

SECTION 4: PLAN ELEMENTS

4.1 Cultural + Historic Resources

4.2 Economic Vitality

4.3 Housing

4.4 Land Use + Zoning

4.5 Mobility + Transportation

4.6 Open Space + Natural Resources

4.7 Public Facilities + Infrastructure

4.8 Fiscal Planning

Each plan element section contains the following information:

- Introduction
- What the Community Said
- This “Element” Today (Existing Conditions)
- Goals + Policies, Strategies, and Actions
- Systems Matrix



Concord's MBTA Commuter Rail Line

SECTION 4.5 MOBILITY + TRANSPORTATION

INTRODUCTION

The historic layout of roadways in Concord has largely been preserved over the years and contributes to the community’s character. Continuing to preserve this scenic quality has been a priority among residents throughout the Envision Concord planning process. Much feedback has also been received indicating that the existing transportation systems in Concord may benefit from improvements that enhance options for moving throughout and to/from town. The need for improvements raises the issue of striking a balance between preserving historical character and modernizing the transportation network to promote alternative mobility options consistent with the Town’s sustainability principles. Improvements may include adding connectivity links between sidewalks and pedestrian/bike paths, exploring ride sharing options, providing shuttle services, and improving parking.

Implementing improvements within the transportation system to achieve the goals set out in this planning effort benefits residents and visitors as follows:

- Improve coordination with regional partnerships in efforts to reduce traffic volume from commuter through-traffic (especially near the village centers) as well as congestion experienced by town residents using fiscally prudent and sustainable approaches.
- Create safe, cost-effective walking and bicycling connections between key pedestrian and bicycle paths/trails for mobility around Concord for the residential community and visitors.
- Examine and implement shared/on-demand vehicular transportation options to improve mobility around Concord for residents (particularly, but not exclusively, for the non-driving public), as well as visitors.
- Manage existing parking spaces and provide additional parking options for the residential community and visitors outside of the village centers. Provide transportation options (e.g., ride sharing service, van, shuttle bus) into the village centers and other Concord destinations to reduce the need to park in village centers.
- Incorporate policy changes that result in lower carbon emissions and/or otherwise encourage transportation-related environmental sustainability.

WHAT THE COMMUNITY SAID...

October 2017 Envision Concord Survey Highlights

(Total of 458 Respondents from mid-September to mid-October 2017)

- The category of Mobility + Transportation was considered the #3 priority contributing to the quality of life and health of Concord. This includes getting into, out of, and around town by foot, bike, car, ride share, and transit.
- Approximately 50% of respondents believe some improvements are needed to Concord’s mobility and transportation options. Over 25% believe major improvements are necessary.
- The most pressing mobility and transportation problems were rated as traffic in village centers (#1), bicyclist safety (#2), and lack of sidewalks outside of village centers (#3).
- Over 90% of respondents typically get around Concord by privately-owned car. When asked how you would like to get around town, 70% of respondents selected walking.
- Approximately 87% respondents who said they worked in Concord (but outside of their homes) drive to work alone.

Envision Concord website and other input:

- Numerous comments supported improvement of the connectivity between existing trails and bike paths.
- Comments also supported shuttle services and other ride sharing options to provide transportation around town. Comments focused mainly on the areas between village centers and commuter rail stations. Comments suggested that shuttle service might also be utilized for inter-town travel.

MOBILITY + TRANSPORTATION TODAY

Concord's suburban location affords residents easy access to the Boston and Cambridge area while allowing a more rural lifestyle. With the lower density of housing and significant open space, the most commonly used form of transportation by residents is the privately-owned vehicle. The Town's new sustainability policies encouraging the reduction of carbon emissions are in alignment with the desire of residents to increase alternative transportation options and reduce private-vehicle travel in and around town.

The current transportation system has a major impact on the quality of life in Concord. Traffic congestion is an annoyance—and sometimes a safety issue—for drivers, bicyclists, and pedestrians. Existing shuttle services do not meet demand of the populations served. Perceived lack of parking availability (perhaps tied to concerns about free parking) and parking policy are a frustration to residents, visitors, and business owners.

Heavy dependence on privately-owned vehicles imposes hardships on the people who cannot afford cars or do not drive (e.g., students, seniors, lower-income individuals, and disabled individuals). People with limited access to cars may also be disadvantaged because of resulting limits on access to services, food, and jobs.

Private Vehicles

The dominant mode of transportation within Concord is privately-owned motor vehicles. There are approximately 17,416 privately registered vehicles in Town (number of excise tax bills in 2017). With approximately 6,700 households (MAPC report), Concord has 2.6 vehicles per household. Any shift away from private vehicle ownership will entail a shift in capital investment and operating expenses from private individuals to the Town or businesses running transportation services. Today, the Town invests in transportation infrastructure and residents invest in vehicles.

Public Transportation

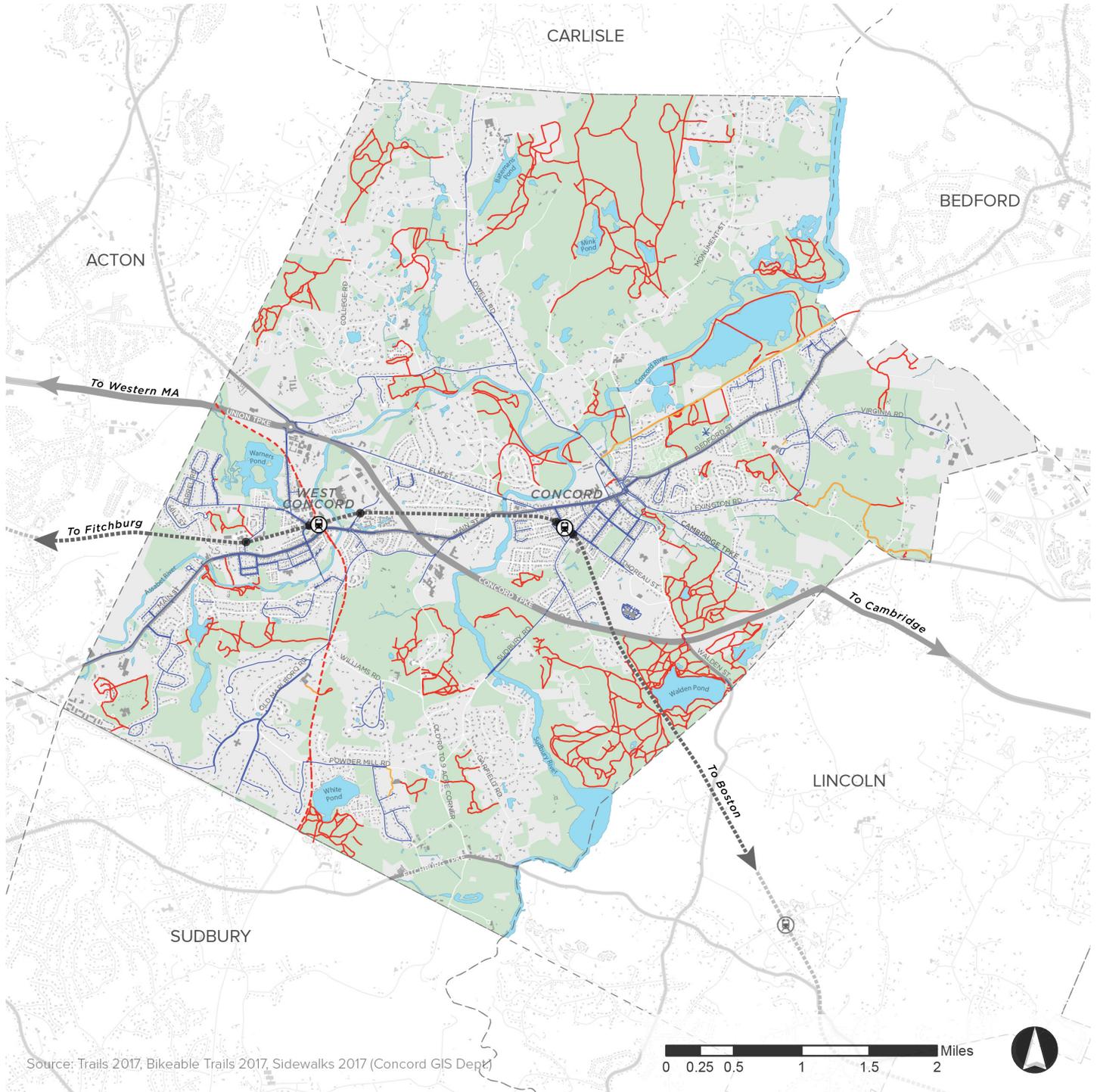
The MBTA Fitchburg commuter rail line has two stops in Concord in two of the three village centers and serves as an important and attractive means of travel for residents commuting to and from work (primarily in Boston) and for visitors and employees coming to town. Commuter rail schedules, however, are optimized for workday commuting, making off-peak and weekend visitor travel difficult. There is also limited parking available 39 free spaces at Concord Depot, 56 spaces at Crosby Market (by permit) and 168 spaces at West Concord Station (64 for residents by permit and 104 for anyone at \$5/day) and only ten bicycle spaces at each location.

While there is reliable commuter rail access to Concord, there are no regular MBTA buses that service Concord to provide connections from the station. For visitors, employees, and residents who must travel to or from the commuter rail stations, there are currently limited alternatives to private vehicles.

The Yankee Line, Inc. runs two commuter buses Monday-Friday from Crosby's Supermarket to Copley Center in Boston with occasional modifications in service. Similar connection challenges exist

Pedestrians and Bicycles

Concord has an extensive network of sidewalks, trails, and bikeways that residents utilize throughout town; however, the connectivity of these pathways could be improved. Opportunities exist to link certain trail networks to provide walking and bicycle access to all areas of town. In the spirit of creating stronger connections between existing paths, some streets connecting various trails could be utilized, but bike lanes and/or sidewalks are not always present. While there have been many requests for sidewalks and bike lanes as part of this planning effort, street layout and construction vary widely throughout the town, and only select roadways can be improved to accommodate "Complete Streets." In addition, the construction of new sidewalks can adversely affect the historical character of rural roads and are not always welcome by all residents in the town. Lastly, while many residents have asked for more connectivity, the future level of use of new sidewalks and bike paths is uncertain and an investment model would be needed to document whether this may be cost effective and beneficial.



Source: Trails 2017, Bikeable Trails 2017, Sidewalks 2017 (Concord GIS Dept)

Transportation + Circulation

- Commuter Rail (Fitchburg Line)
- Route 2 / Concord Turnpike
- Other Major Roads (Class 3)
- Trails*
- Planned Bruce Freeman Rail Trail
- Bikeable Trails
- Sidewalks
- Commuter Rail Station
- Railroad Crossing

* Source: Town of Concord Division of Natural Resources

Figure 39 Transportation and Circulation Map - Major Roads, Commuter Rail Access, Sidewalks, and Trails (Source: CivicMoxie map created using Town of Concord GIS files)

COMPLETE STREETS



(Source: Smart Growth America)

What is a “Complete Street”?

A complete street provides safe and accessible options for all travel modes - walking, biking, transit and vehicles – for people of all ages and abilities.

Who has Complete Streets?

According to the Smart Growth America, over 1300 local government agencies had adopted complete streets policies as of 2017. One example of a recent comprehensive complete streets policy was adopted by the Town of Stoneham, Massachusetts and was recognized as one of the Best Complete Streets Initiatives of 2017 by the National Complete Streets Coalition.

For more information, see: <https://smartgrowthamerica.org/resources/best-complete-streets-initiatives-2017/>

Concord is also a destination for cyclists attracted to its beauty, terrain, cultural sites, shopping, dining, and recreational resources. The Minuteman Bikeway, Bruce Freeman Rail Trail, and the Reformatory Branch trail allow some riders alternatives to roads, but also bring cyclists to Concord’s streets and sidewalks. There are few facilities in Concord to support cyclists and ensure that cyclists, pedestrians and cars can safely coexist. The lack of bicycle facilities is a hindrance to Concord residents seeking to share the roads with all modes of transportation.

Private Shuttles

Concord previously had a shuttle bus system that was discontinued due to low levels of ridership. Today, there are a limited number of private shuttles that are run by Concord businesses solely for employee or client use. Several social service providers offer van services to assist their clients who do not drive; however, the funding for these transportation services are either grant-specific or have other limitations in place that restrict service providers to only using their vans/buses for their constituents.

Council-on-Aging Vans

The Council on Aging (COA) shuttle service is available for residents who are 60 years old or above for medical and shopping destinations, as well as COA programs and activities. The service is available by appointment only from Monday through Friday. There is a minimal suggested donation for trips with a recommendation to make appointments early since times can be booked months in advance.

Ride Sharing

Ride sharing services and the prevalence of access to smart-phone apps will be an important factor in future transportation services and may further erode the usefulness of private shuttles. However, any reduction of overall traffic and congestion from single-occupancy vehicles is preferable both for quality of life and the Town’s sustainability goals.



Council on Aging Van in Concord

(Source: www.concordma.gov)

Traffic and Parking

Traffic

Major roadways in Concord, including Routes 2, 62, and 117, Elm Street, Cambridge Turnpike, and Lexington Road, allow residents easy access to downtown Boston and surrounding communities for work and leisure, as well as ample access for visitors from outside of town. Daily commuter traffic through town and increased traffic on local roadways has created challenges for convenient resident travel through town. Route 2, while providing access from and to Concord, also divides the town and hinders travel between the main town centers. Radial road patterns funnel traffic through the two village centers, leading to traffic congestion and presenting safety concerns related to pedestrians and cyclists. Possibly contributing to traffic congestion problems are the travel apps such as WAZE and Google Maps that direct commuters off Route 2 during peak congestion times onto local Concord streets to shorten travel times. Residents have offered consistent anecdotal input about the increase in traffic on local roads, perhaps due to these apps and increased development in the region.

Parking

The 2012 Parking Management Plan by Nelson/Nygaard for Concord Center and West Concord included analysis of the existing parking spaces (both private and public) available in both areas (see Table 11). The plan noted that parking is needed by a variety of groups – visitors,

residents, customers, commuters, workers, and students. These groups have different parking needs, such as all-day parking, price sensitivity (free vs. paid parking), location/proximity to destination, etc. In 2012, the analysis showed there were sufficient parking spaces to meet average peak demand in both centers. In just the past few years, however, the burgeoning redevelopment in West Concord, including the addition of several restaurants/dining establishments, has affected both the peak times for parking as well as the overall demand.

While Concord Center has not undergone similar development-related changes to West Concord, the demand for parking in the village centers, as well as at other public venues and facilities, such as the Concord Free Public Library and the Umbrella, Concord-Carlisle High School, and Minute Man National Historical Park, has continued to increase. Without other transportation options, the number of vehicle trips in town will continue to rise, along with demand for parking.

Following the 2012 analysis, the Town has piloted strategies suggested in the study with mixed results. Some of the parking policies instituted are contentious (e.g. the Keyes Road lot in Concord Center is often filled before retail stores open), leaving the Town to continue modifying what, if any, parking restrictions for specific public parking lots or street parking should be and if there should be fees in certain areas to encourage turnover of parking, which might be advantageous for businesses.

# of Parking Spaces	Concord Center Study Area	West Concord Study Area
Supply	~ 3,900 spaces (46% available for general access)	~ 2,770 spaces (35% available for general access)
Demand at Average Peak	2,765 spaces	1,750 spaces

Table 11. Parking Supply and Demand in Concord Center and West Concord Study Areas

Source: 2012 Parking Management Plan

SHARED PARKING

What is shared parking?

Shared parking is when two or more uses, such as a church, shopping mall, theatre, special event center, with peak needs at alternate times, share parking areas so that in aggregate fewer parking spaces need to be provided and less space is used for parking.

Park-and-Ride Planning and Design Guidelines, Spillar 1997 provides standards for how to plan shared parking. Such standards may be a good starting point for Concord.

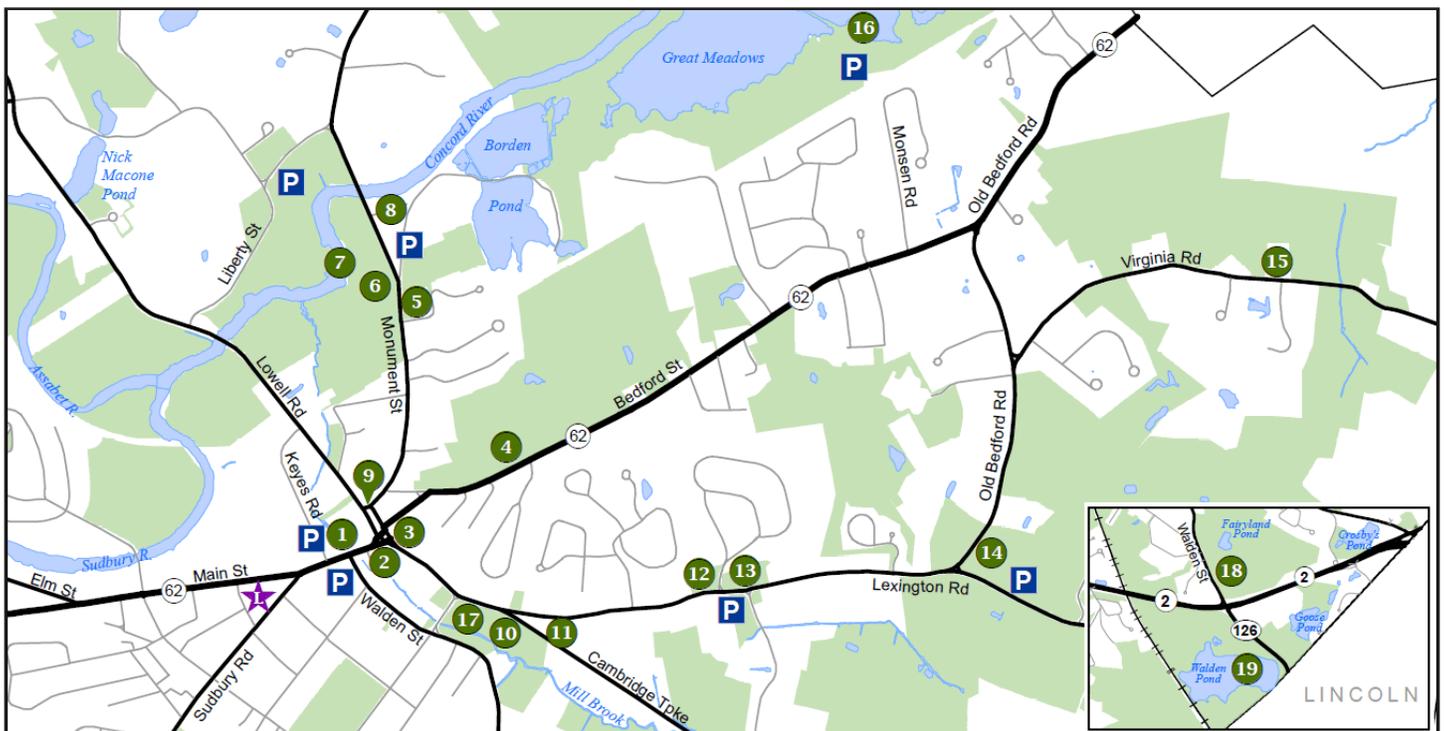


Figure 40 Temporary Parking Map for Concord Center (Source: www.concordma.gov)

GOALS + POLICIES, STRATEGIES, AND ACTIONS

Concord has maintained the historical character of the town throughout the years, including many of its public roadways. While residents cherish this aspect of Concord, it also creates challenges for reconfiguring roadways to adjust for increased travel, parking demands, and alternative travel needs such as biking, that did not exist a century ago. The apparent increase in traffic has had significant impact on the quality of life for residents and, in mature towns like Concord, congestion problems cannot be resolved by simply widening roadways. Denser building patterns in the village centers, the desire to retain the historical character and rural environment of the town, and other issues (such as wetlands, topography, and existing infrastructure), make solving roadway and traffic issues a challenge. As noted within the ‘Traffic and Parking’ section above, a portion of the congestion issues could be attributed to overall increases in regional traffic and use of new GPS driving apps. To make noticeable improvements to accessibility and circulation in and around town, Concord will have to look at transportation beyond the roads and traffic signals, including taking advantage of and/or adapting newly emerging technologies, where appropriate.

Strategies to broaden transportation options beyond private-vehicle use reinforce the town’s commitment to decreasing environmental impacts, improving safety and health of pedestrians and bicyclists, and providing better accessibility to the commercial centers, public and recreational facilities, and social service areas for residents and visitors alike. Connecting key destinations either through physical infrastructure or by some type of transit/ride share service would offer residents the option to leave their cars at home and provide incentives for visitors to park once and then travel by other means.

In addition to the impacts transportation facilities make on quality of life for residents, access and parking are also major concerns in terms of the health of the town’s commercial centers. Transportation goals in this plan work in tandem with the goals and actions in other plan elements, particularly Economic Vitality and Land Use, where the issues of traffic, parking, pedestrian-friendly infrastructure, and wayfinding can help or hinder the health of the local businesses and help shape goals for future land use.

The success of physical enhancements and additional services will hinge on good communication and a public awareness campaign to explain and promote improvements so people know what is available. In order for any strategies to be successful, a public education campaign should be undertaken, similar to the efforts made to modify personal habits around energy and water use. This education effort can include information on how using the range of non-personal vehicles for moving in and around town is beneficial from a personal level (fewer vehicle trips reduces auto expenses and increases health from walking and biking) and for the town at large in terms of less traffic and environmental impacts.

Envision Concord’s Mobility + Transportation plan is organized around the following five goals to improve and expand the options for how residents and visitors travel in and around town, enhance the commercial centers, and support sustainability principles. This section presents each goal along with the specific strategies, policies, and actions to advance it.

Goal 1: Establish a central transportation planning function within Town government to reduce motor vehicle dependence and traffic volume within Concord and encourage a more environmentally sustainable blend of transportation modes, protect the character of the Town, and reduce the need for parking.

Reducing vehicle trips within Concord will require reliable alternatives for residents, workers, and visitors. The planning, coordination, and implementation of transportation-related studies, programs, and projects has been managed by the Transportation Management Group (TMG). As the transportation strategies have become more complex, the TMG may need additional capacity. The following key action would advance this goal:

1. Create a transportation planning and coordination function within municipal government to:
 - a. Determine policies, services, and plans most likely to achieve this and other goals, including consideration of updating the 1994 Roads Policy with additional design and technical strategies from the Massachusetts Complete Streets policies.

- b. Prioritize actions and projects in view of sustainability and other community lenses (e.g., providing electric-vehicle charging stations, bike racks, and shuttle stops at public parking facilities, encouraging [transit-oriented development](#) principles in relation to redevelopment and new development near train stations, and addressing delivery truck-related congestion).
- c. Further develop Town expertise in the area of transportation systems, programs, services, funding, etc.
- d. Work with Town departments with regard to policy development and project planning (e.g., evaluating location and access for new redevelopment and development for appropriateness and impacts and coordinating fleet and other Vehicle Miles Travelled (VMT) reduction opportunities).

Goal 2: Provide effective mobility options to those who cannot or do not want to use private vehicles for trips within Concord, including residents of outlying neighborhoods who require access to transportation and services in village centers, and residents who require regional transportation to Boston and other regional medical centers and key destinations.

Currently, privately-owned vehicles are the main mode of travel to most businesses, cultural facilities, health services, educational services, and historic sites. This dependence on privately-owned vehicles for intra-town transportation is an impediment to the various population segments (students, seniors, lower income individuals, etc.) whose access to services, food, and jobs is reduced without a vehicle, and it is not consistent with the Town’s sustainability goals.

New transportation modes should be developed that would improve availability of service while aligning with the Town’s environmental goals. Services to be considered include ride-hailing, ride sharing, and fixed route services. Additional services and technologies (e.g. automated vehicles) should be explored as they become viable. These existing and emerging transportation modes would support the goals of Economic Vitality listed in section 4.2, linking cultural and historical assets to local businesses.

Six core action areas will advance this strategy and development vision:

1. Identify the town population segments that have the greatest need and generate the most demand for a shared/on-demand transportation option and what destinations in town would benefit most for each segment. Match major populations in town with popular and shared destinations to create efficient routes, boost ridership, and provide opportunities for recouping the costs for running the services.
2. Conduct a study to examine transportation-use preferences, projections of traffic given certain selected alternatives, expected cost burden for public vs. private transit, and options for who pays. Known traffic data for Concord streets is dated (i.e., collected ten years or more ago) for specific locations (e.g., at certain intersections). Recent, comprehensive data is needed to make reliable decisions about major changes in transportation options. The Town should consider a comprehensive traffic study as part of making decisions about new transportation alternatives.
3. Explore mobility options, especially on-demand shared mobility solutions with the intent of implementing or piloting a program in the near-term. Door-to-door transportation options compared to a “station” or “stop”

AUTOMATED VEHICLES (AV)

Could AV shuttles help Concord address mobility issues?

A number of companies offer AV shuttles that can be called as needed or leased and deployed from remote locations. This allows for adaptive management of mobility needs in a community and eliminates the need to site overnight parking and storage.



based shuttle are more critical for certain populations – such as seniors or youth – than for older students or adults. The Town should work with companies utilizing new technologies such as Automated Vehicles (AV) for transit shuttles when the technology is effective and appropriate for Concord’s uses.

4. Encourage and incentivize carpooling in town, including high school students to reduce the amount of traffic and congestion from the high school. The concept of incentivizing carpooling may also apply to employees in town if preferential off-street parking or other tangible benefits are identified.
5. Identify shared use of transit vehicles (e.g., buses, vans) to improve door-to-door transportation options for the rapidly growing senior population and others who are unable to wait, walk, or carry packages to shuttle stops. The Council on Aging (COA) offers a shuttle for seniors but is limited in its capacity and restricted in who it can serve, as is the case with transportation offered by other social service providers. With appropriate and more flexible funding sources, some of these separately run shuttles may be able to coordinate and offer services to the public. In Acton, a collaborative multi-town service consisting of COA vans was piloted to increase capacity with existing vehicles. While the COA vans still operate in Acton, Boxborough, Littleton, and Maynard, Acton also has multiple services, including the MinuteVan that is dial-a-ride for residents of any age, a commuter rail shuttle, and Road Runner, which is specifically for seniors and those with disabilities. The Town should coordinate with the State around efficacy of shared mobility programs that utilize Town-owned vehicles, including school fleets, for integrated public transportation. These existing shared use vehicles may be complemented by new technology to provide a comprehensive range of services.
6. Improve multi-modal transportation opportunities, particularly from transit hubs to work destinations. Continue discussions with Hanscom Air Force Base and others to develop shuttle service for first-mile/last-mile from Concord’s train stations to work destinations. Employers whose businesses run outside of standard commuting hours, such as farms and restaurants, face the additional hurdle of not having available access to either train station (due to limited train service late at night and early morning). Employers who have more standard operating hours could participate in CrossTown Connect to learn more about transportation demand management options and participate in implementing transportation solutions.

ROADS POLICY & COMPLETE STREETS

How does the 1994 Roads Policy Compare to National Complete Streets Standards?

In the *Elements of a Complete Street Policy* (2018), the National Complete Streets Coalition (NCSC), which is recognized by MassDOT and is a widely accepted collaborative authority on complete streets, identifies 10 elements of a comprehensive complete streets policy.

To more fully address these elements Concord may wish to add standards focusing on bicycle and pedestrian safety as well as customization of standards for different land-use contexts. The Town should also consider how best to coordinate these standards across various review agencies and provide clear performance standards to ensure effective implementation.

10 Elements of Complete Streets

1. Vision and Intent
2. Diverse Users
3. Commitment in all projects and phases
4. Clear, accountable expectations
5. Jurisdiction
6. Design
7. Land Use and context sensitivity
8. Performance Measures
9. Project Selection Criteria
10. Implementation Steps

Goal 3: Create safe, cost-effective walking and bicycling connections between key pedestrian and bicycle paths/trails to improve mobility around Concord.

During the planning process, many residents voiced their desire for strategic sidewalk and bike path connections from residential neighborhoods to key destinations, such as schools, village centers, and existing paths. Such enhancements would specifically focus on improving connections to school or afterschool activities for students and to and between the village centers for all residents – eliminating vehicle trips and improving community

health. As infrastructure improvements are being planned, Concord's Public Works Department has been reviewing where streetscape improvements could be made to meet Complete Street design standards as described in the Mass Highway *Guiding Principles of the Highway Project Development & Design Guide*. By focusing on key areas, such as the village centers and near the schools or rail trail, safe connections between existing paths and streets can be made. This goal is also addressed in Section 4.6: Open Space + Natural Resources, and it is intended to be coordinated with Goal 1 described above.

Six core action areas will advance this goal:

1. Consider expanding the charge and membership of the Transportation Management Group to include analyzing the community's transportation and mobility needs and preparing a Complete Streets Prioritization Plan that includes the integration/update of policies in the Town's 1994 Roads Policy and takes into account historic preservation policies.
2. Prioritize a set of financially sustainable infrastructure projects (such as dedicated paths/lanes, road markings, bicycle racks, etc.) that will improve connections between key bicycling and walking paths and sidewalks. These improvements may take several different forms depending on location, with shared-lanes for bicycles and improved signage and crosswalks within existing right-of-ways. These improvements should review historical considerations as part of determining location and design and be coordinated with the crosswalk policy of Concord Public Works which provides standards around both crosswalk design and placement based on current and potential demand.
3. Evaluate options for safe, convenient non-auto passage across/over Route 2 near Route 62. This location was most often identified as a barrier for residents, leading them to drive rather than walk or bike. Feasible and financially acceptable solutions should be studied by the Central Transportation Planning Staff (CTPS), MassDOT, Concord Public Works, and other Town departments, commissions, and boards.
4. Study possible paths and trails that create better links to natural areas, recreational lands, and other destinations. Enhancing community access to natural resources and destinations is consistent with other stated goals in Plan Elements.

5. Develop a model for understanding the costs and benefits of various transportation improvements and services. The costs of streetscape and other transportation infrastructure improvements and ongoing maintenance must be included when understanding fiscal priorities and feasibility. Prioritize potential improvements to account for demand, timing, type, location, cost-effectiveness, and coordination with other improvements that may be planned in town.
6. Improve connectivity through wayfinding and signage. Part of improving connections is proper wayfinding and signage. Incorporating signage and in-town mapping information at high volume locations will create a more cohesive cultural, historical and visitor experience.

Goal 4: Improve coordination with regional partnerships for the purpose of reducing traffic volume from commuter through-traffic (especially near the village centers) as well as congestion experienced by town residents using fiscally prudent and sustainable approaches.

Traffic congestion and volume is one of the first concerns raised at every planning event. Traffic concerns also represent a significant number of online comments on the Envision Concord website. The town cannot fully effect reduction in traffic congestion without the help of partners (e.g., MassDOT and neighboring towns like Acton and Lincoln) to ensure a coordinated approach to traffic management and avoid moving one community's problem to another.

Six core action areas will advance this goal:

1. Reallocate existing staff resources to allow for greater focus on transportation planning and implementation. The Town does not currently have a transportation department or a transportation planner. In order to support or assist with local and regional transportation planning that has tangible results, the Town would need to reassign staff time or hire qualified additional staff to perform transportation planning and implementation work.
2. Provide leadership and participation in a regional transportation group, such as the 495 Partnership or the 128 Central Corridor Coalition, to reduce commuter

through-traffic. In order to effect real change in the regional transportation system, Concord will need to coordinate with the state, regional agencies, and neighbors to collectively improve regional roadway access, discourage rerouting of commuters onto local thoroughfares, and introduce transit improvements to avoid having one town's solutions push the traffic problems to its neighbor. As other communities in New England may be dealing with the impacts of GPS driving apps, the Town may want to evaluate GPS algorithms to determine if there are ways to re-designate appropriate roadways in town, so they aren't included as alternate routes for the traveling public, which would require coordination with neighboring communities.

3. Promote regional public transportation options, ride sharing, carpooling, bicycle transportation, alternative-fuel vehicles, etc. to commuters who may currently choose local through roads. The Town should support any efforts by the MBTA and Metropolitan Area Planning Council (MAPC) to promote regional use of public transportation and any extension of service. As a member of MAPC's Minuteman Advisory Group on Interlocal Collaboration (MAGIC), the Town can review programs and services in neighboring communities, such as Acton and their shuttle services, and create partnerships.
4. Study potential traffic calming measures along the main thoroughfares and commercial centers. Traffic calming measures, such as sidewalk bump-outs, lane narrowing, neck-downs, and speed bumps may work in certain instances but would need to be compatible with pedestrian and bicycle safety as prescribed in Complete Streets, and be consistent with other goals in the Envision Concord plan, such as historic preservation. If adding traffic signals as a way to deter through-traffic were a consideration, a traffic study will be required.
5. Evaluate existing opportunities with neighboring communities (such as developing a joint transportation planning/coordination function or service programs) to collaborate on fiscally prudent regional connectivity options and partner with at least one other town in the region to provide a new transportation option to reduce regional traffic. The Town should continue working with adjacent communities, MAPC, and MBTA to coordinate transportation services that would connect to regional destinations (e.g. Alewife, Burlington, Bedford, and locally, Emerson Hospital and medical offices), which would also improve accessibility of other towns to Concord's public transit services without the need for private vehicles.

6. Ensure the selected alternatives for regional improvement are cost effective and fiscally sustainable. As it works to address transportation congestion and related issues, the Town should continue to ensure that the strategies promoted offer improved cost benefit and can be reasonably sustained in the long term.

Goal 5: Develop an approach to parking that balances the principles of sustainability with the Town's economic goals. The approach should include managing existing parking spaces and considering providing parking options for the residential community and visitors outside of the village centers.

Parking is a very polarizing issue and concerns tend to be clustered around the village centers, the high school, and other public and recreational facilities. For the health of local businesses, the availability of parking that serves not only customers, but employees, is critical. Following recommendations from the 2012 parking study of Concord Center and West Concord study areas, the Town has been piloting different parking restrictions with and without fees with limited success. As the Town continues to work through the management of the public parking lots and street parking near the village centers, it will continue evaluating the success and drawbacks, including cellphone application technology.

One strategy to alleviate some of the parking and congestion issues near the village centers is to introduce remote parking with some form of shuttle or ride sharing service to bring people into the village centers and other popular destinations. In combination with a shuttle/ride share service described in Goal 2, this remote parking and shuttle/ride share service would work in concert with goals described in Plan Elements – Economic Vitality, such as having visitors pay for remote parking to offset the shuttle/ride share service costs, while residents could park remotely and/or use the shuttle/ride share service from a different location at a reduced fee. Employees of businesses in the village centers could also access reduced/no-fee remote parking, which would free up parking for customers of village center businesses.

Seven core action areas will advance this strategy and development vision:

1. Develop plans to decrease the demand for parking, by giving visitors and residents new ways to get to businesses and services (including cultural, historical, agricultural, education, etc.) without bringing a private vehicle to each stop on their journeys to and within Concord. Consider concepts such as bringing people to Concord on commuter rail trains and buses and then providing local mobility service within the town. Also consider the use of ride-hailing and ride sharing services within town to decrease the use of private vehicles for intra-town travel.
2. Within the context of the Town's total parking and mobility plan, evaluate the creation of preferred parking for carpool, vanpool, and other high-occupancy vehicles as well as bicycles in public parking lots. Preferred parking also should be considered at public facilities with restricted parking such as the high school to incentivize carpooling and alternative transportation modes.
3. Reduce parking requirements near village centers and other specific areas while requiring multi-modal features. Modify zoning in areas near village centers or other specific areas (such as the Baker Avenue industrial park area) to reduce parking ratio requirements for new business and residential developments and require new developments to incorporate features, such as electric charging stations, bicycle racks, shared-car parking spaces, etc. to reduce traditional vehicle use.
4. Provide electric-vehicle charging stations, bike racks, and public transportation stops at public parking facilities and in publicly funded development, encouraging privately-owned parking areas to do the same.
5. Evaluate and identify sites suitable for remote parking. Location of remote parking should consider total commute time experienced by potential users in order to maximize convenience and cost-benefit, and ideally be close to higher capacity roads to function as a parking hub for ride service into the town centers and/or visitor locations.

PARK-AND-RIDE PLANNING STANDARDS

Several excellent documents provide planning standards for park-and-ride facilities.

These include:

- *Decision-Making Toolbox to Plan and Manage Park-and-Ride Facilities for Public Transportation: Research Report and Transit Agency Case Studies*, January 2017, TCRP Project H-52
- *Park-and-Ride Planning and Design Guidelines*, Spillar 1997
- *Guide for Park-and-Ride Facilities*, 2014, American Association of State Highway and Transportation Officials

6. Incentivize the use of remote parking through convenience and discounts at local sites and businesses. There are many variations of packages or fee structures that could be established that would make remote parking/shuttle to multiple destinations much more convenient than parking in town and driving from site-to-site. As described in Section 4.2: Economic Vitality, there is potential to create a type of Visitor Pass program that includes the ride services, admission to cultural sites, and discounts at local businesses.
7. Through joint planning with tour operators, develop a system of tour bus registration and routing. Directing tour bus parking to the remote parking areas would reduce the buses travelling through Concord Center but still bring tourists to visit Concord's destinations by shuttle.

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MOBILITY + TRANSPORTATION SYSTEMS MATRIX

		Section 4.1				Section 4.2				Section 4.3						Section 4.4					Section 4.5								
		Cultural + Historic Resources				Economic Vitality				Housing						Land Use					Mobility + Transportation								
		Goal #1	Goal #2	Goal #3	Goal #4	Goal #1	Goal #2	Goal #3	Goal #4	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5				
G1	#1								●																●				
	#2						●					●					●								●	●			
Goal #2	#1						●					●					●								●	●			
	#2						●					●					●								●	●			
	#3						●					●													●	●			
	#4																								●	●			
	#5																								●	●		●	●
	#6					●	●																		●	●		●	●
Goal #3	#1				●																						●		
	#2					●	●					●												●	●		●	●	
	#3																							●	●		●	●	
	#4	●																									●	●	
	#5											●															●	●	
	#6		●			●			●																		●		

Note: The Systems Matrix is intended to depict crossover between goals and actions throughout the Plan Elements section. It is intended as a tool to assist in prioritization of actions based on the "breadth" of their crossover with formalized goals both within and outside of their respective sections.

Section 4.6

Section 4.7

Section 4.8*

Open Space + Natural Resources										Public Facilities + Infrastructure								Fiscal Planning			
Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6	Goal #7	Goal #8	Goal #9	Goal #10	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6	Goal #7	Goal #8	Goal #1	Goal #2	Goal #3	Goal #4
																	●				
															●						
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										●											
										●			●								
												●									
								●				●									
								●	●												
										●				●							

* For the purposes of this Matrix, Fiscal Planning is assumed to be a factor in all decisions involving the prioritization of action items. As a result, Goals from fiscal planning are not represented as being connected to specific actions. Rather, they are represented as a separate constant in the decision-making processes.

MOBILITY + TRANSPORTATION SYSTEMS MATRIX

(CONTINUED)

		Section 4.1				Section 4.2				Section 4.3						Section 4.4					Section 4.5				
		Cultural + Historic Resources				Economic Vitality				Housing						Land Use					Mobility + Transportation				
		Goal #1	Goal #2	Goal #3	Goal #4	Goal #1	Goal #2	Goal #3	Goal #4	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5
Goal #4	#1																				●				●
	#2						●														●	●	●	●	●
	#3					●															●		●	●	●
	#4																				●	●	●	●	●
	#5																								●
	#6																								●
Goal #5	#1					●	●		●																●
	#2					●	●				●			●		●	●			●	●	●	●	●	●
	#3					●													●	●					●
	#4																			●					●
	#5					●	●				●					●	●								●
	#6					●			●																●
	#7					●			●																●

Note: The Systems Matrix is intended to depict crossover between goals and actions throughout the Plan Elements section. It is intended as a tool to assist in prioritization of actions based on the “breadth” of their crossover with formalized goals both within and outside of their respective sections.

