Comprehensive Economic Development Strategy



The Strafford-Rockingham Region Intelligent Transportation System Strategic Plan Update

Plan Review Process

Shared Themes

SRPC asked each municipality and regional entity to review their master plan matrix and provide feedback on the categorization of goals and visions by livability principle.

After the review process, SRPC staff analyzed the matrices by livability principle and vision category. Each staff member reviewed a livability principle and its assigned master plan goals from the municipalities and regional plans in order to assess the frequency with which values related to the principles occurred Following this process, SRPC staff created codes that represented the core themes contained in each livability principle.

The goals and visions from local Master Plans and regionally adopted plans supplemented the information collected during the outreach process.

Visioning

Shared themes were derived from the outreach and local and regional plan analysis.

Staff used the information gathered from the local and regional plan review and the public outreach effort to develop two to three draft vision statements for each Technical Appendix.

SRPC established guidelines for writing the vision statements to ensure their accuracy and accessibility. The guidelines included:

- Use of everyday language
- Creation of a concise vision
- Inclusion of the key themes identified from master plan analysis
- Attention to equity.

In order to address the issue of equity when writing the visions, SRPC staff used the Equity and Engagement Checklist, which was developed by the Statewide Engagement and Equity Technical Advisory Subcommittee in 2013. Key documents used in the visioning process included:

The Power of Visioning in Strategic Planning. Institute for Law and Justice. Adapted from Pickett Institute Curriculum, ILJ, 2002.

Community Visioning Handbook, How to Imagine- and Create- a Better Future. Maine State Planning Office, 2003.

Outcome

The product of the visioning process included two or three draft vision statements linking each livability principle to its Regional Master Plan *Technical Appendix.*

SRPC Commissioners and guests reviewed and voted on the vision statements at the SRPC 2013 Annual Meeting. The Advisory Team considered the Commissioners' selected vision statements and comments and provided further input for staff. Following this shared process, staff a prepared vision statement for each Technical Appendix.

The vision statement for the Comprehensive Economic Development Strategy (CEDS) region, created by the CEDS Committee, became the vision statement for the Economic Development Technical Appendix. *The Strafford Comprehensive Economic Development Strategy 2011 - 2016* is a document that included an economic analysis, economic road map, and an action plan with the purpose to generate economic investment and improve community infrastructure and services in the region.

During the April 2013 Commission Meeting, the commissioners used the same process to develop the vision statement for the Climate Change Impacts and Adaptation Technical Appendix.

"The vision is the dream.
The vision describes.
The vision is poetry.
The vision is about possibilities.
The vision describes what.
The vision is an aspiration.
The vision appeals to the imagination.
The vision is striven for."
-Maine State Planning Office

SRPC outreach and engagement events



Photo Credit: SRPC Staff


Dover, NH

Photo Credit: City-Data.com

Regional Trends

This section includes an overview of the region and land use, demographic, and transportation system trends.

Regional Snapshot

Geographic Background

The Strafford Regional Planning Commission is responsible for one of the nine planning regions in the state. This region is comprised of 18 communities, including the 13 communities in Strafford County, two communities in Carroll County, and three communities in Rockingham County.

The Strafford region is in the southeastern corner of the state, forming the eastern border of New Hampshire. Rockingham County borders Strafford County to the south, the state of Maine to the northeast, Carroll County to the north, and Belknap and Merrimack Counties to the west (see figure 2).

The Salmon Falls River flows south along the boundary of the region into the Piscataqua River, separating Strafford and Carroll Counties from Maine. The region is equidistant of Metro Boston and Portland, Maine (60 miles).

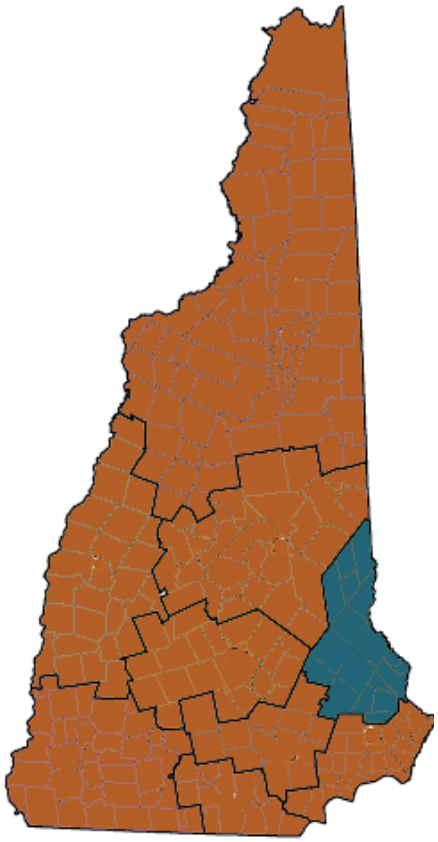
To the north lies the Lakes Region, shaped by the beautiful waters of Lake Winnipesauke and the White Mountain National Forest. The Strafford Region is located just north of New Hampshire's seacoast region and includes five coastal communities. The Strafford Region lies east of the Capital Region surrounding Concord and west of the State of Maine and the Atlantic Ocean. While the southern portion of the region benefits from employment opportunities due to its proximity to Metro Boston, the northern communities benefit from the recreational opportunities in the Lakes Region and White Mountains.

Strafford is a region that is set apart by its beautiful natural resources, diverse urban and rural communities, and rich cultural heritage. The region is home to Dover, Rochester, and Somersworth, the only Tri Cities in the state. In addition, Durham is home to the University of New Hampshire, a major institution and the flagship entity of the University System of New Hampshire.

Most communities in the Strafford region lie within the Piscataqua River Basin. Five coastal rivers pass through the region and converge in Great Bay, a nationally recognized Estuarine Research Reserve. The Piscataqua River drains the estuary into the Gulf of Maine through Portsmouth Harbor to the east.

SRPC Communities

Barrington
Brookfield
Dover
Durham
Farmington
Lee
Madbury
Middleton
Milton
New Durham
Newmarket
Northwood
Nottingham
Rochester
Rollinsford
Somersworth
Strafford
Wakefield



Strafford Regional Planning Commission is responsible for one of nine planning regions in the state.

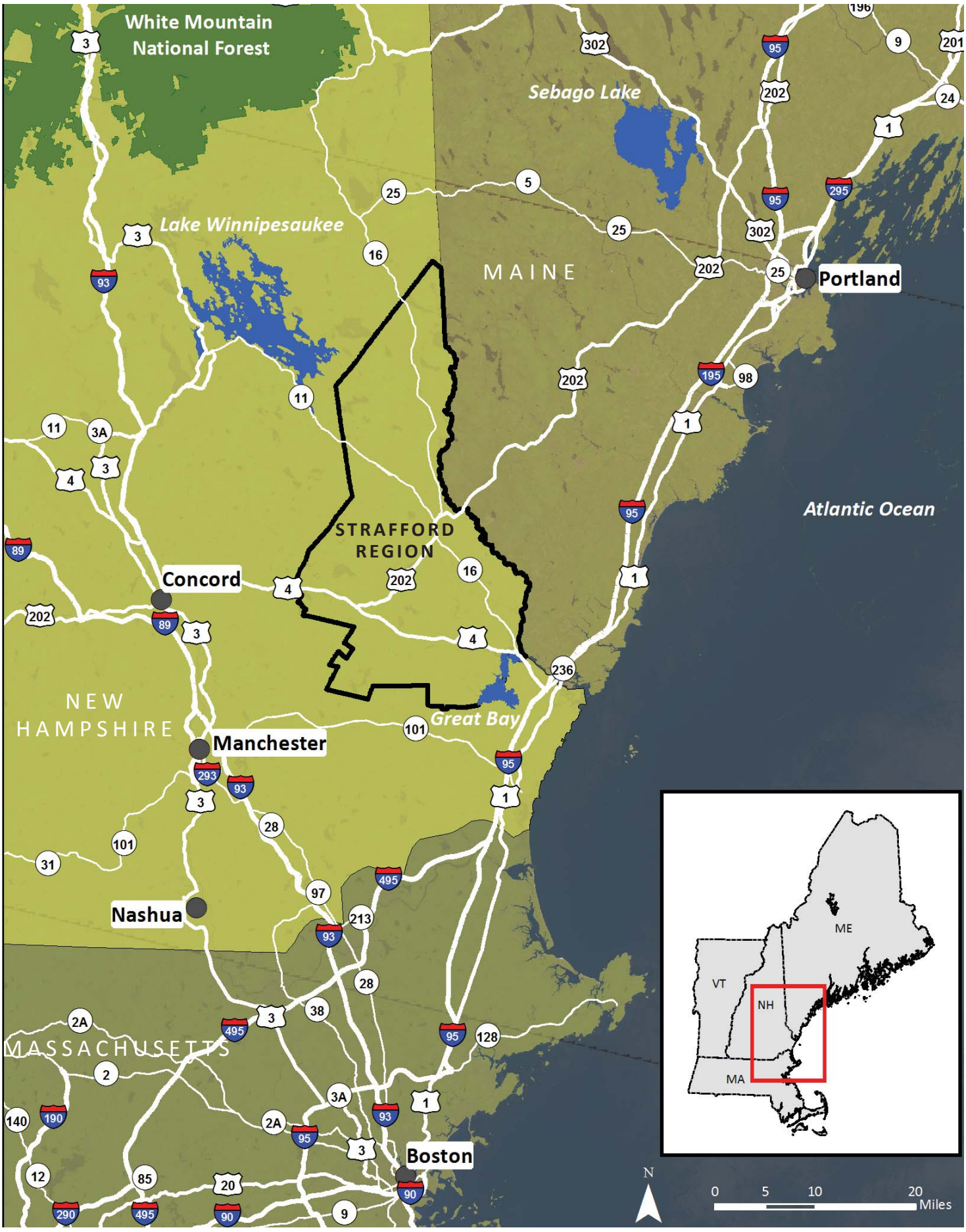


Figure 2. Regional context map

The Strafford region is rooted in its communities' rich industrial history and tradition. Established during the Industrial Revolution as a hub of textile production within the northeast, the region continues to be defined by traditional mill-town development, built upon the veins of the Cocheco, Lamprey, Salmon Falls, and Oyster coastal rivers leading south to the port of Portsmouth. Though these rivers connect our population, they geographically divide us from our neighbors in Maine along the Salmon Falls River.

The Strafford Region is defined by its unique characteristics within this broader geographic context.

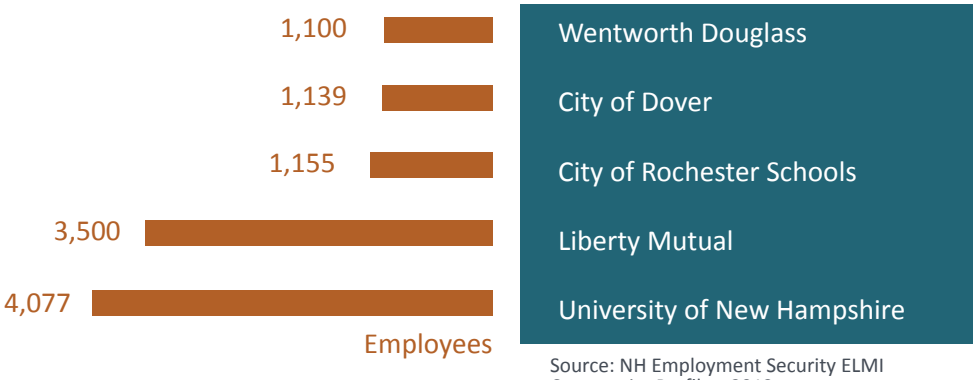
Economic Background

Although no longer home to bustling textile factories, the region's employment centers, major employers, and countless small businesses continue to provide employment for residents of all eighteen communities.

The Strafford region's economy is influenced by its position within the seacoast region of New Hampshire and Maine, the Greater Portland and Boston areas, and the northeast region of the country. Efforts by partners ranging from regional communities and economic development professionals, to partners at development authorities, businesses, and educational institutions, forged a vision for the greater Seacoast as a hub of advanced aerospace engineering and manufacturing.

The University of New Hampshire, Liberty Mutual, and the City of Rochester School Department are the largest employers in the region, drawing their employment base from not only the 18 communities in the region, but also from northern communities in Carroll County, the southwest communities of Rockingham County, and western Maine.

Major Employers in the Region



Source: NH Employment Security ELMI Community Profiles, 2013

University of New Hampshire

University of New Hampshire, Durham

Photo Credit: Pintrest

The region's innovation hub and educational driver, as well as its largest employer, is the University of New Hampshire's flagship campus in Durham, New Hampshire. The University's influence stretches into the communities that surround Durham, where ample affordable and diverse housing provides a home to students, faculty, and staff.

The University serves residents of the state and exports educational services to neighboring states and to countries around the globe. After graduation, many students choose to take their first career steps in this region, building upon strong university connections and placement programs with major regional employers.

Durham is a prototypical college-town, with the strong presence of the University in shaping its development. However, the University, due primarily to the factors discussed above, truly exerts regional influence. The Strafford Economic Development Region is consequently a 'college-region'.

Transportation Network

The region's communities are tied together by a network of transportation corridors stretching from north to south and east to west. The region's primary retail, service, and medical corridor, Route 108, stretches from Rochester in the north to the outer boundary of the region in the south, and continues into Massachusetts. Directly parallel, New Hampshire Route 16, a limited-access highway, serves as the area's primary commuter route, connecting the region's northern communities to the I-95 Corridor. These corridors support intra-regional commerce and connect the local economy to state, national, and global economies.

Skyhaven Airport

Image Credit: Smart Environmental

Freight movement that drives the region's retail and manufacturing development is concentrated on two corridors within the region: Route 4 running east-west and Route 125 running north-south. Despite heavy trucking along these corridors, each continue to serve as retail and service centers for smaller rural bedroom communities. Both freight and passenger rail continue to play an important role in the region's economy. The New Hampshire Northcoast Railway traverses the Strafford region, providing services to businesses and industrial parks from north to south and Metro Boston.

With the recent award of the TIGER V Grant, freight rail extension to North Conway in the North Country of New Hampshire can be a reality, raising the value of the current rail service in the region. Passenger rail plays a role in the regional economy, particularly in its relationship to the Greater Boston and Portland economic regions. The Amtrak Downeaster, with two stops in Dover and Durham, provides rail access north to Portland and south to Boston.

C & J Bus lines provide intercity bus service to South Station and Logan Airport in Boston, while COAST and Wildcat transit provide regional public transportation.

Regional Land Use Trends

Existing Land Use

There are a total of 347,893 acres or 544 square miles within the Strafford Region. The map to the right displays land use data that was created from 2010 aerial imagery. The table below summarizes changes in land use from the late 1990's to 2010. A significant portion of the region (64%) is comprised of forest land. Developed land accounts for approximately 16% of the region (Source: GRANIT).

Table 1. Land use change from 1998 to 2010

Land Use (2010)	Area (Acres)	% of Total Area	% Change from 1998
Developed	57,152	16.4	32.4
Agriculture	12,787	3.7	-7.9
Forest	224,063	64.4	-11.4
Water	18,448	5.3	-3.5
Wetlands	27,728	8.0	277.1
Idle/Other Open Space	7,714	2.2	32.8

*change due in part to availability of better imagery

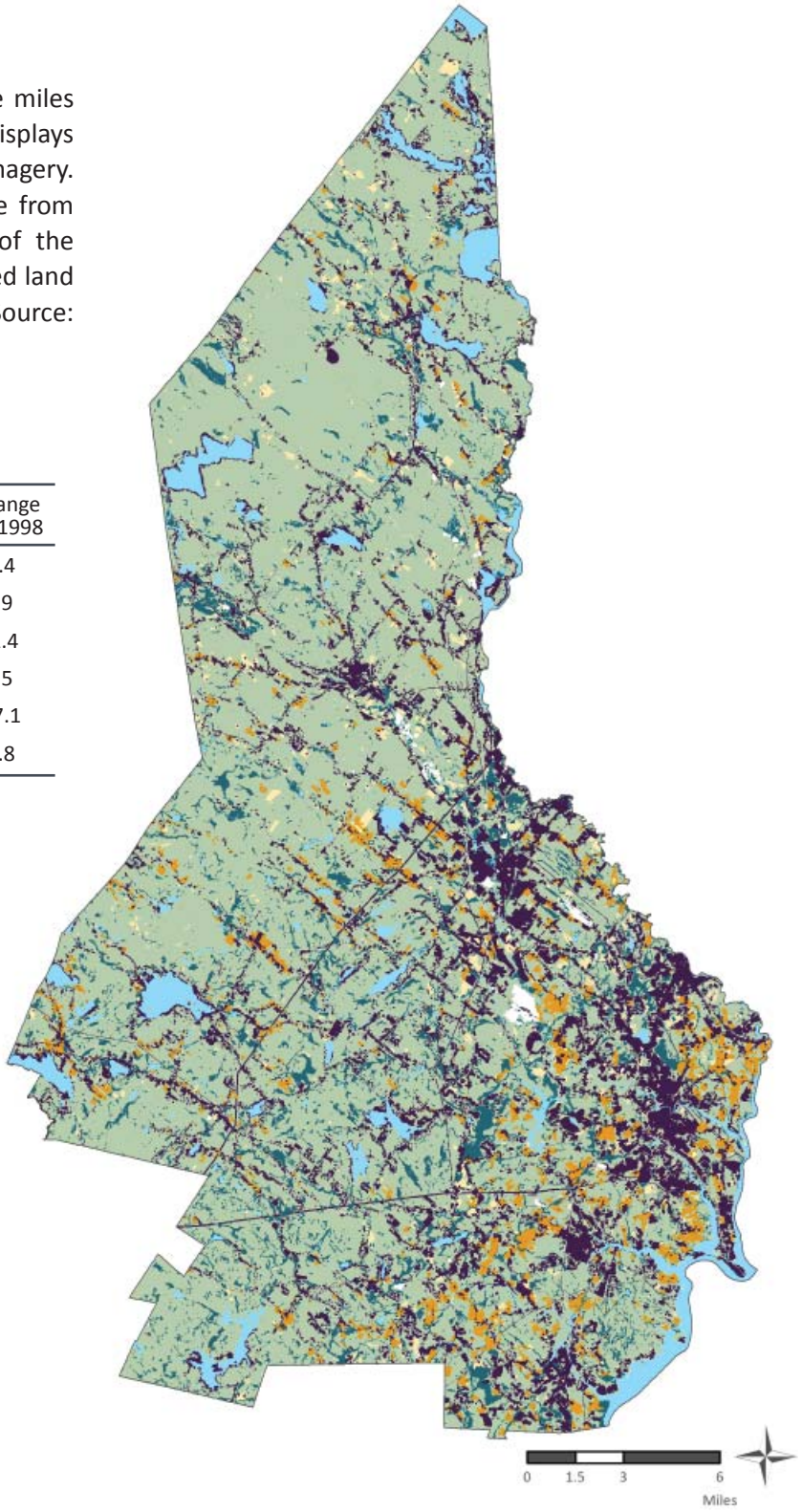


Figure 3. Existing land use in the region (Source: GRANIT)

Land Use Characteristics

Major Transportation Routes

1,857 miles of roads in the region

Developed Land

Impervious surfaces account for 15% of the total acreage in the region

Conservation Land

48,968 acres or 14.8% of total land area in the region is permanently protected

Water

18,450 acres or 5% of the total surface area of the region

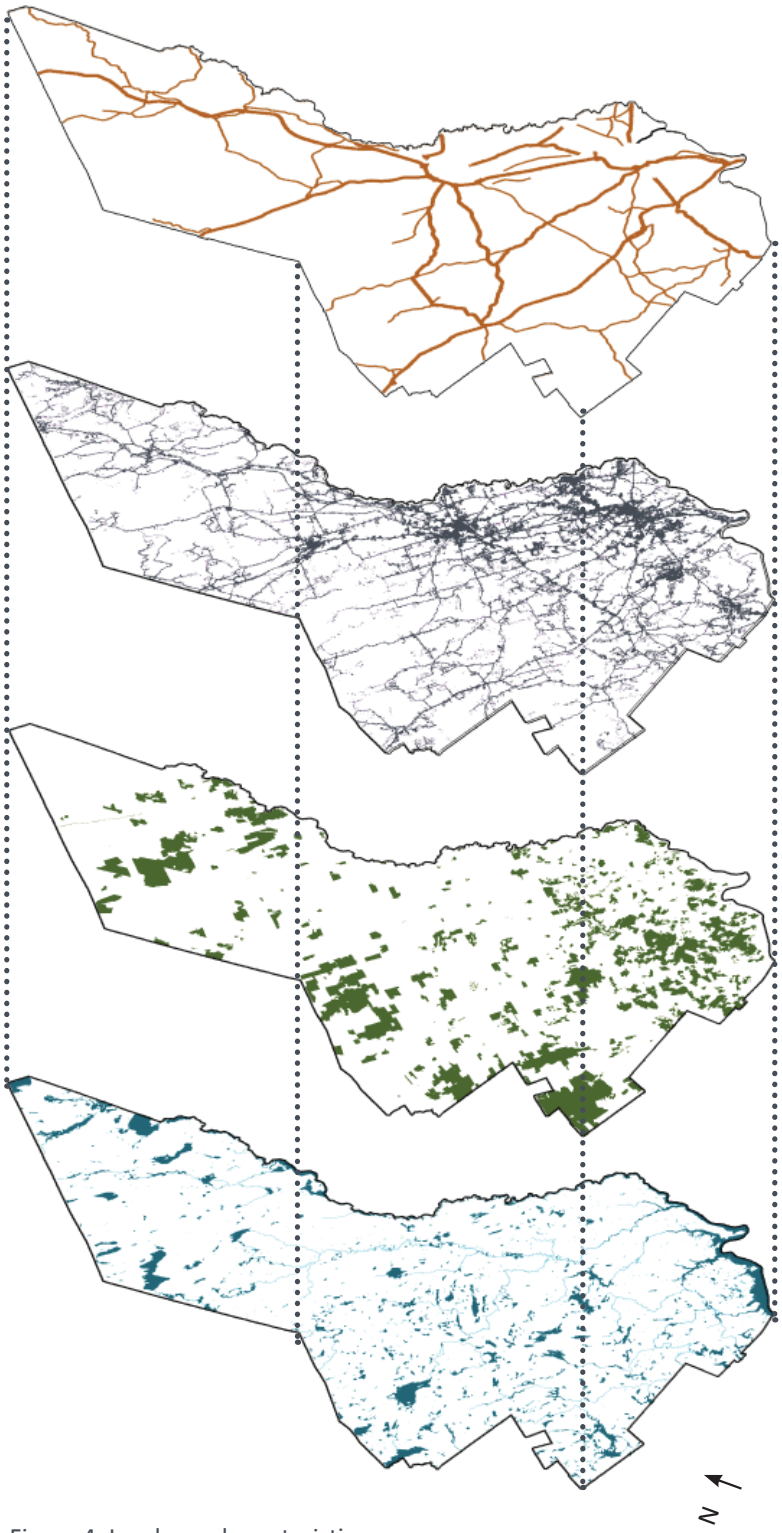


Figure 4. Land use characteristics

Changes in Land Cover

Between 1998 and 2010, developed land increased by approximately 32%. As of 2010, developed land accounted for a total of 16.4% of the area of the region (Source: GRANIT).

In comparison with other development trends — including population growth, which slowed between 1990 and 2010, and residential development, which declined after the recession — impervious surface cover within the region continues to increase. Impervious surfaces within the region accounted for 15% of the total acreage in the region in 2010 (Source: GRANIT).

Within the Piscataqua Watershed, impervious surfaces accounted for nearly 10% of the watershed in 2010 and increased twice as much between 2005 and 2010 as between 1990 and 2005 (Source: PREP, 2013).

Impervious Surfaces

Impervious surfaces such as roads, parking lots, and rooftops prevent precipitation from soaking into the ground and contribute to non-point source pollution.

As little as 10% impervious cover in a watershed can result in degradation of streams and rivers. (Source: US EPA, 2003)

Forest Cover

While the decline in forests in New Hampshire in the 1800s was largely a result of the deforestation that occurred to support sheep farming, today's change in forest cover is primarily due to development. From 1998 to 2010, forest cover in the region declined by over 10% (Source: GRANIT).

Two of the top watersheds in the U.S. that are predicted to have the greatest change in housing density of forested land between 2000 and 2030 are located in southern New Hampshire. The Merrimack watershed and Piscataqua - Salmon Falls watershed are ranked 1st and 3rd, respectively, in the country in terms of total acreage of private forest projected to experience increased housing density (Source: USFS, 2009).

The forests in these watersheds provide high contributions to the production of clean water, which is critical to drinking water supplies, protection of human health, recreation, and wildlife habitat in the region (Source: USFS, 2009). In addition, cleaner surface and groundwater that requires less treatment is also less costly for municipalities.

Protecting the valuable services and benefits these forests provide through land use planning, regulation, conservation, and best management practices, such as Low Impact Development, is essential to future sustainable development in the region.

Forested Land

Over 57 million acres of rural forest land could experience a substantial increase in housing density from 2000 to 2030 in the U.S.

The loss of forest cover — which has higher groundwater recharge, lower stormwater runoff, and contributes lower levels of nutrients and sediment to streams than urban or agricultural areas — will likely impact water quality in the region. (Source: USFS, 2009)

Photo Credit: Elizabeth Durfee

Conservation Land

As of October 2014, approximately 15% of the land area within the region was conserved through permanent, legally enforceable conservation easements, deed restrictions, or outright ownership by an organization or agency (Source: GRANIT).

The table below summarizes the extent of regulatory and non-regulatory conservation and natural resource planning efforts in the region identified in the *2010 Piscataqua Region Environmental Planning Assessment*.

Identifying and prioritizing undeveloped land to retain and protect at a local and regional scale is important to maintaining the natural resource functions that support a healthy environment in the region (Source: TNC, 2006).

Conserved Land on Great Bay, Newmarket

Photo Credit: Elizabeth Durfee

Table 2. Percent of the region's municipalities with conservation and natural resource protection measures as of 2009

Conservation Planning	
100%	Conservation Commission
100%	Code Enforcement Officer
44%	Natural Resource Inventory
67%	Natural Resource Chapter in Master Plan
Wetlands Protection	
94%	Wetlands Ordinance
33%	Designated Prime Wetlands
44%	Explicit Protection of Vernal Pools
50%	Completed Local Wetland Inventory in Last 15 years
Conservation Subdivision	
39%	Mandatory Conservation Subdivision Requirements
Open Space & Conservation Easements	
78%	Open Space or Land Protection Plans
50%	Conservation Easements on Publicly Owned Land
61%	Regularly Monitor Conservation Easements held by Municipality
Investment of Public Municipal Funds in Land Conservation	
72%	Land Use Change Tax Money For Conservation

Source: Piscataqua Region Estuaries Partnership, 2010

Drivers of Land Use Change

Population Trends

Population growth is a major driver of land use change. The region's population increased by 123% (80,918 individuals) from 1960 to 2010. During this period, the greatest population growth occurred in the 1970s (23.8%) and 1980s (25.5%) (Source: NH OEP, 2011) (see figure 5).

Within the region, average growth by community varied significantly between 1960 and 2010, ranging from 30% in Rollinsford to nearly 730% in Barrington (NH OEP, 2011).

NH Population Trends

Statewide, population increased by 117% between 1960 and 2010. The greatest growth during this period occurred in Carroll County (202%). Rockingham (199%) and Strafford (106%) Counties also experienced high growth during this period. Coos County was the only county to experience population loss (-11%) during this period.

(Source: US Census)

Urban vs. Rural Population

In 2010, a majority of the region's residents resided in urban areas. The population of three communities in the region - Dover, Rochester, and Durham - accounted for approximately 50% of the total population in the region. These communities comprise 18% percent of the region's land area.

While population is the highest in urban and suburban communities in the southeast portion of the region, the greatest percent change in population from 1960 to 2010 occurred in the region's more rural northern and western communities. Rural communities also account for an increasing share of the total population of the region.

Density and Land Used Per Person

In 2010, the average population density in the region was approximately 285 people per square mile, ranging from 31 people per square mile in Brookfield to 1,211 people per square mile in Somersworth (Source: US Census, 2010).

Data obtained from land cover maps indicates that the sprawling pattern of development that occurred in the mid 1960s through mid 1970s in Strafford County has slowed, however development is still less dense than it was in the early 1960s. A land use study found that the development ratio, or amount of land used per person, increased from 0.24 acres per person in 1962 to 0.43 acres per person between 1962 and 1974, and then declined to 0.36 between 1974 and 1998 (Source: TNC, 2006).

2010 land use data (similarly obtained from aerial imagery) indicates that the development ratio in Strafford County in 2010 was approximately 0.31 per person and 0.39 acres per person in the region.

Proximity to Urban Centers

Although population growth is slowing, development in Southeast New Hampshire is also influenced by growth within New England. Employment opportunities in major urban centers in Massachusetts and Maine will continue to draw residents into the region and influence the number of people traveling to, from, and within the region.

Population Trends

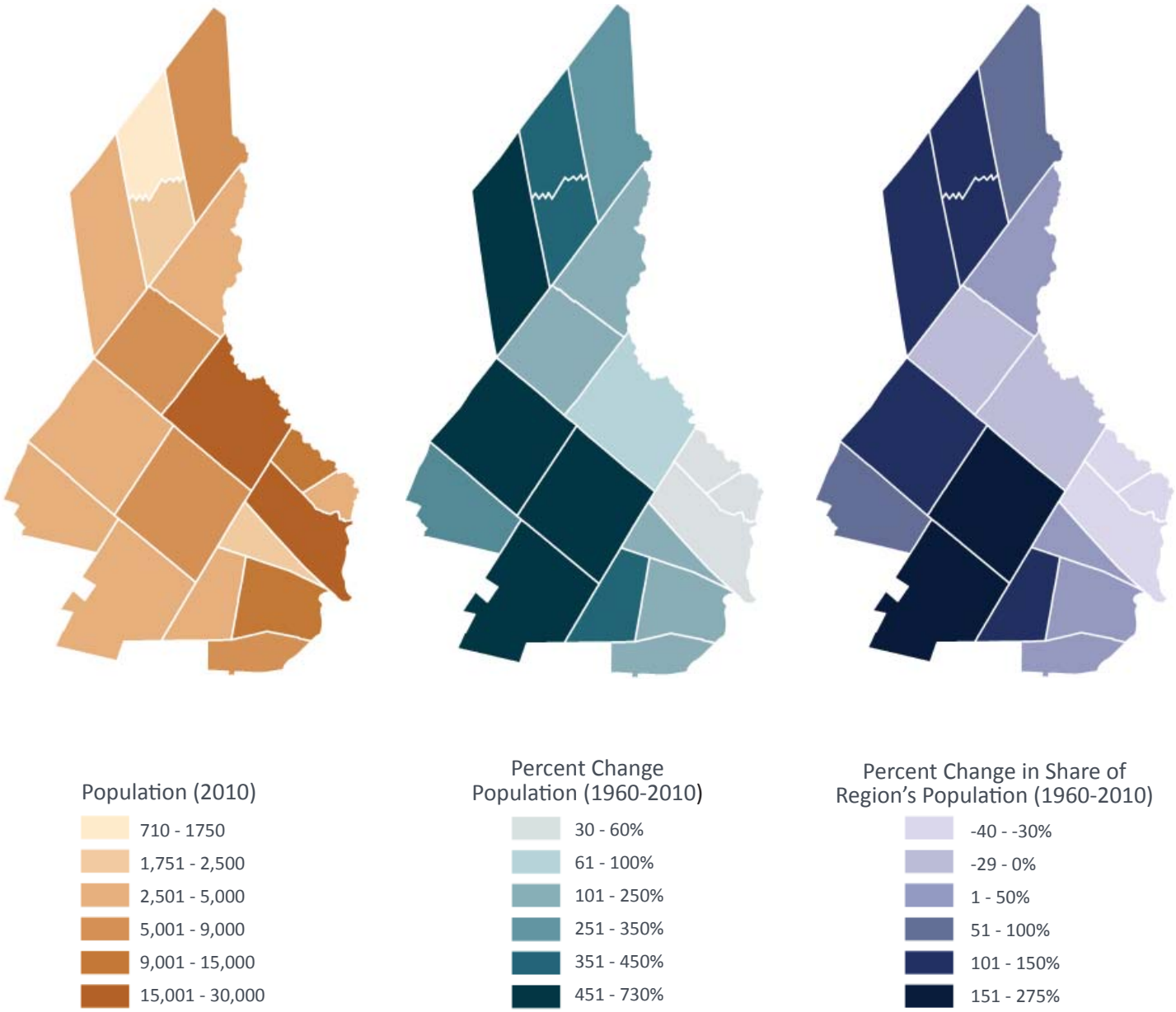


Figure 5. Population trends in the region from 1960 to 2010
(Source: U.S. Census Data, Prepared by NH OEP March 2011)

Future Population Growth

Population projections indicate that the population in the region is expected to increase by approximately 12.7% (or 0.4% annually) from 2010 to 2040. This growth rate is approximately 75% less than the growth rate of the previous three decades (Source: NH OEP, RPCs, 2013).

Residential Development

Residential development trends within the region align with population growth patterns. Factors such as changes in preferred housing type, accessibility to jobs and services, demographic change, and economic conditions impact the demand for housing and drive land use change.

Between 1990 and 2005, a large share of the region's single family housing growth flowed to rural areas within the region. During this time, the number of single family housing building permits issued in rural areas outweighed those authorized in urban areas three to one, and permits issued in suburban areas by approximately 50% (Source: BCM Planning, LLC, 2014).

Since the recession, housing activity in urban and suburban areas has increased and there has been little change in multifamily unit opportunity outside of urban centers. Long term population projections indicate that future growth could continue to expand outward from urban centers. Between 2010 and 2025, urban, suburban, and rural areas are each projected to absorb approximately one-third of the growth in the region (Source: BCM Planning, LLC, 2014).

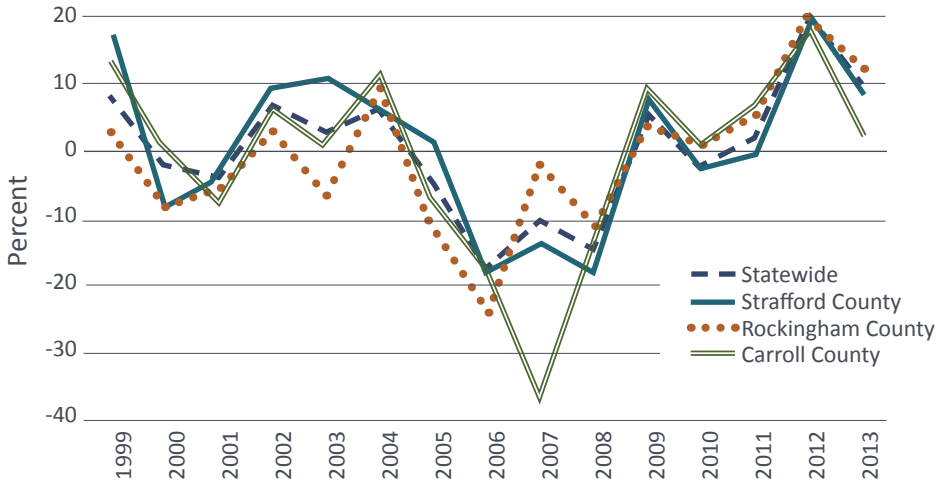


Figure 6. Percent Change in Single-Family Residential Property Values between 1998 and 2013 (Source: Northern New England Real Estate Network)

Residential Property Value

Between 1998 and 2005, the statewide median price for a single-family residential home rose 112% from $127,500 to $270,000. Over the following four years, the median price of single-family homes experienced a period of increasing decline. In more recent years, the market has exhibited signs of recovery and in 2012 unit sales were 21% higher than in 2011.

In general, Strafford, Rockingham, and Carroll Counties followed this statewide trend, however in Carroll County the peak in home price lagged two years behind the statewide average (figure 6).

(Northern New England Real Estate Network)

Future Land Use & Development Constraints

A constrained land use analysis can aid in identifying the general extent and location of potential future development in the region. This analysis represents a maximum build out scenario of all unconstrained land and does not take into account local regulations such as setbacks.

Constrained land accounts for a total of 154,642 acres within the region. Existing development accounts for approximately 57,152 acres (16% of total area) of this constrained land. The full development land use scenario showed that a total of 193,251 additional acres of the total area within the region are unconstrained and could potentially be developed. Given this full build out, a total of 72% of the region could potentially be developed (figure 7).

Constrained land uses considered in this analysis:

- Existing developed land
- Water
- Very poorly drained soils
- Steep slopes <25%
- Permanently protected land

(Source: GRANIT, USGS, SSURGO)

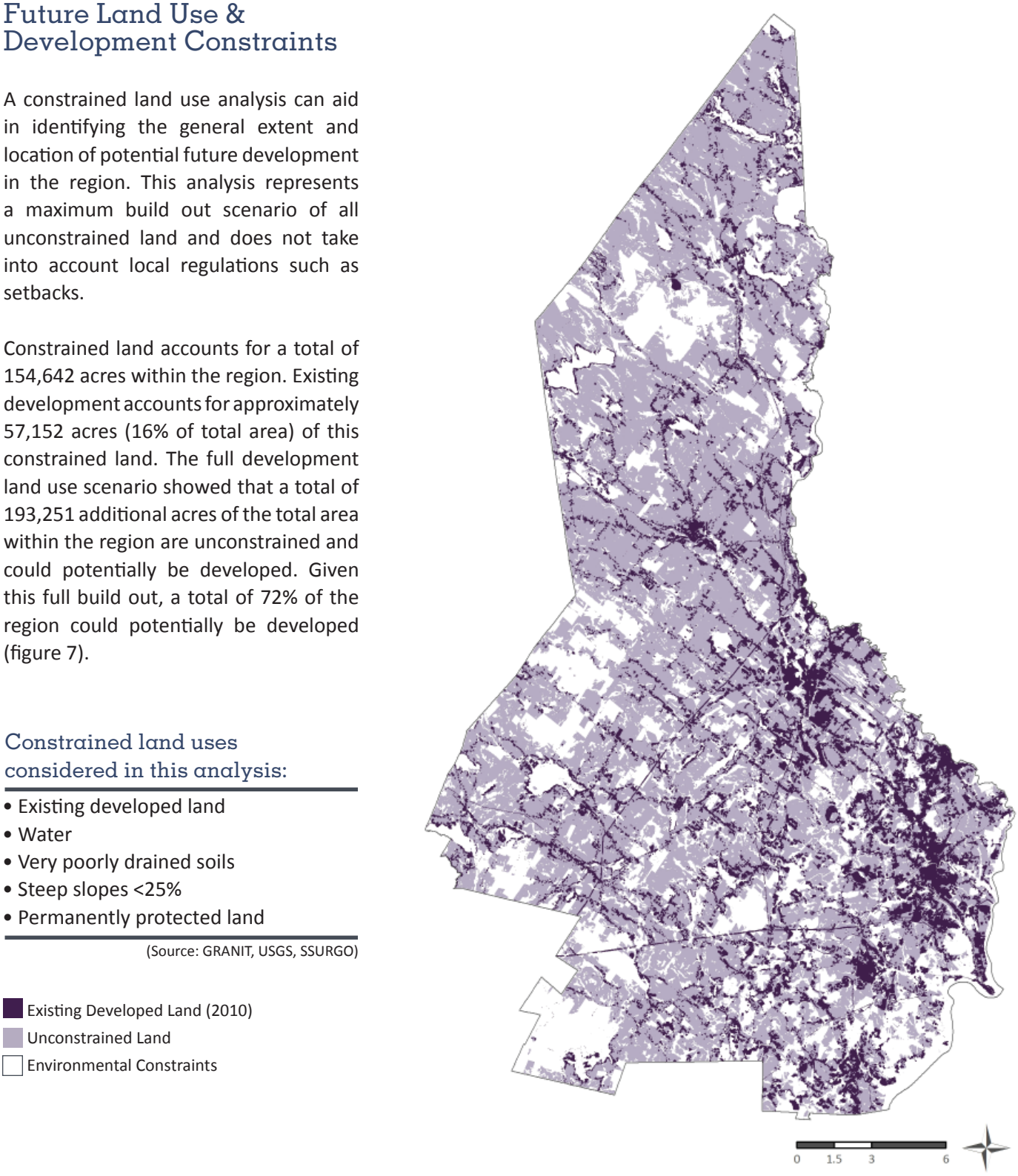


Figure 7. Constrained land use map (Source: GRANIT, USGS, SSURGO)

Regional Demographic Trends

Slowing Population Growth

According to Census figures, the Strafford region's population was the fastest growing area in the state of New Hampshire, increasing 10.9% between 2000 and 2010.

The region's proximity to large population centers, such as Boston and Portland, will continue to provide strong population growth and in-migration in the coming decades. However, population projections developed by the New Hampshire Office of Energy and Planning, in partnership with RPCs, suggest that growth will slow in the years between 2010 and 2040. Projections for the Strafford Region estimate that the population will grow from 146,895 to 165,694, just a 12.7% overall growth rate or 0.4% annually. In the years between 1980 and 2010, also a 30-year period, the region grew by 52% (1.7% annually). Figure 8 displays population growth and projected population change in the region between 1960 and 2040.

Municipal population change rates within the region are expected to vary, ranging from a projected 28% growth in Nottingham to a projected loss of -5% in Rollinsford.

Population in the region increased by 10.9% between 2000 and 2010. It is expected to grow by 12.8% between 2010 and 2040.

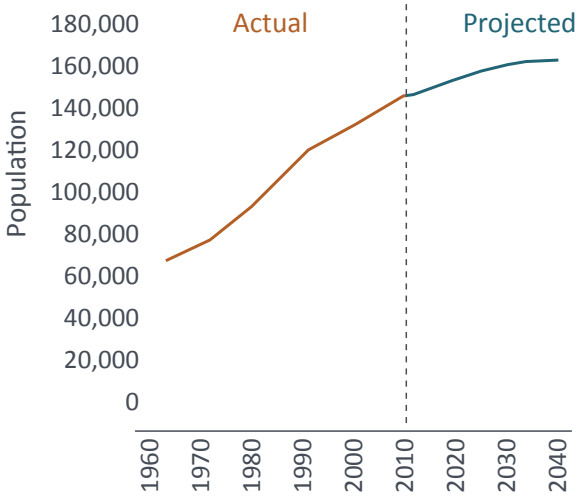


Figure 8. Actual and projected population growth in the region between 1960 and 2040 (Source: U.S. Census, OEP, RLS)

An Aging Population

The Strafford region, along with the State of New Hampshire, is currently experiencing a rapid aging of its population.

From 1990 to 2010, the region saw a significant increase in its 65 and older population. This trend is occurring across New England states and is a product

of aging Baby-Boom and Generation X populations. In *The Two New Hampshires: What does it mean?*, author Dr. Ross Gittell noted that if rural New Hampshire were its own state, it would have the second highest population of 65+ individuals, second only to Florida.

Population in the region is aging rapidly, but remains slightly 'younger' than the rest of the state.

Estimates suggest that by 2030, New Hampshire's senior population will double. This 'silver tsunami' is crashing so rapidly that in the years between 2000 and 2010, New Hampshire climbed from the eighth oldest state in the nation to the fourth. Median ages of all regional communities increased in this same ten-year period with the exception of Durham, the home of the University of New Hampshire. The Town of Strafford experienced the greatest increase in median age – nearly seven years. Of all the regional communities, 40% saw a five year or greater increase in median age.

Interestingly, the region remains slightly 'younger' than the rest of New Hampshire – 61% of communities in the region fall below the state median for population age.

In the decade from 2000 to 2010, the state saw a greater than 10% net loss in 20-29 year olds. Perhaps the most potentially damaging trend to the state, unstable market conditions following the national recession of the mid-to-late 2000's most likely caused this out-migration.

2013 Population Estimates

Barrington	8,733
Brookfield	712
Dover	30,275
Durham	15,182
Farmington	6,822
Lee	4,340
Madbury	1,790
Middleton	1,778
Milton	4,573
New Durham	2,620
Newmarket	9,173
Northwood	4,252
Nottingham	4,840
Rochester	29,893
Rollinsford	2,522
Somersworth	11,754
Strafford	4,010
Wakefield	5,070
TOTAL	148,339

(Source: NH OEP)

Implications

An understanding of the regional existing conditions and emerging trends is a key component of creating solutions that provide an opportunity for future growth and prosperity of our communities and people. Though the causes behind many of these trends are variable, identifying proactive strategies that holistically address these complex issues is one of the primary objectives of **Local Solutions for the Strafford Region**.

As the previous content suggests, the challenge of providing care and services for the aging population will soon be shared by all communities. Similarly, a shrinking young population — those typically comprising the labor force and providing school enrollees — could have potentially damaging impacts. The question is then: how can we create opportunities for both older and younger generations by providing vibrant downtown and rural communities for all ages and incomes that provide access to equitable access to transportation, services, housing, and recreation? To understand this, let us first explore the possible implications of these demographic trends on a local level.

A Housing Preference Shift

New Hampshire is experiencing a shift in population demographics. This change is driving a shift in housing preference among both older and younger generations, one that may result in a misalignment between housing supply and demand in coming decades. Several trends are emerging:

- Home ownership is declining. Declining in-migration, an unstable housing market, and difficulty in procuring financing have each contributed to a decline in home ownership attractiveness. In particular, seniors are experiencing liquidity challenges as they attempt to downsize and relocate, while simultaneously, student-debt burden, wage quality, and savings rate make ownership for younger populations problematic.

- Housing preferences are evolving. Young population demand has shifted from ownership towards more flexible housing arrangements such as renting. Older populations, with average household sizes of approximately 1.5 persons, are down-sizing from large 3+ bedroom homes to 1 and 2 bedroom units closer to community centers. Together, these preference shifts are causing demand shortage for larger, more rural homes and a supply shortage for smaller, more flexible spaces.

- Existing housing stock is not flexible. It is expected that construction rates will decline alongside slowing population growth in New Hampshire's communities. Competition between older and younger generations for single-family homes and rental units in or adjacent to community center areas may create excessive demand on a limited housing stock supply in these areas. One solution is the reuse of existing space. However, communities must take proactive steps to ensure that ordinances and regulations allows for innovative reuse, rehabilitation, and expansion.

- Senior housing is a concern. The aging of the Baby Boom generation is expected to result in the doubling of our senior population between 2010 and 2015. In parallel, housing unit occupancy by seniors will double, requiring a revisit to how we design and retrofit our housing for seniors with and without disabilities. Though a high percentage of seniors are interested in 'aging in place', this choice could become strained by increasing taxes and real estate costs, increased prevalence of disability combined with decrease in 'caregiver' population, and a decrease in median household income. Statewide figures estimate that median incomes for seniors are just over half that of all households.

- Seniors choose to 'age in place'. Despite anecdotal evidence suggesting the seniors migrate to southern, warmer climates, only 3% of New Hampshire's seniors move annually. A 2010 AARP survey of 45 and older citizens indicated that 86% of respondents would "like to stay in their current residence as long as possible." However, the ability of seniors to remain in their community is directly related to factors such as income, healthcare, housing stock, and

74% of respondents of the University of New Hampshire statewide survey indicated that towns should encourage assisted living facilities. This was second only to single family detached housing (75%) residential development.

(Source: UNH Survey Center)

75% of seniors in New Hampshire live in suburban or rural areas. These areas typically lack access to key services and amenities such as healthcare and transportation.

housing cost burden. Nearly 45% of the state's senior population classify themselves as having one disability. Of those, 18% report that their disability makes independent living challenging.

Historically, social agencies have played a key role in ensuring that seniors are able to remain independent. However, predicted funding shortages could lead to widespread cuts in these services. As indicated above, seniors, despite often having more assets, tend to make one-half the state's median income and pay more than 30% of that towards housing costs. Approximately 75% of the state's senior population lives in suburban or rural areas; these areas typically lack access to key services and amenities such as healthcare and transportation. As a result, down-sizing seniors are searching for housing in downtown areas with close proximity to vital services. Unfortunately, much of existing community-center housing stock is older and not 'senior-friendly'.

- Assisted living demand will rise. New Hampshire Housing Finance Authority's *Senior Housing Perspectives* report estimates demand for nursing home beds will increase by more than 50% by 2025 (state nursing homes are currently at 100% capacity). In parallel, demand for assisted living units is expected to grow from 4,400 to 7,400 in the next 15 year period, a 68% increase.

A Decline in School Enrollment

Concurrently, the region's municipalities struggle to maintain enrollment in school districts with a decline in young families.

Two observable demographic shifts are occurring across much of New Hampshire, and the nation. Though some states have been able to endure changing age demographics by attracting heavy in-migration from immigrant populations, New Hampshire's population is rapidly aging while communities are experiencing an observable decline in families, children, and school enrollment.

As part of its *2012 Housing and School Enrollment in New Hampshire: 2000-2010-A Decade of Change study*, New Hampshire Housing and Finance Authority suggests that demographics can have a greater influence on enrollment figures than housing growth/construction. In the decade between 2000 and 2010, New Hampshire communities gained nearly 45,000 housing units, but lost nearly 21,600 school enrollees. Of the state's 161 school districts, 130 experienced a decline in enrollment in that same period.

Communities within the Strafford Region, like many of those across the State of New Hampshire, attempted to address the cost of educating new students coming from new housing unit construction in the early 2000's. In 2014 the demographic playing field has changed. Family households are in decline with a rapidly growing number of housing units occupied by only one person or multiple unrelated

individuals living together to minimize costs. Despite construction of new single-family homes and multi-family units in some New Hampshire communities, these projects typically produce only 0.64 and 0.17 students per unit respectively. Declining or stagnating enrollment, once considered a goal of some communities, is now costing taxpayers more as they work to pay for fixed education costs like maintenance and staffing. Furthermore, state-funding, often based on a student-enrollment funding formula, is also declining.

With slow growth projected for much of New Hampshire, enrollment numbers are not expected to return to 1990-2000 levels. Many school districts now have a surplus of capacity that must be addressed. Communities must begin to take action to improve the overall fiscal health of their education system by addressing the provision of affordable and attractive family housing stock that will increase property tax revenues.

School enrollment numbers are not expected to return to 1990-2000 levels and school districts must address a surplus of capacity.

A Shrinking Labor Force

An aging population combined with a decrease in population between 18 and 55 could result in a significant labor force shortage in coming years. Additionally, a trend known as 'brain drain', the mass emigration of highly skilled or trained individuals, could have potentially significant impact on local, regional, and state economic systems.

With the expected increase in demand for health care, assisted living facilities, and nursing home capacity, and the potential for a smaller labor force, a care-provider shortage might emerge. Local governments will likely need to create new programs and strategies in order to provide adequate health and social services for aging seniors.

A Decrease in Volunteerism & Stewardship

Much of local government in New Hampshire is performed by older, tenured community members. The impact of the anticipated age demographic shift could result in decreased interest in civic engagement, public participation, stewardship, and the general level of volunteerism. Local governments and organizations may need to begin to address this potential shortfall by altering public engagement and outreach practices to attract younger populations interested in sustaining local advocacy and progress. Furthermore, much of the historical context and knowledge of our regional space and places must be passed from generation to generation through communication and engagement. Without an engaged younger demographic, communities risk loss of local historical knowledge.

Without an engaged younger demographic, communities risk loss of local historical knowledge.

Transportation Systems Trends

COAST Bus

Image Credit: SRPC

Existing Conditions

A number of broad scale challenges and opportunities are transforming regional, state, and national transportation systems across the country. Among the range of factors that affect the region's transportation system include land use development patterns; population growth and demographic change; regulation and policy; increased maintenance and operations costs; and use of sustainable technologies.

This section contains a brief overview of existing transportation system conditions and summary of implications for future planning needs.

Roads & Principal Corridors

There are approximately 1,875 miles of roads in the region. Roadways are classified by functional class as well as by legislative class.

Roads are classified as urban and rural arterials, collectors, or local roads depending on the character of traffic service they provide (US DOT). A majority of roads within the region are local roads.

Principal corridors in the region include New Hampshire Routes 11, 16, 108, 125, and 155; U.S. Route 202, which serves north-south traffic; and US Route 4, which serves east-west traffic. Interstate 95 runs parallel to the coast to the south and east of the region and is accessible via Route 16 (Spaulding Turnpike) and provides access to Maine and Massachusetts (see figure 9).

Infrastructure Condition

Eight percent of total state highway roads are located within the region. Relative to the state, highway roads in the region are in better condition: 75% of state highway roads in the region are in 'good' or 'fair' condition, compared to 60% statewide (Source: NH DOT, 2011).

Eight of the 149 red listed bridges in the state are located within the region. As classified by the New Hampshire Department of Transportation, these bridges are structurally deficient, with one or more major structural elements in poor condition or worse (Source: NH DOT, 2011).

Nearly 80% of residents from the region who participated in the UNH Survey Center's statewide survey indicated that policy makers should invest more money in maintaining roads, highways, and bridges (Source: UNH Survey Center, 2011).

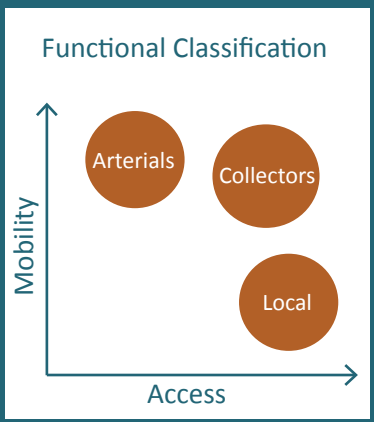
The cost of maintenance and operations is an increasing financial burden at the local and state level. Over the last 20 years, the cost of paving materials, for example, increased by 460% statewide (Source: NH DOT 2013, NH OEP, 2014).

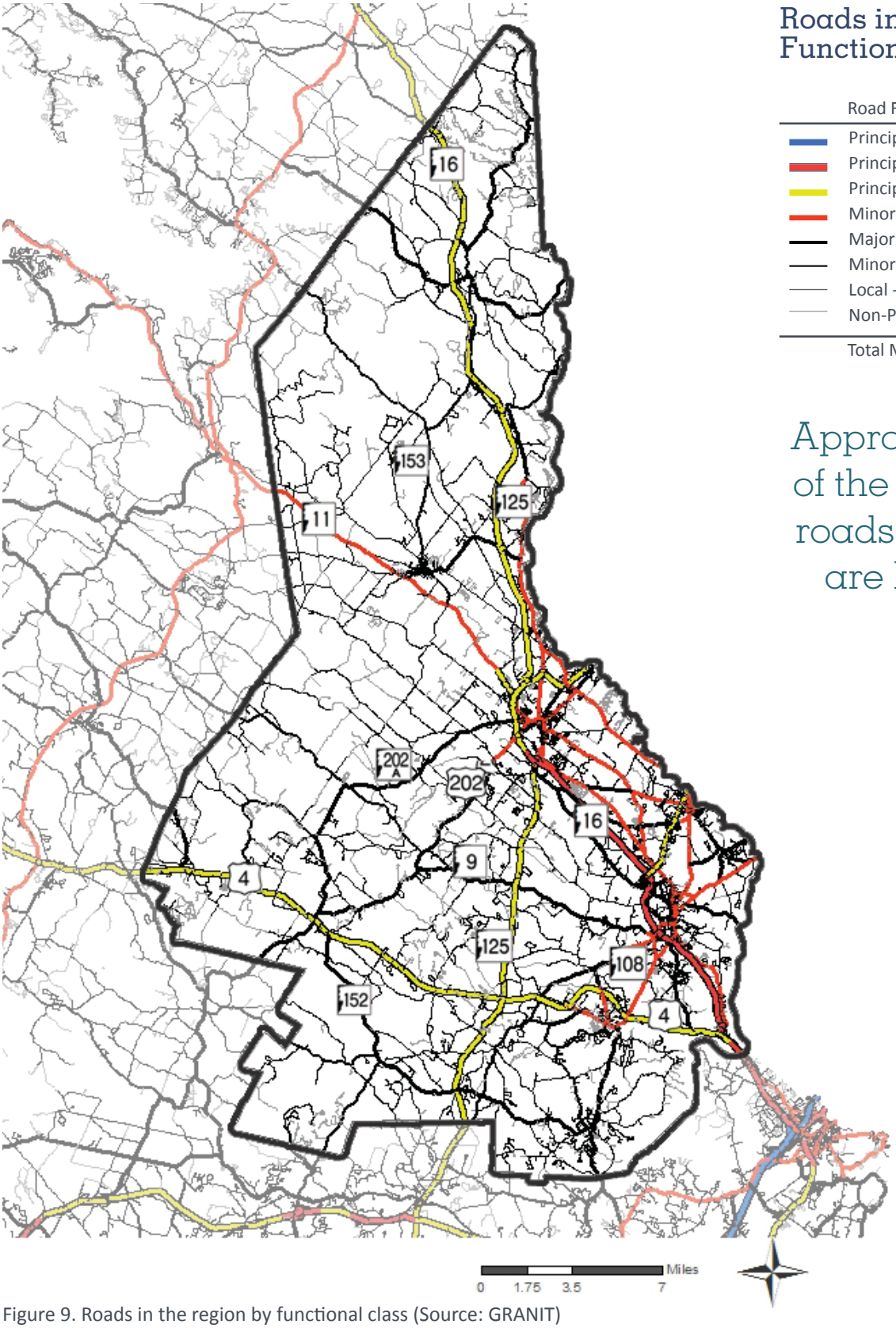
Classification

As land use changes, roads may be reclassified to reflect changes the intensity of development and type of traffic generated by development.

Local land use decisions that shape the form and location of growth should reflect the need for a reexamination of the existing road classification and may also require a change in jurisdictional responsibility.

(Source: US DOT)





Roads in the Region by Functional Class

Road Functional Class
Principal Arterial - Interstate
Principal Arterial - Other Expressways
Principal Arterial - Other
Minor Arterial
Major Collector
Minor Collector
Local - Public
Non-Public

Total Miles = 1,875

Approximately 50% of the 1,857 miles of roads in the region are local roads.

Figure 9. Roads in the region by functional class (Source: GRANIT)

Public Transportation

Local & Regional Transportation

The region's public transit system serves over 117 miles in the region and is the most comprehensive in the state. Reliable and affordable public transit is a significant asset and an issue of high importance to residents in the region.

There are two major public transit providers in the region: Cooperative Alliance for Seacoast Transportation (COAST) and University of New Hampshire (UNH) System Transit, which includes Wildcat Transit and the Campus Connector. The bus routes offered by these providers are critical for access to jobs, healthcare, education, and other services in the region.

Since 200, COAST ridership has increased at a greater rate than vehicle miles traveled at the state and national level (Source: COAST, 2013). This service has a significant economic impact: the estimated economic return is approximately $4 for every $1 invested (Source: American Public Transportation Association). Figure 10 displays COAST ridership by service.

UNH System Transit ridership nearly doubled between the 1999 and 2014 academic years, with peak ridership during this time period occurring in 2013-2014. As a result of UNH System Transit ridership, over 4.7 million vehicle miles were avoided (Source: UNH, 2014).

Outreach Response

Transit-related issues were the most talked about transportation topic among community members who participated in regional outreach events. Issues included:

- Route & schedule expansion
- Inter-regional transportation
- Transit for the elderly and ADA individuals
- Sustainable infrastructure

Carshares

UNH has hosted a fleet of ZipCar carshares for four years. Membership is open to UNH and Durham community members.

Annual passenger transportation ridership in the state is 3,415,291 passengers.

(Source: NH DOT, 2011)

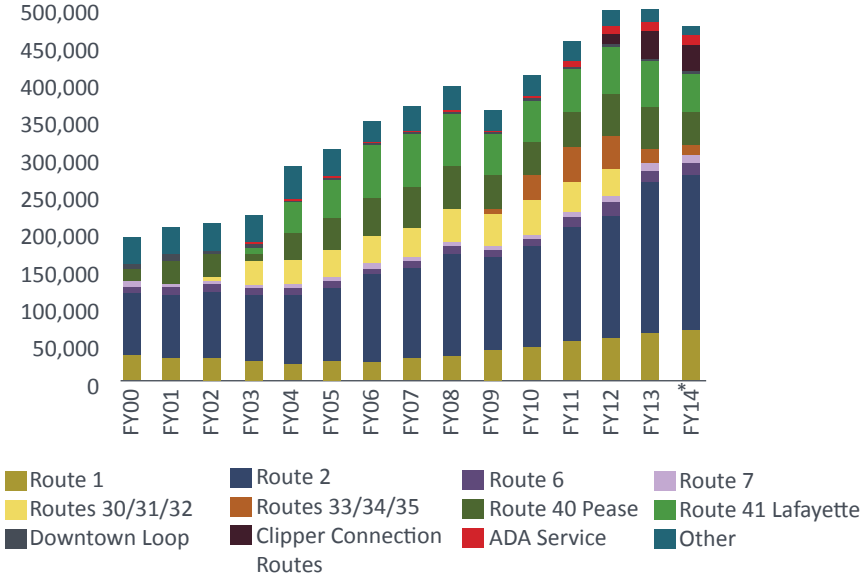


Figure 10. COAST ridership by service (Source: COAST, 2014)

Intercity Transportation

Inter-regional and inter-state service includes C&J Trailways, an intercity bus line, and Amtrak's Downeaster. C&J Trailways offers 30 trips per weekday and 21 trips per day on the weekend between Dover and Logan Airport and South Station in Boston, as well as daily service from Portsmouth to New York City.

Passenger Rail Transportation

The Downeaster is a 145 mile regional passenger rail service managed by the Northern New England Passenger Rail Authority and operated by Amtrak. The Downeaster runs between Brunswick, ME and Boston's South Station with three stops in New Hampshire in Exeter, Durham, and Dover.

Pedestrians & Bicycles

Within the region, approximately 17% of workers commute via walking, public transportation, biking, and carpooling, as compared to 12% statewide (Source: ACS, 2011). Non-motorized mode facilities in the region, such as those for pedestrian and bicycles, vary considerably from community to community. As walking and bicycling becomes more prevalent in the region, there is a greater need for safe, convenient, and well-designed facilities to support these modes of travel.

Nearly 60% of survey respondents in the region felt that investments should be made in the availability of bike paths or shoulder bike routes (Source: UNH Survey Center, 2011).

Traffic Safety

Safety is a priority in the state and region. Following an increase from 2006 to 2008, the number of vehicle crashes that occurred within the region declined through 2013 (Source: NH DOT) (figure 11).

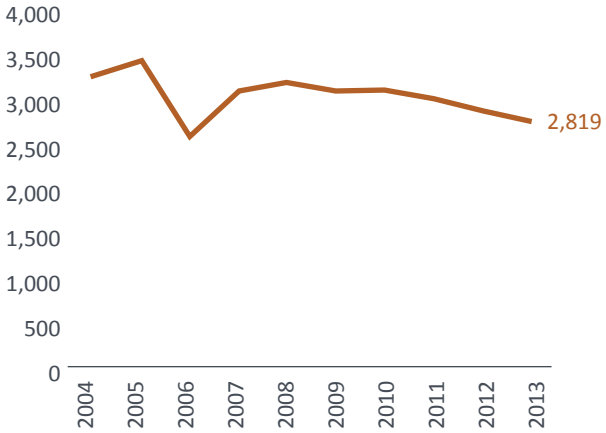


Figure 11. Total vehicle crashes in the Strafford Region (Source: NH DOT)

Between 2004 and 2012, the number of vehicle crashes that occurred in the region declined by a greater rate (11.4%), than the decline in statewide vehicle miles traveled during this period (4.8%) (Source: FHWA, 2013).

Park & Ride

There are seven local and state Park & Ride lots within the region located on Routes 16, 125, 4, and 202.

East West Express

The East West Express provides service between Portsmouth, Epping, and Manchester Boston Regional Airport.

"I used to ride my bike to work every day but I can't anymore due to safety. Our communities need to provide road infrastructure that is more conducive to bicycle travel."

-Newmarket resident

17% of workers in the region commute via walking, public transportation, biking, and carpooling.

(Source: ACS, 2011)

Vehicle Miles Traveled

An average of 9,926 miles per capita were driven in New Hampshire in 2010 (Source: FHA, 2013).

Transportation sector-wide vehicle miles traveled is projected to increase slightly by 2032. From around 2020 through 2032, light duty plug-in electric vehicles are projected to account for an increasing proportion of total vehicle miles traveled, replacing vehicle miles traveled by light duty gasoline powered vehicles (Source: NH OEP, 2014).

Paving Materials

Technological advances in surface materials contributes to reduced fuel consumption. Approximately 40% of all asphalt pavement in the state during 2011 was Warm-Mix Asphalt. This "green" technology pavement material is mixed at lower temperatures than Hot-Mix Asphalt, thus reduces fuel consumption and associated greenhouse gas emissions and paving costs.

(Source: US DOT, 2014b, 2014c)

Energy Efficiency

The transportation sector accounts for 35% of the state's energy consumption and 46% of the state's total energy expenditure. In recent years, the average fuel economy of light duty vehicles, which accounts for 90% of the state's vehicles, has increased. This trend is projected to continue (Source: NH OEP, 2014).

Freight

Over 64.6 million tons of freight was shipped statewide via all modes of transport in 2009 (Source: NH DOT, 2012).

The region's rail lines play an important role in intra-and interstate commerce and trade. Over half of the statewide rail line miles capable of speeds of 40 miles per hour (Federal Railroad Administration Class 3 track category) are located within the region (Source: NH DOT, 2011).

The region is served by Pan Am, North America's largest regional railroad system, with stops in Durham, Dover, and Rollinsford. The region is home to the Skyhaven Airport and located in close proximity to Pease International Tradeport and ports in Portsmouth, NH, Boston, MA, and Portland, ME.

Gas Tax

New Hampshire's gas tax increased in July 2014 for the first time since 1991. The 4.2 cent tax increase is expected to generate an additional $32 million annually for the state Department of Transportation. Approximately 33% of this will go to municipalities to help pay for road and bridge projects.

(Source: NH DOT)

Spaulding Turnpike Improvements

Capacity building improvements along a 3.5 mile stretch of the Spaulding Turnpike between Exit 1 in Newington, NH and the Dover toll plaza, just north of Exit 6 will enhance long-term mobility and safety and help accommodate future demand, which includes a projected 34% increase in vehicles per day by 2025.

In addition to the expansion of lanes and reconfiguration of interchanges, the project includes: rehabilitation and widening of Little Bay Bridges; future planning for elevated rail connection from the Newington Branch Line to Pease Tradeport; rehabilitation of General Sullivan Bridge for recreational uses; and new park and ride facilities in Dover, Rochester, and along U.S. Route 4 in Lee.

For more information, see: http://www.newington-dover.com/html-proj_hilites/index.html.

Planning Approaches for the Future

The challenges of our regional transportation system will require sustainable solutions that are efficient and increase the resilience of our transportation system as well as the communities that it serves.

At the local, regional, and inter-regional level, land use and transportation planning are interconnected: Just as land use decisions and development patterns influence the transportation system, the extent, design, mode and transit options provided by the transportation system impact local land use decisions (Source: US DOT).

Integrated Land Use & Transportation Planning

Integrated land use and transportation planning is an important component of sustainable development that helps to ensure that investments in the transportation system are consistent with principles and practices of land use planning and development that occurs at the municipal level (Source: US DOT).

Transportation decisions that are integrated with the array of planning factors that shape a community — including land use, public health, education, economic development, equity, and environmental quality — support goals that help the region achieve its vision for a high quality of life. This integrated planning facilitates collaboration among entities in the region and aids in identifying approaches to advance livability in the region.

Scenario Planning

Scenarios may consist of assumptions about future land use, population change, and greenhouse gas emissions, among other factors, that help navigate toward future conditions in the region (source: FHWA, 2011).

Scenario analyses allow for scenario-based planning, which involves engaging stakeholders and citizens in order to achieve a more collective and informed decision-making process (Source: FHWA, 2013). Scenario planning can help engage diverse stakeholders including individuals, organizations, and agencies involved in transportation and land use planning, public health officials, broadband providers, developers, and others. Scenario planning efforts will assist community members with identifying appropriate policies and investments that reflect future changing conditions in order to achieve the desired vision for the region (Source: FHWA, 2011).

Integrated planning supports improved transportation outcomes by enhancing collaboration.

(Source: USDOT, 2014)

Issues Transportation Scenario Planning Can Address:

Transportation
Population change
Demographic shifts
Land use shifts and policies
Technological developments
Fuel prices
Economic shifts
Water use
Walkability
Greenhouse gas emissions
Sea-level rise vulnerabilities
Energy consumption

Performance & Outcome-Based Planning

For more information about National Performance Goals and Planning Factors from MAP-21, see https://www.fhwa.dot.gov/map21/factsheets/pm.cfm

The Strafford Metropolitan Planning Organization (SMPO), which is administered by SRPC, is transitioning to a performance and outcome-based transportation planning process to ensure more effective and sustainable use of resources, project selection, and transportation improvements. A performance-based future is guided by the federal planning factors and national goals, outlined in the Moving Ahead for Progress in the 21st Century (MAP-21) Act (Section 1203).

Performance measures are metrics that are used to assess progress toward meeting objectives and goals. While measures may be broadened and diversified to address a unique set of regional circumstances and context-based affairs, they must also address the seven national goals and eight federal planning factors from MAP-21.

Performance measures help ensure that transportation planning is integrated with the efforts of a diverse group of agencies and stakeholders. Using a holistic set of performance measures to evaluate transportation investments and decisions includes incorporating measurements of environmental, economic, and social outcomes (Source: EPA, 2011). Reporting on a diversity of measures allows citizens to identify opportunities to address the specific linkages between transportation performance, policy, and investment decisions (Source: EPA, 2011). It is critical to evaluate the performance of transportation decisions because those decisions influence other factors, such as the health of residents or the use of land in a region, and because funding for projects are not unlimited.

Transportation agencies that measure their capability to create an overall more efficient transportation system and a sustainable community have a greater ability to make informed decisions that support quality of life in the region.

Monitoring performance measures over time is one strategy to observe trends in the region and can indicate whether the region is reaching its desired performance targets.

Metropolitan Transportation Planning:

MPOs "in cooperation with the State and public transportation operators, shall develop long-range transportation plans and transportation improvement programs through a performance-driven, outcome-based approach to planning."

"The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decision making to support the national goals…."

23 USC Section 134(c)(1); 49 USC Section 5303(c)(1), 23 USC Section 134(h)(2); 49 USC Section 5303(h)(2)

Sustainability

Resilience

Long-term planning that incorporates projected precipitation, temperature, and sea level change into infrastructure design and standards will increase local and regional resilience. Incorporating a resilience-based framework into transportation planning can help increase the life of capital assets and decrease operational disturbances (Source: USDOT, 2012).

With projected changes including a 17 to 20% increase in annual precipitation and extreme precipitation events in southern New Hampshire, the region is likely to experience excessive runoff, flooding, and damage to critical transportation infrastructure including roads, bridges, culverts, and dams (Source: Wake, 2014).

Strengthening collaboration across jurisdictional boundaries will support resilience within the range of dynamic variables influencing the future of the region.

Scenario planning can reveal potential impacts of projected climate change. This data provides vital information that can be used to design systems that increase resilience. For example, communities concerned with damage due to excessive stormwater runoff can evaluate how various build out scenarios — and the increase in impervious surfaces associated with these scenarios — may influence future runoff (Simpson, 2014). This information can help municipalities evaluate their existing capacity to manage runoff and potential threats to critical infrastructure and public and private property. Scenario planning can also guide decision making regarding the implementation of sustainable development strategies, such as low impact development (LID) (Source: Simpson, 2014).

Precipitation predictions under various greenhouse gas emission scenarios can be used to evaluate culvert infrastructure resiliency and determine appropriate culvert size for a particular stream/road crossing at various precipitation scenarios (Source: Simpson, 2014).

"Resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events."

– National Research Council

Smart Growth

A wide variety of transportation issues are directly related to land use and development patterns. Smart growth planning principles can guide socially, economically, and environmentally sustainable development patterns in both urban and rural areas.

Smart growth supports a sustainable transportation system and region through: increasing transportation choices, mobility, and access; reducing vehicle miles traveled and per capita greenhouse gas emissions; and providing access for all modes of travel (Source: APA, 2012). Smart growth increases the opportunities and choices for residents, businesses, and neighborhoods in a manner that preserves the unique local character of urban and rural communities.

" [We have a] great community in terms of art, music, culture, and small business… love the COAST bus."

-Dover resident

Summary of Planning Implications

Enhancing Quality of Life in the Region

Future Planning Needs & Opportunities

- Integrated planning across sectors and disciplines at both the local and regional level
- Enhanced regional, statewide, and multi-state collaboration
- Incorporation of new data and information into local and regional plans to account for changes in precipitation, temperature, and floodplain extent
- Adoption of regulations to ensure long term protection of natural resources
- Implementation of strategies and measures to reduce fossil fuel consumption and increase energy efficiency
- Affordable housing options for seniors, renters, and smaller households
- Identification of opportunities to attract young people and support populations of all ages by expanding services, amenities, and jobs
- Support for existing and new businesses, employment opportunities, and educational system
- Enhanced connectivity through broadband

Community Design & Physical Planning

- Reduce environmental impacts associated with development through best management practices, such as low impact development and smart growth
- Implement Complete Streets to support pedestrian and bicyclist friendly travel
- Increase mobility and access through public transportation and transit oriented development
- Support public health through walkable community design, access to recreational opportunities, open space, and natural areas, and maintaining clean air and water quality
- Strengthen sense of place in community centers
- Adopt infrastructure design standards that reflect projected change in temperature and precipitation and increase resiliency
- Use conservation tools, such as cluster development, and encourage infill development to maintain open space and encourage compact design in community centers and limit the social, environmental, and economic impacts of sprawl

Newmarket, NH

Photo Credit: Newmarket Happenings

Telling Our Story

This section includes a summary of what SRPC staff heard from communities in the region during the outreach effort and community interviews.

Outreach Results

Commitment to Our Communities

Staff conducted extensive outreach to better understand what residents of the Strafford Region view as important in their communities. Citizens were engaged in a variety of outreach events, surveys, listening sessions, and interviews. As part of the Strafford Regional Planning Commission's mission to assure that the region is responsive to the needs of its residents through cooperation with the federal and state agencies and its member communities, this outreach is a vital component of the Regional Master Plan update. By attending 27 events in the region, and reaching out to upwards of 1,300 participants, SRPC gained a sense of what individuals in the region find most important when planning for a shared future.

What We Heard

3,300 comments were reviewed and sorted into categories based on livability principles.

SRPC staff analyzed comments received during regional outreach events. Each of the 3,300 comments received was reviewed and sorted into 65 categories (see Appendix C). The questions asked at the majority of outreach events concerned what participants like about the Strafford region, as well as areas that they believe need improvement. The categories were derived from the comments themselves and include categorizations such as recreational opportunities, education, access and proximity to recreation and services, business and economy, rural environment, land conservation, affordable housing, and transportation, among others. Figure 12 summarizes what residents indicated they liked about the region.

"What do you like about the Strafford Region?"

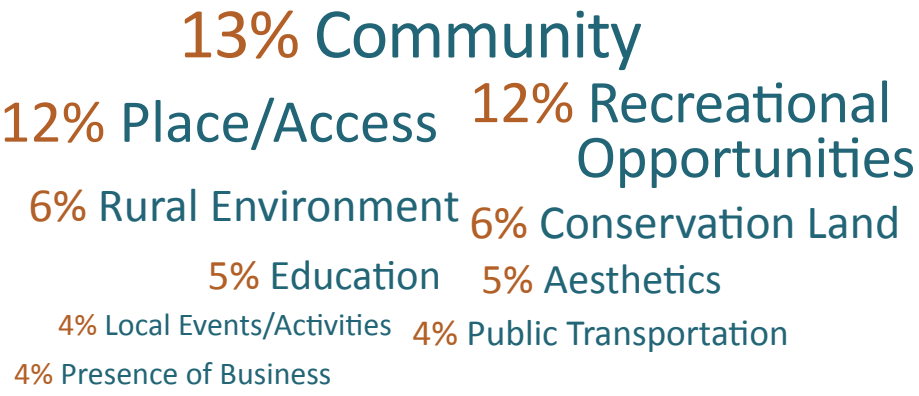


Figure 12. Summary of outreach results: What do you like about the Strafford Region?

Sense of Community

Sense of community was the top response from individuals who took part in SRPC outreach efforts that asked participants to identify what they like about the region was the sense of community. Participants shared that people in the region are friendly and cited the communities' small town feel as something they really liked about the region.

Recreation

The abundance of recreational opportunities was a second overwhelming response heard from those participating in SRPC's outreach efforts. This relates to issues of place and access, which was another area of high response. The region, which is located within a reasonable distance to the lakes, mountains, and ocean, provides plentiful recreational options for those living in and visiting the area. Specifically, participants cited the local recreational opportunities such as trails, parks, and bike paths. Participants cited the Dover Community Trail, Northwood Lake, UNH's facility at Mendums Pond, Henry Law Park, and Rochester Commons among other recreation areas. The abundance of conserved and natural land in the region was seen as a beneficial to residents.

Regional Location

Participants also discussed access in terms of the region's equidistant relationship to Portland, Boston, and Concord. When discussing transportation options required in accessing these cities, many noted that we are fortunate to have such an extensive public transit system in region. This primarily includes COAST, UNH Wildcat Transit, C&J Bus services, and the Amtrak Downeaster. Many participants noted that they use the COAST bus for transportation in the region.

Education

Education, also noted as a positive characteristic in the area, was often discussed in terms of the location of the University of New Hampshire in the region. Other schools noted in the region included Coe Brown in Northwood and the Rochester Elementary School system.

Community Assets

The abundance of local events such as Dover Apple Harvest, farmer's markets, and other opportunities for community gathering, such as Northwoods's Bean Hole Bash, were mentioned. Participants also discussed the abundance of services, including local business and larger commercial shopping centers, in their benefits to the region.

Apple Harvest Day in Dover | 2012

Photo Credit: SRPC

Dover Community Trail

Photo Credit: TrailLink

The comments addressed as '*Other*' included positive regional characteristics such as strong public safety, the preservation of historic buildings and landmarks, community assistance programs, and public places and parks. Participants often noted aesthetics of the region were a major reason they chose to live here, or why they visit.

Residents were also asked what could be improved in the region. Findings from this survey questions are summarized below (figure 13).

"What could be improved in the Strafford Region?"

9% Education

7% Recreational Opportunities

6% Public Transit Route Expansion

6% Taxes 5% Affordable Housing

5% Local Events/Activities 5% Jobs/Economy

4% Resources/Opportunities for Children

4% Small Government/Politics

3% Conservation Land

Figure 13. Summary of outreach results: What could be improved in the Strafford Region?

Interactive Outreach Display

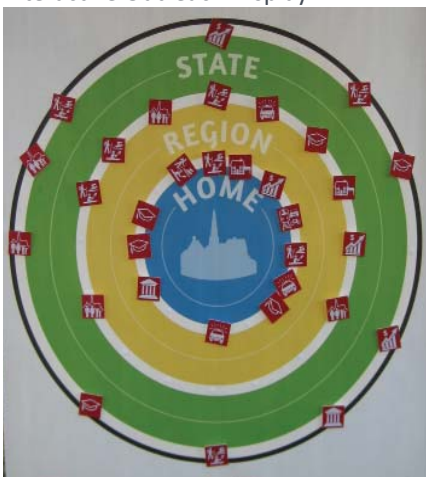


Photo Credit: SRPC Staff

See the Public Outreach Plan at www.strafford.org for more information about SRPC's outreach.

Education

Education was the number one priority for improvement among regional respondents at SRPC outreach events. Citing inadequate funding for school systems, the need for improved educational programs, options for primary education, and more affordable secondary education, respondents frequently addressed this topic.

Taxes

While many participants expressed satisfaction with the lack of income and sales tax, others were vocal about high property taxes in the region. Conversely, some participants shared how they would not oppose an increase in taxes if money supported improvements in the region, such as an improved education system.

Recreation

Participants desire more recreational opportunities in the region including the addition of bike lanes for major traffic routes, the extension and addition of trails in the region, and keeping land open for recreational uses.

Housing

Participants also indicated regional housing needs as an area that needs improvement in the region. Many cited the need for more affordable housing. Participants also expressed the need for public assisted housing through the Section 8 Housing Voucher system, as well as an increase in low-income housing units, sharing that there is often a long list for this type of housing. The parameters concerning housing development and where it should occur were also addressed. Many participants felt development should occur in already developed areas, instead of areas that are currently undeveloped or could be conservation land.

Transportation

Transportation concerns included route and schedule expansion for regional transit. Participants requested expansion of current regional routes, as well increased service on night and weekends. In terms of regional service, many participants mentioned COAST specifically. The need for inter-regional transportation options was also mentioned repeatedly.

Economic Development

Multiple participants addressed the economy and discussed the need for more local business to encourage growth in our communities' local economies. Some individuals also indicated they wanted more commercial business. In addition, job creation and security was undeniably important to participants.

Local Events and Engagement

Residents addressed the need for more local events to encourage a sense of community at multiple outreach events. Individuals discussed the importance of community events such as fairs and farmers markets and the increased need for these types of events. Governmental concerns such as changes in funding and keeping local citizens involved, the need for more resources and programs for children in the region, and the importance and necessity for preservation of regional lands, were possible improvements discussed as well.

Categories in '*Other'* included a desire for: more residential development; support of agricultural efforts in the region; and improved road conditions.

The purpose of conducting outreach at various community events was to gain input to guide the regional master plan appendices.

Each comment was reviewed and analyzed. The data was compiled and then used to shape the vision statements and content of each of the Master Plan appendices.

The regional implementation strategies and projects outlined in this plan also reflect the comments that were received during the outreach process.

In general, the citizens sharing their opinions indicated that:

- What happens in the region is important to them
- Their voice is important in the planning process.

At multiple outreach events, individuals expressed appreciation that their opinions were being considered in SRPC's planning process.

Comments from SRPC Regional Outreach

"There is a great balance in Newmarket between people of different types of income. The region could benefit from more reuse of historic structures like the mill redevelopment that is currently going on in the region. Everyone must be cautious about balancing development and preservation."

"Transportation is a complex issue with no easy solution. Public transportation can always use expansion though."

"The goal is to keep young people here, to stay here. There is a great quality of life here. The cost of housing and energy is high though. The area could use more affordable housing."

"I like the natural beauty, historic street scopes and village,: culture and arts, beautiful villages, oceans and bays, conservation lands, and the people"

"There is a need for a more communal environment. I would like to see green transportation, such as a Durham or Portsmouth bike share combined with bus service that would increase green transportation and access."

"The best thing about this area is the natural beauty in our surroundings that we "experience" every day. Communities small and large embrace what nature has offered us and seem to support and create new ways to enjoy and preserve it."

"I am originally from the Seacoast area. I am appreciative of the proximity that the Seacoast has to so many valuable assets such as the ocean and lakes. There are huge tax benefits to living in NH and school systems educate our children well."

Outreach by State Partners

Listening Sessions

Communities of Interest

The University of New Hampshire's Cooperative Extension aided the community engagement process. In each of the nine regional planning commission areas in New Hampshire, both UNH Cooperative Extension and NH Listens identified and engaged specific interest groups made up of under-served populations in order to ensure outreach was conducted in an equitable manner. A total of 20 focus groups were held across the state, one of which took place in the Strafford region. This process was referred to as *Communities of Interest* and allowed UNH Cooperative Extension and NH Listens to work with identified populations on their home territory.

20
Equity focus groups were held across the state.

The process used for these focus groups allowed for safe and confidential expression of views. The goal of these facilitated dialogues was to gauge the interests of these groups, and how natural and built environments affect the social, economic, and cultural lives of these populations. Cooperative Extension staff conducted the *Communities of Interest* focus meetings beginning in December 2012 and ending in April of 2013.

Communities of Place

NH Listens and UNH Cooperative Extension also conducted regional conversations titled Communities of Place. These ten facilitated sessions took place around the state, and included one session in the Strafford region. The sessions were widely advertised and drew crowds totaling 528 participants from 115 towns. At each session attendees were separated into smaller focus groups. Conversations within each focus group covered a range of topics including New Hampshire population trends, transportation systems and networks, the state's economy, land use, housing, natural resources and climates, and any topics participants thought important to discuss.

10
Facilitated regional conversations drew a total of **528** participants from **115** towns.

Results from both UNH Cooperative Extension and NH Listens outreach efforts were included in a final report released to the Regional Planning Commissions and the public in fall 2013. This report can be viewed at http://granitestatefuture.org/files/9513/8186/9699/Granite_State_Future_Summary_Report_Standalone-print.pdf.

Top priorities for investment in the region:

Environmental Protection & Conservation (43%)

Energy Efficiency (35%)

Safe & Affordable Housing (30%)

Statewide Survey

In addition to in-person outreach components, a phone survey was conducted to measure state and regional concerns. The University of New Hampshire Survey Center completed the final product, *NH Regional Planning Commission A Granite State Future 2013 Statewide Survey*, from May-July 2013. Responses were collected and reported from 2,935 NH residents. Of the nearly 3,000 participants, 12% were from the Strafford region, which closely reflects the population ratio of individuals living in the Strafford region to the state total.

From the survey it was evident that residents of the Strafford region were concerned with environmental protection, energy efficiency, and safe and affordable housing. When asked where public funding should be directed, survey respondents ranked these priorities as most important (figure 12).

The Strafford Region is reflective of the state a whole with minor differences in areas including preparedness for weather and safe and affordable housing. These differences likely reflect the region's proximity to the coast as well as its more urbanized areas as compared to other regions of the state.

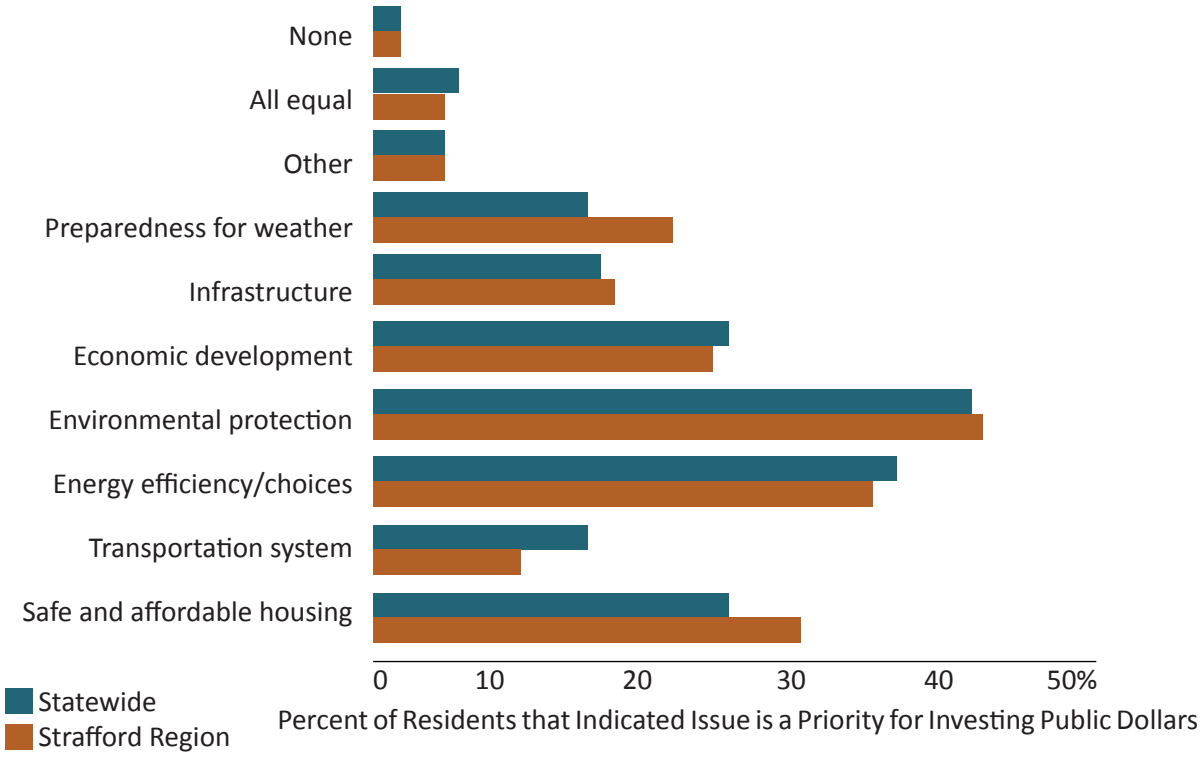


Figure 14. Statewide phone survey responses: Investment Priorities
(Source: NH Regional Planning Commission. A Granite State Future 2013 Statewide Survey.)

In the UNH Statewide Survey, residents were also asked which types of activities, practices, and actions should be taken and encouraged in their community. Among the topics most recognized by participants included promoting safe places to walk or bike; protecting historic buildings and neighborhoods; promoting local agriculture; and expanding or promoting current business (figure 13).

Top activities that should be encouraged in the region:

Promoting Local Agriculture (90%)

Promoting Safe Places to Walk or Bike (85%)

Expanding or Promoting Current Businesses (84%)

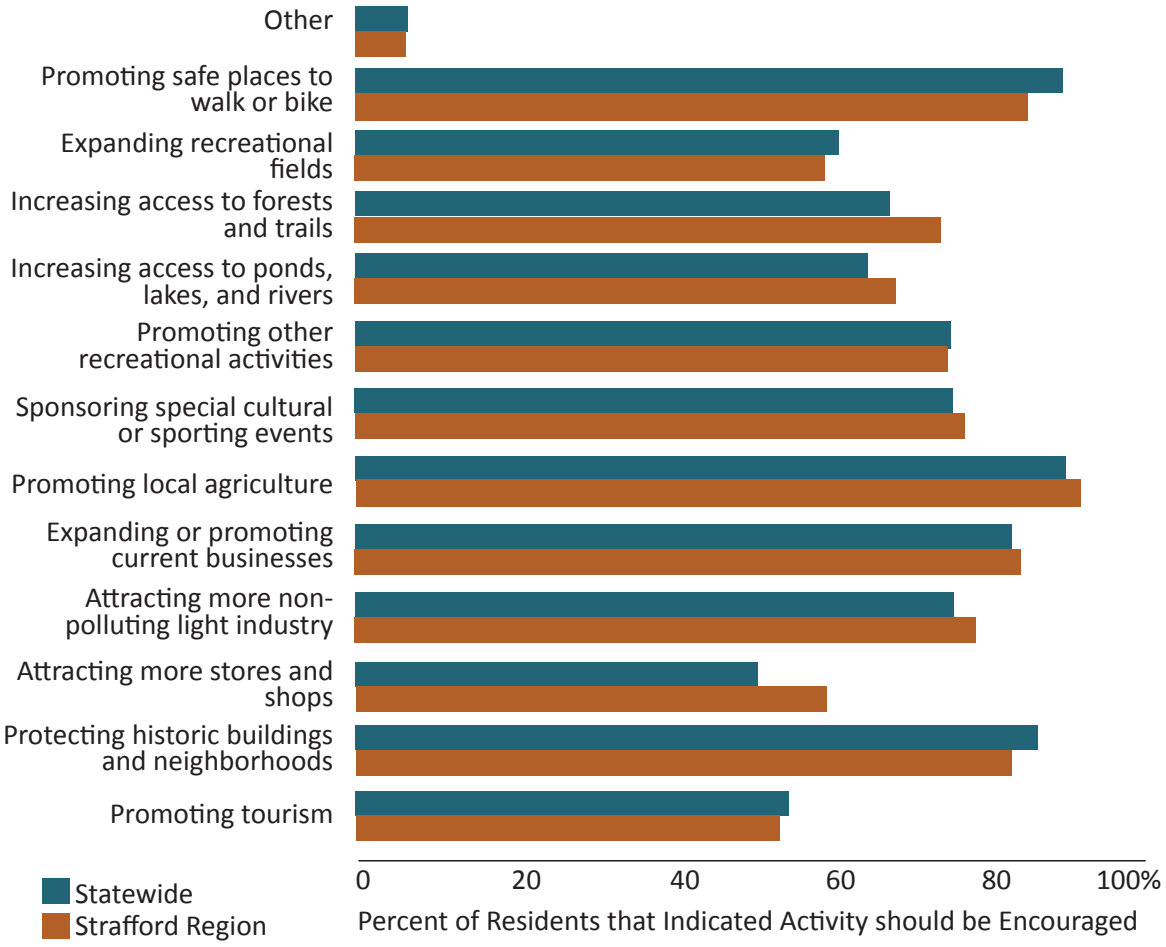


Figure 15. Statewide phone survey responses: Activities & Actions
(Source: NH Regional Planning Commission. A Granite State Future 2013 Statewide Survey.)

Community Narratives

Introduction

Focus interviews were conducted to supplement the data and trends analysis usually found in a Master Plan. This alternate approach enabled SRPC to paint a picture of existing conditions in the region through the voices of individuals living and working in the Strafford region. These community narratives provide a glimpse of the identity of the region and supplement the information gleaned from regional and statewide outreach efforts, data collecting and existing conditions analysis, and information compiled in each of the Technical Appendices.

Moose Mountain Recreation, Brookfield

Photo Credit: Sarah McGraw

Interviewees

Jennifer Decker
Dover resident, COAST Board Member

Lisa Graichen
Dover resident, University of New Hampshire Masters Student

Lisa Henderson
Newmarket resident, Executive Director at LeadingAge Maine and New Hampshire

Cheryl Kimball
Middleton resident, Chair of the Heritage Commission

Allan Krans
Dover resident, Executive Director of Dover Housing Authority

Emmett Soldati
Somersworth resident, Owner of Teatoaller, Co-owner of Leaven

Geoff Spitzer
Newmarket employer, Senior Project Manager at Chinburg Properties

Deanna Strand
Portsmouth resident, Executive Director of Dover Adult Learning Center

Cynthia Wyatt
Milton resident, Vice Chair of Moose Mountain Regional Greenways, Milton Conservation Commission

Matt Wyatt
Rochester resident, President of Rochester Museum of Fine Arts

Advisory Team

Samuel Reid
Dover resident, Advisory Team Vice Chair

John Scruton
Farmington resident, Advisory Team Member

Christine Soutter
Exeter resident, Advisory Team Member

Victoria Parmele
Northwood resident, Advisory Team Chair

Jennifer Decker

transportation

Jennifer Decker, a Dover native, has recently moved back to the Garrison City after living in Portsmouth for some time. Now living and working in Dover, Decker has taken to exploring the city in her spare time, seeing what new amenities the city has to offer since she's been gone. Speaking to Dover's walkability, Jennifer shared, "so far it's been a really pedestrian friendly city. This is something you look for in a Master Plan." As Decker uses a wheelchair to get around, pedestrian access is essential in her day to day activities.

"I rely on it [public transportation] and I think there are a lot of people in the same boat ... We have a pretty comprehensive public transit system for the size of our area geographically. I think it really gives people a lot more options."

An advocate for not only walkability and transportation options in the region, as evidenced by her work as a member of the COAST Board of Directors, Decker also works as a regional advocacy facilitator at Granite State Independent Living. After being recruited by an outgoing COAST board member, Decker has integrated her service on the Board of Directors into her advocacy role at Granite State Independent Living

"I rely on it [public transportation] and I think there are a lot of people in the same boat whether it is disability related, or for economic reasons such as not being able to afford a vehicle. We have a pretty comprehensive public transit system for the size of our area geographically. I think it really gives people a lot more options. If people live in Rochester, but they come in Portsmouth where there are a lot of jobs…it gives people more options."

She shared that her participation on the COAST Board was requested "because of my involvement with Granite State Independent Living, and the accessibility needs of consumers. I am also a COAST user, both with the regular busses and the paratransit, so it was a really good fit. It is something that I do as part of my job, but something I would do anyway now knowing what it's like and the importance of it."

COAST bus on a regional route

Photo Credit: COAST

As a regional advocacy facilitator for Granite State Independent Living, Decker works with individuals with disabilities to assist them in advocating for themselves. Granite State Independent Living is a statewide non-profit focused on education, information, advocacy and support for seniors and people with disabilities. Services include home care, community-based disability support, and employment assistance services.

As part of the services offered by the Advocacy department, Decker facilitates a monthly, community based advocacy group for individuals on the Seacoast to inform them and to act as a support service for those looking to advocate for themselves effectively.

Housing and transportation access are common issues that come up at these meetings. Decker also shared that Granite State Independent Living serves individuals with employment programs, such as referrals to vocational rehabilitation services, and their 'Ticket to Work' program which helps those currently on social security find work. Vocational Rehabilitation is one of oldest federal programs established by the Rehabilitation Act of 1973, and allows individuals with disabilities support in preparation to find and keep suitable employment. Employment services offered at Granite State Independent Living are useful in supporting and encouraging those with a disability. Those who take advantage of this program are recognized with certain milestones achievements in their employment process.

Considering Decker's involvement with COAST and her recent involvement with the City of Portsmouth in assessing bikeabililty and walkability, it is apparent that she is very involved with her community and the planning needs of the area. Decker is also able to lend her vast expertise to planning issues in the region.

Interviewee Spotlight

Jennifer Decker works as a regional advocacy facilitator for Granite State Independent Living. In this position Decker works with disabled individuals to assist them in advocating for themselves. Also involved with regional planning efforts, she volunteers her time on the Board of Directors at COAST, and has been working with the City of Portsmouth on their planning efforts focused on bikeability and walkability.

Lisa Graichen

natural resources & education

Growing up in Arundel, Maine, Lisa Graichen developed an early appreciation for nature, and especially the coast, through spending lots of time outdoors. Graichen attended high school in South Berwick, Maine and recalls visiting the University of New Hampshire (UNH) for a school project. While she knew she enjoyed the seacoast area, Graichen decided to move to Western Massachusetts for her freshman year of college. After taking courses in geology and environmental science and spending time hiking and rock climbing, it was an easy decision for Graichen to focus on studying environmental conservation. She was particularly interested in the connections between environmental and social issues, and the idea of working to address both through outreach efforts. In conversations with friends who attended UNH, Graichen learned about the classes available in the Department of Natural Resources and soon decided that UNH was where she wanted to spend the rest of her undergraduate career. The opportunities offered by UNH, including their status as a land, sea, and space grant institution and the Cooperative Extension programs, combined with exciting research opportunities, drew her to Wildcat Country.

Graichen was drawn not only to the school, but also back to the seacoast area itself. She described this region as the "best of all worlds," where the ocean, rivers, and mountains are all accessible. During her undergraduate experience, she enjoyed rock climbing at Pawtuckaway State Park and doing beach clean ups with the UNH Climbing Team. She also benefitted from the availability of local conserved areas like College Woods, state parks, and town forests, which are used as extended classrooms in many courses at UNH.

It is important to "focus on the management piece linking ecosystems and people."

College Woods, Durham

Photo Credit: UNH

After completing her Bachelor of Science Degree in Environmental Conservation Studies, Graichen spent a year working in a research lab at UNH and then stayed at UNH to work toward her Master of Science Degree in Natural Resources through the Training for the Integration of Decision making and Ecosystem Science (TIDES) program. This decision stemmed from her personal interest in working in this field, in addition to her study abroad experiences in Ecuador and New Zealand.

During her time abroad Graichen was really able to see first-hand the connections between human communities and environmental challenges. In Ecuador, she learned about community-based projects occurring in the cloud forest to restore forested areas and protect local water supplies. In New Zealand Graichen was introduced to watershed management and efforts to involve different groups in decision making and planning.

Graichen reflects on her experiences from time abroad and current work with the TIDES program, which focuses on public participation, stakeholder engagement, collaborative planning, and science communication. As part of her graduate work, she is currently completing an internship with the Hudson River National Estuarine Research Reserve (NERR), a partnership between the New York State Department of Environmental Conservation (NYSDEC) and the National Oceanic and Atmospheric Administration (NOAA). In her time with the Hudson River NERR, Graichen has worked to engage stakeholders and citizens in marsh management planning and a sustainable shorelines project. Graichen shared that through these experiences, she is learning that it is important to "focus on the management piece linking ecosystems and people." She reflected that reaching out "ends up being effective down the road. By identifying potential problems early on and incorporating concerns and interests, people are more likely to respect [the process]. While [outreach] efforts can be challenging, they end up giving you a greater likelihood of success down the road. It really pays off."

Graichen will graduate from the TIDES program in the spring of 2015, and she is looking forward to applying what she has learned to her future work, hopefully in or near the Strafford region. She shared that "there is a lot of exciting energy in the region" related to environmental science and conservation. Graichen is interested in harnessing this energy and enthusiasm by working to involve communities in conservation or restoration efforts and improving science communication and outreach efforts to different audiences.

Interviewee Spotlight

Lisa Graichen is a currently a master's student in the TIDES program (Training for the Integration of Decision making and Ecosystem Science) at the University of New Hampshire. She grew up in Arundel, Maine, and has always appreciated the outdoors and the natural resources Maine and New Hampshire have to offer. Lisa is a proponent of involving stakeholders in decision-making processes related to addressing environmental challenges.

Lisa Henderson

housing & community development

Cocheco Park Apartments, Dover

Photo Credit: POAH

For close to 20 years, Lisa Henderson has been involved in community development centered on housing in the Seacoast region. Explaining that "housing is a(n) [essential] part of community infrastructure," she shared that planning and housing go hand in hand. Unlike most students in the program, Henderson did not necessarily have a planning career in mind when majored in Community Development at the University of New Hampshire. Instead, she was interested in non-profit management. She became interested in housing when she was chosen for a work study position with The Housing Partnership. Located in Portsmouth, The Housing Partnership is a non-profit organization that develops affordable workforce housing for low to moderate income residents of the Greater Seacoast regions of New Hampshire and Maine as well as provides housing counseling for first-time home buyers.

In her time at The Housing Partnership, Lisa took on a communications role writing letters to the editors of local newspapers, assisting in fundraising efforts, and communicating with the community at large. Following this role, Henderson became involved in the Workforce Housing Coalition of the Greater Seacoast (WHC), which was originally a program of The Housing Partnership. In 2000, economic activity at the Pease International Tradeport began to take off, and with it a need for employees. These employees had needs of their own, including an affordable place to live. Henderson worked to help develop the Workforce Housing Coalition from its early stages as a full time staff member, to becoming the Executive Director in 2008. This organization seeks to address the needs of the workforce in the Seacoast region through the education of and outreach to the regional population. Henderson remains committed to the WHC's mission of Opening Doors to Vibrant Communities.

For Henderson, the Town of Newmarket is the community she is proud to call home. Growing up in the Rochester, New York area, Henderson grew fond of the Seacoast area during her time at UNH. Henderson shared that she is proud to call the region, and specifically Newmarket, home for many reasons. She elaborated on Newmarket's features such as their downtown, and her safe neighborhood of 1950s capes within walking distance of the town's schools. Henderson explained that she enjoys the great sense of community, sharing that her and her neighbors watch out for each other. She considers her own neighborhood as affordable workforce housing, and enjoys the overall cohesiveness of the community.

> Sense of community and having neighbors that watch out for each other is valuable.

Giving back to the community in many ways, Lisa's job and volunteer efforts benefit those in and around Newmarket. In July of 2014 Henderson became the Executive Director of LeadingAge Maine and New Hampshire. While she was previously employed in the area of workforce housing, she explained her new job as a "logical extension" of her previous work. LeadingAge is a branch of a national organization that is a trade association for non-profit Continuing Care Retirement Communities, nursing homes, assisted living facilities, federally assisted and market rate senior housing, and home and community based services. Henderson explained how in her role she is given the opportunity to be part of a national dialogue about preparing for the swell in senior populations across the nation. This is important considering the trends in aging population across the state as well.

In her volunteer efforts, Henderson has been involved with community activities such as the Newmarket Heritage Festival that she referred to as "one of the gems of Newmarket." She has also participated in a steering committee for Newmarket Common Ground related to future options for the Newmarket Junior/ Senior High. The group believes in using a community dialogue model versus only public hearings the offer only brief speaking opportunities. In her job and volunteer efforts Henderson exemplifies the importance of supporting a sense of community and identifies how housing plays into the community infrastructure of the Strafford region.

Interviewee Spotlight

Lisa Henderson is a champion for equitable housing opportunities in the region. From working with The Housing Partnership, the Greater Workforce Housing Coalition of the Greater Seacoast, and LeadingAge Maine and New Hampshire, Henderson understand the wide variety of housing needs in the area. Henderson is also very involved in the community of Newmarket, where she is a proud resident.

Cheryl Kimball

history & cultural preservation

Middleton Town Hall

Photo Credit: Cheryl Kimball

Middleton Town Hall

Photo Credit: Cheryl Kimball

From just across state lines, Cheryl Kimball grew up in Kittery Point, ME. She moved to New Hampshire when she was 18, and settled in Middleton almost 21 years ago on a 19th century farm. Early on, Cheryl was active in the Town's government, first becoming involved when the Town was trying to decide whether or not to build a new Town Hall in 1996. The decision was based on the state of the Old Town Hall, and its' need for major renovations.

From the time the building was marked as in need of renovation, Kimball played a large role in working to make these renovations possible. The preservation of this landmark was important to her considering her personal connection with the building, and her overall interest in historic preservation.

Kimball not only worked for the New Hampshire Preservation Alliance, but was a founding member of the Middleton Heritage Commission. As chair of the Middleton Heritage Commission, she secured Land & Community Heritage Investment Program (LCHIP) and State Council on the Arts funds for the project.

She explained her feelings about the importance of preserving the Old Town Hall, and these types of buildings in general: "People relate with buildings and structures as they become a part of their history, similar to their family and friends."

Kimball and her husband were married in the building's second floor church, exemplifying the importance of this building to her.

While these types of projects seem exciting to Kimball, she said it can be difficult sparking others' interest, specifically with the restoration of the Old Town Hall. Regardless, Kimball shared no matter how many people show up at events held in support of the renovations, these efforts to inform citizens about the project is essential. She shared, "in Middleton, even though we have a small community where funds are limited, residents have come to understand the importance of preserving the Old Town Hall as the last landmark of what was once called 'Four Corners' and the Town Center."

Middleton residents showed their understanding of the building's importance as there was overwhelming support for the OId Town Hall project witnessed at Town Meeting in March 2014. When the vote came up to appropriate taxes toward the LCHIP grant for the renovations, there was not a single person that voted against it.

This sense of community is one of the main reasons Kimball is proud to call Middleton home. "You have neighbors that you really care about, and whether or not you see them daily, you know that they will be there for you and vice versa, which is a great thing."

In addition, Kimball explained her love for the great outdoors, and her appreciation for being close to the lakes and mountains as benefits of living in Middleton. Kimball also shared that Middleton's distance to the seacoast and larger cities like Concord — where she formerly worked as the Director of Development & Communications for the Pope Memorial SPCA of Concord-Merrimack County — are a benefit as well. She also shared how for a small town with limited financial resources, Middleton has great services such as a friendly and hardworking police force, and attentive road maintenance.

"People relate with buildings and structures as they become a part of their history, similar to their family and friends."

Interviewee Spotlight

Photo Credit: Workman.com

Cheryl moved to New Hampshire when she was 18. She lives in Middleton on a 19th century farm, is president of the board of directors of the New Hampshire Farm Museum and has been involved with the preservation of the Middleton Old Town Hall since 2009. As chair of the Middleton Heritage Commission, she helped secure Land & Community Heritage Investment Program and State Council on the Arts funding for the project. She is the former Director of Development & Communications at the Pope Memorial SPCA of Concord-Merrimack County.

Allan Krans

Mineral Whittier Park

Photo Credit: Dover Housing Authority

A Native New Englander, Allan Krans grew up in Newport, NH before settling in the City of Dover over thirty years ago. Passionate about the provision of housing access for Dover residents, Krans cited the middle class community and diversity of Dover as the main reasons he is proud to call this city home. Krans shared that the opportunity for people of different socioeconomic statuses to live in one area is definitely a positive factor.

Krans, an attorney and Executive Director for the Dover Housing Authority (DHA), has been actively involved in many committees and boards in the Dover community over the years. Before becoming Executive Director of the Dover Housing Authority, Krans was involved as a Board member for more than twenty years. He has been involved with other boards such as Dover Main Street, NH HealthTrust, the Dover South Side Little League, the Wentworth Douglas Hospital Board of Trustees, and the Seymour Osman Community Center.

"Housing and basic human happiness go hand in hand...[as] adequate housing is crucial in the enjoyment of the American life."

Krans' passion in working to provide housing to those who may have difficulty securing it on their own was evident in his discussion concerning the work of the Dover Housing Authority. Designed to provide services to those with lower income, the Dover Housing Authority was established in 1950 and offers housing for seniors, families, and disabled individuals.

Krans shared that housing and basic human happiness go hand in hand, explaining that adequate housing is crucial in the enjoyment of the American life. He shared his firsthand experience of traveling to Guatemala, and how it reaffirmed the essentiality of housing, and how adequate living opportunities are vital to a high quality of life; citing the limited public housing opportunities in Guatemalan cities.

The social aspect of housing was also addressed by Krans as he explained the importance of assisting individuals not only with housing, but with social support programs as well. As early as 1980, the Dover Housing Authority began to attend to the social service needs of their residents by offering programs to encourage the education of children, as well as support for adults. Krans shared his belief as to why Dover's public housing programs are so successful citing the combinations of available and affordable units and the social service programs.

Dover Housing Authority properties include housing for seniors, families, and disabled individuals.

Some of the social service programs that Krans was especially excited about were focused on the education of children living on Dover Housing Authority properties. The Seymour Osman Center, which is maintained and staffed by the Housing Authority, is a center that emphasizes the importance of education. They offer after school homework support, educational programs for low-income neighborhood children, homework labs, and computer lab uses, among other services. The recent relocation of the Cocheco Arts and Technology Charter School onto the site of one of the Housing Authority housing locations also encourages neighborhood children to recognize the importance of staying in school, as they watch high school students going to and from school each day.

The community in Dover, according to Krans, is very supportive. When talking about the social support programs the Dover Housing Authority offers, he added that they are so successful due in part to participating schools, businesses, and organizations in the city.

Woodman Park Elementary School is one such partner, assisting in the provision of flagship social service programs for children. Local churches sponsor breakfasts for Dover Housing Authority residents, and Wentworth Douglas works to provide transportation to senior populations for transportation to and from appointments. These collaborative efforts encourage teamwork and a sense of community in Dover, and in the region.

Interviewee Spotlight

Allan Krans works as Executive Director for the Dover Housing Authority. Involved in his community on many levels, Krans is and has been active on many boards such as Dover Main Street, NH HealthTrust, the Dover South Side Little League, the Wentworth Douglas Hospital Board of Trustees, and the Seymour Osman Community Center. Krans advocates for housing access for Dover residents and believes housing and basic human happiness go hand in hand.

Emmett Soldati

community & economic development

Teatotaller Tea House

Photo Credit: Shayna Sylvia

With a passion for tea and international food and drink, Emmett Soldati turned his dream into a reality with the opening of Teatotaller Tea House in 2011. While the idea for Teatotaller arose at the inconvenient time of Soldati finishing his Masters at the London School of Economics, he spent hours of dissertation procrastination sketching logos, designing a website, and dreaming up ideal locations for what has become a beloved Tea House in Somersworth's downtown. Raising money using Kickstarter, all the while rallying community support, a starting budget of $10,000 funded Soldati's dream. Kickstarter, which is a web-based source for community funding, helped Soldati raise $8,000. This money, plus Soldati's positive attitude were the humble beginnings of Teatotaller. Putting his all into this business, Soldati has been learning how to run his business purely by trial and error. "Teatotaller was my life blood," he explained.

A Somersworth native, Soldati was more than eager to move back to the Seacoast after school, only slightly fearing the loss of the cosmopolitanism and excitement of city life in London, and prior to that Toronto. After moving back and opening Teatotaller, Soldati went on a mission to encourage others to come to Somersworth. "I own a business here, I'm amidst a bunch of empty storefronts, and not only as a citizen of Somersworth, but also as a business owner, I want more businesses to be here. I want more traffic and foot traffic, and activities going on."

With that in mind he began providing advice to those interested in opening businesses downtown, and working to convince interested parties that downtown Somersworth was and is a good place to open a business. "I was always calling up friends across the U.S. that I'd met through college and telling them to come open a business in Somersworth." So, when his best friend approached him about moving back from New York and opening a brewery downtown, Soldati was more than eager to get involved.

"The types of businesses that are going to flourish are the type of businesses that promote pedestrian activity and intimacy with the community. Part of the reason that we opened Leaven, found the developer that bought the building, and got that ball rolling was because of the Downtown improvement project."

While the brewery concept did not pan out, Leaven Beer and Bread House did, offering fresh baked breads and beer on tap. The question then became how to make the restaurant concept unique. "You have to go bold in a town like this. Nobody is going to drive to Somersworth for a regular sports bar. You really have to do something interesting and unique that will draw people out and excite people," Soldati noted. He shared that with Teatotaller, "we are off the beaten path, old Main Street in Somersworth, with crumbling storefronts. People would come because they would hear about our afternoon teas, or our crazy programming ideas."

A bread connoisseur and self-proclaimed sourdough enthusiast, Soldati and a friend came up with the idea of bread and beer. This has been well received by the community who was more than eager to support Leaven Beer and Bread House. Locally know as a community sourced bar, Leaven was funded through the donations of community members. These community members were in turn given gift cards, spread throughout the first year of Leaven being open, totaling 120% of what they initially contributed. This ensures an ongoing customer base, who will then spread the word to friends and family.

In order to further engage the community, Leaven Beer and Bread House has taken a dedicated stand in encouraging economic development in the area through their trivia style Start-up Nights. This monthly experience, co-hosted by Seacoast Local and sponsored by Smuttynose Brewery, is based on an event called Start-Up Weekend-an event where entrepreneurs create and design a business in a weekend, presenting their ideas at the end of the workshop. “I need to bring more entrepreneurs into Somersworth. I need to show them opportunity,” Soldati explained.

Start-Up Night works as attendees pitch their individual ideas for a business, smart phone app, or technology. These ideas are then voted on and three are chosen. Three teams are then created, and have the responsibility of coming up with a business plan, logo, budget, etc for their idea. In the end, one team becomes the winner. “We want to start a launch pad to spark people’s ideas.” Soldati emphasized.

Adamant about economic growth and the benefits of the renovation going on downtown, Soldati shared his excitement concerning the construction noting that “part of the revitalization is going to disrupt the actual essence of what our downtown has to offer. The types of businesses that are going to flourish are the type of businesses that promote pedestrian activity and intimacy with the community. Part of the reason that we opened Leaven, found the developer that bought the building, and got that ball rolling was because of the Downtown improvement project. These developers saw that in a couple years not only are there going to be beautiful streets, sidewalks, bike lanes and street trees, but it is actually going to begin transforming everything. We wanted to be part of that.”

Not only keeping busy with his two businesses, Soldati also volunteers his time as Chair for the Friends of Somersworth, Inc. organization. This group is focused on encouraging arts and culture in the Hilltop City. Their public private partnership with the City serves to collaboratively create a plan for the renovation for the Hilltop School to become classroom, studio, and museum space. Soldati envisions his community as a place where you want to come dine, before seeing a local show, or checking out a gallery or museum. “There’s a strong multi-faceted economic development component to it. It stems back to the fact that I still want to live in a city, in a small way, and vibrancy and creativity and the constant flow and discourse of ideas, new mediums, and new activities is central to what I am looking for.” Programs should create exciting overlays, collaborations, and partnerships.

This effort relies on volunteerism, which is important to the community. However, there is a need for fresh new ideas. “There is a lot of brain drain going on, and Somersworth needs young talent”, shared Soldati. Explaining the recent lack in volunteerism he opined that “…there hasn’t been the services or spaces over the last ten years that allowed them [volunteers] and catalyzed them [volunteers] to get involved. Overall, Soldati has an inspiring vision for Downtown Somersworth. The pride and faith he has in his hometown is evident, and it is easy to see why he is so hopeful for what is to come.

Interviewee Spotlight

Emmett Soldati, tea and bread connoisseur is a Somersworth native who returned to the Hilltop city after college to open his own tea shop. Following this he joined up with two friends to open a beer and bread house. Also involved in local politics, he volunteers for Friends of Somersworth, and is involved with the City in other facets.

Geoff Spitzer

preservation & energy

Newmarket Mills

Photo Credit: STE *Photo, Flickr

Towering above the Lamprey, Cochecho, and Salmon Falls Rivers, the Newmarket, Cochecho, and Canal Street Mills once were centers of industry. Producing mainly textiles, these mills were the driving economic force in the region. While the textile industry thrived in the early to mid-1800s, by the turn of the 20th century there was a significant decline in the operations that once prospered in our regions' mills. This left these historic buildings in states of disrepair, in some instances leading to vandalism. In Newmarket specifically, police were on call, putting out fires and dealing with trespassers.

As landmarks in our community, it was important that these structures be preserved for future generations, but how? The answer arrived with Chinburg Properties and their decision to renovate a handful of mill buildings in the Strafford region. Geoff Spitzer, nicknamed the 'Mill Guy' by co-workers and colleagues alike, spearheaded these efforts on many occasions. Spitzer, a previous Dover resident, not only worked on renovating the mill buildings in Dover, but was a tenant as well, citing the uniqueness and down to earth qualities of Dover as the main reasons he loved the Garrison City.

Elaborating on the mills, he explained how their aesthetic beauty and historic ties were reason alone for the renovation of these buildings. In addition, the masive amount of energy that would be required for demolishing the mills would make this counterproductive, especially given the effort of construction.

After joining the Chinburg team in 1999, Spitzer's first project was the renovation of the Picker House, which was an abandoned industrial mill building in Dover's downtown. With a passion for preservation, his role as resident Mill Guy is fitting for Spitzer, who focused on historic preservation in the form of carpentry, consulting, and contracting throughout New England for thirteen years before joining Chinburg Properties.

Following the Picker House renovation in Dover, the repurposing of the Canal Street, Newmarket, and Cocheco Mills followed. In an effort to revitalize the economic spirit that was once thriving in the mills, Chinburg Properties decided to renovate the mills as a mix of residential and commercial space. This live, work, play atmosphere is a healthy one to encourage in the region, and businesses have definitely taken advantage of the opportunities made available. For some residents, their new commute has been rolling out of bed and heading downstairs to the office, a concept that is enticing to many. The demographics of residents in these buildings are mixed as well. University upperclassman and graduate students, young professionals paving their way in the business world, and older

individuals looking for a range of amenities in one place have taken to these new apartments in the communities of Dover, Newmarket, and Somersworth.

Specifically addressing The Mills in Newmarket, Spitzer shared how the building was renovated from a fire hazard to a fully functioning mixed use mill. The residential aspect has brought people to town, boosting existing commercial business. This boost was also immediate, as those working on the mill project supported local business when dining, shopping, and getting gas in town.

"The mix of residential and commercial has not only brought people in to town and boosted the existing commercial industry but has added life to the whole building," Spitzer noted.

With a range of responsibilities, Spitzer also wears the hat of resident 'Green Guy' as well. As an LEED accredited professional, Spitzer encourages the use of energy efficient systems throughout the Mill buildings. He added that while it is harder to utilize energy efficient technology given the age of the mill buildings, every little bit counts. The use of energy efficient heating and cooling systems, motion censored lights in commons areas, and lighter colored roofing materials combined with the reuse of the buildings themselves, are examples of sustainable living practices in the Mill buildings.

Spitzer's efforts in managing the restorations of our historic mill buildings into mixed use, energy efficient spaces have had a definite impact on the downtowns of the tri-cities and Newmarket. This can be seen with the successful economic development opportunities that these buildings encourage.

"The mix of residential and commercial has not only brought people in to town and boosted the existing commercial industry but has added life to the whole building."

Interviewee Spotlight

Geoff Spitzer, resident 'Mill Guy' at Chinburg Properties recognizes the importance of historical preservation. As a senior project manager, Geoff has worked on many of the mill renovations in the region. Also a Leadership in Energy and Environmental Design Accredited Professional, Geoff values the importance of sustainability in building practices. He is on the Portsmouth Music and Arts (PMAC) Building Committee and Newmarket Pedestrian Crossing Improvements. Committee.

Deanna Strand

education & economic development

Located just blocks from Dover's Downtown, the McConnell Center is home to the Dover Adult Learning Center (DALC) among many other community non-profits and city services that are involved in health, education, or recreation. With a diverse student base bustling through the halls, Dover Adult Learning Center saw enrollment numbers of 4,464 in the 2012-2013 school year. "It surprises people the number of lives that are affected", explained Deanna Strand, Executive Director.

"I can't imagine there being the diversity of riches and opportunities, and by riches I mean experiences and beauty…. anywhere else."

Dover Adult Learning Center

Photo Credit: Dover Adult Learning

Strand, the Executive Director since 2009, has built an impressive career focused in adult education. With three degrees from the University of New Hampshire, inclusive of a Masters in English, Language, and Linguistics, Strand first became involved as an Adult Basic Education Coordinator in York, Maine. Including time as the Adult Learner Services Coordinator at the Exeter Adult Education Office, Strand has been in the field for close to fifteen years.

Originally from Connecticut, Strand first experienced the region as a student at New England College, and then at the University of New Hampshire. Speaking to what the region has to offer Strand shared, "what's not to like about living on the Seacoast. I really can't imagine a better place to live." Elaborating, she cited the access to the seacoast, arts, culture, and recreation opportunities, while at the same time, Portland and Boston as major reasons for the region being as unique as it is. "I can't imagine there being the diversity of riches and opportunities, and by riches I mean experiences and beauty….anywhere else," noted Strand.

One such opportunity that Strand deals with on a daily basis is access to education. Dover Adult Learning Center provides multiple programs for adult students including basic skills preparatory classes for those interested in attending college or job training programs, adult high school, ESOL (English for Speakers of Other Languages), career counseling and support services, as well as enrichment classes.

"We are building our next generation of leaders, and we need to do a really good job of that so we have the kind of services, care, and leadership that we would want for our communities and families," explained Strand.

A key factor in ensuring this, according to Strand, is the collaboration of local organizations and schools. "We have a lot of great resources, and I think we have worked in silos to a certain degree. It's been remarkable in the last couple of years to see what can happen when you can all get together and realize your either duplicating services, or you're just disconnected…Just building awareness of what is here is important."

Dover Adult Learning Center has recently aligned themselves with Great Bay Community College in an attempt to create a more comprehensive education to workforce pipeline. While this collaborative effort is in its early stages, an ideal situation would include students first receiving prerequisite training (basic education classes) at Dover Adult Learning, which would make the transition smoother when choosing to attend Great Bay, or another school or career training program. Through higher education and training programs, students would have opportunities to connect with employers, as Great Bay Community College and other training programs ensure opportunities for business connections. Strand commented that "education is a lifelong thing [that] doesn't stop when you graduate from high school or college."

There is also the opportunity for good jobs. "We need to embrace some of those manufacturing jobs and the opportunity that they can provide particularly in this state," she noted.

In New Hampshire in 2013 about 10% of seasonally adjusted and non-seasonally adjusted non-farm jobs were jobs in manufacturing. Strand explained, "there is a critical need for retraining, reskilling, and retooling people's abilities to fill the needs of a very rapidly changing workforce." The workforce is a key component of economic development in a community.

For Dover Adult Learning in particular, this effort to prep students for these types of jobs and further education is done at the hands of Dover Adult Learning Center staff. Volunteers also play a significant role. Dover Adult Learning Center has close to 125 volunteers who work in the thirteen towns in Strafford County. These volunteers tutor those who either can't make it to classes or need assistance with class materials.

Elaborating on volunteering Strand shared, "we have people coming to us and asking what volunteer's opportunities do you have." In the community the sense of volunteerism seems to be great as well. Using Timberland and Liberty Mutual as examples, Deanna shared how these companies have offered to do work for the center as part of their yearly volunteer days.

Interviewee Spotlight

Deanna Strand is the Executive Director of the Dover Adult Learning. In the adult learning field for close to fifteen years, Strand understands the importance of educational opportunity for adults looking to learn and to acquire new skills. She is active on the McConnell Center Tenants Collaborative as the President, and on the Board at the Dover Chamber of Commerce and their education committee.

Cynthia Wyatt

conservation & recreation

Branch Hill Farm, Milton Mills

Photo Credit: Timothy Borkowski

Branch Hill Farm, a 3,000 acre award winning Tree Farm centered in Milton Mills, was the pride and joy of Carl Siemon. Originally owned by his grandparents, Carl spent his childhood summers coming to the farm.

While Carl spent his life running the Siemon Company out of Connecticut, a family run company and industry leader in the manufacturing and innovation of high quality, high performance network cabling solutions, Carl continued his parents' tradition by bringing his own children to the farm every summer. Eventually purchasing his grandparent's 1786 farm house in Milton Mills, the original 100 acres of farmland had been sold off leaving only 3 acres. Carl was soon given the opportunity to buy back some of the original farm when a large plot of land behind the farmhouse became available for purchase. With the purchase of 56 acres in 1966, and with thousands more to follow, the legacy that is Branch Hill Tree Farm grew.

In admiration, this story was shared by Carl's daughter, Cynthia Wyatt, who has since taken over running of the farm as managing trustee. In 1991, Cynthia moved with her family to New Hampshire to help her father manage Branch Hill Farm. This is the same year that her father made the decision to donate a conservation easement on 1500 acres of forestland to the Forest Society. In 1995, Carl made the decision to designate Branch Hill Farm as a Private Operating Foundation with education and conservation purposes. Inspired by her father's stewardship ethic, Wyatt has grown to become an advocate for conservation in the region and state. Before her father passed away, their joint vision to join Branch Hill Farm's 3,000 forested acres to other regional greenways led to the creation of Moose Mountains Regional Greenways. In 2000, Cynthia was instrumental in the founding of the Greenway. Cynthia also served as the Chair of the Milton Conservation Commission for 15 years.

"Conservation lands are essential for the preservation of water and air: we need to be forward thinking about protecting our resources for the present and future generations."

"These conservation lands [such as Branch Hill Farm] are essential for the preservation of water and air: we need to be forward thinking about protecting our resources for the present and future generations," she commented.

Moose Mountains Regional Greenways is a land trust that serves the communities of Wolfeboro, Brookfield, Wakefield, Middleton, Farmington, New Durham, and Milton. Over the past fifteen years, the Moose Mountains Regional Greenways has facilitated more than twenty conservation projects, assisting willing landowners with the permanent conservation of over 4,000 acres of farms, forests, and wetlands.

Recently, the board voted to become an accredited land trust enabling the organization to hold conservation lands and easements in our region and manage

them in perpetuity. Their mission also includes a strong educational outreach mission, hosting several programs a year for the benefit and enjoyment of surrounding communities. Wyatt, as founding member and Vice Chair, is active in the numerous events held throughout the year. Many of these events are hosted at and underwritten by Branch Hill Farm. Community outreach events are a fun way to engage families in enjoying the great outdoors, she shared. Some of the events held on a yearly basis by Branch Hill Farm, in collaboration with Moose Mountains Regional Greenways, include: forestry workshops, Earth Day clean up, and the Branch River Paddle. A crowd favorite, and their biggest event, the Woods, Water, and Wildlife Festival is held the second Saturday every August. For the young at heart there are hay rides and corn mazes, fishing on the river, live music, plenty of festival food, and programs for those with a love of the outdoors. Many events include informative talks and walks by Cooperative Extension Educators on topics such as invasive species, tree and wildlife identification, pond ecology, and learning to garden.

In addition to managing over 3,000 acres of conservation land and producing hay on 80 acres of hayfields, Wyatt enjoys serving on the Milton Conservation Commission. She was adamant in explaining that, "Milton is on a major highway corridor and growth and development are inevitable. Our Conservation Commission has worked hard over the years to have planning in place to balance growth with the preservation of open spaces and a management plan for the Milton Three Ponds." Wyatt believes that an essential part of town and regional planning is to identify important natural resource areas and work to conserve them. The benefits are multiple and have enormous economic benefits to the town and region: clean water for drinking water supplies and for our rivers and lakes, working farms for fresh local food, healthy forests for wood products, woodland trail networks for recreation, and the preservation of our beautiful scenic vistas. All conservation work supports New Hampshire's local economies and tourism industry. Milton's Conservation Commission is presently working on an exciting project to designate a 73 acre Town owned forested property as a Town Forest.

Wyatt elaborated how the region can promote the use of existing trail systems on certain conserved properties with kiosks and marked trails to draw tourism into the communities of Milton and Milton Mills, as well as the region. Collaboration between conservation groups, local farms, museums, heritage commissions, and local recreational businesses in the area to promote the abundant recreational and cultural opportunities, is vital to marketing the area as a dynamic tourist destination. Sharing that Milton and the surrounding areas have so much to offer, Wyatt believes this form of recreational tourism would be beneficial to the region as an exciting and viable industry to promote economic development of our Moose Mountain communities.

Interviewee Spotlight

Photo Credit: NH Fish and Game

Cynthia Wyatt is passionate about land conservation and has been a long standing advocate for the permanent protection of the most important natural resources areas in the Moose Mountain region. She serves as the Vice Chair of Moose Mountains Regional Greenways and is Chair of the Milton Conservation Commission. Wyatt is managing Trustee of Branch Hill Farm, a Private Operating Foundation and a working agricultural farm with conservation and educational purposes.

Matt Wyatt

Matt Wyatt, Rochester native, recognizes the importance of arts and culture and has taken to sharing his view with the greater Rochester community. With an early dream of being a cartoonist for Warner Brothers, his interest in art led him to attend the New Hampshire Institute of Art in the City of Manchester. Wyatt's sustained passion for the arts drew him back to the Lilac City in his career as an artist, and with his desire to share artwork with residents and visitors alike. Wyatt explained that while he has put his roots down in Rochester, this should not mean that he can't experience the world of art that might be more prominent in bigger cities like Boston, Portland, or even New York. "When I got grounded, the idea was if I can't always travel to go see it, it has to come to me in some way. There is no reason why it can't be here too."

"There are a lot of great volunteers out there. If you want to see something happen, you have to stand up and do it. You have to get people together and collaborate. You have to be positive and optimistic about the mission."

The outcome of this outlook, and some collaborative efforts with other artists became what is now the Rochester Museum of Fine Arts. The museum, which doesn't have a permanent space, is made up of what Wyatt refers to as mini museums in local public libraries and in the Rochester City Hall. The Museum partners with the libraries to make artwork accessible to the greater public. Currently the Museum is partnered with the Farmington, Somersworth, and Rochester libraries, and soon the Gafney Public Library in Sanbornville. These libraries house the museum's permanent collections, which come from all over the world. Every piece is donated through personal solicitations to desired artists. Artists are very receptive to these requests. Wyatt explained, "when you have artists working with other artists, there is always collaboration going on. People are eager to be a part of something like this."

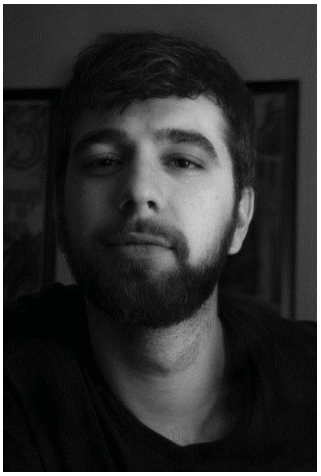
Rochester Museum of Fine Arts, Rochester Public Library Location

Photo Credit: Rochester MFA Facebook

The Museum also borrows pieces for their bi-monthly gallery exhibits in the Andrew Carnegie Gallery at the Rochester Public Library. Featured artist have included Eric Carle, Susan Kare, Wayne White, and others. Wyatt explained that the resources available are important to the accessibility of art, such as the Rochester Opera House, the Rochester Library and the Museum. As the Chair of the Commission for Arts and Culture for the City of Rochester, Wyatt shared a little on the community attitude towards the arts, "there are a large number of people that want to see this void filled, and they believe it can happen. It takes a lot of different groups to come together and make it happen." Volunteerism is a big part of this. "There are a lot of great volunteers out there. If you want to see something happen, you have to stand up and do it. You have to get people together and collaborate. You have to be positive and optimistic about the mission." Wyatt added that hometown pride is a big factor in his volunteer efforts.

As for getting the word out about the Museum, the main focus is on the use of social media, and the reliance of word of mouth. Awareness of this cultural resource also can benefit other local small business as visitors are looking for places to dine and visit after checking out some of the artwork. This could be the first steps to revitalizing Rochester's downtown. The museum as part of the downtown is still in its infancy, and it will take some time to grow. "We rely on people going to our exhibits and we prove ourselves that way. Then they go and tell a friend, and people learn about it that way." With this positivity, Wyatt and other community advocates championing for their community will not only strengthen the arts and culture community in Rochester, but will encourage a sense of community that will reflect regionally as well.

Interviewee Spotlight



Matt Wyatt is a Rochester native who is very involved in the arts and culture of his hometown city. He attended the New Hampshire Institute of Arts. Upon moving back to Rochester, Wyatt founded the Rochester Museum of Fine Arts with a group of other artists. Wyatt is also the Chair of the Commission for Arts and Culture for the City of Rochester. He recognizes the importance of arts and culture in a community, and seeks to share these cultural resources with residents and visitors alike.

Samuel Reid

advisory team vice chair

Lives in: Dover, NH

Hometown: South Bend, IN

Education:

- Bachelors Degree, Economics,University of New Hampshire,
- Juris Doctorate, Law, University of Maine School of Law

Career Path:

- Computer Programmer (CT)
- Law Firm (NH)
- Sports Industry Apparel Company (NH)
- Certified Financial Planner (NH)

Committees/Volunteer Efforts:

- Strafford Rivers Conservancy Inc. (President) which is merging with Southeast Land Trust of NH (Secretary)
- Dover ZBA (Chair)
- Strafford Economic Development Corp. (Vice President)
- Strafford Regional Planning Commission (Past Chair)
- Seacoast Metropolitan Organization (Past Member)

Why the Strafford Region?

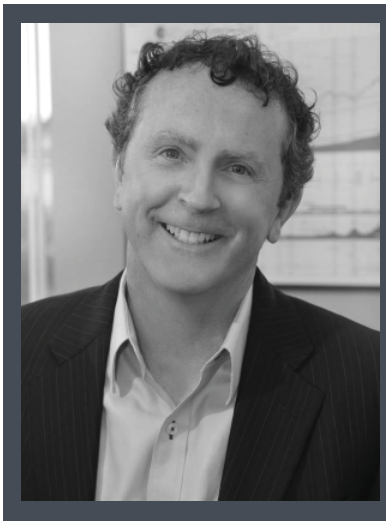
I chose to live here because of the natural beauty of the area and the proximity of the Seacoast to Boston, Portland and the lakes and mountains of northern New England. I also love the friendliness of the people in this area.

Why is volunteerism so important?

Volunteerism is important as we cannot rely on others to advance our vision of what is right. While I think we are fortunate to have volunteers working on a myriad of worthwhile causes, there is always a need for my hands and brains and perspectives. Volunteering is important to create a meaningful sense of community and a link with other folks in the region. It is very rewarding.

Why do you think regional planning is important and why were you interested in being involved on the Strafford Regional Advisory Team?

I believe regional planning is important in that it avoids unnecessary duplication of services. Many New England cities and towns seem to think they are an island onto themselves. That is myopic. Each of us can learn from each other. Roads and transportation systems head in all directions. It is absurd to not employ the impressive expertise from the Planning Commission staff. I became interested in the Advisory Team to learn more about how our region is part of the State plan and how we are different from other areas of the State.



How do you hope people will use the regional master plan?

I hope that the data compiled by staff is useful in setting priorities for the future in all of the areas covered by the plan. There is a very impressive amount of information that can be drawn upon to make educated decisions about future challenges.

John Scruton

advisory team member

Why the Strafford Region?

I live here because it is home. My children and grandchildren, mother, sister and other family members all live close. I like the open fields and forests, while at the same time being close to cultural and historical places. There is a good selection of restaurants in the area. It is a short trip by mass transit to Boston and world class museums and historical places.

Why is volunteerism so important?

There is a great need for more people to be involved in local government. There are many factors that have caused volunteers to become scarce, including long commute times, second jobs, youth sports activities, the Internet, changes in family structure, home entertainment systems, etc. Sadly when people do not volunteer, their opinions are not heard. Sometimes the opinions of only a few are heard, with the apathetic being disenfranchised. We need much broader participation in the decisions that are being made for the benefit of all.

Why do you think regional planning is important and why were you interested in being involved on the Strafford Regional Advisory Team?

I am convinced we need regional cooperation and solutions to solve our problems. The roads, rivers, air, and jobs, are all regional. No community can close itself off from the need of connecting with others. That is why I have supported Strafford Regional Planning Commission and volunteered to work on the Regional Advisory Team.

Lives in: Farmington, NH

Hometown: Farmington, NH

Education:

- Bachelors Degree, Dairy Science, University of New Hampshire
- Master's Degree, Divinity, Gordon-Conwell Theological Seminary
- Master's Degree, Public Administration, University of New Hampshire

Career Path:

- Pastor (NH)
- Scruton's Dairy (NH)
- Farmington Town Administrator (NH)
- Local Government Administrator (multiple locations NH)
- Barrington Town Administrator (NH)

Committees/Volunteer Efforts:

- Farmington Conservation Commission, Zoning Board, Planning Board, Budget Committee, Board of Selectman (Past member)
- PRIMEX member
- NH Municipal Association (Serves on Governing Board)

How do you hope people will use the regional master plan?

I hope this will enable people to see how complex and interrelated the towns and cities are. Regional solutions require knowing what the issues are first. A second benefit is being able to find examples of how others have addressed the issue.

Christine Soutter

advisory team member

Lives in: Exeter, NH

Hometown: Canterbury, NH

Education:

- Bachelors Degree, Rollins College
- Master's Degree, French, University of Georgia

Career Path:

- Women's Business Center Executive Director (NH)
- State Division of Economic Development (NH) Business Resource Specialist
- City of Somersworth Economic Development Manager
- Somersworth Chamber of Commerce Board Member

Committees/Volunteer Efforts:

- Local High School Career Technical Center (CTC) Committee and CTC Renovation Committee (CTC) (Member)
- Participation on other committees that support the overall economic health of the region.

Why the Strafford Region?

We love New Hampshire for its diversity of seasons, topography, activities and education. Stafford County is a great area as it is close to both the mountains and the ocean which isn't something most areas of the United States can boast. It also has great jobs and good people.

Why is volunteerism so important?

Volunteerism is absolutely critical to the health and prosperity of our region and our State. It is what makes the difference between a good place to live and a great place to live. We do have a lot of individuals who care greatly about the region and who give of their time, talent and treasure to a variety of charitable causes. The State, however, is not particularly generous with their "treasure" and could use some education about the impact on the nonprofit community and how their financial support can really make a difference in not just the lives of those less fortunate but their own lives through community events, recreation and more.

Why do you think regional planning is important and why were you interested in being involved on the Strafford Regional Advisory Team?

New Hampshire is a small state made up of small cities and towns. If we are not thinking regionally then we are not thinking clearly. Everything we do affects our surrounding communities. We have strength in numbers and the more we approach decisions with a regional view the better off all of our communities will be.

How do you hope people will use the regional master plan?

I hope that they realize the amount of time and care that went into the master plan which enables them to make informed decisions without putting the same time into the work needed to come up with the information provided in the plan. I hope they refer to the plan as they create their own set of priorities and development strategy.

Victoria Parmele

advisory team chair

Why the Strafford Region?

I eventually made my way back east [from Washington state], and after living in Newburyport, MA, I moved to Exeter, and then to Northwood just before entering graduate school at the University of New Hampshire. I was drawn to Northwood's rural character and its proximity to the Seacoast area.

Why is volunteerism so important?

I learned over time how essential volunteerism is to community life in New Hampshire. One reason for this is that while the needs are there, funding at whatever level often isn't there. There is a good sense of volunteerism in the Strafford region, but it could be greater. There are many problems and projects to take on, including in the area of land use planning, but often there are too few hands to do the work required.

Why do you think regional planning is important and why were you interested in being involved on the Strafford Regional Advisory Team?

I believe regional planning can play a vital role in helping people think about the linkages between transportation, economic development, environmental protection, and other planning issues. It's not easy for New Hampshire towns to do this on their own, because of a lack of data, technology and/or manpower to do the analyses needed in order to understand the linkages. Also, many planning issues extend beyond town/city boundaries. Regional planning allows volunteers and staff working on these issues to see the bigger picture and, hopefully, develop solutions that will work for as many people as possible.

I'm especially pleased to have served on the Advisory Team. Getting to see up close the work SRPC planners have been doing on the Regional Master Plan has been fascinating, and heartening. As a result of their efforts, a tremendous amount of useful information will be available to municipalities, to do with as they see fit.

Lives in: Northwood, NH

Hometown: Massapequa, NY

Education:

- Bachelors Degree, English, University of New Hampshire
- Technical courses, Cornell, University of Washington, Essex Agricultural and Technical Institute
- Master's Degree, Natural Resources Management and Administration, University of New Hampshire

Career Path:

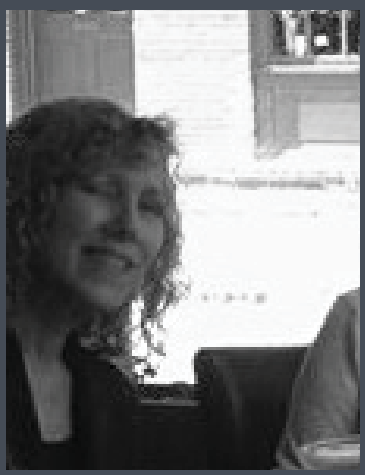
- Two Environmental Non-Profits (WA)
- NH Office of State Planning Land Use Planner (NH)
- Environmental Film Company (MA)
- Environmental Consulting Firm (NH)
- Town of Durham Minutes Taker (NH)

Committees/Volunteer Efforts:

- Northwood Planning Board (Alternate Member)
- Upper Lamprey Scenic Byways Committee (Member)
- Saving John's Field Committee (Member)
- SRPC Commissioner
- SRPC Executive Committee (Vice Chair)

How do you hope people will use the regional master plan?

I hope the regional master plan will be poured over by believers as well as by skeptics, and that it will spark many spirited debates about the planning issues facing the Strafford region. I hope the plan will help towns and cities find solutions to their particular problems, by allowing them to devise unique solutions for their particular problems based on some really good information in the regional plan.



Milton, NH

Photo Credit: Ken Gallager

Executive Summaries

Quality of Life is th contextual, integrating theme of the plan. This section includes executive summaries for each *Technical Appendix*. Each executive summary contains an overview of data and trends and a discussion of how these trends influence quality of life in the Strafford region. For more information, refer to the *Technical Appendices*.

Integrating Theme: Quality of Life

Responses from the combined outreach efforts indicate that the quality of life a person has in this region is the primary reason people live and invest here. As a reflection of this, quality of life is a central, integrating theme that runs throughout this plan.

Quality of life is a broad, subjective concept that is challenging to define as each individual may evaluate it using a wide range of factors. Quality of life is determined by a range of quantitative and qualitative factors such as individual wellbeing, happiness, and equity. It is more than a standard of living or a measurement of income or prosperity.

At the individual, community, and regional level, **Local Solutions for the Strafford Region** describes quality of life as comprised of the following factors: human health and wellbeing, economic prosperity, stewardship and engagement, accessibility and equity, and resilience. These factors are described on the following page.

Quality of life is a lens through which to assess and describe current conditions and future trends across the topical areas discussed in the technical appendices.

Subthemes

Human Health & Wellbeing

A complex mix of factors influences *Human Health and Wellbeing*, but environmental quality is chief among them. A healthy outdoor environment is vital for clean air, clean water, and recreation opportunities that create balance between work and leisure. Healthy indoor environments are equally important – clean, well-built homes that are energy efficient against seasonal temperature extremes.

Economic Prosperity

Economic Prosperity depends on high quality natural resources and environment for raw materials and other resources, and educated, responsible people for a dependable workforce. While large companies provide substantial employment opportunities for towns and cities, small regional and local businesses are the foundation for resilient, vibrant communities — each with individual cultures. A thriving business community is critical for creating a range of jobs that provide adequate wages for residents.

Stewardship & Engagement

Stewardship and Engagement are essential tools for residents seeking to create a sense of place and investment in their community. Opportunities for participation in social development and community decision-making are quintessential hallmarks of a New Hampshire municipality. An individual's quality of life is directly tied to being a valued participant in the development of their community and in the protection of natural and historic resources. Social capital has value for individuals and communities.

Accessibility & Equity

Community members have a right to *Accessibility and Equity.* This means access to goods and services that are fundamental for quality of life. Vibrant communities have diverse, safe, affordable housing; access to a range of transportation and employment options; and quality local schools for residents and their children. Dependable, affordable health care is indispensable for families and individuals of all ages. Residents will also measure their quality of life by their access to jobs, high quality natural areas and local greenspace, and cultural amenities for all ages, and community governance.

Resilience

Finally, *Resilience* is a key component of a community's ability to keep its residents safe and happy. Multiple factors influence resilience, which is the ability to respond to and recover from change. Capital improvements to critical infrastructure (roads, bridges, buildings, etc.) are a critical step toward resilience. A community that is prepared for unexpected events such as violent storms is able to respond appropriately, provide critical aid to citizens, and return to normal operations quickly. This ability depends, in part, on a community's access to resources and support – both internal and external. Community resilience also depends heavily on the level of social connectedness and support throughout: between local and neighboring government entities, within the business community, within neighborhoods, and between individuals.

Integrating Elements

The core planning areas — Environment, Housing, Economic Development, Water Infrastructure, Energy Efficiency, Transportation, Emergency Management, and Climate Change Impacts and Adaptation — discussed in the technical appendices of the regional master plan are fundamentally interconnected and linked to one another.

SRPC has endeavored to create a more cohesive and informative master plan through a two-part approach:

Part 1

Individual technical appendices are unified through a central theme: quality of life. There are many indicators and metrics used to describe and measure quality of life. In the regional master plan, quality of life is used to assess and describe – rather than quantify – current conditions and future trends across the planning areas discussed in the technical appendices. Quality of life acts as the core theme that integrates each component of the plan.

Approaching the regional planning process through this lens provides the opportunity for a reader to use these tools to:

- Identify gaps and needs that constrain a high quality of life at the individual, community, and regional level
- Evaluate and assess comprehensive impacts of implementing policies
- Highlight and learn from best practices and success stories
- Identify leverage points for intervening in complex systems – where small actions can produce large changes in a society's wellbeing.

Part 2

The complex and interrelated issues discussed in each technical appendix are reiterated in a user-friendly format that is designed for a wider, non-technical audience. These three integrating elements function to link planning areas by reinforcing the quality of life theme:

- A concise Executive Summary with an overview of data and trends and an introduction to quality of life (pages 81-104)
- A matrix that highlights the interactions among issues in each appendix and acts as a reference for considering cross-sector implementation challenges (page 105)
- Green call-out boxes placed within each appendix that highlight important links between planning areas discuss in the appendices.

Look for call out boxes within the *Technical Appendices* for information linking planning issues.

Water Infrastructure: Executive Summary

Community Assets

Water infrastructure is a major community asset that treats and conveys water and wastewater, controls flooding, and influences growth and development patterns. Quality of life within the region depends on the functioning of water infrastructure systems as well as the protection of water resources that provide drinking water, recreational opportunities, and wildlife habitat. Rivers, streams, and lakes also contribute to quality of life in the region simply because they exist.

Drinking Water

Both surface and ground water sources supply the region's public drinking water systems. Approximately 65% of residents within the region are served by five large public systems and 35% use private, household drilled or dug wells (Source: USGS, 2005). Planning considerations for drinking water include: meeting the anticipated demand of a growing population; ensuring clean, adequate drinking water supplies for residents; and identifying opportunities to increase the resiliency of public water systems through interconnectivity, asset management, and adaptation planning.

Wastewater Infrastructure

There are eight municipal wastewater treatment plants within the region. Approximately one-third of homes in the region are connected to municipal sewer systems, which discharge directly into rivers flowing into the Great Bay. The remaining two-thirds utilize individual septic systems (Source: NHDES, 2008). Regulation and management of decentralized septic systems is challenging but crucial to reducing nutrients in Great Bay. Current and future wastewater planning considerations include: infrastructure upgrades to comply with new permit requirements for nitrogen; and projections of future system capacity and demand.

Dams

Dams are a component of the water infrastructure system. Within the region, there are approximately 300 active dams (Source: NHDES, 2010). These dams are cultural assets that reflect the historical significance of rivers to the development of southeast New Hampshire. Dams provide a range of public uses and benefits. However, the structural integrity, potential risks, and adverse effects of these structures, as well as the impact of flooding associated with increased precipitation on dams must also be assessed and evaluated to insure public safety and high quality aquatic habitats.

Pollution & Threats

Both point and non-point source pollution contaminate the region's water resources. Nitrogen loading in the Great Bay Estuary is a particular concern. Point and non-point sources of pollution, stormwater management, and erosion and sedimentation both influence, and are influenced by, the greater coastal watershed.

Water quality impairment impacts the beneficial uses bodies of water within the region provide to society. The affects of this are widespread ranging from reduced recreational opportunities to direct threats to public health. At the municipal level, best management practices, ordinances, and overlay zoning districts demonstrate a community's commitment to protecting natural resources and ecosystems. Educating residents and building capacity to manage stormwater and reduce non-point source pollution on private property is a strategy to foster environmental stewardship.

Availability of Clean Water

Access to clean water is a basic need that is often taken for granted. While regulations are in place to protect the roughly two-thirds of the population who are served by public water systems, NH DES estimates that levels of radon and arsenic exceed recommended water quality standards in over 95% of private wells. This indicates a potential health risk. Wastewater infrastructure, also often overlooked, plays a key role protecting public health and safety.

Neither the capacity of water and wastewater treatment plants, nor the quantity of water available from drinking water sources is unlimited. Because of this, an increase in population in the region may require communities to further investigate interconnectivity potential and to identify creative solutions to distribute water and to reduce water consumption.

Protection & Regulation

Water resources are protected through a combination of federal and state regulations, local policies, and best management practices. In order to reduce environmental degradation of the region's water bodies, many wastewater treatment plants will need to comply with new water quality standards. Ultimately, water quality regulations protect quality of life in the region by ensuring the protection of water resources that define and sustain the region. Municipalities and residents will likely incur greater sewage treatment costs as a result of new standards. If water quality were to continue to degrade, resulting in negative impacts to water based businesses and recreation, residents, developers, and municipalities will likely face more stringent regulations.

Water Infrastructure Findings & Trends

Water Resource Protection

Of the 18 communities in the region:

89% Have aquifer protection regulations

61% Have wellhead protection regulations

61% Have impervious surface limits in aquifer protection areas

44% Have a water resource management plan in their master plan

17% Have a source water protection district

PREP, 2010

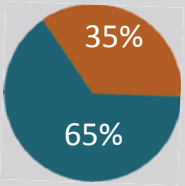
30 Facilities in the region have National Pollutant Discharge Elimination System permits for discharge directly into waters in the region

EPA, 2014

10 Communities have small Municipal Separate Storm Sewer Systems (MS4s)

US Census, 2010

Drinking Water



Private Household Wells
Public Water Systems

Population
USGS, 2005

Surface Water Sources

Berry River
Bellamy Reservoir
Follet's Brook
Lamprey River
Oyster River Reservoir
Piscassic River
Salmon Falls

Surface water provides approximately 64% of the 11.7 million gallons per day used by community water systems in the state.
USGS, 2005

5 Large drinking water treatment plants in the region

54% Projected increase in water demand in the Seacoast region from 2003-2025 based in population growth

USGS, 2007

Pollution

Between 2009 and 2011, 1,225 tons of total nitrogen were deposited into the Great Bay Estuary each year. 68% of nitrogen loading originated from non-point sources. 32% of nitrogen loading resulted from sewer treatment plants. The total nitrogen load into Great Bay increased 42% from 2005-2010.

PREP, 2013; PREP, 2010

66.3% Increase in impervious surface cover from 1990-2010

GRANIT, 2010

Drinking Water Contamination

20% Private wells in the state that would exceed drinking water standards for arsenic.

95% Private wells in the state that would exceed drinking water standards for radon.

Susca, 2004

Water Infrastructure: Findings & Trends

Wastewater Infrastructure

33% Population in the state served by centralized wastewater treatment facilities (WWTF)
NHDES

20% Septage disposed of out of state (80 million gallons)
NHMA, 2012

Projected increase in population served from 2005-2020

13.7% Septic

8.7% Sewer Systems

NHDES, USGS, 2009

Average flow capacity used at WWTF in the region = 63%
Rivard, 2014

84,700 People in the region served by wastewater treatment facilities

9.87 mgd Long term average flow

6.38 mgd Total flow capacity available for growth

3 Draft NPDES permits have been issued for Exeter, Newmarket, and Dover to require nitrogen removal at waste water facilities to 3 mg/L.
NHDES, 2013

Discharge Receiving Water

The 8 wastewater treatment facilities in the region discharge into the:

- Piscataqua River
- Lamprey River
- Oyster River
- Cocheco River
- Salmon Falls River

Wastewater & stormwater facilities investment needs

Wastewater Treatment	$108,150,356
Sewer Rehabilitation and Replacement	$20,862,695
New Sewers	$6,577,595
Stormwater	$17,588,988
Total Needs	$153,179,634

NHDES, in the Clean Watershed Needs Survey 2013

Aquifers

There are approximately 58,880 acres of stratified-drift aquifer within the region. The majority of stratified-drift aquifers occur in the southeast part of the region. Areas along the Cocheco River in Farmington and Rochester and along the Pine River and Coop Brook in Wakefield have the highest transmissivity.
GRANIT, USGS

7.3% Projected increase in groundwater withdrawal in the region from 2005-2020
USGS, 2007

18% Protected acres of stratified-drift aquifers in the region that are suitable for high-yield wells
Sunquist, 2010

30 square miles Area of aquifer land lost to development in the state from 2002-2010. About 1/4 to 1/3 of all sand and gravel aquifer land areas remains
Sunquist, 2010

1.6 feet/year Average aquifer recharge rate in the Seacoast Region
Mack, 2003

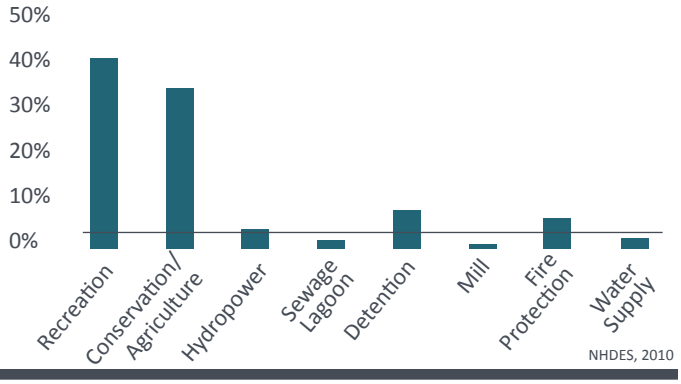
Dams in the Region

Status	# Dams
Active	296
Breached	18
Exempt	50
Not Built	46
Pending	4
Removed	7
Ruins	72
TOTAL	493

11 High hazard
26 Significant hazard
41 Low hazard
218 Non-menace structures

11 Hydro-powered dams
NHDES, 2010

Regional Dam Uses



NHDES, 2010

Housing: Executive Summary

Trends & Projections in the Region

Recent housing trends have and will continue to impact communities and individuals within the region. Between 2000 and 2010, household growth was dominated by one and two person households, and the rate of younger age group household formation declined. Between 1990 and 2010, the homeownership rate among the region's population increased only among households age 65 and older. Household projections for the region indicate virtually no long term net growth in the number of households headed by persons under age 65 from 2010-2030.

Reasons for these trends reflect the state's aging population and may include a decline in quality job opportunities and a reduced household earning capacity relative to the cost of housing.

Production Needs

While single family housing production within the region accelerated between 1997 and 2006 (in rural areas in particular), development slowed significantly following the 2008-2009 recession.

Most multi-family housing development has been limited to the urban centers and a few suburban towns in the region. The increased share of job creation occurring within the suburbs has not been matched by an increase in their share of multi-family housing production. Population projections by municipality imply that the rural towns may experience increased shares of the region's new housing development over the next 10 years.

Costs & Affordability

Because home prices and rents in the region are lower than neighboring regions to the south, the region attracts a resident labor force through its relative affordability. However, approximately 33% of homeowners and 50% of renters incur housing costs of 30% or more of their gross income, with the greatest housing burden experienced by low income families.

Since the recession, home prices have increased but the median price of existing homes has remained fairly constant over the last four years. Since 2009, new home prices have been reasonable relative to the maximum workforce income. However access to credit may reduce the ability to purchase homes.

Rent for one and two bedroom units in the region has also remained relatively stable since 2010, while the median rent for three bedroom units has increased. This may reflect a reduced capacity of family households to transition from renting to homeownership.

The availability of affordable homes is a significant factor impacting quality of life, especially given the higher poverty rate within the region as compared to the state. Participants in SRPC's outreach and engagement efforts indicated that one of the top priorities for investment of public dollars in the region is safe and affordable housing. While most participants perceive rent as "somewhat affordable," many residents dedicate a substantial portion of their income to housing. As a result, individuals and families are less able to meet basic nutritional and healthcare needs and afford quality education. Further, a lack of affordable housing detracts from the value of economic development efforts if residents are not able to find housing that meets their needs.

Access

Proximity of housing to education, services, and jobs is especially important. Individuals who are able to live near work are able to avoid the stress, cost, and time of long commutes. Given that childcare is concentrated in urban communities and located primarily along major transportation corridors, adequate public or private transportation is an essential linkage to a high quality residential life. Finally, with the region's aging population, access to health service and medical care is essential to the wellbeing of the residents.

Future trends

The demographic shift influences the demand for different types of housing. Trends include a(n): decline in large family households; increase in number of single parent households; increase in the demand for rental units among older populations; and greater need for assisted living options. In addition, fewer younger people may desire single-family suburban homes and instead opt for downtown units and the lifestyle offered by urban centers.

Development patterns will also likely influence quality of life within the region. Smart Growth practices that promote walkability, open space preservation, and mixed uses in urban centers, for example, will support the health and wellbeing of residents, and increase accessibility to services and amenities. Within the region, 71% of participants indicated a preference for growth in developed areas versus undeveloped areas (Source: GSF Statewide Survey, 2011). However, long term population projections for 2010-2050 indicate that future growth could continue to push outward from the urban centers. Housing production that is more focused on producing smaller, more efficient units at locations closer to central services will better meet the needs of the future population in the region. (RHNA source: BCM Planning, LLC, 2014)

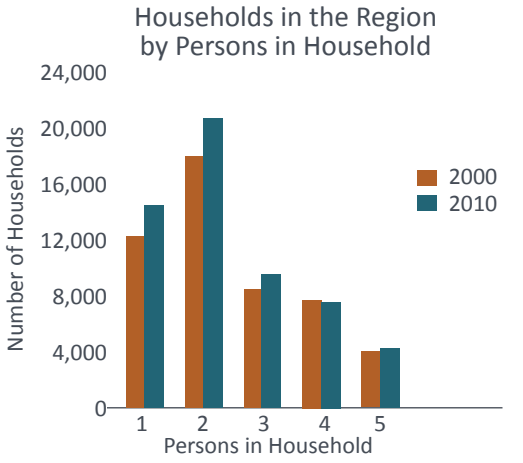
Housing: Data & Trends

SRPC Area Demographic Trends & Projections

The Regional Housing Needs Assessment municipal classification is based primarily on population density.

- Urban
- Suburban
- Rural

BCM Planning, LLC, 2014



BCM Planning, LLC, 2014

Most growth occured in smaller households

84% Net change in households in the region accounted for by small households

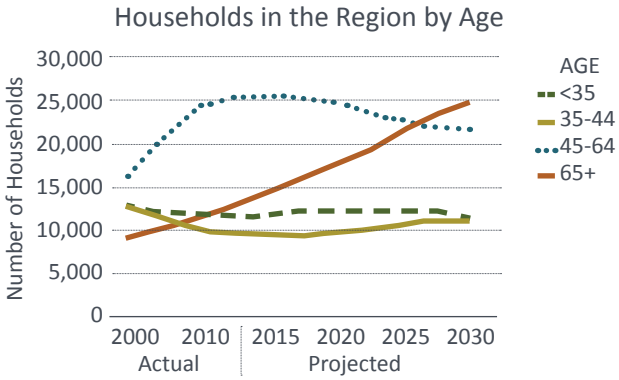
Aging is a dominant factor in future housing

33% Households that will be headed by a person age 65 or older in 2030 unless the region experiences significant new in-migration among younger households

3.2% Change in homeownership of ages 65-74 and 75+ from 1990-2010

-7.4% Change in homeownership of ages 25-34 from 1990-2010

BCM Planning, LLC, 2014



BCM Planning, LLC, 2014

Housing Production Needs & Regional Distribution

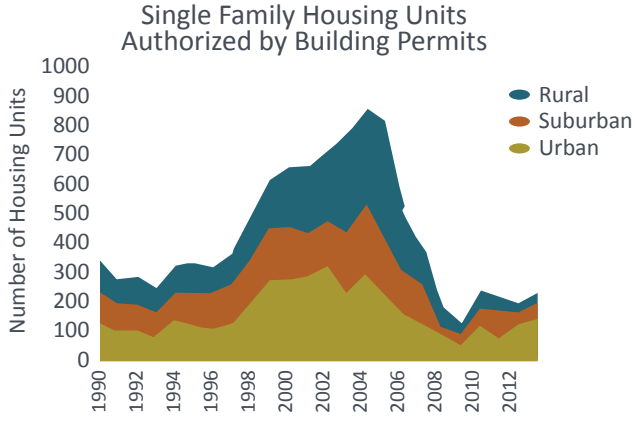
Location of housing activity shifts with the economy

The development of most multifamily housing has been limited to urban centers and a few suburban towns. Increased job creation in the suburbs has not been matched by an increase in multifamily housing production.

88% Region's assisted rental stock or lower income rental housing resources found in urban communities

45% Resident workers with jobs located outside the region

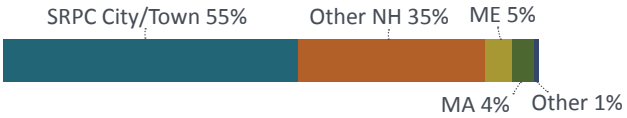
BCM Planning, LLC, 2014



BCM Planning, LLC, 2014

Housing: Data & Trends

Work Location of Strafford Region Residents

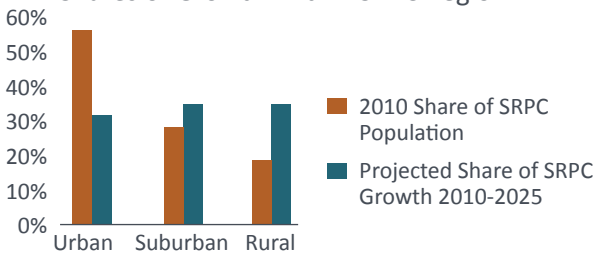


630 Projected housing unit production need per year from 2010-2020 to meet total demand

360 Annual production from 2010-2013

BCM Planning, LLC, 2014

Population Distribution & Projected Shares of Growth Within SRPC Region



BCM Planning, LLC, 2014

Regional Housing Costs & Affordability to Workforce

Housing cost burden

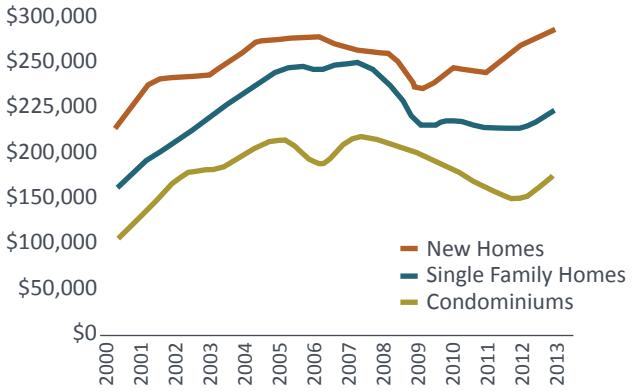
Housing costs consume 30% or more of the gross income of about 1/3 of the region's homeowners and nearly1/2 of renters

BCM Planning, LLC, 2014

56% Primary homes sold that were affordable at workforce income levels over the last 5 years

BCM Planning, LLC, 2014

Median Price in SRPC Area Primary Homes



BCM Planning, LLC, 2014

2020 Workforce housing development goal

Workforce housing development needs:

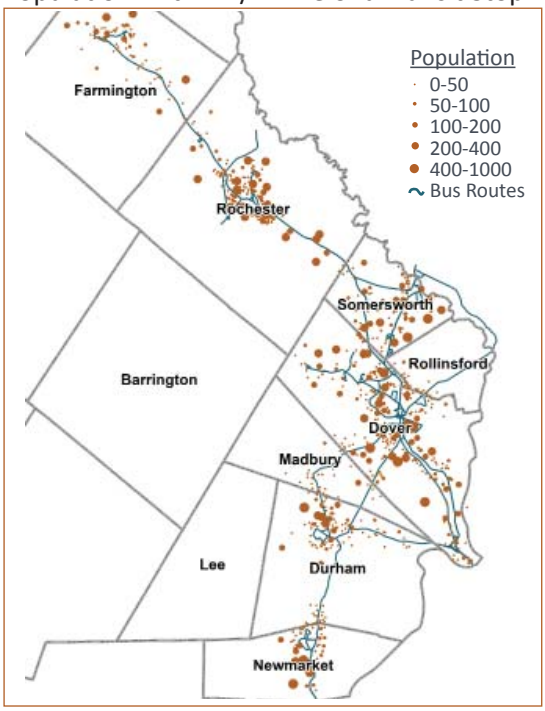
270-290 Total workforce units/year (ownership and rental)

210-310 Workforce ownership units/year

60-80 Workforce rental units/year

BCM Planning, LLC, 2014

Population Within 1/4 Mile of a Transit Stop



Source: Wildcat Transit, COAST

Housing & Access to Services

59% Designated Community Anchor Institutions (schools, hospitals, libraries, public safety entities, and other support organizations) in the region that are are within 1/4 mile of an assisted housing unit complex (275 total)

40% Community Anchor Institutions within 1/4 mile of a transit stop in the region (275 total)

Opportunity Index Scores based on access to:

- employment
- healthcare
- education
- transportation
- goods
- services
- affordable housing

Opportunity Index Scores ranged from a low of 15 to a high of 75

BCM Planning, LLC, 2014

Economic Development: Executive Summary

Population Trends

The Comprehensive Economic Development Strategy (CEDS) planning region — which includes the 13 communities in Strafford County along with Brookfield and Wakefield in Carroll County — is projected to grow at a slower rate (12%) than the national projected growth rate (20%) through 2060.

Change in the age of the workforce in the CEDS region reflects the state's aging population: between 2001 and 2012, the share of young workers ages 15 to 24 remained constant and the share of middle age workers ages 35 to 44 decreased, while those between ages 45 and 65 increased.

Population trends influence economic growth in the region. The decline in people migrating into the state, the aging population, and emigration of young residents out of the state are three factors that will influence the region's workforce and economy and likely result in a deficit in the human capital required for economic growth.

Jobs within the Strafford Region

Most of the major regional employers are located in the Tri-Cities and Durham. Within the Strafford region, there were an estimated 52,452 jobs in 2010 (excluding governmental jobs). A majority (79%) of these jobs were in the service industry and include jobs in retail trade, finance, insurance, and educational services.

Jobs are projected to increase by 10% between 2010 and 2020. Construction jobs (29.9%) followed by professional, scientific, and technical services (28.2%) are projected to increase the most during this period (Source: NH Employment Security, 2013).

Income & Poverty

While the average median household income in the Strafford CEDS region ($77,172) is higher than that of the state ($64,925), the average median per capita income in the region ($29, 973) is lower than the state average ($32,758) (Source: ACS, 2008-2012).

The state poverty rate is 8.4%. In the Strafford CEDS planning region, the poverty rate ranges from 3.6% in Strafford to 20.1% Durham. Durham's high poverty rate is due in part to its student population (Source: ACS, 2008-2012).

Unemployment

Unemployment in the CEDS planning region decreased from a peak of 6.1% in 2009 — when over 6,1000 unemployment claims were filed — to 4.0% in April 2014. As of April 2014, the unemployment rate ranged from a low of 2.6% in Brookfield to a high of 5.1% in Milton (Source: NH Employment Security).

Meaningful employment and income factor strongly into quality of life. Unemployment limits the availability of resources for basic needs, as well as cultural and recreational activities. Poverty can undermine quality of life for individuals as well as the community. At the community scale, hidden costs of poverty to society, such as deteriorating real estate values, loss of productivity, and increasing public and private costs for services and health care, can detract from quality of life.

Economic Development

Strafford County's diverse mix of public and private organizations promote economic and community development and growth throughout the region. There are a wide variety of associations that provide or promote economic or community development services to select populations, as well as public financial assistance for businesses, individuals, and entrepreneurs. Strong infrastructure networks, including transportation and broadband, are important to maintaining the region's competitiveness and participation in the greater regional economies.

Infrastructure & Accessibility

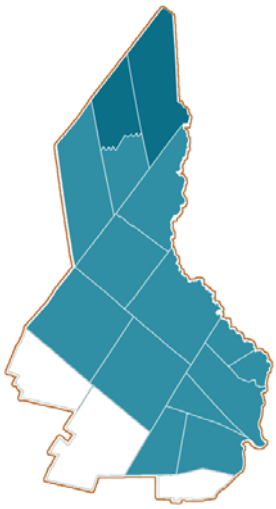
Infrastructure and accessibility to services and amenities will play a key role in retaining business and talent in the region. Public transportation and transportation assistance will be increasingly important for the aging population. The expansion of access to markets, efficiency of freight distribution, and ability of people to reach workplaces, will impact the strength of the region's economy. Community-wide access to broadband will also increase quality of life and resiliency in the region, in addition to supporting business.

Funding

Funding cutbacks are an added challenge to future economic development. A reduction in the availability of federal and state funding will significantly impact communities' ability to invest in their infrastructure and economic development projects.

Economic Development: Findings & Trends

Strafford CEDS Region



The Strafford CEDS Region includes all communities in Strafford County and 2 communities in Carroll County.

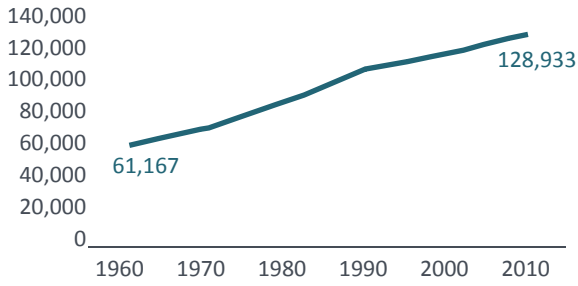
SRPC Region
Strafford CEDS Region
Strafford County
Carroll County

*Communities in Rockingham County are part of the Rockingham CEDS planning region

Population

Population has Doubled Since 1960

Population in the Strafford CEDS Region



Source: U.S. Census

Income

	Strafford CEDS Region	New Hampshire
Average Median Household Income	$77,172	$64,925
Average Median Per Capita Income	$29,973	$32,758
Average Median Family Income	$78,195	$79,488
Average Weekly Wage	$866	$1,017

Source: ACS 2008-1012, Q4 Weekly Wage NH Employment Security ELM, 2013

Poverty rate

8.4% New Hampshire

20.1% Durham
(high rate due in part to student population)

15.8% Somersworth

3.6% Strafford

Source: ACS 2008-1012

Minority Population

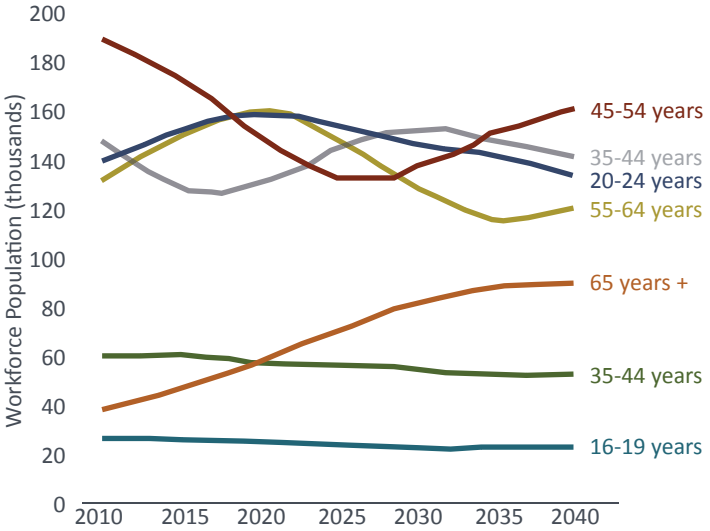
5% Population in the CEDS region that identify as a minority

18.5% Growth rate of minority population in the CEDS region from 2009-2011

Source: ACS 2008-2012

NH's Population is Aging

Projection of Employment By Age Group



*assumes that employment as a percent of NH workforce remains constant

Source: Federal Bureau of Labor Statistics NH OEP, NH Center for Public Policy, NPR

Economic Development: Findings & Trends

Employment & Job Growth

52,452
Jobs within the Strafford RPC Region in 2010

- **79%** Service Industry
- **13%** Goods-Producing Industries
- **7%** Self-Employed & Unpaid Family Workers

Source: NH Employment Security, 2013

Major Employers

University of New Hampshire
Liberty Mutual
City of Rochester Schools
City of Dover Municipal Services
Wentworth Douglas

*includes governmental jobs
Source: NH Employment Security, 2013

20% Projected increase in jobs from 2010-2020
Source: NH Employment Security, January 2013

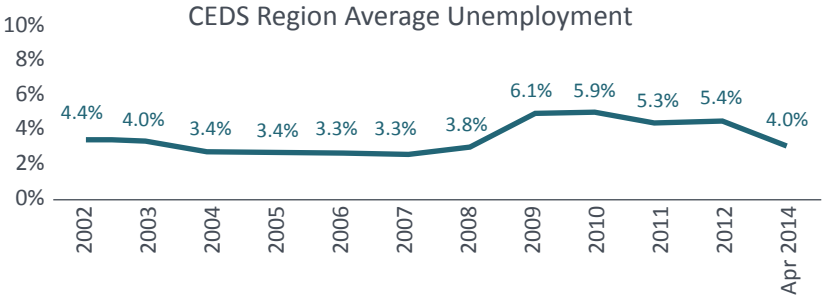
Areas of Distress in the Region

3 Economically distressed areas

12% Region's population living in an economically distressed census tracts in Durham and Rochester

Source: ACS, 2008-2012

Unemployment



Source: ACS, 2008-2012

Broadband

The total economic impact of broadband in NH was estimated at $634 million in 2010. In 2011, 11,000 net new jobs were created because of expanded broadband.

Source: Strafford Region Broadband Plan

CEDS Goals

Economic Development

Support the attraction, retention, and expansion of business, as well as capital investments and employment in the region.

Quality of Place

Improve the health and welfare of residents and workers in the areas of wealth generation, human health and wellbeing, educational attainment, recreation, social services, and environment.

Regional Collaboration

Provide opportunities for regional collaboration and leadership in economic development among businesses, communities, institutions, governments and other parties.

Infrastructure

Expand access to the critical regional infrastructure of banking and finance, transportation, utilities, water and wastewater, waste management.

Workforce & Entrepreneurial Development

Support development of education and training initiatives relevant to businesses in the region. Provide quality education and training for resident and employees of all ages and abilities.

Resource & Environment

Capitalize on built environment and natural resources through measures that protect, preserve, manage, and promote quality and an increasing diversity of resource usage.

Transportation: Executive Summary

Integrated Transportation Planning

To support a high quality of life in the region, transportation decisions should be integrated across all planning sectors, including land use, economic development, public health, and environmental planning. Performance measures and scenario planning are two tools that can support integrated transportation planning and assist the region with planning for a sustainable transportation system that meets the needs of current and future population, mitigates environmental impacts and hazards, and supports strong local, regional, and state economies.

Corridors

Efficient, congestion-free travel along major transportation corridors is an important element of quality of life in the region. Principal corridors in the region include: New Hampshire Routes 11, 16, 108, 125, and 155; US Route 202, which serves north-south traffic; and US Route 4, which serves east-west traffic. Interstate 95 provides access to Maine and Massachusetts.

Alternative Transportation

Reliable and affordable public transit is a significant asset and an issue of high importance to residents in the region. The region has the most comprehensive public transportation system in the state, with local and regional, fixed and on-call bus routes provided by bus operators (including C&J Trailways, Cooperative Alliance for Seacoast Transportation (COAST), and University of New Hampshire's Wildcat Transit and Campus Connector), and the Amtrak Downeaster line. These services provide access to Boston, Portland, Logan Airport, New York City, and other regional destinations. They are also critical to the accessibility of jobs, healthcare, education, and other services in the region.

COAST ridership has increased since 2000 at a rate that has outpaced that of vehicle miles traveled both in New Hampshire and the nation (Source: COAST, 2013). This trend has both direct and indirect impacts on the region's economy and contributes to a reduction in the environmental impacts associated with personal vehicles. UNH System Transit ridership nearly doubled between the 1999 and 2014 academic years, resulting in over 4.7 million fewer personal vehicle miles traveled (Source: UNH, 2014).

Bike & Pedestrian

The ability to reach a destination in a safe and enjoyable manner without a personal vehicle is essential to reducing both the environmental impacts associated with fossil fuels as well as mitigating public health impacts associated with poor air quality and lack of physical activity. Within the region, the presence of non-motorized mode facilities varies considerably from community to community. As of 2011, approximately 17% of workers in the region commute via alternative modes of transportation (walking, public transit, biking, carpooling), compared to 12% statewide (Source: ACS, 2011).

As walking and biking become more prevalent forms of transportation, there is a greater need for safe, convenient, and well-designed facilities. Planning tools such as smart growth and are available to communities to facilitate the design of walkable communities that meet the needs of individuals of all ages.

Safety

Safety is a critical element of transportation planning. In 2013 there were a total of 2,819 crashes in the region, representing a 14% decline since the ten year high in 2008 (Source: NH DOT, 2014).

Maintenance & Operations

Within the region, 75% of highways are rated in 'good' or fair condition. Out of the 149 listed bridges in the state, 8 are located in the Strafford region (Source: NH DOT, 2013). The cost of materials is an increasing financial burden at the local and state level. The cost of asphalt cement, for example, has increased by 460% statewide over the past two decades (Source: NH OEP, 2014; NH DOT, 2013). New technologies that reduce fuel requirements, such as "green" asphalt, may help reduce maintenance and operations costs as well as the environmental impacts of infrastructure (Source: US DOT, 2014, 2014).

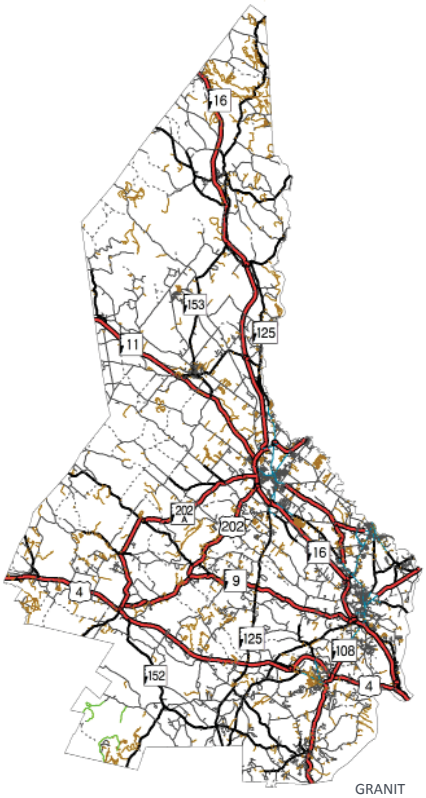
Freight

Multi-modal transportation is critical to a strong regional and state economy. In 2009, over 65.6 million tons of freight was shipped statewide via all modes of transportation (Source: NH DOT, 2012).

The capacity to efficiently ship freight is important to the long term viability and expansion of aerospace engineering and manufacturing, and other industry and business in the region. Between its proximity to ports in Portsmouth, NH, Boston, MA, and Portland, ME, commercial rail lines, Pease Tradeport, and Skyhaven Airport, the region is important to commerce in the state. Continued investment in this system is necessary to ensure that the region is attractive to emerging markets and opportunities that will bring jobs and revenue to the region.

Transportation: Findings & Trends

Roads



GRANIT

Road Legislative Class		Percent of Miles within Region
Class I	State	9.5%
Class II	State	9.2%
Class III	Recreation	7.1%
Class IV	State	1.8%
Class V	Local	49.5%
Class VI	Not Maintained	1.8%
Class 0	Private	22.4%

Total Miles = 1,875

State Highway Pavement Condition in the Region

85.4 miles	Good condition
186 miles	Fair condition
90 miles	Poor condition

75% of state highway roads in the region are in good or fair condition, compared to 60% statewide.

NH DOT 2011 Scorecard

8 Number of red listed bridges in the region (149 in state)

NH DOT 2011 Scorecard

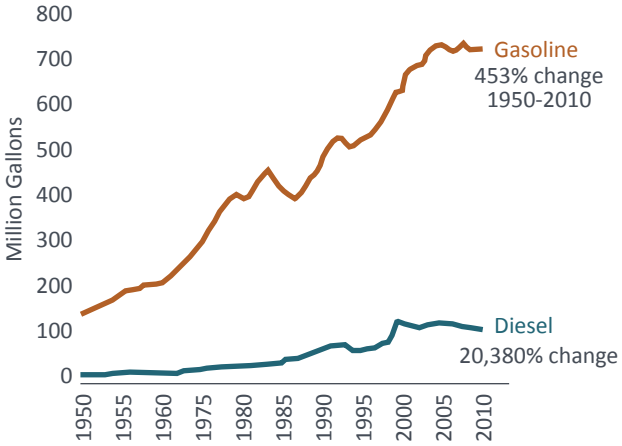
Fuel

$2.9 Billion

Dollars spent on transportation fuels in 2012 in New Hampshire that left the state

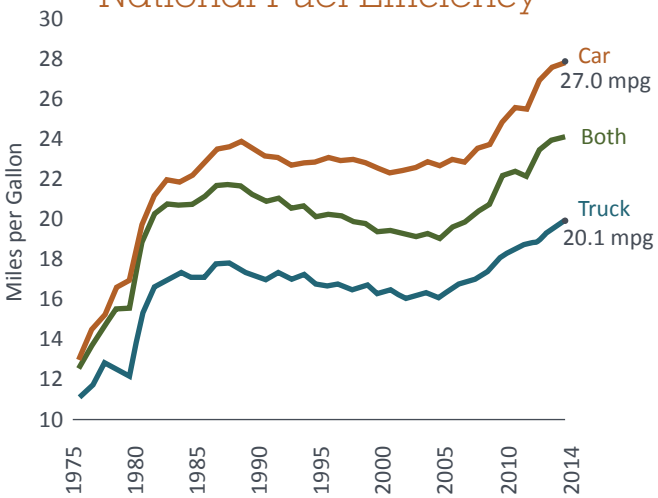
Vermont Energy Investment Corporation, 2013

NH Gasoline & Diesel Consumption



US DOT, June 25, 2012

National Fuel Efficiency



EPA, 2014

UNH Fleet

13% UNH's overall fleet that is hybrid or uses alternative fuel

16,479 gallons petrodiesel used in 2013

86,709 gallons B20 biodiesel used in 2013

40% UNH transit miles ran on compressed natural gas in 2013

840 Tons of CO_2 emissions avoided from 2000-2012 as a result of use of compressed natural gas

UNH, 2014

Transportation: Findings & Trends

Public Transportation

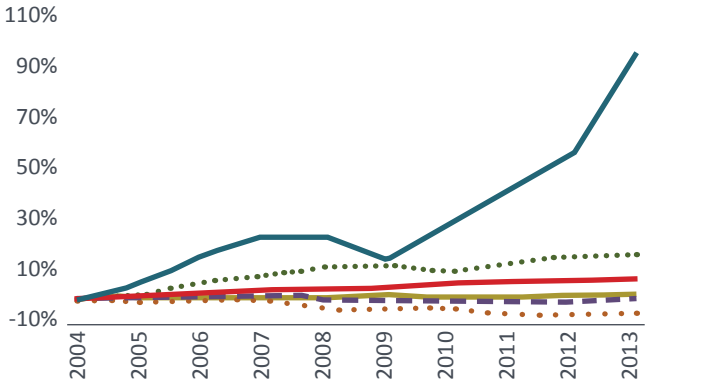
41.4% Population in the region served by local transit with access to multi-modal transportation (estimated 60,210 people) NH DOT 2011 Scorecard, 2010 census

17% Workers commuting via walking, public transportation, biking, and carpooling in the region (12.4% in state) ACS, 2011, 5 year estimate

495,393 UNH Transit service miles (2012) UNH, 2014

4.1 million Wildcat UNH System Transit vehicle miles traveled (2013-2014) UNH, 2014

Vehicle Miles Traveled, Population & Transit Passenger Mile Growth Rates



COAST, APTA, SRPC, NH OEP

Freight & Air

80 aircraft Based at Skyhaven Airport, which is owned and operated by the Pease Development Authority. NH DOT

66,677,213 tons Freight shipped statewide by all modes in 2009 NH DOT 2011 Scorecard, NHDOT 2011 Reporting

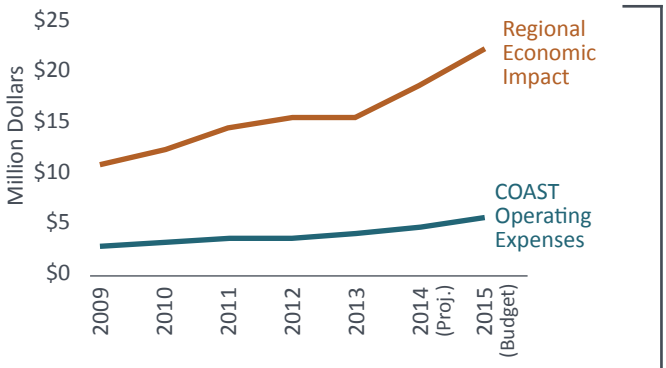
51.2 miles Number of miles of rail line capable of 40 mph in region (50% of rail line statewide) NH DOT 2011 Scorecard, GRANIT

Rails to Trails

67 Total rail trails statewide

536 Miles of trails statewide Rails to Trails Conservancy, 2014

COAST: FY09-FY15 Regional Economic Impact Estimates



Every $1 invested in public transportation generates $4 in economic returns

COAST, American Public Transportation Association

Public Transportation

117.6 miles Number of Miles served by transit in the region GSF Core Metrics, 2011

3,415,291 passengers Annual public transportation ridership in the state NH DOT 2011 Scorecard

Intercity Transportation

2,000 travelers/day Average daily C & J ridership from 2 service locations in the state: Dover and Portsmouth C& J Trailways

Passenger Rail

219,805 passengers 2013 Ridership at Amtrak Downeaster stops in state: Dover, Durham-UNH, and Exeter between Brunswick, ME and Boston, MA NH DOT, 2014

Air Quality

As of July 2013, all of NH is in attainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS), and currently operating under a 10-year Maintenance Plan.

27% Percent of greenhouse gas emissions attributed to transportation of major contributing sectors nationally (1,834 teragrams) EPA, 2010

Environment, Recreation & Land Use: Executive Summary

Natural Resource Management

Federal, state, and local policies and regulation shape the use and protection of natural resources in the state and region. The general intention of natural resource management is to protect human health and ecosystems and to ensure the long term sustainability of the culturally and economically valuable resources that enable a high quality of life.

Land Use Trends

Between 1998 and 2010, developed land in the region increased by over 30%, accounting for a total of 16% (or 57,152 acres) of the region in 2010 (Source: GRANIT). This increase in developed land has had a range of impacts on the natural environment, including declining water quality in the Great Bay Estuary, a significant natural asset in southern New Hampshire.

Land conservation helps to preserve key habitat, maintain productive soil, and protect forests, farms, and wetlands, and is a driver of high quality of life in the region.

Agriculture

One important resource is the state's farmland. Within the region, there is growing interest in locally-sourced food, support for small scale farming in the region, and desire for a more sustainable food system that relies less on chemicals and fossil fuels for production and distribution. While the region has experienced a decline in both farmland acreage and in the average farm size, the number of farms increased between 2007 and 2012 (Source: US Agricultural Census, 2007, 2012). Among some of the important elements of ensuring a strong agricultural system include: diversifying crops, supporting young farmers, ensuring residents and farmers have access to markets, and protecting prime soil and farmland.

Forests

Forestland accounts for a majority of the land use in the region. Over 42 thousand acres or approximately 12% of forests within the region, are protected (Source: GRANIT, CTAP). Between 1998 and 2010, forest land declined by 11%.

In addition to providing critical wildlife habitat, clean air and water, recreational opportunities, and carbon storage, forests provide timber, which is an important resource in the state. Two of the state's eight biomass power plant are located within the region, and 8% of the state's population rely on wood products as their primary source for home heating (Source: ACS, 2011).

Water Resources

The Strafford region is located adjacent to the Salmon Falls River along the Maine state border and north of the Great Bay Estuary. Additional major surface waters in the region include the Bellamy, Cocheco, Isinglass, Lamprey and Oyster Rivers (all tidal rivers), as well as a total of 54 great ponds or natural water bodies at least 10 acres. These bodies of water provide important wildlife habitat, recreational opportunities, drinking water, and fire aid. Reducing the amount of point and non-point sources of pollution that reaches water bodies is critical to sustainability in the region.

Economy

The viability of industries – ranging from tourism and outdoor recreation to fishing, forestry, and agriculture – that rely on natural resources is dependent on environmental quality. These activities generate significant local and state tax revenue and support thousands of jobs in the state. Protecting the integrity of natural resources also helps communities avoid the costs associated with environmental degradation and poor air and water quality, such as remediation, water purification, and healthcare for respiratory problems.

Future Environmental Quality

Balancing development and environmental protection has been and will continue to be a fundamental challenge for growing communities. Trends, including population growth, development patterns, funding for conservation, climate change, education about the value of natural resources, and the overall state of the economy, will continue to influence this balance. Changing state and federal regulations, voluntary efforts at the local level, and collaboration across jurisdictional boundaries will play roles in the future of environmental quality in the region.

Land Use Trends

Land Use

Land Use (2010)	Area (2010 Acres)	% of Total Area	% Change 1998-2010
Developed	57,152	16.4	32.4
Agriculture	12,787	3.7	-7.9
Forest	224,063	64.4	-11.4
Water	18,448	5.3	-3.5
Wetlands	27,728	8.0	277.1
Idle/Other Open Space	7,714	2.2	32.8

*change due in part to availability of better imagery

GRANIT

Forestry Resources

Since 1997, NH lost 148,000 acres of forestland to development and other land uses. The state is projected to lose an additional 288,000 acres of forest land by 2025.

NH DRED, 2010

50% Forest in the state comprised of Northern hardwoods including beech, birch, and maple

USDA Forest Service

80% Forest lands in the state under private ownership

NH DRED, 2010

Agriculture

2007-2012 Change in Farmland in Strafford, Carroll, and Rockingham Counties

-6% Loss of farmland acreage

-6% Loss of average size of farms

11% Increase in the number of farms

USDA Census of Agriculture, 2007, 2012

Local Markets

18 Community Supported Agriculture programs

11 Farmers Markets

9 Community Gardens

7 Christmas Tree Farms

3 Regional Greenhouses

Seacoast Eat Local, 2014

Productive Soils

97,686 Total acres of productive soils in the region

13% Conserved productive soils

NRCS SSURGO, 2010

Water Resources

Major Watersheds

Cocheco
Salmon Falls
Lamprey
Great Bay Drainage

Designated Rivers

Cocheco (2009)
Isinglass (2002)
Lamprey (1990, 2011)
Oyster (2011)

Major Rivers

Bellamy
Cocheco
Isinglass
Lamprey
Oyster

Aquifers

Stratified drift aquifers underly 30% of the region

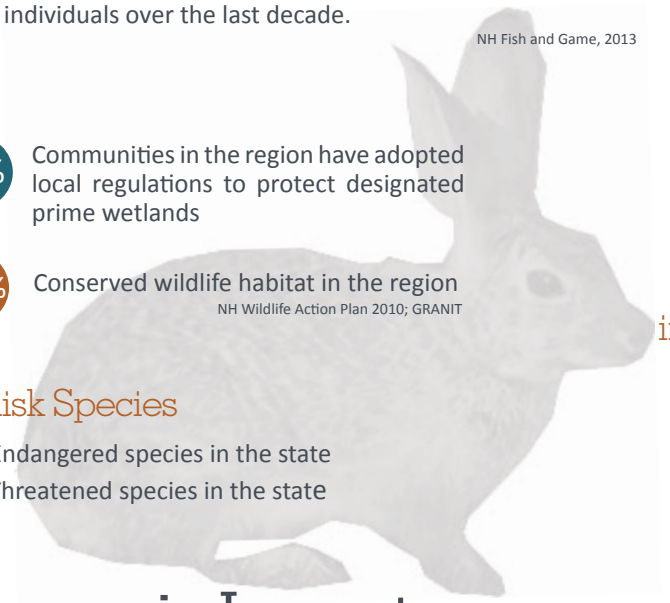
GRANIT

54 Great Ponds

Wildlife & Habitat

New Hampshire's moose population has declined from 7,000 to 4,400 individuals over the last decade.

NH Fish and Game, 2013



28% Communities in the region have adopted local regulations to protect designated prime wetlands

7.8% Conserved wildlife habitat in the region

NH Wildlife Action Plan 2010; GRANIT

At Risk Species

11 Endangered species in the state

13 Threatened species in the state

Invasive Species

338 Identified invasive species in Strafford County

Source: NH DAMF

12 of 19 Habitat Types in the state are present in the Region

- Appalachian Oak - Pine Forest
- Cliffs
- Coastal Islands
- Floodplain Forests
- Grasslands
- Hemlock - Hardwood - Pine Forest
- Lowland Spruce - Fir Forest
- Northern Hardwood - Conifer Forest
- Peatlands
- Rocky Ridges and Talus Slopes
- Salt Marsh

Source: NH Wildlife Action Plan 2010

Economic Impact

Conservation Land

- A 2014 study found that in 11 New Hampshire municipalities, local farms, forests, and other conserved lands cost $0.56 of every $1 in taxes paid, while residential lands cost an average of $1.12 in services

Trust for Public Land, 2014

- Every $1 invested in conserving land returns $11 in economic value from natural goods and services

Trust for Public Land, 2014

Natural Resource Industries

$2.5 billion Generated annually by forestry, agriculture, commercial fishing, and related processing activities industries in New Hampshire

$1.7 billion Generated annually by the state's forest product industry in New Hampshire

18,500 jobs Jobs supported by forestry, agriculture, and fisheries industries in New Hampshire

Source: Trust for Public Land, 2014

Health

- Healthcare costs related to obesity are estimated to reach between $1.1 and $2.3 billion by 2018 in New Hampshire

Source: Trust for Public Land, 2014

- Access to healthy outdoor environments is important for the physical activity and human health and can help reduce costs associated with obesity

Recreation, Culture, and Tourism

$4 billion Generated annually from outdoor recreation retail sales and services in NH

$500 million Contributed annually to the state economy by state park visitors

53,000 jobs Supported by outdoor recreation in NH

Source: NH Division of Parks and Recreation

80% Residents in the that participate in outdoor recreation activities

$4.2 billion Consumer spending on outdoor recreation activities by out of state residents

$293 million Local tax revenues generated by outdoor activities

$1.2 billion Wages and salaries associated with outdoor activities in the state

Source: Trust for Public Land

Agriculture

$1 million Agricultural market contribution to state economy in 2007 from Strafford, Carroll, and Rockingham Counties

Source: USDA Census of Agriculture 2007

Energy Efficiency: Executive Summary

Sources of Energy

Reliable sources of energy are critical for the economic stability of communities and quality of life for all residents. New Hampshire generates electricity from a wide range of sources including hydroelectric dams, natural gas, and the Seabrook Nuclear Station. Most of this is exported to a regional pool of electricity that serves New England.

Numerous factors affect the generation, distribution, and cost of energy. While municipalities do not have significant influence over the mix of energy available to them through energy providers, at the household or business level, energy efficient appliances and alternative sources of energy – such as solar or wind – can reduce energy demand on the grid, consumption, and long term cost. As a result, individuals and communities also reduce greenhouse gas emissions and impacts to local air quality while contributing to state renewable energy goals.

Energy Cost

A total of over $5.8 billion was spent on energy in the state in 2012 in the transportation (50%), residential (26%), commercial (17%), and industrial (8%) sectors. Approximately 65% of dollars spend on energy leave the state to pay for imported fuels (Source: VEIC, 2013).

Heating, electricity, and transportation energy costs represent a substantial portion of household budgets and can be a significant burden for low-income households in the region. In 2010, the average households spend an estimated $2,816 on residential energy. New Hampshire households at or below the poverty line incur energy costs as great as 30-60% of their total income (Source: Fisher, Sheehan & Colton, 2014).

Energy Efficiency

Improved energy efficiency practices and alternative energy technology enable more municipalities, businesses, and homeowners to reduce their energy costs and the environmental impacts associated with burning non-renewable fuels. Many municipalities in the region have reduced their energy bills by switching to more efficient infrastructure such as street lighting and wastewater treatment equipment. Investing in on-site energy generation and efficiency has resulted in a rapid return on investment for many local businesses. These efforts are supported by several federal and state assistance programs.

Improving energy efficiency and reducing energy consumption can be achieved in all sectors, at a range of scales, and is necessary to reducing greenhouse gas emissions. Within the transportation sector, there is significant opportunity to reduce energy consumption through public transportation and fuel efficient vehicles.

As of 2013, there were 70 LEED certified residential buildings in the state. The region has taken progressive steps with regard to increasing efficiency and reducing fossil fuel consumption. Within the region, there are a number of green buildings and 7 LEED certified buildings. Durham was the first municipality in the nation to adopt the 2012 International Energy Conservation code and the University of New Hampshire was the first university to use land fill gas as its primary fuel source.

Energy efficiency will become increasingly important as the region grows and develops, and as warmer summer temperatures increase demand for air conditioning.

GHG Reduction

Reducing greenhouse gas (GHG) emissions is strategy to mitigate the severity of future climate change and is a critical component of protecting air quality and human health. Emissions of carbon dioxide and other GHGs directly affect regional concentrations of ground level ozone, one of the leading drivers of asthma.

Within the state, a total of 25.34 million metric tons of carbon dioxide were emitted in 2012. This is projected to increase to 42.95 million metric tons per year by 2050 (Source: NH DES, 2009).

Planning for Sustainability

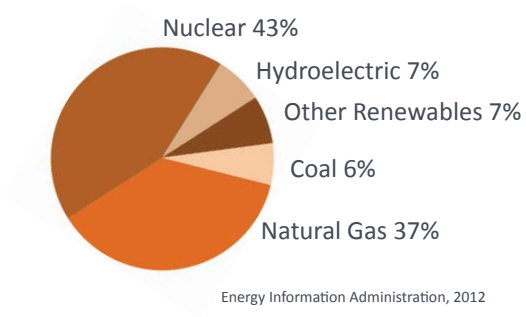
Distributed or decentralized energy distribution systems are one model that can increase resiliency by reducing dependency and load burden on conventional systems through regionally interconnected, small energy generators. Such a model may reduce the impacts associated with supply and distribution for households, businesses, and communities.

Long term planning and design considerations for homes and buildings as well as infrastructure facilities and systems should aim to reduce fossil fuel consumption. Communities and individuals may realize energy savings by investing in alternative energy sources now.

Energy Efficiency: Findings & Trends

Power Source

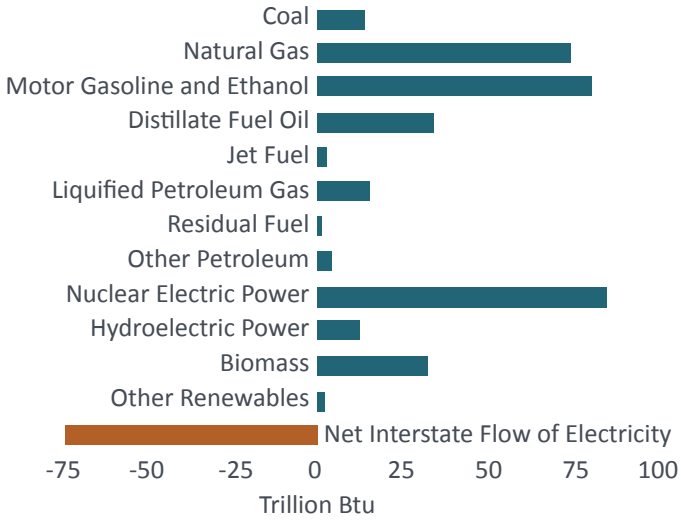
New Hampshire Power Generation by Source (2012)



Energy Information Administration, 2012

Consumption

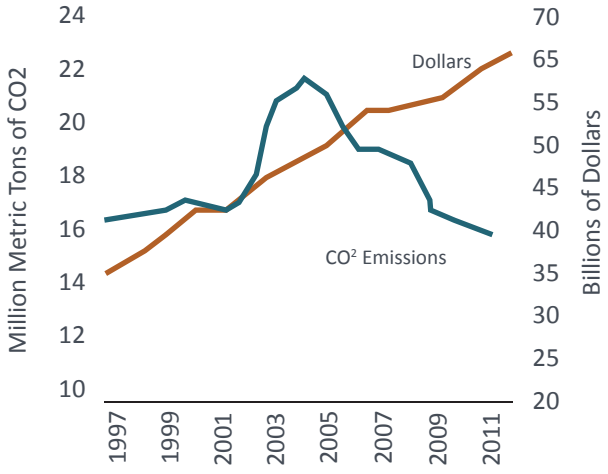
2012 New Hampshire Energy Consumption Estimates



Energy Information Administration, State Energy Data System

Greenhouse Gas Emissions

Carbon Emissions vs. Gross State Product



Bureau of Economic Analysis

New Hampshire is a member of the Regional Greenhouse Gas Initiative (RGGI), a model effort to reduce greenhouse gases at the regional level. New England states lead the country in effective planning and programs to reduce carbon emissions. Efforts like RGGI promote innovations that open new business opportunities and revenue while reducing environmental impacts.

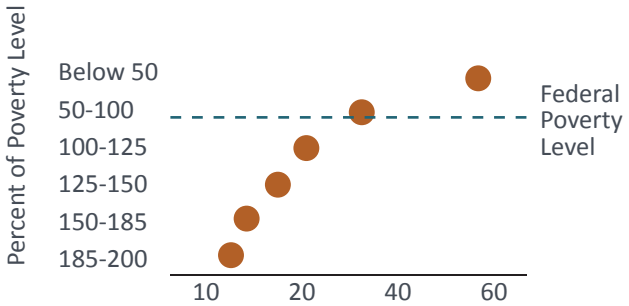
Cost of Energy

$6 Billion

Dollars spent on energy in New Hampshire

Energy Information Administration, 2012

Percent of household income spent on energy relative to poverty level



(Fisher, Sheehan & Colton, 2014)

Energy Efficiency: Findings & Trends

Transportation

$2.9 Billion Dollars spent on transportation fuels in 2012 in New Hampshire that left the state

Energy Information Administration, 2012

Trends

- ↑ Increase in fuel efficiency standards for light-duty vehicles
- ↑ Increase in fuel prices
- ↑ Increase in number of vehicle miles traveled (VMT)

NH OEP

9,926 average miles driven per capita in New Hampshire in 2010

Federal Highway Administration, 2013

Public transportation can result in a wide range of regional and community benefits:

- ↓ Traffic congestion
- ↓ Emissions
- ↓ Vehicle miles traveled
- ↓ Energy cost for individuals
- ↑ Public health

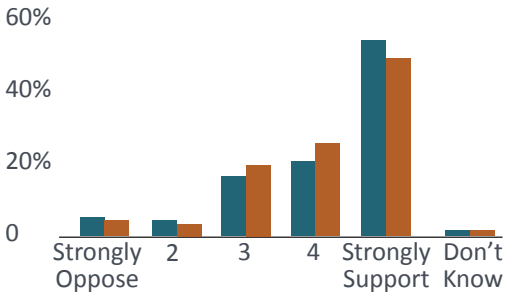
Energy Efficiency

Impacts of achieving the maximum, cost-effective energy efficiency improvement to buildings statewide:

210%	Return on investment
$195 million	Annual savings to business owners
$2.9 billion	Total savings from reduced energy use
2,300	In-state jobs created
$160 million	Added to GDP annually

VEIC, 2013

Statewide Survey Results



Support for higher energy standards for new buildings

Support for expanding incentives for home energy efficiency improvements

Granite State Future Survey, 2011

Renewable Energy

541 kw potential electricity provided by photovoltaic solar panels in the region

As of June 2014, the Open PV Project had logged 72 photovoltaic installations throughout the Strafford region with a range of capacity:

National Renewable Energy Laboratory

1-7 kw	residential panels
29 kw	generated for municipal buildings in Durham
140 kw	capacity panels at Favorite Foods in Somersworth

National Renewable Energy Laboratory

Communities in the region with solar, wind, and biomass energy tax exemptions

Barrington	x	x	
Durham	x		
Farmington	x	x	x
New Durham	x		
Newmarket	x	x	x
Northwood	x	x	x
Rochester	x		
Wakefield	x	x	x

NH OEP

Climate Change: Executive Summary

Projections of Change

The earth's climate has changed and will continue to change. Regional projections of climate change include increased: seasonal temperatures; frequency and duration of heat waves; precipitation; extreme precipitation events; drought; sea level rise; coastal flooding; sea surface temperature; and growing season, as well as decreased snow and ice cover (Source: Wake et al., 2011, 2014).

The rate at which climate will continue to change is dependent on a number of factors including: population growth, peak, and decline; economic growth and associated fossil fuel use; adoption of less fossil-fuel industries and cleaner, more efficient technologies; and carbon dioxide concentrations in the atmosphere. High and low emissions scenarios are used in climate change projections to account for this uncertainty.

Climate change will have widespread impacts on people, the economy, and the built and natural environments within the region. While the impacts of climate change on individuals and communities will vary in magnitude and scope, the overall effect of climate change on quality of life will be negative.

Infrastructure Impacts

The projected increase in precipitation and extreme precipitation events, in particular, pose a threat to the built environment. Climate change will increase the risk of flooding of buildings and infrastructure located in proximity to streams, rivers, and the coast. In many instances, existing infrastructure may not have the capacity to handle greater volumes of water. Coastal communities will face the added challenge of coping with sea level rise and storm surge.

Human Health & Well-Being

Temperature, extreme weather events, reduced air quality, and an increase in vector-borne diseases may impact the health of residents in the region and result in increased heath care costs. Factors including age, socioeconomic status, and existing health conditions contribute to vulnerability of the region's population.

Environmental Impacts

Changes in precipitation and temperature impact the natural systems and ecological functions that sustain quality of life in the region. Temperature and precipitation change will lead to greater volumes of pollutant containing stormwater runoff entering the region's streams and rivers. This will impact drinking water quality, aquatic biota, and recreation opportunities. As the climate warms, species will continue to shift north, resulting in a change of forest composition and habitat.

Cultural and Economic Impacts

There will likely be significant economic implications associated with adapting to, coping with, and recovering from the impacts of severe storm events. This may strain already tight municipal budgets as well as potentially divert funding away from important projects. Climate change is also expected to have impacts on culturally and economically significant resources, including maple syrup production, as well as on the tourism and winter recreation industries. Additionally, individuals may also be affected by increased insurance rates and higher air conditioning costs. Coping with changes to the norm, the uncertainty of future climate change impacts, and identifying the best adaptation strategies to invest in can be an added stress on individuals and municipalities

Adaptation Planning

Adaptation strategies are inherently local or regional in nature because anticipated changes in climate vary by region and because the impacts of those changes are dependent on vulnerability and the specific character of the population, built environment, and ecosystem of a place. Communities in New Hampshire have the opportunity and authority to adopt local action plans and adaptation measures to address issues that are of particular local concern.

Planning and preparedness is essential to minimizing the impacts of climate change. There are a range of adaptation strategies at the individual, community, and regional level to increase resiliency to climate change. Integrating climate change planning into existing planning documents is a key aspect of adaptation planning. Increasing awareness of health implications, expanding access to resources, identifying at risk infrastructure, and enhancing existing emergency preparation and planning and stormwater management efforts will be important to minimizing risks to people, and the build and natural environments.

Communities in the region are already implementing a range of adaptation strategies that enhance quality of life and reduce risk associated with climate change. Pairing adaptation and climate change mitigation efforts can be an effective and resource-efficient strategy to increase resilience and mitigate future climate change.

Climate Change: Findings & Trends

1.3 to 1.7°F increase in mean annual temperature since 1970; 4.5-9.0°F increase in annual max. and min. temperatures over next 100 years

Frumhoff et al., 2007

Increase in temperature, frequency, intensity, and duration of heat waves; up to approximately 22 more extremely hot days (over 95°F) per year

Wake et al., 2014

Increase in frequency of short and medium-term seasonal droughts

Wake et al., 2014

Four fold increase in annual sea temperature from 1970-2008 compared to the 1887-2008 trend

Wake et al., 2011

Change in river flow; increase in annual discharge from the Lamprey and Oyster Rivers since data collection initiated in 1935

Wake et al., 2014

Warming of winter temperatures and decrease in winter snowcover; As much as 53 fewer snow-covered days by 2100

Wake et al., 2014

Increase in frequency of heavy rainfalls and increase in annual mean precipitation up to 8.8" by the end of the century

Wake et al., 2014

Increase in sea level of up to 1.7—6.3' by 2100; 100 year flood still water elevations will range from 9.4-12.9' by 2050 and 10.9-17.5' by 2100

Wake et al., 2011

Earlier lake ice-out date ranging from 0.4 –1.6 days/decade earlier between 1887 and 2010

Wake et al., 2011

Increase in growing season by 12-42 days since 1960; northward shift in USDA plant hardiness zones between 1990-2006

Wake et al., 2011; USDA, 2014

Impacts

↑ Increased threat of Invasive species
Wake et al., 2011

↑ Northward shift in forest species
US Global Change Research Program, 2009

↓ Decline of maple syrup industry
NH DES, 2008

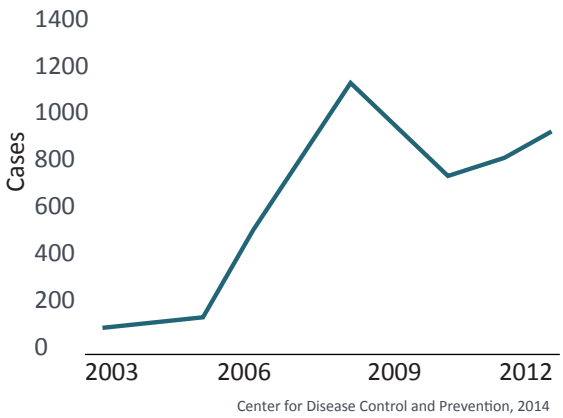
↓ Decreased air and water quality
Wake et al., 2014

7% Short-term lengthening in growing season under high and low emissions scenarios

30% Long-term lengthening in growing season under high emissions scenario

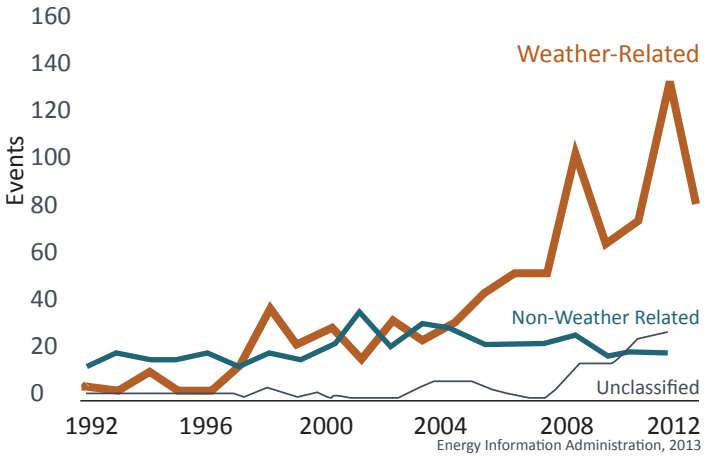
Wake et al., 2014

The number of reported cases of Lyme's Disease in New Hampshire has increased.



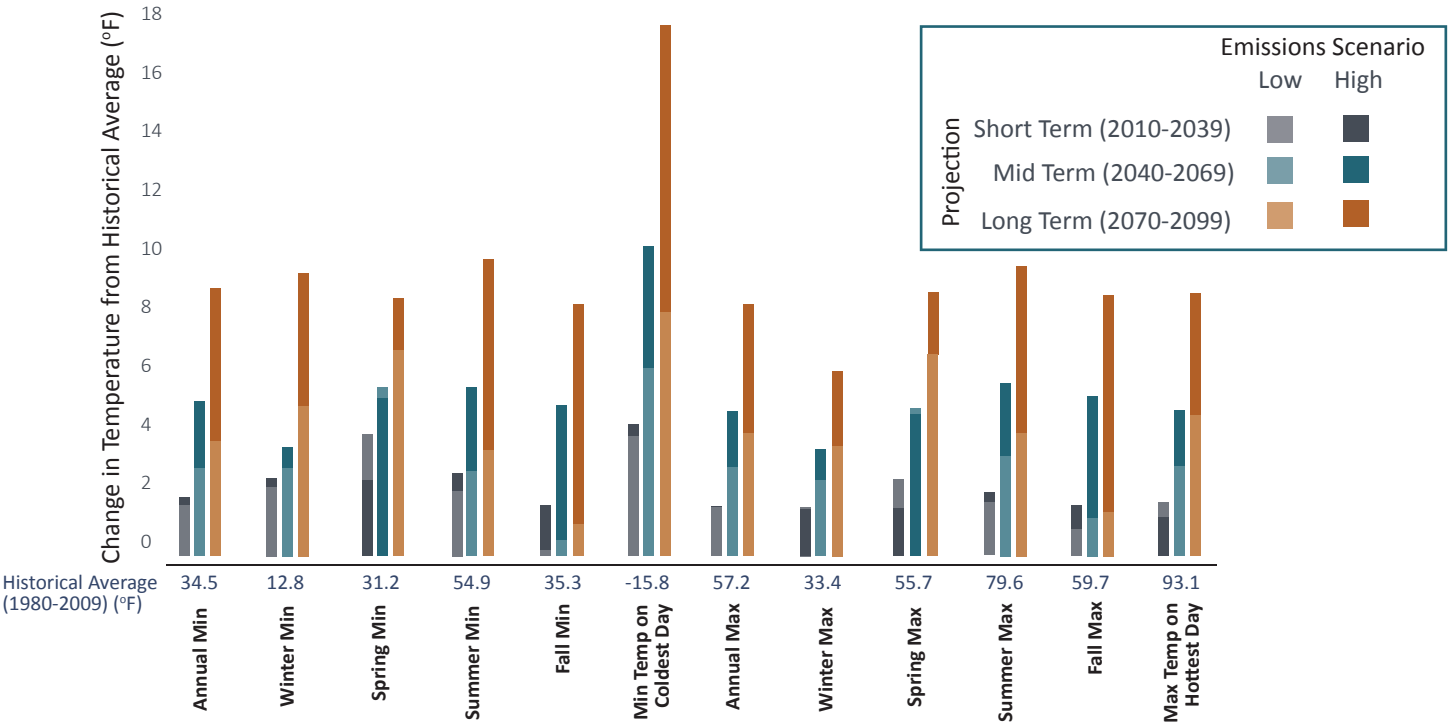
Center for Disease Control and Prevention, 2014

Observed weather-related outages to the bulk electric system have increased.



Energy Information Administration, 2013

Climate Change: Findings & Trends



Short term, mid -century, and end-of -century temperature projections under high and low emissions scenarios in Southern New Hampshire

Wake et al., 2011

Adaptation

Climate change adaptation is action taken to avoid and minimize negative impacts and take advantage of positive impacts of a changing and increasingly variable climate. Adaptation includes changes in processes, practices, and structures to reduce potential damages associated with climate change.

Example Adaptation Strategies

- Create vulnerability maps that identify vulnerable assets, resources, and populations
- Conduct a municipal audit to identify barriers and incentives to implementing climate change planning and adaptation at the local level
- Integrate climate change planning into regional and local plans
- Continue and expand efforts to manage stormwater pollutant loading in the Great Bay watershed
- Utilize best available precipitation, floodplain, and temperature data when modifying culverts, building codes or design standards
- Ensure Hazard Mitigation Plans address risks associated with climate change
- Educate the public about health risks associated with heat, extreme weather events, and increase in vector-borne diseases
- Protect sensitive and vulnerable species and habitats; conserve areas for habitat expansion; increase removal and eradication efforts of pests and diseases
- Modify farming practices including crop varieties and timing of field operations to cope with changes in temperature and precipitation
- Reduce impervious surface cover to minimize flooding and reduce water quality impairment associated with heavy rainfall

Emergency Management: Executive Summary

Interconnected Planning Areas

Three planning areas that are critical to emergency management include power, water, and transportation. This infrastructure network, along with a well-developed communication system, allows municipal systems to continue to operate during an emergency.

Factors including: the interdependence of these infrastructure systems; the range of scales at which planning and operation of these systems occurs; and the diversity of stakeholders responsible for the management of these systems necessitate that local emergency management occurs within a regional context.

Power

There are four primary utility providers in the region, the largest of which is Public Service Company of New Hampshire. The power grid is an interconnected network that delivers electricity from suppliers to consumers. Loss of continuity from the generator to the end user results in power outages. When outages occur, the amount of time it takes to return power to residents in a community varies depending on the extent of disturbance and the critical facilities impacted. Municipalities, businesses, and public health professionals can take steps to minimize risks to residents during outages.

Transportation

Clearly identified evacuation routes are an important component of emergency planning. Many, but not all, communities in the region have identified local evacuation routes. The absence of a regional evacuation plan and the lack of standardized, accessible route signage would likely be a significant barrier to effective and efficient regional evacuation in an emergency. In the event of an evacuation, access to public transportation is critical to ensuring the safety and wellbeing of individuals without vehicles.

Transportation infrastructure is linked to emergency management. Public rights-of-way are a critical component of emergency response and hazard prevention because they provide access to utility infrastructure. Hazardous material transportation regulations serve to minimize risks to public health and the environment and are a component of emergency management and prevention.

Water

Drinking water and wastewater utilities are vulnerable to threats such as natural disasters or human caused incidents that impact normal operations. These disruptions may have diverse impacts on communities, ranging from reduced water for firefighting, sanitation, and health care operations to contaminated drinking water (Source: EPA, 2012).

Planning for an emergency drinking water supply is an important part of local emergency management as power damage to critical water infrastructure, power interruptions, droughts, or contamination can impact the availability of drinking water supplies.

Education

Local officials, staff, and the public can benefit from education about emergency response procedures and resources. Education related to emergency management ranges from safety awareness during power outages to familiarization with FEMA reimbursement processes and completion of emergency management classes and courses. Ensuring residents know how to care for themselves and where to turn in an emergency increases sense of safety and may facilitate more efficient response.

Preparedness & Coordination

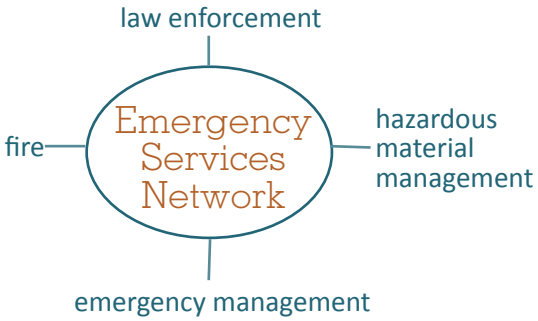
Emergency preparedness may reduce risks, cost to respond, damage to public and private infrastructure, impacts to public health and environmental quality, and the cost to return to 'normal'. Diverse aspects of preparedness may include: designation and identification of evacuation routes; creation of a personal emergency kit; ensuring that back-up generators have fuel; and establishing and implementing new design standards for culverts.

Pre-disaster, coordinated discussions about transportation, water, power, and public health planning can minimize the impacts during power outages and emergency events, and reduce costs associated with response and recovery.

Strengthening local coordination is a key to minimizing the impacts to the health and well-being of individuals – as well as the infrastructure and economy of communities – in an emergency and disaster event. Strategies to increase resiliency before, during, and after emergencies include: hazard mitigation planning; use of alternative energy; and incorporation of best available scientific data when determining design standards for infrastructure.

Emergency Management: Findings & Trends

Communication



Emergency Alert System

Operated by the State Emergency Communications Community

3 points

- BEM Communications
- New Hampshire State Police Communications
- National Weather Service Office in Gray, Maine

NH HSEM

Power

Energy Generation and Capacity

60 Power generators in the state

6 Power generators in the region

4 Primary utilities in the state

NH HSEM

21% Energy supplies that come from renewable sources

PSNH

55% Of the state's total electricity generation provided by the Seabrook nuclear facility in 2013

Public Utilities Commission

70% Of the state served by Public Service Company of New Hampshire

Public Utilities Commission

↓ In-state power generation for the electric sector has declined over the last 10 years as use of coal as an energy source has diminished

OEP, 2014

↓ Total capacity projected to decline slightly over the next ten years in New England

ISO New England, 2014

NH Summary Energy Statistics

	Amount
Total Energy Consumption Per Capita[t]	215 million BTU
Total Energy Expenditures Per Capita[t]	$4,447
Production[t]	128 trillion BTU
Total Net Electricity Generation*	992 thousand MWh
Price National Gas*	$16.83/thousand ft^3
Price Electricity*	$0.01754 kWh

EIA, [t]2012 and *April 2014

Major Power Transmission & Telephone Lines in the Region

Power Transmission Line
Telephone Line

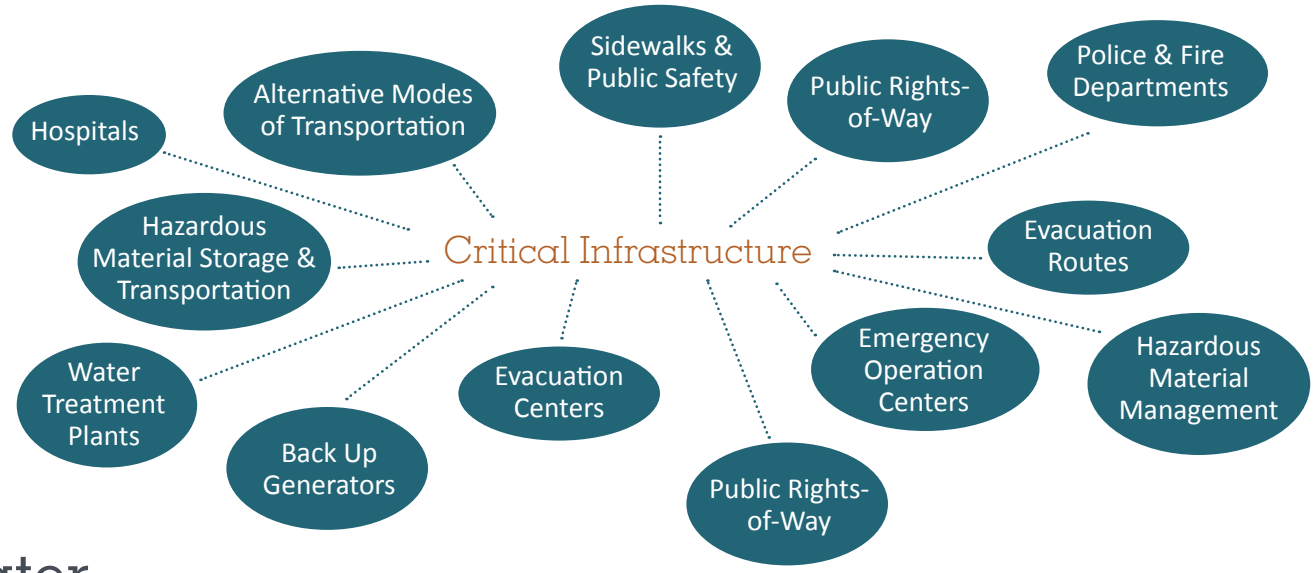
GRANIT

Power Outage Risk Management

- Identify evacuation routes, emergency shelters and the extent of financial or logistical municipal assistance with evacuation
- Establish emergency communications, alert systems, and operation centers
- Identify and prioritize power-dependent functions, operations and equipment
- Provide guidance on developing emergency kits
- Identify backup power at critical facilities, including water treatment facilities, police and fire stations, emergency shelters, and telecommunication facilities
- Post links to utility outage maps and updates on website
- Provide public education about emergency procedures, risks, resources, and preparedness, including creating emergency kits
- Establish arrangements with neighboring communities, such as individuals to contact

Emergency Management Ontario

Transportation & Infrastructure



Water

Community water systems serving > 3,300 people are required to have an emergency response plan and should coordinate with existing Local Emergency Planning Committees established under the Emergency Planning and Community Right-to-Know Act when preparing this plan.

EPA, 2011

Sources of Emergency Potable Water

- Water from neighboring water utility
- Bottled water
- Locally produced (packaged)pre-treated water

Hazard Mitigation Planning

Between July 1953 and August 2013 NH had:

12 Federal emergency declarations

34 Major disaster declarations

FEMA, 2014

Emergency Management Strategies

- Monitor electricity load to reduce outages
- Maintain or removing threatening dams
- Regulate water and wastewater treatment
- Regulate the transportation of hazardous materials
- Adopt best management practices for roadway maintenance
- Identify and educating the public about evacuation routes
- Establish diverse communication strategies

Water Utility Emergency Preparedness Planning includes:

- Vulnerability to reasonably expected events
- Number of people affected for the duration of an event
- Point when local capacity to respond would be exhausted
- Most feasible potable water alternatives for the event
- Resources needed from others
- Communication process for requesting resources from others
- Implementation of the delivery of needed resources

EPA, 2012

Homeowners should regularly test wells for radon and arsenic, which are naturally occurring and harmful contaminants in New Hampshire's groundwater.

Local hazard mitigation plans identify critical fire aid infrastructure: water bodies, cisterns, towers, dry hydrants, and wells.

Building Resilience to Flood Hazards

- Promote effective land use planning based on identified hazards
- Adopt and enforce building codes and standards
- Buy flood insurance to protect personal property and belongings
- Secure shelves and water heaters to walls
- Elevate structures above the floodplain
- Retrofit structures to withstand earthquakes
- Acquire and demolish flood prone structures
- Replace culvert damaged by flooding to increase capacity to prevent future damage

NH SHEM

Integration Matrix

opportunity | challenge | best practice

	Economic Development	Housing	Energy Efficiency	Transportation	Water Infrastructure	Environment	Climate Change	Fair Housing Equity Assessment
Economic Development		The region is losing working-age families. It is important for municipalities to develop affordable and attractive housing options for working-age families	SRPC works with local business stakeholders to invest in energy efficiency improvements that will retain local dollars in the community.	Broadband expansion could help boost local economic development. Implementation of the broadband plan will require collaboration between utilities and NHDOT for access to poles and wires, and rights-of-way.	SRPC assists the business community in developing and adopting local LID standards.	SRPC continues to engage municipalities in land conservation. Preserving open space protects natural resources and limits the cost of local services.	Resilience is critical for local economic stability. SRPC supports local efforts that adapt and build resilience.	Affordable/workforce housing planning includes collaboration with local business communities to ensure employment and housing are linked.
Housing	The region's population is aging, and balancing housing needs of residents aged 65+ while attracting wage-earning families will be a challenge.		Focusing development in existing urbanized areas will allow more residents and business to take advantage of alternative energy sources.	Conventional housing and transportation practices should be adapted to reduce sprawl and increase access to local services.	Septic systems contribute significantly to degradation of the region's rivers, streams, and the Great Bay. Local leadership is critical for promoting BMPs for homeowners with septic systems.	Municipalities have a leadership role in promoting low impact development practices, and working closely with developers to reduce impacts.	SRPC supports municipalities investing in LEED certification for new and existing buildings.	Housing is an opportunity for communities to practice smart growth, sustain traditional NH village development patterns and offer high-quality housing that increases quality of life for everyone.
Energy Efficiency and Green Building	End-user energy efficiency means reduced revenue for utility companies. SRPC can help facilitate collaboration with utilities to develop financial alternatives like "decoupling".	Population growth is increasing housing demand, which will also increase residential energy demand. Improving energy efficiency will enable population growth and control costs.		Public transportation reduces cost of living and greenhouse gas emissions. Expanding public transportation allows low-income residents greater opportunities to access jobs and increase their quality of life.	Wastewater treatment technology has great potential for energy recovery (e.g. heat capture, methane generation, hydroelectric).	The process for siting alternative energy technology (e.g. wind turbines) involves relevant stakeholders from the beginning.	Efforts to improve energy efficiency and mitigate climate change are mutually beneficial. Energy efficiency reduces costs now, and mitigates climate change costs in the future.	SRPC supports communities agencies and communities who build affordable and energy efficient housing.
Transportation	Existing roads and power lines are important conduits for new technologies such as high-speed internet.	Surveys suggest Strafford residents favor development near urbanized areas. This approach locates people closer to services and reduces municipal costs related to road maintenance.	Investing in energy efficient municipal infrastructure (e.g. street and traffic lighting) has potential for municipal cost savings.		SRPC facilitates partnerships and identifies resources for transportation projects that reduce impact to water resources.	Roads are a large portion of impervious cover and source of non-point source pollution. Treating stormwater on-site is an effective way to protect ecosystem health and water quality.	Transportation planning that incorporates climate change to prevent future damage to infrastructure and control rising costs from storm damage is a mitigation strategy.	SRPC helps identify resources for linking affordable housing and public transportation development.
Water Infrastructure	Protecting local drinking water sources will require collaboration between municipalities and local business communities.	Promoting low impact development practices for new housing development can increase property values and aesthetics, and protect clean water.	Waste water and drinking water plants should continue to find ways to increase energy efficiency.	Stormwater has a direct impact on local and state roads. It is unclear how current stormwater infrastructure (e.g. culverts) will handle increased stormwater loads.		SRPC promotes best management practices for agriculture: open space preservation and reducing impacts to water resources.	Increased precipitation is one of the primary concerns for water infrastructure management (e.g. towns with "high hazard" dams) .	Collaboration between affordable housing organizations and stormwater management groups promotes stormwater best management practices.
Environment	SRPC will support communities in redeveloping brownfields for commercial or industrial use through NH Brownfields program.	Conventional development practices increase sprawl. Migration toward urban centers, is an opportunity for preserving rural open space.	Ensuring the health of environmental resources and ecosystem services for future generations will require finding ways to be more efficient with our energy use.	Tourism is a critical part of natural resources protection. A resilient rural road network brings tourism dollars to the community level.	Responsible wastewater treatment is critical for protecting clean water for drinking, fishing, and recreation.		Community resilience will depend heavily on the health of natural areas to act as buffers (e.g. wetlands for ground/surface water recharge and carbon sequestration).	Well insulated homes are an effective way to reduce home energy use and carbon emissions from power generation.
Climate Change	Without adaptation, businesses and municipalities will spend budgets on recovery. Vulnerability assessments and hazard mitigation plans are essential for investing municipal funds for preparedness wisely.	Sustainable development practices that incorporate resilience principals are critical for maintaining property values and protecting homeowners from regional climate impacts.	Rising temperatures and more damaging storms will have a greater impact on energy transmission infrastructure (e.g. power lines). This will result in higher consumer costs.	Reducing vehicle miles traveled and emissions in the transportation sector presents one of the greatest opportunities to mitigate climate change.	Are waste and drinking water plants prepared for increased frequency of storms? Have we analyzed how changing precipitation patterns will affect water supplies and treatment?	Mitigating climate change is critical for protecting natural resources in the future.		GIS is a critical climate change adaptation tool that can be used to identify vulnerability.
Fair Housing Equity Assessment	Reducing energy costs and increasing access to resources and local jobs for low income residents keeps spending local and increases cash flow.	SRPC will encourage and support communities in developing a range of housing types (accommodate aging population and attract working families).	Energy efficiency standards for new development and improvements to existing structures are critical for equity in quality of life.	Considering access to transportation for jobs and essential services is a critical part of affordable housing development.	New affordable housing should incorporate a low cost of living with environmental best management practices, such as low impact development.	Brownfields and existing lots in urban areas present opportunities to develop affordable housing close to jobs and transportation, and reduce sprawl.	Low income populations are extremely vulnerable to climate change - from direct impacts and rising cost of living. Quality affordable housing is important for increasing the resilience of vulnerable populations.	

Figure 15. Technical Appendix integration matrix

Nottingham, NH

Photo credit: Kyle Pimental

Implementation

The implementation table contains strategies Strafford Regional Planning Commission will take to support community planning and sustainability within the region. These strategies are organized by planning area or Technical Appendix topic as well as by one of the four broad categories of support Strafford Regional Planning Commission provides: education and outreach, data, technical assistance, and partner.

Implementation

Implementation Process

Local Solutions is a vision and resource for the eighteen communities within the Strafford region. The findings of this plan reflect the 'advisory only' role of Regional Planning Commissions under RSA 36:45, which outlines the Purpose of Commissions and specifically, the preparation of a "coordinated plan for the development of the region, taking into account the present and future needs with a view towards encouraging the most appropriate use of land". The RSA further defines the role of the comprehensive plan as that which promotes the "health, safety, morals, and general welfare of the region and its inhabitants" Regional Planning Commissions are also asked to "render assistance on local planning problems" and "make recommendations on the basis of…plans and studies to any planning board" (RSA 36:45).

The role of the comprehensive plan is to promote the health, safety, morals, and general welfare of the region and its inhabitants.

This Plan represents not only a consultative resource for local-decision making, but also a foundation for the future work-planning of Strafford Regional Planning Commission and Strafford Metropolitan Planning Organization. Findings within each appendix shape the priorities and goals of the organization. The first step in this process is the identification of specific strategies, extracted from each appendix that fit within the goals created by the Strafford Regional Planning Commission, the Strafford Metropolitan Planning Organization, and Executive Director. These strategies have been organized by the organizational capacities of the Strafford Regional Planning Commission and Strafford Metropolitan Planning Organization.

Findings within each appendix shape the priorities and goals of this organization.

Strafford Regional Planning Commission staff, with the support of the Regional Master Plan Advisory Team, have compiled an comprehensive list of high, medium, and low priority implementation strategies within the following implementation table. These strategies are designed to carry forward the findings and conclusions of this Master Plan and its appendices, as well as provide support functions and build capacity of our regional communities and stakeholders. Each strategy identified in the table below was extracted from a larger list of strategies within each appendix. Thus, these represent the most important (but not always those with the highest priority rating) implementation strategies from each plan appendix. It is important to note that for each strategy identified, Strafford Regional Planning Commission or Metropolitan Planning Organization is the acting or responsible body.

Structure

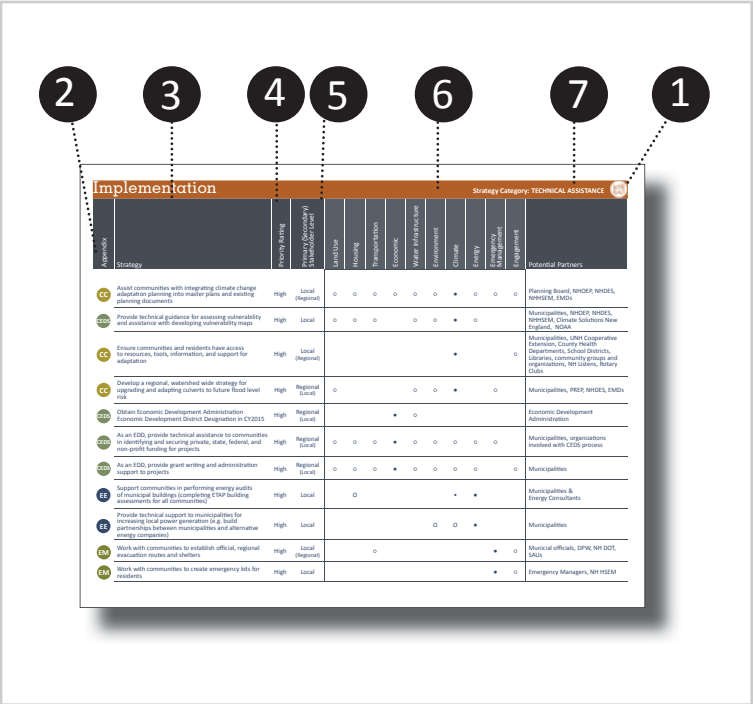
The Implementation Strategy Table fields include: priority rating, primary and secondary stakeholder(s) level, functional planning areas, and potential partners for each strategy. Refer to the Implementation Table Key on the following page for a description of each field.

Implementation Table Key

1 Strategy Categories

General categorization of strategy type.

- **Data**
  collection, database creation, management
- **Organizational Development**
  internal, capacity building
- **Outreach & Education**
  engagement, workshop, outreach
- **Partnerships**
  collaboration with another organization, entity
- **Technical Assistance**
  project support and assistance, mapping



2 Appendix

Appendix strategy is derived from.

- **CC** Climate Change Impacts & Adaptation
- **ED** Community Economic Development Strategy
- **EE** Energy Efficiency & Green Building
- **EM** Emergency Management & Public Safety
- **ENV** Environment, Land Use, and Recreation
- **H** Fair Housing Equity Assessment / Housing Regional Housing Needs Assessment
- **WI** Water Infrastructure

3 Strategy

4 Priority Rating

A qualitative ranking of strategy priority by SRPC staff based on the following weighted factors:

1. Need
2. Magnitude of Impact
3. Feasibility from a budgetary and staffing perspective
4. Timeframe and length of term to complete

Rating Levels: High / Medium / Low

5 Stakeholder Levels

Primary and (Secondary) stakeholder(s).

Levels: Local / Regional / State

6 Functional Planning Areas:

Identification of strategies that bridge multiple planning areas. Strategies have one primary functional area and may have one or more secondary functionality.

Planning Areas:

Land Use	Environment
Housing	Climate
Transportation	Energy
Economic	Emergency Management
Water Infrastructure	Engagement

- ● Primary Functional Area
- ○ Secondary Functional Area(s)

7 Potential Partners

List of potential partners. See the Partner Acronym List on the following page (table 3)

Table 3. Implementation strategies partner acronym list

Partner Acronym	Full Partner Name
CAW	Climate Adaptation Workgroup
CEDS Committee	Comprehensive Economic Development Strategy Committee
CSNE	Carbon Solutions New England
DRED	New Hampshire Department of Resources Economic Development
EDA	Economic Development Administration
EMD	Emergency Management Director
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
ICNET	Infrastructure and Climate Network
GBNERR	Great Bay National Estuarine Research Reserve
GRANIT	Geographically Referenced Analysis and Information Transfer System
HEAL	Healthy Eating Active Living
NHDA	New Hampshire Department of Agriculture
NHDES	New Hampshire Department of Environmental Services
NHDOT	New Hampshire Department of Transportation
NHDPS	New Hampshire Department of Safety
NHEDA	New Hampshire Economic Development Association
NHFG	New Hampshire Fish and Game
NHHFA	New Hampshire Housing Finance Authority
NHHSEM	New Hampshire Homeland Security and Emergency Management
NHOEP	New Hampshire Office of Energy and Planning
NOAA	Nation Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Services
PREP	Piscataqua Region Estuaries Partnership
RPC	Regional Planning Commission
SAU	School Administrative Unit
SPNHF	Society for the Protection of New Hampshire's Forests
SWA	Southeast Watershed Alliance
TNC	The Nature Conservancy
UNH	University of New Hampshire
UNH T2	University of New Hampshire Technology Transfer Center
UNHCE	University of New Hampshire Cooperative Extension
UNHSC	University of New Hampshire Stormwater Center
USACE	United States Army Corps of Engineers
WHCGS	Workforce Housing Coalition of the Greater Seacoast

Implementation

Strategy Category: DATA

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
CC	Promote use of best available data (FIRMs, precipitation data, climate science, local projections, etc.)	High	Regional (Local) (State)	○	○	○	○	○	○	●	○	○	○	Climate Solutions New England, FEMA, NOAA, EPA, PREP, GRANIT
ED	Continue CEDS Annual Updates	High	Regional (Local)				●							CEDS Strategy Committee
ED	Develop web-based clearinghouse of NHBMPP products, information, reference materials, & meeting minutes, etc. for decision makers and stakeholders	High	Regional (State)				●						○	RPCs, GRANIT
ED	Prepare broadband infrastructure component for SRPC Regional Master Plan	High	Regional (Local)				●					●		RPCs, broadband stakeholder groups, Regional Master Plan Advisory Team
EE	Identify knowledge gaps in energy efficiency at different sectors (municipal, commercial, residential)	High	Local				●				●			Municipalities
H	Develop standardized Building Permit Data collection form	High	Regional (State)		●									NHOEP
ED	Establishment of CEDS Annual Performance Measures/ Evaluation Tools	Med	Regional (Local)	○	○	○	●	○	○	○	○	○		Economic Development Administration, CEDS Strategy Committee, Municipalities
ED	Conduct regional audit of local land use regulations and ordinances in an effort to identify barriers to broadband development and expansion	Med	Local (Regional)	○			●							Municipalities, town planners
ED	Explore alternative and expanded data collection efforts of spatial broadband infrastructure by collaborating with state, local, and industry partners to improve the public dataset	Med	Regional (State)				●							
EM	Provide traffic data and maps to support emergency management and planning	Med	Local (Regional)	○		○		○		○		●	○	NH DOT, NOAA, FEMA

Implementation

Strategy Category: DATA

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
WI	Develop community-wide or watershed-wide databases of septic system users that could be used by communities addressing non-point source pollution associated with leaking or failing septic systems	Med	Regional (Local) (State)		○			●	○	○			○	NHDES, Public Works, Conservation Commissions
CC	Create a GIS-based flood impacts database to document and track: vulnerable and under capacity culverts; dam breaches or failure; flood damage.	Low	Local (Regional)					○	○	●				Municipalities, PREP, UNH students, GRANIT
ED	Continue Cluster Analysis Research	Low	Regional				●							Municipalities
ED	Create CEDS ArcGIS Online Application focused on basic demographic and economic datasets	Low	Local (Regional)				●							
ED	Encourage inclusion of broadband in hazard mitigation or recovery planning efforts.	Low	Local (Regional)				●					○		Planners, Municipalities

Implementation

Strategy Category: ORGANIZATIONAL DEVELOPMENT

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
EE	Work with state agencies (OEP, CDFA) to develop funding opportunities for local (municipal and commercial)energy efficiency retrofits (similar to CDFA "Better Buildings").	High	State								●			State agencies
EE	Improve SRPC web content and presence on energy-related projects and educational materials	High	Regional								●			
H	Migration of public FHEA datasets to ArcGIS Online SRPC organizational account	High	Regional (Local)		●									
H	Identification of funding sources for local and regional housing planning	High	Regional		●									
ED	Establishment of more comprehensive CEDS Website	Med	Local				●						○	
ED	Obtain Economic Development Administration Economic Development District Designation in CY2015	High	Regional (Local)				●	○						Economic Development Administration
ED	Creation of strict Annual Update and Project Solicitation schedule	Med	Regional (Local)				●							CEDS Strategy Committee
ED	Adaptation of AHP scoring for Project Scoring	Med	Regional (Local)				●							
ED	Design online form tool to allow for streamlined project solicitation and annual updates.	Low	Regional (Local)				●							CEDS Strategy Committee

Strategy Category: OUTREACH & EDUCATION

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
ED	Hold four (4) CEDS Strategy Committee Meetings annually	High	Regional (Local)				●					○		NHEDA
ED	Establish open enrollment policy for CEDS Strategy Committee	High	Regional				●						○	CEDS Strategy Committee
ED	Conduct recruitment of new CEDS Strategy Committee members with focus on private sector members	High	Regional				●						○	CEDS Strategy Committee
ED	Expand and develop education programs focused on leveraging broadband technology by promoting workshops or trainings that target community leaders and stakeholders.	High	Regional (State)				●					○	●	UNH Cooperative Extension; NH Municipal Association
ED	Work with the NH Municipal Association and DRED to promote or sponsor education, trainings, and other opportunities focused on broadband capacity building for municipalities.	High	Regional (State)				●					○	●	NH Municipal Association, UNH Cooperative Extension, Department of Resources and Economic Development, municipalities
EM	Provide education about mandatory evacuation routes to communities and residents including the costs associated with not evacuating	High	Local (Regional)			○	○			○		●	○	NH HSEM, Municipal officials, FEMA
EM	Provide a forum for coordinated emergency management planning and preparation	High	Local (Regional)									●	○	NH HSEM, Municipal officials
ENV	Educate communities about non-point source pollution in Great Bay & Regional public water bodies and advocate for local land use regulations which support practices which reduce pollution.	High	Regional (Local)					○	●				○	NHDES, PREP, Municipalities
ENV	Advocate for incorporation of permanent land preservation within project planning processes to foster compact, well organized urban areas while safeguarding wildlife habitat, farmland, watershed area & open spaces in perpetuity	High	Regional (Local)	○					●					NHACC, NHACD, SPNHF, SRC, TNC, BRRG, SELT, MMRG, LRCT, Great Bay Stewards, NHFG
ENV	Recognize that highly functional watershed ecosystems are essential to sustain ecosystem services we depend on and advocate for higher priority for funding associated with natural watershed infrastructure	High	Regional	○					●					NHDES, PREP

Implementation

Strategy Category: OUTREACH & EDUCATION

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
H	Development and distribution of annual Regional Housing Market Analysis	High	Regional		●									NHHFA
WI	Encourage public outreach and awareness campaigns to local residents on the effects caused by certain lawn care practices and pet waste	High	Local (Regional) (State)	○				●	○				○	NHDES, NH Listens, UNH Cooperative Extension, and Local School Administrative Units (SAUs)
WI	Encourage outreach campaigns on best management practices for farming and agricultural methods	High	Regional (Local)	○				●					○	Department of Agriculture, NHDES, NRCS
WI	Encourage communities to incorporate higher standards for water quality and stormwater management	High	Regional (Local)	○		○		●	○	○				UNH Stormwater Center, NHDOT, NHDES, SWA, Planning Boards
WI	Encourage communities to conduct annual private well testing to ensure safe drinking water	High	Local (Regional) (State)				○	●	○				○	NHDES, EPA, Public Works, Conservation Commissions, and Local Water Advocacy Groups
CC	Convene a panel of experts and host an educational workshop on climate change impacts and opportunities to collaborate across the region for public works facility managers and municipal staff.	Med	Local (Regional) (State)			○	○	○	○	●	○			Public Works Departments, NHDES, NHOPE, NHDOT, Climate Solutions New England, ICNET
ED	Design creative and effective outreach tools to communities and stakeholders in an effort to identify projects	Med	Regional (Local)	○	○	○	●	○	○	○	○	○		CEDS Strategy Committee
ED	Share regional economic development success stories and highlights via SRPC blog, social media, and website	Med	Local (Regional)	○	○	○	●	○	○	○	○		○	
ED	Encourage legislators to support amendments addressing municipalities' abilities to bond for broadband infrastructure construction and improvements	Med	State (Local)				●					○		Legislators, municipalities, town officials, regional decision makers
ED	Present SRPC Broadband Plan to regional communities	Med	Local (Regional)				●					○	●	Municipalities, town officials

Implementation

Strategy Category: OUTREACH & EDUCATION

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
ENV	Encourage SRPC member communities to incorporate regulative measures designed to protect and preserve irreplaceable historic sites unique to the region for future generations to enjoy	Med	Regional (Local)	○					●				○	NH Dept. of Cultural Resources, Municipalities
ENV	Advocate for Placemaking efforts involving planning, design, management & programming of public spaces to strengthen the connection between people and the community in which they reside through cultural, economic, social activities connected to nature	Med	Regional (Local)				○		●				○	Municipalities
ENV	Advocate for Smart Growth approaches & supporting programs that fit local, regional & statewide needs, provide economic benefits, cultural & natural resource preservation & protection, and which preserve agricultural-based economies and add value to our communities	Med	Regional (Local) (State)				○		●					NH Dept. of Cultural Resources, Municipalities
ENV	Expand underground nonseptic treatment systems to larger sewer integration & interconnection of water/ wastewater utilities	Med	Regional (Local)					○	●					NHDES
ENV	Encourage communities to perform regular testing of private wells for contaminants such as radon, arsenic, MTBE, etc.	Med	Local					○	●				○	NHDES, VLAP, VRAP, Municipalities
ENV	Advocate for best management practices (e.g. LID) that improve water quality	Med	Regional (Local)	○				○	●					NHDES
H	Presentation of FHEA and HNA products to regional communities	Med	Local		●								○	Municipalities
WI	Encourage both private and public sectors to participate in the Green SnowPro training and certification program and implement basic techniques to reduce road salt	Med	Regional (Local)				○	●	○	○			○	Public Works, UNH T², Private Contractors, NHDOT

Strategy Category: OUTREACH & EDUCATION

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
WI	Provide public education and outreach for residents living within dam inundation zones	Med	Local (Regional)		○			●					○	Emergency Management, NHDES, FEMA
WI	Conduct outreach and education about household water consumption and conservation methods	Med	Regional (Local)				○	●	○	○	○		○	NH Listens, PREP, UNH Cooperative Extension, EPA, NHDES
CC	Increase online outreach and climate change education. Add climate change impacts and adaptation information to SRPC website and feature articles in newsletter	Low	Local (Regional)							●			○	Climate Adaptation Workgroup, NH Listens, Municipalities
CC	Host a workshop to educate municipalities about FEMA's Community Rating System	Low	Local		○		○	○	○	●		○	○	NHOEP, Planning Department, EMDs
ED	Development of Annual Update Fact Sheet	Low	Local				●						○	CEDS Strategy Committee
ED	Develop broadband fact sheet to distribute to communities and stakeholders	Low	Regional (Local)				●					○	●	
EM	Educate communities and residents about alternative sources of energy	Low	Local (Regional)				○				○	●	○	Municipal officials, NH OEP
EM	Increase awareness of the impact of hazardous materials on natural systems	Low	Local (Regional) (State)			○		○	○			●	○	NH DES, NH DOT, PREP, EPA
ENV	Encourage the establishment and continued maintenance of recreational trail networks within the region and the supporting funding mechanisms	Low	Regional (Local) (State)	○					●				○	NH Parks & Recreation
WI	Educate about both the economic benefits and public usage, as well as the adverse effects and potential risks of dams	Low	Regional (Local) (State)	○			○	●	○	○	○	○	○	NHDES, FEMA, DRED, Fish and Game

Implementation

Strategy Category: PARTNERSHIPS

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
CC	Collaborate with county public health departments to increase community awareness of the health impacts of climate change	High	Local (Regional) (State)							●			○	County Health Departments, HEAL, Schools Districts, NHDPS
ED	Maintain required ratio of private sector employees on CEDS Strategy Committee	High	Regional				●					○		CEDS Strategy Committee
ENV	Support organizations and efforts which contribute to the environmental protection and conservation achievements making the state and region able to sustain its natural qualities and unique character	High	Regional (Local) (State)	○			○		●					NHDES, NHFG
ENV	Support the cooperative nature of local, regional & state partners to achieve desired outcomes based on community culture, natural & economic assets, and common values	High	Regional (Local)				○		●					NHDES, PREP
WI	Work to ensure that communities with wastewater treatment facilities all have an asset management plan	High	Local (State)				○	●	○	○	○			NHDES and Local Water Divisions
WI	Work with state and regional partners to conduct an updated study on the future drinking water supply and demands for the region using new populations projections and climate change projections	High	Regional (State)				○	●		○		○	○	NHDES, Private Groundwater Engineering Firms
CC	Work with regional and local partners to identify key land conservation priorities that will increase local resilience, increase carbon sequestration, and protect vulnerable flora and fauna	Med	Regional (State)	○			○		○	●			○	NH Fish and Game, NH Forest Service, NH Society for the Protection of Forests, Conservation Commissions, TNC, GBNEER, land conservancies
ED	Support stronger partnerships with University of New Hampshire	Med	Regional	○	○	○	●	○	○	○	○		○	University of New Hampshire
EE	Support and facilitate implementation of Public/Private Partnership driven downtown Wi-Fi networks	Med	Local (Regional)				●						○	
EE	Engage with local economic interest groups (e.g. chambers of commerce, economic development offices) to develop educational and incentive programs, and explore local energy efficiency policy	Med	Local				O			O	●		O	Municipalities

Implementation

Strategy Category: PARTNERSHIPS

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
EE	Increase collaboration with regional energy providers (include representatives on comprehensive economic development strategy committee)	Med	Regional								●			Regional energy providers
EM	Collaborate with utilities and municipalities to develop plans that address vulnerability, local capacity, communication, resource needs, etc. for drinking water systems	Low	Local (Regional)					○		○		●		NH DES, NH HSEM, DPW, epa
H	Work with Workforce Housing Coalition of the Greater Seacoast to hold regional charrette	Low	Regional (Local)		●		○						○	WHCGS, Municipalities
H	Creation of Regional Housing Advisory Committee (quarterly)	Low	Regional (Local)		●								○	Municipalities
ED	Improve collaboration with the Broadband Center of Excellence	Low	Regional (Local)										●	UNH Broadband Center of Excellence
ED	Collaboration with school districts to encourage expanded access to affordable broadband technology/ high speed internet for students	Low	Regional (Local)										●	Regional SAUs, Internet Service Providers
ED	Support stronger partnerships with state Economic Development Agencies	Low	State (Regional)				●						○	NH Economic Development Association, Department of Resources and Economic Development

Implementation

Strategy Category: TECHNICAL ASSISTANCE

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
CC	Assist communities with integrating climate change adaptation planning into master plans and existing planning documents	High	Local (Regional)	○	○	○	○	○	○	●	○	○	○	Planning Board, NHOEP, NHDES, NHHSEM, EMDs
CC	Ensure communities and residents have access to resources, tools, information, and support for adaptation	High	Local (Regional)							●			○	Municipalities, UNH Cooperative Extension, County Health Departments, School Districts, Libraries, community groups and organizations, NH Listens, Rotary Clubs
CC	Develop a regional, watershed wide strategy for upgrading and adapting culverts to future flood level risk	High	Regional (Local)	○				○	○	●		○		Municipalities, PREP, NHDES, EMDs
ED	Provide technical guidance for assessing vulnerability and assistance with developing vulnerability maps	High	Local	○	○	○		○	○	●	○			Municipalities, NHOEP, NHDES, NHHSEM, Climate Solutions New England, NOAA
ED	Promote the development of municipal telecommunications or broadband committees: development of how-to guide for establishing committees, allocating resources to assist committees, etc.	High	Regional (State)				●					●	●	RPCs, municipalities, Town Officials
ED	As an EDD, provide technical assistance to communities in identifying and securing private, state, federal, and non-profit funding for projects	High	Regional (Local)	○	○	○	●	○	○	○	○	○		Municipalities, organizations involved with CEDS process
ED	As an EDD, provide grant writing and administration support to projects	High	Regional (Local)	○	○	○	●	○	○	○	○		○	Municipalities
EE	Support communities in performing energy audits of municipal buildings	High	Local		O					•	●			Municipalities & Energy Consultants
EE	Provide technical support to municipalities for increasing local power generation (e.g. build partnerships between municipalities and alternative energy companies)	High	Local						O	O	●			Municipalities
EM	Work with communities to establish official, regional evacuation routes and shelters	High	Local (Regional)			○						●	○	Municial officials, DPW, NH DOT, SAUs

Implementation

Strategy Category: TECHNICAL ASSISTANCE

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
EM	Work with communities to create emergency kits for residents	High	Local									●	○	Emergency Managers, NH HSEM
ENV	Support local agriculture by continuing to advocate for local produce and the continued solvency of federal, state, and local funding programs for conservation	High	Regional (Local)	○			○		●				○	NHDA, NRCS, Seacoast Eat Local, Seacoast Growers Association
ENV	Support planning projects that protect floodplains, reconnect streams, protect wetlands, maintain natural flood storage & stormwater controls while maintaining wildlife habitat	High	Regional	○					●					NHDES, NHFG, PREP, UNH Stormwater Center
ENV	Provide technical assistance to the public, agencies, land trusts, towns & landowners to continue support for wildlife habitat resource areas & encourage people to utilize tools to protect them	High	Regional (Local)	○					●				○	SPNHF, SRC, TNC, BRRG, SELT, MMRG, LRCT, Great Bay Stewards, NHFG
H	Work with communities to develop/update Master Plan Housing and Demographic Chapters	High	Local		●		○							Municipalities
H	Offer Housing Cost and Affordability Studies for SRPC communities	High	Local		●								○	Municipalities
WI	Work with communities to ensure current and future drinking water supplies through adequate surface and groundwater protection measures	High	Local (Regional)	○			○	●	○	○			○	NHDES, PREP, Conservation Commissions, Public Works, Planning Boards, Local Water Advocacy Groups
WI	Work with communities to identify opportunities to reduce stormwater runoff and imperious coverage by implementing green infrastructure and LID	High	Local (Regional)	○	○	○	○	●		○				UNH Stormwater Center, Public Works, PREP, NHDES
CC	Assist communities with identifying opportunities to increase resilience to change and 'no-regrets' projects and that enable decision making, action, and investment given the range of uncertainties	Med	Local			○	○	○	○	●	○		○	Municipalities, UNH Stormwater Center, NHOEP, NHHSEM, EMDs

Implementation

Strategy Category: TECHNICAL ASSISTANCE

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
CC	Identify projects and funding for projects that increase communities' resilience to climate change	Med	Local (Regional)							●				Municipalities, NHDES, Rotary Clubs
ED	Complete re-format of 2016 Comprehensive Economic Development Strategy	Med	Regional (Local) (State)				●							CEDS Strategy Committee
ED	Work with communities to provide technical assistance to Economic Development committees and development Economic Development Master Plan chapters	Med	Local				●					○		CEDS Strategy Committee
ED	Provide demographic and advanced economic datasets to communities, business, and other stakeholders by request and as part of CEDS Annual Updates	Med	Regional (Local)				●							CEDS Strategy Committee
ED	Develop model broadband chapter for use by communities in master planning efforts	Med	Regional (Local)				●					●	●	Municipalities, planners, RPCs
ED	Promote establishment of dedicated funds for broadband development, expansion, and improvements at the municipal level	Med	Regional (Local)				●					●		Municipalities, town officials
ED	Develop guidance document for use by communities when negotiating a Cable Franchise Agreement; continue updates to web-based Cable Franchise Agreement database	Med	Regional (Local)				●							New HampshireCoalition for Community Media, Municipalities, Cable Franchise Agreement Boards, town officials
ENV	Encourage communities to establish a Brownfields Redevelopment Program through the NH Brownfields Program in order to encourage the redevelopment and/ or reuse of contaminated properties	Med	Regional (Local)	○				○	●				○	EPA, NHDES, Municipalities
ENV	Address inefficiency of current system to ensure long-term sustainable management of water resources & services and broaden the range of interest groups that will support the actions which support sustainability	Med	Regional				○		●					NHDES, PREP, VLAP, VRAP

Implementation

Strategy Category: TECHNICAL ASSISTANCE

Appendix	Strategy	Priority Rating	Primary (Secondary) Stakeholder Level	Land Use	Housing	Transportation	Economic	Water Infrastructure	Environment	Climate	Energy	Emergency Management	Engagement	Potential Partners
H	Promote use of Workforce Housing Creation tools available through NHHFA to promote effective and efficient housing construction including: Model Ordinances, Meeting the Workforce Housing Challenge Guidebook, and Housing Solutions Handbook	Med	Regional (Local)		●								○	NHHFA, Municipalities
WI	Provide assistance in delineating updated dam inundation zones by using new LiDAR and contour data	Med	Regional (Local)		○	○		●					○	GRANIT, OEP, FEMA, NHDES, HSEM, Emergency Management
WI	Work with communities to identify potential areas to expand water/sewer networks to adjacent homes currently served by septic as opportunities arise	Med	Local (Regional)	○	○		○	●	○	○			○	Public Works, EPA, NHDES, Town Planning
WI	Provide data and support to communities for the removal of dams that are no longer active or serve a purpose (i.e. recreation, agriculture, hydropower, water supply, etc.)	Med	Local (Regional) (State)	○		○	○	●	○	○			○	NHDES, Public Works, Conservation Commissions, Fish and Game, Local Water Advocacy Groups
WI	Work with communities to ensure that high hazard and significant dams have an up-to-date emergency action plan	Med	Local (State)					●	○	○			○	Emergency Management, NHDES, FEMA, HSEM
EM	Assist communities with Complete Streets and walkability planning and implementation	Low	Local			○	○					●		HEAL, NH DOT, Strafford County Regional Public Health Network
ENV	Coordinate public utilities inventory work	Low	Regional						●				○	NHDES
H	Work with NHHFA to update Progress in Workforce Housing report	Low	Regional (Local)		●									NHHFA
H	Development of Workforce Housing Model Ordinance for use by communities (performance zoning and form-based code)	Low	Local		●									Municipalities, OEP, NHHFA
WI	Identify the feasibility of hydropower in select dams in the region	Low	Regional (Local)				○	●	○	○	○	○		Army Corps of Engineers, EPA, OEP, NHPUC

Durham, NH

Photo credit: UNH

Appendices

A. Community Visions Organized by Livability Principle

Table 4. Summary of visions from municipal plans organized by New Hampshire's six livability principles

	Frequency of Occurrence in Plans
Total Number of Plans	18
Traditional Settlement Patterns and Development Design	
Create a Vibrant Downtown	14
Importance/Maintenance of Rural characteristics	10
Community/Preservation focused development/growth	19
Connections between development and greenways	5
Preservation of historic building/sites	2
Value of greenways	2
Slow residential growth	2
Planning for future utility/infrastructure needs	2
Housing Choices	
Diversity of housing options	2
Housing development that is in balance with land protection	1
Transportation Choices	
Safer transportation	2
Community serving transportation	5
Landscape feature of roadways	1
Road maintenance	1
Natural Resource Functions and Quality	
Preservation/Protection of natural resources (through recreation/planning)	14
Natural rural characteristics	1
Importance/Maintenance of farmland and agriculture	6
Protection of water resources	6
Maintenance of wildlife habitats for ecoconservation	1
Land conservation in relation with coastal watersheds	1
Community & Economic Vitality	
Vibrant community (live.work.play)	14
Celebrated history/culture	1
Rural values	1
High standards/quality of life (health, welfare, safety)	9
Strong school systems	5
Social/Recreational opportunities	5
Connections between the town and UNH	3
Strengthen local economy/local business	10
Technology aiding in town development	1
Recreational facilities	3
Strengthen connection/understanding between town and government	3
Strengthen connection/understanding between citizens and town government	2
Expand Tax Base	4
Stabilize tax burden	5
Senior citizen needs addressed	1
Importance of master plan	1

B. Plan Analysis Summary: Natural Resources

Table 5. Frequency that each natural resource-related topic occurred within the reviewed plans (eighteen municipal and eight regional plans)

Issue	Frequency of Occurrence in Plans	
	Municipal	Regional
Total Number of Plans	18	8
Balance Social & Economic Initiatives with Environmental Protection	14	5
Land Conservation Initiatives, Open Space Preservation & Management	16	3
Wildlife Corridors and Unfragmented Green Space	12	2
Promote Sustainability	6	3
Promote Innovative Land Use Controls and Improve Current Environmental Regulations	9	3
Protect Quality of Surface Waters	10	3
Protect Quality of Wetlands & Watersheds	9	3
Protect Quality of Shoreland Areas & Restoration of Natural Vegetative Buffers	7	1
Protect Water Quality & Quantity	10	4
Protect Groundwater Aquifers	12	1
Protect Rural Landscape & Scenic Vistas	13	2
Protect Archaeological Sites	2	3
Protect Sensitive Areas and Exemplary Natural Communities	10	5
Protect Agricultural Land Uses & Prime Farmland	12	4
Protection Against Erosion	3	3
Improve Gravel Excavation Regulations and [BMP Initiatives?]	4	0
Improve Solid Waste/Waste Water Disposal Methods and Alternatives	5	4
Preserve Air Quality	4	1
Promote Recreational Opportunities	6	2
Promote Recycling Opportunities	3	1
Minimize Energy Consumption	1	1
Develop and Initiate Community Resource Mapping Program	3	0
Develop and Initiate Programs to Support Resource Preservation - [Impact Fees, LUCT Etc.]	4	1
Build upon State, Regional & Federal Environmental Programs	1	3
Improve Volunteer Labor Network Support - UNH etc.	1	0
Pursue Alternative Funding Sources for Environmental Protection	1	0
Improve Infrastructure Improvements	4	2
Improve Pollution Prevention	8	3
Improve Management Methods and Quality of Stormwater	2	3
Formulate Hazard Mitigation Plans and Maintain Proper Protection from Natural Hazards	3	3
Maintain Functional Value of Environmental Resources	18	5
Protection of Eelgrass and Shellfish Populations	0	1
Invasive Species Management and Prevention	0	1
Saltmarsh Protection and Restoration Initiatives	0	1
Preservation of Native Bird & Fish Species	0	1
Support Boating Outreach & Education Programs	0	2
Support Stream Crossing Inventory & Replacement Programs	0	1
Improve Dam Removal Initiatives	0	1
Working Landscapes	2	0

B. Plan Analysis Summary: Transportation

Table 6. Frequency that each transportation-related topic occurred within the reviewed plans (eighteen municipal and eight regional plans)

Issue	Frequency of Occurrence in Plans	
	Municipal	Regional
Total Number of Plans	18	8
Existing transportation network maintenance	7	1
Public transit route expansion	4	2
Public transit schedule expansion	2	2
Public transit mode integration	3	3
Passenger rail/Rail Corridor Improvements	4	0
Inter-regional/state public transit coordination	1	2
Pedestrian/Bike Safety	5	5
Accessibility for ADA	5	4
Traffic congestion/mitigation	4	1
Accessibility for elderly/diverse age groups	6	3
Biking/Walking paths and trails	6	3
Bridge improvements	2	1
Parking capacity	5	1
Livable/Walkable communities	6	1
Road Signage/Wayfinding improvements	3	0
Safer Roadway Infrastructure	11	5
Accessibility for low-income	4	3
Regional and Statewide Transportation Planning Coordination/Cooperation	7	3
Variety of transportation facilities and services	9	2
Public safety facilities/communication	2	0
Traffic Calming Measures	2	0
Scenic Roads/Vistas	4	0
Road and Design Standards	5	0
Access Management	5	1
Rural Character	4	0
Transportation Demand Management Systems: Park and Rides, Rideshares	2	3
Compact/Mixed-Use Development based transportation system development	5	2
Minimize undue financial burden/Funding mechanisms	7	3
Transportation Plan construction	2	1
Efficient movement of goods and services (freights)	4	1
Airport expansion	1	0
Maintenance of Rural unpaved roads	2	0
Lighting Improvements	1	0
Public Involvement in Transportation Planning Process	0	2
Proximate development to existing transportation routes	3	2
Incident management systems	0	1
Intelligent transportation systems (DMS, Signal Coordination, High-Speed Tolling)	1	4
Environmental Compatibility	6	5

B. Plan Analysis Summary: Climate & Energy

Table 7. Frequency that each climate and energy-related topic occurred within the reviewed plans (eighteen municipal and eight regional plans)

Issue	Frequency of Occurrence in Plans	
	Municipal	Regional
Total Number of Plans	18	8
Growth Management & Development	3	2
Sustainable Communities & Smart Growth Principles	7	4
Open Space Clustered Housing & Natural Resource/Land Protection	14	3
Community, Sense of Place, and Quality of Life	4	1
Transportation Alternatives	3	2
Preserving Agricultural Lands & Soils	4	0
Low Impact Development	1	3
Minimizing Energy Consumption	1	0
Protection of Water Resources, Wildlife Habitat, & Ecosystems	5	4
Recycling Programs	3	1
Use of Alternative Fuels & Reduction of Non-Renewable Energy Sources	1	1
Reduction of Light Pollution	1	0
Minimize Flooding Risks	0	1
Mitigating Climate Change Impacts	0	1

B. Plan Analysis Summary: Traditional Settlement Patterns

Table 8. Frequency that each traditional settlement pattern-related topic occurred within the reviewed plans (eighteen municipal and eight regional plans)

Issue	Frequency of Occurrence in Plans	
	Municipal	Regional
Total Number of Plans	18	8
Variety of recreation opportunities	2	0
Building sustainable communities	1	2
Livable/walkable downtown areas and communities	8	0
Social/cultural activities	1	0
Business diversity	2	0
Rural character maintenance	10	0
Retain traditional/historic character	8	0
Respect existing built environment	1	0
Adopt development/architecture/siting standards	4	0
Mixed Use Development	3	0
Encouragement of high density development	4	0
Discourage and restrict sprawl/strip development	5	1
Traditional compact settlement patterns	4	0
Regional Cooperation	1	0
Bike/Walk Trail network	2	0
Sense of community	3	0
Infill development/Adaptive reuse	4	0
Adaptive reuse of buildings/structures	5	0
Education/outreach program for owners on historic value/cultural values of properties	1	0
Consider existing infrastructure when planning for future development	2	2
Parking Siting	2	0
Growth Management practices	1	1
Access for all populations (age, incomes, disabled)	2	0
Agriculture/Forestry	5	0

C. Outreach Comment Categories

Table 9. Categorization of outreach comments by 65 topic areas

1. Recreational Opportunities
2. Place/Access-proximity to varying areas
3. Taxes
4. Sanitation Service and Clean Streets
5. Presence of local business(need more)
6. Presence of business
7. Downtown-oriented communities
8. Local events/activities
9. Education/Schools(more affordable educ, life training, funding for education, options for educ, educ for disabled, updated curriculum)
10. Rural environment/small communities
11. Conserved land/Open space/Nature
12. Parks/Public Places (libraries, community centers, etc.)
13. Community (people)
14. Resources/opportunities for children (toddler programs, after school programs, affordable activities for children)
15. Agriculture
16. Cultural diversity
17. Connection/relationship with UNH
18. Public Safety
19. Beauty/Aesthetics/Scenery
20. Quiet place
21. Environmental awareness (recycling, pollution mitigation, ethanol use)
22. Preserved buildings/history
23. Regulations (pesticides, fluoridation of water, growth in effect on water supplies)
24. Residential Development
25. Walkable communities
26. Strategically located elderly living facilities
27. Attractions/venues (Music and arts venues)(Tourism)
28. Nightlife
29. Affordable housing
30. Small government/ NH politics/ legislative accessibility
31. Broadband/WiFi
32. Jobs/Economy (min. wage increased)
33. Community Assistance (food pantries and municipally-delivered programs)
34. Welfare/social services
35. Law enforcement
36. Healthy, active lifestyles
37. Graduate retention
38. Community involvement
39. Bike/walk lanes (Complete streets)
40. Road maintenance
41. Public transit route expansion
42. Public transit schedule expansion
43. Public transit mode integration
44. Passenger rail
45. Inter-regional/state public transit coordination
46. Sidewalks for ADA/pedestrian safety
47. Major highway/arterial access (statewide)
48. Toll Roads/Gas Tax
49. Improved coastal access
50. Public transit for ADA
51. Iconic signs preservation
52. Iconic covered bridge preservation
53. Traffic congestion
54. Public transit for elderly
55. Biking/Walking paths and trails
56. Bridge improvements
57. Signal coordination
58. Cleaner streets
59. Parking capacity
60. Walkable community centers
61. Road Signage improvements
62. On-Route Vehicle Safety
63. Public transit for low-income
64. Sustainable transportation infrastructure
65. Transportation alternatives

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