



# 2023 Lakes Region Bicycle and Pedestrian Plan

# Bicycling and Walking: Transportation Choices for New Hampshire's Lakes Region



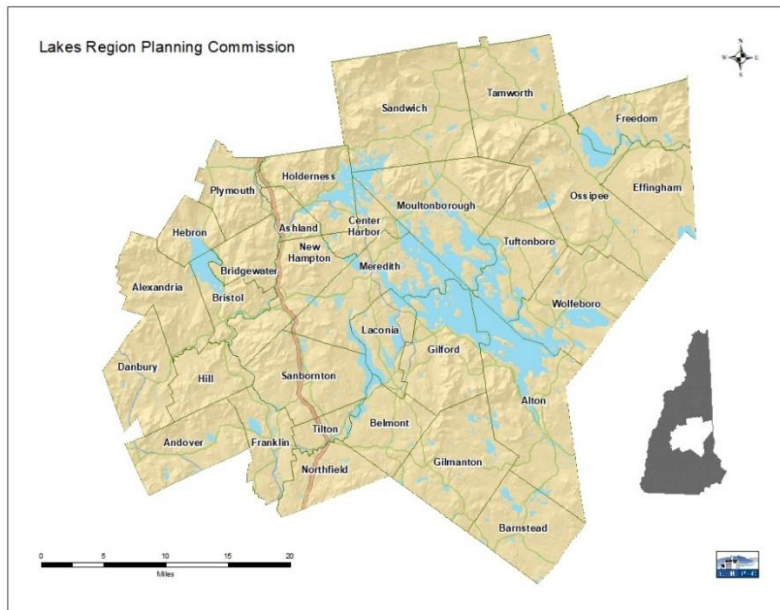
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# EXECUTIVE SUMMARY

The Lakes Region is home to more than 125,000 residents and is a thriving area to visit during the beautiful summer months where many travel to stay on the beautiful lakes New Hampshire has to offer. The Lakes Region surrounds the beautiful Lake Winnepesaukee and many smaller lakes, ponds, and streams. The 31 communities sit at the center of New Hampshire separating the Northern half of New Hampshire and the Southern half. The Region is made up of small rural communities, the largest city in the Lakes Region has a population of less than 20,000.

The Lakes Region municipalities are striving towards creating infrastructure that allows those to continue exploring the beautiful landscape by walking and bicycling. For decades, motorized vehicles have been the dominant form of travel in the Lakes Region. There are only small amounts of sidewalks and designated bike lanes throughout the region that allow those to travel through the main downtown/village centers of the towns and cities.

The 2023 *Lakes Region Bicycle and Pedestrian Plan* is a comprehensive update to the 2012 plan. It was developed to provide the communities in the Lakes Region with additional information about existing biking and walking infrastructure and to reinforce local revitalization efforts that desire to make their communities safer and more enjoyable places to live and visit.

The planning process for this report included public participation for a new vision statement, a review of existing conditions of the built infrastructure, and recommendations.

## The 2023 Vision Statement:

*A purposefully connected network of trails, sidewalks, road shoulders, and markings promoting safe, enjoyable, and inclusive bicycle and pedestrian mobility for residents of all ages and physical ability. Design and maintenance of livable, complete streets that support transportation, recreation, health, and economic interests throughout the Lakes Region.*

Implementation of transportation improvements such as road reconstruction, bike paths, sidewalks, etc. often takes many years, from a project's purpose and need to final construction. The long view is important. The region is in the process of developing an updated transportation plan and process for motorized travel and currently has a well-developed plan available. Frequently, roadway funding and facility decisions are made with little consideration of the needs of bicycling and pedestrians. This plan is an attempt to recognize bicycling and walking as serious transportation modes, and to encourage our communities, and the state, to integrate them into future improvements of the transportation network. With recent technological developments over the years and growing infrastructure, bicycling and walking are becoming a more popular mode of travel compared to the traditional motorized mode.



**Chapter 1** outlines some of the important reasons to support walking and bicycling opportunities in the Lakes Region.

- The population of the Lakes Region grew by 5.12% from 2010 to 2020. This means trails, bike lanes, and all corridors of pedestrian transportation will continue to see increased use but need continued expansion and updates to keep up with the growing population.
- The median age of the Lakes Region is estimated to be 49.8 - eleven years older than the US median age and seven years older than New Hampshire's median age. Active transportation can support health and mobility, allowing people to age in place and participate in the local economy for as long as possible.
- Gasoline prices are continuing to rise in the aftermath of the COVID-19 pandemic as demand for fuel soars. Motorized transportation has become increasingly expensive in a time of returning to normalcy after nearly two years of pandemic stagnation.

**Chapter 2** describes the development of the vision statement and the goals supporting the vision and describes the changes from the 2012 plan to the 2023 plan.

**Chapter 3** presents public input obtained at three public meetings that were held throughout the Lakes Region near the end of 2020 and the beginning of 2021. The meetings were facilitated to allow people to express needs and concerns related to bicycling and walking, and to present their ideas for solutions. Input was summarized into topical statements of need/concern. In addition, a public survey was available from December 2021-January 2022 for the

public to answer a variety of bicycle and pedestrian questions.

**Chapter 4** examines the existing conditions of the built environment in the Lakes Region as they affect pedestrian and bicycle safety and accessibility and includes discussion of the potential for improvements to be made. Parking, intersections, crosswalk, trails, sidewalks, travel lanes, shoulder width, pavement conditions, and maps are all discussed. Research on pedestrian and bicycle safety and road design is also presented.

**Chapter 5** then goes into an analysis of the data mentioned in Chapter 3. Past policies relating to bike and pedestrian usage are outlined along with relevant crash data. Chapter 5 also includes a breakdown of the survey results in order to determine recent trends in bike and pedestrian activities. This will help give a sense of what people are looking for in terms of new infrastructure and policies.

**Chapter 6** gives examples of regional bike and pedestrian projects at different stages. Recently completed projects provide a sense of what is being done successfully and what can be improved upon in future projects. The list of upcoming projects then creates a snapshot of what is to be expected in bike and pedestrian infrastructure in the near future. The final section includes project recommendations for the Lakes Region. These are based off recent proposals and how well the project aligns with the goals of this report. Lakes Region Planning Commission (LRPC) provides guidance on the next steps of bike and pedestrian improvements.

**Chapter 7** outlines an action plan for the region that will help bring the 2023 vision to life. Hopefully, the strategies listed can hold the LRPC and its communities accountable in prioritizing bike and pedestrian infrastructure.



# CHAPTER 1: CONTEXT

Walking, or assisted mobility, is the most basic form of transportation. All modes of transport, whether it be taking public transit, driving a motor vehicle, or bicycling require walking at some point. Despite this, walking is often overlooked as an “alternative” mode of transportation and not considered as much as motor vehicles in transportation planning. All trips require a pedestrian element (walking at destinations and walking from origins to other modes of transportation) Walking, or assisted mobility, is a fundamental aspect of daily life and society that is typically overlooked.

The reason walking, or assisted mobility, is not easily addressed under any one topic is that it is an inherent element of economic activity, recreation, physical and mental health, social interaction, and vibrant community. Consider a business who is resistant to roadway improvements that reduce street parking, only to notice it increases the number of visitors as a result of a more inviting and walkable public place; it is the people who spend the money, not the number of vehicles that travel past the business. People are what our communities are built around and providing ways to bring ourselves and our services together, to work, to school, to the lake, and any place is how our communities are shaped.

To accommodate bicycle and pedestrian needs, we must acknowledge the fundamental roles that pedestrians and bicycles play in the equation. We must take a look at what is needed for bicyclists and pedestrians. What infrastructure do they need to get from Point A to Point B. What will best protect pedestrians and bicyclists from motorized travelers. How will the bicyclists and pedestrians know where infrastructure is available to use?

Safe opportunities to move about our communities while not in cars must be provided for and maintained in our communities. This plan outlines the case of continuation of many good efforts to enhance pedestrian and bicycle resources that have been underway around the region and present the cases for more deliberate consideration of our public streets as assets for supporting economic, physical, and social health of our communities.

## Plan Purpose

The intent of the *2023 Lakes Region Bicycle and Pedestrian Plan* is to build on what is presented in the 2012 *Bicycling and Walking: Transportation Choices for NH's Lakes Region*, and the achievements of the communities and organizations over the past 11 years. This plan will expand on the recommendations for achieving the 2023 Vision and highlight what changes the Lakes Region has seen over the past decade on expanding and improving bicycling and walking becoming a more prominent mode of transportation and activity in the growing Lakes Region.

The purpose of this plan is to provide a framework to guide policies of the LRPC related to bicycle and pedestrian planning. This framework will help LRPC and the communities in the lake's region develop comprehensive transportation plans that include non-motorized transportation planning infrastructure developments and help communities see what opportunities are available to grow on bicycling and walking. The intent is to raise awareness among local and state officials of the stated needs and priority interests of residents and visitors to the region related to bicycle and pedestrian safety and accessibility. This plan





is designed to be used communities as a resource as they develop their own local bicycle and pedestrian plans and to be used as a resource when they develop their own projects designed for non-motorized travel.

## Geographic and Demographic Context

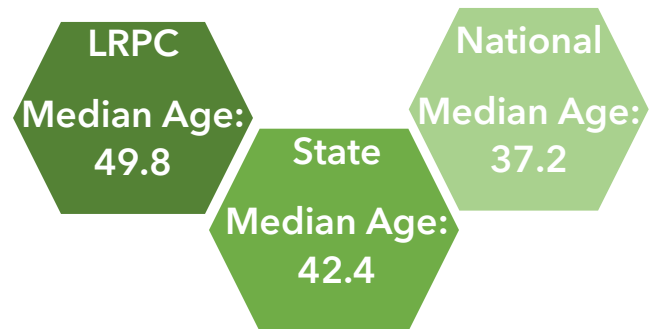
The thirty-one (31) municipalities of the Lakes Region comprise a diverse area of land use and activities including many year-round outdoor recreational opportunities. Most of the lakes and ponds are surrounded by a mixture of resorts, summer cottages, second homes, and year-round homes. Many of the roads that encircle them are close to the shore. This mix of residential developments transforms the smaller rural towns into busy and often congested communities during the peak summer tourist months. Many of the Lakes Region corridors see double the amount of vehicular traffic during the busy summer months from those who travel to the beautiful lakes and ponds in the region. In addition to the influx of motor vehicles, on-road cyclists, from individuals, families, and children, can be seen pedaling around the beautiful lakes in the region. The roads see an increase in use from those biking to villages, recreational areas, downtown destinations, and more.

Squam Lake and Lake Winnepesaukee split the Lakes Region into two parts, with eight (8) towns laying to the north and east of these lakes and the other twenty-three (23) towns to the west and south. The Region also borders the White Mountain National Forest to the north, including the Squam Mountains and the Sandwich Range. The Ossipee Mountains to the northeast of Lake Winnepesaukee, and the Belknap Mountains to the south of Lake Winnepesaukee create additional challenges for transportation through these areas. In the Lakes Region, as

is the case throughout much of New Hampshire, north-south travel tends to be much easier than east-west travel, primarily because of natural barriers created by lakes and the orientation of the mountains. Consequently, there are many roads in the region where no convenient alternative exists for bicyclists and pedestrians to travel along safer, lower vehicle-volume routes.

### The Lakes Region is Aging

Similar to much of New Hampshire, the Lakes Region communities are aging. The median age of year-round residents of the Lakes Region in 2021 was 49.8. This is nine years (33.8 percent) older than the national median age of 37.2. It is also more than seven years older than the state median age. The regional median age by town now ranges from over 57 in Hebron to just under 24 in Plymouth.



In addition to year-round residents, the Lakes Region is home to many thousands of summer seasonal households, the majority of which are either families with young children or more elderly, retired people. The Lakes Region communities are attracting more and more retirees from out of state, seeking a place that can provide outdoor and active recreational resources. The number of older residents is significant to consider in this regional bicycle and walking plan because having safe and accessible walking and bicycling



opportunities can support independent mobility longer than motor vehicle dependence for some.

## Planning History

The New Hampshire Department of Transportation (NHDOT) developed the first pedestrian and bicycle plan for the state in the 1970s. This plan was updated first in 1995, again later in 2000, and most recently in the fall of 2023. The *New Hampshire Statewide Pedestrian and Bicycle Plan* was developed as an element of the comprehensive *New Hampshire Long Range Statewide Transportation Plan*. Its purpose is to meet the requirements and needs for promoting all modes of transportation as established by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and reaffirmed first by the Transportation Equity Act for the 21st Century (TEA-21) of 1998 and later by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005.

The vision statement outlined in the 2023 *New Hampshire Statewide Pedestrian and Bicycle Plan* states that “The State of New Hampshire will enhance safety and mobility through improved pedestrian and bicycle-related policies that continually expand and enhance our network of pedestrian, bicycle, and transportation facilities designed for a wide variety of users and abilities.” Although the Plan is an information resource for regional and local planning, its primary focus is on meeting the needs for bicycle and pedestrian planning at the state level. For example, the Plan discusses the need to connect major destinations throughout the state and focuses on the ability of the state transportation system to do this. As such, the focus of the state plan is on improvements and strategies related to the

numbered and unnumbered state routes throughout New Hampshire.

In spring 2001 the NHDOT released a new map of the “Statewide Bicycle Route System”. This map was developed through the New Hampshire Bicycle and Pedestrian Transportation Advisory Committee, an appointed group of public officials and organized bicyclists. Input from many experienced and locally knowledgeable cyclists was received during the informational meeting process and incorporated into the route map. The purpose of this map was to identify the best highway routes for bicyclists wishing to travel from one major destination to another. However, these maps do not necessarily reflect the safest routes available. Although safety was a factor, logical transportation routes and distances were the primary considerations in determining these routes. The State and Regional Bicycle Routes map provides a valuable tool from which to base bicycle planning in the Lakes Region.

The comprehensive transportation policy plan for the Lakes Region, *PLAN 2000*, was adopted by the Lakes Region Planning Commission in September 2000. The overarching principal of *PLAN 2000* is “the provision of efficient multi-modal and inter-modal transportation systems which do not negatively impact the surrounding natural, social or historic environments.” Due to its comprehensive nature, *PLAN 2000* addressed only improvement needs for the region at a very general level, identifying possible bike routes throughout the Region.

The 2012 plan highlighted the successful ways that communities in the Lakes Region have accommodated and promoted pedestrian and bicycle travel. It also articulated a vision for the successful completion of an inter-connected off-road multi-use pathway spanning the region, outlined a process for local pedestrian and



bicycle planning, and discussed some of the important land use planning tools that can support implementation. While the vision and goals of the 2012 Plan are largely still relevant and appropriate, this comprehensive update includes an assessment of bicycle and pedestrian safety, accessibility, and facilities. It also includes an expanded public engagement process targeted at understanding the needs and concerns of residents of the region, and the development of a more comprehensive set of recommendations for the LRPC, communities, and others to consider.

In 2015, LRPC adopted an updated regional transportation plan. It includes a comprehensive set of recommendations but did not address non-motorized needs in great detail. *2023 Lakes Region Bicycle and Pedestrian Plan* is an important component of the regional transportation program and serves to augment the 2015 Transportation Plan through consideration of non-motorized modes. See Appendix A for more detailed information on relevant state and regional planning efforts.



### Why a Bicycle and Pedestrian Plan for the Lakes Region?

An overarching reason to plan for walking and bicycling is because many people want to feel safer doing so in their communities. Families and individuals, young and old, recreational and utilitarian users across the region have expressed not only a sense of concern for personal safety and the safety of children, but have also expressed a strong desire for more walkable and livable communities. When people feel safe, and perceive walking and bicycling as enjoyable activities, they spend more time in public places, whether shopping, strolling, bicycling for fun or exercise, being with others, or simply enjoying the outdoors. Safe and well-designed public places leverage desirable community activity, and they provide opportunities to off-set some other health and environmental impacts created in part by our dependence on motor-vehicles.



# CHAPTER 2: A VISION FOR A BIKEABLE & WALKABLE REGION

*"Livability means being able to take your kids to school, go to work, see a doctor, drop by the grocery store or post office, go out to dinner and a movie, and play with your kids in the park - all without having to get in your car."*

~U.S. Transportation Secretary, Ray LaHood

## Revising the Vision

The vision statement of the 2012 Plan was revised based on review and discussion from Lakes Region Staff and the Transportation Advisory Committee in the Spring of 2022, and the input from the Lakes Region Residents through the Bicycle and Pedestrian Plan.

### The 2012 Vision:

*"A purposefully connected network of trails, sidewalks, road shoulders, and markings promoting safe and enjoyable bicycle and pedestrian mobility. Design and maintenance of livable, complete streets that support transportation, recreation, health, and economic interests throughout the Lakes Region."*

Meeting participants generally agreed with the vision statement from 2012 but wanted it to convey the importance of personal comfort and enjoyment derived from being able to safely and easily walk and bike. While biking and walking can always be viewed as travel and transportation, these terms may suggest a purely utilitarian idea of biking and walking. The term 'mobility' is considered to be a more inclusive term that does not suggest any one purpose.

Additionally, participants agreed that their vision was of an environment where biking and walking were actively promoted or deliberately supported through design and function, and that the many elements of a non-motorized pathway network be explicitly included as part of the vision. This was mainly a reflection of participants' perception that the former plan focused primarily on improving the multi-use trails of the region. Lastly, the majority of participants found the use of the word 'feasible' to be confusing, assuming that it implied that the vision was for bicycle and pedestrian accommodation only where feasible. While the term 'feasible' was used in 2006 to indicate a vision for an environment where biking and walking is a feasible option, most participants who critiqued the 2006 vision felt that a safe and enjoyable network necessarily included feasible options to walk and bike.

### The 2023 Vision:

*"A purposefully connected network of trails, sidewalks, road shoulders, and markings promoting **safe, enjoyable, and inclusive** bicycle and pedestrian mobility for residents of all ages and physical ability. Design and maintenance of livable, complete streets that support transportation, recreation,*



health, and economic interests throughout the Lakes Region.”

This plan is designed to achieve the vision by promoting safe bicycle and pedestrian mobility throughout the region while supporting the construction of inter- and intra-town pathway systems by providing the public and non-public sectors with guidance and data for funding, design concepts, and technical contacts.

## Clarification of the Vision Statement

### Safe

Bicycle and pedestrian travel become safe when motor vehicle hazards to non-motorized users have been minimized, when problem areas along the network have been addressed through the provision of adequate space or corrections to design, when built sections have been connected, non-motorized and motorized users have been educated, and enforcement is an on-going process.

### Enjoyable

Bicycle and pedestrian travel become enjoyable when it is safe, and when it is apparent to the user that pedestrian and bicycle needs have been thoughtfully considered in the design, construction, and maintenance of the pathway network, particularly with regard to exposure to motor vehicle hazards, and when useful signage and informational materials have been provided that identify routes, hazards, and helpful contextual information.

### Inclusive

This term is added to the 2023 vision statement in order to encourage design and consideration of projects that improve accessibility for all residents in the Lakes Region. As it is further outlined in the vision statement, this includes residents of any age, gender, and physical ability. The Lakes Region will strive to create a cohesive bike and pedestrian infrastructure focused around the principles of equity and inclusion.

The updated vision is supported by the following goals and objectives.

**GOAL 1 - CONNECTIVITY:** Improve connections between the region’s walking and bicycling routes.

- Complete regional and local connections through on-street networks that more seamlessly links city and town centers with rural areas.
- Eliminate gaps in the rail trails and shared use path networks.
- Promote better links between destinations with improved pedestrian and bicycle facilities.
- Support and encourage efforts of the NHDOT and local public works departments to increase bicycle infrastructure.



**GOAL 2 - DESIGN:** Collaborate with NHDOT and the region's municipalities on bicycling and pedestrian infrastructure design that reduces level of stress experienced by bicyclists and walkers.

- Plan for sidewalks and safe crossings where warranted on state highways and local roads that run through areas with concentrated commercial and/or residential land uses.
- Encourage bicycle facilities designed for "all ages and abilities" that incorporate traffic calming elements (e.g. narrower lanes, on-street parking with bump-outs, roundabouts, raised speed reduction medians, horizontal and vertical deflection, changing one-way streets to two-way, etc.).
- Participate in the NHDOT's Complete Street Advisory Committee.
- Use the Lakes Region Transportation Technical Advisory Committee (TAC) as an opportunity to communicate with local communities about transportation bicycling and walking.
- Establish a Lakes Region Bicycle and Pedestrian Advisory Committee as a standing committee to the Transportation Advisory Committee to monitor plan recommendations on an annual basis, and to update the plan at least every 4-5 years.

**GOAL 3 - POLICY:** Provide outreach and training to interested Lakes Region municipalities on streetscaping and complete streets policies that promote walking and bicycling.

- Collaborate with Lakes Region municipalities on Transportation Alternatives Program (TAP) Project proposals.
- Distribute bicycle education and encouragement programs to interested Lakes Region communities.
- Provide Lakes Region communities with information and materials on land use strategies and regulations which address bicycle safety and usage.
- Provide communities and interested organizations with useful regional walking and bicycling maps and information.

**GOAL 4 - EQUITY:** Promote equity in pedestrian and bicycle planning.

- Ensure that bicycle and pedestrian planning includes understanding the needs in traditionally underserved communities.
- Encourage funding that takes into account need, safety hot spots and future demand.
- Promote the design of bicycle and pedestrian infrastructure that improves accessibility for users of any age and physical ability.



**Goal 5 - DATA:** Ensure a continuous and comprehensive process of bicycle and pedestrian data collection.

- Communicate with, and assist interested Lakes Region communities with collecting accident, geographic, trip and other related data.
- Maintain research files on bicycle and pedestrian related information.
- Coordinate data collection with NHDOT, other governmental and non-governmental organizations.
- Encourage municipalities to conduct before and after studies of new bicycle facilities to measure effectiveness.

**Goal 6 - SAFETY:** Ensure that there are opportunities for the safe movement of non-motorized modes of travel.

- Encourage a continuous, comprehensive program which first addresses the most viable on-road and off-road routes.
- Support local programs, education, and local law enforcement efforts that are designed to reduce the number of bicycle and pedestrian accidents, injuries, and fatalities, particularly those that involve motorists.
- Support a policy of creating usable shoulder widths for bicycles and pedestrians on rural roads.
- Prioritize pedestrian and bicycle access and safety along roads near public or private K-12 school.
- Encourage flexible speed-limit policies that increase safety on state highways.

**GOAL 7 - ECONOMY and HEALTH:** Leverage walking and bicycling improvements to promote economic development and improve public health opportunities.

- Encourage local land-use policies and design strategies that encourage walkability and bicycling.
- Partner with public health organizations and officials to identify data needs to measure the impacts of walking and bicycling on public health.
- Facilitating bicycling and pedestrian improvements along the Lakes Region Tour Scenic Byway.
- Support local and statewide educational and incentive programs that encourage people of all ages to walk and to ride bicycles for health and mobility.
- Promote visibility and wayfinding of pedestrian and bicycle infrastructure.
- Increase cooperation between municipalities in creating and marking pedestrian and bicycle infrastructure.



# CHAPTER 3: PLAN DEVELOPMENT AND COMMUNITY INPUT

The development of the *2023 Lakes Region Bicycle and Pedestrian Plan* began in the winter of 2021.

An update of the 2012 plan was viewed as an important step to enhancing the existing bicycle and pedestrian network and promoting the Lakes Region as a biking and walking destination. LRPC's vision is to have a plan that is used by community leaders, public officials, regional tourism agencies and biking and walking enthusiasts in order to promote walking and biking as viable and healthy mobility options, and to promote the development and preservation of suitable infrastructure for safety and enjoyment.

## Public Survey

An internet-based survey was designed to collect data on biking and walking, and to provide an opportunity for those who could not attend the public meetings to be able to provide input on biking and walking in the region. The survey was publicized similarly to the meetings.

The survey was open for six weeks from the beginning of January to Mid-February. In that time frame, 634 responses were received. Survey questions were designed to understand:

- For what **purposes** people bike and/or walk
- What **facilities** people use to bike and/or walk

- What **prevents** people from biking and/or walking more
- What would **encourage** people to bike and/or walk more

Specific survey results are discussed in detail in Chapter 5, where they serve to highlight existing conditions and views about walking and bicycling. The complete survey results can be found in Appendix B.

## Design Concepts

In support of a more comprehensive assessment of the existing conditions for bicycling and walking, LRPC solicited nominations from member municipalities for sites throughout the region that were particularly unsafe or poorly accommodate pedestrians and bicycles. The intent was to highlight a number of sites that are representative of different kinds of design problems, and that may share commonalities with many other sites in terms of existing barriers to safe and enjoyable accessibility as well as potential solutions.

Respondents were asked to nominate intersections, road segments, network connectivity gaps, or trail related sites that were either unsafe or presented access challenges. LRPC asked for a descriptive narrative and for supportive documentation that would help describe and characterize the sites. LRPC emphasized that sites that were of regional significance would be prioritized for review.





As part of the effort to characterize existing conditions in the Lakes Region, LRPC engaged Resource Systems Group, Inc., a transportation planning firm with offices in Concord, NH, and Ironwood Design Group, LLC, a landscape architecture, urban design, and environmental planning firm located in Exeter, NH, to assess bicycle and pedestrian access and safety improvements in 15 municipalities in the Lakes Region and provide graphics depicting conceptual solutions at 15 of 36 sites that were nominated. Site selections were made by LRPC transportation staff and were based on the following criteria:

- Regional importance
- Geographic distribution
- Severity of existing conditions
- Nature of sites (trail, sidewalk, intersection, right-of way constraint, etc.)

Consideration was given to a balanced selection of rural and urban sites when developing a priority list of sites. LRPC staff and consultants teamed with municipal officials in conducting field assessments at each location. The team of engineering and

design professionals assessed each of the sites that were selected. Sites were visited over three days with LRPC staff and local representatives familiar with the particular challenges to safe and enjoyable biking and walking. Following site visits, the team met to review findings and discuss conceptual solutions that would address the challenges that were observed and conveyed by local stakeholders.

Detailed site analysis and design improvement recommendations are presented in a special supplement to this report titled, *Bicycling & Walking: Conceptual Design Supplement*. It contains detailed narrative assessment of existing conditions at each of the 15 sites, and discussion of conceptual design improvements that address the accessibility and safety problems at each site. Existing conditions are depicted with photographs, and conceptual designs are illustrated to show how pedestrian and bicycle safety and access could be improved. The challenges present at these sites are related to many of the topics discussed in Chapter 4 (Review of Existing Conditions) and help to highlight the conditions that must be addressed in order to be more walkable and bikeable, and livable.



# CHAPTER 4: EXISTING CONDITIONS

There are many elements of the built environment that affect pedestrians and bicycles, and the policies that determine the design and function of these elements are just as important. This chapter reviews the condition and impacts of many important elements of the built environment in the Lakes Region. Design and policy consideration related to these elements of the built environment are discussed as well.

project completion. Since 2006, sections of multi-use trail have been completed throughout the Lakes Region.

## Multi-Use Trail Development

### WOW Trail - 4.5 miles

The first phase of the Winnepesaukee Opeechee Winnisquam (WOW) Trail was completed in early 2010. The paved path connects bikers, walkers, and runners from Elm Street in Lakeport to downtown Laconia. It became a popular trail through

Trail conditions in the region are viewed as good by survey respondents. They generally offer more space than sidewalks, a significantly reduced exposure to motor vehicle hazards, and more intimate access to natural surroundings. More trails and completed connections were prioritized by both survey respondents and public meeting attendees, and are considered to be a priority regional goal. LRPC should continue to work with NHDOT and New Hampshire Department of Natural and Cultural Resources (DNCR) to support policies that will help build successful trails. LRPC should also continue to work with trail organizations to support economic development studies, planning and design considerations, and federal funding for



Map of proposed Opeechee Loop trail



the heart of the Lakes Region’s most densely populated community. In fact, the trail was the most used one among survey respondents. Phase two was completed in the fall of 2016. It continues the trail from Laconia’s train station to a convergence with Belmont’s Winnisquam Scenic Trail at Belmont’s Leslie Robert’s Beach before ending at Lakeport Square at the corner of Elm St. and Union Ave in Laconia. The trail offers beautiful views of Lake Winnisquam while providing opportunities for swimming and picnicking along the route. In total, phases I and II of the WOW Trail and Belmont’s Winnisquam Scenic Trail create 4.5 miles of continuous trail for pedestrians and cyclists to enjoy.

With phases I and II of the trail being so popular, in October 2021 plans were revealed to extend the WOW Trail by five miles around Opechee Bay. The extension would begin at Lakeport Square and travel perpendicular to Elm St. through the former State School property. Then, it would loop around to travel through Ahern State Park on the other side of the bay, before continuing to run perpendicular to the entire length of Shore Drive. At that point, it would travel along Holman St, Gale Avenue, and finally a three-block section of Pleasant St. before reconnecting to the lower portion of the Rail Trail in Veterans Square. This extension would add an additional 2.5 miles of trail, totaling the WOW Trail to seven miles of non-motorized recreation for the community to enjoy.

Over the past decade, there have also been plans to extend the trail from Lakeport north to Weirs Beach. However, this project has been difficult to complete due to opposition from abutters from the South Down and Long Bay condominium communities.

### Winnisquam Scenic Trail

The Winnisquam Scenic Trail will eventually be 5.2 miles long and will connect the WOW Trail in Laconia and the Winnepesaukee River Trail in Tilton. Phase I of III of the trail was completed in Belmont in August 2016. It begins at Leslie E. Roberts Drive on the Laconia-Belmont city line, turns on to Horse Point Road, then continues through the woods on NHDOT land. The paved path runs along the former B&M Railroad along the shore of Lake Winnisquam, crossing a trail easement donated by Sun Lake Village. After 1.8 miles, phase I ends at US route 3 above Mosquito Bridge.

Phase II of the Winnisquam Scenic Trail is currently in the planning stages. If completed, it would connect an extra 0.5 miles to the existing 4.5 miles of continuous paved trail between the Lake Winnisquam Scenic Trail in Belmont and the WOW Trail in Laconia. Phase II would begin at Osborne’ Agway Garden Center, the end of the existing trail segment before reaching US Route 3. The proposal includes a pedestrian and bicycle hybrid traffic light to help pedestrians manage the busy road. The exact location for the crossing station is ongoing with the NHDOT Traffic Bureau. From there, phase II of the trail turns parallel to Route 3 before turning south on a proposed 1,200 ft raised boardwalk adjacent to the existing railroad track between Timothy Drive and Dupont Road. This boardwalk would end at Elaine Drive. The \$1.25 million project cost would be covered by local funds as well as funds from the Federal Highway Transportation Alternative Program.

The challenge in completing this addition is the need to cross US Route 3. The current speed limit would create an unsafe environment for pedestrians and cyclists, and it would likely have to be reduced.



### Winnepesaukee River Trail - 5.1 miles

The Winnepesaukee River Trail provides trail access from the city of Franklin and the Northern Rail Trail, eastward to Tilton, Northfield, and the ongoing trail projects in Belmont and Laconia. It is a completed section of the 2006 vision of the Lakes Region Connector, which would allow for trail travel throughout the Lakes Region. In 2011, steps were taken to add a connection across the Winnepesaukee River between Tilton and Northfield, but as of 2021 there are no longer plans to install one.

### Northern Rail Trail - 58 miles

The Northern Rail Trail is part of the longest rail trail in New Hampshire spanning 58 miles from Lebanon to Boscawen. It offers scenery of wetlands and wooded areas, and views of the Merrimack and Mascoma Rivers. The elevation grade is mostly never greater than 1% and the surface consists of cinder or gravel.

26 miles of this trail passes through the Lakes Region communities of Danbury, Andover, and Franklin. As of 2021, the Merrimack County portion of the trail is 34 miles long. Over the past decade, a total of 9.3 miles of trail have been added, extending the trail south within a half-mile of the Hannah Duston Park and Ride on US Route 4 in Boscawen. In addition, volunteers have repaired culverts, bridge decking and railings, and mileposts to maintain and beautify the trail. Trail signage and a restoration of the historic round table site in Franklin was also completed.

The priority is to finish connecting the southern terminus, located in a Boscawen corn field, a half-mile to reach the Concord city line within the Hannah Duston Park and Ride. That extension would then connect the trail to the other trails emanating from Concord. Another hopeful extension is to connect the section of trail in west Franklin to the Winnepesaukee River Trail. The trail

association will continue to promote the rail trail to garner support from businesses and residents within the trail's path. The NH Trails Bureau will also continue to work with the Northern Rail Trail to assure proper maintenance of the trail.

Another initiative by the Northern Rail Trail is the recent introduction of e-bike charging stations along the route. In 2020, local businesses in Danbury, Andover, and Boscawen offered access to their chargers for trail users. This agreement allows the trail to be used by all forms of recreational transportation and makes it more accessible to people of all physical abilities. For example, the Friends of the Northern Rail Trail are now promoting their own Cycling Without Age project. This program will allow seniors to participate in rail trail use by using an electric Trishaw with the assistance of volunteers. With the charging infrastructure to support e-bikes, the Northern Rail Trail is now able to promote accessibility and inclusion while strengthening its local sense of community.

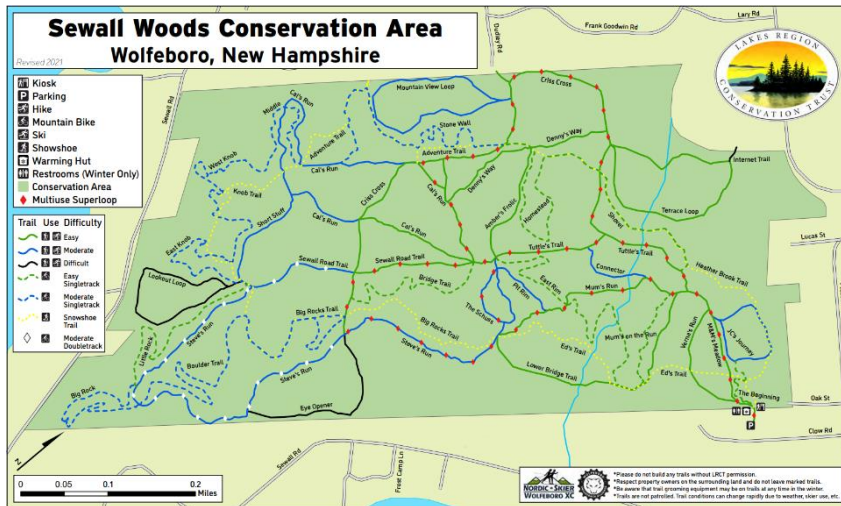
### Sewall Woods Trails - 3 miles

The Sewall Woods Conservation Area is a 179-acre woodland in Wolfeboro, NH preserved by the Lakes Region Conservation Trust. The area provides multi-use trails for all experience levels and a scenic forest and wildlife habitat. The popular trail network within the woods has been around for about a decade and is a great example of a local trail project completed with privately raised funds. The area is a stand-alone recreational resource rather than a corridor with multiple access points, however, it is within a short walk of downtown Wolfeboro, making it an ideal resource that meets the needs of the Wolfeboro community better than corridor trail development. Corridor trail development must consider infrastructure right-of-way, adjacent property owners' interests, and conflicts with motor vehicle



needs. Whereas stand-alone recreational areas near downtown amenities provide

important to Moultonborough residents because there are no nearby trails in surrounding communities.



Map of Sewall Woods Trails

alternative places to walk than the very narrow shoulders along rural roads.

### Cotton Valley Trail - 12 miles (Sanbornville to Wolfeboro)

The Cotton Valley Rail Trail is a 12-mile trail in total; within the Lakes Region, it connects downtown Wolfeboro with parks and beaches. Its crushed stone path points east to Wakefield. The trail is heavily used year-round for walking, biking, running, wildlife viewing, fishing, cross country skiing, and snowmobiling. It is a great example of how crushed stone trail beds can successfully accommodate multiple users.

### Moultonborough Neck Trail

Improvements are needed on the Moultonborough Neck Trail due to its unfortunate placement at a lower grade than an adjacent roadway. The elevation difference has led to drainage problems where debris is washed onto the paved trail. pedestrians and bicyclists would benefit from an improved and upgraded trail. Proper maintenance of this trail is especially

### Ossipee Lake Trail

The Ossipee Lake Trail is a route around Ossipee Lake that is ideal for bicyclists and pedestrians due to its on-road wide shoulders. However, users face challenges at narrow bridges and along segments with many side streets. To accommodate this, NHDOT has integrated two culvert replacements along the route in direct support of the future vision for additional bike lanes.

### Parking

Because free parking is viewed as an important economic development tool, it is free in most communities in the Lakes Region. This situation can exacerbate traffic congestion significantly. In some dense urban squares in big cities, cruising can amount to thirty percent (30%) of the traffic or more. Most of the year, it is not difficult to park in any Lakes Region downtown district or village. However, the Lakes Region's seasonal population expansion and high summer and weekend visitation rates can place severe constraints on parking availability in some of the densest commercial locations, such as Meredith, Wolfeboro, Laconia, and Tilton.

Communities can address parking demand and the hazards to pedestrians and bicyclists in several ways:



- Assess peak-demand parking supply. If fewer than fifteen percent (15%) of on-street and municipal lot stalls are not regularly available, then additional supply or reduced demand is necessary. The first step is to assess the parking problem and understand opportunities and constraints for increasing supply.
- Assess whether local codes are effective and consider alternatives. Examples include: (a) shorter on-street time regulations, which promote off-street parking; (b) charging for on-street parking during peak demand (summer months, weekends, etc.), and many others. Many parking regulations make Sunday and evenings free, but if a demand problem exists during those times, it may be appropriate to charge( e.g., Weirs Beach). Fees not only help with turnover and reduce cruising congestion, but they also provide a marginal incentive for people to walk or bike if they perceive a monetary cost at their destination. This alone can help promote more walking and biking, and a safer streetscape.
- Conducting a comprehensive parking study to identify parking needs and safety.

Parking design also affects pedestrian and bicycle safety. Some communities have pull-in angled parking. This parking configuration creates a convenience for drivers and an extreme hazard for pedestrians and bicycles - cars can pull into spaces directly from the travel lane without indication (posing a hazard to cyclists), and by design, back out into traffic. A safer configuration for angled parking is to have reverse-angled parking, as shown on the right side of the photo below. This slows

driver speeds when backing into spaces and gives them direct line-of-sight to oncoming cyclists when pulling out. Reverse-angled parking has had mixed results in recent years. Bristol tried to implement this change in the downtown area but was met with pushback from the town and ended up repainting to remove them. Laconia has had



success implementing reverse-angled parking stalls along the east and west portions of Beacon St.

In many lakefront communities and in the larger communities of the Lakes Region where parking stalls have been stripped on the road, stalls are striped right up to intersection corners, crosswalks, and curb-cuts. This practice at intersections poses a significant hazard to pedestrians for several reasons and is in violation of state law requiring 20 feet of clearance from crosswalks at intersections. The NH Supplemental Design Criteria supplementing the FHWA Roundabouts: An Informational Guide (2000) for roundabout design on New Hampshire state maintained roadways makes clear that for the purposes of the law, roundabouts are considered to be intersections, and no parking is to be allowed within 20 feet of roundabout crosswalks.

Parked cars adjacent to crosswalks obscure pedestrian visibility to drivers and place pedestrians near turning and parking vehicles. By locating parking stalls in



violation of state law, municipalities may unintentionally be exposing themselves to personal injury claims from pedestrians, as well as drivers who were parked in illegal locations and whose vehicles contributed to line of sight related to accidents.

Crosswalks and intersections benefit greatly from intersection corner curb extensions, called "bulb-outs", that protect pedestrians from cars pulling out of parking spaces, make pedestrians visible to oncoming traffic, allow pedestrians to see on-coming traffic more easily, reduce crossing distances, and calm traffic approaching intersections. Bulb-outs at intersections and mid-block crossings also allow more parking stalls to be accommodated legally. Bulb-outs create additional challenges for snow removal, but this should be a secondary consideration where pedestrian safety is an issue.

Municipalities should mark parking stalls in accordance with state law or should install bulb-outs to enhance pedestrian visibility. Bulb-outs also provide an extra level of safety by placing a curb between parked cars and pedestrian crossing points. Municipalities experiencing peak demand parking supply problems may also wish to conduct parking demand analyses in order to evaluate options for ensuring adequate parking supply that do not involve creating serious hazards to pedestrians.

## Pavement Conditions

Pavement conditions affect bicyclists more than pedestrians. Many cyclists who attended public meetings expressed frustration with the state bicycle map for the Lakes Region depicting a bicycle route system along roads in such poor condition. Deteriorating roads are often heaved, have potholes that are very hazardous to cyclists, have longitudinal cracking that is equally hazardous, and have inconsistent road

edges that can affect the usable shoulder width. All of these conditions also create a source for loose gravel that ends up collecting on the edges of the road where cyclists ride.

In 2019, NHDOT created a map of road conditions using data collected from 2018 - 2019. In the third maintenance district, where most Lakes Region communities are located, the pavement conditions are classified as 45% good, 34% fair, 19% poor, and 2% very poor. With less than half of roads considered good, this limits cyclists in their safe route options. Without widespread smooth pavement, cyclists must ride on routes with the lowest traffic volumes - a much safer option than numbered state highways, which are major routes for regional motor vehicle travel. While less traveled routes allow cyclists to ride comfortably in the lane, where edge conditions are less hazardous and road hazards can be avoided, suitable improvements to numbered routes would demonstrate commitment to safety and sustainability principles and recognize roads as a principle state recreational resource.

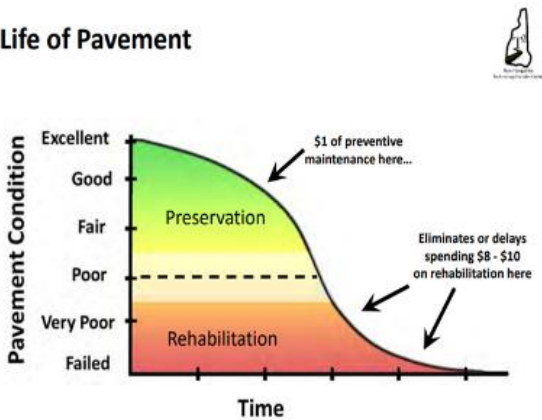
While there are many construction projects identified in the NH Ten Year Transportation Plan (Ten Year Plan or TYP), preservation of the existing system is critical to maximizing the effectiveness of limited funding. While restoring pavement condition is a whole-road investment, obviously targeted at preserving roads for motor vehicles, cyclists would benefit from a policy prioritizing preservation of the existing system.

The pavement deterioration curve demonstrates the advantage of spending for preventative maintenance. The curve is representative of a road with a design life of about twenty years. After a roadway has been constructed, a slow decline in pavement condition is observed. As the



roadway continues to age due to climate, traffic loading, etc., a much sharper decline is typical. Applying a pavement preservation treatment will generally restore the pavement condition. If treatment is delayed for another three years, a more costly rehabilitation treatment will be required to restore the pavement condition. The cost of

Life of Pavement



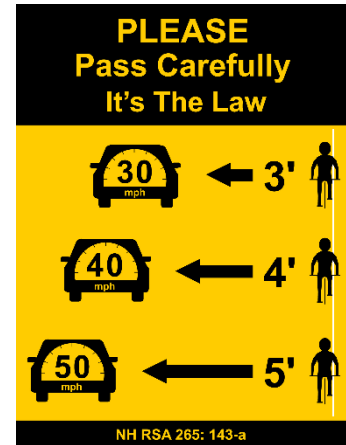
the rehabilitation treatment can be upwards of ten times more than the cost of the preservation treatment.

NHDOT resurfaced just over 60 miles of pavement in the Lakes Region in 2023. This includes mostly light capital paving, with some sites of major rehabilitation in Ossipee and minor rehabilitation in Bristol. The details of this plan are included in their published annual Paving Program Map.

The 2025-2034 Draft Ten Year Plan outlines potential issues for the future of pavement conditions in the state. Due to payback of NHDOTs Transportation Infrastructure Finance and Innovation Act (TIFIA) loan the department expects to lose approximately \$20 million from their repaving budget. This is estimated to drop the miles of resurfaced roadway in half from ~440 miles to ~230 miles. Without additional funding it seems likely that our region will only have about 30 miles of repaving done by the state annually starting in 2025. This will have significant impacts on roadway conditions of the regions more substantial corridors.

## Shoulder Space

The lack of available paved shoulder space for cycling or level shoulder space for walking are leading concerns among survey respondents. In 2009, the NH Legislature



adopted special road rules for bicyclists (NH RSA 265:143-a). The law requires drivers to exercise caution when approaching bicyclists by leaving a prudent distance between the vehicle and bicycle. A prudent distance is considered to be at least three (3) feet when the vehicle is traveling at 30 miles per hour or slower, with an additional foot of clearance for every 10 mph. After multi-use trails, rural road shoulders are also the most common places where survey respondents report walking. Availability of shoulder space is dependent upon multiple factors, including pavement width, lane width, number of lanes or striped medians, right of way width, and physical constraints. For example, West Shore Road along Newfound Lake is severely constrained by near vertical bedrock along sections on the west side of the road and by the lake on the east. Safe accommodation of pedestrians and cyclists along this popular route is a challenge that will require a creative solution.

In the Netherlands, roads like this have a configuration that accommodates all users within the existing space. For example, an 18-foot segment of pavement would have two 4-foot paved shoulder lanes, and one 10-foot center lane. The road legally accommodates two-way motor vehicle traffic - cars drive along either side of the



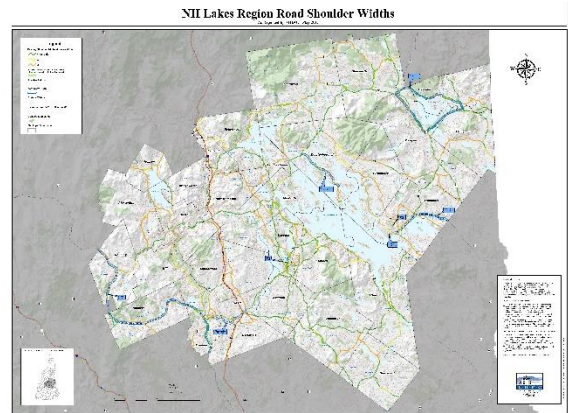


road, straddling the striped shoulder lane. When a car encounters a cyclist, it moves to the center of the road and slows down considerably. If two vehicles encounter each other in the center of the road while heading in different directions, they are moving so slowly that they are no danger to each other. Once the vehicle has passed the cyclist, the car moves back to the right and resumes at a reasonable speed.

While this traffic configuration is essentially non-existent in the United States, it is a successful example of serious pedestrian and bicycle prioritization that still manages to accommodate motor vehicles along lower volume roads. This traffic configuration is successful for three important reasons: (1) slow vehicle speeds; (2) high maneuverability of cars at no physical cost to the driver; (3) the significant physical protections for drivers traveling inside of motor vehicles. Configurations like this offer the kind of simple design solutions that gives the Netherlands the distinction as a country with the highest non-motorized mode share, as well as being a destination that draws tourists eager to cycle the country's cities and regional trails.

While the road configuration example from the Netherlands is illustrative of a creative and unorthodox approach, the reasons for its success are important considerations that should inform all transportation planning and design. Traffic calming is possible for many projects where safe separation cannot be achieved within available space, and where cultural travel norms insist on equal accommodation of travel modes.

In New Hampshire, many segments of local and state roads have lane widths that are in excess of the maximum FHWA recommended width of 12 feet. LRPC has produced a map using NHDOT data showing available road shoulder s



pace on all road segments classified as minor collectors or higher. The map, included in the Appendix, shows road shoulder space in three categories, based on available data: 0-2 feet, 3 feet, and 4 feet or greater. It also indicates road segments where paved shoulder width could be increased from the lowest category to a higher category through the striping of lane widths at 10 feet, within the American Association of State Highway Officials' (AASHTO) recommended width range for arterial routes. The analysis of the NHDOT data indicates that over 30 miles of road shoulder along state routes in the Lakes Region could be improved from the worst category (0-2 feet) to at least three feet by striping 10-foot lanes.

Many road segments also have center turning lanes that accommodate only a small number of turns at the expense of shoulder width (two travel lanes and a turning lane with minimal shoulders as opposed to no turning lane and wider shoulders). Center turning lanes should be very carefully considered, and should only be included in transportation project plans where significant delays would be likely to result from turning activity. These lanes not only consume existing pavement that could otherwise be shoulder space, but they also promote higher speeds due to reductions in visible and physical constraints within the right-of-way without necessarily increasing vehicle throughput. Such lanes can be



avoided by utilizing parallel access roads internal to adjacent development, and by accepting a certain amount of delay that does not result in overall congestion. Their visual impact on the streetscape is substantial, and they cost more to build and maintain.

## Lane Widths

The American Association of State Highway and Transportation Officials (AASHTO) "Green Book" is commonly referred to as the traffic design bible (the most recent edition is officially titled Geometric Design of Highways and Streets, 6th Edition, 2011). The Green Book calls itself a "guide" - meaning that it contains suggestions - but many states and municipalities treat AASHTO recommendations as required standards. Even so, while AASHTO publications tend to suggest ranges for key road dimensions, with the exact size to be chosen depending on the particular context of each project, professional practice is to use the maximum size whenever possible. This is partly because of the tendency to "overbuild" by designing roads to handle faster speeds, heavier traffic, and bigger vehicles than officially anticipated - partly to provide an extra margin of safety, partly to prepare for possible growth, and partly because of the "cars are the future" attitude that has dominated American planning and culture for much of the past century.

For lane widths, AASHTO suggests that "local" roads should be constructed with 9 to 12-foot lane widths and that "collectors" and "arterials" have 10 to 12-foot lane widths. The Federal Highway Administration's publication, Mitigation Strategies for Design Exceptions (July 2007, chapter 3) states: "Narrower lane widths may be chosen to manage or reduce speed and shorten crossing distances for

pedestrians. Lane widths may be adjusted to incorporate other cross sectional elements, such as medians for access control, bike lanes, on-street parking, transit stops, and landscaping. The adopted ranges for lane width in the urban, low-speed environment normally provide adequate flexibility to achieve a desirable urban cross section without a design exception."

However, NHDOT policy is to stripe lanes at 12 feet or to the pavement edge if 12 feet cannot be accommodated with available pavement. Given the narrow and unchanging distance between buildings on many urban streets, maximum traffic lane widths often leave no room for widening sidewalks, installing bicycle lanes, center medians, or intersection bulb-outs, replacing storm sewers with more environmentally friendly stormwater treatment, adding street furniture, trees or other aesthetic improvements, and much else that would make streets more attractive and useful.

Practice of this policy is evident along many of the numbered routes in the Lakes Region where pavement is too narrow to accommodate 12-foot lanes. Striping often follows the pavement edge, yielding variable lane widths along many segments. Other sections of road have been striped at widths much greater than 12 feet. In some places this is driven in part by intersection design and other factors, and may be somewhat defensible, but wide travel lanes promote higher speeds which are exponentially associated with higher risk of pedestrian fatality.

## Bikeability Assessment

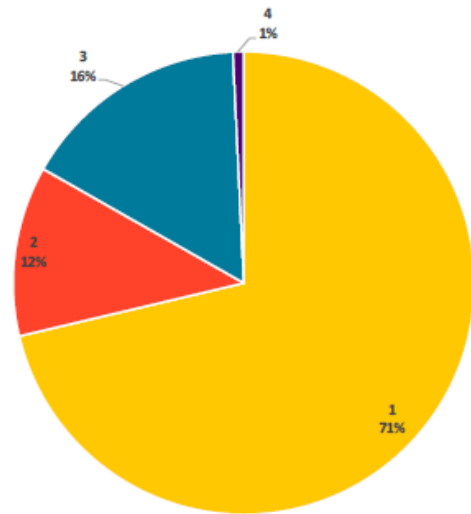
In 2019, LRPC performed an assessment on the "bikeability" of the region. The purpose of this report was to analyze current conditions and work being done in order to



direct future bike and pedestrian efforts by the Commission. The assessment uses the Level of Traffic Stress (LTS) as an indicator of how safe roads are for bicyclists and pedestrians. Higher LTS roads are more unsafe and require experienced users, while lower LTS are safe for users of all levels. The measurement of LTS does not include speed in this assessment because not all Lakes Region communities had this data available.

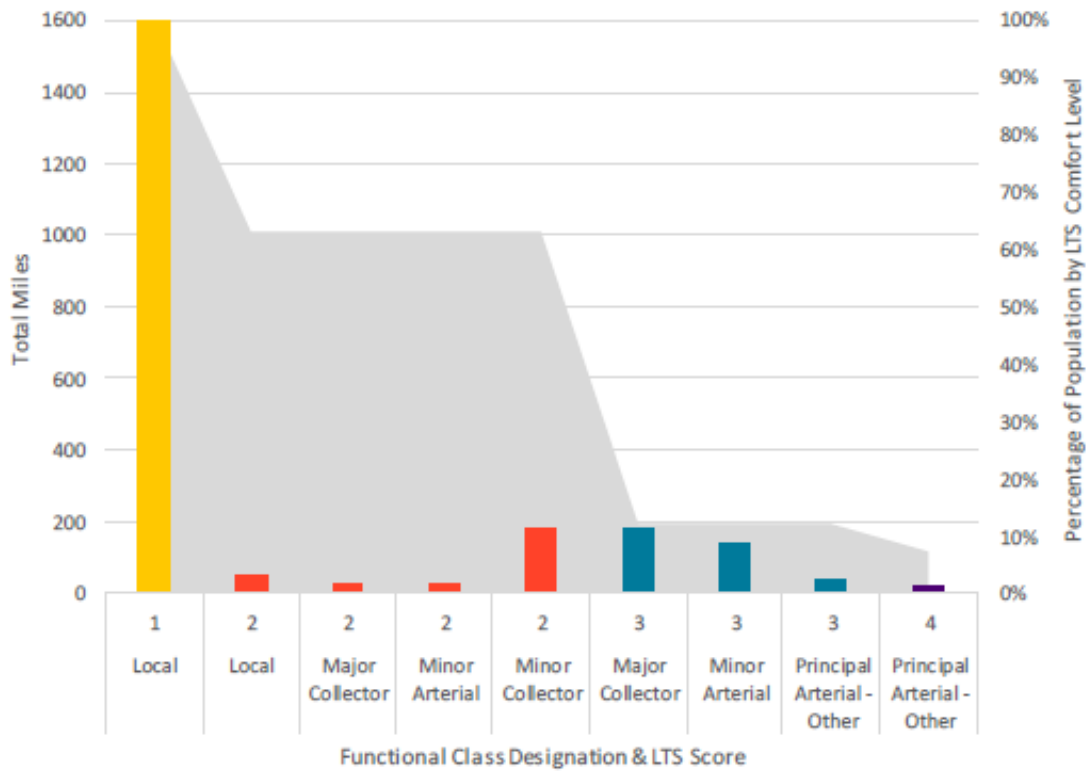
It was discovered that many of the rural backroads of Lakes Region communities had low LTS (1-2), while the larger main roads and highways had higher LTS (3-4). The figure below shows this relationship. Such a large portion of LTS 1 roads may be deceiving because they are mostly rural roads which are not always connected. This means that most residents would be able to bike and walk comfortably around their

Percentage of Total Miles in LRPC Area by LTS Score



**Figure 1.** Shows that majority of roads in the Lakes Region are LTS 1 because there are so many rural roads. The ones with LTS 3 or 4 are the main roads and highways that act as important connections between regional hubs.

LTS Score by Functional Class



**Figure 2** breaks down the roads by type and LTS levels. The shaded area is the proportion of population that can access the roads based on LTS score. This means that very few people can safely access LTS 3 and 4 which are roads of greater importance.



neighborhoods, but would not be able to safely access significant destinations along the main corridors. In other research by Laura Getts (2017), it was determined that “97% of regional routes cannot be completed without traveling along an LTS 3 or 4 segment”. This issue creates a significant break in connectivity because bicyclists and pedestrians cannot access local hubs or destinations.

One of the main areas identified in limiting connectivity is the Route 3 corridor from Franklin to Laconia. This road has a large section of LTS 4, the most dangerous condition, which limits access to a lot of resources and destinations along the corridor.

The assessment outlines priority projects to help reduce the LTS of roads in the Lakes Region. All of the projects here are included in the Ten Year Plan and are expected to be addressed by 2027. The report also outlines a simpler solution of using the planned NHDOT paving schedule to widen the shoulder widths of roads with painting rather than expanding the paved section. This will be an important tactic to follow up on and make communities aware of this opportunity to improve bike and pedestrian access on main corridors.

The assessment also recommends further analysis in order to see how connectivity can be improved throughout the region. A Network Analyst extension will be needed for a more detailed plan of which roads will provide the highest levels of connectivity and access to a variety of destinations for users. These strategies have been incorporated into the Action Plan described in Chapter 7.

## Electric Bikes (E-Bikes)

In E-Bikes have become a more popular form of transportation in the past few years. E-bikes can accommodate a larger portion

of the population since they lower the physical requirement to bicycling. Due to the ease of use and speed of travel, this new technology comes with some considerations that should be addressed. This includes rules/regulations, trail maintenance/material, and charging infrastructure.

E-bikes range depends on usage and battery size. Having reliable charging infrastructure will be important for commuters, tourists, and recreation.

**Class 1:** A bicycle equipped with an electric motor, of 750 watts (1HP) or less, that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the e-bike reaches 20 mph.

**Class 2:** A bicycle equipped with a throttle-actuated electric motor, of 750 watts (1HP) or less, that may be used to provide assistance until the e-bike reaches 20 mph.

**Class 3:** A bicycle equipped with an electric motor of 750 watts (1HP) or less, that provides assistance only when the rider is pedaling and that it ceases to provide assistance when the e-bike reaches 28 mph. a factory installed speedometer is also required.

*NH Bike Walk Alliance (NHBWA)*

E-bikes require less resistance to operate which leads to a higher portion of the population that are able to utilize this mode of transportation with ease.



## Regulations

E-bikes are under the same regulations as traditional bicycles.

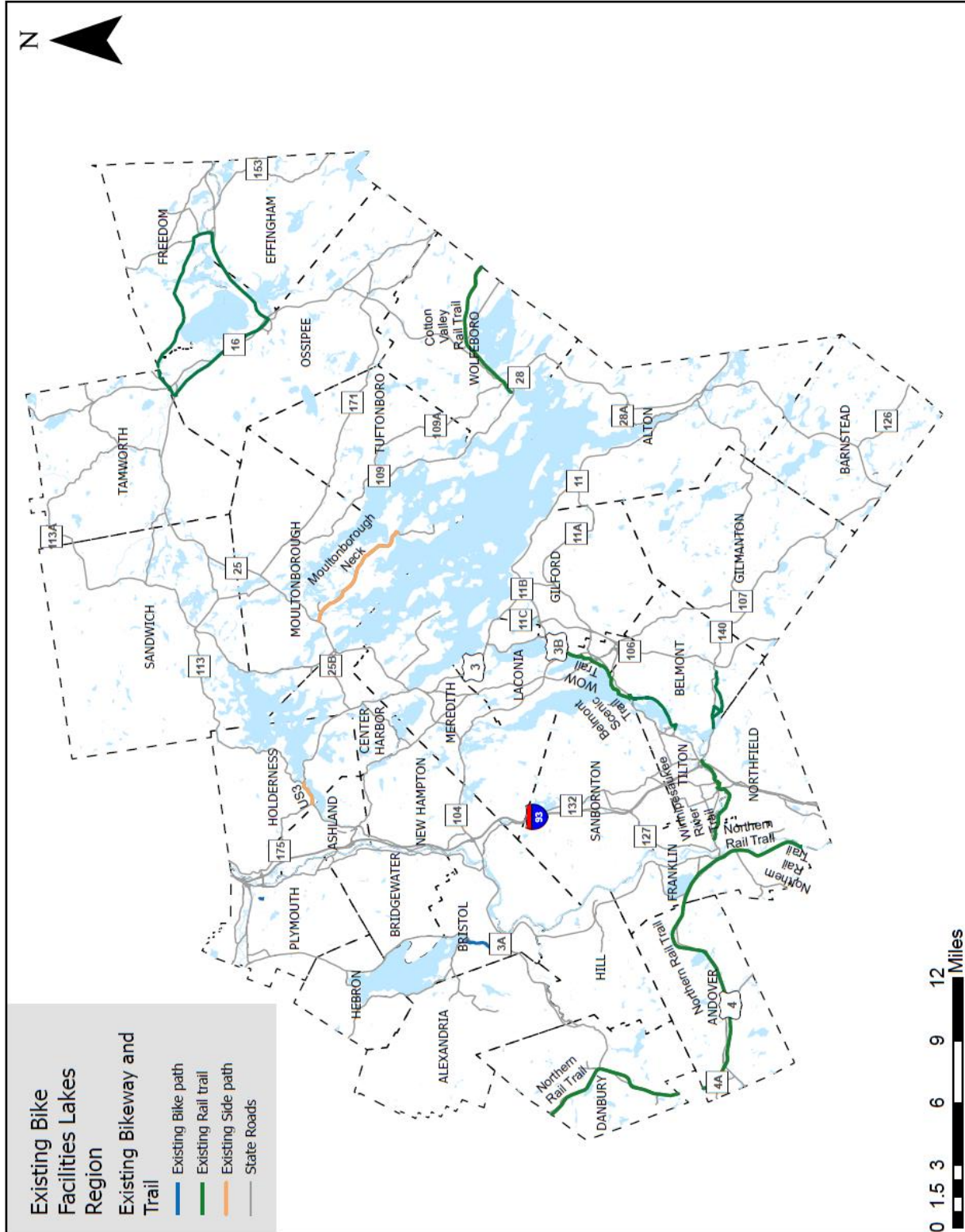
- Same rules for roadway use
- Helmets required for Class 1 & Class 2 e-bikes for users under the age of 16; 18 for Class 3.
- A city, town or state agency that has jurisdiction can restrict where e-bikes are allowed for safety reasons or to protect natural resources
- E-bikes are not subject to registration, licensing, or insurance requirements
- Class 1 and Class 2 e-bikes may be ridden on bicycle or multi-use paths where bicycles are permitted.
- Class 3 e-bikes are only allowed on roadways, unless otherwise allowed by the local authority.

Federal and NH State laws consider e-bikes to be motorized vehicles. This limits which trails e-bikes are allowed to be used on.



## Bicycle Routes and Maps

This map shows the current bicycle routes available across the Lakes Region.



# CHAPTER 5: USE TRENDS AND PUBLIC INPUT

## NH and US Data and Policies

The 2020 5-Year American Community Survey (ACS) for the State of New Hampshire reveals that only 2.79% of commuters either bike or walk to work. This number is quite low in comparison with the national portion of 13% of all trips that are bike and pedestrian users. Although it is small, the New Hampshire rate remains consistent with previous trends throughout the past decade.

Research done by the League of American Bicyclists continues the work of The Alliance for Biking and Walking by investigating bicycle and pedestrian trends. The data shows that while NH has a 12% fatality rate for bicyclists and pedestrians, there has been a decrease in federal transportation funds directed towards bicycle and pedestrian uses. Just from 2017 to 2020, New Hampshire reduced its federal funding to bike and pedestrian services by 76%. This major withdrawal of funding could have a detrimental impact on improving the safety of bicycle and pedestrian infrastructure.

The New Hampshire Strategic Highway Safety Plan for 2022 outlines one of its "critical emphasis areas" as non-motorized vulnerable road users, which includes pedestrians and bicyclists. The plan includes strategies to improve the safety of these users. It largely promotes the adoption of complete streets practices throughout the state as enforced by NHDOT. The U.S. Department of

Transportation (USDOT) defines complete

streets as follows:

*"Complete streets are designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are travelling as drivers, pedestrians, bicyclists, or public transportation riders. The concept of Complete Street encompasses many approaches to planning, designing, and operating roadways and rights of way with all users in mind to make the transportation network safer and more efficient."*

The Federal Highway Administration (FHWA) is working towards this goal by training local agencies how to incorporate complete streets into their planning process. The safety of vulnerable users is an extremely important consideration when analyzing a proposed transportation project. LRPC also aims to address this concern and prioritize complete streets practices by designing a safety action plan in the 2023 Regional Transportation Plan. This plan will help guide communities in their project design process with an emphasis on safety and accessibility for all transportation users.

## Concerns Expressed Through Public Meetings and Survey

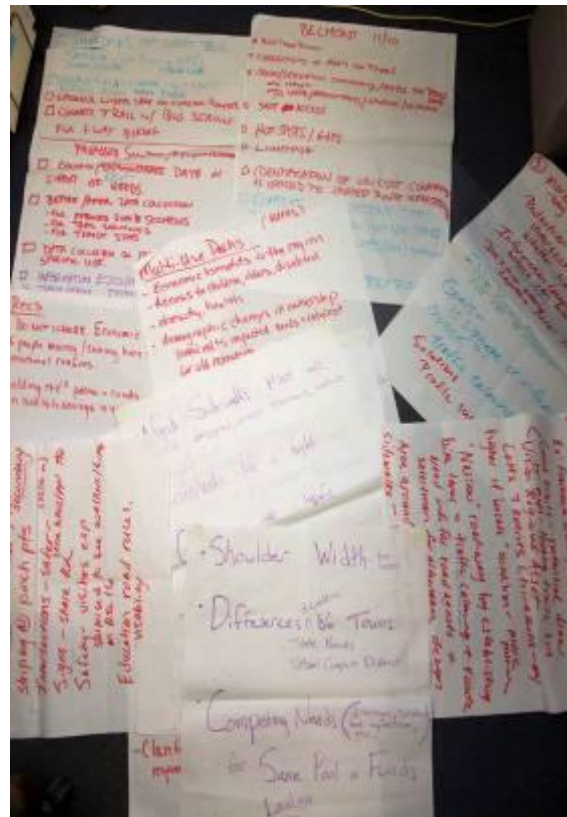
The summary need/concern statements that were generated through the public meeting process are included here. Many of these statements represent expressions of



concern that were shared by multiple people at all five meetings. The large set of summary statements provided below, helped to define five broad topical areas to target planning recommendations - Design & Function, Connectivity & Opportunities, Information & Planning, Education & Enforcement, and Funding & Policy.

### Information and Plans

- 1) Economic benefits of trails and walkable communities are poorly understood.
- 2) People are unaware of existing trail and walking resources.
- 3) Communication with residents about NH DOT paving schedule is poor.
- 4) Signage indicating safe routes through regional and village centers for road cycling is poor.
- 5) Decision makers need to be better informed about resident priorities and economic benefits of walkable and bikeable communities.
- 6) Untapped local knowledge could help inform route identification and map development.
- 7) Selectmen and road agents need information about right-of-way designs that can calm traffic and that will be approved by NHDOT.
- 8) information on what NHDOT is responsible for on state roads.
- 9) Need for examples of model local pedestrian and bicycle plans for reference.
- 10) Need for useful regional maps that show gradation of safe routes to unsafe.
- 11) Need for regional walking resource/destination map.



**Fig. 2 - Sample of notes from public meetings**

- 12) Need to identify the most dangerous locations/conditions in all thirty-one communities.

### Funding & Policy

- 1) New sources of funding for projects need to be identified.
- 2) Municipalities' and NHDOT refusal to agree to maintain new proposed sidewalks is leading to their removal from concept plans.
- 3) Snow clearing on sidewalks is poor and unsafe for pedestrians and wheelchairs in most places.
- 4) Limited funding due to mis-proportioned/misaligned allocation federal and state allocation.
- 5) Maintenance inconsistencies exist between rural areas and Urban Compact Districts.





- 6) Competing needs for same pool of funds.
- 7) Need for local comprehensive plans as well as regional plans.

### Design & Function

- 1) Cycling space is needed for circum-lake routes that are popular and that could draw more visitation and/or events.
- 2) Transit routes need shoulder space for safety of demand response service.
- 3) Paths and walking routes to schools need adequate lighting.
- 4) Existing sidewalk infrastructure does not meet ADA access in urban areas for passing and safe crossing in wheelchairs. Designs are haphazard and inconsistent, with huge curb cuts, and dangerous out-slopes and tip-downs at intersections.
- 5) Summer parking demand is creating traffic congestion and hazards for bikes and pedestrians.
- 6) Little use of traffic calming measures anywhere in the region.
- 7) Recreational events require more police and road closures to mitigate unsafe conditions.
- 8) Some routes have severe space constraints and no reasonable alternative route for miles due to geography.
- 9) Intersections are designed for cars and do not minimize pedestrian hazards.
- 10) No signed on-street bike lanes anywhere in the region.
- 11) Travel lane space allocation created by 12-foot or greater lanes promotes excessive speeds.
- 12) Pavement conditions are poor for riding in many places.
- 13) Crosswalks have poor line-of-sight and have unsafe landings in many places.

- 14) Parking stalls have been striped too close to crosswalks and intersections in violation of state law in many communities.
- 15) Observed speeds do not align with road conditions and settlement characteristics.
- 16) Lack of adequate (or maximized) shoulder space due to pavement width or striping.
- 17) Plastic road paint is a hazard to cyclists when wet.

### Education/Enforcement

- 1) *Share the Road* signs needed along narrow and busy corridors, but sign requests are evaluated by NHDOT based on road design/function criteria rather than on informational needs.
- 2) School-based riding and walking trainings for children and adults are needed.
- 3) Landowners need to be educated on the benefits of expanded right-of-way to accommodate bicycles and pedestrians.
- 4) Personal safety on trails is a concern for some.
- 5) Visitors are surprised by bicycles and pedestrians in the road.
- 6) Tourists drive aggressively, trucks and commercial drivers often pass too close, and other drivers are fearful of cyclists and pass too widely.
- 7) Wood chip trucks present a hazard for road cyclists.
- 8) Pedestrians and bikes often use the wrong side of the road.

### Connectivity/Opportunities

- 1) Need more transit options to increase mobility.



- 2) Connectivity between existing multi-use trails is limited.
- 3) Need to identify low-cost, feasible connections as opposed to shortest route infrastructure.
- 4) Connectivity to outlying areas is poor but people walk along non-existent road shoulders all the time because it is the only place for them.
- 5) Not enough family friendly bike routes through communities.
- 6) Connections between trails and transit do not exist but could be made.
- 7) Seniors and children are not walking much to schools and within the community but say they would if conditions were safer and if it were possible.
- 8) Lack of safe pedestrian connections between neighborhoods and popular destinations.
- 9) Poor connectivity of existing sidewalks and trail systems.
- 10) Need for additional and improved off-street multi-use trails to support economic development as well as travel options.

about the bicycle and pedestrian patterns in the region. The following conclusions have been made from the results of this survey:

### Respondent Data

- ❖ 634 responses were received, which is over double that of the 2011 survey.
- ❖ 79% of respondents were 50 years or older, a 12% increase from 2011.
- ❖ About half of the respondents were from Laconia, Hebron, Gilford, or Meredith.
- ❖ 69% of respondents believe that local governments should be responsible for improving bicycle and pedestrian infrastructure.

## Bicycle and Pedestrian Data Collection

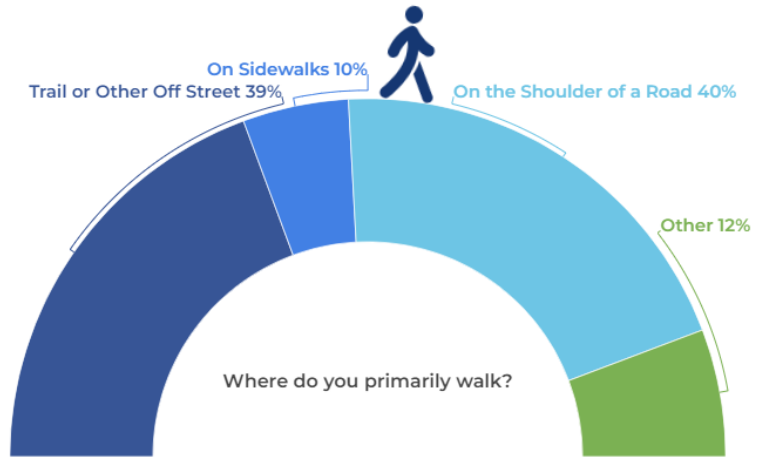
A comprehensive assessment of existing conditions cannot be limited to the built environment alone, but must include recent usage trends, stated needs, and established goals. Together with the built environment, these factors help to illustrate current conditions affecting bicycling and pedestrian accessibility in the Lakes Region. As mentioned in Chapter 3, the LRPC conducted a survey in the winter of 2022



# Walking Data

## Top 3 Reasons for Walking

- 1 For Exercise
- 2 To Be Outdoors
- 3 To Walk a Pet



The leading factors that **prevent** respondents from walking more are:

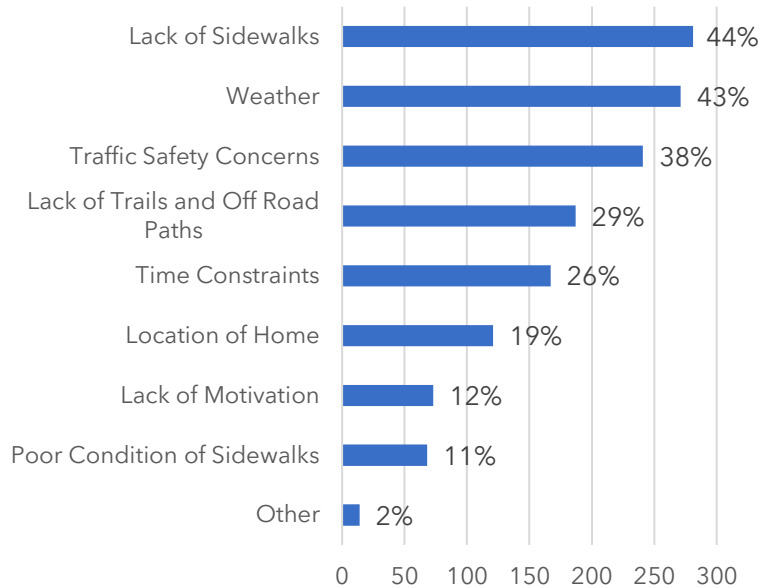
- Lack of Sidewalks
- Weather
- Traffic Safety Concerns

- Most of the respondents walk on either the shoulder of a road or trails and off-street paths
- Only 10% of walkers used sidewalks

The main improvements that would **encourage** respondents to walk more are:

- More Trails or Off-Road Walking
- More Sidewalks
- Better Maintained Sidewalks

## What **prevents** you from walking more or at all?



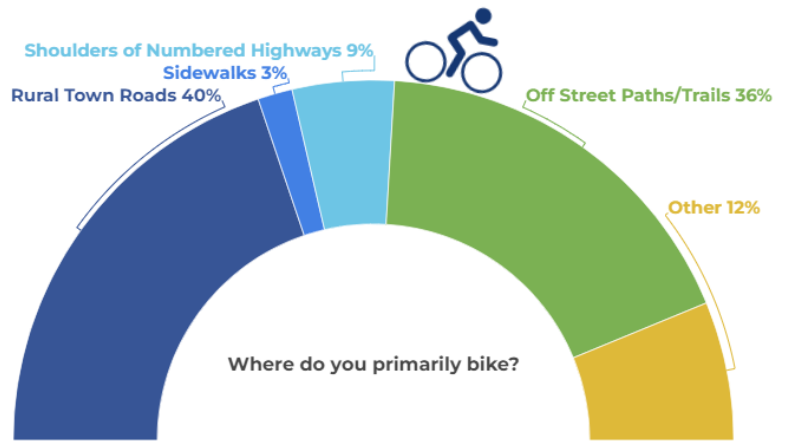
**46%** of respondents believe that there are places in their community in need of repaired or new sidewalks



# Bicycling Data

## Top 3 Reasons for Bicycling

- 1 For Exercise
- 2 To Be Outdoors
- 3 To Spend Time with Others

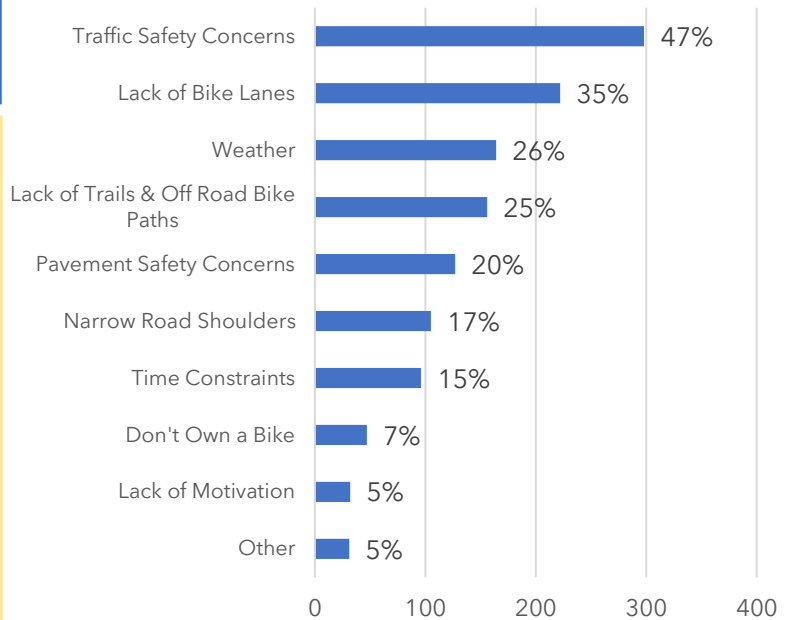


The leading factors that **prevent** respondents from biking are:

- Traffic safety concerns
- Lack of bike lanes
- Weather

- Most bikers ride on either rural town roads or off-street paths and trails

## What **prevents** you from biking more or at all?



The main improvements that would **encourage** respondents to bike more are:

- 4ft. shoulders on paved roads
- More off-road bike paths and trails
- Dedicated on-street bike lanes

**81%** of respondents would like more off-street paths and trails in their community.



# CHAPTER 6: BIKE AND PEDESTRIAN PROJECTS

## Overview

The Lakes Region has implemented many projects to improve bike and pedestrian infrastructure since the last version of this report in 2012. This chapter includes three major projects that have altered the way people walk and bike within their communities. These projects have improved the accessibility and or safety of vulnerable road users. Each project is outlined in detail and considered for its recent effects on the community. This analysis is done with the hopes of improving future bike and pedestrian projects in the region so that communities can continue to grow the infrastructure available to bicyclists and pedestrians and bring the 2023 vision to life.

## Recently Completed Projects

### Bristol Downtown Improvements

One of the major pedestrian-focused projects undertaken by a community was the complete renovation of the Bristol downtown area of Central Square. Bristol's Master Plan outlines the need for certain pedestrian safety and accessibility features that would improve the vitality of their downtown region. The proposed projects included adding curbing and other buffer options such as widening the sidewalks or adding trees and décor that help separate the pedestrians from motor vehicles to reduce their vulnerability. Bristol has also created the new Bristol Falls Park. It includes a handicapped-accessible entrance right by

Central Square. This allows pedestrians of all physical abilities to participate in the use of this trail and encourage community recreation. Bristol also hopes to expand this trail along the Pemigewasset in the upcoming years with the creation of the Pemi - Path.

The Pemi - Path would be a 2.5 mile, multi-use path that would connect to the Northern Rail Trail through other multi-use trails. By making the downtown area a safe and accessible place for pedestrians, Bristol aims to increase participation in various economic and recreational activities and promote a walkable community lifestyle.





communities involved are prioritizing these modes of transportation by electing to invest in an extension of the popular Phase I construction of the trail. This project also demonstrates how successful it can be to build off existing infrastructure. The WOW trail has proven to be well used and appreciated by the communities. The 2016 extension furthered this use and opened up trail accessibility to more citizens. The WOW organization has an ultimate goal of continuing extensions so that Weirs Beach will be connected down to Franklin by one cohesive rail trail.

**WOW Trail Extensions**

After its Phase I construction in 2010, the WOW trail underwent further extension in 2016. The Phase II project consists of a 1-mile long, shared-use, rail-with-trail path from the Belmont Town Line to the south end of the completed Phase I path segment. Similar to Phase I, a section along Fair Street was constructed on-road to avoid needing to build a pedestrian bridge over the Winnepesaukee River. In addition, another section of path was constructed to provide full access to the City-owned Bartlett Beach facility. The path is 10 feet wide and paved with an attractive bridge over Durkee Brook and wood-constructed boardwalks over sensitive environmental areas. The northern segment begins at the former train station where the project included a full-width concrete paver surface with granite block inlay and new aesthetic lighting. From the train station, the path continues on-road along New Salem Street. Construction of this Phase II was completed in 2016.



The WOW trail is shown above where the Phase II addition begins. Here, users can access Bartlett Beach or continue along the extended trail into Belmont.

This project serves as an example of continued dedication to bike and pedestrian accessibility and safety. The



### New Cross Walk in Meredith NH

In 2019, a cross walk was added to downtown Meredith to help pedestrians safely cross US 3. It is located in a very high traffic area on the state highway and serves to connect the Main Street part of town with the Town Docks and sculpture walk. This crosswalk has extra safety features to



accommodate such a dangerous area for pedestrians. It is known as a HAWK beacon (High-Intensity Activated crosswalk), a traffic signal used to stop road traffic and allow pedestrians to cross safely. It is more commonly known as a “pedestrian hybrid beacon”. The purpose of a HAWK beacon is to allow protected pedestrian crossings, stopping road traffic only as needed. It is designed with flashing lights in order to increase awareness of pedestrians and reduce their risk of danger. However, there have been many public concerns about the efficiency of this design due to confusion about its operation. Many drivers and pedestrians are unfamiliar with this design and are unsure of the right of way here and the meaning of the different light signals. This confusion can ultimately put more pedestrians at risk if users, both drivers and pedestrians, are not sure how to proceed at this crosswalk.



Photo courtesy of The Laconia Daily Sun.



## Upcoming Projects

The 2023-2032 NHDOT Ten Year Plan outlines the transportation projects that will take place in the Lakes Region throughout the next decade. The existing bike and pedestrian projects are shown in the table below along with which of the goals from this plan they serve to address. This will help the LRPC recognize which of the bike and pedestrian goals are being worked towards and which ones may need more attention in future projects and plans.

Municipality	Project #	Scope	Construction Dates	Priority	Goals Addressed
Belmont	40635	Improve intersection safety and congestion	2025		Safety, Design,
Bristol	40636	Roadway widening and shoulders for bike/ped travel from School St. to West of Danforth Brook Rd.	2026		Safety, Connectivity, Economy and Health
Bristol	41579	Bike/ped improvements to Lake St., increase separation between different modes of transportation for safety	2026		Safety, Design, Economic and Health (ERZ)
Franklin	42513	Construct a pedestrian walkway on the existing trestle bridge to connect to Mill City Park	2026		Safety, Connectivity, Equity
Gilmanton	42603	Construct pedestrian islands and sidewalks and improve curb at intersection of NH 140 and NH 107	2030		Safety, Design, Connectivity, Economy and Health
Laconia	43731	Construct 4,300 ft. of sidewalk on Elm St. and 8' wide multi-use path on the other side of Elm St.	2031		Safety, Design, Connectivity, Equity, Economy and Health
Laconia	43845	To replace and improve a municipal red-listed bridge on US 3 / Weirs Blvd., improve sidewalks and bike/ped safety	2026		Safety, Design, Economy and Health
Meredith	43533	Intersection improvements for Laker Lane, True Rd., Quarry Rd., and Patrician Shore Circle with NH 25	2032		Safety, Design, Connectivity
Moultonborough	40639	Intersection improvements on NH 25 between Lake Shore Drive E and Lake Shore Drive (W)	2025		Safety, Design
Moultonborough	41580	Complete streets improvements to Moultonborough Central Village	2027		Safety, Design, Connectivity, Economy and Health, Equity
Moultonborough	41581	Intersection improvements at Sheridan Rd. and NH 25	2027		Safety, Design





Plymouth	41583	Intersection and sidewalk improvements to Highland St. and in the vicinity of Reservoir Rd.	2025		Safety, Design
Plymouth	43532	Intersection improvement to the NH 25/ Smith Bridge Rd.	2032		Safety, Design, Connectivity, Economy and Health
Tilton	42600	Intersection safety improvements (roundabout)	2031		Safety, Design, Connectivity, Economy and Health
Wolfeboro	29615	Improvements from NH 109 to Alton TL, consider roundabouts, pavement width, sidewalks, work with SRTS to consider safety issues for pedestrians as this road includes access to 4 schools and other public facilities	2025		Safety, Policy, Design, Connectivity

Many of these upcoming projects address multiple goals from Chapter 2 of this report. This shows how many aspects of bike and pedestrian infrastructure are intertwined so that by improving one aspect, it may also benefit another. For example, by improving the safety of biking and walking on a roadway, it automatically increases accessibility for users because of the lower LTS and contributes to connectivity throughout the region.

It is also important to note that all of the projects above work specifically towards the goals of safety and design for bike and pedestrian infrastructure. The Lakes Region communities and the NHDOT prioritize safety and altering design elements to improve it in the long run. By analyzing these projects in terms of the goals of this report, it shows that all the work being done is actively contributing to the LRPC's 2023 vision, often in multiple ways through each project.



## Project Recommendations

The Lakes Region Planning Commission has identified multiple bike and pedestrian projects that will greatly benefit the infrastructure across the region. These projects were selected based on the goals from this report that they will address, the needs of the community, and feasibility considerations with the funding and resources available. LRPC recommends that these projects should be considered as priorities for the upcoming Ten Year Plan, or other funding sources. The highlights below detail how each project exemplifies the goals of this Bike and Pedestrian Plan and will help bring to life the vision of a walkable and bikeable Lakes Region.

### Plymouth North Main Street Safety Improvements

The Town of Plymouth proposed a project for the improvement of US-3 (Main Street) to be included in the 2025-2034 NHDOT Ten Year Plan. The proposal includes a correction of horizontal and vertical road alignments to improve sightlines, as well as adding in pedestrian infrastructure such as sidewalks, curb ramps, and crosswalks along the project area spanning along US 3 from Tobey Road to Fairgrounds Road. The project areas and major destinations are shown in the photo further below.

The Town expressed great need for this project because it was determined to be an extremely unsafe area for both pedestrians and drivers. Crash data from the Plymouth Police Department has shown a recent increase in frequency of crashes at the Amory Road intersection. In fact, the proposal states that this section of the US 3 road is the 2<sup>nd</sup> greatest safety challenge

area and the only one yet to be addressed. The Town notes that there has been a lot of interest in this project due to the high volume of traffic in this section from the NH Army National Guard Amory, Plymouth State University parking, and the nearby downtown area. The 2018 Plymouth Master Plan (see Appendix C) supports the construction of safe bike and pedestrian mobility, which will be accomplished through this project.

The benefits of this project along Main Street in Plymouth address the goals of Design, Safety, Connectivity, Equity, and Economy and Health.

**Design** - The Town’s planners, LRPC, and NHDOT are currently working together throughout the planning and design process to incorporate sufficient bike and pedestrian elements to reduce the vulnerability of users.

**Safety** - One of the major motives of this project proposal is to improve the safety of both pedestrians and drivers by altering the street design and elements. The goal is to create safer conditions for all road users with these improvements.

**Connectivity** - The stretch of US 3 from Tobey Road to Fairgrounds Road offers access to many different types of destinations including Plymouth State University, the National Guard Amory, the downtown area, and the development at Foster Street with the Common Man Inn and Foster’s Boiler Room Restaurant. By improving pedestrian access to these destinations, Plymouth would greatly increase the connectivity for bicyclists and pedestrians between more rural areas and the vibrant downtown.

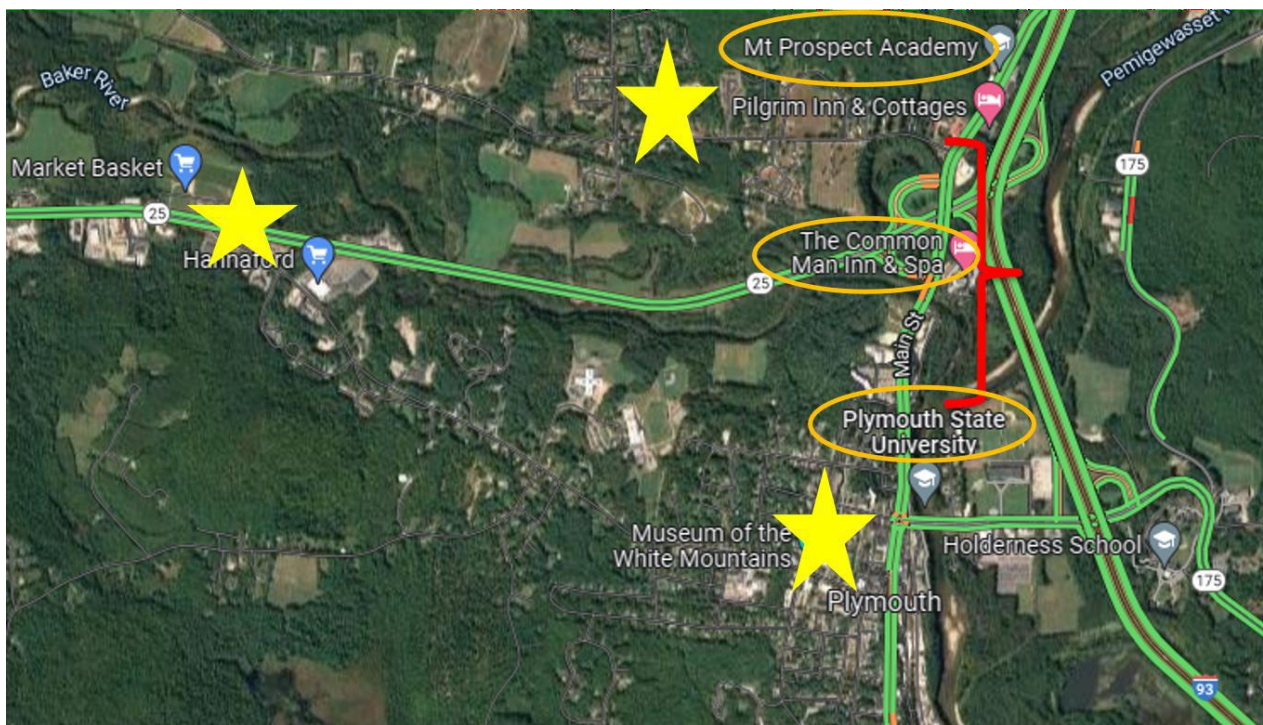


**Economy and Health** - The accessibility to the destinations mentioned above will also promote economic development because more transportation users have access to these stores and restaurants. It allows bicyclists and pedestrians to use these modes of transit for everyday actions such as errands and social outings. Hopefully, this will encourage people to use these modes of active transportation more often, which will eventually improve public health as well.

**Equity** - In 2019, Plymouth was designated as an opportunity zone by the US Department of Transportation. These zones "are economically distressed communities, defined by individual census tract, nominated by America's governors, and certified by the U.S. Secretary of the Treasury" (USDOT). Since the proposed project is meant to help promote local economic activity, it will be supporting a Lakes Region community in need. This project demonstrates how bike and pedestrian infrastructure can be used to

address issues of transportation and economic inequalities amongst communities.

The LRPC Transportation Advisory Committee met in the spring of 2023 to rank all of the proposed projects based off of a number of criteria including safety, mobility, equity, and economic development. The Plymouth project scored 3<sup>rd</sup> ranked priority for the 2025-2034 Ten Year Plan, only behind the second ranked by 0.08 of a point. Although it scored highly among the TAC, the Plymouth Main Street project was too expensive to fund with the allocated TYP amount from NHDOT. LRPC therefore recommends that this project be considered in future years when the funding is available because it provides many contributions towards the 2023 vision of this report. This project will be very important to the future of downtown Plymouth in both its physical and economic development.



### Franklin Trestle Bridge

The City of Franklin proposed a project to create a pedestrian walkway on the Trestle Bridge to connect two recreational areas. The bridge is shown in the photo below with Mill City Park to the left and the Winnepesaukee River Trail entrance to the right. It is still being decided what type of construction will occur, whether the City can salvage and restore the original bridge or if a total reconstruction is needed. Either way, this project will greatly benefit the community of Franklin and will address several goals of the 2023 Bike and Pedestrian Plan.

transportation users by removing them from the roadway. This project is currently a planned TAP project, but there has not been enough funding to move forward to the next phase.

**Connectivity** - As mentioned before, the Trestle Bridge would connect two major recreational areas in downtown Franklin. The Winnepesaukee River Trail offers miles of safe trails for cyclists and pedestrians. Mill City Park is a developing public area with lots of access to nature and outdoor space. The Trestle Bridge would create immediate access between the two and hopefully encourage dual use between the



two sites.

**Safety** - The location of this trestle bridge would provide pedestrians and cyclists with an alternative to the busy highway road. The bridge would connect the Winnepesaukee River Trail with the Mill City Park, both near downtown Franklin along Central Street (US 3/NH 11). Pedestrians currently have to walk along the side of Central Street in order to access Mill City Park from the rail trail entrance. This section of the road is labeled by NHDOT as a level 4 traffic stress area and is extremely dangerous for bike and pedestrian use. The construction of the trestle bridge would completely eliminate this risk and reduce the overall vulnerability of active

**Equity** - Franklin has been identified by the US Department of Transportation as a highly “transportation insecure” city using their Equitable Community Transportation Explorer program. The greatest challenges in Franklin are traffic safety and transportation access. The Trestle Bridge project will help to improve the safety of vulnerable transportation users and also improve access to active modes of transportation. It will work to address the issues of inequality within local transportation.



**Economy and Health** - The City hopes to increase use of the rail trail and park with the addition of the trestle bridge walkway. The increased access to both recreational facilities will likely increase the number of people who visit them. This, in turn, will promote better public health by encouraging outdoor activities and active modes of transportation. Due to the location of this project being so near to the recently revitalized Franklin downtown area, it also serves as a way to increase economic development. One suggestion to further this impact would be to ensure safe crossing of Central Street for pedestrians to access the shops downtown.

This project was first proposed in 2018 and included in both the 2021-2030 and 2023-3032 TYP's. In 2019, the City of Franklin received a \$500,000 grant from NHDOT for this project. However, the project still requires more funds in order to be completed. LRPC recommends that this project be considered in future reviews for TYP funding because it aligns well with the 2023 vision. This project will help make Franklin a walkable community and promote recreational activities, just as the City advocated for in its 2018 master plan (Appendix C). As of the most recent TYP report, it will require about \$700,000 more for completion.

### Alton-Gilford NH 11 Renovations

Back in 2015, the Towns of Alton and Gilford submitted their first project proposal for the rehabilitation of NH Route 11. This led to a study being conducted from 2019 to 2022 in order to assess the needs of this corridor. The conclusion from this study includes the following recommendations:

- Intersection improvements of NH Route 11 near Ellacoya State Park and at NH Route 11A, both with roundabouts recommended for traffic calming measures.
- Widen feasible sections of the NH 11 corridor ranging from Ellacoya State Park to Minge Cove Road. This is recommended to be done in segments due to the high funding requirements.

Based on the findings of this study, LRPC supports the continuation of this project and recommends it for further consideration in future Ten Year Plans. This project will largely address the goals of Safety, Connectivity, and Data.

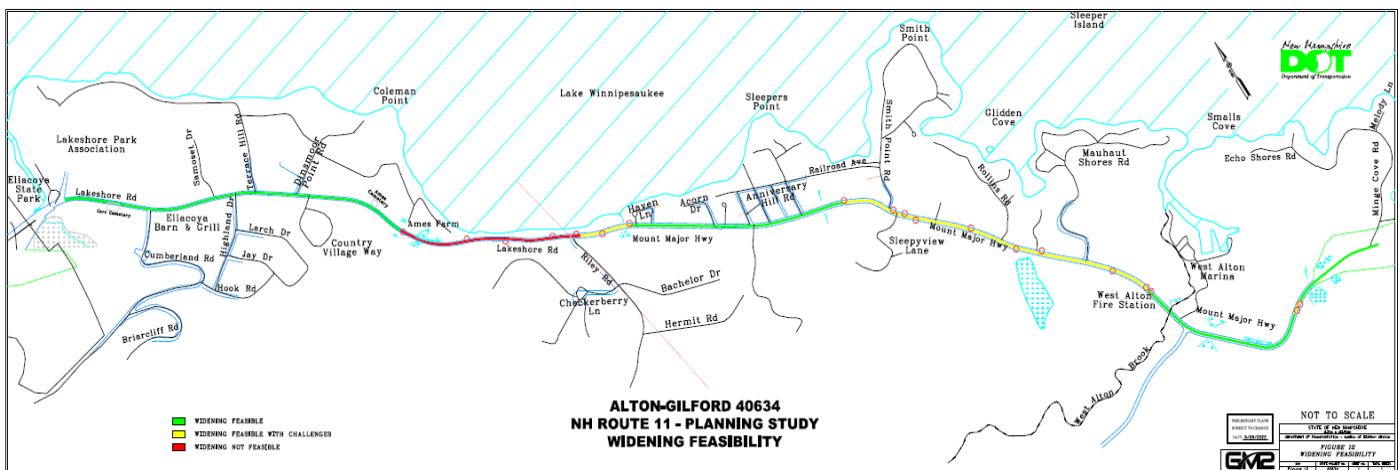
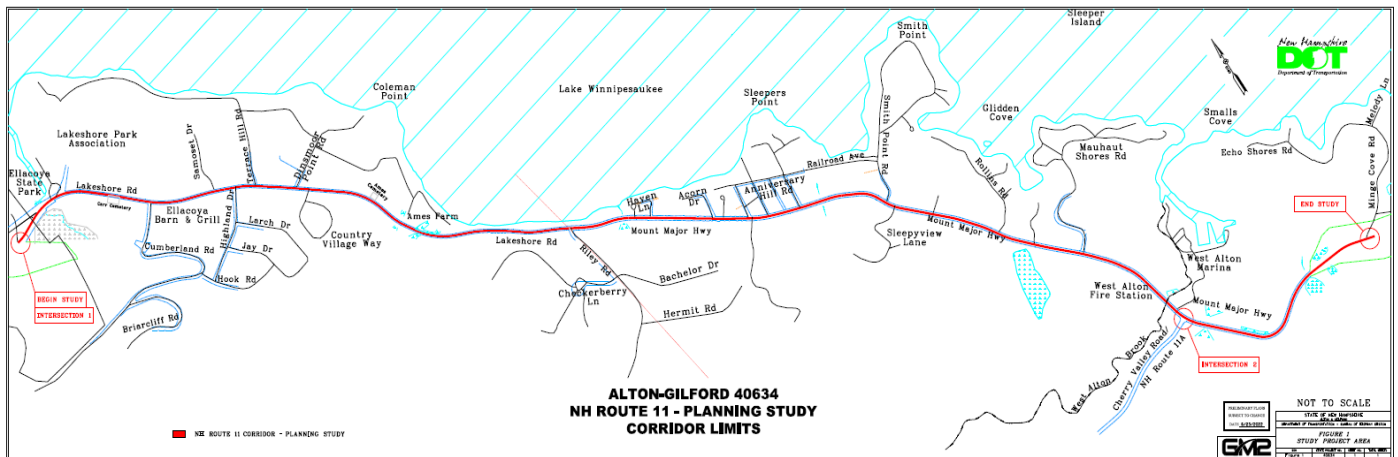
**Safety** - One of the main objectives of this project is to widen NH Route 11 wherever possible to 11' travel lanes and 5' shoulders. This would provide cyclists and pedestrians with more room to safely navigate across the corridor and would decrease the level of traffic stress that they experience. The roundabout recommendations work as safety measures for both drivers and pedestrians; they reduce the vulnerability of those crossing the street and act as a traffic calming measure to reduce speed on the busy highway.

**Connectivity** - NH Route 11 is a major transportation corridor in the Lakes Region that connects the town centers of Gilford and Alton, while also providing access to recreational sites such as Ellacoya State Park and the Mount Major trailhead. This means that this would be a major step towards connecting the Lakes Region through bikeable and walkable infrastructure.



**Data** - This project has already been extremely informative in safety analysis data, thanks to the completed planning study. It has given the LRPC a formative base to make decisions about the necessity of bike and pedestrian infrastructure in this area.

This project will transform the long-range active transportation opportunities available to the Lakes Region. It has already contributed to the goals of this plan and will continue to help achieve the 2023 Vision. The LRPC supports the continuation of this renovation of NH Route 11 in Alton and Gilford.



# CHAPTER 7:

## ACTION PLAN TO SUPPORT THE VISION

**A purposefully connected network of trails, sidewalks, road shoulders, and markings promoting safe, enjoyable, and inclusive bicycle and pedestrian mobility for residents of all ages and physical ability. Design and maintenance of livable, complete streets that support transportation, recreation, health, and economic interests throughout the Lakes Region.**

The following strategies will help guide Lakes Region Planning Commission's efforts to support the vision for livable streets and walkable communities. In order to foster active transportation and recreation in the Lakes Region and make substantial progress toward achieving the 2023 vision, state and municipal governments will need to commit to a culture of purposeful design and maintenance of streets that prioritizes safety for all modes. State agency leaders

will also need to acknowledge that our streets and rail corridors are some of our most important and valuable recreational resources. They will need to collaborate and demonstrate that in addition to transportation, these assets can support statewide goals related to physical and mental health, public safety, and economic development. With state, regional, and local commitment to livable streets and walkable communities, the vision can be achieved.

### Goals:

1 - CONNECTIVITY

2 - DESIGN

3 - POLICY

4 - EQUITY

5 - DATA

6 - SAFETY

7 - ECONOMY &  
HEALTH



## Strategies and Actions:

Strategies	Goals Addressed	Time Frame	Priority
Help communities articulate active transportation/recreation goals in master planning and identify opportunities to amend local road standards, land use regulations, and zoning to foster appropriate bicycle and pedestrian connections.	2 3		
Explore and promote extending current sidewalk networks, and/or creation of new sidewalks, in areas that currently have compatible land-use regulations.	2		
Hold communities and their proposed transportation projects to design standards that comply with the Complete Streets practices in order to make roads inclusive and safe for all modes of transportation.	2 3 6		
Support community efforts to request lane allocation modifications (e.g. striping narrower lanes, etc.) from NHDOT on state roads in order to calm traffic speeds and provide wider shoulders for bicycles and pedestrians.	2		
Assist communities in capitalizing on the NHDOT paving schedule to alter lane paintings for wider road shoulders rather than extending the pavement in areas with limited space.	2		
Continue to explore opportunities for "Share the Road" signs and other informational aids that help publicize reasonable clearance distances between vehicles and bicycles.	6		
Continue to assist with development of Transportation Enhancement grant applications, Highway Safety Improvement Planning requests, and development of Safe Routes to School travel plans.	3 6		
Encourage and assist communities with participating in the Safe Streets and Roads for All Grant Program by providing them with an applicable safety action plan.	3		
Work with the Transportation Advisory Committee (TAC) to prioritize active transportation projects in underserved or disadvantaged communities.	4		
Continue to review and update regional bicycling and pedestrian plans on a regular basis.	2 3		
Develop a process to disseminate useful bicycling and walking information and data on a regular basis. Examples may include a web component created and maintained for this purpose.	5		
Pursue opportunities to develop an enhanced regional bicycle map showing useful information (related to conditions and safety, locations of bike shops, and completed and proposed sections of multi-use pathways) that can be distributed or made available to regional economic development and tourism organizations, municipalities, and other stakeholders.	5 7		
Promote walking, cycling, and complete streets in local context sensitive solutions for design and re-construction of state and local routes	2		





Provide assistance with pedestrian and bicycle data collection on off-street trails and paths throughout the region.	5		
Encourage local and state officials to maintain a database of regional pedestrian and bicycle collision related injuries and fatalities	5		
Encourage municipalities to study the impacts of peak-parking demand to help communities more effectively manage parking through the promotion of techniques including shared parking allocation and maximum parking limits. One goal of this effort will be to identify underutilized parking spaces for potential re-use as pedestrian and bicycle connections.	1 2		
Support a state policy of creating usable shoulder width for bicycles and pedestrians through reduced lane widths and increased pavement widths along priority routes.	3		
Support efforts to connect off-road pathways with on-road bicycle and pedestrian routes.	1		
Provide trail developers with corridor/route assessment assistance and information.	5		
Encourage Brownfields assessment work at sites with potential to enhance existing pedestrian and bicycle accessibility.	2		
Support regional transit providers and the Regional Coordinating Councils with bicycling and walking data and analysis to enhance transit service planning.	5		
Coordinate with Lakes Region communities for increased participation in Bike/Walk to Work Week, and other programs that encourage active transportation.	3 7		
Encourage NHDOT to support an economic impacts study of bikeable/walkable communities in order to support community decisions about constructing and maintaining infrastructure	7		
Integrate active recreation in the Scenic Byway Corridor Management Plan.	3		
Continue to participate in the Safe Routes to School State Advisory Committee.	3 6		
Promote and participate in educating the public on the value of active communities and healthy lives.	7		
Communicate with railroad owners to identify opportunities for future trails.	1 2		
Support an effort to work with cyclists familiar to the region, bike shop and chamber of commerce representatives, and other stakeholders to identify safe existing routes, and priority routes of regional importance (triathlon routes, long distance bike race routes, and circum-lake routes, for example) to be included with future maps	2		
Work with the Federal delegation, State legislators, and NHDOT staff to preserve or increase funding for NHDOT's Transportation Improvement Program.	3		



## Appendix A: Historical Bike and Pedestrian Documents in the Lakes Region

### *Lakes Region, NH Bikeway System: Background Report (1982):*

In April 1982 the Lakes Region Planning Commission (LRPC), working in cooperation with the city of Laconia Planning Department, completed the *Lakes Region, NH Bikeway System: Background Report*. Funded by the US Department of Transportation, Federal Highway Administration, this report examined the opportunity to develop a 27-mile bikeway through 6 communities - Meredith, Laconia, Belmont, Northfield, Tilton, and Franklin. The purpose of the bikeway was to provide a safe and convenient alternative to automobile transportation, while at the same time providing economic benefits to the Lakes Region in the form of tourism and recreation. Although only covering a small portion of the area, this was arguably the Lakes Region's first foray into regional bicycle and pedestrian planning and serves as a major foundation for this 2011 planning effort, 29 years later.

### *Vacation Travel Background Report: Lakes Region, New Hampshire (1983):*

In 1983, the LRPC released a comprehensive report that examined the existing conditions, challenges and opportunities, and recommendations for future action regarding travel and tourism in the Lakes Region. The report established specific long-term goals for the region, which included the preservation of scenic and rural qualities, the promotion of historic and cultural activities, continued promotion of tourism, recreation, and improvements of resort, commercial, and downtown facilities. The report also examined the barriers and challenges to transportation within the region, recognizing that increased traffic congestion would have negative impacts on the travel and tourism industry, and recommended that the use of bicycles and bicycle touring through the Region be encouraged.

Of perhaps greater significance, however, was the attention the report gave to linking the major natural resources of the region (scenic views, lakes, rivers, etc.) with future tourist development. Specifically, the report recommended that recreational activities such as bicycling and walking be encouraged to provide residents and visitors both "exercise and the quiet enjoyment of the region's natural heritage". The report identified that adequate bicycle and pedestrian facilities were sorely lacking throughout the region.

Some of the major recommendations of the report related to bicycle and pedestrian planning included the following:

- Encourage communities to reinvest local tax revenues generated from tourism in the construction of recreation facilities such as jogging and bicycling trails.
- Recognize that tourists use several modes of travel while visiting the region, and to expand the transportation network to include roads and highways, sidewalks, pathways, railroad tracks, boating facilities, and airport facilities.
- Make public improvements to bicycle and pedestrian travel. Pedestrian improvements could include the construction or widening of sidewalks, trees or other plantings, benches, curb ramps, crosswalks, signals, and signage. Bicycle improvements could include bicycle racks, road shoulder improvements, signage, and the creation of bike routes and pathways.



- Recognize that downtowns and village centers play an integral role in the tourism industry in the Lakes Region, and that efforts need to be made to enhance pedestrian circulation so that after finding a place to park, tourists can walk to the businesses they intend to visit. Barriers should be removed, crosswalks should be safe, pathways should be well landscaped, and benches should be provided for both residents and tourists of the Lakes Region.

*Lakes Region Transportation: Baseline Report (1986):*

In 1985, LRPC, responding to a request by the New Hampshire Department of Public Works and Highways (now Department of Transportation), agreed to develop a comprehensive Lakes Region Transportation Program. LRPC assumed the role of coordinating and furthering the activities of a newly created Regional Transportation Committee (now referred to as the Transportation Technical Advisory Committee or TAC). The first responsibility of the Regional Transportation Committee was to develop goals and objectives for the new Lakes Region Transportation Program. From those goals and objectives, the committee established specific transportation-related tasks to be undertaken in the program. One of the early tasks, funded through a grant from the State, was for the committee and LRPC Staff to collect data and develop an inventory of the existing regional transportation network. Because the ultimate purpose was to develop a comprehensive transportation plan for the Lakes Region, the focus of the data collection and inventory was on streets and highways, bridges, railroads, airports, and public transportation.

The body of the *Lakes Region Transportation: Baseline Report* presented no information regarding bicycle or pedestrian transportation. However, an appendix to that report contained a list of the goals and objectives originally identified for the first ever Lakes Region Transportation Program, which included the following:

- To encourage and support a multi-modal transportation system in the Lakes Region by:
  - Assisting and encouraging pedestrian movement with a sidewalk construction program with crosswalks in highly developed areas.
  - Encouraging the development and maintenance of transportation related facilities for recreation such as bikeways and jogging trails.
- To give special attention to the natural environment and scenic qualities of the Lakes Region when considering transportation improvements by:
  - Promoting accessibility by a variety of modes to existing and future recreational facilities and open space in a way that enhances recreational pursuits.
- To ensure the transportation system is compatible with energy conservation programs, clean air standards, and the enhancement of environmental quality and safety by:
  - Encouraging the development and use of safe bicycle facilities.

*A Regional Transportation Plan for the Lakes Region (1991):*

The first Regional Transportation Plan for the Lakes Region was released in 1991 and built upon the data collected and presented in the 1986 Baseline Report. The 1991 plan reaffirmed the goals and objectives contained in the 1986 document, with only one minor change that was unrelated to bicycle and



pedestrian planning. The 1991 plan was developed to continue the process to create a comprehensive transportation plan for the Lakes Region. The focus, however, remained on roads and highways, and bicycle and pedestrian transportation was again not integrated in the planning process.

*Lakes Region Tourism Profile (1995 and 2002):*

In 1995 the LRPC released a profile of tourism in the region which would supersede the 1983 Background Report discussed earlier. This report was a significantly scaled back report, primarily focused on presenting data and existing trends in tourism throughout the nation, but most specifically in the Lakes Region of New Hampshire. As recognized in the 1983 report, the lakes and the natural resources of the region are the primary reason for the strength in the tourism industry. The report also recognized the potential for heritage-and history-based tourism to play a larger role, and that biking and walking could play a part. For example, bicycle tours connecting historic places, or local heritage walking tours could all play a part in promoting tourism in the Lakes Region in the future.

The 1995 Tourism Profile also discusses the current trends in transportation in the state and region. Unfortunately, the trends discussed are specifically focused on the automobile and its relationship to highways and roads and goes as far as to indicate that “Once in the Lakes Region, a number of connecting highways offer nearly unimpeded automobile travel within and between the many municipalities and villages”. So again, although bicycle and pedestrian transportation is recognized as an important opportunity in the Lakes Region, little is flushed out regarding how future facilities and improvements should be planned. The 1995 report was updated with new information and data in 2002 and remained much the same as its 1995 predecessor.

*A Regional Transportation Plan for the Lakes Region Update (1997):*

In 1997 the LRPC developed and approved the first transportation plan for the Lakes Region that fell under the auspices of the Intermodal Surface Transportation Efficiency Act (ISTEA) legislation which authorized federal transportation programs for fiscal years 1992 through 1997. This important legislation provided the focus on future transportation efforts at the federal and state levels by providing for “intermodal” transportation which purposefully included non-motorized transportation such as bicycle and pedestrian.

The 1997 LRPC plan recognized that the automobile was still the predominant mode of transportation, and that highways were the principal, almost exclusive, means of travel in and around the Lakes Region. However, the 1997 plan represented for the first time an emphasis on transitioning the region towards a more multi-modal transportation system without a near total dependence on privately operated motorized vehicles. Intermodal planning to include bicycle and pedestrian transportation became a clear goal of the LRPC as articulated in the 1997 Regional Transportation Plan, although the plan provided significantly more focus on bicycle, as opposed to pedestrian transportation.

Of perhaps most notable importance was the Plan’s recognition that transportation planning needed to be integrated with local and regional economic development, housing, environmental, historic, and land use planning. It was noted that bicycle facilities can support this integrated approach to planning. As



such, the plan attempted to identify the existing conditions in the region related to bicycle infrastructure. Based on an examination of existing and planned on-road bike routes and off-road multi-use pathways, the plan identified recommendations and strategies to improve the bicycle transportation infrastructure in the future. These recommendations were based on the identified major benefits of bicycle transportation, including:

- The reduction of motorized vehicle traffic on the highway system.
- The reduction in air pollution as a result of reduced motor vehicle travel.
- Benefits to the tourism and recreation industry in the Lakes Region.
- Other quality of life benefits to the residents of the region.

The 1997 plan concludes by identifying three specific strategies, and four recommendations related to bicycle and pedestrian transportation in the Lakes Region:

Strategies:

- Perform community out-reach, data collecting, and research to produce a comprehensive bikeway and pedestrian map for the next updated Regional Transportation Plan.
- Review proposed projects and comment on those locations that are considered existing or proposed bike or sidewalk locations.
- Provide technical assistance to communities or civic groups considering multi-use trails.

Recommendations:

- The bikeway system (map V-2 in the 1997 plan) will be completed prior to the year 2017
- All enhancement projects currently in the NHDOT's Ten Year Plan will remain at their assigned construction date.
- All those multi-use trails shown on map V-2 and defined as being planned, designed, or constructed by active groups will be completed by the year 2007.
- All highways as shown on map V-2 as having wide shoulders will be signed and striped for bicycle safety by the year 2007.

*Lakes Region Tour Scenic Byway Corridor Management Plan (1999):*

In 1974 the State Scenic Byway system identified 67 miles of roadway, through ten communities in the Lakes Region Planning Commission's area, as the Lakes Tour. The underlying purpose of the *Lakes Tour Scenic Byway* is to promote the enjoyment of its scenic, natural, historic, cultural, and recreational attributes. In 1997, LRPC began work on a management plan for the Lakes Region Scenic Byway Tour. The overall goals of the management plan emerged as follows:

- To enhance and protect the livability of the corridor.
- To protect the unique character of all the individual communities.
- To ensure that the scenic, environmental and cultural qualities of the Corridor are protected, enhanced and managed appropriately in the future.
- To identify traditional and innovative strategies that reduces traffic on the roadways of the Byway.
- To improve the multi-modal and inter-modal considerations.



- To increase awareness of the cultural, environmental, and historical attributes of the corridor for the residents and the visitors.
- To promote sustainable low impact tourism with an emphasis on cultural, environmental, and heritage tours.

All of the above goals have a direct relationship to both bicycle and pedestrian transportation, and the contents of the *Lakes Tour Management Plan* emphasize this relationship. Chapter 5 of the Management Plan is dedicated to transportation, and discusses such issues as roadway shoulders, traffic calming, and an assessment of bicycle and pedestrian transportation. In fact, the management plan states that “bicycle and pedestrian use and safety are at the heart of good byway planning”. It can be argued that bicycle and pedestrian use and safety is at the heart of all transportation planning efforts, and this understanding led to the development of this first-ever bicycle and pedestrian plan for the Lakes Region.

#### *PLAN 2000: A Lakes Region Transportation Plan Update for the Year 2000 (2000)*

“To maintain, enhance, and manage infrastructure that facilitates, encourages, and supports viable pedestrian and bicycling transportation.”

*PLAN 2000* is the most recent update to the 1997 Regional Transportation Plan for the Lakes Region. The focus of this plan is “the provision of efficient multi-modal and inter-modal transportation systems which do not negatively impact the surrounding natural, social or historic environments.” The plan identifies several goals and objectives aimed at addressing this focus, including:

- To encourage that transportation planning recognizes the value of sustainable economic development, including tourism and recreation, in the Lakes Region.
- To maintain, enhance, and manage infrastructure that facilitates, encourages, and supports viable pedestrian and bicycling transportation.

*PLAN 2000* then goes further, and identified specific implementation strategies related to bicycle and pedestrian transportation, including:

- Promote alternate modes of transportation as a means of providing congestion and air quality relief, and as an important component of recreation and tourism.
- Provide technical assistance to communities that are planning multi-purpose trails.
- Maintain an inventory of existing facilities.
- Work with towns to develop plans that complement regional and statewide bicycle plans.

#### *New Hampshire State Rail Plan (2001)*

The 2001 New Hampshire State Rail Plan identifies both the active and the abandoned rail lines in New Hampshire. While there is some discussion of possibly upgrading the rail system in the Lakes Region, no definitive plans are currently available. It is helpful to know the possible uses for the railroad right of way for planning purposes. It is a stated goal in this plan that abandoned railroad rights of way that are owned by the state should be preserved and eventually put to public use such as trails.



*New Hampshire State Trails Plan (2005)*

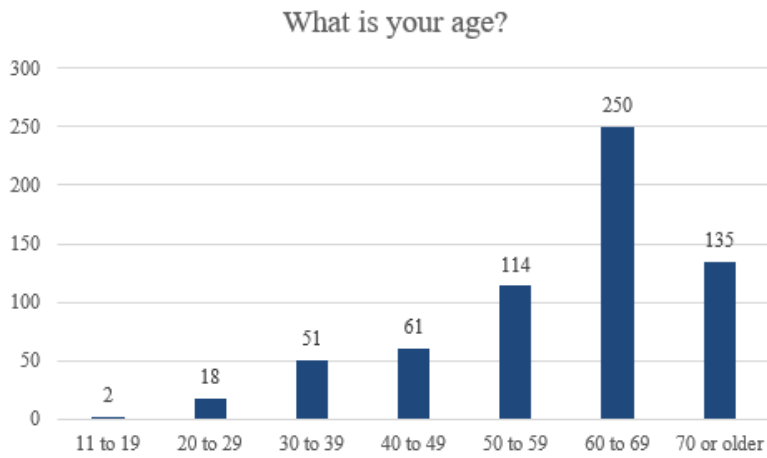
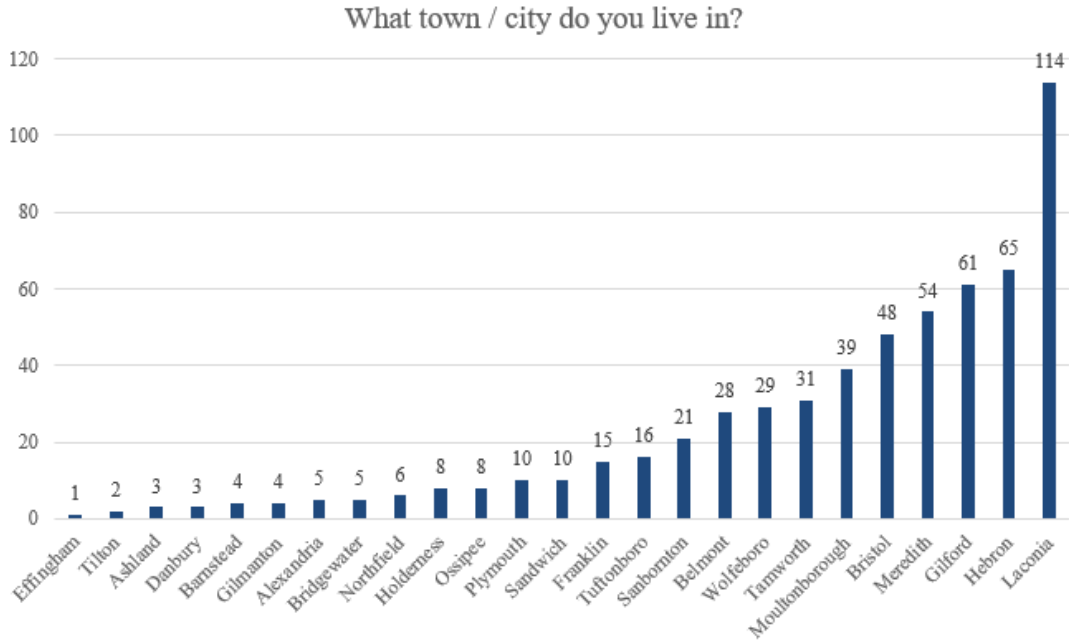
This plan is intended to; identify existing multi-use trails and corridors with the potential to be developed or improved as multi-use trails, describe the conditions and potential of these trails and corridors for future trail use, and propose guidance for trail development. It identifies and describes abandoned railroad corridors owned by the state, catalogs other non-railroad off-street trails and bike/pedestrian-oriented projects throughout the state, summarizes planning studies and documents that address off-street trails, pedestrian accommodations, and bicycle features, and provides guidelines for developing trails.



## Appendix B:

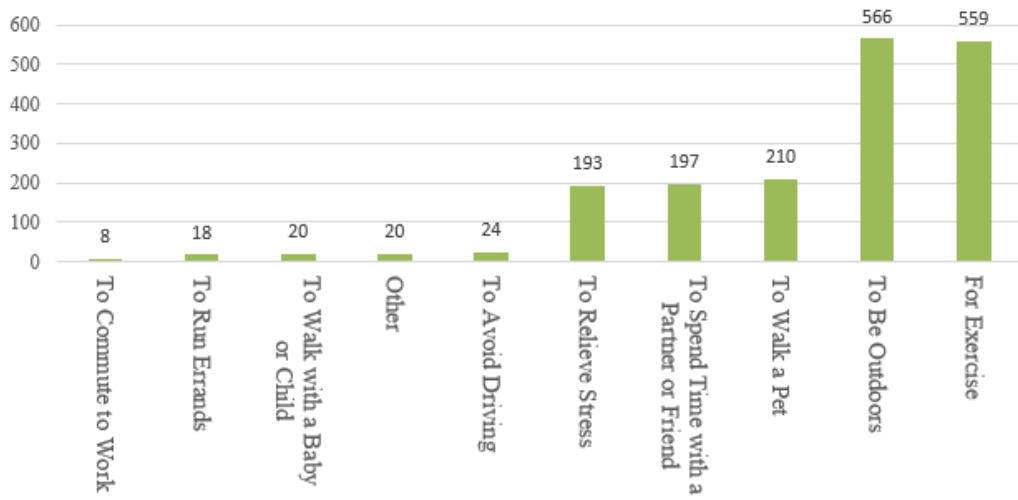
### Survey Questions and Results

This appendix contains the results of the online survey that was conducted in the winter of 2022, to which 634 people responded. The results are displayed with charts. The vertical axis often indicates the **number** of responses to the question, not the percentage. The horizontal axis contains the set of answers to each question. Not all Respondents answered all questions. Many questions allowed for multiple answers.

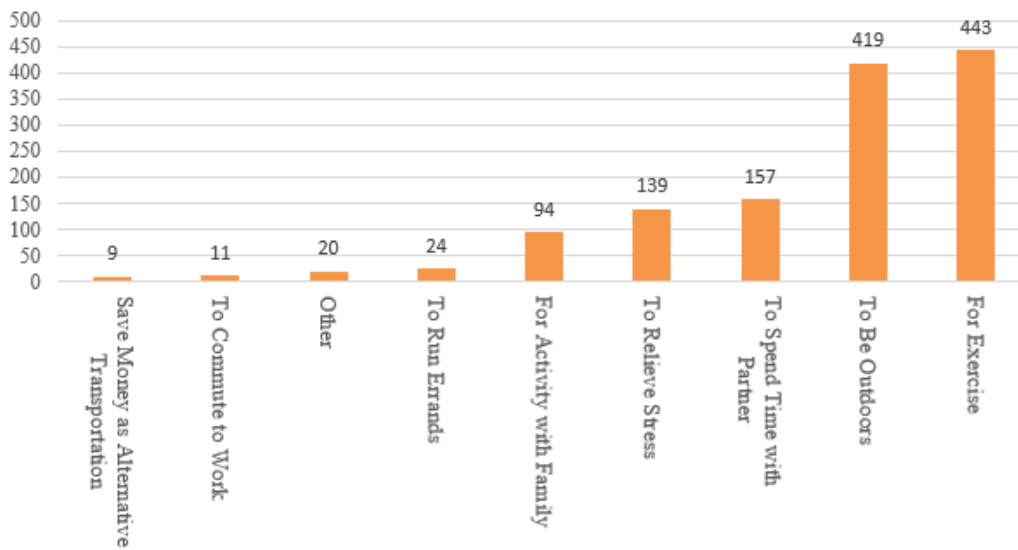




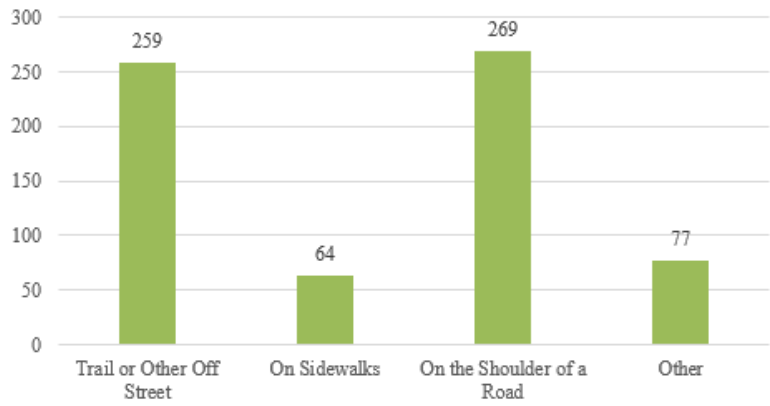
What are the top 3 reasons that you walk?



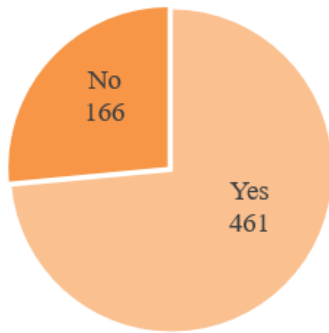
What are the top 3 reasons that you bike?



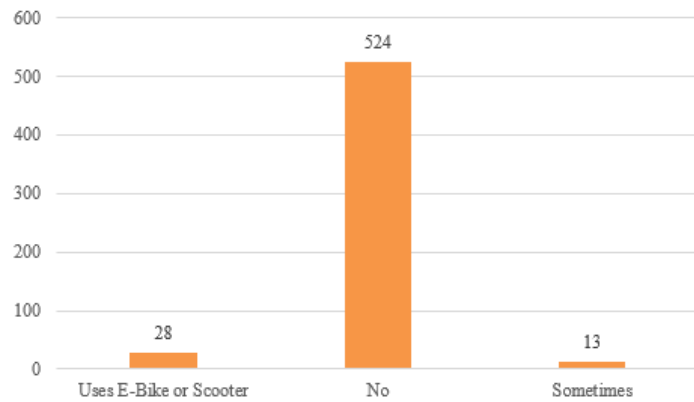
### Where do you primarily walk?



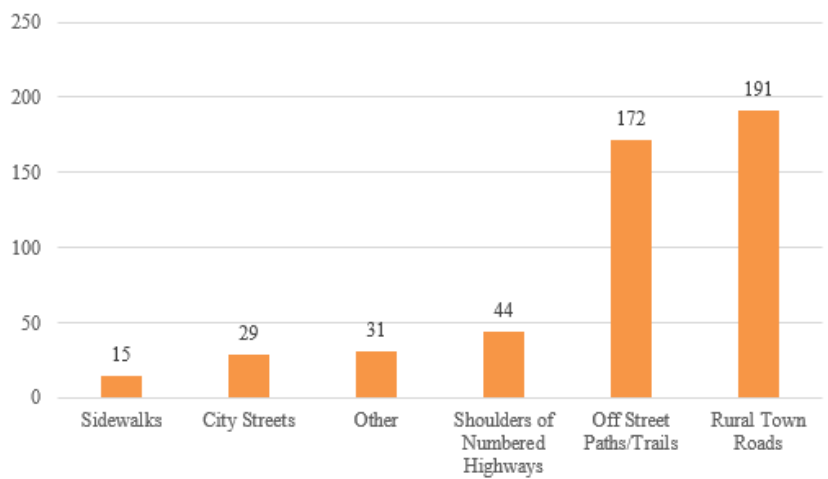
### Do you ever ride a bicycle?



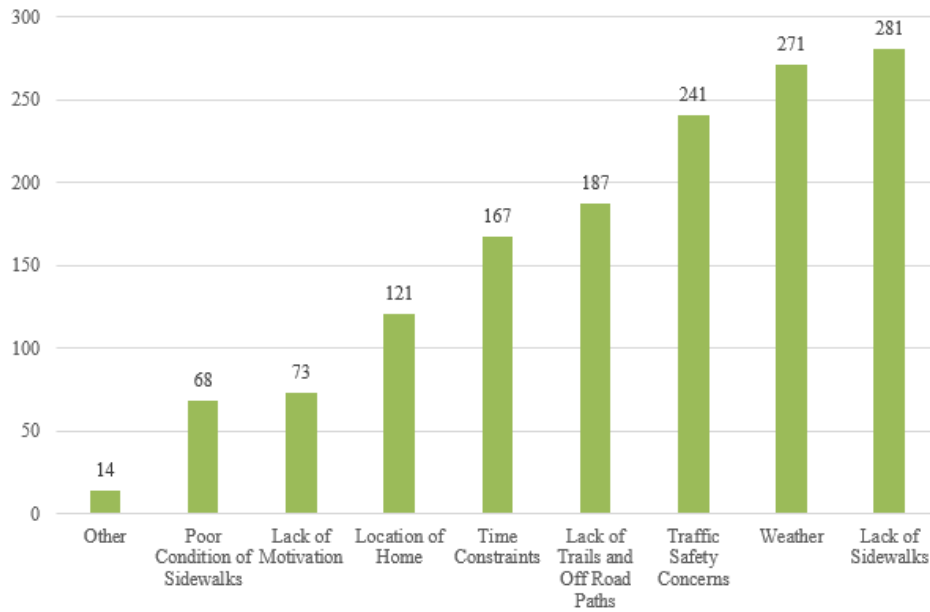
### Do you use an electric bike or scooter?



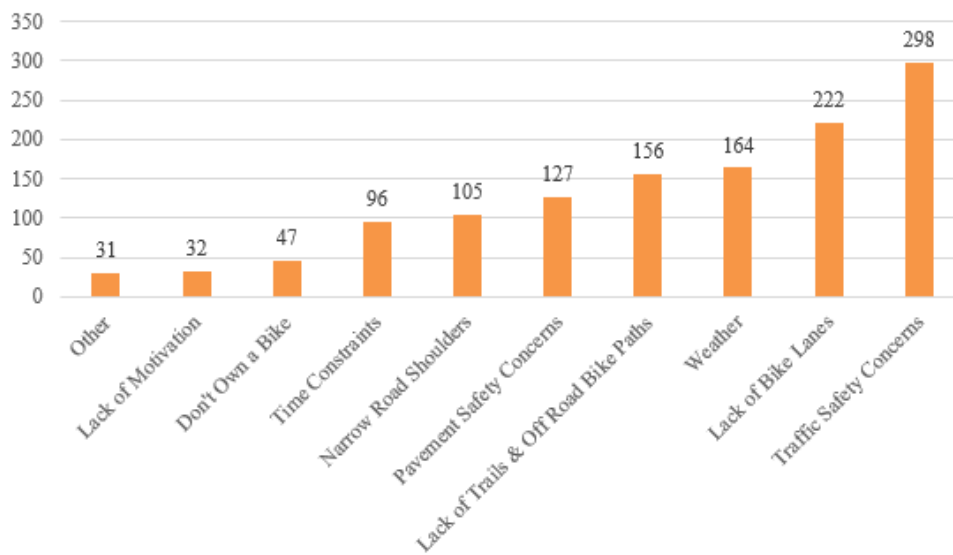
### Where do you primarily bike?



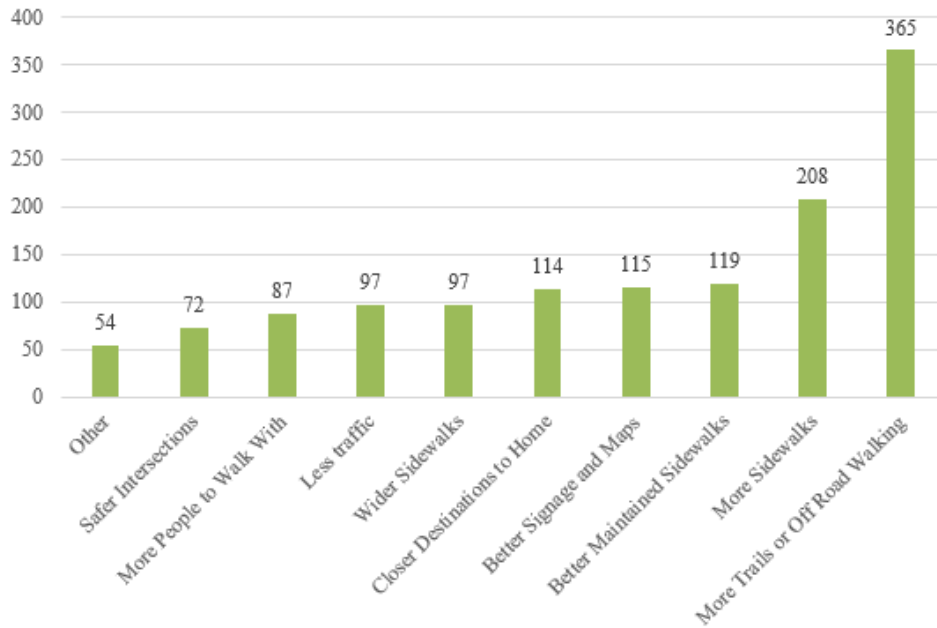
What prevents you from walking more or at all?



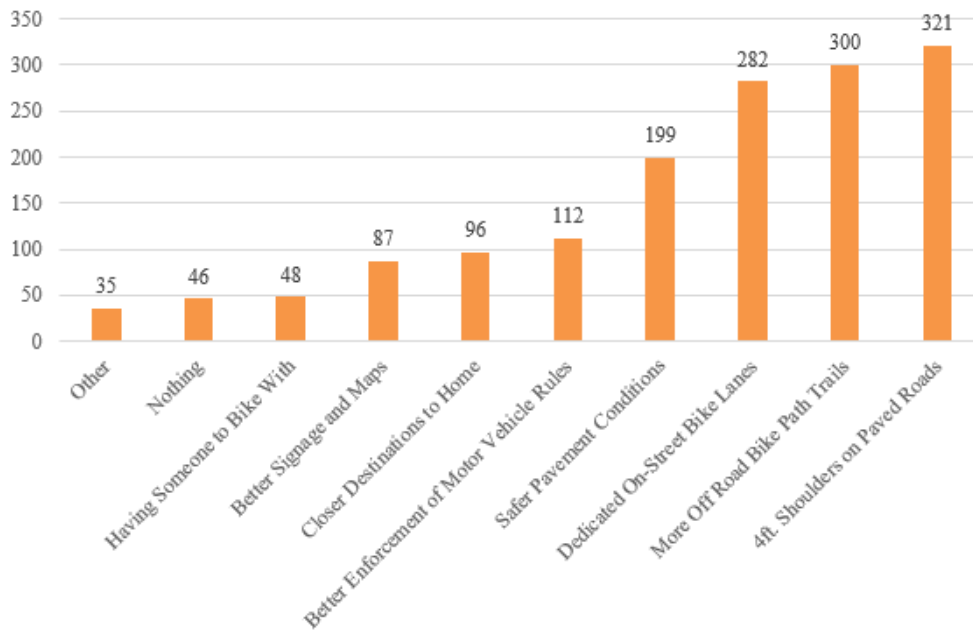
What prevents you from biking more or at all?



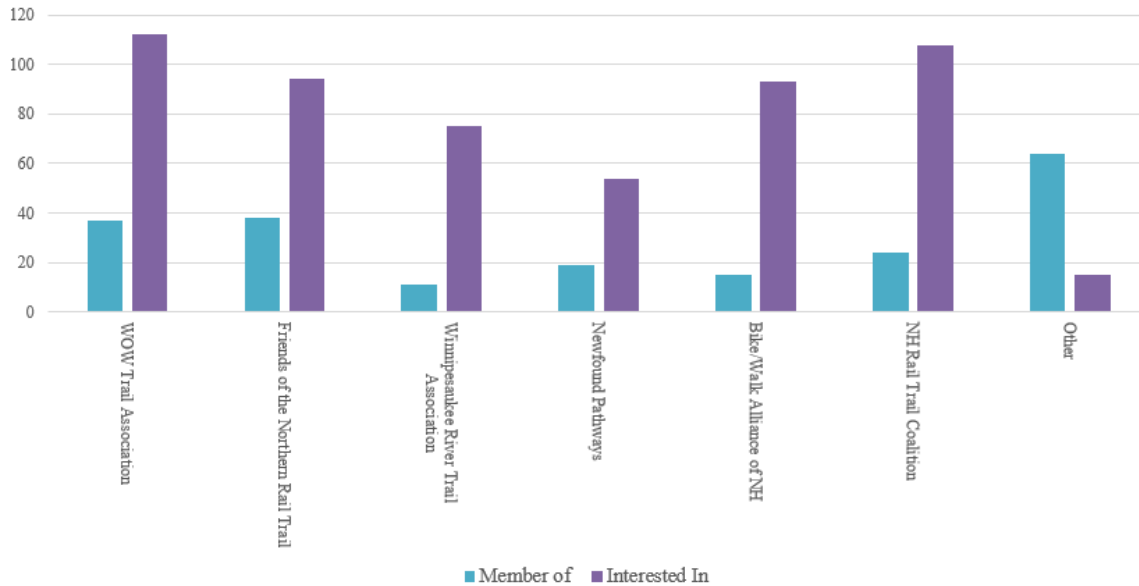
### What would encourage you to walk more?



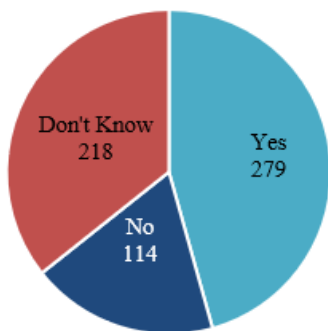
### What would encourage you to bike more?



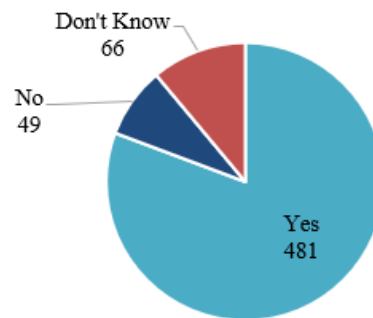
What are you a member of or interested in?



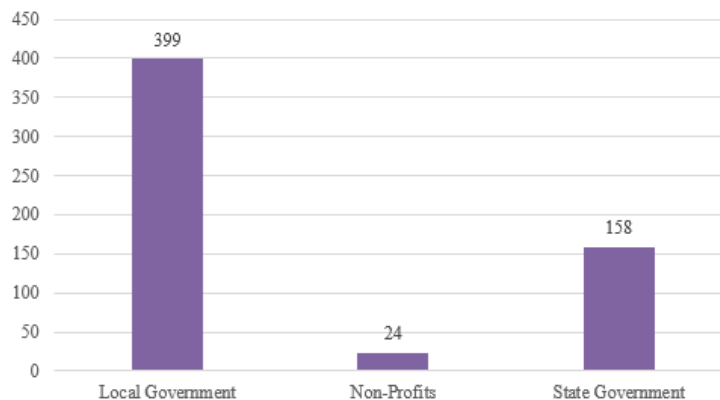
In your community, are there places where new or repaired sidewalks are needed?



In your city/town, would you like more off-street paths / trails?



Who should be responsible for maintaining and improving pedestrian infrastructure?



## Appendix C:

### Local Master Plan Goals and Recommendations Related to Non-Motorized Transportation

#### Alexandria: 2014

Alexandria's master plan contains a small section on recreation in the community. The stated goal is to increase and expand the types of recreation available. The recommendations to achieve this are to assemble existing recreational groups to attend yearly advisory meetings, develop trails for non-motorized use, increase activities and events, and develop a recreation field in the town center.

#### Andover: 2013

Andover's master plan does not mention pedestrian and bicycling facilities. Continuing the 1992 plan, it states that the community is open to an increased recreation and tourism economy. The recreation project mentioned that most closely relates to pedestrian facilities is the mentioning of a "pick-your-own-produce" farm that would encourage walking throughout the farm.

#### Ashland: 2011

Ashland's master plan does not contain a pedestrian and bicycling facilities section. However, there were several recommendations related to pedestrian infrastructure in the transportation section of the plan. These included supporting the maintenance of pedestrian and bike pathways, supporting alternative modes of travel in its transportation network, continuing the sidewalk improvement program, and exploring sidewalk expansion to the ball field, US Route 3 to River Street, and along Main Street to West St.

#### Barnstead: 2014

Unlike the 2003 document, Barnstead's 2014 master plan does not mention goals specific to walking and bicycling. Rather, it contains goals regarding the support and preservation of broader recreational opportunities. A survey revealed that 79% of Barnstead residents would like continued support for recreational opportunities, many of which are pedestrian related such as hiking and cross-country skiing. To reflect this, the plan recommends that the Barnstead Conservation Commission and Recreation Commission partner with each other and outdoor groups to support recreation infrastructure by creating a robust 50-year recreation plan with maps included in it.

#### Belmont: 2002

Belmont has not updated its master plan since 2002. However, it contains some excellent goals related to pedestrian and bicycle needs. In the recreation chapter, the plan states that the Town wishes to establish, create, expand, and map a series of loop trails to link town lands, scenic and wildlife areas, restaurants, and sleeping/camping facilities throughout the town. This goal was worked toward in 2016 when phase I of III of the Winnisquam Scenic Trail was completed with the help of the Belmont Recreational Alternative Transportation Team (BRATT). The trail begins at Leslie E. Roberts Drive on the Laconia-Belmont line before ending at US Route 3 above Mosquito Bridge. Phase II of this trail is in the planning stages and would further Belmont's recreational goals. In addition, the transportation chapter has the broad goal of facilitating, encouraging, and supporting public transit and non-motorized travel to reduce energy consumption, preserve air quality, and reduce pollution. The key suggestions to achieve this are to support new recreational trails, both motorized and non-motorized, and to create wider shoulders for bike paths along existing and new roads.

#### Bridgewater: 2006



Bridgewater’s master plan includes a section specific to bicycle and pedestrian needs. The plan cites serious safety deficiencies in the areas of town where the demand is greatest for walking and biking. These two areas include Whittemore Point, and the area around the school and the town offices along NH Route 3A. The Town of Bridgewater should promote these healthy activities safely through its transportation improvement program. In addition to considering the infrastructure and safety needs of these modes of travel, a special goal of the Town is to provide safe enjoyment not only for walkers, runners, and bicyclists on the roads of the town, but also for hikers, cross-country skiers, and snowmobilers on the back roads and rustic paths of the community. Areas such as the newly established Bridgewater Town Forest along Dick Brown Road and Sawhegenet Park along the Pemigewasset River provide safe recreation areas for a wide array of users.

**Bristol: 2022**

Bristol’s master plan is currently under revision. The completed updated chapters outline a focus on maintaining “public safety, recreation, transportation, and the general welfare” while prioritizing “a safe and effective transportation system”. These goals require much improved bicycle and pedestrian infrastructure. In its former plan from 2003, Bristol mentioned a lot about revitalizing its village district. The Town stated that “A downtown is, after all, supposed to be a pedestrian area, and the more attractive it is to people on foot, the more successful it is likely to be”. This statement gives a good idea of the Town’s priorities regarding its improvement intentions. We saw in Chapter 6 that these ambitions were achieved with the recent upgrades to the downtown area. The improvements have proved effective in promoting pedestrian safety in the area. The Town of Bristol has also managed to meet demands by extending the multi-purpose trail and including an entrance in the downtown area.

**Center Harbor: 2012**

The Center Harbor master plan is focused on many things, although the needs of bicyclists and other pedestrians is not one of them. With minimal reference to these needs throughout the plan, Center Harbor’s standpoint on bicycle and pedestrian needs is as follows: The town does boast a well-established network of nearly a mile of sidewalks within the village district. Also, the state identifies three roads in Center Harbor on its bicycle map. In addition to these bicycle routes, the Squam Lake Association maintains Belknap Woods and Chamberlain-Reynolds Memorial Forest, which offer off-road walking and biking.

**Danbury: 2011**

Danbury’s master plan does not include many references to bicycle and pedestrian needs. The town does have a recreation commission and community center. The Town’s master plan does not mention any specific plans for improving wellness or providing new recreational areas beyond what already exists. In 2010, the Town of Danbury conducted a community survey for the purpose of acquiring community input prior to the master plan process. The top two results for the question “Which municipal or community facilities or programs need to be enhanced or improved?” were the “Community Center” at twenty-seven percent (27%) and “Recreational Parks” at twenty-three percent (23%). This indicates that plans for improvements to Danbury’s recreational facilities should be made.

**Effingham: 2011**

While Effingham’s 2003 master plan cited the importance of walking and bicycling to promote physical and mental health and that steps should be taken to promote these activities, this sentiment was not continued into the 2011 update to the master plan. In the 2011 plan, there are transportation and recreation sections, but they do not mention goals or recommendations for walking and bicycling infrastructure; rather, the transportation section regards only motor vehicle transportation.

**Franklin: 2018**



When Franklin wrote its former master plan in 2005, bicycle and pedestrian needs were clearly considered. The primary concern of the City relates to the construction and completion of both the Winnepesaukee River Trail and a river walk connecting Trestle View Park to Odell Park. Both projects were accomplished, and Franklin continues its commitment to bike and pedestrian mobility. The 2018 edition focuses on creating recreational areas for outdoor activities including active modes of transportation.

**Freedom: 2020**

Freedom’s master plan does not contain much about pedestrian and bicycling facilities, however, it does include a paragraph on the current and future infrastructure plans. The plan cites the importance of alternative modes of transportation, yet acknowledges the continued lack of sidewalks in Freedom, impeding safe pedestrian conditions from vehicular traffic. Instead, the best pedestrian facilitation Freedom has exists in the form of four foot wide paved shoulders along Ossipee Lake Road between Babcock Road and Pequawket Trail. There is a proposition to expand the four-foot bike path to Danforth bridge, but no plans exist to extend the bike path the entire length of Ossipee.

**Gilford: 2016**

Regarding bicycle and pedestrian needs, Gilford’s master plan is brief and focused. The Town identifies that it is not seeing greater use of roadways by pedestrians and bicyclists and that its roads are generally not constructed to safely allow for interaction of vehicles and pedestrians. The Gilford Planning Board supports the development of sidewalks, bicycle paths, walking paths, and similar recreational trails throughout the town. Specifically, the Planning Board encourages these elements be added throughout the village and around the schools to improve safety in a busy area where many children are present.

**Gilmanton: 2018**

Gilmanton’s master plan contains a section on transportation but its plans and recommendations regard strictly motor vehicle transportation rather than pedestrians and bicyclists. However, while there is no mention of it in the 2018 master plan, there is a community trail system in the town that offers recreational opportunities for hikers, bicyclists, equestrians, cross-country skiers, and snowmobilers.

**Hebron: 2010**

Hebron’s few major roads provide little safety for bicyclists and pedestrians alike. The Town would like to work with NHDOT to make improvements on NH Route 3A, North Shore Road, West Shore Road, and Groton Road to improve pedestrian safety. The updated vision statement focused largely on improving recreational opportunities for active transportation, rather than regional connectivity. The Town would like to add shoulders to their own roads to provide safer travel and recreation for pedestrians and bicyclists alike. They have also made recommendations in the land use chapter to expand recreational facilities on town-owned lands, work with land trusts, and private municipal owners to create linking trail networks, explore the possibility of a Cockermonth River walk, and encourage the maintenance of class VI roads as four-season multi-use trails.

**Hill: 2007**

The Town of Hill is in the “development” stage of its bicycle and pedestrian planning. The master plan makes note that a limited network of sidewalks and streetlights exist in the village and are mostly located within a two-block area of the school. The Town feels that these features, although nice, are not practical on the outlying roads. Some ideas for improvement include seeking grants available to fund sidewalk upgrades within the village, exploring ways to fund the maintenance of its portion of the Heritage Trail, and requiring new subdivisions to have open space and incorporate room for trails. These trails could eventually connect to an existing trail network, saving the town money, and increasing recreational opportunities for the townspeople.





**Holderness: 2015**

The 2015 update to the *Holderness Master Plan Vision* does not mention anything about specific improvements or goals for their transportation system. The former master plan from 2007 includes a bit more about the needed improvements in its bicycle and pedestrian system. The rarely used 50-acre town forest boasts a network of logging roads that can be used for hiking in the summer and cross-country skiing in the winter. The Town attributes the limited use of the town forest to the unfamiliarity of its location. This may be the driving factor behind the Town’s goal of creating and distributing a town trail map which would include routes to hike, walk, bike, ski, and snowmobile within Holderness town limits. In addition to the fifty miles of trails maintained by the Squam Lakes Association, the Town would like to develop a town-wide multi-modal trail system.

**Laconia: 2018 Draft**

While the City of Laconia has drafted a 2018 master plan, it does not yet contain a transportation section. In its 2007 master plan, Laconia admits to having poor bicycle and pedestrian infrastructure and has been taking steps to correct that. Luckily, many improvements are currently underway or have been completed. The City finished a sidewalk project on Elm Street and finalized a joint effort with the state to provide sidewalks for several thousand feet of Endicott Street on either side of its intersection with Weirs Boulevard. Laconia generally requires sidewalks in new developments. The City has also been actively pursuing the construction of new bicycle and pedestrian facilities throughout the city, including the Court Street Bicycle Path, the Winnepesaukee Opechee Winnisquam (WOW) Trail, and the bicycle and pedestrian bridge on Bridge Street. The city network will also become part of the Lakes Region Bikeway, which is proposed to stretch from Meredith to Franklin. The Laconia Trails with Rails Exploratory Committee has been a driving force on these issues. To incorporate their activities into a city-wide trails network, Laconia’s strategy is to invest in non-motorized transportation systems such as the riverwalk, sidewalks, and the Rails with Trails program.

Additionally, the City of Laconia provides an interactive walking guide created with Google Maps found on the City’s website under the Visitors tab > Maps > Laconia Walking Map.

**Meredith: 2002**

The Meredith Planning Board is currently in the process of updating its master plan. In the 2002 plan, Meredith makes its bicycle and pedestrian needs a top priority. So serious is it that the master plan makes these transportation needs priority number two out of six. Some of the Town’s objectives in dealing with these needs are to develop a bicycle and pedestrian plan. This plan will: (1) Include an inventory of all existing pedestrian and bicycle facilities. (2) Include an inventory of activity centers or neighborhoods that ought to be connected. (3) Identify specific areas where networks can be expanded or improved. (4) Identify needed support facilities (i.e., restrooms, drinking water, bicycle racks, benches, parking areas, etc.) (5) Include an education and awareness component to encourage greater utilization and to reduce the exposure to the risks associated with these forms of travel. The plan should be considered in the scoping of all public and private development projects. The Town hopes to provide a network of multi-purpose facilities to improve travel opportunities to, from, and within Meredith. Lastly, the Town hopes to incorporate bicycle and pedestrian access into land use regulatory processes.

Additionally, the Meredith Pathway Committee is an advisory committee appointed by the Meredith Board of Selectmen. The broadly stated purpose of the committee is to develop a pedestrian plan and promote pedestrian activity in the community. The committee provides a pathway map of designated routes throughout the town.



**Moultonborough: 2016**

Much of the work mentioned in the master plan is derived from Moultonborough’s 2010 Travel Plan. The plan to revitalize its village includes many suggestions to update bicycle and pedestrian systems. One of the major improvements is building sidewalks on NH Route 25 in the village, which is currently in the engineering phase. In addition, Moultonborough completed Phase II of the Moultonborough Neck Pathway in 2007. Phase II runs along Moultonborough Neck Road to Kona Farms Road. Phase I runs from JoJo’s Country Store to Winaukee Road, leaving the middle of the neck for a Phase III. The construction of this pathway has encouraged many residents to promote alternative modes of transportation and increased the demand for bike and pedestrian connectivity throughout the community.

**New Hampton: 2021**

Regarding bicycle and pedestrian needs, New Hampton’s 2021 update to the master plan mentions very little. One of their main focuses for transportation is the high volume and speed of its main corridors including NH Route 104 and NH Route 132. Their recommendations to improve safety in these areas are to implement traffic calming measures. These elements would benefit pedestrians and vulnerable road users as well as drivers. Unlike the previous plan from 2002, this one does not emphasize the need for recreational areas in relation to the transportation system and multi-modal transportation.

**Northfield: 2014**

The Northfield master plan briefly touches on several topics related to bicycle and pedestrian needs. These topics include a mixed-use village district like the plan of nearby New Hampton. The update mentions that a sidewalk issue was addressed on Elm Street to improve pedestrian safety. Contained within Northfield are two excellent recreational areas: The Winnepesaukee River Trail, which has been extended since the last master plan, and Knowles Pond Park. Together they offer a network of trails that allow access by foot, ski, peddle, snowshoe, and equestrian use. The Town would like a defined bicycle and pedestrian linkage to connect and enhance recreational facilities for people of all ages and levels of ability. They have hope that the “Missing Link” bridge over the Winnepesaukee River will be funded in the future to complete the multi-use trail.

**Ossipee: 2010**

Ossipee does consider bicyclists and pedestrians in its master plan. The Town plans to install a bicycle path around Ossipee Lake that will connect with existing pathways around the lake and eventually to non-motorized pathways in the rest of the Lakes Region. The regional Transportation Advisory Committee has been instrumental in the development of these bicycle paths throughout the Lakes Region. The Ossipee Conservation Commission plans to develop trails for hiking on conservation land in the town. One of the first properties they plan to work on is Sumner Brook. Constitution Park already contains a trail system including wooden bog bridges to prevent adverse impact from foot traffic. Lastly, the master plan recommends that sidewalks and crosswalks be considered anywhere pedestrian traffic exists within the town.

**Plymouth: 2018**

The Town of Plymouth has many recommendations related to bicycling and pedestrian infrastructure outlined in the implementation section of its master plan. First, the Town wants to develop a plan for safe pedestrian and bicycle access and circulation in addition to the comprehensive master plan. This



would include development guidelines for incremental improvement in the appearance of the area and in pedestrian/bicycle safety. To achieve this, Plymouth wants to seek funding from NHDOT's Transportation Alternatives Program to pay for improvements to pedestrian and bicycling infrastructure.

### Sanbornton: 2012

Sanbornton's master plan mentions mostly motor vehicle planning. However, there are two recommendation points in it about pedestrian and bicycling infrastructure. The plan recommends that public right of way be accessible to alternative modes of transportation including pedestrians, bicyclists, and equestrians. It also points out that the infrastructure should be designed to include areas for additional utilities where necessary. Lastly, it mentions that long-range transportation policies should encourage transportation alternatives such as car-pooling, bicycling, and other energy-efficient transportation modes.

### Sandwich: 2011

Sandwich's master plan acknowledges several modes of transportation including bicycling and pedestrian facilities. The recent update admits that Town roadway facilities for bicyclists and pedestrians are limited, especially in Center Sandwich. The plan recommends potential actions that could be taken to achieve overall bicycle and pedestrian facility improvement goals. These actions include: (1) Adding an additional 2-feet of pavement to the shoulder of roads to provide a safe place for bicyclists and pedestrians; (2) Working with NHDOT to assure that any state bridges that are rebuilt or reconstructed provide adequate space for sidewalks and/or bicycle lanes; (3) Develop a long-range plan for sidewalks in Center Sandwich; (4) Properly mark and sign the state designated bicycle routes, including NH Routes 113 and NH Route 109; (5) Work toward a system of bicycle routes and multi-use trails/paths for the enjoyment of Sandwich citizens and visitors that is coordinated with state and regional trail systems.

### Tamworth: 2008

Unfortunately, in some areas the historic rural nature of the town left little physical room for improvements to transportation systems. Regardless, improvements including the installation of a crosswalk in Chocorua Village were in the plans for 2008. This improvement supports Tamworth's second smart growth principle 'Foster the traditional character of New Hampshire downtowns, villages, and neighborhoods by encouraging a human scale of development that is comfortable for pedestrians and conducive to community life.' Community survey respondents indicated a high degree of support for more bicycle paths, sidewalks, and linked trails throughout the town. Development of town bicycle lanes is on the forefront of the 2008 Plan. A local resident is spearheading a project to improve the shoulders on both sides of NH Route 113. Eighty percent (80%) of the project is covered by federal funds while the other twenty percent (20%) is projected to cost the town \$29,000. These improvements will make the roadway safer for pedestrians and bicyclists.

### Tilton: 2013

Tilton's master plan cites the need for open space and recreation areas to provide an improved quality of life, sense of town character, and economic boost. An example of this is the walking trail from NH Route 140 to near downtown Tilton developed by the Winnepesaukee River Trail Association. The Town's goal is to extend the trail to downtown and eventually cross the Merrimack River to connect with Northfield's portion of the trail. This walking trail is the only pedestrian infrastructure mentioned in the plan. While there is a section on alternative modes of transportation, its recommendations are motor vehicle related like bus network expansion and road improvements.

### Tuftonboro: 2021



Tuftonboro’s 2021 community attitude survey indicated great support for improving bicycle and pedestrian access throughout the town. To please its residents, the master plan outlines many goals and recommendations related to improving pedestrian and bicycling facilities. It is recommended that Tuftonboro petitions the state to reduce highway lane width from 12’ to 10’ to accommodate 4’ bicycle lanes in each direction, improving safety and eliminating the perception that the roads are not bicycle-friendly. Additionally, the Town wants to add curb bump-outs and table intersections to further improve pedestrian safety.

**Wolfeboro: 2019**

Wolfeboro maintains 7.5 miles of sidewalk and 1,750 feet of stone dust path within the town. Since the 2007 master plan was written, pedestrian movement in the downtown has increased (anecdotally) after significant upgrades were completed in the downtown area. The extension of sidewalks along Bay Street, Center Street, North Main Street, and Pine Hill Road are in the planning stages. Despite this relatively robust sidewalk network, Wolfeboro concedes that there are several safety issues around them including minimal separation from travel lanes, multiple and wide curb cuts, and accessibility constraints.

For improvements to this infrastructure, the master plan outlines many general and sidewalk-specific recommendations. It suggests that a bicycle, pathway, and pedestrian plan/map be developed to supplement the master plan. Plus, it recommends implementing traffic calming measures, improving crosswalk locations and designs in downtown, and encouraging the development of a circular back bay pedestrian sidewalk and pathway system which would connect three of the four commercial sub areas.

Specific to sidewalks, it is suggested that a sidewalk/pedestrian pathway inventory and asset management plan be developed. Expansions to sidewalks on North Main Street, Bay Street, Center Street to Mast Landing, Pine Street, and the Elm Street Pathway are also suggested. Lastly, where sidewalk construction is not feasible, the plan recommends that pedestrian safety still be improved via speed limit reduction, travel lane narrowing, provision of sharrows, and shoulder area expansion.



Appendix D:  
Maps

