



## WINCHESTER MASTER PLAN 2030

# PHASE I EXISTING CONDITIONS

## REPORT

This report prepared for the Master Plan Steering Committee (MPSC) details the findings of Phase I of the Winchester Master Plan 2030 Existing Conditions analysis for the Town of Winchester, Massachusetts.

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# Chapter 6: Transportation and Circulation

## Introduction

The Transportation and Circulation element of a Master Plan describes the existing transportation network, including public transportation and multi-modal facilities, and ongoing local transportation initiatives. The chapter also identifies considerations for future transportation and circulation planning

Winchester, like many historic New England towns, was shaped by its geography and habitable land and water resources. Bounded by hilly terrain on the east and west, Winchester's colonial-era development pattern began in the low-land valley areas of town. These original land-based pathways linked larger towns, like Lowell and Boston, to the north and south of Winchester. The Middlesex Canal cut through the town in 1803, briefly provided a transportation waterway from Charlestown to Lowell. The Canal was closed in 1851 and then replaced in 1883 by the Boston & Lowell Railroad as a means of quick and convenient transportation of goods and people to and from Boston. These original transportation routes and roadways established the development pattern for the town and remain as the framework of the circulation network today.

Since the previous *1953 Master Plan*, transportation technology, policies, and physical pathways have changed in Winchester. Like many created during the mid-century era of planning, the *1953 Master Plan* focused on the automobile—encouraging the creation of parking lots in Town Center, limiting through streets (promoting cul-de-sac development), and leaving out public transportation, pedestrian, and bicycle circulation. These recommendations were considered to be best-practices for transportation planning during the 1950s, 60s, and 70s in the United States. This era of planning and development pattern can be seen in the larger lot sizes, cul-de-sacs, and lack of sidewalks in Winchester's west side where the newest development occurred during those decades. The *1953 Master Plan* also pre-dated the large National Highway System projects that took place in Greater Boston during the 1960s. Two major routes, Interstate 93 and the Route 128/Interstate 95 loop, would significantly impact traffic patterns in Winchester and the surrounding towns.

### Trends and Challenges

- Single occupancy vehicle drivers make up over 70 percent of commuting traffic.
- Middle and high school start times have recently changed to coincide with elementary schools creating parent drop-off traffic congestion and pedestrian-safety issues in the downtown area.
- The new Tri-Town Community Bike Path offers a multi-use pathway to neighboring towns.
- There are pressures from bordering towns with the dock-less bike-share program.
- Route 3 Cambridge Street acts as pedestrian barrier, creating safety concerns for kids walking to elementary schools west of Cambridge Street.
- *Complete Streets Policy and Plan* adopted in 2016 indicates policy change towards providing multi-modal transportation facilities and increased safety measures for all users.

The transportation planning policies in place in Winchester today promote multi-modal transportation. Safe, accessible, and town-wide pedestrian and bicycle routes, along with lowering speed limits and traffic calming are key elements of the Town's transportation goals. In 2016 the town adopted a *Complete Streets Policy* and formed a Traffic and Transportation Advisory Committee. This eleven-member committee is appointed by the Select Board and Town Manager and advises on transportation policies, projects and provides technical information. Lowering traffic volumes through walking, biking, and public transportation, is at the core of the discussions, addressing the transportation needs for the next decade and beyond.

## Inventory of Existing Conditions

As predicted in the 1953 *Master Plan*, the number of vehicles has increased significantly over the last few decades. Winchester's location along Interstate Route 93 and proximity to the Interstate 95/Route 128 circumferential highway makes it a very desirable community for people working in the Greater Boston area. Traffic increases due to population growth along with an increase in vehicles per household.

*According to the U.S. Census Bureau's 2012-2016 American Community Survey over 85 percent of workers live in households that have two or more vehicles available.*

Heavy traffic volumes have created congestion and delays during certain times of day, at specific locations. As observed by several residents, vehicle navigation technologies that re-route drivers off the congested highways, and on to local streets in town, have noticeably added to the congestion during commuting hours. Heavy vehicular volumes and increased speeds have also posed safety concerns for pedestrians, bicyclists, and other non-motorized vehicle users.

### EXISTING TRANSPORTATION NETWORK

Winchester's existing transportation network is made of streets, sidewalks along many streets, a dedicated bike path that connects to neighboring towns, recreational trails, and public transit via bus and commuter rail services.

#### *Street Network*

The Town owns and maintains approximately 90 miles of public roadways. Private roads make up a small percentage of the overall network. State jurisdiction roadways include Massachusetts Department of Transportation's (MassDOT) Route 3 (Cambridge Street), and Department of Conservation and Recreation (DCR)-owned roads—Mystic Valley Parkway and the roads bordering Middlesex Fells Reservation: South Border Road, Hillcrest Parkway and North Border Road.

The hierarchy of streets is focused on moving vehicles through town and in and around neighborhoods. The major arterials and collector roads—Main Street, Cambridge Street, Washington St., Mystic Valley Parkway and Highland Avenue, run Northeast and Northwest to south connecting to

**Table X. Functional Class of Winchester's Street Network**

Functional class	Miles	Percent
Interstate	0.058	0.10%
Principal Arterial	4.361	4.70%
Minor Arterial	11.037	12.00%
Collector	10.806	11.70%
Local	65.992	71.50%
<b>Total</b>	<b>92.254</b>	

Woburn to the north and Arlington and Medford to the south. With the exception of Route 3 (Cambridge Street) and Highland Avenue, these collector roads converge in the downtown area. The Middlesex Fells Reservation, which borders almost the entire eastern edge of Town, prevents direct east-bound vehicular travel.

*The majority of the roadway system is an interconnected grid—allowing for good traffic flow, connectivity, and volume disbursement.*

Dead-end streets occur at physical barriers, such as water bodies and large facilities. Intentionally designed cul-de-sac streets with single-point or restricted entry and exits are found primarily in the neighborhoods west of Cambridge Street that were developed since the mid-1950s.

#### *Network Safety*

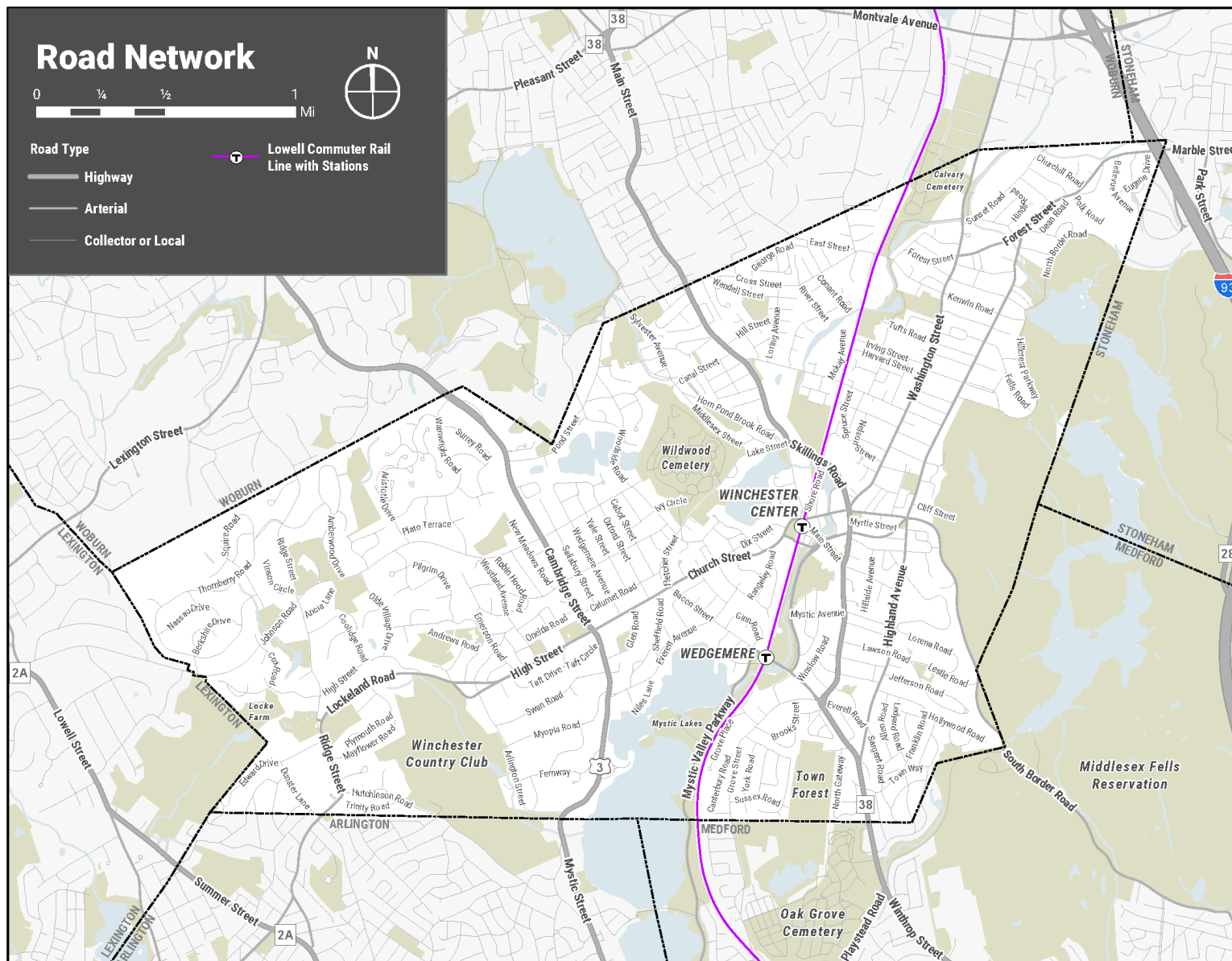
The MassDOT Registry of Motor Vehicles (RMV) compiles crash reports submitted by state and local police, reporting the crash location, crash date and time, number and type of vehicles, manner of the collision, weather conditions, and, when applicable, the type of non-motorist involved. According to the most recent MassDOT Crash Portal data from 2106, there were a total of 221 vehicle crashes in Winchester, including 39 injury-related crashes. No fatalities were reported. Two pedestrian crashes and one bicycle crash were reported in that time frame.

When examining Winchester Police accident reports for 2017 and 2018 several pedestrian and bicycle vs. vehicle accidents have been recorded, these were, for the most part, minor non-injury or non-property damage reports and would not be recorded in the State crash portal. The data does not support clusters of these accidents in concentrated areas, the incidences are spread across the town randomly. However, it should be noted that there were two serious pedestrian vs. vehicle accidents in 2018, one of these resulted in a pedestrian fatality. These accidents are under investigation and the locations are the focus of traffic safety analysis.

Intersections with the highest number of injury crashes were recorded at the traffic circle in the town center and at the intersections of Johnson Road at Ridge Street, Main Street at Canal Street, and Highland Avenue at Mystic Valley Parkway—each reporting two such incidents. The North Main Street corridor and the Church Street corridor have also generated a higher number of total crash incidents. North Main has a higher number of injury-related crashes while Church Street had mostly non-injury crashes.

Since 2016, when this crash data was collected, there have been traffic calming measures implemented in town at several of the problem intersections including: Ridge Street and Johnson Road; along North Main Street; on Skillings Road near the High school; and at Pond Street and Woodside Road. These measures include traffic lights, pedestrian-activated flashing beacons, sidewalk bump-outs and crosswalks.

All five elementary schools in Winchester are listed as “Safe Routes to School Partners.” A *Safe Routes to Schools Assessment* and implementation project has been in progress at the Vinson-Owen Elementary School. This project is focused on the Ridge Street and Johnson Road intersection and includes a traffic signal and sidewalk improvements. Vinson-Owen has been active in promoting walking and increasing participation on their “Walk-to-School” incentives. Lincoln School has been rated as having one of the highest walking rates in the state.









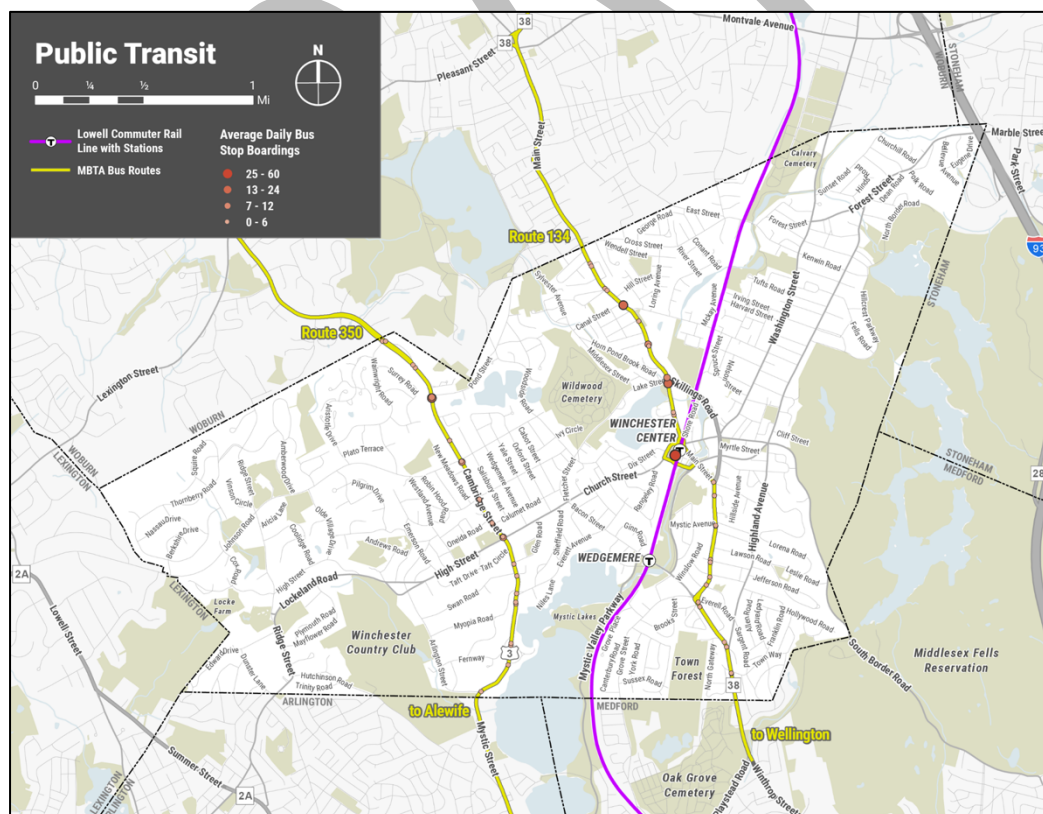
### Public Transportation

The Lowell Line of the Massachusetts Bay Area Transit Authority's (MBTA) Commuter Rail stops at two stations in Winchester—Wedgemere Station and Winchester Center. Approximately 75 percent of riders board at the Winchester Center station, which is centrally located in the downtown. Wedgemere Station is located less than half-a-mile south of downtown at the intersection of Bacon Street and the Mystic Valley Parkway.

**Together, Winchester's two stations serve approximately 1,300 riders daily.**

Trains run throughout the day and night starting around 5:30 AM and ending around 12:00 AM, stopping approximately every 20 minutes during commuting hours, and hourly during non-commuting hours. Both stations are in the MBTA's Zone 1. A one-way trip to North Station costs \$6.25, while a monthly pass costs \$200.25.

Municipally-owned and maintained parking lots serve each station. The Wedgemere Station parking lot costs users \$1-per-hour up to \$5-per-day on weekdays. Commuters with resident permits are permitted to park along Bacon Street and other neighborhood streets. Although no statistics are available, stakeholders reported that many commuters from surrounding towns drive to Winchester to access the train and take advantage of the free parking in neighborhoods surrounding Wedgemere Station.<sup>151</sup> Although not sanctioned by DCR, commuters also park in the Mystic Lakes Shannon Beach Parking lot along Mystic Valley Parkway.



<sup>151</sup> Conversations with Transportation and Circulation stakeholders. October 3, 2018

Commuters driving to Winchester Center can park at the three main parking lots—Upper Aberjona, Laraway Road, and Cullen Lots—for \$1-per-hour on weekdays. Winchester residents can also purchase permits from the Engineering Department for \$125-per-quarter to park in various lots and on-street spaces. Covered bicycle parking spaces are also provided at both stations.

Parking by permit-only, and time-restricted to after 8:45 AM, is provided in the lot off Waterfield Road on the west side of the Commuter Rail station. Permit parking is also allowed, in accordance with posted signage, in the following downtown locations: Jenks Center/Mount Vernon Street Lot, Lower Aberjona Lot, Shore Road, Dix Street and School Street, on Main street near Wedge Pond/Elliott Park.

The Winchester Engineering Department administers the Town Center Parking Permit Program and are available to Town Center Employees (with proof of employment) for \$10 per permit, and to Winchester residents utilizing the MBTA Commuter Rail (with proof of residency) for \$125 per quarter.

Two MBTA bus routes also serve the Town. Route 134 connects North Woburn to Wellington Station (MBTA Orange Line) in Medford, traveling along Main Street through Winchester, and stopping at 13 locations, including the Town's most-used bus stop at the Winchester Center Commuter rail station on Laraway Road. The first 134 bus traveling inbound arrives at Winchester Center at approximately 6:30 AM on weekdays and arrives At Wellington Station at Approximately 6:48 AM. This bus runs every hour on the half-hour throughout the day with the last bus leaving Winchester Center at approximately 8:30 PM. The last outbound bus leaves Wellington Station at 7:00 PM and arrives at Winchester Center at approximately 7:25 PM.

The Route 350 bus runs along Cambridge Street/Route 3 from North Burlington to Alewife Station (MBTA Red Line) in Arlington. The 350 bus makes 13 stops in Winchester from the Woburn town line to the Arlington town line with the first inbound bus arriving at approximately 6:20 AM and the last inbound bus at 10:43, with a similar schedule for the outbound direction. Frequency of times vary ranging from approximately every half-hour (during morning and afternoon commuting hours) to every hour. The local bus fare for a one-way trip is \$1.70 when using a CharlieCard (reusable pre-paid cards), or \$2.00 for CharlieTicket (individual ticket) or cash. Average daily bus boarding numbers range from approximately 60 people at the Winchester Center Stop on the 134 bus to less than 5 at stops along Route 3 and Route 38 for the 350 bus.

Winchester is included in *The RIDE*, MBTA's door-to-door, shared-ride paratransit service. This is an on-demand service for trips in and around the greater Boston area. The Winchester Hospital also operates a bus shuttle service for their employees who require transportation to and from hospital remote-parking facilities.

### *Jenks Center Wheels*

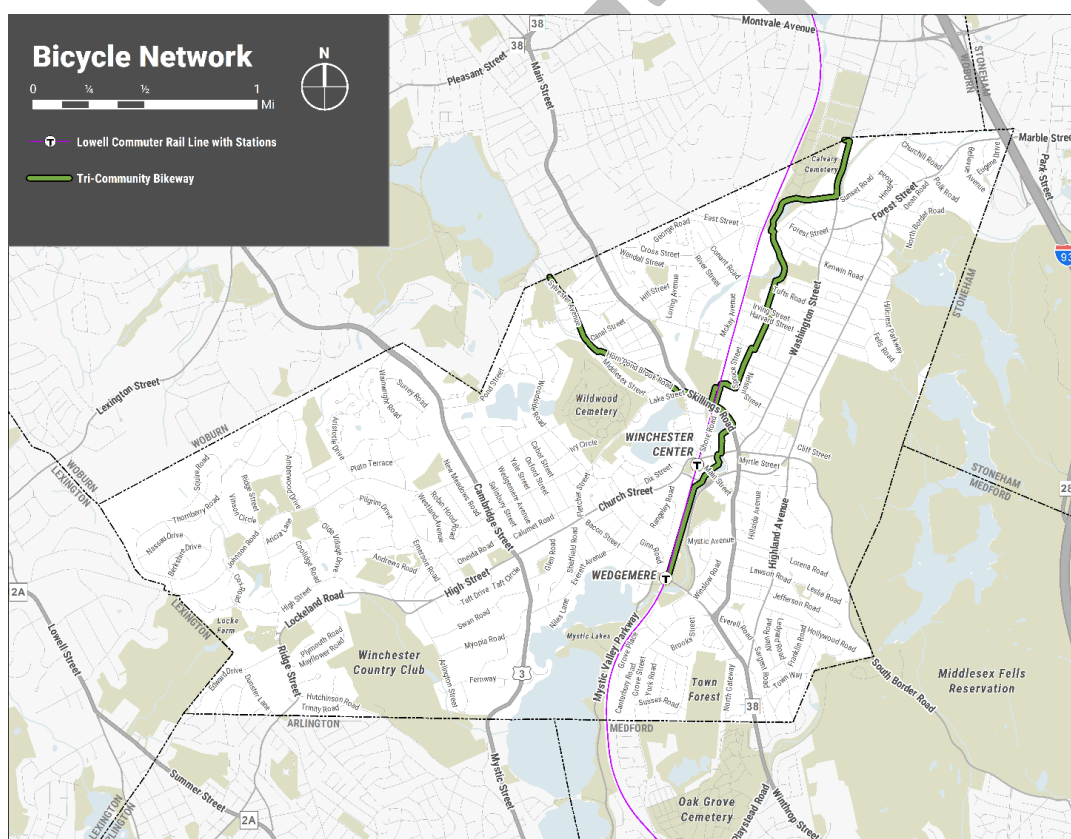
For over forty years, the Winchester Council on Aging has offered a diverse array of transportation services to meet the needs of area seniors. These services include but are not limited to: Volunteer Drivers for local medical, shopping and social engagements, Paratransit into Boston area medical centers through SCM Door to Door, Taxi service for urgent medical needs and subsidized vouchers, and Eating Together program transportation provided by Salter Healthcare. Educational programming for senior drivers is also offered through the Transportation Program.

In fiscal year 2018, Winchester COA transportation services provided 1061 roundtrips to older adults. These programs are managed by a part-time (19 hours per week) Transportation Coordinator certified by the UMass Dept. of Gerontology in Organizing and Managing Senior Transportation Options. At the 2018

Town Meeting the Town approved a warrant article for \$37,000 towards the purchase of a passenger van to expand the Jenks Center transportation services. The Council on Aging is actively applying for grant monies to fund this service.

### *Paths and Trails*

Dedicated bicycle facilities are limited in Town. Plans to add bike lane shoulders and/or shared lane markings to Main Street, Church Street, Johnson Road, and Highland Avenue are being discussed and are part of the Complete Street Priority Plan. The neighboring towns of Stoneham and Woburn recently joined Winchester in constructing a roughly seven-mile shared-use path, the Tri-Community Greenway. The trail starts at the Wedgemere rail station in Winchester, running north through Woburn and into Stoneham, with a spur between Wedge and Horn Ponds into Woburn. The Greenway is paved with a few short segments on neighborhood streets. This path is used for commuting, getting around town on foot and bicycle well as for recreation.



Bicycling is also popular on the Mystic Valley Parkway's wide shoulder with painted bike sharrows, which connects from Wedgemere Station south into Medford—ultimately connecting to a shared-use path along the Alewife Brook Parkway in Arlington and into Somerville and Cambridge. These neighboring towns have adopted bike-sharing systems including dock-less bike-share vehicles (bikes and electric-assist scooters and bikes). Winchester residents have begun to use these vehicles which has prompted the Town to consider how to integrate the bike-share programs into the transportation options for residents.

Many students at the McCall Middle School and High School ride bicycles to school using these paths and town streets. During warmer dry weather the bike racks at both schools are overflowing. The Winchester School District supports students biking to all schools, however few elementary students bike to and from school and most of the elementary schools do not have bicycle racks available.



*Bike parking at Winchester High School*

On the east side of the town, trails in the forested Middlesex Fells Reservation attract mountain bikers and hikers with easy, moderate, and difficult routes available. Known colloquially as “The Fells”, the reservation is owned and operated by The Commonwealth of Massachusetts, Department of Conservation and Recreation (DCR). The public park encompasses over 2,500 acres and offers over 100 miles of trails for walking, biking and winter snow activities.

## **PEDESTRIAN FACILITIES**

As a travel mode and recreation activity, walking offers the potential to reduce traffic congestion, improve air quality, and create healthier citizens. Winchester is, for the most part, a very walkable town. Sidewalks exist along most major roadways and most neighborhood streets. Maintenance and upgrades to sidewalks, curb-cuts and crosswalks is ongoing throughout town as part of the *Complete Streets Plan*. Recent improvements include curb extensions on North Main Street at Sheridan Circle and Hemingway St. crossings.

Cambridge Street acts as a physical divider between Winchester’s pedestrian-friendly areas and car-centric neighborhoods. Neighborhood streets without sidewalks tend to be in the developments built after the mid-1950s and on private roads west of Cambridge Street. As part of the *Complete Streets Policy*, new developments and roadway improvements will follow best practices to accommodate pedestrians and all users. Parents are concerned for school children who live in neighborhoods just east of Cambridge Street who are enrolled at Ambrose Elementary and must cross Cambridge Street if walking to school. Many parents opt to drive the short distance rather than allow kids to walk or bike.

## **PARKING**

A *Parking Management Plan* was adopted by the Select Board and put into place in 2014. Parking pressures in the downtown area and near Wedgemere Station prompted action by the Town to restrict parking in these areas to control all-day parking and provide convenient parking for visitors and clients of the downtown businesses. Parking restrictions were also implemented to discourage all-day parking on neighborhood streets near the commuter rail stations. The Town has received complaints from residents in neighborhoods within walking distance to the stations of ‘spill-over’ parking on un-restricted streets.

One-hour and thirty-minute on-street parking is concentrated along the major streets radiating from the town center and on the smaller connector streets in that area. Pay-parking-lots using metered kiosks provide long-term parking. These lots are located at Wedgemere Station, Shore Road, Waterfield Road and Laraway Road. Two-hour restricted-parking and resident-permit-parking lots are also located in lots on either side of Winchester Center Station off Waterfield Road and along Shore Road. Three-hour restricted-parking was instituted along neighborhood streets within walking distance to the train stations to prevent all-day on-street parking by commuters in these neighborhoods. On-street parking along



Mystic Valley Parkway and Skilling's Road near the McCall Middle School, Lincoln School and High School is restricted before 9 AM. During the winter months and snow storm events there is an all-night parking ban for on-street parking from 1:00AM to 7:00 AM throughout town to allow for snow plowing.

## COMMUTING PATTERNS

Geographically, Winchester is only 8 miles from downtown Boston. According to the US Census, in 2016, 90.6 percent of working Winchester residents commute outside of town, and only 9.4 percent of residents live and work in Winchester. Almost a third of these commuters travel to Boston. Over 70 percent of



commuting residents use single-occupancy vehicles to get to work which adds approximately 7,000 vehicles to the roads during morning and evening commuting hours.

Of the 9,000 people who are employed at jobs in Winchester, approximately 89 percent live in

other communities. This indicates that the worker inflow is comparable to the outflow.

## ONGOING AND FUTURE TRANSIT INITIATIVES

### *Slow Zones*

Winchester is considering a *Safety Zone Study* for Winchester's Town Center and Bacon Street between Mystic Valley Parkway and Fenwick Road. The study will aim to create Safety Zones, which permit a 20-mph speed limit, to further protect vulnerable users. The Town is also considering adopting a default speed limit of 25 mph town-wide which would apply to all roadways which do not have an otherwise posted regulatory speed limit.

### *Complete Streets*

Winchester adopted a *Complete Streets Policy and Plan* in 2016. Through grants from the State and the Town Capital Improvement Plan, many tasks have been implemented. The program is ongoing, and projects will continue to improve pedestrian and multi-modal mobility throughout Town.

### *McCall Middle School Traffic Study*

As part of a town-wide policy to include traffic studies with school expansion projects, there is an ongoing Traffic Study for the McCall Middle School expansion project. This study examines traffic and safety issues and solutions pertaining to McCall Middle School and Lincoln Elementary School drop-off and pick-up circulation.

### *Winchester Center Train Station*

Upgrades to the Winchester Center Train Station are planned to be completed in the next couple years. Improvements include station access and structural reconstruction.

### *DCR Parkway Study*

Massachusetts Department of Conservation and Recreation (DCR) is conducting a study of Metropolitan Boston's parkways, including Mystic Valley Parkway in Winchester. The goal of the study is to improve bicycling, pedestrian, and multi-modal routes and facilities along these parkways.

### *Highland Avenue Corridor Study*

The Town plans to begin a traffic study along Highland Avenue from the Mystic Valley Parkway intersection to Forest Street. This section of roadway experiences frequent traffic congestion during the commuting hours. On Street Parking, sidewalk and pedestrian crossing conditions will also be evaluated.

### *Cross Street Corridor Study*

The Town plans to begin a traffic study along Cross Street from the Main Street intersection to Washington Street. This section of roadway experiences frequent cross-town traffic congestion during the commuting hours. On- street parking, Sidewalk and pedestrian crossing conditions will also be evaluated.

## Conclusions

Transportation issues identified during the data analysis and initial stakeholder outreach centered around growing traffic congestion in town and improving pedestrian, bicycle, and non-motorized user safety. Many of the ongoing and future planning and construction projects will address some of these issues. The following are considerations for future transportation and circulation planning.

### **LAND USE AND CONNECTIVITY**

Transportation and mobility are major quality-of-life factors for all residents. The safety, comfort, and convenience of the transportation network affects all residents and users. Land use and future development decisions will impact the transportation network. New development, regulatory changes in land use, and increased density planning should be closely integrated with transportation improvements and circulation considerations—building less reliance on motorized vehicles by encouraging safe and pleasant non-motorized alternatives.

### **BICYCLE AND PEDESTRIAN FACILITIES**

The adoption of the *Complete Streets Plan* is an important step in providing safer multi-modal transportation. Continued improvements to the bicycle and pedestrian circulation network could encourage commuter-use in addition to shorter and more local trips within town, reducing reliance on vehicular transportation. Bike-share programs, a more extensive network of bike paths, and dedicated bike infrastructure on major routes would create safer cycling routes. Separated and/or protected bike lanes create the most comfortable and safest bike route. Improving connectivity to existing bike paths—particularly to desired destinations such as schools and public transportation centers—should be included in future planning efforts.

### **BUS AND WALK TO SCHOOL PROGRAMS AND EDUCATION**

During “Walk to School Wednesdays,” school staff observe a decrease in vehicular traffic congestion during the morning drop-off periods, particularly in the downtown areas. Promoting everyday walking and biking to school while improving and maintaining sidewalks and crosswalks along the school routes, could encourage an increase in these alternative modes of transportation and reduce drop-off congestion.



Survey participants and stakeholders expressed a desire for improvements to the school bus service, specifically rate reduction. Current bus fees are prohibitive for many families. Lower bus fees and extra bus service, particularly in the late afternoon, could increase ridership—reducing vehicular drop-off and pick up traffic at the schools.

### **COMPLETE STREETS PLAN MAINTENANCE AND IMPLEMENTATION**

The adoption of the *Complete Streets Plan* is a vital step towards better mobility for all users. Maintaining and reviewing the plan as a living document is important to continue improvements in the next several years. Prioritization of the plan's action items should be clearly established. The maintenance of the *Complete Streets Plan* will also be important to securing funding for transportation projects.

### **PUBLIC TRANSPORTATION**

Winchester is fortunate to have two commuter rail stops in town. Yet single occupancy vehicle commuter ridership in Winchester remains high. Almost 30 percent of commuters travel to Boston, which is serviced by the Lowell Commuter Line. Increasing ridership for residents should be a transportation goal for the Town. Improvements to parking facilities and bike facilities at the commuter stations should be studied and implemented to encourage more use of this public transportation asset.

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