SUSTAINABLE MOBILITY PLAN

A TRANSFORMATIVE VISION FOR WELLESLEY, MA

WELCOME

In 2020, the Town of Wellesley, Massachusetts set out to develop a 5- to 10-year vision that addresses and enhances the use of current and alternative modes of transportation in Wellesley through the development of a Sustainable Mobility Plan (SMP).

The effort to develop the SMP was spearheaded by the Town's Mobility Committee, a diverse group of Town employees, elected officials, and engaged residents all interested in reducing greenhouse gas (GHG) emissions and expanding the use of sustainable modes of mobility, with invaluable input from the public, multiple Town Committees, and regional agencies. This document provides a transformative vision for the future of transportation in Wellesley, establishes goals and strategies, and provides a roadmap for implementing the proposed strategies.

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EXECUTIVE SUMMARY

SUSTAINABLE MOBILITY

The ability for people and goods to move around effectively in a sustainable manner using a variety of "low-impact" travel modes, such as walking, biking, and transit, in addition to reducing the GHG emissions resulting from car trips.

INTRODUCTION

Wellesley has set ambitious climate change reduction goals of achieving a 50% reduction in GHG emissions by 2030 (compared to 2007 levels) and net-zero GHG emissions by 2050, in line with the targets being set at the state level. With transportation accounting for 30.6% of the Town's GHG emissions, **a dramatic reduction in transportation-related GHG emissions is necessary to achieve these targets.**

Such reductions require a multi-pronged approach that shifts travel away from single-occupancy vehicles toward lower-impact modes, such as walking, biking, and transit, while also accelerating the shift toward electric vehicles and shortening trip lengths through land use changes.

This holistic approach of considering a wider range of factors beyond strictly transportation infrastructure is embodied by the term **Sustainable Mobility.**

Wellesley's *Sustainable Mobility Plan* builds upon the Town's previous planning efforts to support multi-modal travel through infrastructure projects and policies geared toward providing safe, convenient, and accessible facilities for pedestrians, bicyclists, and transit users by establishing an actionable framework for achieving sustainable mobility in Wellesley.

🏃 MOMENTUM 00

Momentum Boxes are included throughout the Sustainable Mobiilty Plan and highlight efforts that are underway.

Looking for information on current projects? Visit wellesleyma.gov or follow us on Social Media!

VISION & GOALS

The following vision statement was set based on input received from Wellesley residents, employers, and workers throughout the planning process:

In 2040... Wellesley is a Town that is recognized for its respect for the environment and support for sustainability; commitment to expanding sustainable modes of transportation; and support for providing a variety of options for getting to destinations within the Town and throughout the region.

From this Vision Statement, the following three goals were used to guide subsequent planning efforts:

GOAL NO. 1
EXPAND & ENCOURAGE SUSTAINABLE MODES OF TRANSPORTATION

Wellesley will continue to embrace and expand opportunities for people to be less reliant on cars and instead use sustainable modes of transportation, including walking, biking, and transit and encourage a shift in behavior through education and marketing.

GOAL NO. 2
CONNECT PEOPLE TO TOWN DESTINATIONS & THE REGION

To support quality of life and economic vitality in the region, Wellesley will make it easier for people to reach destinations both within Town and across the region.

GOAL NO. 3
REDUCE GREENHOUSE GAS EMISSIONS

To meet its target of net-zero GHG emissions by 2050, Wellesley will take action to accelerate the reduction in transportation-related GHG emissions by providing people with a variety of convenient low-impact transportation options and accelerating the shift to electric vehicles.

STRATEGIES

Six categories of strategies were established to meet the Town's goals:

STRATEGY NO. 1
ENHANCE LOW-IMPACT COMMUTING OPTIONS

Enhance and actively Promote Low-Impact Mobility Options for Commuting to Work and School.

Transit — in the form of school buses, commuter rail, buses, and microtransit — is a critical tool for reducing single-occupancy vehicle travel for trips of all lengths. Wellesley should raise awareness of existing transit services and actively work to expand low-impact mobility options throughout Town.

1.1 Promote the Use of School Buses

1.2 Boost Microtransit, Buses, and Shared Transit

1.3 Boost Commuter Rail

1.4 Work with Major Employers to Support Low-Impact Commuting Options

STRATEGY NO. 2
PRIORITIZE PEDESTRIANS & BICYCLISTS

Non-motorized travel, including both walking and biking, is not only the most sustainable form of travel but also linked to public health and quality-of-life benefits.

The Town can support these travel modes by expanding and improving the sidewalk network, on-road bicycle network, and trails network as well as helping to develop a "culture of walking and biking".

2.1 Expand the Sidewalk Network

2.2 Expand the On-Road Bicycle Network

2.3 Improve the Safety and Connectivity of the Trails Network

2.4 Develop a "Culture of Walking and Biking"

STRATEGY NO. 3
ACCELERATE THE REDUCTION OF VEHICLE GHG EMISSIONS

New electric travel options — including electric vehicles, bikes, and scooters — can allow for dramatic reductions in GHG emissions while providing a high level of convenience.

The Town can accelerate the shift to these lower-emission options by raising awareness of existing incentives and benefits, expanding charging and parking infrastructure, expanding access to shared e-bikes/e-scooters, and undertaking educational campaigns about ways in which people can reduce their carbon footprint.

3.1 Accelerate the Shift to Electric Vehicles

3.2 Promote Low-Impact Transportation Options

3.3 Educate about Low- and No-Emission Transportation Options

STRATEGY NO. 4
PROMOTE SMART GROWTH

Smart, sustainable development is one of the most powerful strategies to reduce transportation-related GHG emissions by reducing vehicle trip lengths and building infrastructure to support walking and biking.

The Town can advance smart growth by integrating smart growth policies into many Town processes and actively managing parking to support both more compact development and low-impact travel modes.

4.1 Implement Smart Growth Policies

4.2 Actively Manage Parking

STRATEGIES (CONT.)

STRATEGY NO. 5
OFFER SAFE FACILITIES FOR
ALL TRAVEL MODES

Provide Safe Facilities for All Users Regardless of Travel Mode.

A transportation network cannot be considered sustainable unless travelers can reach their destinations safely regardless of travel mode. Providing a safe environment is particularly important for supporting non-motorized travel, as potential bicyclists and pedestrians will be discouraged if conditions feel hazardous or stressful.

The Town should increase travel safety by undertaking safety-oriented infrastructure improvements and educational campaigns to promote safe travel behavior.

5.1. Increase Intersection and Roadway Safety

5.2. Undertake Educational Efforts to Promote Traffic Safety

STRATEGY NO. 6
PROVIDE DIVERSE & ACCESSIBLE
MOBILITY OPTIONS

Particular attention must be paid to those in the community who are most vulnerable from a mobility perspective, including those with disabilities, lower-income households, and those under the age of 18 or over 65.

Wellesley can provide convenient, affordable mobility options for these segments of the population by updating infrastructure to be compliant with the latest state and federal accessibility guidelines, investigating the feasibility of implementing car- and bike-share programs and discounted bike/e-bike purchase programs, and expanding and raising awareness of microtransit options for all ages.

6.1. Achieve Compliance with State and Federal Accessibility Guidelines

6.2. Provide Viable Low-Cost Transportation Options for All Users

6.3. Promote Independent Mobility for Users of All Ages

IMPLEMENTATION
SECTION 6

Each strategy is accompanied by recommendations for implementation.

In addition, this plan includes information on funding sources, including federal, state and regional grants.

Partnerships will be a key factor for success and include work with neighboring cities and towns, regional agencies including Boston Metropolitan Planning Organization (MPO) and Metropolitan Area Planning Council (MAPC), and the state.

Importantly, dedicated resources within Town will be critical for moving these goals forward and maximizing the opportunities available through various funding sources.

SECTION 2
INTRODUCTION

SETTING THE STAGE
A CHANGING LANDSCAPE

REGIONAL CONTEXT

LAYING THE FOUNDATION
PREVIOUS PLANNING EFFORTS

MEETING THE CHALLENGE
SUSTAINABLE MOBILITY PLANNING

HOW WAS THIS PLAN DEVELOPED?

INTRODUCTION

> **Wellesley has made considerable progress over the last decade in supporting multi-modal travel through infrastructure projects and policies geared toward providing safe, convenient, and accessible facilities for pedestrians, bicyclists, and transit users.**

The work accomplished to date has been possible due to the dedication of Town staff working through departments and committees, stakeholders, and volunteers seeking to improve the connectivity of the Town for all users and reduce the Town's carbon footprint from transportation.

While significant progress has been made to date, trends in travel behavior and greenhouse gas (GHG) emissions from transportation within Wellesley indicate that **a call to action is needed for the Town to achieve its sustainable mobility goals and the goals set forth in MA's latest climate change legislation**. Specifically, Senate Bill 9, "An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy,"[1] commits Massachusetts to achieve net-zero emissions in 2050 and authorizes the Secretary of Energy and Environmental Affairs to establish an emissions limit of no less than 50% (compared to 1990 levels) for 2030.

The **Town of Wellesley committed to a similar goal of reducing GHG emissions by 50% compared to 2007 levels by 2030** and to achieve net-zero emissions by 2050. Toward this end, the Town released a Climate Action Plan in 2022 providing a roadmap for town-wide efforts to address climate change.

With transportation accounting for 30.6% of the Town's GHG emissions, **a dramatic reduction in transportation-related emissions is critical to achieving these emissions targets**. Such a change requires a multi-pronged approach that shifts travel away from single-occupancy vehicles toward lower-impact modes, such as walking, biking, and transit, while also accelerating the shift toward electric vehicles and shortening trip lengths through land use changes.

This document builds upon the Town's previous efforts, including the comprehensive Unified Plan adopted in March 2019, by establishing an actionable framework for achieving sustainable mobility in Wellesley. The strategies proposed here focus on reducing GHG emissions from vehicles, expanding the use of environmentally sustainable travel modes, and improving connectivity within Wellesley and the region.

A CHANGING LANDSCAPE

As the Greek philosopher Heraclitus stated, "there is nothing permanent except change." Wellesley, like other communities, is **facing a time of change like none other due to the impacts of climate change** and the need to adjust with a variety of forces impacting transportation and the way we move.

THE URGENT NEED TO REDUCE GHG EMISSIONS

In August 2021, the International Panel on Climate Change (IPCC) issued its latest Assessment Report[2], labeling its latest results as a **"code red for humanity."** The report provides new estimates of the likelihood of crossing a global warming level of 1.5°C, the target set forth in the Paris Agreement, and concludes that unless there are immediate, rapid, and large-scale reductions in GHG emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach.

Climate change already plays a large role in all aspects of statewide and local planning in Massachusetts. Throughout the state, considerable time, effort, and funding has been allocated to study the impacts of climate change, set priorities, and take action to mitigate and adapt to a changing climate. The Massachusetts State Hazard Mitigation and Climate Adaptation Plan (SHMCAP), published in 2018[3], established an "Integrated Climate Change Strategy for the Commonwealth '' and identified the biggest climate change impacts to Massachusetts. These impacts include **changes in precipitation, sea level rise, rising temperatures, and extreme weather.** The Commonwealth is already feeling effects in all four of these areas.

The latest GHG emissions reduction targets set at the state level, with a goal of achieving net-zero emissions by 2050, demonstrate the importance being placed on fighting climate change in Massachusetts. Since Senate Bill 9 was approved, **the Town of Wellesley's ambitious carbon reduction goals are aligned with those set at the state-wide level.**

WHAT IS SUSTAINABLE MOBILITY & HOW CAN IT HELP?

The term "mobility" is becoming a popular replacement for "transportation" within local and regional plans. This change in terms focuses on the movement of people and goods rather than vehicles. Going car-free is 10X more effective than increasing an automobile's efficiency.

In this context, **"sustainable mobility" refers to the ability for people and goods to move around effectively and sustainably using "low-impact" travel modes, such as walking, biking, and transit, in addition to reducing the GHG emissions resulting from car trips.** This shift from "transportation" to "sustainable mobility" reflects the fact that the goal of net-zero GHG emissions by 2050 can only be achieved by considering more than strictly tranportsation infrastructure.

A 2017 study by Lund University[4] found that **among 148 actions that an individual can take to reduce GHG emissions, going car-free was among the most effective and in fact is ten times more effective** than increasing an automobile's efficiency. As such, embracing "sustainable mobility", or making "low-impact" travel modes, such as wwalking, biking, and shared transit, are gaining more traction as powerful GHG emissions reduction solutions..

The Boston Region Metropolitan Planning Organization (MPO) sponsored a similar study in 2016[5], assessing the GHG reduction potential for 23 strategies. The study found that carbon pricing is the most effective method for reducing GHG emissions; other notable effective strategies include driver education/eco-driving (#2), compact development (#4), and infrastructure improvements (various, #14-#19).

While large-scale changes are needed to meet state GHG reduction goals, sustainable mobility strategies can and should also include initiatives that lead to incremental changes in travel behavior. In Wellesley and many communities throughout the state, the street network and rights-of-way are established, with little room for expansion, reconfiguration or reallocation of space.

Thus, strategies that can lechange behavior without dramatic alterations to the physical network become increasingly important in developing an implemental action plan. For instance, monthly or weekly "open streets" events can build a cycling/walking culture and replace car trips with other modes one trip at a time.

REGIONAL CONTEXT ON GHG REDUCTIONS

At all levels of governance, sustainable mobility encompasses a wide-ranging list of actions spanning planning, infrastructure, construction, vulnerability and adaptation. For purposes of this study, the assessment will cover those activities that regulate GHG emissions related to local travel and are linked to criteria that Wellesley must satisfy to access funding.

STATE-LEVEL INITIATIVES

In Massachusetts, transportation accounts for 42% of GHG emissions statewide[6]; within this sector, light-duty vehicles (e.g., passenger cars) account for 58% of all transportation emissions and medium- and heavy-duty surface vehicles (e.g., trucking and transit) account for 30%. Since 1990, the number of vehicle miles traveled (VMT) annually has steadily increased, and in the last decade, passenger vehicle purchases have trended toward larger vehicles (e.g., sport utility vehicles).

With respect to reducing the climate impacts from transportation, recent documents outline the state's main short- and long-term strategies to achieve net-zero emissions from a variety of sectors.

- **"An Act Creating A Next-Generation Roadmap for Massachusetts Climate Policy"[7] (March 26, 2021)**
  This legislation directs state agencies to set interim GHG emissions limits, as well as sector-based emission sub-limits for certain sectors, every five years. It codifies the state's long-term emissions limit of net-zero emissions by 2050 and directs the adoption of a the 2030 emissions limit of at least 50 percent below 1990 levels and a 2040 emissions limit of at least 75 percent below 1990 levels. Previously, the 2030 emissions target was 45 percent below 1990 levels.

- **Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding[8]**
  In July 2020, Massachusetts joined 15 other jurisdictions in a Memorandum of Understanding (MOU) that commits the state to developing an action plan that will speed up the adoption of medium- and heavy-duty electric vehicles. This MOU sets a goal of at least 30% zero-emission vehicle (ZEV) sales by 2030 and 100% by 2050.

- **The Interim Clean Energy and Climate Plan for 2030[9] (December 2020)**
  This interim document reflects five main paths for achieving reductions. (Note: the interim document specifies tactics for achieving the old 45% reduction target.) GHG reductions are projected to come from (1) increasing the number of electric light-duty vehicles to 750,000, (2) supportive fleet electrification infrastructure, (3) reducing the fuel carbon density for medium/heavy trucks by 20%, and (4) reducing VMTs by 15% by 2030.

REGIONAL CONTEXT OF GHG REDUCATIONS (CONT.)

- **Massachusetts 2050 Decarbonization Roadmap[10]**
  The December 2020 Roadmap breaks down each sector for net-zero policies. For the Commonwealth to achieve net-zero, fossil fuel use must be all but completely eliminated in on-road vehicles by 2050. In 2019, EVs accounted for over 2% of new light-duty vehicle sales. As of 2020, there are 2,372 publicly available level 2 recharging stations. Of these, 4% of Level 2 and 61% of fast chargers are Tesla plugs that are currently unavailable for other models (though the company is gradually opening up the network to other automakers as part of the Non-Tesla Supercharger Pilot program). To meet net-zero GHG emissions, EV miles would need to be approximately 87-93% of total VMT depending on decarbonization of electricity sources. Demand management is also mentioned but limited to areas that are already dense.

Massachusetts is also part of a multi-state Transportation & Climate Initiative (TCI)[11] that aims to develop a regional program to cap and reduce transportation-based GHG emissions. The program, which would require reports from fuel companies to set parameters for cap and trade functions, has lost initial member states and may be subject to repeal if a 2022 ballot initiative is successful. If the TCI continues, the state will develop a new source of funding dedicated to low-carbon transportation.

REGIONAL INITIATIVES

Wellesley lies within the larger Boston region and, as such, contributes to, and gains resources from, a variety of agencies. While regional partnerships ranked low among important issues within the Unified Plan, these entities have control over priority setting, funding allocation, and project selection for infrastructure, programs, and projects related to mobility. This section highlights important activities that affect Wellesley's ability to implement sustainable mobility projects.

BOSTON REGION MPO

The **Boston Region Metropolitan Planning Organization (MPO)** is responsible for conducting the federally required transportation planning process for the 97 municipalities within the Boston metropolitan area, including Wellesley. Wellesley is a member of the Metrowest subregion, a subunit for assessments and planning projects within and among the Boston region's western communities.

The major planning initiatives impacting mobility within Wellesley are described below.
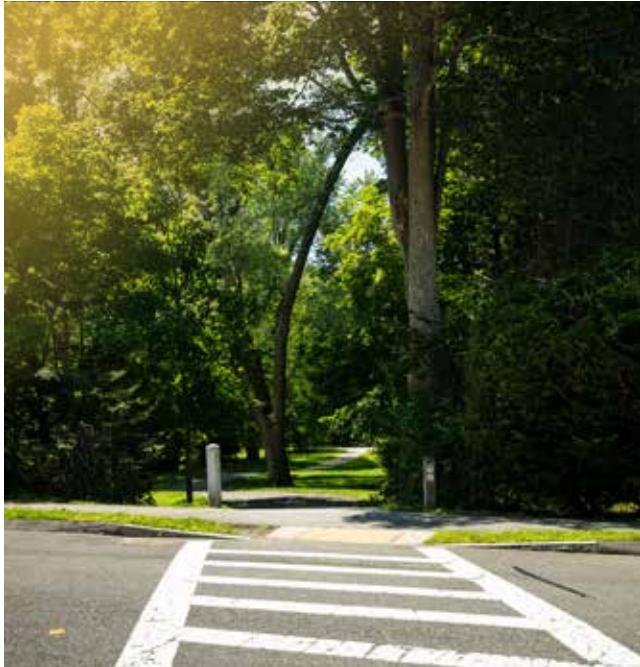
- Long Range Transportation Plan (LRTP and Destination 2040)[12]: The LRTP, adopted in 2019, adopts specific major transportation infrastructure projects that cost more than $20 million and/or add capacity to the transportation network to fund over the next 20 years.

- Transportation Improvement Plan: The TIP documents all transportation projects that will receive federal funding in the region over the next five years. The most recent TIP was adopted in June 2021 for years 2022-2026[13]. Of note:

  - Wellesley will receive $85,000 for bicycle improvements (four covered bicycle racks at Wellesley Middle School) under the MPO's new Community Connections pilot program to address first- and last-mile connections.

  - Wellesley is included in bundled bridge repairs project (Bacon Street)

  - The TIP is funding the expansion of microtransit and Blue Bikes programs to neighboring Newton. While this expansion will not affect Wellesley in the near term, the success of this program could lay the groundwork for expansion into Wellesley.

  - The TIP projects were also included in a September 2020 MetroWest subregion needs assessment[14].

REGIONAL INITIATIVE (CONT.)

- Regional Target funds: The organization also allocates over $100 million through the Regional Target funds program. The MPO recently revamped the project selection criteria[15], with many of the criteria aligning with the sustainable mobility strategies set forth in this plan. The new criteria applying to projects moving forward are summarized below.

  - Transportation Equity: The criteria were updated to integrate equity into every MPO goal area, with consideration given to the share of equity populations within one-half mile of the project and the expected impacts of the project in terms of reducing transit vehicle delay, improving the bicycle network, affecting people with limited English proficiency, improving ADA accessibility, and affecting people age 75 and older

  - Safety: The safety criteria were updated to increase the focus on enhancing safety on many types of transportation (as opposed to just vehicles), incorporate traffic-calming measures and safety-oriented traffic signal upgrades, and consider transit-related safety issues

- Sustainability: New criteria were developed that consider the existing levels of harmful air pollutants in the project area, with priority given to projects that reduce nitrogen oxide emissions in parts of the region with high concentrations of these pollutants, as well as projects that increase access to parks and open space or increase tree canopy coverage

- Resiliency: New criteria were included to expand the list of critical facilities (e.g., hospitals, fire stations, police stations, emergency shelters, schools), encourage the implementation of resilience recommendations from MVPs, incentivize nature-based solutions for stormwater management, reward projects that consider a range of future projections for sea level rise /flooding, and encourage regional coordination in resiliency planning

- Transit: New criteria were added to prioritize projects that make bus stop or transit station improvements (including Americans with Disabilities Act accessibility), reduce congestion on roadways that serve more people through transit, and focus on creating bicycle and pedestrian connections to transit

METROPOLITAN AREA PLANNING COUNCIL (MAPC)

The **Metropolitan Area Planning Council (MAPC)** is the regional planning agency for the 101 cities and towns of Metropolitan Boston. MAPC conducts studies, civic outreach, data development, collective purchasing, research, and planning, including updates to the regional plan (MetroCommon 2050[16]). Wellesley participates through the MetroWest Regional Collaborative, the subregional group for western communities in the Boston region.

MAPC produces resources supporting sustainable mobility decisions and investments. Topics include consulting and technical assistance on parking planning, transit oriented development, Complete Streets, trails, and housing. Technical assistance is offered twice a year through a "call for concepts"[17] in the spring and fall.

MAPC prioritizes projects that align with regional land use policies, MetroCommon 2050, and the agency's strategic plan. Because MetroCommon's action areas include climate change and inclusive growth and mobility, many recommendations in this plan appear to be good candidates for technical assistance and/or research.

- Bicycle and Pedestrian Networks: The criteria were updated to emphasize closing gaps in the bicycle or pedestrian network, creating new bicycle and pedestrian access to key destinations, and providing new bicycle amenities (e.g., bicycle parking or bike share stations)

- Economic Opportunity and Support: New criteria were added to encourage projects that facilitate freight deliveries and passenger pick-ups and drop-offs, promote access to affordable housing opportunities, support access to areas with higher densities, and get public feedback on the design early on

LAYING THE FOUNDATION
PREVIOUS PLANNING EFFORTS

Wellesley has undertaken extensive planning initiatives in recent years that serve as a solid foundation for establishing the community's values and developing an effective plan for achieving sustainable mobility. In particular, the previous planning initiatives described below served as references for the development of this plan.

ROUTE 9 ENHANCEMENT STUDY & PLAN (2016)[18]

Through a partnership with the Metropolitan Area Planning Council (MAPC) and MetroWest Regional Collaborative (MWRC), **Wellesley undertook a community outreach-driven study for the Route 9 Corridor that provided tailored strategies for addressing the functionality and form of the roadway and corridor.**

The plan recommended "refocusing Route 9 from its role as a regional traffic conduit to strengthening its role as a residential roadway" in order to advance Wellesley's local identity but noted that many of the recommendations would require collaboration and approval from the Massachusetts Department of Transportation (MassDOT) given that the road is under state jurisdiction.

LANDLINE PROJECT (2018)[19]

The Landline Trail and Greenway Plan, developed by the Metropolitan Area Planning Council (MAPC), is **a vision for connecting 1,400 miles of trails and greenways throughout the Boston region.** Although the Metro Boston region has several popular trails, such as the Minuteman Bikeway, Charles River Esplanade, and Northern Strand Trail, most of them do not currently connect with each other. The plan proposes to construct critical connections that would allow for a connected network throughout the region.

As part of this vision, the existing trails within Wellesley, namely, the Sudbury Aqueduct Trail, Cochituate Aqueduct Trail, and Charles River Link Trail, would be connected to the larger regional trail network, allowing the "full potential of active transportation and all of its benefits" to be achieved.

WELLESLEY'S UNIFIED PLAN (2019)[20]

Wellesley underwent a significant planning initiative with the development of its Unified Plan, which serves as both a comprehensive plan and Town-wide strategic plan for the next 20 years. The Unified Plan articulates the core values of the community, establishes a vision for the future of Wellesley, sets Town-wide priorities and goals, and provides guidance on strategies, tools, and specific actions for achieving the Town vision.

Among several mobility-related recommendations, tthe Unified Plan recommends establishing a Mobility Policy Committee to provide policy guidance for Town coordination and transportation investments, ensuring that Wellesley develops an integrated multimodal transportation system.

The Unified Plan set forth the following vision for Wellesley

" In 2040... Wellesley is a Town recognized for its welcoming community culture and exemplary town services; commitment to education and life-long learning; a quality of life that enhances the health and social well-being of its residents; respect for the environment and support for sustainability, conservation, and protection of physical and historical assets; and for its dynamic and thriving business community. Wellesley is recognized for its fiscally sound, well-managed, innovative, and accessible town government that has strong citizen participation and a highly motivated, collaborative, and talented professional staff. "

PREVIOUS PLANNING EFFORTS (CONT.)

COMPLETE STREETS POLICY & PRIORITIZATION PLAN (2019-2020)

The Town of **Wellesley adopted its Complete Streets Policy[21] in 2019 to enhance the safety, health, economic viability, and quality of life** in Wellesley by providing accessible and efficient connections between destinations. The policy directs decision makers to consistently plan, design, and construct streets to accommodate all anticipated users, including, but not limited to, pedestrians, bicyclists, motorists, emergency vehicles, and freight and commercial vehicles.

Since the Complete Streets Policy was implemented, **the Town has established a Prioritization Plan detailing 30 infrastructure projects** that would improve bicycle and pedestrian facilities in town.

In November 2020, Wellesley received funding from MassDOT for the Great Plain Traffic Circle project, which involves redesigning the traffic circle at Great Plain Avenue and Wellesley Avenue and improving pedestrian facilities throughout the limits of work.

🏃 MOMENTUM 01

Wellesley is making progress on its Complete Streets plans that include completing the Great Plain Avenue roundabout and embarking on grant applications to construct improvements for Walnut Street.

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MUNICIPAL VULNERABILITY PREPAREDNESS PROGRAM - COMMUNITY RESILIENCE BUILDING WORKSHOP (2020)

The Commonwealth's Municipal Vulnerability Preparedness (MVP) program, established shortly after the publication of the SHMCAP, provides funding for municipalities to perform planning studies and execute projects that help communities mitigate and adapt to climate change impacts. In January 2020, the Town of Wellesley published its MVP Planning Study report[22].
The report highlights a number of priorities for Wellesley, including several transportation-related activities, such as making transit improvements and strengthening walking connections to schools, to address traffic-related air quality concerns and make the town more resilient to climate change.

CLIMATE ACTION PLAN

In February 2022, Wellesley released its Climate Action Plan to engage the community, set goals for GHG emissions reductions, define and prioritize actions, and create a blueprint for building resilience and achieving net-zero GHG emissions by 2050. The Climate Action Plan considers ways to reduce GHG emissions from all sources within Town, including energy, buildings, waste, natural resources, and mobility. The mobility-related goals recommended in the Climate Action Plan focus on accelerating the shift to electric vehicles and promoting low-impact transportation options, and as such, align with those offered in the SMP, providing a consistent direction for achieving the GHG emissions reduction targets.

MEETING THE CHALLENGE
SUSTAINABLE MOBILITY PLANNING

The initiatives described in the previous section demonstrate the dynamic relationship between mobility and climate change and provide a planning backdrop for developing an effective, implementable Sustainable Mobility Plan.

The previous planning efforts undertaken by the Town and regional entities provide a solid foundation on which to develop strategies that align with the Town's planning goals and priorities. The urgent need to embrace sustainable mobility to help meet GHG emissions targets is clear.

With this understanding of why sustainable moblity is a critical tool for enhancing mobility choices and combating climate change, it's important to clarify what the Sustainable Mobility Plan does - and does not - do.

This plan does:

- Summarize existing data sets obtained from local, regional, and state databases

- Summarize information received from local and regional stakeholders, including the Town's Mobility Committee, residents, employers, non-profits, and other institutions

- Develop a transformative vision for the future of transportation in Wellesley

- Establish goals by which strategies can be prioritized based on stakeholder input

- Identifies sustainable mobility strategies aligning with the Town's established goals that consider land use, transportation, and infrastructure design together

- Identifies and prioritizes short - and medium-term action items

- Provides a roadmap for implementing the proposed strategies, including project leads, order-of-magnitude costs, regional partners, funding opportunities, and performance metrics

This plan does not:

- Provide technical analyses to support infrastructure or transportation engineering decisions

- Provide conceptual or engineered design plans for infrastructure projects

- Provide precise costs for implementing the proposed strategies

HOW WAS THIS PLAN DEVELOPED?

Wellesley's *Sustainable Mobility Plan* was developed over the course of more than eight months and incorporated the opinions and values of diverse stakeholders and the general public early on.

The Town's **Mobility Committee provided invaluable guidance and direction throughout the planning process.** The Mobility Committee consists of members of boards, committees, and departments within the Town of Wellesley, representing a broad range of interests, responsibilities, and perspectives related to the Town's transportation network, as well as key transportation stakeholders and community advocates.

In **January 2021, the project team began analyzing existing conditions about Wellesley's demographics, transportation infrastructure, and travel patterns based on existing data sets.** A Public Engagement Plan was also established to set both stakeholder engagement goals and a stakeholder engagement strategy.

From the trends identified in the existing conditions analysis and input received from the Mobility Committee and public outreach efforts (described in further detail below), **the project team developed initial project themes as well as goals/values for the Sustainable Mobility Plan** during the spring and summer of 2021.

Potential **strategies were identified and categorized based on the initial project themes.** The strategies were then assessed in terms of both their alignment with the Town's goals and other screening criteria, including timeline, implementability, lead, and regional partners. Funding options were investigated throughout the planning process to leverage grants.

The list of strategies was finalized in coordination with the Mobility Committee and prioritized based on the established goals. Finally, **an implementation plan detailing project leads, order-of-magnitude costs, regional partners, and funding opportunities for various strategies was developed** to provide a roadmap for the Town .

PUBLIC & STAKEHOLDER OUTREACH EFFORTS

The Sustainable Mobility Plan has been guided by input received from Wellesley residents, employers, and workers throughout the planning process.

The main objective of the stakeholder planning process was to gather as many perspectives on mobility from the community as possible while navigating COVID-19 restrictions. The following stakeholder engagement goals were established at the beginning of the planning process to help guide subsequent engagement activities:

- Successfully reach a variety of stakeholders
- Use outreach to define how a mobility plan differs from traditional transportation planning
- Use the engagement process to discern existing and future mobility system needs
- Inform plan priorities and actions

The Town's Mobility Committee was instrumental in helping the project team establish a public engagement strategy that would be best suited for the Wellesley community. Due to the COVID-19 pandemic, a variety of outreach techniques – including a virtual Town forum, a StoryMap website, online surveys, and stakeholder interviews – were employed instead of traditional outreach techniques.

Town Forum

On April 15th, the Town hosted an online forum consisting of a presentation followed by a question and answer session. The presentation, which can be found in Appendix A, covered the project background, an introduction to the Mobility Committee, an overview of sustainable mobility and key concepts from the Unified Plan, important trends in mobility, and the process to be used to develop the Sustainable Mobility Plan.

Within the trends and approaches, the presentation covered both traditional modes and key advances, such as vehicle electrification, shared-use mobility, new vehicle types, parking, COVID-related trends, land use models that reduce the impacts of transportation, street design, and new technologies.

StoryMap

Wellesley established an interactive StoryMap to serve as the main portal for presenting and gathering information from the public. The StoryMap hosts background content, interactive maps, and online surveys.

HOW WAS THIS PLAN DEVELOPED? (CONT.)

Online Surveys

Eight brief online surveys on a variety of topics were posted on the StoryMap weekly during the spring and summer of 2021 to engage stakeholders and obtain anecdotal evidence about mobility trends and opinions. The surveys were qualitative in nature and are not considered a representative sample of the Town overall. Highlights from the responses to the surveys are provided below, and the complete survey results are provided in Appendix B.

Work from Home
- The percentage of respondents who work from home at least 1 day a week increased from 38% to 46% since the COVID-19 pandemic began
- The percentage of respondents who are employed and do not work from home at all decreased from 18% to 7% since the COVID-19 pandemic began
- 18% of respondents anticipated working from home indefinitely

E-Bikes & Bikeability
- 67% of respondents use a bicycle as a mode of transportation at least occasionally, with 30% using a bicycle frequently
- 78% of respondents considered their experience getting around within town on a bicycle as "excellent" or "good"
- 85% of respondents have used Wellesley's trails as a cyclist or pedestrian to access their destination
- "Wellesley should have an explicit policy about e-bikes on the town trails"

Use of Rideshare Mobile Apps
- 60% of respondents use rideshare apps, such as Uber or Lyft, to get around
- 72% of respondents use rideshare apps to access destinations outside of Wellesley
- Only 6% of respondents use rideshare apps to access destinations within town

E-Commerce
- 54% of respondents use E-commerce sites, such as Amazon or eBay, at least weekly
- Respondents noted the convenience, wide selection, and low prices of e-commerce sites compared to local stores but a preference to shop local if possible
- "My goal is to stop using Amazon but it's tough to say 'No' to their selection and delivery service. [I] don't like supporting a company that isn't environmentally friendly"

School Travel / Childcare
- Several respondents noted the need for better bicycle infrastructure, such as painted dedicated bike lanes, and crossing guards at busy intersections to promote walking and biking to school
- "Wellesley should create public maps showing the best biking/walking routes that include off-street paths that connect neighborhoods or help support carpool systems for families to reduce the number of cars driving to schools, especially in the morning"

Autonomous Shuttles

- 64% of respondents see autonomous vehicles as a potential alternative mode of travel in the future.
- Opinions on safety are split, with 35% of respondents indicating that they believe safety will improve and another 35% not agreeing that autonomous vehicles will lead to safety improvements
- "In the next 5-10 years, I don't expect [autonomous vehicles] to navigate pedestrian-heavy roads with heavy snowfall and complex intersections, but I expect simple trips between major parts of town to be easily doable."

Use of Food Delivery Services

- Two out of five respondents reported using food delivery services, while the other three have not used them
- "If delivery were more local / faster we'd use it more."
- "One reason for use is the inability to get to the grocery store during business hours due to work schedule or lack of child care."

Microtransit

- Of the respondents, none had used the services
- Within the comments, three were unsure of what constitutes microtransit service

Stakeholder Interviews

Throughout the process, the team gathered information from local and regional experts in areas of transportation, transit, housing, public works, climate change, and related topics. Interviews took place via phone calls, video conferencing, and an in-person visit in July 2021.

🏃 **MOMENTUM** 02

Working in partnership with SRD and Wellesley Public Schools, the process to develop these maps townwide for elementary and middle schools was initiated.

SECTION 3
VISION & GOALS

2040
VISION FOR WELLESLEY

GOAL NO. 1
EXPAND & ENCOURAGE SUSTAINABLE MODES OF TRANSPORTATION

GOAL NO. 2
CONNECT PEOPLE TO TOWN DESTINATIONS & THE REGION

GOAL NO. 3
REDUCE GREENHOUSE GAS EMISSIONS

VISION & GOALS

The planning process began with establishing a set of sustainable mobility goals by which decisions could be made and priorities could be set. Building off of the Vision Statement set forth in the Unified Plan, the following **Vision Statement** was developed for the *Sustainable Mobility Plan.*

In 2040

Wellesley is a Town that is recognized for its respect for the environment and support for sustainability; commitment to expanding sustainable modes of transportation; and support for providing a variety of options for getting to destinations within the Town and throughout the region.

From this Vision Statement, the following three goals were used to guide subsequent planning efforts:

GOAL NO. 1
EXPAND & ENCOURAGE SUSTAINABLE MODES OF TRANSPORTATION

Wellesley will continue to embrace and expand opportunities for people to be less reliant on cars and instead use sustainable modes of transportation, including walking, biking, and transit and encourage a shift in behavior through education and marketing.

GOAL NO. 2
CONNECT PEOPLE TO TOWN DESTINATIONS & THE REGION

To support quality of life and economic vitality in the region, Wellesley will make it easier for people to reach destinations both within Town and across the region.

The following six categories of strategies were established to meet these goals:

1. Enhance & Actively Promote Low-Impact Mobility Options for Commuting to Work and School
2. Put Pedestrians and Bicyclists First
3. Accelerate the Reduction in Vehicle GHG Emissions
4. Promote Smart Growth
5. Provide Safe Facilities for All Users Regardless of Travel Mode
6. Provide Mobility Options for All Users Regardless of Age, Income, or Impairment

GOAL NO. 3
REDUCE GREENHOUSE GAS EMISSIONS

To meet its target of net-zero GHG emissions by 2050, Wellesley will take action to accelerate the reduction in transportation-related GHG emissions by providing people with a variety of convenient low-impact transportation options and accelerating the shift to electric vehicles.

SECTION 4
STRATEGIES

STRATEGY NO. 1
ENHANCE LOW-IMPACT COMMUTING OPTIONS

STRATEGY NO. 2
PRIORITIZE PEDESTRIANS & BICYCLISTS

STRATEGY NO. 3
ACCELERATE THE REDUCTION IN VEHICLE GHG EMISSIONS

STRATEGY NO. 4
PROMOTE SMART GROWTH

STRATEGY NO. 5
OFFER SAFE FACILITIES FOR ALL MODES OF TRAVEL

STRATEGY NO. 6
PROVIDE DIVERSE & ACCESSIBLE MOBILITY OPTIONS

STRATEGIES

| Six categories of strategies were established to meet the Town's goals.

STRATEGY NO. 1
ENHANCE LOW-IMPACT COMMUTING OPTIONS

Enhance and Actively Promote Low-Impact Mobility Options for Commuting to Work and School.

1.1 PROMOTE THE USE OF SCHOOL BUSES

Why?

School buses are one of Wellesley's most important forms of transit. **Traffic congestion around schools at the beginning and end of the school day accounts for approximately 30% of traffic in Wellesley on school days,** which also means more emissions and increased travel times for all drivers.

Wellesley has a substantial school population of nearly 5,000 public school students and 1,166 private school students[23]. Because 25% of Wellesley residents are under the age of 18, the carbon footprint of this cohort's travel must be reduced to meet the Town's ambitious climate goals.

Wellesley has been addressing climate and school travel in several ways. First, input on the Unified Plan resulted in a call for a Transportation Demand Management program to reduce school-related traffic by at least 50%. Second, Sustainable Wellesley provides leadership and resources for staff, parents and teachers with regard to school transportation.

Respondents to a survey on school travel noted several issues with current options:

- More covered bike parking is needed
- The roads leading to Wellesley High School are unsafe for active modes
- The bus is too expensive, does not match the variety of start times, and does not consider extracurricular activities
- There are too many conflicts between drivers dropping students and walkers/bikers
- The Kingsbury St. crossings at Linden and Washington Street are problematic
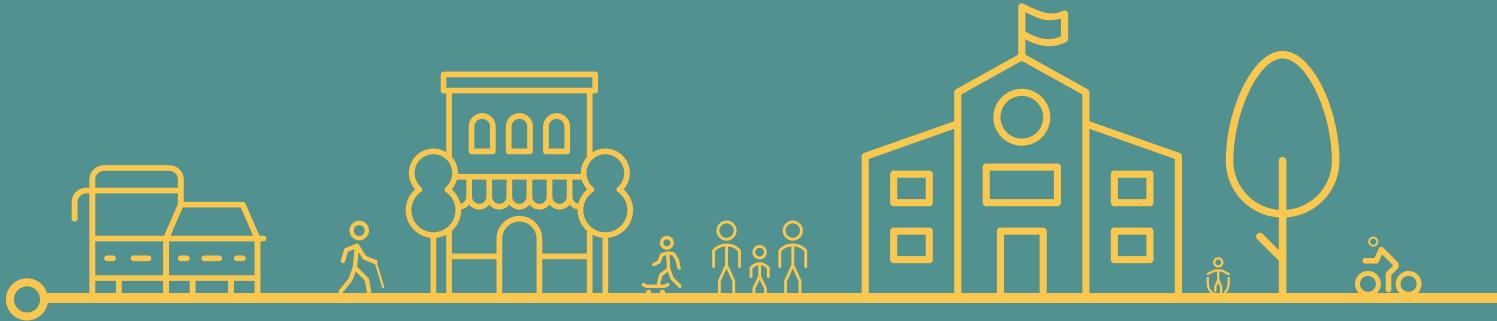
How?

Add a climate lens to school travel-related activities by adding transportation demand management (TDM) to WPS's Transportation policies. WPS can also use Safe Routes to School programming as a platform for integrating TDM for elementary and middle school students and hire staff to support the effort.   Also add a Momentum section that reads: Wellesley is reducing school bus travel fees for Fiscal Year 2023, with the aim of eliminating fees altogether by Fiscal Year 2026.

1.1.1 INITIATE AN INFORMATION CAMPAIGN ON THE CONNECTION BETWEEN EMISSIONS AND PERSONAL TRANSPORTATION HABITS

A simple yet powerful tool for promoting low-impact mobility options is raising awareness of the connection between GHG emissions and personal transportation habits. The Town can encourage students to "be part of the climate solution" by changing their own travel behaviors, including choosing to ride the bus or walk/bike to school instead of being dropped off or driving.

The Safe Routes to School (SRTS) program can be a valuable resource for the Town as it seeks to reduce GHG emissions related to school operations and school-related travel to reach its GHG emission targets.

1.1.2 REVIEW ALTERNATIVES FOR MAKING BUS TRAVEL MORE ATTRACTIVE, SUCH AS EXPANDING FREE BUS SERVICE, BASED ON PUBLIC FEEDBACK

Innovators are expanding the traditional concept of fixed route bus service and paratransit service to include on-demand rides with door to door service. For regional bus service, new options for electric buses and bus rapid transit are under development in Massachusetts. Service through smaller shuttles, or microtransit, is already available in Wellesley. **Making bus service more attractive entails cost, schedules, and frequency.** Given the low usage rates, Wellesley may want to consider reducing the fees charged for busing.

1.1.3 LEVERAGE ENGAGEMENT IN SAFE ROUTES TO SCHOOL (SRTS) TO UPDATE EXISTING SCHOOL TRAFFIC DEMAND MANAGEMENT PROGRAMS THAT ENCOURAGE SUSTAINABLE MODES OF TRANSPORTATION

Transportation demand management (TDM) refers to understanding how people make transportation decisions and then using policies, pricing, incentives, and disincentives to better manage transportation and traffic impacts. While typically used when working with campus and employer representatives, the same approach can help target school transportation.

STRATEGY NO. 1 (CONT.)

2009 Washington State Department of Transportation Report

Most of the research and best practices are keyed to commuter transportation demand, although some of the information applies to schools as well. The Washington State Department of Transportation published a 2009 report on what factors influence student trips to school, including attitudes and the built environment surrounding schools.

The studies of attitudes find that distance, traffic, walk quality, and fear of kidnapping and crime (even when such crimes are rare) are all influencing factors. Some studies suggest that personal factors, such as the number of cars in the household or the convenience of dropping kids off on the way to work, are major reasons children do not walk to school.

CASE STUDY:
MULTIMODAL SCHOOL TRAVEL

Arlington, VA initiated **one of the first comprehensive school TDM programs in the nation to address congestion and support multimodal school travel for students and staff.**

In 2013, the County initiated the APS Go! program[26], beginning with surveys to create baseline data on mode splits and greenhouse gas emissions. The study also **examined the physical conditions surrounding schools to score access based on barriers** (e.g., lack of sidewalks) and opportunities (co-locating with transit stops and bikeshare).

Concurrent with field assessments, the county conducted a **policy review to assess priorities that could indirectly impact transportation performance.** The scan reviewed School Board decisions, Instruction and Student Services, Fiance and Human Resources, Boundaries, Management, and Operations (including Facilities and Equipment).

The **review found few barriers and highlighted supportive language.** For example, Arlington policies contained broad support for multi-modal travel, Safe Routes to School, and health/wellness.

Examples of leveraging the SRTS program for travel demand management in schools include:

- Orienting SRTS programs toward reduced emissions and car travel
- Bicycle skills programs (e.g., Safety Town and the growing popularity of Traffic Gardens that are designed into local parks and playgrounds)
- Enhanced bike parking (note: new bike racks are being installed at Wellesley Middle School)
- Bike sharing
- Forming school bicycle collectives and clubs
- Walking school buses or bicycle trains
- Transit or Microtransit pass (e.g., Catch Connect for middle and high school students)
- Bike to School days
- Link transportation demand management to the Wellesley High School Climate Action Club

In addition to the more traditional methods listed above, technology companies are focusing on ride-matching platforms geared toward students. The school travel company HopSkipDrive now partners with 300 schools in nine states (although does not include Massachusetts) to provide pre-screened drivers for families with children and/or older adults. They recently released RideIQ to provide pooled rides, much like the technology used by Uber and Lyft for shared rides. **The Mobility Committee, in coordination with PTOs & other community groups, should be used to identify, vet, and pilot ideas such as those listed above.**

1.1.4 TIE SAFE ROUTES TO SCHOOL PROGRAMS TO CLIMATE ACTION

Replacing car-based school travel with walk and bike trips can have an appreciable impact on emissions. As such, programs that support mode shifts are essential for addressing GHG emissions. Currently, six Wellesley Schools (Bates, Fiske, Hunnewell, Hardy, Schofield, and Upham Elementary Schools) are Safe Routes to Schools partners with the state and hence are eligible for the Safe Routes to School (SRTS) Infrastructure Funding Program. The program provides design and construction services between $200,000 and $1.5 million around middle and elementary schools. Recent federal legislation codified Safe Routes to School and established levels of dedicated funding within state DOTs[27].

This plan provides a foundation for documenting and tracking the climate impacts of school travel." (if true. The CAP will NOT track school GHG emissions separately). The Safe Routes to School National Partnership has resources, including a Steps to a Greener Future[28] report that presents five case studies that documented the environmental impact. In 2018, the Boston MPO released a technical memorandum[29] assessing infrastructure projects intended to support Safe Routes to School.

STRATEGY NO. 1 (CONT.)

In California, the Metropolitan Transportation Commission found that certain activities are more successful than others[30]. Activities that increase active mode share include frequent walk and roll programs, walking school buses, and bike train programs. In addition, schools that offer a larger number of varied activities and an ongoing, rather than one-time, basis are related to higher active transportation mode shifts. Schools that participated in National Bike to School Day have higher biking mode splits, while schools that encourage carpooling have higher carpooling mode splits.

Common elements among the cases include bike and walk to school events, travel surveys, and programs to register students and track progress and celebrate success. As a result, the schools were able to quantify mode shifts and associated reductions in greenhouse gases.

🏃 MOMENTUM 03

As of April 2022

1. $50K grant to support the program
2. Sprague and WMS are moving forward to become SRTS participating schools
3. Several parents identified recently (at least one at each school)
4. Partners identified to join Mobility Committee
5. Several planning meetings with school leadership to define next steps in implementing SRTS

1.2 BOOST MICROTRANSIT, BUSES & SHARED TRANSIT

Why?

Shuttle and dial-a-ride systems are being rebranded as microtransit as more providers adopt technologies to simplify scheduling and decrease wait times. In Wellesley, the Council on Aging sponsors a popular dial-a-ride service, while nearby colleges use shuttles to link Wellesley campuses with stops in Boston. The MetroWest Transit Authority (MWRTA) also sponsors the Boston Hospital Shuttle[31], which will pick up Wellesley residents for visits to eight regional hospitals.

In February 2021, MWRTA launched Catch Connect[32] to expand transit options, augment the Authority's MetroWest Ride paratransit service, and replace the Route 8 service. Instead of schedules, service is door-to-door and on-demand through a mobile app, similar to Uber or Lyft ride hailing services. MWRTA expanded services to Natick and Framingham in August 2021. Currently, fares are waived.

Microtransit is becoming more popular around the country, particularly in smaller communities like Wellesley. The agile on-demand services are replacing larger, fixed-route buses. Because this type of transit can be more reliable and convenient than traditional transit, access to microtransit can make it easier to live car-free.

However, it is difficult to operate microtransit in a cost-effective manner. Transit systems usually need to balance two countervailing service goals: coverage and ridership. Expansive service areas with a fixed number of vehicles will have infrequent service that reduces the appeal of transit. High ridership is usually achieved through a focused set of routes that serve nodes with higher densities. Microtransit seeks to accomplish both.

Several factors must be considered to maximize both ridership and coverage. The largest microtransit service provider, Via, has been able to continuously improve its dispatch and routing software to find the most direct routes with multiple riders. They also work with client agencies to determine service areas that balance efficiency and access to destinations. In Sacramento, the service offers "corner to corner" service[33], directing riders to the closest intersection. This avoids time spent trying to find an exact location.

An important factor is understanding who is likely to take microtransit, what travel services they need, and when they need them. From the research, higher-income riders in Helsinki, Finland needed low wait times, while lower-income groups had difficulties understanding the novel app-based service or were not aware of its existence[34]. Summit, New Jersey decided to adopt ridehailing services[35] rather than build an expensive parking structure on a congested lot. This service expanded in 2018 to allow commuters the option of scheduling a ride ahead of time in addition to the on-demand service.

Some of the use cases that may apply to Wellesley include:

- First and last mile access to transit and medical services. In Wellesley, this applies to acess to the commuter rail stations, links to the Green Line in Newton, Newton Wellesley Hospital, and other medical outpatient facilities

- Services for households that are "car light" or that are without access to an automobilie: In Wellesley, the Council on Aging's Service is available for aging adults

- Service for younger riders without a driver's license

- College students without a vehicle or who prefer not to drive

For fixed route buses, MWRTA operates the Route 1 bus that runs from Natick Mall to the Woodland T Station in Newton (with an additional early morning bus that begins at the Blandin Hub in Framingham). There are six stops, although MWRTA allows a passenger to flag down a bus for pick up in safe locations. The entire trip from Natick Mall to the Woodland T Station is roughly 40 minutes. Headways are quite large (over one hour).

STRATEGY NO. 1 (CONT.)

Even with MWRTA's new on-demand services, fixed route buses are still important as part of the region's sustainable mobility portfolio. **According to the 2019 American Community Survey, 139 households in Wellesley are car-free[36]; the area that includes Framinghan and Natick has almost 2300, or 2.8% of households.** During the COVID pandemic, bus ridership exceeded subway and rail (normally the highest service lines)[37], showing how crucial the bus system is for essential workers in frontline industries.

Many transit agencies that suspended fares, including certain bus routes run by the MBTA, are now testing the long term viability of free bus rides. The MBTA is conducting a three-month pilot on one of their highest-ridership routes in Boston, Route 28.
Cities around the country have been testing service, route and station area improvements. MWRTA is adopting some of these features. Providing real-time information has proven to be an effective investment, and the MWRTA has developed, and add MWRTA in front of Catch App, which shows bus locations and allows riders to communicate with bus drivers. The app is aimed at fixed-route, commuter shuttle riders, and micro transit riders.

The most effective way to increase bus ridership is to increase bus frequency. Prior to the pandemic, Houston and Seattle both saw ridership increase[38] by adding buses or making routes more direct. Research[39] has shown that passengers will walk further to access more frequent bus service. In all cases, the path to improvement began with user interviews.

How?

As microtransit grows in the region, Wellesley can help existing and potential riders make use of the system while proactively tracking service quality. Discrete actions include targeting outreach for different user bases, working with Babson College given their academic interest in transit and the College's use of Catch Connect, and establishing Wellesley's leadership position to make sure the program can expand to match the Town's dispersed ridership base.

1.2.1 CONTINUE TO SUPPORT THE CATCH CONNECT SHUTTLE AND EXPLORE WAYS TO EXPAND AND IMPROVE THE SERVICE

One of the top benefits of Catch Connect is that it acts like on-demand ride hailing companies at a much lower cost. That said, signage and outreach are still needed to build and maintain ridership. The Town of Wellesley is working with Babson College to partner with students to develop a marketing plan to boost awareness and ridership in town.

Based on the Helsinki experience, many older potential riders did not know about the service and were apprehensive about learning the new system. In Wellesley, the older ridership audience may use the Council on Aging's system and hence stick with what they know. They may also need to have personalized instruction on using the system (see 2.3 below). Some of the challenges in expanding use of the Catch App, as shown in other research, include:
- For health care users, the pressure to meet doctor appointments
- Experience using transportation apps
- Good WiFi and signal coverage (poor signals make it difficult for drivers to find riders)
- The ability of the software to efficiently route multiple incoming routing requests

1.2.2 RAISE THE PROFILES OF EXISTING SHUTTLE SERVICES IN TOWN AND EXPAND THE CUSTOMER BASES OF SHUTTLES

Shuttles can be an important part of a low-carbon mobility system. One of the most efficient operating scenarios for shuttles identifies a critical mass of riders within a defined area traveling to a concentration of destinations at the same time. In this regard, first/last miles to commuter lines and college student travel align well.

The ability of shuttles to provide GHG emissions reductions increases with growing ridership. In this case, Wellesley can explore other transit and microtransit outreach campaigns for ideas. First, it's important to understand factors that support shuttle usage and how this helps with creating targeted marketing.

Many of the factors that support shuttle usage are the same as those that support other types of transit services:
- Local travel patterns (length, number, and types of trips)
- Demographics conducive to ridership (access to vehicles, age, income)
- Parking constraints
- Density of potential riders
- Extent of service areas
- Number of vehicles in service
- Shuttle travel is safer and easier than an automobile (as a driver or rider)

STRATEGY NO. 1 (CONT.)

1.2.3 INCREASE TRAVELER KNOWLEDGE OF HOW TO USE CATCH CONNECT AND OTHER TRANSIT MOBILE APPS

While the process for scheduling a ride on Catch Connect is Many of these are similar to other types of transit services" to "Many of the factors that support shuttle usage are the same as those that support other types of transit services, riders who could benefit the most may not be familiar with the steps on how to use mobile phone ride hailing or ridesharing apps.

There are several ways Wellesley can lead or participate in awareness campaigns. One effective method is to convene small meetings with local service organizations on the Catch Connect to demonstrate how the service works and the benefit to partner organizations' constituents. As shown in the Helsinki study, users would benefit from a one-on-one session with help for (1) loading the app, (2) using the app for the first time, and (3) taking trips. With seniors, a direct mail campaign with information on Catch Connect and the option to receive personalized instructions may help overcome user apprehension.

1.2.4. INCREASE THE AVAILABILITY OF SHARED TRANSPORTATION OPTIONS, SUCH AS ZIPCAR, CARPOOLING APPS & COMMERCIAL AND RESIDENTIAL SHUTTLES

Zipcar, one of the most established car share companies in the United States, is headquartered in Boston. Wellesley College has two Zipcars on campus. Membership for Wellesley students is $35/year plus fees that apply to the trip duration. Members aged 18-20 years can use Zipcars only on the Wellesley campus, while drivers over the age of 21 can take the cars off campus.

Surveys[41] have found that each car-sharing vehicle replaces as many as seven or more private cars, as members sell their cars or avoid a new purchase. These surveys looked at roundtrip car sharing (like Zipcar where a car is checked out and returned to the same parking spot) and "free floating" models, where a member can pick up and return a car in a designated area.

MOMENTUM 04

Wellesley coordinated with MWRTA to host an in-person "Train the Trainer" event with representatives from the Board of Health, Library, Council on Aging, Police, and Schools. The session focused on "What is Microtransit?" and how to use the Catch app to book rides.

A new kind of car share model is emerging that may increase the popularity of shared automobiles. "Amenity fleets" are offered to individual entities, such as campuses, hotels, and even affordable housing developments.

The Los Angeles-based company Envoy Technologies has successfully launched electric car share for campus housing in college towns around the country and for affordable housing units in Los Angeles. Innova EV[42] offers a small vehicle with a range of 130 miles per charge and a top speed of 35 mph. They are currently piloting carshare at four universities.

1.2.5. USE CATCH CONNECT DATA TO PROVIDE INSIGHTS INTO WHERE ENHANCED TRANSIT MAY BE NEEDED

Data from the Catch Connect service can provide valuable insight on transit usage trends and areas or times of higher demand. Furthermore, when coupled with other data sets, the data can also reveal areas of potential usage or service improvements. TThe Catch Connect service also faces a problem of meeting a growing, but dispersed ridership base, or if demand peaks cannot be met by flexing driver resources.

Stakeholders need to follow the data carefully to determine the nature and extent of increased wait times, as well as decision points regarding when to add vehicles to the Wellesley-based Catch Connect fleet.

Data collected since February 2021 illustrates how ridership on the Catch Connect shuttle has increased since the service was first launched, with average daily ridership increasing from 8 passengers/day in February up to a peak of 87 passengers/day in November 2021.

1.2.6. ESTABLISH AND MAINTAIN A LEADERSHIP POSITION IN MWRTA SUBCOMMITTEES TO HAVE A VOICE AT THE TABLE AND ENSURE THAT WELLESLEY'S PRIORITIES ARE ADVOCATED FOR

Microtransit is growing in the Boston region as CatchConnect and other on-demand shuttle services grow. While Wellesley may have a smaller, less concentrated population of microtransit users compared to surrounding communities, there are neighborhoods and campuses seeking transit options. As such, having strong representation in MWRTA Advisory Board is vital to expanding this low-impact transportation option.

1.3 BOOST COMMUTER RAIL

Why?

Before the COVID-19 pandemic, 21% of Wellesley residents commuted to Boston using commuter rail[43]. In doing so, Wellesley commuters contribute to reducing regional vehicle miles travelled (VMT) and related impacts on traffic and emissions. Wellesley's three stations, as well as proximity to the Woodland Station on the MBTA Green Line, are valuable assets for residents, employers, the environment, and the local economy. Pre-pandemic, the Framingham/Worcester line was the fastest growing among riders, with a 46% increase in ridership between 2012 and 2018[44].

However, commuter rail service has faced significant headwinds that may extend into the future. Data from MBTA tracked ridership recovery in mid-2021, though a sharp decline due to the Omicron variant. As of December 2021 (the last available), average daily ridership is around 40% of pre-COVID numbers (45,000 compared to 114,000 in February 2020). Economic development officials are tracking trends that could depress ridership (e.g., remote work and business travel) or bring commuters back to rail (the recent rise in gasoline prices). T**his long-term decline in ridership would represent a severe revenue loss for MBTA**, as commuter rail accounts for 31% of its total revenue[46]. As such, **the MBTA is likely to explore new areas of funding and ridership,** which could stimulate discussions with local governments on the potential of park-and-ride lots.

One issue that affects rail ridership in the middle- to long-term is the future of the gasoline tax as a primary infrastructure funding source. The expected growth in electric cars is adding to the sense of urgency for finding alternative funding mechanisms. One of the emerging ideas is a per-mile tax, which would likely make regional commuter rail more attractive over the long term.

Recently, **MBTA included hourly clock face scheduling on weekdays (services run at consistent intervals throughout the day). On weekends, the Agency reinstated service with $10 Commuter Rail Weekends for unlimited rides with trains running on a two-hour schedule.** MBTA has also introduced new fares that offer monthly discounts or reduced 10-day passes for workers on a hybrid schedule. Long term, the Agency is planning to add a third track to the Framingham/Worcester line and station improvements, including Wellesley's three stations. Because **the commuter rail is a vital component of Wellesley's economic, transportation, and climate futur**e, the Town has a stake, and a role, in the long-term success of commuter rail service. While MBTA and other agencies hold control over major decisions, Wellesley can take on a supportive role.

How?

Given commuter rail's importance to MBTA and role in climate mitigation, Wellesley in turn has a role to play in commuter rail's success. In the near term, Wellesley can work with MBTA and neighboring jurisdictions to rebuild ridership to and from the Town's three stations through incentives and outreach, as well as station and service improvements.

1.3.1 WORK WITH THE MBTA TO INCENTIVIZE NEW RIDERS

While the Town does not control physical access to stations, it can lobby Agencies ot act. MassDOT's FY 2022 Capital Improvement budget[47] includes a new program, Transit Infrastructure Improvements.

This program authorizes $25 million for partnerships and/or grants to municipalities to implement transit-supportive infrastructure to improve and facilitate more efficient delivery of transit operations, improve the passenger experience, and enhance transit rider and pedestrian service and safety for both the MBTA and RTA networks. Access to these funds is limited to communities that encourage transit-oriented development, including multi-family housing.

1.3.2 ADVOCATE FOR MAKING AT LEAST ONE WELLESLEY RAIL STATION ADA ACCESSIBLE PENDING LONGER-TERM UPDATES ANTICIPATED WITH STATION IMPROVEMENTS

Massachusetts Bill H.5248, entitled "An Act Authorizing and Accelerating Transportation Investment"[48], earmarked $600,000 for improved access to persons with disabilities at Wellesley's three stations on the Framingham/ Worcester commuter rail line. However, the funds will not be appropriated without action taken by the governor; thus, this bill provides a method of raising awareness of this issue of concern but is not something that can be relied upon as a funding mechanism.

MOMENTUM 05

The Town has held meetings and ongoing conversations with the Assistant General Manager at MBTA who is responsible for system-wide accessibility. The Town has also worked with the Congressional Delegation (Jake Auchincloss and Katherine Clark) to take the accessibility discussion up with the Federal Transit Administration and is working with the Boston Center for Independent Living to advance accessibility at Wellesley's three rail stations.

To **bring ADA-related station improvements to the three Wellesley stations,** the Town should continue a line of advocacy by initiating discussions with the MBTA's Accessibility Director to understand what issues the agency is facing. Furthermore, the Town should work with its congressional representative to raise the profile of this issue with the Federal Transit Administration (FTA) and request interim improvements until a full station redesign can take place.

The Town has held meetings and ongoing conversations with the Assistant General Manager at MBTA who is responsible for system-wide accessibility. The Town has also worked with the Congressional Delegation (Jake Auchincloss and Katherine Clark) to take the accessibility discussion up with the Federal Transit Administration and is working with the Boston Center for Independent Living to advance accessibility at Wellesley's three rail stations.

1.3.3 ADVOCATE FOR MORE FREQUENT SERVICES AT ALL THREE COMMUTER RAIL STATIONS, ESPECIALLY DURING THE OFF-PEAK, ONCE THE THIRD TRACK IS IN

Like many transit agencies, MBTA added mid-day service during COVID in recognition that essential jobs do not follow a conventional 9-5 workday. Wellesley can continue to advocate for more frequent mid-day service to ensure expanded access for the non office-based workforce.

1.3.4 ESTABLISH AND MAINTAIN A LEADERSHIP POSITION IN MBTA SUBCOMMITTEES TO HAVE A VOICE AT THE TABLE AND ENSURE THAT WELLESLEY'S PRIORITIES ARE ADVOCATED FOR

"Similar to leadership and advocacy for microtransit, Wellesley should continue to serve on MBTA Advisory Boards supporting commuter rail.

🏃 MOMENTUM 06

Wellesley Representatives at the MBTA Advisory Board is seated on the Commuter Rail, Climate, and Audit Subcommittees.

1.4 WORK WITH MAJOR EMPLOYERS TO SUPPORT LOW-IMPACT COMMUTING OPTIONS

Why?

Over the past 20 years, the field of **transportation demand management (TDM) has become a proven strategy to reduce traffic impacts.** TDM works by offering incentives and disincentives to lower the rate of single-occupancy vehicle travel. Most regions view the primary benefit of TDM to be congestion reduction, although other reasons include reducing roadway costs to infrastructure agencies, household transportation costs, and pollution and GHG emissions. Other benefits come from improving health, safety, and land use design proven to support economic activity.[49]

Wellesley's zoning by-law[50] includes a requirement for a TDM program within the Administrative and Professional District (Section 9), with the goal of promoting the efficient management and reduction of vehicle trips to and from the site. The by-law lists several common strategies for commercial buildings: (1) carpooling, vanpooling, and ride sharing; (2) flexible/staggered work hours and 4-day work weeks; (3) shuttle services to and from public transportation; and (4) on-site services to reduce trips.

THE BOSTON REGION
has a wealth of information and examples on TDM programs

CITY OF BOSTON
In October 2021, the city launched a new TDM Point System tool.[51] The TDM point system spreadsheet allows developers to compare a variety of strategies to customize travel management options based on the developer's project and its context. The tool does not assign VMT or GHG emission reduction factors but rather issues points as a weighting system and additional points for adopting strong programs.

The TDM program applies to large developments (over 50,000 square feet). Project sponsors enter into a Transportation Access Plan Agreement (TAPA). These agreements include methods for reducing development impacts on local roadways, such as transit pass programs, carpooling, bike amenities, and guaranteed ride home. A repository of Boston's TAPAs can be accessed from the Analyze Boston website.[52]

NEWTON & NEEDHAM
The City of Newton requires Mobility Management Plans for master planned developments under its zoning code for Planned Multi-Use Business Developments and Transit Oriented Developments.

In Needham, the zoning by-laws give the Planning Board discretion to require at least one or more TDM programs delineated in the code.

MAPC
MAPC reviewed regional TDM programs and presented case studies in a 2015 report.[53]

STRATEGY NO. 1 (CONT.)

The Unified Plan provided several TDM-related recommendations:

- Work across departments and with other groups to develop coordinated TDM measures to reduce single-occupant vehicle traffic (Chapter 10, Goal 1. A. iv)
- Develop a TDM program focused specifically on school traffic to reduce schooltime traffic by at least 50% (Chapter 10, Goal 1 F.)

With ambitious climate targets, **Wellesley can expect increased attention to quantifying TDM measures for not only climate reporting but also characterizing changes in impacts to the roadway network near work and home.** TDM effectiveness varies depending on the outcomes sought and the degree to which a measure is implemented. TDM is carried out by several players: governments (federal, state and local), transportation partnerships, real estate developers, building managers, employees, and residents.

The Federal Highway Administration (FHWA) has also reviewed the effectiveness of TDM strategies[54] and found that:

- The effectiveness of TDM is highly dependent on local conditions, such as the application setting, complementary strategies, the nature of the target travel market, and even the "vigor" with which TDM is implemented and promoted

- Most evaluation studies indicate that the most effective strategies involve financial incentives and disincentives to manage demand and reduce single-occupancy vehicle travel

- Parking strategies are also highly effective and involve strategies to right-size supply, apply demand-based pricing, and provide preferred parking for carpools. Pricing includes not only the amount but also how and when drivers are charged. For example, commuters who may otherwise wish to telework may be reluctant to do so if they have already paid for an entire month of parking

- FHWA also notes that even small reductions in single-occupancy vehicles can have a considerable effect on congestion reduction

The Vermont Department of Transportation created TDM guidance[56] in 2016 that applies reduction factors based on the TDM measures sought. A developer develops a standard traffic impact study without mitigation and then applies factors for the suite of measures chosen. This type of system may be more applicable to Wellesley and can readily translate into GHG reduction factors.

THE VICTORIA TRANSPORTATION POLICY INSTITUTE

ranked[55] the effectiveness of TDM measures; the chart below depicts measures that may apply to Wellesley by their ability to manage congestion (not in any order, with Wellesley-controlled items in parentheses).

MOST EFFECTIVE

Transit & Rideshare Improvements
(infrastructure and wayfinding
to transit stations)

HOV/Transit Priority

Telework
(Town of Wellesley employees;)

**Parking Management,
Supply & Pricing**
such as parking cash-out (pay
non-drivers an amount that equals
the value of free parking)

Commute Trip Reduction Programs
and incentives such as Guaranteed
Ride Home
(Transportation Demand
Managment programs)

**School and Campus
Transport Management**
(integrate, where possible, with
town and regional TDM programs)

MODERATELY EFFECTIVE

Walking & Cycling Improvements
(infrastructure, programs)

Marketing Programs
(Wellesley sustainability programs)

Transit Oriented Development
(planning and zoning bylaws,
overlay zones)

Carsharing
(car share parking, Wellesley Housing)

Fuel Tax Increases

Freight Transport Moanagement
(curbside and delivery management)

STRATEGY NO. 1 (CONT.)

How?

TDM for residential and commercial development can be one of the strongest tools for shifting away from single-occupancy vehicles. With increased attention to reducing GHG emissions, TDM programs should include both new and existing developments. The main strategies include strengthening and expanding the Town's TDM by-law, partnering with TDM program managers in neighboring jurisdictions, and convening regional entities to further develop best practices and emerging technologies for low-impact travel.

Finally, while working from home can reduce transportation-related GHG emissions, it can lead to increased building-related GHG emissions; thus, the Town should work to decrease the carbon footprint of working from home.

1.4.1 DEVELOP STRONG TDM ZONING BY-LAW REQUIREMENTS FOR LARGER COMMERCIAL, MIXED-USE & RESIDENTIAL REDEVELOPMENT AIMED AT REDUCING SINGLE-OCCUPANCY VEHICLE TRIPS AND CAR DEPENDENCY

There are several action items that are under Town control and listed in other sections of this report.

- Follow the Unified Plan's recommendation to rezone office, business and industrial districts in the eastern part of Wellesley near I-95.

- Enact Mobility Management planning requirements similar to those in place in Newton.

- Pursue new state-level grant funding for this effort under the banner of joint economic, mobility, and climate action.

- Determine which redevelopment sites (e.g., commercial and transit-oriented development) are the top candidates for the most ambitious programs and work to ensure that they are designed in a way that reduces car dependence and ownership.

1.4.2. DEVELOP LOCAL RELATIONSHIPS WITH THE LOCAL CHAMBER OF COMMERCE & THE 128 BUSINESS COUNCIL TO FORGE IMPROVED PLANNING AND TDM PROGRAMS

Newton and Wellesley share a common border and traffic flows for commerce and commuting, namely the Woodland MBTA station. The 128 Business Council[57] is the state's oldest Transportation Management Association, with 40 years of experience in developing mobility management programs that work. This type of **partnership can reap the economies of scale needed to support a strong TDM program and transit system.**

The Catch Connect shuttle service is also growing to include Needham and Newton, which could provide economies of scale for marketing, evaluation, data analytics, and program improvement.

1.4.3 CONVENE REGIONAL EXPERTS TO EXAMINE THE BEST MOBILITY TECHNOLOGIES FOR TDM

Boston is home to some of the most advanced companies, universities, and government agencies working on the intersection of mobility and technology. Wellesley can play a leadership role in helping assemble this expertise to evaluate those technologies with the most potential to expand mobility options while reducing or eliminating single-occupancy vehicle trips.

An essential element in this exercise includes benefits to employers from the technologies and programs they deploy.
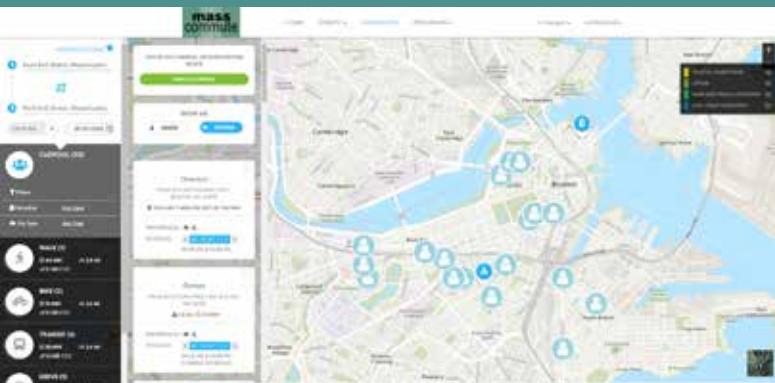
STRATEGY NO. 1 (CONT.)

TECHNOLOGY & TRANSPORTATION DEMAND MANAGEMENT

TDM technology can play a significant role in mobility management. Here is how technology supports some of the most effective TDM strategies:

MASS COMMUTE[58]

and the technology company RideAmigos sponsors a range of services for commuters, including ridematching (carpools, vanpools), trip planning, emergency (or guaranteed) ride home, and a rewards program.

BIKESHARE

Park & Pedal is a Boston-based service that outfits regional commuter lots with shared bicycles.

AMENITY CAR SHARE

Amenity car share companies offer vehicles that are available to individual buildings, developments, and campuses. For multi-family housing, having a fleet of shared cars can reduce the need for a second car (or automobile ownership altogether).

SHARED USE PLATFORMS

There are several companies, such as Ridecell, that supply software and vehicles that let any entity build their own ride hail, transit, and vehicle share fleets. While the company specializes in corporate fleets, these solutions could allow transit agencies, campuses, and even local governments the ability to design and build more efficient fleets and alternatives to solo driving.

1.4.4 REDUCE THE CARBON FOOTPRINT OF WORKING FROM HOME

Telework is a prime example of how complicated reducing GHG emissions can be. Telework is touted as a strong climate strategy when assessing mobility. However, reductions related to one strategy may be offset or increased in other areas. **A 2020 International Energy Agency analysis[59] showed that working from home results in a carbon reduction for commuters who travel more than 3.5 miles.** However, for short car commutes or those done by public transport, working from home could increase GHG emissions due to additional residential energy consumption. Hybrid work schemes may pose even higher building-related emissions[60] where an employee and employer are heating or cooling two spaces.

In order to mitigate potential overall emissions, **the climate company Watershed created a calculator to help employers and their employees determine the climate footprint of flexible employment options.** By working with employers, this tool can be part of a Transportation Demand Management program. Likewise, Wellesley can work with the Chamber of Commerce to develop and promote a better understanding of the trade offs between working from home and commuting, as well as possible methods for making all work options as sustainable as possible. The Climate Action Plan can also help with its focus on making buildings more environmentally friendly by reducing GHG emissions with cleaner heating and cooling.
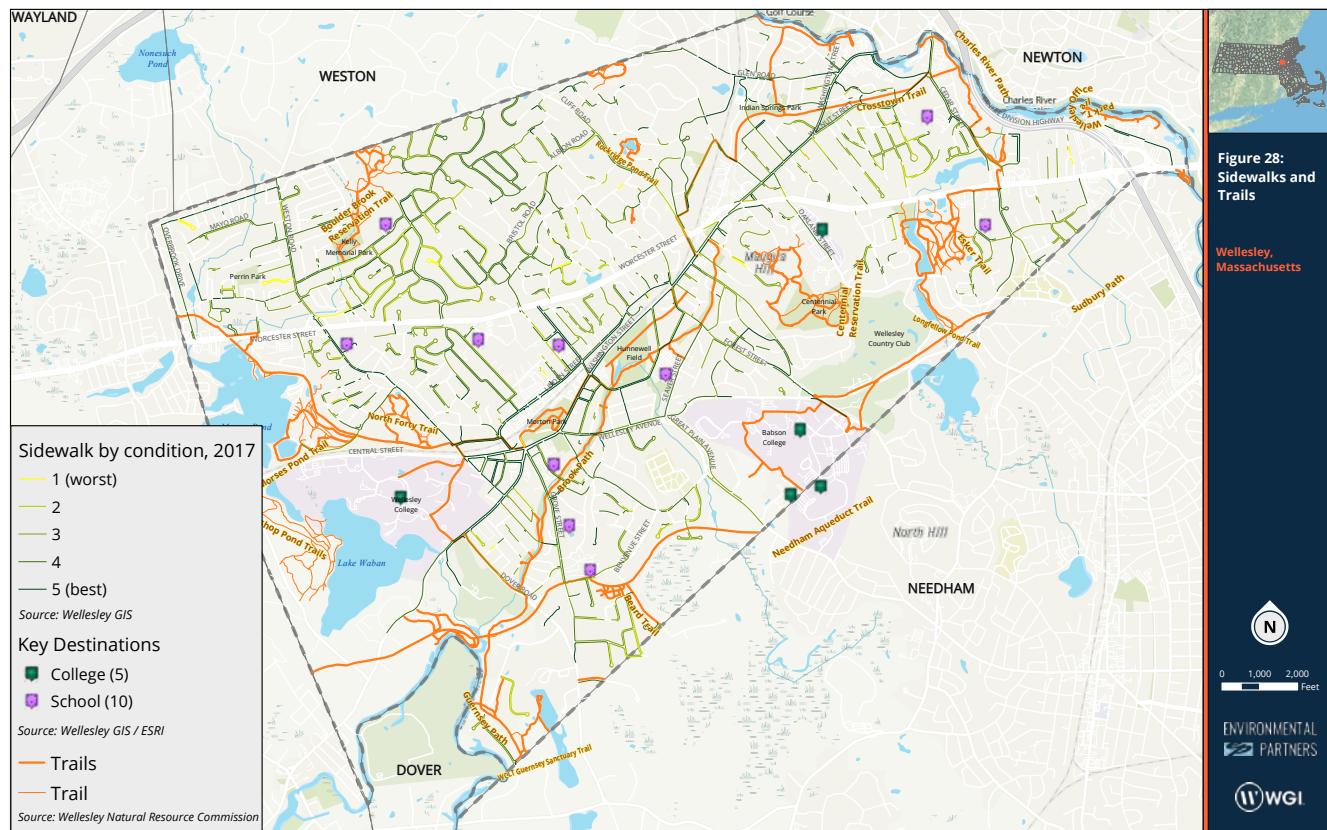
MOMENTUM 08 🏃

The Town is working on its Climate Action Plan which includes action to reduce building-related GHG impacts.

STRATEGY NO. 2
PRIORITIZE PEDESTRIANS & BICYCLISTS

The existence, quality and connectivity of sidewalks is a key component for supporting low-carbon travel. However, robust bikeway and sidewalk inventories can be difficult to obtain, in particular data on quality. Previous studies also highlighted constraints to building a network of safe, direct routes.

This planning effort pulls together the bike and pedestrian network developed to date, noting opportunities and links to GHG emissions reductions.

2.1 EXPAND THE SIDEWALK NETWORK

Why?

Wellesley has been actively improving key sidewalk segments and intersections through the Town's capital improvement budget, Complete Streets funding, and other sources. In general, the sidewalk buildout and repair have focused on links that connect neighborhoods to parks, schools, and commercial areas.

SIDEWALK & TRAILS MAP
WELLESLEY, MA

How?

In order to meet climate goals by shifting auto trips to active trips, Wellesley will need to prioritize capital improvement and operations for prioritizing sidewalk gaps among common destinations such as schools, groceries, parks, and localized tripmaking (e.g., jobs, doctors' offices). Operationally, this translates to maintenance and snow removal. The Town can use "quick build" infrastructure to quickly deploy protective measures when needed.

2.1.1 CLOSE CRITICAL GAPS IN THE SIDEWALK NETWORK BY CONSTRUCTING SIDEWALKS IN NEW LOCATIONS AND RECONSTRUCTING SIDEWALKS IN POOR CONDITION

Wellesley is making progress on identifying and filling in missing sidewalk links through its capital improvement and complete streets project lists. In 2021, the state passed legislation with an earmark for $675,000 for sidewalk and roadway improvements[61], though funding would require appropriation.

With passage of the Bipartisan Infrastructure Bill, Wellesley can position for several sources of funding for completing projects on capital improvement plans and for identifying new sidewalk and trail segments.

1. Work with the states and the Boston MPO

The following programs are apportioned through formula funding to Massachusetts. Some of this funding flows to the MPO, which will decide priorities and projects to include in the Transportation Improvement Plan (TIP). As such, Wellesley should meet with the MPO early to ascertain the types of projects likely to successfully compete for funding. The following programs are likely to include sidewalk funding:

- Transportation Alternatives (including the Recreational Trails Program)
- Safe Routes to School
- Carbon Reduction Program (open to States and MPOs)

2. Direct applications

In addition to formula funding above, there are several programs that allow local governments to directly submit applications to USDOT (also known as discretionary programs).

- Stopping Threats to Pedestrians Pilot Program (bollard installations)
- Safe Streets for All
- Active Transportation Infrastructure Investment Program (for regional projects)

STRATEGY NO. 2 (CONT.)

2.1.2 RE-EVALUATE SIDEWALK PLOWING PRIORITIZATION

During interviews, the project team heard several comments related to the prioritization of sidewalks for snow plowing. **Plowing policies should reflect priority pedestrian routes during and after snowfall, such as schools and supermarkets.** In addition, policies need to address conflict minimization, such as where snow plowed from roadways is deposited onto sidewalks. The Department of Public Works and MassDOT are the two main infrastructure stakeholders.

2.1.3 USE QUICK-BUILD ELEMENTS TO EXPAND PEDESTRIAN SPACES

Many communities are finding ways to expand pedestrian (and bicycle) spaces that require little capital investment. By **using modular (or quick build) infrastructure, Wellesley can expand and deploy infrastructure as needed.** Using temporary installations can allay opposition that can emerge with permanent installations. Concerns may be related to cost or the need to test configurations before investing in a permanent design. The California Bike League published a Quick Build Guide in 2020 with information on design and materials.

2.2 EXPAND THE ON-ROAD BICYCLE NETWORK

Why?

Expanding bicycling is a common theme within the Unified Plan and survey results. The demand for cycling grew during the COVID-19 pandemic, reflecting trends for electric bicycles nationwide and in Massachusetts in particular. This demand can only be met with improved cycleways, intersection improvements, and bike parking.

Wellesley's ability to create a complete network of cycling infrastructure is hampered by spatially constrained roadways, granite curbs, and challenging North-South crossings. The trail system is well used for recreational trips, with some functionality for school and utilitarian trips. However, many routes are out and back.

Wellesley has a plan that includes a schedule for Complete Streets projects. **For sustainable mobility, the next generation of projects can be prioritized for segments that replace auto trips.** This can be for school trips or common errands.

🏃 MOMENTUM 09

1. The Town of Wellesley has met with MassDOT to identify priority areas near Route 9 and schools where snow plowing activity has historically blocked sidewalks and to ask for changes in plowing and snow clearing practices.

2. The Mobility Committee reviewed the Complete Streets Plan and ranked outstanding projects in order of improvements in mobility, with a heightened focus on walking to school and transit.

How?

Even with the infrastructure constraints, **Wellesley can continue to build links that form a more complete network of inviting, safe bikeways.** As noted in the Unified Plan, the Town can seek grants to map and build a "low-stress" network of trails and bikeways. Low-stress analyses tend to look for advantageous links, such as cut-throughs and use of overly wide streets. Mobile apps can be used for crowdsourcing information on hazards and improving wayfinding with maps and augmented reality.

2.2.1 CONDUCT A "LOW-STRESS NETWORK" STUDY TO DETERMINE PRIORITIES FOR BICYCLE INFRASTRUCTURE IMPROVEMENTS

As recommended in the Unified Plan, Wellesley can conduct a low-stress study of sidewalk, bikeways, and trails throughout town. A low-stress network seeks connected routes on which all cyclists can easily access areas throughout a community. This type of study begins with a Level of Traffic Stress (LTS) Analysis[64] that seeks information on:

- **Connectivity**
  Are there large gaps that prevent more direct connections between residential areas and jobs? Are there opportunities to improve high-stress linkages (e.g., Route 9 crossings)?

- **Access to Destinations**
  Can Wellesley use better origin-destination (O-D) information to find key network gaps in areas of latent cycling demand? What options exist for this O-D data?

- **Safety**
  Besides crashes, are there areas of near-misses that prevent riders from replacing more auto trips with cycling? How can we tell where these areas exist?

- **Infrastructure Quality**
  How can Wellesley improve maps to show not only the existence of cycling and walking infrastructure but also its quality, which can affect a traveler's decision on mode? For instance, pavement quality and maintenance should be considered to provide smooth, comfortable surfaces for all riders.

- **Perceptions of Safety**
  Where are areas of potentially high demand but also of high stress (for example, high automobile volume and travel speed)? Where are opportunities to provide a higher separation from traffic? Is lighting an issue?

- **Drainage infrastructure**
  Have all drainage grates been replaced with bike-friendly grate styles, and are they all oriented in the appropriate direction?

STRATEGY NO. 2 (CONT.)

CASE STUDY: MAPPING A LOW-STRESS NETWORK

In Sarasota Florida, the Sarasota/Manatee MPO65 used data to analyze common O-D pairs and local activity centers. Using cell phone data, they were able to map both shortest paths and existing transit and bike routes in these popular corridors. Locations with no bike facilities and high-stress segments were identified as potential future projects.

2.2.2 EXPAND THE BICYCLE NETWORK WITHIN EXISTING RIGHTS-OF-WAY

When conducting a low-stress network study, the Town should evaluate candidates for converting existing pavement to cycling facilities. Low-stress network studies often seek opportunistic links and cut-throughs that offer safe and convenient connections.

2.2.3 DEPLOY TECHNOLOGY TO IMPROVE THE BICYCLING EXPERIENCE

One of the most underappreciated areas of transportation technology for sustainable mobility is mobile phone apps. This extends to cycling. Boston solicits information on safety concerns through its Vision Zero program[66], through which pedestrians and cyclists can report an array of safety problems, including near misses, aggressive drivers, and poor infrastructure design. The tourism industry is making use of augmented reality apps in ways that could extend to wayfinding and directions. The apps AR Trails[67] and PeakVisor[68] use digital wayfinding that is location-based.

Working with local technology companies, Wellesley could create its own sustainable mobility for travelers using active transportation. This can help riders who need to access multiple trail and bikeway segments to reach a destination but don't want to constantly check a trails map. The app could be combined with a GHG reduction tracking feature. As the technology improves, expect AR to extend to transit as well. The digital transit firm Moovit is working on a feature that allows a transit rider the ability to hold up a phone and determine transit options that pop up on a screen.

2.3 IMPROVE THE SAFETY AND CONNECTIVITY OF THE TRAILS NETWORK

Why?

Wellesley's trails network is an extremely popular and well-used resource within town. **In the bike-related online survey conducted as part of this project, an impressive 85% of respondents indicated that they had used Wellesley's trails as a cyclist or pedestrian to access their destination.** Thus, the trails network represents a way for the Town to both increase the use of low-impact mobility options (bicycling and walking) and improve the user experience, particularly for bicyclists, by providing a safe, dedicated facility for non-motorized travel.

Efforts to build out Wellesley's walk and bike network will rely on new links within the trails network as well as infrastructure improvements to make existing crossings safer and more user friendly.

How?

Wellesley's Trail Committee has developed detailed lists of improvements that identify trail investments for maintenance and safety improvements, as well as new connections. At the state level, Commonwealth Trails grants are supported by the state's annual Capital Investment Plan and aim to help communities design, create and maintain off-road shared-use pathway connections.

2.3.1 INSTALL IMPROVEMENTS AT TRAIL ROAD CROSSINGS TO IMPROVE PEDESTRIAN & BICYCLIST SAFETY

The Trails Committee has identified improving road crossings and sidewalks near trails as one of their top priorities in its Trails Development and Improvement Plan for 2022-2026.

Specifically, the proposed betterments for road crossings include the following:

- Installation of zebra striping and crosswalk warning signage
- Installation of flashing pedestrian signals when necessary
- Installation of sidewalks or wide cleared shoulders

In addition, maintenance of existing crosswalks and signage, pedestrian flashing lights, and sidewalks is noted as equally important to prevent existing facilities from becoming in a state of disrepair. The Trails Committee will work with both the Traffic Committee and Mobility Committee to address safety concerns and the most appropriate corrective action for high-priority locations.

STRATEGY NO. 2 (CONT.)

2.3.2 FILL KEY GAPS IN THE TRAILS NETWORK

As part of the Low Stress Network map, **the Town should determine where trail links are needed to complete a network for all ages and abilities.** The assessment should also include a sustainable mobility lens to help determine the critical gaps for work and utility trips.

2.3.3 ESTABLISH A LIAISON AT THE DEPARTMENT OF CONSERVATION AND RECREATION TO HELP ADVOCATE FOR TOWN PRIORITIES

Trail system planning in Massachusetts falls under the Department of Conservation and Recreation (DCR).[69] The DCR is guided by a Stewardship Council, a 13-member citizen advisory council appointed by the Governor. One opportunity to raise Wellesley's profile would be a nomination to this Council. In addition, the Council welcomes Guest Presenters.[70] The state also convenes the Massachusetts Recreational Trail Advisory Board (MARTAB)[71] to gain input from the wide variety of trail users.

2.4 DEVELOP A "CULTURE OF BIKING & WALKING"

Why?

Transportation planners often refer to a "car culture" to describe resistance to multi-modal improvements and ingrained opinions that cycling and walking will not work. **One of the ways to broaden support for multi-modalism is to build a culture of biking, walking, and transit.**

How?

Developing a culture of biking and walking is a process that builds on cycling and walking events. Other c**ommunities have found several areas of success including "open streets" events,** continuous school-based walk and bike events, and progression towards offering safe and secure facilities. Increasingly cities are also integrating climate themes to celebrate action on reducing GHG emissions.

2.4.1 PROMOTE BICYCLE AND PEDESTRIAN ACTIVITY IN ACTIVITY CENTERS BY IMPLEMENTING PERIODIC PEDESTRIAN-ONLY DAYS ON KEY RETAIL/COMMERCIAL STREETS AND PROMOTING RETAIL/COMMERCIAL USES IN ACTIVITY CENTERS THAT SERVE AS GATHERING SPOTS

Cities that have built a culture of biking often started small by closing streets to auto traffic. These popular half-day events often become a monthly series that also features classes, childrens' events, and cycle safety information.

Open streets events became popular during the COVID-19 pandemic as cities sought ways to increase access to outdoor activities. AARP has developed a resource[72] with six steps on creating a successful ciclovia or "Open Streets" event:

- Identify a founding partner or partners: Who or what group will take the lead to organize, advocate for and launch the ciclovia?

- If the local government isn't already involved, provide elected leaders and municipal departments educational resources on the event and the benefits

- Identify and recruit a committee to make the plan. Choose stakeholders from the public sector (local government), private sector (area businesses and hospitals) and nonprofit world (social welfare, health and other organizations). Reach out to business along the route since they will be impacted by a street closure

- Identify a preferred route for the ciclovia and coordinate with the local police, traffic and public works departments to assist with road closures, security and waste management

- If the ciclovia is a longer route, identify locations for rest stops, called "reclovias," and line up sponsors, such as local businesses or vendors, who will take charge of supplying and staffing the rest stops

- Include fundraising and advertising to market the event

STRATEGY NO. 2 (CONT.)

2.4.2 SUPPORT AND INCREASE VISIBILITY OF "BIKE TO WORK"/"WALK TO WORK" AND "WALK TO SCHOOL"/"BIKE TO SCHOOL" DAYS AND ADD LOCAL BIKING EVENTS

Many Wellesley schools host monthly Walk and Bike to School Days. Other **communities are expanding from a single day to Bike and Walk to School Month in October**.
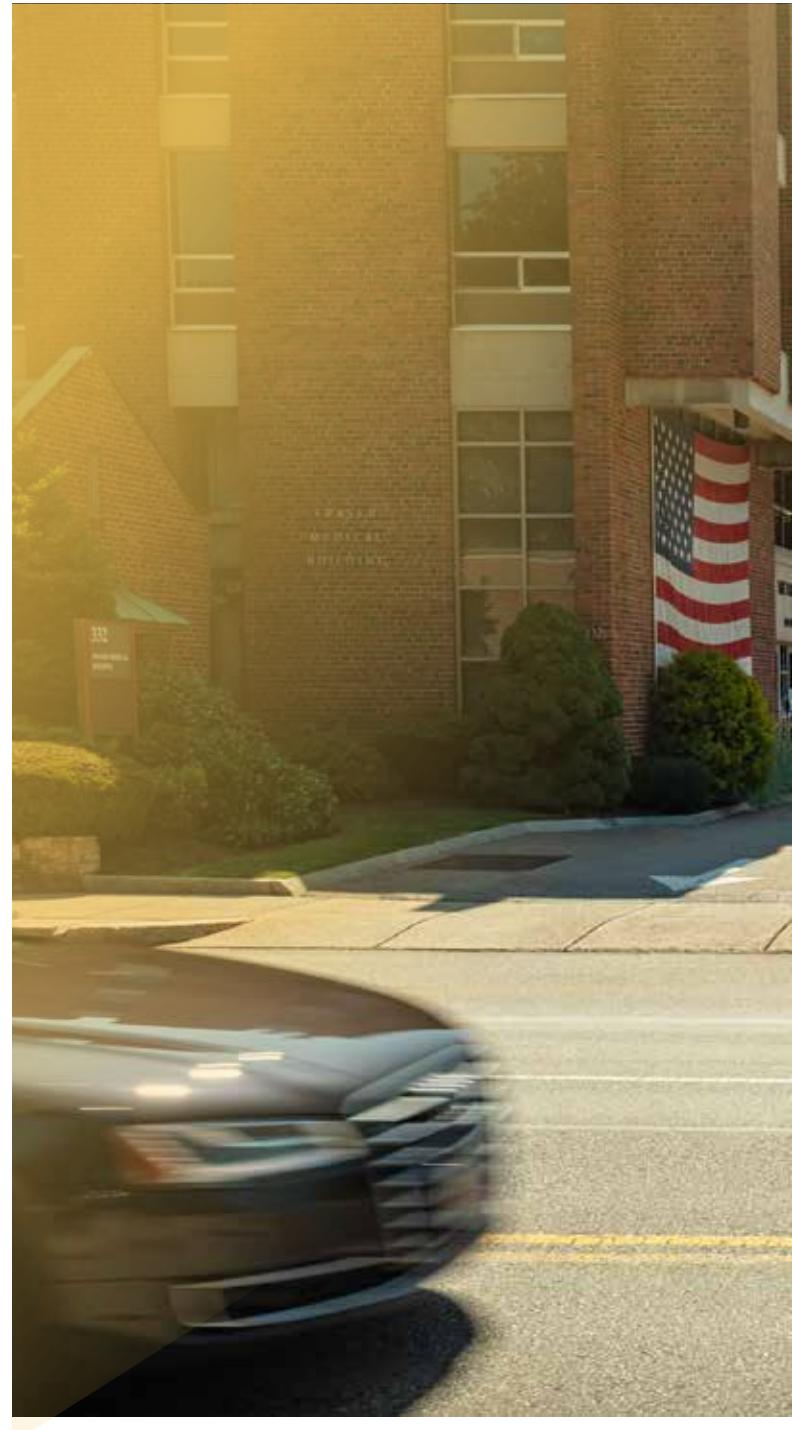
Arlington Public Schools in Virginia encourages walking all year long by adopting weekly walking and biking promotions like "Walking Wednesdays" and "Foot Fridays."

Communities also use events to create Walking School Buses and Bike Trains. A walking school bus typically begins at the end of a route. Families join "the bus" as the group travels to school, sometimes escorted by police. **Framingham recently launched a walking school bus**[73] in response to the school bus driver shortage. For more on walking school buses, see walkingschoolbus.org.

2.4.3 INSTALL SHELTERED SECURE BICYCLE PARKING AT COMMUTER RAIL STATIONS, MULTI-FAMILY HOUSING UNITS, AFFORDABLE HOUSING UNITS, AND MIDDLE AND HIGH SCHOOLS TO FACILITATE BICYCLE USAGE

Visible **bicycle parking signals the support for multi-modal transportatio**n as part of the mobility system. The recent rise in bicycling, unfortunately, has also seen an increase in bicycle theft.[74] As more cyclists use electric bikes, the need for secure parking is growing.

STRATEGY NO. 3
ACCELERATE THE REDUCTION IN VEHICLE GHG EMISSIONS

3.1 ACCELERATE THE SHIFT TO ELECTRIC VEHICLES

Why?

Shifting from gasoline-powered vehicles to electric vehicles has the potential to reduce GHG emissions from transportation within Wellesley dramatically.

According to a study by the Lufthansa Innovation Hub, the average GHG emissions of an EV over its lifecycle are approximately half those of diesel- and gasoline-powered vehicles.

Because **nearly all households in Wellesley own at least one vehicle,** the overall reduction in GHG emissions that could be achieved by incentivizing a sizable portion of households to shift to using an EV is significant and should be pursued. Although the shift to EVs will occur to some degree without any intervention by the Town, several strategies can be implemented to accelerate it.

It is important to note that because incentivizing the use of EVs does not help achieve the Town's goals of expanding sustainable modes of transportation and connecting people to town destinations and the region, **it is critical that the strategies listed here are implemented in conjunction with ones that promote a reduction** in single-occupancy vehicle travel toward lower-impact travel modes, such as transit, walking, and biking.

How?

Wellesley can accelerate the the adoption of electric vehicles within Town by raising awareness of the cost benefits of EV ownership, including raising awareness of existing federal, state, and local incentives, prioritize electric options for Town fleet purchases, support the adoption of charging infrastructure in new developments, and establish an EV charging working group to spearhead the effort to expand EV charging within town.

3.1.1 EXPLORE AND IMPLEMENT INCENTIVES FOR ELECTRIC VEHICLE ADOPTION

Rebates and tax credits are an effective tool for incentivizing new EV purchases.

Existing local incentives that augment state and federal incentives, such as the WECARE program offered through the Wellesley Municipal Light Plant (WLMP), should be actively promoted, and opportunities for additional incentives should be explored. Information on federal & state grants for installing EV chargers at multi-home and commercial developments should also be provided to developers to raise awareness of existing incentives.

3.1.2 EDUCATE RESIDENTS AND MUNICIPAL EMPLOYEES ABOUT THE BENEFITS OF BUYING AND DRIVING ELECTRIC VEHICLES, INCLUDING FEDERAL AND STATE GRANT OPPORTUNITIES AND OPERATING COST SAVINGS

One simple yet powerful tool for accelerating the adoption of electric vehicles is raising awareness of the monetary and environmental benefits of buying and driving EVs. Existing grants and incentives for electric vehicles can be difficult to navigate, causing residents and municipal employees to overlook existing resources or information that may make buying an electric vehicle more appealing. Educational campaigns can include educational letters and press releases in addition to in-person events, such as roadshows, as appropriate.

3.1.3 UPDATE THE MUNICIPAL FUEL EFFICIENT VEHICLE POLICY TO ACCELERATE THE TRANSITION TO ELECTRIC VEHICLES

Wellesley can update their municipal Fuel Efficient Vehicle Policy that requires Town vehicle purchases to prioritize electric options, sets fuel efficiency standards for gasoline-powered vehicles, and requires other GHG emission reduction strategies, such as minimizing idling, for municipal vehicles.

3.1.4 SUPPORT ELECTRIC VEHICLE CHARGING IN RESIDENTIAL, COMMERCIAL & MULTI-HOME DEVELOPMENTS

As noted in the Unified Plan, expanding the number of EV charging stations in Wellesley is important for supporting the shift to EVs. Chargers should be installed in locations and with capacity that align with actual driver behavior to serve the maximum benefit to users.

Fast chargers, which need only 30 minutes to provide a big range boost, could be located along high-traffic corridors, such as Route 9, activity centers, and other locations where drivers plan to spend short periods of time. Fast charging stations require the most power and have the highest installation cost, although Tesla will install a supercharger at no cost and grants are available for other types of fast charging stations. Furthermore, Wellesley, as an MLP town, has an opportunity to earn revenue on the margin between the Town's cost for electricity and the rate to the EVSE installation owner.

Slower chargers, namely, 110V wall outlets or 220V power sources, should be installed in public parking lots, employer parking lots, and multi-family housing developments. Regulations for new buildings reviewed by the Design Review Board and Planning Board should be updated to request or require EV charging, such as inclusion of charging infrastructure (including conduits where demand is not yet established), whenever public and private parking lots are repaved.

STRATEGY NO. 3 (CONT.)

3.1.5 ESTABLISH AN EV CHARGING WORKING GROUP

Given the diverse set of considerations involved with planning for, funding, and constructing publicly available EV charging stations, a working group including, but not limited to, the Municipal Light Plant, the Department of Public Works, Engineering and Planning, and select Board staff, should be established to develop policies and spearhead the EV charging expansion effort. This working group should bring policies and recommendations to the Sustainable Mobility and Climate Action Committees, among other potential groups.

3.2 PROMOTE LOW-IMPACT TRANSPORTATION OPTIONS

Why?

The **popularity of low-impact transportation options, such as electric bikes and scooters, has grown tremendously in recent years** and particularly since the beginning of the COVID-19 pandemic as people have sought new ways to move around -- for work, pleasure, or completing errands -- in a convenient, affordable, and sustainable manner. In particular, people who previously relied on public transportation and are now reluctant to use buses or trains are finding particular interest in these options as a safer alternative that requires minimal contact with other people.

E-bikes function in a similar manner as pedal bicycles but benefit from **an electric assist motor that allows riders to travel farther and faster with less effort**. Riders are legally allowed to travel at speeds of up to 20 mph, although the e-bike may be capable of going faster than that. E-bikes range in price from approximately $600 to over $8,000, with most mainstream e-bikes costing between $1,500 and $4,000.

E-scooters, which are simply regular scooters with a motor attached, can travel at speeds of up to 15-20 mph and have an even lower entry cost than e-bikes, with many costing between $100 and $500.

FIRST-MILE/LAST MILE PROBLEM

The first-mile/last-mile (FMLM) problem, in the context of passenger travel, is the need for a second mode of transportation to get to a public transit station from the starting location of a trip or to reach a final destination. Most people are only comfortable walking up to a quarter mile or half mile to and from a light rail or heavy rail transit stop, respectively. Thus, transit stations located farther away than that may not be considered a viable alternative unless other FMLM solutions are available.

E-bikes and e-scooters are often used on a rental basis, with docked or dockless programs in place throughout the country. **Docked stations are typically located near transit stations, activity centers, and schools** to accommodate short trips and to solve the first-mile/last-mile problem.

Note that E-bikes are currently prohibited on trails and in bike lanes in Massachusetts; legislation[75] was reintroduced this year to allow e-bikes on paths and trails, with some stipulations.

How?

The Town can promote low-impact transportation options, including bikes, e-bikes, and e-scooters, by evaluating the potential for a docked e-bike/e-scooter pilot program as well as installing secured, sheltered parking at key locations, including commuter rail stations, affordable housing units, and schools.

3.2.1 EVALUATE A POTENTIAL PILOT PROGRAM FOR DOCKED, SHARED ELECTRIC BIKES AND/OR ELECTRIC SCOOTERS AT COMMUTER RAIL STATIONS, AFFORDABLE HOUSING UNITS & MIDDLE AND HIGH SCHOOLS

A pilot program of a docked shared e-bike or e-scooter program, located at commuter rail stations, affordable housing units, and/or middle and high schools, will provide a sense of the demand for and raise awareness of these micromobility options in town. Docked programs prevent e-bikes or e-scooters from being scattered throughout the town, as is often the case with a dockless program.

If the pilot program is successful, permanent docked stations should be implemented at the locations with the highest demand. The Park & Pedal program could serve as a helpful resource for implementing the pilot & permanent program.

3.2.2 INSTALL SHELTERED, SECURE PARKING AT KEY LOCATIONS TO FACILITATE BIKE, ELECTRIC-BIKE, AND/OR ELECTRIC SCOOTER USAGE

Sheltered bike, e-bike, and e-scooter parking at transit stations and in activity centers that provides both a safe parking location and charging capabilities will promote bike, e-bike, and e-scooter purchases. **Property managers and e-bike companies will be helpful resources** for identifying potential sites and determining the appropriate equipment, respectively.

Coordination with the Wellesley Municipal Light Plant (WMLP) and Planning Department will be necessary to determine the infrastructure needed to accommodate charging at such parking facilities.

STRATEGY NO. 3 (CONT.)

3.3 EDUCATE ABOUT LOW- OR NO-EMISSION TRANSPORTATION OPTIONS

Why?

Significant reductions in GHG emissions can often be achieved by simply making people aware of the ways in which they can reduce their carbon footprint. The issue of tackling climate change can often be overwhelming, with individuals feeling powerless to make any difference or not understanding how small lifestyle changes can accumulate over time. Furthermore, it can often be difficult for individuals to keep up with the programs in place to help reduce their carbon footprint.

How?

Educational campaigns to promote low- or no-emission transportation options include promoting federal and state rebates for EV purchases, actively promoting walking and biking as replacements for car trips to school and work, raising awareness of the negative impacts of vehicle idling, and working with schools and school transportation vendors to facilitate the shift to electric school buses.

3.3.1 PROMOTE FEDERAL TAX CREDITS & MA STATE REBATES

Educational efforts aimed at raising awareness of and navigating through existing federal, state, and local incentives and resources in place for EV purchases can help residents maximize potential savings and other benefits when making an EV purchase.

3.3.2 ACTIVELY PROMOTE ZERO-CARBON MOBILITY FOR COMMUTING TO SCHOOL AND WORK

There are several **informational campaigns aimed at increasing awareness** of zero-carbon mobility options, such as walking and biking, as replacements for car trips. For instance, the "One Less Drive" campaign is an initiative started by CycleCart, a shopping cart that also acts as a bicycle trailer, to use a bicycle instead of a car when going to the grocery store. Initiating a campaign for residents to "be part of the climate change solution" by swapping out car trips for walking, biking, and public transit can promote awareness of the impacts of driving on climate change and other convenient options available for different types of trips.

3.3.3 REDUCE COMMUNITY-WIDE VEHICLE IDLING THROUGH EDUCATION AND TICKETING

Small changes to daily behavior that don't involve changes in travel modes or patterns, such as reducing idling, can be particularly easy for residents to incorporate into their lives. Car idling is estimated to waste approximately 6 billion gallons[76] of fuel annually and also **emits air toxins, or pollutants known or suspected to cause serious health effects, including cancer.**

The Idle-Free Schools Toolkit[77] available through the EPA provides information needed to run an effective idling reduction campaign at a school to reduce the exposure of students to vehicle exhaust and can be easily adapted to community-wide educational campaigns.

IdleBox[78], an electronic education and outreach toolkit created by the US Department of Energy, is another valuable resource for engaging and educating others, including drivers, fleet managers, and employers, on the value of idle reduction.

Finally, because Massachusetts law[79] prohibits a car from idling more than 5 minutes unless it's being serviced or used to deliver or accept goods where engine-assisted power is necessary, increased enforcement can be used in conjunction with educational efforts to reduce idling.

3.3.4 RESEARCH STATE AND FEDERAL FUNDING FOR ELECTRIC SCHOOL TRANSPORTATION AND VEHICLE-TO-GRID BATTERY STORAGE TECHNOLOGY AND SHARE WITH WELLESLEY PUBLIC SCHOOLS AND SCHOOL TRANSPORTATION VENDORS TO FACILITATE THE MIGRATION TO ELECTRIC VEHICLES

Electrification of the Town's school fleet is a significant opportunity to reduce GHG emissions from transportation in Wellesley. The Town can help facilitate this transition by researching state and federal funding opportunities to both replace its existing bus fleet and incorporate vehicle-to-grid battery storage technology and share its findings with Wellesley Public Schools and school transportation vendors.

As an example, **Beverly, Massachusetts has received grants for two battery electric buses.** In 2019, Beverly awarded a contract to Highland Electric Transportation[80] of Hamilton, Massachusetts. The district is leasing the buses to progressively replace its 22-bus fleet. The contract includes the charging infrastructure, maintenance, and repairs.

While purchase pricing for battery-electric buses is higher than that for conventional diesel buses ($400,000 versus $100,000 on average), the former offer both **fuel cost savings and lower maintenance costs, operating costs, and secondary health and air quality benefits.** Beverly will lease the bus for $24,000 per year for five years, the same cost that the City currently pays to lease a diesel school bus.

Fleet electrification, including school buses, is expected to accelerate. **Funding is included in federal infrastructure and transportation plans.** In the Massachusetts legislature, Bill H. 3579[81] was reintroduced in 2021 to transition all of the Commonwealth's buses to zero-emissions technology. Operators must submit an Electric Bus Rollout Plan and convert fleets to all electric by December 31, 2035.

The World Resources Institute's Electric School Bus Initiative[82], which seeks to electrify the entire fleet of U.S. school buses by 2030 by building coalitions and markets, is a valuable resource for this initiative. The website includes contact information to learn more about joining the coalition. Highland Electric (the operator of Beverly's program) may also be able to **help the Town find grant funding**, including US EPA grants through the Diesel Emissions Reduction Act (DERA) rebate program.

STRATEGY NO. 4
PROMOTE SMART GROWTH

4.1 IMPLEMENT SMART GROWTH POLICIES

Why?

There are many reasons to pursue smart growth given the diverse set of benefits related to health, economic return, and the ability to reduce travel times and costs that can be achieved by co-locating common destinations. Smart, sustainable development is also one of the most powerful climate strategies to reduce GHG emissions due to transportation by reducing vehicle trip lengths and building infrastructure to support walking and biking.

The state of Massachusetts has made smart growth a cornerstone of planning, investment, conservation, and grants programs. Municipalities that pursue smart growth have a wealth of incentives and funding opportunities through several state programs.

How?

Given the importance of linking land use and transportation for not only mitigating but also preventing GHG emissions through walking, biking and transit, this section includes recommendations that span multiple disciplines.

Actions include using "15-minute city" planning techniques in several areas within Wellesley and seeking grants that allow for a diagnostic scan of uses and accessibility to identify areas that can drastically reduce Vehicle Miles Travelled (VMT). Once in place, this expanded smart growth program can be integrated into multiple Town processes, such as traffic impact studies, design guidelines, and zoning codes.

WHAT IS SMART GROWTH?

According to the US Environmental Protection Agency, **"Smart Growth"[83] covers a range of development and conservation strategies that deliver environmental, health, transportation, economic, and social benefits.** Massachusetts has developed a Smart Growth/Smart Energy Toolkit84 based on Sustainable Development Principles, Policies, Initiatives, Model By-laws, Housing programs (40B and 40R), Transit Oriented Development, and Technical Assistance.

The Unified Plan provides multiple recommendations to support smart growth, including strategies for housing, schools, open space, mobility, economic investment, historic preservation, and climate action.

4.1.1 INCREASE THE NUMBER OF TOWN RESIDENTS WHO LIVE WITHIN A 15-20 MINUTE WALK OF MOST BASIC NEEDS BY 2030

Designing cities around a 15-minute walk, bike, or transit trip is gaining popularity as both a mobility and climate action strategy. **The 15-Minute Cit**y (or neighborhood) dates back to Portland, Oregon's efforts but gained international attention when Ann Hidalgo based her winning mayoral campaign in Paris, France on the concept. In Massachusetts, the Boston Indicators and the Massachusetts Housing Partnership released a paper[85] in September 2021 outlining locally relevant elements, including equity.

While the idea of using time and distance to define districts (e.g., the quarter-mile walk) is not new, the emphasis on access to a complement of everyday destinations sets the 15-Minute City apart.

With **traditional planning, municipalities set zoning codes that specify allowable uses, leaving market forces to determine how spaces are eventually occupied. Instead of asking "what's allowed here," the 15-Minute City posits "what should be here"** based on the travel needs of the local population. While the 15-Minute City is relatively new, there is some research that provides guidance for Wellesley in building out neighborhoods supporting walking and biking.

Town Form
A Harvard research team examined cities around the world to determine an ideal physical planning structure for developing 15-Minute Cities.[86] They found that a "fractal city" like Barcelona supported more local trips. They define a fractal city as one constructed with a series of hubs (city/neighborhood centers) that are strategically spread throughout the city providing access to important amenities to residents and businesses alike. Neighborhoods developed prior to the automobile exhibit this distribution in the form of corner stores, and post automobile, through convenience stores.

Uses
Grocery stores, pharmacies, banks, healthcare facilities, and small retail shops are typically a staple in all 15-Minute Cities. Beyond the basics, the type and number of other uses will depend on such factors as demographics and the local economy. In Wellesley, through surveys and interviews, the team found that limited options for affordable child care exist, forcing families to drive to neighboring cities. Children under 5 years comprise 5% of Wellesley's population, a figure that does not include non-resident workers who would prefer child care options near work. Incentives for child care facilities are not typically regarded as a mobility strategy; however, for Wellesley, such incentives could provide reductions in vehicle miles traveled and associated emissions.

STRATEGY NO. 4 (CONT.)

Proximity and Accessibility

In traditional planning for walkability, cities focus on infrastructure design and state of repair. As noted above, the use mix was left to market-based decisions. The 15-Minute City takes a more deliberate approach to (1) highlighting the mismatch among essential and everyday trips and (2) using traditional and non-conventional tools to fill the space.

The Sustainable Mobility team has produced maps describing Wellesley's existing 15-Minute neighborhoods based on a small set of common destinations: cultural locations, educational facilities, grocery stores, parks, medical facilities and transit stops. This initial exercise shows there are two main areas with five or more destinations, mostly flanking Linden Street downtown. These neighborhoods are surrounded by areas within a 15-minute walk or bike to at least four destinations. There are also potential **candidate neighborhoods for building out a 15-Minute City** at the town's northeastern quadrant near I-95 and at the very eastern border north of Worcester Street.

4.1.2 REVIEW ZONING BYLAWS TO FURTHER INCENTIVIZE MIXED-USE DEVELOPMENT & PROMOTE COMPACT DEVELOPMENT DESIGNS IN ACTIVITY CENTERS

Mixed-use, compact development is primarily viewed as an economic development topic. However, it is a primary path to reducing GHG through land use efficiency and support for car-free and car-light travel. In other words, density and use mix are powerful climate solutions.

The climate profile of a development will depend on decisions related to design, use mix, infrastructure, and connectivity. Wellesley uses overlay district design to coordinate and incentivize development.

To incentivize mixed use and compact development, Wellesley can:

- Use the 40R process to direct incentives. The law provides that municipalities can create more than one district as long as the total does not exceed 25% of total land area (or 15% for an individual 40R development). The Wellesley office site occupies less than 1% of total land in the Town

- Incorporate 15-Minute City elements to the Project of Significant Impact review process

- As noted in the Unified Plan, Wellesley's design review bylaw and guidebook (1989) are out of date, and a 2018 update is still incomplete. The Town can better communicate the areas for directed growth, design guidelines, and typologies by revisiting and finalizing the bylaw and guidebook updates.

- Wellesley can apply for a planning grant through the state's Community Planning Grant Program to identify and plan new areas for directed growth (e.g., 15-Minute City planning areas). The FY 2022 Guidelines[87] provide more information. In 2021, applications were accepted between January and April.

4.1.3 ADD VEHICLE MILES TRAVELED (VMT), MULTIMODAL LEVEL OF SERVICE (MLOS), AND OTHER MEASURES AS THE CRITERIA USED TO ASSESS NEW DEVELOPMENTS AND INFRASTRUCTURE PROJECTS

Wellesley currently uses a traditional automobile Level of Service (LOS) standard to assess development impacts. LOS describes the condition of auto traffic flow at intersections on a grading scale of A (free flowing) to F (congested).

Transportation agencies are re-evaluating this system for several reasons:

- Striving for free-flowing, high-speed vehicular traffic is not compatible with other system users and economic vitality;

- LOS typically only looks at vehicular travel, thereby omitting consideration of other modes; and

- A grade of F suggests failure, when in fact lower-moving traffic is a sign of health for downtowns, transit sheds, and main streets.

In 2019, the Boston MPO (which includes Wellesley), published a report called "New and Emerging Metrics for Roadway Usage"[88] exploring alternatives to traditional automobile LOS. The report, which focuses on regional roadways, provides **new metrics that can inform how Wellesley assesses infrastructure and development proposals on a more robust set of performance indicators**. Multimodal Level of Service (MLOS) presents a range of new metrics, which can be customized to the local context. The report recommends choosing 4-6 metrics for each mode (automobile, transit, bicycle and pedestrians), depending on mobility goals.

Wellesley should seek multimodal metrics and performance measures that characterize both sustainability and the mobility system. Although these two criteria are linked, it's important to choose metrics that will feed into the Town's GHG reporting system. It's also important to link the two because the adoption of electric vehicles, while an improvement, will perpetuate or increase congestion and demand for parking.

STRATEGY NO. 4 (CONT.)

SAMPLE OBJECTIVE FOR INFRASTRUCTURE OR DEVELOPMENT PROJECTS	SAMPLE METRICS	PERFORMANCE MEASURE	DATA SOURCE
Increase school-related walking, biking and busing to meet 25% GHG reduction goal and decrease congestion around schools.	Mode substitution (from driven to walk/bike/bus) Perceptions of safety with active modes	Change in bicycle and pedestrian counts, Driver trips replaced by month per school, Reduced number of cars in carlines, Increased number of bus riders, number of students using Catch Connect for extra-curricular activities; number of bike and pedestrian crashes	Manual counts, crash data, Self-reporting, Catch Connect data, student and parent safety surveys Automatic counters for trails, lanes and sidewalks
Increase # of commuter rail riders within 2 miles of transit stations who walk, bike or use transit for access	Commuter rail ridership, Facility usage, Transit Oriented Development	New commuter rail riders, development density (overall & new development), walk/bike infrastructure (new, improved),	Manual counts, MBTA data, survey data, Capital Improvement Plans
Develop a network of Complete Streets facilities and trails.	Trail and Sidewalk usage, Network Connectivity, Mode Substitution	Network connectivity index, % of continuous, barrier-free walk and bikeways.	Maps (GIS), sidewalk audits
Increase the number of housing units in car-free or car-light neighborhoods	Mode substitution (from driven to walk/bike/bus), transit oriented development, 15 minute city	# car-free households; # housing developments within 1 mile of transit with no parking	Wellesley (Planning)

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4.1.4 POSITION WELLESLEY TO SUPPORT INNOVATION AROUND LOW-EMISSION DELIVERY ZONES AND FUTURE MOBILITY AND MICRO-TRANSIT OPTIONS

In 2021, MAPC issued a study on e-commerce and food delivery, "Hidden in Plain Sight - Impacts of E-Commerce in Massachusetts,"[89] to describe a variety of traffic, congestion, pollution, real estate, and equity impacts. While e-commerce only comprises 15% of retail activity and foot traffic to physical stores is growing, consumers are expected to make deliveries a part of procuring products, groceries, and meals. The impacts at the intersection of e-commerce and sustainable mobility are typically viewed as follows:

Long-haul Deliveries
As goods are imported and dispatched across the country, air delivery poses the largest source of carbon, followed by trucking and rail. Air delivery is growing to accommodate one-day delivery.

Regional
Goods are stored and sorted in warehouses, which are typically co-located with highway access points. Goods can be distributed to stores, or processed in a fulfillment center for customer delivery. Climate impacts vary, depending on how full a truck is and vehicle fuel efficiency.

Local
The "last mile" of goods delivery is the most difficult and energy intensive. Historically, last-mile delivery took place when a shopper bought goods in a store. Today, shoppers have numerous ways to obtain goods: (1) in-person shopping, (2) store pick up, (3) locker pick-up, and (4) delivery from the local store. Comparing GHG emissions is complicated and can depend on the types of vehicles involved for shoppers and deliveries, as well as trip distances and the number of trips.

Household Level
Shoppers using e-commerce make decisions that drive carbon. Speed deliveries almost triple GHG emissions,[90] as orders cannot be batched with others (which takes time). Approximately one-third of all online orders are returned, which adds to the carbon footprint of an order. Making purchases one item at a time can result in additional deliveries of individual packages.

Tactics to lower the climate impacts of

STRATEGY NO. 4 (CONT.)

e-commerce include the following:

- Participate in regional activities on logistics, which can include how warehouses and distribution centers are located with respect to data sharing, traffic, congestion and efficiency.

- Establish low-emissions delivery zones in areas of concentrated deliveries. Santa Monica established a voluntary low-emissions zone[91] seeking to replace medium and large trucks with smaller, electric delivery vehicles

- Initiate a campaign through the Climate Action Plan to educate residents and businesses on the carbon footprint of logistics and delivery decisions

- Proactively track and plan for innovations in e-commerce

4.1.5 REVIEW ALL OVERLAY ZONES AND DISTRICTS THROUGH A CLIMATE ACTION & SUSTAINABLE MOBILITY SCREENING PROCESS

Within the zoning code, there are several sections that should be subject to a sustainability and mobility audit:

- Section 5 & 5A (Multifamily District)

- Section 6 and 6A (Limited Residence)

- Section 9 A-C (Planned Development District, Lower Falls and Wellesley Square Commercial Districts)

- Section 10-12 (Business Districts)

- Section 14D - Historic Districts

- Section 14F - Residential Incentive Overlay

- Section 14G - Linden Street Corridor Overlay District

- Section 14J - Smart Growth Overlay Districts

- Section 14J.1 - Wellesley Park Smart Growth Overlay District

- Section 21 - Off Street Parking

While there are examples of smart growth audits, there are none for sustainable mobility per se. **Safe States lists a transit-oriented development checklist[92] that helps assess building, station areas and sites near transit stations.** This checklist can be modified to assess Wellesley's primary redevelopment districts.

Additions can include new site-level and station area mobility options such as pick up and drop off areas, the availability of shared use options, and a review of infrastructure.
A second type of audit is a walkability audit that is conducted on a walk tour of districts or development projects. AARP has developed a Walk Audit Tool Kit[93] and Leader Guide.

STRATEGY NO. 4 (CONT.)

4.2 ACTIVELY MANAGE PARKING

Why?

The provision of parking has been a mainstay in development and planning since the dawn of automobile travel. Over time, standard-setters like the Institute for Transportation Engineers (ITE) promoted the idea of providing more parking than necessary to meet peak periods, namely, the day after Thanksgiving for retail establishments.

Real estate lenders see excess parking as risk reduction for future sales. Neighborhoods call for more parking to keep parked cars off of city streets. The common thread in these positions is the assumption that excess parking comes without negative consequences.

However, excess parking is a hidden, yet powerful, driver of emissions:

- Research conducted in 2016[94] and 2021[95] demonstrated the link between supplying expansive parking and increased driving

- Projects with more on-site parking induce more auto ownership, less transit use, and less walking[96]

- Not including land costs, the median construction cost for a new parking structure in 2021 is $25,700 per space, a 15.8% increase from 2020. This does not include soft costs such as permitting, inspections, and the like, which add 20% to costs[97]

- The land needed to accommodate auto storage and maneuvers increases the distance and difficulty for pedestrians

Cities and towns in the Boston region have been revisiting zoning by-laws and parking requirements for several reasons that include countering the negative impacts listed above. The Boston region's rich network of transit provides convenient and accessible alternatives to driving. Lowering parking ratios in transit oriented developments yields more funds and space for housing and commercial uses.

Another reason to lower parking ratios is that parking is supplied but not used. In 2019, MAPC published a parking utilization study[98] of residential units across the Boston region. While there were no projects surveyed in Wellesley, the Village Falls Condominium project in Newton across I-95 was included. The Condominiums are not along a transit line but are located in a neighborhood with a high WalkScore (80), indicating access to a mix of everyday uses. Zoning required 2 parking units per unit, though the survey found only a 50% utilization rate.

The 2014 Parking Regulations Report[99] prepared for Wellesley contained lists of recommendations to update the parking code related to sustainable mobility, with a summary provided below.

- Establish an intent to maximize use with the least number of spaces necessary

- Consistently monitor public parking occupancy and turnover to achieve a parking availability goal of 15%

- Establish sustainable mobility criteria for off-site parking and use them to evaluate new development and redevelopment through administrative procedures

- Establish minimum and maximum parking by use (note: parking maxima are included in the Smart Growth overlay)

- Provide new standards to manage parking supply efficiently through shared parking, shared access, and internal access and connectivity. Shared parking should be permitted in each district either by right or special permit as an alternative to creating a "parking overlay district" in certain districts

- Consider structured parking for commuter rail (in conjunction with new transit-oriented development)

- Establish a public parking fund dedicated to improvements and multimobility

STRATEGY NO. 4 (CONT.)

> The field of parking demand management is growing as developers realize the costs of excess parking and local governments gain more tools to better manage existing spaces, eliminating the need for expensive structured parking.
> **The following table lists several tactics for this purpose:**

POTENTIAL ON-SITE PARKING REDUCTION METHODS	SAMPLE REGULATORY LANGUAGE (MAY BE BY SPECIAL USE OR CONDITIONAL USE PERMIT)
On-Street Parking Credit	Allow 1 off-street space reduction for every on-street public parking space in front of business.
Off-Site Parking Credit	Reduction (%) if a public or private parking lot with 20+ spaces is within x feet and demonstrated availability and accessibility
Payment to Public Parking Fund	In lieu of off-street parking, town may accept payment made per each space to be used in construction of new public parking spaces
Proximity to Bus Transit	Town may reduce off-street parking by up to x% for commercial and y% for residential if main entrance is within a determined # of feet of bus stop and shelter
Proximity to Rail Transit Station	Town may reduce off-street parking by up to x% for commercial and y% for residential if the station entrance is within ½ mile

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POTENTIAL ON-SITE PARKING REDUCTION METHODS	SAMPLE REGULATORY LANGUAGE (MAY BE BY SPECIAL USE OR CONDITIONAL USE PERMIT)
Car-Sharing Program	Town may reduce off-street parking by x spaces per car-share vehicle (1) where public spaces available to residents or employees within 700 feet or (2) where an amenity car share program is open to tenants.
Carpooling/Vanpooling	Town may reduce off-street parking by x% if applicant institutes and maintains active program
Shuttle Service	Town may reduce off-street parking by x% if applicant institutes and maintains a resident/employee/student shuttle program
Transportation Mitigation Plans (TMP)	Town may approve TMPs for on-going Transportation Mitigation and Operation plan
Curb Cut Reduction and Internal Connectivity	Town may reduce off-street parking if pedestrian safety improvements are designed to reduce the number and width of curb cuts
Public Parking Reserve	In lieu of off-street parking, Town may accept a permanent easement for future public parking lot subject to approval
Private Parking Reserve	In lieu of off-street parking, the town may accept a preserve on site equivalent to the area that parking would have been required. The reserve area must be equal to 300 s.f. per parking space reduced. After one year the town can determine whether a reserve area is needed for additional parking or waived allowed for other uses.

Pt. 2 of 2

STRATEGY NO. 4 (CONT.)

In developing the Unified Plan, Wellesley residents were eager to address a list of issues that included a greater number of sustainable mobility options and parking concerns. The strategies included here need to address both, recognizing that although parking is a hot button issue, different approaches to parking will be needed to achieve the Town's GHG emissions reduction goals.

Within Wellesley, parking is not a monolith. **The breath of parking issues present will require different approaches.** Furthermore, the common perception that more parking is always better and new development will always overwhelm the community with cars will have to be dispelled.

Wellesley will also need to track new technologies that affect the amount and design of parking. Travel apps, such as Google maps, now include parking options and directions, eliminating the additional traffic related to search and circling for parking. Self-parking technology, now a feature in new vehicle models, reduces the amount of space needed per car since cars can park closer together. **While the SMP is mainly focused on non-auto travel, these technologies are important for reducing VMT a**nd alerting the Town of technologies that affect decisions on future parking investments. Parking structures may not be needed if current lots can accommodate more cars.

How?

Actively managing parking entails making the best use of parking spaces you have while simultaneously reducing demand for parking. This strategy begins with educating Wellesley residents and businesses on the link between parking, driving, and climate change. Active management also requires a performance- and data-driven approach that replaces regulatory, prescriptive text. As such, the Town should work with regional partners on building a curbside management and technology pilot.

As with previous studies, shared parking is critical to managing existing parking. Finally, as parking spaces are increasingly determined to be multi-use spaces, the Town should continue to repurpose public parking for commerce, events, and other activities.

4.2.1 INITIATE AN INFORMATION CAMPAIGN ABOUT THE CLIMATE IMPACTS OF PARKING, BEST POLICY PRACTICES, AND ALTERNATIVES

Most **drivers are unaware of the hidden negative impacts of parking**, as well as measures that can successfully manage parking. The bottom line is that more parking makes it easier to drive, especially where parking is free. More surface parking expands the distance that pedestrians need to traverse to reach their destination. Parking permits for non-commuter parking, even with a permit fee, incentivize driving since the parking has already been paid.

There are a variety of best practices for parking that can be implemented in Wellesley over and above those adopted based on the recommendations from the Town's 2014 Parking Study.

4.2.2 ESTABLISH PERFORMANCE-BASED PARKING FOR SUSTAINABLE MOBILITY

The Town's 2014 Parking Study recommended that the Town strive to achieve an 85-90% on-street occupancy rate while leaving some spaces open for incoming motorists. This is an example of a performance-based system, though one that requires careful programming to achieve. In Wellesley, implementation is mainly through observation and enforcement. Larger cities are beginning to use technology to set dynamic parking rates keyed to 85% occupancy. As spaces on a block fill, rates increase.

The performance-based approach focuses less on prescriptive regulations and more on continuous monitoring and adjustment. While relatively new, the concept is gaining traction as a way to adapt to changing conditions and incorporate new technologies.

For sustainable mobility, occupancy is one of many factors that describe parking within a sustainable mobility system tied to climate action. Other factors may include:

- Amenities: Bicycle parking, Electric charging
- Curbside management
- Car-free and car-light districts (which many also be tied to affordability)
- Urban heat island
- Land use cost-effectiveness
- Parking spill-over control
- Enforcement efficiency

Performance-based approaches are made possible by technologies that allow monitoring, reporting, analytics, and predictive capabilities (e.g., sensors, dynamic pricing and real-time information).

4.2.3 CONTINUE SHARED STREETS PROGRAMMING FOR PARKLETS AND OUTDOOR DINING AS WELL AS INFRASTRUCTURE TO SUPPORT LOW-IMPACT TRAVEL MODES

Wellesley took advantage of outdoor dining in Clocktower Park during the COVID-19 pandemic and will likely continue to do so through the COVID-19 recovery and beyond. In 2021, the Town set up two new parklets by repurposing a total of five parking spaces on Washington Street between the Library and Wellesley Square and on Central Street. The town is working on several improvements for aesthetics and pedestrian safety. In Wellesley Square, these spaces are five out of 499 two- and four-hour metered spaces (or 1%).

The concept is so popular statewide that MassDOT is extending the Shared Streets and Spaces Program, with the next round of applications beginning in January 2022. Together with the success of Wellesley's initial parklet program, the Town may want to explore additional options for repurposing on-street parking spaces. Other cities are using spaces for bike parking, parks, and small business display space.

Repurposing parking spaces does not need to be permanent. Several companies specialize in modular infrastructure, including parklets. Dero[100] (Minneapolis, MN) and Architrak[101] (Jessup, MD) sell ready-to-assemble parklet kits. Dezignline[102] (Minneapolis, MN) sells planters that can be used as delineators for bike lanes and parklets. They are designed to be readily moved with a forklift.

4.2.4 MAXIMIZE SHARED PARKING DOWNTOWN

The Unified plan recommended better parking management and options for structured parking in commercial villages. For climate action, managing existing parking is the more assertive action and was a recommendation from the Town's 2014 Parking Study. That said, new parking supply is likely to continue, so updating regulations to achieve multiple benefits, including GHG emissions reductions, is essential.

In the near term, **shared parking strategies can include:**

- Opening publicly owned spaces during non-business hours
- Determining the feasibility of parking overlays for master plans and overlay districts ripe for shared parking
- Set parking criteria should consider: (1) peak demands by business for hour and day, (2) business-to-business cooperation, (3) business-to-institution (e.g., public, church), and (4) valet parking location and management
- Foster the use of new technologies for shared use

STRATEGY NO. 5
OFFER SAFE FACILITIES FOR ALL MODES OF TRAVEL

5.1 INCREASE INTERSECTION & ROADWAY SAFETY

Why?

A transportation network cannot be considered sustainable unless travelers can reach their destinations safely regardless of travel mode.

For bicyclists and pedestrians, safety also extends to the travel experience. If conditions feel hazardous and stressful, it's difficult to get all but the most fearless cyclists and pedestrians to make non-auto trips. The following framework[103] is often used to describe different types of bicyclists based on their comfort level by facility type:

- **Strong and Fearless**
  People willing to bicycle with limited or no bicycle-specific infrastructure (approximately 7% of all cyclists)

- **Enthused and Confident**
  People willing to bicycle if some bicycle-specific infrastructure is in place (approximately 5% of all cyclists)

- **Interested but Concerned**
  People willing to bicycle if high-quality bicycle infrastructure is in place (approximately 51% of all cyclists)

- **No Way, No How**
  People unwilling to bicycle even if high-quality bicycle infrastructure is in place (approximately 37% of all cyclists)

The safety of a given travel mode is affected by both the infrastructure in place and traveler behavior; thus, efforts to increase travel safety should tackle both issues to achieve the best results.

How?

The Town's campaign to increase intersection and roadway safety should start with the adoption of a Vision Zero policy to set the framework by which traffic safety is approached within Wellesley. Then, pedestrian and bicycle crossings, particularly on major traffic corridors, should be assessed and improved given the high proportion of crashes that occur at crossing locations.

Non-motorized school travel can also be encouraged by making walking and biking routes to schools safer. Finally, given that the roads with the highest number of crashes in recent years are owned and operated by MassDOT, annual meetings with the agency should be established to facilitate funding for future safety improvements on those facilities.

5.1.1 ADOPT A VISION ZERO POLICY OF PROACTIVELY REDESIGNING ROADWAYS FOR SAFETY AND SYSTEMATICALLY ADDRESSING THE FACTORS LEADING TO CRASHES

Vision Zero is an internationally recognized program that aims to end traffic-related fatalities and serious injuries by understanding the root causes of crashes and using a systems-based approach to implementing safety measures. Instead of viewing traffic fatalities as inevitable, Vision Zero considers such occurrences to be preventable by taking a **"proactive, preventative approach that prioritizes traffic safety as a public issue"**[104]. The key priorities to a Vision Zero policy include robust community engagement, ensuring equity when prioritizing roadway safety investments, and managing speed through safe street design, automated speed enforcement, and setting safe speed limits.

Both MAPC, which is involved in the Vision Zero Planning Project, and the advocacy group Massachusetts Vision Zero Coalition, have initated Vision Zero implementation in cities that have already adopted policies (Boston, Cambridge, and Somerville), will be valuable resources for the Town in advancing this initiative.

5.1.2 IMPROVE PEDESTRIAN AND BICYCLIST CROSSINGS ALONG WELLESLEY'S MAJOR TRAFFIC CORRIDORS

The ability for a pedestrian or bicyclist to cross a roadway safely is critical, as crashes involving non-motorists are more likely to occur when crossing a roadway than walking alongside it[105]. Thus, increasing safety at both controlled (e.g., at traffic signals or stop signs) and uncontrolled (e.g., mid-block) crossings is a critical part of providing safe facilities for non-motorists. There are several tools available for enhancing the visibility of both the crosswalk and pedestrian/cyclist[106], with the most appropriate countermeasure for a particular location depends on the roadway width, traffic volume, and speed limit:

- **Crosswalk visibility enhancements**
  Common visibility enhancements include high-visibility crosswalk markings, such as ladder or continental striping, adequate nighttime lighting, crosswalk warning signs, and parking restrictions approaching the crosswalk

- **Raised crosswalks**
  Raised crosswalks, which allow pedestrians/bicyclists to cross at grade with the sidewalk, make the non-motorist more prominent in the driver's field of vision and acts as a traffic-calming measure

STRATEGY NO. 5 (CONT.)

- **Pedestrian refuge islands**
Refuge islands are typically installed in the middle of a two-way roadway and provide a location for pedestrians/bicyclists to stop and wait for an oncoming motorist to stop. The minimum width for a pedestrian refuge island is approximately 6 feet

- **Pedestrian hybrid beacons (PHBs)**
PHBs, also known as high-intensity activated crosswalk (HAWK) signals, are pedestrian-activated signals that control vehicular traffic while a pedestrian crosses the street. PHBs are typically used at mid-block crossings where the roadway speed limit is at least 40 mph, but an engineering study should be conducted before installing a PHB to ensure that all criteria for utilizing PHBs are met for the location under consideration

- **Curb extensions**
Curb extensions "extend" the curb line and sidewalk into the street, thus shortening the crossing distance. Curb extensions are often used where parking is present but can be considered for any crossing location. Importantly, curb extensions should not extend into any in-road bicycle facilities

- **Rectangular Rapid Flash Beacons (RRFBs)**
RRFBs are pedestrian-actuated beacons that are used to increase motorist yielding rates at marked crosswalks. They are often used in conjunction with visibility enhancements and pedestrian refuge islands at mid-block crossings when the roadway speed limit is less than 40 mph.

PEDESTRIAN HYBRID BEACON (FHWA)[107]

RECTANGULAR RAPID FLASH BEACON (FHWA)[108]

5.1.3 MAKE SCHOOL WALKING/BIKING ROUTES SAFER

Providing safe, comfortable routes to school is critical for increasing the proportion of school-aged children that walk and bike to school. To this end, a comprehensive initiative to assess and improve walking and biking routes should be performed, including the following:

- Inventory existing infrastructure along school walking & biking routes, including sidewalks, pedestrian curb ramps, and bike facilities, to identify deficiencies, and use that information to replace infrastructure in poor condition and fill in existing gaps to provide continuous, safe facilities
- Evaluate crossing locations along school walking/biking routes and implement appropriate safety improvements, including visibility enhancements, curb extensions, raised crosswalks, or RRFBs
- Organize new safety-oriented events, such as police-led walking and biking to school
- Recruit parents to fill in as crossing guards in the event of staffing shortages
- Implement Safe Routes to School (SRTS) programs at newly constructed schools to receive resources and services that help encourage safe behavior and provide funding for safety-oriented assessments and design efforts

5.1.4 ESTABLISH ANNUAL MEETINGS WITH MASSDOT AND IDENTIFY ADVOCATES FOR WELLESLEY TO FACILITATE FUNDING OPPORTUNITIES

Many of the crashes that have occurred in Wellesley in recent years have been on facilities owned and operated by MassDOT, including Worcester Street (Route 9) and Central Street (Route 135)/Washington Street (Route 16).

The ability of the Town to improve the safety of these corridors is dependent on receiving funding from the State for infrastructure improvements. To facilitate future funding opportunities, **regular coordination with the State in the form of annual meetings should be established,** and advocates for the Town should be identified to ensure that Wellesley's interests are being prioritized.

STRATEGY NO. 5 (CONT.)

5.2 UNDERTAKE EDUCATIONAL EFFORTS TO PROMOTE TRAFFIC SAFETY

Why?

A comprehensive campaign to improve traffic safety must consider not only safety-oriented infrastructure improvements but also traveler behavior. Distracted driving, speeding, and unfamiliarity with new types of infrastructure can all contribute to unsafe travel conditions within Wellesley even if the infrastructure.

In **2020 and 2021, Massachusetts saw an alarming trend[109] of increased speeding**, with traffic citations increasing 81% in 2020 compared to 2019. Furthermore, the number of traffic-related deaths nationwide in 2020 was the highest in more than a decade despite the fact that cars and trucks drove fewer miles during the year due to the COVID-19 pandemic.

A recent survey[110] conducted by Boston.com provides anecdotal evidence that driver behavior has indeed worsened since the COVID-19 pandemic began, with respondents lamenting over other drivers' failure to practice safe driving habits.

"I think people have forgotten how to read traffic signs. When the NO TURN ON RED sign is as big as the sun and people still turn in dangerous intersections (Washington & Beacon intersection in Somerville), we know we're in for a rough summer. With increased bikes and pedestrians, this is a recipe for disaster and way more road accidents."
— Meredith, Somerville[110]

Public awareness campaigns and enforcement remain the main tactics for reducing such dangerous behavior and are critical to providing a safe environment for not only pedestrians and bicyclists but all travelers.

Other campaigns that would be applicable to Wellesley in particular include those aimed at promoting safe bicycle use and increased awareness of the latest bicycle infrastructure to minimize potential conflicts between bicyclists and drivers.

How?

Wellesley can promote traffic safety by undertaking educational campaigns, including renewing the Town's "Bike Rodeo" program to promote safe bike usage by school-aged children and raising awareness of statewide traffic safety campaigns, and can provide opportunities for both bicyclists and drivers to learn more about the latest bicycle infrastructure, such as bike boxes and two-stage turn boxes.

5.2.1 UNDERTAKE EDUCATIONAL CAMPAIGNS TO PROMOTE SAFETY

There are several state traffic safety initiatives that Wellesley can build off of to increase awareness of road safety issues.

- MassDOT recently partnered with Fundación MAPFRE on the Look Both Ways program, which urges drivers to be "aggressively nice" on the road as part of a campaign to reduce road-related injuries and fatalities. Fundación MAPFRE is also planning a "Look Both Ways" Road Tour, which will provide an interactive road safety program to high schools, colleges and public events across Massachusetts and Connecticut
- MassDOT also oversees Drive Sober or Get Pulled Over, which provides grant funding to local police for extra traffic enforcement patrols at high-crash locations
- The Governor's Highway Safety Bureau (GHSB) Click It or Ticket enforcement campaign provides another reason to buckle up (the threat of a traffic ticket) beyond safety. Grants are available through the Executive Office of Public Safety and Security's Office of Grants and Research (OGR) to increase patrols and remind drivers and passengers about how wearing a seat belt saves lives

Additionally, the Town's Bike Rodeo event, which is sponsored by the Wellesley Police Department and was last held in September 2019, should also be renewed to provide bike safety training for children up to 12 years old.

Salt Lake City, Utah
Image Credit: Nacto

5.2.2 PROVIDE OPPORTUNITIES FOR BICYCLISTS AND DRIVERS TO LEARN ABOUT HOW TO USE BICYCLE INFRASTRUCTURE, SUCH AS BIKE BOXES AND TWO-STAGE TURN BOXES

Certain types of bicycle infrastructure being incorporated into Complete Streets projects, such as bike boxes and two-stage turn boxes, may be unfamiliar to both bicyclists and drivers, potentially leading to confusion and unsafe behavior. The Town can reduce the potential for confusion by providing opportunities to learn more about how these types of facilities work. Example educational initiatives include newsletters, flyers, targeted outreach to local school and bicycling groups, and in-person demonstrations with temporary installations.

STRATEGY NO. 6
PROVIDE DIVERSE & ACCESSIBLE MOBILITY OPTIONS

6.1 ACHIEVE COMPLIANCE WITH STATE AND FEDERAL ACCESSIBILITY GUIDELINES

Why?

Wellesley, like many mature communities in Massachusetts, has a considerable amount of public infrastructure that was designed and constructed before modern accessibility standards were put into place. As such, **many of the sidewalks, curb ramps, and traffic signal equipment within the public right-of-way are not compliant with the latest state and federal accessibility guidelines,** including those set forth by the Americans with Disabilities Act (ADA), the Massachusetts Architectural Access Board (MAAB), and the United States Access Board's Public Right-of-Way Accessibility Guidelines (PROWAG).

Compliance with accessibility standards is important for achieving the Town's goal of connecting people to Town destinations and the region. Accessibility standards protect not only those with physical and cognitive disabilities but also nearly all people at some point in their lives, whether it be a parent pushing a baby stroller, a person using crutches after an accident, or an elderly person with reduced mobility.

How?

Wellesley can work toward achieving compliance with state and federal accessibility guidelines by performing a self-evaluation of Town facilities, developing a transition plan for replacing non-compliant infrastructure, and establishing a schedule for replacing pedestrian signals with the latest accessible version.

6.1.1 PERFORM AN ADA SELF-EVALUATION OF ALL TOWN FACILITIES AND DEVELOP A TRANSITION PLAN FOR REPLACING ANY NON-COMPLIANT INFRASTRUCTURE

Under the ADA, s**tate and local government agencies are required to perform a self-evaluation of their facilities to ensure compliance with Title II of the Act,** which deals specifically with state and local government and prohibits them from discriminating against persons with disabilities or from excluding participation in or denying benefits of programs, services or activities.
Types of infrastructure within the public right-of-way that could present barriers include curbs, sidewalks, pedestrian crossings and signals, transit stops, and parking lots.

The end result of the Self-Evaluation is an inventory of facilities within Town for which structural modifications are needed to make the facilities accessible to persons with disabilities.

From the Self-Evaluation, agencies are also required to develop a plan to become compliant, known as a "transition plan". A Transition Plan sets forth the steps necessary to complete the modifications identified through the Self-Evaluation and provides a schedule for completing those modifications.

Wellesley can apply for grant money to complete a Self-Evaluation and/or a Transition Plan through the Massachusetts Office on Disability's Municipal ADA Improvement Grant Program. Furthermore, once those efforts are completed, the Town will be eligible for project grants, which can be used to cover capital-related expenses associated with removing barriers within the public right-of-way, through the same program.

6.1.2 ESTABLISH A SCHEDULE FOR REPLACING PEDESTRIAN SIGNALS WITH THE LATEST ACCESSIBLE VERSION

Accessible pedestrian signals and push buttons (APSs) are devices that communicate information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats to pedestrians who are blind or have poor vision. Although APSs are not currently required under the ADA or MAAB guidelines, they are considered best practice for new construction and when replacing existing equipment under the PROWAG guidelines and MassDOT guidance[113].

After inventorying the traffic signal equipment within Town as part of the Self-Evaluation effort described above, Wellesley can establish a schedule for replacing existing non-APS pedestrian signals with the latest accessible signal equipment in accordance with PROWAG guidelines[114] either as part of an alteration/reconstruction project or following a showing of demonstrated need.

6.2 PROVIDE VIABLE LOW-COST TRANSPORTATION OPTIONS FOR ALL USERS

Why?

Transportation is a significant expense for households in the United States. American households spend an average of $9,826 each on transportation costs annually[115] (16% of household expenditures), representing the second largest household expenditure after housing. However, the relative cost of transportation is not similar across income brackets. **Households in the lowest fifth income bracket spend an average 28.8% of their household expenditures on transportation;** this percentage decreases with increasing income, with transportation representing only 9.5% of total expenditures for households in the top fifth income bracket.

This trend is logical given the high cost and lack of subsidies for personal vehicles. In many suburban communities, including Wellesley, people feel forced to own a personal vehicle given the lack of viable alternative transportation options for many trips, representing a financial burden for those with lower incomes. In this sense, supporting alternative, lower-cost transportation options for all users within Wellesley becomes not only a sustainability issue but also an equity issue.

How?

To provide viable low-cost transportation options for all users, Wellesley should investigate the feasibility of implementing car-share or bike/e-bike share programs at housing developments not near activity centers, work with local bike shops to provide discounted bikes and e-bikes to residents, investigate the feasibility of a loaner program for bikes, e-bikes, and cargo/kid carrier bikes, and establish a pre-tax bike/e-bike purchasing program for municipal employees.

6.2.1 INVESTIGATE METHODS OF IMPROVING THE MOBILITY OF HOUSING DEVELOPMENTS NOT LOCATED NEAR ACTIVITY CENTERS

Several existing and proposed housing developments within Wellesley, including Yarmouth Commons, are located outside of walking distance to the Town's activity centers and commuter rail stations, leaving residents with limited options for accessing their destinations without a personal vehicle. The Town can investigate the feasibility of implementing carshare or bike/e-bike share programs at these developments to provide low-cost, convenient transportation options for residents.

In particular, Good2Go[116] is an electric car share pilot program that focuses on equity. Members are able to rent electric cars on an hourly basis, with reduced rates available for those with certain household income levels and those who participate in economic assistance programs. With maintenance, insurance, roadside assistance, and charging included in the hourly rate, Good2Go represents a cost-effective alternative to car ownership.

6.2.2 WORK WITH LOCAL BIKE SHOPS TO ORGANIZE GROUP PURCHASES OF BIKES AND E-BIKES AT A DISCOUNTED RATE AND PASS ON THESE SAVINGS TO RESIDENTS

Although carshare and bikeshare programs offer convenient access to low-cost transportation, certain households may prefer to own rather than rent for greater convenience or other reasons. However, purchasing a high-quality bike, and particularly an e-bike, at full retail price may represent a financial burden for many households. The Town can work with local bike shops, such as Landry's Bicycles, to organize group purchases of both regular and e-bikes at discounted rates and pass those savings to residents in order to mitigate potential barriers to entry for bike ownership.

6.2.3 INVESTIGATE A LOANER PROGRAM FOR ELECTRIC OR REGULAR BIKES AND CARGO/KID CARRIER BIKES

A loaner program for regular and e-bikes, in addition to cargo/kid carrier bikes, may represent a convenient alternative for those who don't want to commit to purchasing their own equipment. The Town can investigate the potential for establishing a loaner program for different types of bicycles that can be rented out, either at no-cost or for a fee, to residents or visitors for up to a maximum duration.

One example of such an initiative is the City of Punta Gorda, Florida, which established a free bike loaner program through a public-private partnership. Under this program, anyone can rent a bike out for up to a day for free; a driver's license or credit card must be provided at the time of rental to ensure that the equipment is returned.

6.2.4 IMPLEMENT A PILOT PROGRAM FOR MUNICIPAL EMPLOYEES TO PURCHASE BIKES OR E-BIKES PRE-TAX THROUGH THEIR EMPLOYER AND ADVOCATE FOR SIMILAR PROGRAMS WITH LOCAL EMPLOYERS

Another effective method for reducing the upfront cost of bicycle ownership is through employer-sponsored programs to purchase bikes and e-bikes with pre-tax dollars. Such an idea is similar to other commuter benefit packages offered by many employers, through which expenses such as transit passes and parking can be paid for pre-tax.

To advance this initiative, the Town can implement a pilot version of such a program that would be available for municipal employees and, if successful, work with local employers to establish similar programs.

Bike sharing program[117]

STRATEGY NO. 6 (CONT.)

6.3 PROMOTE INDEPENDENT MOBILITY FOR USERS OF ALL AGES

Why?

When seeking to advance the Town's goal of connecting people to Town destinations and the region, it is critical to pay particular attention to those portions of the population that are most vulnerable from a mobility perspective. In particular, a person's age can have a considerable impact on their ability to access destinations in an independent and convenient manner.

How?

Independent mobility for those under the age of 18 and over 65 can be promoted by working with the Council on Aging to increase awareness of the Catch Connect and other shuttles and applying for a used vehicle donation from the MWRTA to help with transporting kids to camp during the summer.

6.3.1 WORK WITH THE COUNCIL ON AGING TO INCREASE AWARENESS OF THE CATCH CONNECT AND OTHER SHUTTLES WITH OLDER RESIDENTS

As an on-demand transit service, the Catch Connect shuttle is a valuable resource for older residents in Town that may not be able to drive or access the fixed transit independently. The Town should work with the Council of Aging to increase awareness of this service, as well as other on-demand shuttles, with older residents in Town that may not yet know about them.

UNDER 18 OR OVER 65

Approximately 40% of Wellesley's population is either under the age of 18 or over 65. Both of these cohorts have a higher likelihood than the general population of being dependent on others to get around, with children being dependent on carpooling, walking, biking, and transit when making trips and older adults often relying on shuttle or transit services or being driven by their spouses/children.

Many of the strategies described in other sections, including boosting microtransit and transit and increasing intersection/roadway safety, will benefit users of all ages, including the cohorts mentioned above. However, some additional actions can be taken to promote the independent mobility of these users in particular.

There are several ways Wellesley can work with the Council of Aging on an awareness campaign for the Catch Connect, such as setting up one-on-one sessions with seniors to provide assistance with (1) loading the app, (2) using the app for the first time, and (3) taking trips. Furthermore, a direct mail campaign with information on Catch Connect and the option to receive personalized instructions may help overcome user apprehension.

6.3.2 APPLY FOR A USED VEHICLE DONATION FROM MWRTA TO HELP TRANSPORT KIDS TO CAMP IN THE SUMMER

The Town can help reduce the dependence of kids on carpooling and being driven by their parents during the summer months by applying for a used vehicle donation from MWRTA. The Town's Youth Commission can help champion this effort in conjunction with the Select Board.
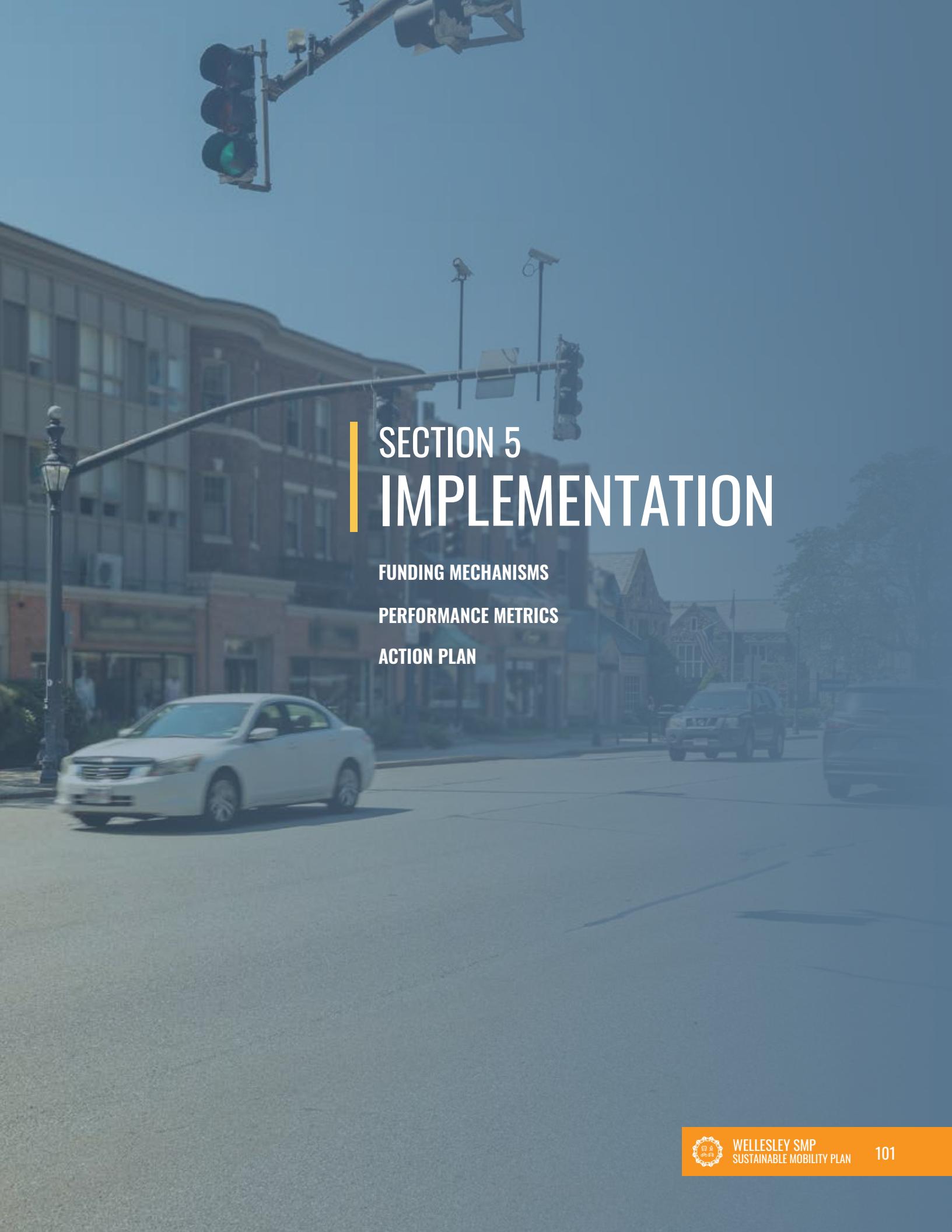
IMPLEMENTATION

This section provides helpful information for implementing the strategies detailed in Section 4, including funding opportunities at the federal, state, regional, and local levels, suggestions for performance metrics that can be used to track progress made once a strategy is implemented, and an action plan matrix detailing the specifics of each strategy.

FUNDING MECHANISMS

Implementation of plans, policies and projects related to sustainable mobility requires funding. This section reviews funding resources available at the federal, state, regional and local levels.

FEDERAL FUNDING

The recently-enacted infrastructure law contains almost $9 billion in direct funding to the state, as well as the chance to compete for additional funds from the USDOT.
Here is a short summary of key programs:

- The bill is divided into two parts: the first is reauthorization of the surface transportation bill that occurs every five years, and the second part represents a one-time allotment (approximately $500 billion) that provides funding over a five-year period. As such, there is a sense of urgency to take advantage of this additional funding

- There are two main types of funding "buckets:" formula and discretionary. Formula funds are apportioned to states and administered through the state DOTs with assistance from MPOs. Formulas are based on a community's population and other factors. To obtain discretionary funds, communities submit applications directly to USDOT, although they often work with

MPOs and partners in developing project proposals

- In preparing an application, communities need to begin a process early to form partnerships and identify matching funds (typically 20% of the project cost)

- Certain program requirements were written into the statue, including details on selection criteria, eligible applicants, eligible projects, and priorities. However, for certain new and expanded programs, USDOT will need to issue guidance. Over the next two years, funding may flow faster for planning, maintenance, existing programs, and projects identified in existing funding lists

With this new transportation legislation, the federal government has elevated sustainable mobility by including climate change, multimodal transportation, safety, and equity within priorities, selection criteria, and application requirements. The following table provides programs that list local governments as eligible applicants or where local governments form partnerships with MPOs and/or the state.

PROGRAM & SECTION IN BIL	ACTIVITIES RELATED TO THE SMP	DETAILS
Sec. 11109 Surface transportation block grant (STBG) program. ($15B by 2026). Also includes Transportation Alternatives (TA) projects	• Traditional walk and bike projects • Trails • Safe Routes to School • Electric charging (new)	ISTBG funds are disbused by MassDOT in coordination with the MPO. To access TA funds, Wellesley will apply through the Boston MPO through a new streamlined process.
Sec. 11111 Highway safety improvement program (i.e. Vision Zero & Complete Streets) (HSIP)	Project design & construction: • Leading pedestrian intervals • Road designs to calm traffic and reduce vehicle speeds • Installation or upgrades of traffic control devices for pedestrians and bicyclists, • Separated pedestrians and bicyclist infrastructure • Pedestrian security feature designed to slow or stop a motor vehicle	HSIP funds are disbursed by MassDOT in coordination with the MPO. The State will need to complete a Vulnerable Road User Safety Assessment within its safety plan. Massachusetts has a greater than 15% crash fatality rate of vulnerable users, and must obligate at least 15 % of highway safety funds to address the safety of vulnerable road users.

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FUNDING MECHANISMS (CONT.)

PROGRAM & SECTION IN BIL	ACTIVITIES RELATED TO THE SMP	DETAILS
Sec. 11119 Safe Routes to School (SRTS). No State shall receive an apportionment under $1,000,000/year; total funding will be based on school enrollment among states.	This section codifies the Safe Routes to School Program and provides set-aside funds Eligible activities: • Planning, design, and construction of infrastructure-related projects including • Sidewalk improvements • Traffic calming and speed reduction • Pedestrian and bicycle crossings • On- and off-street bicycle and pedestrian facilities • Secure bicycle parking facilities • Traffic diversion	Includes infrastructure and non-infrastructure projects such as outreach (which are to be at least 10% but not more than 30%.) SRTS now applies to the programs through 12th grade, so will be opened to High School improvements and bicycle parking. Funding will continue to be administrered through the MA SRTS program.
Sec. 11206/7 Increasing safe and accessible transportation options (planning grants)	• Complete streets standards and policies • Complete streets prioritization plan • Active and mass transportation planning • Regional and mega regional planning • Transit-oriented development (TOD) planning	Available to states and MPOs for creating or updating complete streets-related plans. The statutes lists required elements - and may be an avenue for updating the Town's Complete Streets plan to obtain funding for the Low Stress Network or a 15-minute city plan through a TOD plan Wellesley would work with the MPO to coordinate with plan development.

Pt. 2 of 4

PROGRAM & SECTION IN BIL	ACTIVITIES RELATED TO THE SMP	DETAILS
Sec. 11403 Formula carbon reduction program. ($6.4B)	• A public transportation project • Bicycle and pedestrian facilities • Advanced transportation and congestion management technologies • Street lighting and traffic control device replacement • Transportation Demand Management • Green Freight	States and MPOs will first need to develop a carbon reduction strategy aligned with BIL. In addition to listed eligible activities, Wellesley can also apply for any traditional Surface Transportation Block eligible activity shown to reduce transportation emissions.
Sec. 11405 Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) ($7.3B over five years for formula funding/ $1.4B over five years for competitive grants)	• Resurfacing, restoration, rehabilitation, reconstruction, replacement, improvement, realignment, or relocation, • Natural infrastructure • Upgrades • Flood mitigation • Various stormwater controls • Raising bridges & adding scour controls	This program is applicable to states and MPOs. The bill includes planning grants and capital grants for projects. Wellesley should work with the Boston MPO to see if they are updating resilience plans under the PROTECT grant and pre-position any projects that align with resilience features

Pt. 3 of 4

FUNDING MECHANISMS (CONT.)

PROGRAM & SECTION IN BIL	ACTIVITIES RELATED TO THE SMP	DETAILS
Sec. 11529 Active Transportation Infrastructure Investment Program ($1B over 5 years)	For Planning (no less than $100,000) and Capital (no less than $15M) projects. • Eligible activities • Planning and planning fees • Property acquisition • Site preparation • Expenses related to issuing bonds • Cost of studies (surveys, permits, financing, tax, assessments) • Construction costs, fees, land improvements • Training and education related to bike safety	BIL authorizes this new program, however funds are contingent on annual appropriations. The program's selection considerations prioritizes projects that build out the regional walking and biking network. Communities need to show a commitment to traffic safety, regulations, financial incentives, or community design policies that facilitate significant increases in walking and bicycling. Wellesley can work with the MPO to track this program, funding, and partnerships for competing for regional projects.
Sec. 24112. Safe Streets and Roads for All Grant Program ($1B over 5 years)	Planning for "Vision Zero" planning and activities to carry out strategies and projects • Evaluation criteria for grant applications include: • Likelihood to reduce injuries among all modes • Stakeholder engagement • Innovation • Low-cost/high impact strategies • Equitable investment • Evidence-based projects	Cities are eligible to compete for these funds from USDOT. The program will offer competitive grants to: (1) develop a comprehensive safety action plan; (2)carry out planning and design for projects and strategies identified in the comprehensive safety action plan; or (3) build projects and strategies identified in a comprehensive safety action plan.

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Several programs will fund **electric charging and other alternative fuel infrastructure**. Massachusetts can expect $63 million for deploying electric vehicle recharging infrastructure and $100 million for broadband.

GRANTS FOR CHARGING & FUELING INFRASTRUCTURE
SEC. 11401, $7.5 BILLION TOTAL

These funds are open to states, MPOs, and local governments. Given Wellesley's location along I-95, there could be funds for installing recharging installations on public properties proximate to the highway.

Criteria include whether applications

1. Improve alternative fueling corridor networks,

2. Meet the current/anticipated market for charging or alternative fueling infrastructure,

3. Enable or accelerate construction that would be unlikely to be completed without Federal assistance, and

4. Support a long-term competitive market for alternative fueling and charging infrastructure

FORMULA CARBON REDUCTION PROGRAM
SEC. 11403, $6.4 BILLION TOTAL

This section creates a new formula program to reduce transportation emissions. Funds will be discussed by formula (population) once the state, in consultation with the MPO, develops a carbon reduction strategy. For fleet electrification, eligible projects and activities include advanced truck stop electrification systems, deployment of alternative fuel vehicles, and diesel engine retrofits.

There are also programs that apply to the larger Boston region and may have an impact on travel in and around Wellesley. Overall, Massachusetts can expect $4.2 billion for roadways, $1.1 billion for bridge replacement, and $2.5 billion for public transit.

FUNDING MECHANISMS (CONT.)

LARGE SCALE PROGRAMS

CONGESTION RELIEF PROGRAM
SEC. 11404, DISCRETIONARY
$50 MILLION ANNUALLY FOR FIVE YEARS

This competitive grant is open to states, local governments, and MPOs for projects in large urbanized areas to advance innovative, integrated, and multimodal solutions. The minimum grant award size is $10 million and requires a 20% match.

Eligible projects include 1) deployment and operation of an integrated congestion management system, (2) enforcement of HOV lanes, toll lanes, cordon pricing, congestion pricing and parking pricing, (3) mobility services (commuter buses and vans), and (4) Transportation Demand Management (TDM). These strategies could affect Wellesley regional commuters and are intended to stimulate a mode shift to transit and carpooling.

NATIONAL INFRASTRUCTURE PROJECT ASSISTANCE
SEC. 21201, $10 BILLION OVER 5 YEARS

This section creates a new competitive grant program to support freight-related projects, including roads and bridges, intermodal facilities, grade separation or elimination, intercity passenger rail, public transportation, or a combination of these. This fund is for regional and nationally significant capital projects.

LOCAL AND REGIONAL PROJECT ASSISTANCE
SEC. 21202, $7.5 BILLION OVER 5 YEARS

This section will fund capital investments in surface transportation and will have a significant regional impact. Eligible activities and projects include planning, highway projects, public transportation, passenger and freight rails, and green infrastructure.

BRIDGE PROGRAMS

The act rehabilitate bridges in poor and fair condition. USDOT released the first allotment of a new $1.12 billion progrm in January 2022. The new law also established a 15% set-aside to help localities repair "off-system," or bridges on local roadways. Note local governments, in addition to the state and MPOs, are eligible applicants. Half of the funds are allocated to large (over $50,000,000) projects, while small projects are defined as those costing $2.5 million. USDOT will be developing application templates for developing applications. Evaluation criteria will include information on the project's cost/benefit, safety benefits, resiliency, lowered maintenance, and benefits to non-vehicular and public transportation users. Points are also given to efficiencies and benefits that accrue from bundling several bridge repairs in one project proposal.

According to USDOT, Norfolk County has 12 bridges in "poor" condition and 239 bridges rated in "fair" condition. Two bridges in Wellesley, the crossing at Cliff Road and State Road 9 (Worcester Street) and the crossing at State Road 9 and Washington Street are rated in fair condition. Wellesley may want to confer with the state and MPO on bundling these bridges into a package that includes bicycle and pedestrian improvements.

STATE FUNDING

Massachusetts has a **variety of funding programs that can be used for sustainable mobility**. The state offers the Funding for Community Transportation program[118] with links to state and federal mobility funding resources.

Recently, the state created the Community One Stop for Growth[119], a single application portal and collaborative review process of community and economic development grant programs that make targeted investments.

Funds fall along a development continuum from project projectconcept plans all the way through construction:

- Community Capacity Building (Massachusetts Downtown Initiative (MDI))

- Planning and Zoning (Planning and Zoning Grants, MDI)

- Site Preparation

- Pre-Development and Permitting

- Buildings Underutilized Properties)

- Infrastructure (MassWorks)

- Housing Choice and Rural/Small Town (Housing Choice)

- Additional details are provided within this section.

COMMUNITY PLANNING GRANT PROGRAM

This **new planning program helps communities develop an array of plans**, including Land Use and Master Plans, Small Area Plans, Zoning Review and Updates, or other Strategic Plan types. Grants in this category will likely be $25,000-$75,000. On November 16, 2021, the state announced FY 2022 grant awards[120]; Wellesley can review the award winners to get a sense of awarded projects.

Wellesley may be able to apply in 2022 for a grant[121] to develop the details of a 15-minute city or mobility hub.

EFFICIENCY & REGIONALIZATION GRANT

The purpose of the state's Efficiency and Regionalization (E&R) competitive grant program[122] is to provide financial support for governmental entities interested in implementing regionalization and other efficiency initiatives that allow for long-term local government sustainability. Funds can be spent on multi-jurisdictional efforts or internal efficiency. Examples of previous awards are **multi-jurisdictional net-zero, climate, and transportation for senior citizens**.

The next application period will run from January 10, 2022 through February 10, 2022 at noon. In the future, Wellesley can team with other communities on mobility technology purchases or mobile app development.

FUNDING MECHANISMS (CONT.)

HOUSING CHOICE COMMUNITY CAPITAL GRANTS

In April 2021, Wellesley attained the Housing Choice designation, opening opportunities for new funding programs, including the Housing Choice Community Capital (now a part of the One Stop grant program).

Over the past three years, Massachusetts communities have tapped capital grants to fund infrastructure upgrades. Wellesley can prepare for the FY 2022 application period in spring of 2022.

PARKLAND ACQUISITIONS AND RENOVATIONS FOR COMMUNITIES (PARC) GRANT PROGRAM

The state offers grants[123] for land acquisition for parkland and upgrades to parks. Given the park and trail system's importance in linking neighborhoods and schools, this program may help fund missing connections in the bikeway network. The application period opens each summer.

MASSTRAILS GRANT PROGRAM OVERVIEW

MassTrails plans and helps fund a network of off-road, shared-use pathways and recreational trails. They provide technical assistance, resources, and matching grants that could be useful in applying to federal programs. https://www.mass.gov/welcome-to-masstrails https://www.mass.gov/guides/masstrails-grants

MASSWORKS INFRASTRUCTURE PROGRAM (ONE STOP)

MassWorks is the state's traditional infrastructure program and is now part of One Stop. For the 2021 grant cycle, the state also allowed applicants to submit an expression for feedback prior to a full submission. In addition to meeting state housing goals, the program now includes questions related to alignment with state climate resiliency,mitigation, and adaptation.

MassWorks prioritizes public infrastructure improvements that spur economic and housing development and/or address roadway safety concerns. Moreover, successful projects will be of regional significance, align with the Commonwealth's Sustainable Development Principles, and address the state's preferred portfolio of mixed project types.

On November 16, 2021, the state announced grant recipients124 for the first round of the consolidated One Stop program.

MASSDOT CAPITAL IMPROVEMENT PLAN (CIP)

The State's most recent Capital Improvement Plan includes several new programs that fund sustainable mobility programs through the Transportation Bond Bill signed by Governor Baker in 2021 and included in the 2022 CIP.

Link: https://massdot.maps.arcgis.com/apps/MapJournal/index.html?appid=f6791a6a0d8d44a48c25ec8e8b33f0e5#

2022 TRANSPORTATION BOND BILL (TBB) FUNDS		
Transit Infrastructure Improvements (New)	Program will provide funds through partnerships and/or grants to municipalities to implement transit-supportive infrastructure to improve and facilitate more efficient delivery of transit operations, improve the passenger experience, and enhance transit rider and pedestrian service and safety for both the MBTA and RTA networks ($25M authorized)	These funds are intended to install "Quick Build" or technology improvements such as smart signals.
Local Bottleneck Reductions Program	This program will provide new funding for cities and towns for moderate, cost-effective congestion relief.	These funds are intended to install "Quick Build" or technology improvements such as smart signals.
Public Realm Improvements (aka Shared Streets and Spaces)	Program will continue a successful initiative launched in FY 21 to provide grants for cities and towns to launch or expand improvements to sidewalks, curbs, streets, on-street and off street parking in support of public health, safe mobility, and commerce in their communities ($20M authorized; $4M in 2022)	This program appears in the 2022 CIP as the Shared Streets and Spaces program

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MUNICIPAL ROAD SAFETY (MRS) GRANT PROGRAM

The Office of Grants and Research (OGR) announced the availability of approximately $5,000,000 in National Highway Traffic Safety Administration (NHTSA) grant funding in Federal Fiscal Year 2022 to municipal police departments within the Commonwealth of Massachusetts. This grant is being made available to help reduce roadway crashes, injuries, fatalities, and their associated economic losses in Massachusetts. Open to all Massachusetts municipal local police departments, application periods are typically open in June. Link: https:// www.mass.gov/ service-details/traffic-safety-grants

COMMUNITY COMPACT FY 22 BEST PRACTICES PROGRAM[125]

This grant is a voluntary, mutual agreement entered into between the Baker-Polito Administration and individual cities and towns of the Commonwealth. In a Community Compact, a community will agree to implement at least one best practice from a list of priority areas. The application period typically opens in August and remains open until funding runs out.

FUNDING MECHANISMS (CONT.)

ELECTRIC VEHICLE GRANTS

The US Department of Energy[126] has aggregated electric and alternative fuel funding resources for Massachusetts as presented in the table below. Many of the programs offer funding until the funding pool is exhausted.

PROGRAM	SUMMARY	DETAILS
MassEVIP Public Access Charging Incentives	This program helps property owners and managers with publicly accessible parking acquire electric vehicle (EV) charging stations.	For Government-owned locations: MassDEP funds up to 100% of the hardware and installation costs to a maximum of $50,000 per street address. For all other locations: The agency funds up to 80% of the hardware and installation costs to a maximum of $50,000 per street address.
Multi-Unit Dwelling (MUD) and Educational Campus Electric Vehicle Supply Equipment (EVSE) Grants	Level 1 and 2 charging for campuses and multi-unit dwellings	The Massachusetts Electric Vehicle Incentive Program (MassEVIP) provides grants for 60% of the cost of Level 1 or Level 2 EVSE installed at MUDs and educational campuses, up to $50,000 per street address. Eligible entities include private, public, or non-profit MUDs with five or more residential units, and educational campuses with at least 15 students on campus
Plug-In Electric Vehicle (PEV) Grants for Public Fleets	The Massachusetts Electric Vehicle Incentive Program (MassEVIP) provides grants for the purchase or lease of qualified PEVs and zero emission motorcycles. Applicants (local governments, public universities and colleges, and state agencies) may receive funding for a maximum of 25 vehicles	Incentives for purchase/lease as follows All-electric vehicle (EV) up to$7500 purchase/$5000 lease Plug-in hybrid electric vehicle (PHEV) up to $5000 purchase/$3000 lease ZEV motorcycle up to $750 purchase

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PROGRAM	SUMMARY	DETAILS
Public Access Electric Vehicle Supply Equipment (EVSE) Grants	This program helps property owners and managers with publicly accessible parking acquire electric vehicle (EV) charging stations.	Government-owned locations: MassDEP funds up to 100 % of the hardware and installation costs to a maximum of $50,000 per street address. All other locations: The agency funds up to 80% of the hardware and installation costs to a maximum of $50,000 per street address.
Workplace and Fleet Electric Vehicle Supply Equipment (EVSE) Grants	This program helps employers and fleet operators acquire electric vehicle (EV) charging stations. Applicants with 15 or more employees in non-residential places of business are eligible.	MassDEP provides up to 60 percent of the funding to a maximum of $50,000 per street address for hardware and installation costs.
Plug-In and Zero Emission Vehicle Rebates	Massachusetts Department of Energy Resources' Massachusetts Offers Rebates for Electric Vehicles (MOR-EV) Program offers residents, non-profits, and businesses rebates	MOR-EV offers rebates of up to $2,500 toward the purchase or lease of eligible all-electric and fuel cell electric vehicles and up to $1,500 for the purchase or lease of eligible plug-in hybrid electric vehicles. Eligible non-profit and business fleet vehicles may include rental cars, company cars, and delivery vehicles. Vehicle purchase prices must be below $50,000. Applicants must apply within three months of the vehicle purchase or lease date and must retain ownership of the vehicle for a minimum of 36 months.

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PERFORMANCE METRICS

SUSTAINABLE MOBILITY PERFORMANCE METRICS

Over the past decade, transportation agencies at all levels have been building programs with an eye toward performance. Traditionally, vehicle movement has dominated how performance is characterized.

Today, **the definition of a high-performing transportation system has expanded to include a broader array of goals that include access to destinations, economic indicators, and availability of safe and convenient travel modes**. With growing attention to transportation's contributions to climate change, metrics related to preventing and mitigating are central to describing sustainable mobility.

The resources and lists of indicators and metrics can be extensive and daunting.

Choosing a set of locally relevant metrics and indicators will need to consider:

- Indicators that link to community goals and align with other data collection efforts
    - Community goals, such as sustainability, economic vitality and access
    - Specific performance targets
    - Metrics that are required for other types of planning efforts or compliance (e.g., regional planning)

- A right-sized set of indicators that properly monitors performance

- Data collection methods that are cost-effective, feed into reporting methods, and can be used for other purposes, such as grant applications

- A data strategy that can be executed by staff and stakeholders

- A data plan that identifies when the community should change course if performance metrics are not achieved

There are several sources of data typically used by localities to develop performance-based programs.

OPEN SOURCE DATA

These data sets are available for free to the public. This would include government data sets from USDOT, the state of Massachusetts, regional agencies, transit operators, and data collected within Wellesley. For example, MAPC maintains the DataCommon[127], which includes land use, transportation, and climate data.

PAID SUBSCRIPTIONS

There are data services that offer a la carte and subscription-based data.

COLLECTED

This includes traditional methods, such as field counts (manual, sensors) and a growing array of technologies (LiDAR, cameras).

In 2019, the Boston MPO conducted a study of new and emerging metrics in roadway usage. The report includes the following list of data sources and performance metrics that can apply to this Sustainable Mobility Plan:

DATA SOURCE	ABILITY TO OBTAIN	PROSPECTIVE METRICS RELATED TO WELLESLEY SUSTAINABLE MOBILITY PLAN
MassDOT roadway inventory	Easy	Level of traffic stress Sidewalk presence Bicycle accommodations Annual average daily traffic
MassDOT crash database	Easy	Bicycle crashes Pedestrian crashes
Travel demand and usage	Easy	Transit-miles traveled Truck vehicle-miles traveled Vehicle-miles traveled, Volume-to-capacity ratio
INRIX	Easy (MPO subscription)	Vehicle travel speed Duration of congestion & vehicle delay Travel time and speed indices Multimodal travel time per person Multimodal peak period length
Boston Region MPO signal database	Moderate	Pedestrian signal presence and type
MassDOT ADA Transition Plan	Easy	Pedestrian signal presence and type

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PERFORMANCE METRICS (CONT.)

DATA SOURCE	ABILITY TO OBTAIN	PROSPECTIVE METRICS RELATED TO WELLESLEY SUSTAINABLE MOBILITY PLAN
Functional design reports	Moderate	Duration of pedestrian change interval
MBTA Back on Track website	Easy	Transit On-time performance
MBTA timepoint dataset	Easy (provided to MPO)	Transit vehicles per hour, hours of service per day, transit vehicle speed, transit time index, person-hours of delay, person-hours of delay per bus trip, delay per bus run, and percent of delay during peak periods
Bike parking inventory	Easy	Transit stop bicycle parking
Field collection	Difficult	Multimodal person throughput Bike lane blockage frequency Bicycle facility condition & bike rack counts Sidewalk condition Pedestrian volumes Transit passenger amenities Transit stop weather protection, seating and wayfinding Exposure to congestion and truck volume
Aerial imagery	Moderate	Transit-shed descriptors Bicyclist operating space, facility continuity and proximity to network Driveway conflicts per mile Safe crosswalks per mile (walkway width, crossing length, refuge) Crosswalk and intersection treatment (corner radius, street width) On-street parking Vehicle-pedestrian buffer Transit stop treatment and opportunities

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Based on the data collection survey and interview, the MPO staff recommended 24 performance metrics for evaluating multi-modal transportation facilities

PERFORMANCE METRIC	MODE	DATA SOURCE	IMPORTANCE FOR WELLESLEY MOBILITY PLAN STRATEGY
Bicycle crashes	Bicycle	MassDOT crash database	Extent and location of hazardous conditions
Bicycle facility continuity	Bicycle	Aerial imagery	Quality of the bicycling network
Level of traffic stress	Bicycle	MassDOT roadway inventory	A recommendation in the Unified Plan and the SMP
Bicycle rack presence	Bicycle	Field collection; Bike parking inventory	Supports bike riding and biking to school
Proximity to bike network	Bicycle	Aerial imagery	Describes facilities proximate to the bicycle network
Safe crossing opportunities/safe crosswalks/mile	Pedestrian	Aerial imagery	Quality and safety of pedestrian infrastructure
Sidewalk presence and condition	Pedestrian	MassDOT roadway inventory; Aerial imagery; Field collection;MassDOT ADA Transition Plan	Quality and safety of pedestrian infrastructure
Pedestrian crashes	Pedestrian	MassDOT roadway inventory	Extent and location of hazardous conditions
Vehicle-pedestrian buffer	Pedestrian	Aerial imagery	A measure of safety and perceptions of safety

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PERFORMANCE METRICS (CONT.)

PERFORMANCE METRIC	MODE	DATA SOURCE	IMPORTANCE FOR WELLESLEY MOBILITY PLAN STRATEGY
Transit time index	Transit	MBTA timepoint dataset; INRIX	Provides benchmark for comparing modes
Transit time reliability	Transit	MBTA timepoint dataset	Reliability is one of the important factors for transit patrons
Person hours of delay/ bus trip	Transit	MBTA timepoint dataset; INRIX	Reliability is one of the important factors for transit patrons
Vehicle delay per bus run	Transit	MBTA timepoint dataset	Informs how often buses run in congested conditions.
Load factor/passenger crowding	Transit	MBTA timepoint dataset	May indicate need for service upgrades to meet demand
Safe crossings opportunities at transit stops	Transit	Aerial imagery; Field collection	Quality of the multimodal network
Percentage of truck traffic	Trucks	Field Collection	Tracking for impacts of delivery and e-commerce on local congestion
Vehicle-miles traveled*	Vehicles	INRIX	Wellesley can tell if mode shifts are occurring - and impacts of EV adoption on traffic
Average vehicle delay	Vehicles	INRIX	Congested conditions and need for mode shifts to lower impact modes
Roadway lane density	Multimodal	new	A measure of roadway use and capacity. Allows comparison to transit
Person throughput	Multimodal	new	Captures the value of higher occupancy vehicles by counting people instead of vehicles.

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The following list includes sample metrics commonly used to assess sustainable mobility. **Wellesley should work with state and regional entities, as well as local universities**, to determine (1) existing data sets available to Wellesley, (2) data collection gaps, and (3) the number and type of indicators to track. Wellesley may want to distill the number of performance metrics tracked into a manageable list that can include:

- Metrics tied to mandated data collection and reporting requirements. This may include reporting to the state as both Wellesley and Massachusetts seek net-zero goals by 2050

- "Power metrics" that effectively and efficiently characterize progress on sustainable mobility. For example, the shift in trips from single-occupancy vehicles to active or transit modes is among the most powerful reduction in GHG emissions

- Metrics needed to successfully compete for infrastructure and program funding. For example, addressing vulnerable transportation users is becoming a priority for funding. As such, Wellesley needs to document the need and how a project proposal is likely to solve mobility problems

PERFORMANCE METRICS (CONT.)

Several strategies aim to increase awareness and understanding, which will rely on successful program development, outreach, and education. The list below does not include performance metrics related to programming but rather the outcomes sought.

STRATEGY NO. 1
ENHANCE LOW-IMPACT COMMUTING OPTIONS

STRATEGY	TACTICS	METRICS & SOURCES
1.1 Promote the Use of School Buses	**1.1.1** Initiate an information campaign on the connection between emissions and personal transportation habits **1.1.2** Review alternatives for making bus travel more attractive, such as expanding free bus service, based on public feedback **1.1.3** Leverage Engagement in Safe Routes to School (SRTS) to Update Existing School Traffic Demand Management Programs that Encourage Sustainable Modes of Transportation **1.1.4** Tie Safe Routes to School programs to climate action	**Primary Metric** • Increase in number of students using bus services **Secondary Metric** • Student and parent sentiment surveys on the decision to ride/ not ride the bus to school **Data Sources** • Wellesley Schools(or contractors) • Student & Parent Surveys
1.2 Boost Microtransit, Buses, and Shared Transit	**1.2.1** Continue to support the Catch Connect shuttle and explore ways to expand and improve the service **1.2.2** Raise the profiles of existing shuttle services in Town and expand the customer bases of shuttles **1.2.3** Increase traveler knowledge of how to use Catch Connect and other transit mobile apps **1.2.4**. Increase the availability of shared transportation options, such as Zipcar, carpooling apps, and commercial and residential shuttles **1.2.5** Use catch connect data to provide insights into where enhanced transit may be needed **1.2.6** Establish and maintain a leadership position in MWRTA subcommittees to have a voice at the table and ensure that Wellesley's priorities are advocated for	**Primary Metric** • Number of rides on microtransit services, including MWRTA bus services **Secondary Metrics** • Number of students using microtransit for school and after school activities • Person hours of delay/ bus trip to track bus performance • Rides originating or ending at an educational facility **Sources** • Catchconnect and other microtransit operators (r) • Survey (student) • MBTA timepoint dataset

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STRATEGY	TACTICS	METRICS & SOURCES
1.3 Boost Commuter Rail	**1.3.1** Work with the MBTA to incentivize new riders **1.3.2** Advocate for making at least one Wellesley rail station ADA accessible pending longer-term updates anticipated with station improvements **1.3.3** Advocate for more frequent services at all three commuter rail stations, especially during the off-peak, once the third track is in **1.3.4** Establish and maintain a leadership position in MBTA subcommittees to have a voice at the table and ensure that Wellesley's priorities are advocated for	**Primary Metric** • Overall commuter rail ridership **Secondary Metrics** • Detailed ridership by time of day and origin/destination • ADA improvements by end of 2023 • For any adopted incentives, before and after studies • Percent MBTA budget from commuter rail system **Sources** • MBTA timepoint dataset • Rider surveys
1.4 Work with Major Employers to Support Low-Impact Commuting Options	**1.4.1** Develop strong TDM zoning by-law requirements for larger commercial, mixed-use, and residential redevelopment aimed at reducing single-occupancy vehicle trips and car dependency **1.4.2** Develop local relationships with the local Chamber of Commerce and the 128 Business Council to forge improved planning and TDM programs **1.4.3** Convene regional experts to examine the best mobility technologies for TDM **1.4.4** Reduce the carbon footprint of working from home	**Primary Metric** • Reduced drive-alone rates within participating companies **Secondary Metrics** • Number of employers enrolled in TDM Programs • New program for climate-friendly work from home **Sources** • Employer surveys • 128 Business Council (model TDM programs) expand Wellesley's employer TDM programs, including tracking and reporting methods

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PERFORMANCE METRICS (CONT.)

STRATEGY NO. 2
PRIORITIZE PEDESTRIANS & BICYCLISTS

STRATEGY	TACTICS	METRICS & SOURCES
2.1. Expand the Sidewalk Network	**2.1.1** Close critical gaps in the sidewalk network by constructing sidewalks in new locations and reconstructing sidewalks in poor condition **2.1.2** Re-evaluate sidewalk plowing prioritization **2.1.3** Use quick-build elements to expand pedestrian spaces	**Primary Metric** · Increased number and length of sidewalk segments added **Secondary Metrics** · Number and length of sidewalk segments installed using quick build processes · Length of sidewalk segments added to priority snow plowing schedules **Sources** · Town of Wellesley Department of Public Works · Aerial imagery
2.2. Expand the On-Road Bicycle Network	**2.2.1** Conduct a "low-stress network" study to determine priorities for bicycle infrastructure improvements **2.2.2** Expand the bicycle network within existing rights-of-way by implementing road diets on key corridors with excess pavement **2.2.3** Deploy technology to improve the bicycling experience	**Primary Metric** · Number and length of bike facilities constructed in a low stress network **Secondary Metrics** · Creation of a Low Stress Network plan · Pilot or incentive projects testing bike technologies **Sources** · MassDOT roadway inventory · Aerial imagery · Town of Wellesley Department of Public Works · MAPC · Trailmap Database

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STRATEGY	TACTICS	METRICS & SOURCES
2.3. Improve the Safety and Connectivity of the Trails Network	**2.3.1** Install improvements at trail road crossings to improve pedestrian and bicyclist safety **2.3.2** Fill key gaps in the trails network **2.3.3** Establish a liaison at the Department of Conservation and Recreation to help advocate for Town priorities	**Primary Metric** · Crash reports on trails **Secondary metrics** · New trail links · New liaison with the Department of Conservation and Recreation **Sources** · MAPC Trailmap Database · MassDOT roadway inventory · Town of Wellesley Department of Public Works · Trails committee input
2.4. Develop a "Culture of Walking and Biking"	**2.4.1** Promote bicycle and pedestrian activity in activity centers by implementing periodic pedestrian-only days on key retail/commercial streets and promoting retail/commercial uses in activity centers that serve as gathering spots **2.4.2** Support and increase visibility of "Bike to Work"/"Walk to Work" and "Walk to School"/"Bike to School" days and add local biking events **2.4.3** Install sheltered secure bicycle parking at commuter rail stations, multi-family housing units, affordable housing units, and middle and high schools to facilitate bicycle usage	**Primary Metric** · Share of overall trips taken by bicycle **Secondary Metrics** · Number of bike events and related activities throughout the year · Number of "Open Streets" events · Number of bike facilities installed **Sources** · Travel surveys (Census, surveys) · Town of Wellesley (Recreation, Public works) · Data collection

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PERFORMANCE METRICS (CONT.)

ACCELERATE THE REDUCTION OF VEHICLE GHG EMISSIONS

STRATEGY	TACTICS	METRICS & SOURCES
3.1. Accelerate the Shift to Electric Vehicles	**3.1.1** Explore and implement incentives for electric vehicle adoption **3.1.2** Educate residents and municipal employees about the benefits of buying and driving electric vehicles, including federal and state grant opportunities and operating cost savings **3.1.3** Update the municipal Fuel Efficient Vehicle Policy to accelerate the transition to electric vehicles **3.1.4** Support electric vehicle charging in residential, commercial, and multi-home developments **3.1.5** Establish an EV charging working group	**Primary Metrics** · Percentage of EV car sales and leases as part of overall car sales · Share of municipal vehicle fleet using alternative fuel · Number of charging facilities for electric vehicles per 1,000 residents **Secondary Metrics** · Percentage of charging infrastructure present in multi-family homes and on private property · Creation of Wellesley EV working group · Number of grants awarded for electric **recharging infrastructure** **Sources** · Electric vehicle data (MOR-EV data set searchable by zip code to track rebates). · Field collection · Town of Wellesley (fleet)

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STRATEGY	TACTICS	METRICS & SOURCES
3.2. Promote Low-Impact Transportation Options	**3.2.1** Evaluate a potential pilot program for docked, shared electric bikes and/or electric scooters at commuter rail stations, affordable housing units, and middle and high schools **3.2.2** Install sheltered, secure parking at key locations to facilitate bike, electric-bike, and/or electric scooter usage	Primary Metrics: · Greenhouse gas reporting metrics · Vehicle miles traveled (auto) · Share all trips by bicycling, walking, and transit Secondary Metrics · Initial - Creation of an e-bikeshare system · Usage of e-bikeshare system · Secure parking and recharding for e-bikes Sources · Bicycle and pedestrian counts · Mode shift from SOV auto to other modes · INRIX · Travel demand and usage · Field data
3.3. Educate about Low- and No-Emission Transportation Options	**3.3.1** Promote federal tax credits and MA state rebates **3.3.2** Actively promote zero-carbon mobility for commuting to school and work **3.3.3** Reduce community-wide vehicle idling through education and ticketing **3.3.4** Research state and federal funding for electric school transportation and vehicle-to-grid battery storage technology and share with Wellesley Public Schools and school transportation vendors to facilitate the migration to electric vehicles	See Above

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PERFORMANCE METRICS (CONT.)

STRATEGY NO. 4
PROMOTE SMART GROWTH

STRATEGY	TACTICS	METRICS & SOURCES
4.1. Implement Smart Growth Policies	**4.1.1** Increase the number of Town residents who live within a 15-20 minute walk of most basic needs by 2030 **4.1.2** Review zoning bylaws to further incentivize mixed-use development and promote compact development designs in activity centers **4.1.3** Add Vehicle MIles Traveled (VMT), Multimodal Level of Service (MLOS), and other measures as the criteria used to assess new developments and infrastructure projects **4 1.4** Position Wellesley to support innovation around low-emission delivery zones and future mobility and micro-transit options **4.1.5** Review all overlay zones and districts through a climate action and sustainable mobility screening process	**Primary Metrics** • Number of one and zero car households • Number of households and jobs located in defined walkable and transit oriented neighborhoods **Secondary Metrics** • Number of households within 15-20 minute walk of most needs • Percent packages delivered using low carbon methods **Sources** • Town of Wellesley (Planning, GIS) • Travel demand and usage • INRIX • Walkscore
4.2. Actively Manage Parking	**4.2.1** Initiate an information campaign about the climate impacts of parking, best policy practices, and alternatives **4.2.2** Establish performance-based parking for sustainable mobility **4.2.4** Maximize shared parking downtown	**Primary Metrics** • Number of new parking space construction avoided • Vehicle ownership within one mile of commuter rail stations **Secondary Metrics** • Adoption of sustainable parking provisions within the Wellesley zoning code • Amount of block face, on-street parking occupancy (the target is 80%) • Number new shared parking space agreements • Number of complaints from drivers and business owners **Sources** • Field collection (parking counts, business interviews) • Town of Wellesley (developer applications) • MAPC data common

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OFFER FACILITIES FOR ALL MODES OF TRAVEL

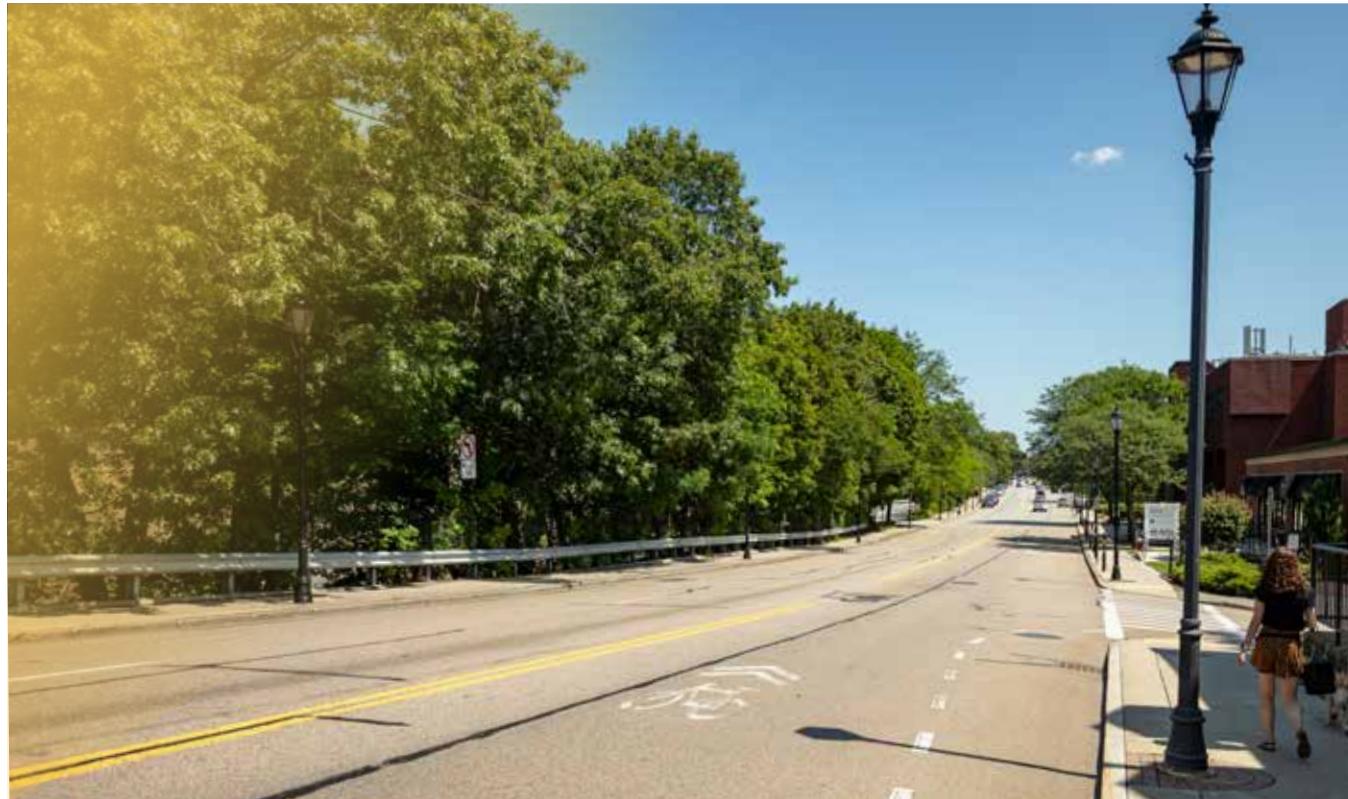| STRATEGY	TACTICS	METRICS & SOURCES
5.1. Increase Intersection and Roadway Safety	**5.1.1** Adopt a Vision Zero policy of proactively redesigning roadways for safety and systematically addressing the factors leading to crashes, in particular for vulnerable road users **5.1.2** Improve pedestrian and bicyclist crossings along Wellesley's major traffic corridors **5.1.3** Make school walking/biking routes safer **5.1.4** Establish annual meetings with MassDOT and identify advocates for Wellesley to facilitate funding opportunities	**Primary Metric** · Crash data (all modes) **Secondary Metrics** · Creation of a Vision Zero plan · Near misses · Number of new protected crossings · New funding for traffic safety projects related to vulnerable road users **Sources** · Wellesley Police Department; · MassDOT crash database · Crowdsourced data · Field data collection · Surveys
5.2. Undertake Educational Efforts to Promote Traffic Safety	**5.2.1** Undertake educational campaigns to promote safety **5.2.2** Provide opportunities for bicyclists and drivers to learn about how to use bicycle infrastructure, such as bike boxes and two-stage turn boxes	**Primary Metric** · Reduction of incidents in high risk areas for pedestrians and bicyclists **Secondary Metric** · Number (events and participants) of new traffic safety training **Sources** · Wellesley Police Department · MassDOT crash database

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PERFORMANCE METRICS (CONT.)

STRATEGY NO. 6
PROVIDE DIVERSE & ACCESSIBLE MOBILITY OPTIONS

STRATEGY	TACTICS	METRICS & SOURCES
6.1. Achieve Compliance with State and Federal Accessibility Guidelines	**6.1.1** Perform an ADA self-evaluation of all Town facilities and develop a transition plan for replacing any non-compliant infrastructure **6.1.2** Establish a schedule for replacing pedestrian signals with the latest accessible version	Primary Metric • Number of ADA compliant curbs added or repaired Secondary Metric • Completion of an ADA walk or roll audit • Number of upgraded pedestrian signal projects Sources • ADA walk audit • Town of Wellesley (Public Works) • MassDOT ADA Transition Plan

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STRATEGY	TACTICS	METRICS & SOURCES
6.2. Provide Viable Low-Cost Transportation Options for All Users	**6.2.1** Investigate methods of improving the mobility of housing developments not located near activity centers **6.2.2** Work with local bike shops to organize group purchases of bikes and e-bikes at a discounted rate and pass on these savings to residents **6.2.3** Investigate a loaner program for electric or regular bikes and cargo/kid carrier bikes **6.2.4** Implement a pilot program for municipal employees to purchase bikes or e-bikes pre-tax through their employer and advocate for similar programs with local employers	Primary metric · Availability of affordable, safe and convenient non-automobile modes located in neighborhoods and residential areas who do not own or have access to an automobile. Secondary Metrics · Number of vulnerable users who report satisfaction with mobility options · Creation of an e-bike strategy covering outreach and incentives for owned and shared e-bikes · Usage of reduced transit passes Sources · MWRTA · MBTA · Rider surveys
6.3. Promote Independent Mobility for Users of All Ages	**6.3.1** Work with the Council on Aging to increase awareness of the Catch Connect and other shuttles with older residents **6.3.2** Apply for a used vehicle donation from MWRTA to help transport kids to camp in the summer	Primary Metric · Increase in ridership within target user groups (senior citizens, students) Secondary Metrics · Wait times for on-demand service · Cost per rider · Successful acquisition of new vehicles for students and campers Sources · MWRTA · Council on Aging · MBTA timepoint dataset

Pt. 2 of 2

PERFORMANCE METRICS (CONT.)

METRICS FOR THE 15-MINUTE CITY

Success arises when residents and workers have non-automobile access to a wide array of everyday uses.

The ideal use mix is typically determined at the neighborhood level described by a 15-minute walkshed and bikeshed. **The 15-minute walk is typically set at ¾ mile, and a 15-minute bike ride covers three miles. The 15-minute city includes many factors used for walkable communities, such as accessibility and diversity of uses.** However, 15-minute success is also described by geographic proximity and localization of key destinations, such as work, schools, social services, and commercial services.

In an ideal situation, workers would choose housing within a 15-minute walk or bike ride. This is unlikely given the employment dynamics within the larger Boston region. However, Wellesley does have an impressive share of workers who walk to work (13%), and the COVID trend of work-from-home could remain post-pandemic as a permanent feature or for a portion of the work week.

Because the 15-minute city is a relatively new concept, the information on metrics is not as robust as for similar planning concepts, such as transit oriented development. A few important points regarding metrics:

- Most time or distance-based planning concepts focus on public-sector levers, such as zoning code changes, financial or process incentives, and infrastructure. The success of the 15-minute city relies on attracting uses usually left to the private sector. As such, the levers for success are different from traditional approaches

- Most commercial real estate investors and business owners examine the potential market through key metrics. In suburban areas, nearby automobile traffic is a main factor, while in the 15-minute city, the number of local rooftops (housing units and family size) is important. As such, areas with compact development and a use mix of common destinations are typically viewed as better candidates.

A literature review[128] reveals several guiding principles and corresponding metrics for creating and monitoring the success of a 15-minute city:

GUIDING PRINCIPLES	DESCRIPTION	METRICS (APPLY WITHIN A 15-MINUTE CITY BOUNDARY)
Proximity	Proximity of neighborhood-relevant destinations that can include health care, jobs, services, education, etc Where transit stations are present, proximity can focus on the intensity of uses proximate to the station entrance	Average walk distance to grocery store Density/FAR within ¼ mile of transit stations
Use Mix	Within the 15 minute city boundary, the diversity and number of important destinations and services	Note: This is highly dependent on local conditions and needs, though usually includes # housing units # jobs
Accessibility, Inclusion & Connectivity	The ability to travel between destinations safely, comfortably, and conveniently by walking, biking, and transit	# Sidewalk gaps # High crash intersections # Bicycle network gaps Walkscore rating Housing/income ratio
Multi Mobility	The number and type of methods for traveling	# Zero or one car households Walk and bike mode share: work Walk and bike mode share: non-commuting walk and bike mode share: schools # & ridership diversity on Catch Connect
Adaptability & Flexibility	The ability to readily change spaces and infrastructure to enhance the offerings within the boundaries	# Buildings under Form Based Codes # Food trucks or similar mobile businesses
Intensity	The number of people, workplaces, housing units, and options	#/density/FAR of neighborhood centers # smaller neighborhood commercial & service hubs density of critical service providers (government, safety, health)

Pt. 1 of 1

ACTION PLAN

> Strategies to provide a variety of options for getting to destinations, particularly reviewing Wellesley's challenging north/south connections through Town, while reflecting a reduction in driving and strengthening low-impact modes of transport.

	TIMEFRAME			EVALUATION CRITERIA			
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region	
1. ENHANCE LOW-IMPACT COMMUTING OPTIONS							
1.1 Promote the Use of School Buses							
1.1.1 Initiate an education campaign on the connection between emissions and personal transportation habits	X			HIGH	MEDIUM	LOW	
1.1.2 Review alternatives for making bus travel more attractive, such as expanding free bus service, based on public feedback	X			MEDIUM	HIGH	MEDIUM	
1.1.3 Update existing school traffic demand management programs to further discourage single-passenger drop-off/pick-up		X		HIGH	MEDIUM	LOW	
1.1.4 Tie Safe Routes to School programs to climate action		X		HIGH	MEDIUM	LOW	

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
CAC/SB/SC	$		No. of Welleslyans who consumed information on sustainable mobility	Surveys, Focus Groups	Effectiveness of educational campaigns, message effectiveness/ focus group
CAC/SC	$				
CAC/SC	$	Safe Routes to Schools	Number of students residing within one mile of schools who walk or bike; number of students using transit services		
CAC, SC	N/A	Safe Routes to Schools	No. of shared activities	Town of Wellesley; state	Track climate outreach activities

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA		
	SHORT <2 Years	**MEDIUM** 2-10 Years	**LONG** 10+ Years	**REDUCE** Greenhouse Gas Emissions	**EXPAND** Sustainable Modes of Transportation	**CONNECT** People to Town Destinations and the Region
1.2 Boost Microtransit, Buses & Shared Transit						
1.2.1 Continue to support the Catch Connect shuttle and explore ways to expand and improve the service	X	X		MEDIUM	HIGH	HIGH
1.2.2 Raise the profiles of existing shuttle services in Town and expand the customer bases of shuttles	X			MEDIUM	HIGH	HIGH
1.2.3 Increase traveler knowledge of how to use CatchConnect and other transit mobile apps	X			MEDIUM	HIGH	HIGH
1.2.4 Increase the availability of shared transportation options, such as Zipcar, carpooling apps, and commercial and residential shuttles		X		MEDIUM	HIGH	HIGH
1.2.5 Analyze CatchConnect data to ascertain where enhanced transit is needed		X		MEDIUM	HIGH	HIGH
1.2.6 Establish and maintain a leadership position in MWRTA subcommittees to have a voice at the table and ensure that Wellesley's priorities are advocated for		X		MEDIUM	HIGH	HIGH

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
MC/SB/PB	$	MWRTA, MAPC	No. of Welleslyans who consumed information on CatchConnect	Surveys, Focus Groups	Effectiveness of educational campaigns, message effectiveness/ focus group
MC/SB/PB	N/A		See above		
MC, SB, PB		Chamber of Commerce, 128 Business Council, Colleges	No. of and type of outreach activities	Follow up surveys	Track effectiveness (group versus one-on-one)
MC/SB/PB		Chamber of Commerce, 128 Business Council, Colleges			
MC, SB, PB	N/A	MWRTA, MAPC, MBTA	No. of times analytics leads to service improvement	Town of Wellesley, MWRTA	Track use and expansion of microtransit
SB	N/A	MWRTA	Positions on leading committees	Town of Wellesley, MWRTA	

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA		
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region
1.3 Boost Commuter Rail						
1.3.1 Work with the MBTA to incentivize new riders	X			HIGH	HIGH	MEDIUM
1.3.2 Advocate for making at least one Wellesley rail station ADA accessible pending longer-term updates anticipated with station improvements	X			LOW	MEDIUM	MEDIUM
1.3.3 Advocate for more frequent services at all three commuter rail stations, especially during the off-peak, once the third track is in		X		MEDIUM	HIGH	HIGH
1.3.4 Establish and maintain a leadership position in MBTA subcommittees to have a voice at the table and ensure that Wellesley's priorities are advocated for.	X			LOW	MEDIUM	HIGH

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
SB/PB	$	MBTA	No. of Meetings with MBTA, Share of transit trips	Town of Wellesley, MBTA, rider surveys	Develop and track messaging for attracting riders
SB/PB	$$	MBTA, FTA	ADA upgrades and related timetable	MBTA	To assist in advocacy
SB/PB	N/A	MBTA	Service and timetable improvements	MBTA	To assist in advocacy
SB	N/A	MBTA	Positions on leading committees	Town of Wellesley, MBTA	

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA		
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region
1.4 Work with Major Employers to Support Low-Impact Commuting Options						
1.4.1 Develop strong TDM zoning by-law requirements for larger commercial, mixed-use, and residential redevelopment aimed at reducing single-occupancy vehicle trips and car dependency		X		HIGH	HIGH	HIGH
1.4.2 Develop local relationships with local Chamber of Commerce, and the 128 Business Council to forge improved planning and TDM programs	X			MEDIUM	MEDIUM	MEDIUM
1.4.3 Convene regional experts to examine the best mobility technologies for TDM	X			MEDIUM	MEDIUM	MEDIUM
1.4.4 Reduce the carbon footprint of working from home	X			HIGH	LOW	LOW

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
SB, CAC	N/A	MAPC	Updated TDM manual, zoning change (or other impactful changes); non-auto trips to and from mixed use developments	Town of Wellesley, surveys (commercial developers, tenants)	Develop and track messaging for SOV trip substitution
SB, CAC	N/A	MAPC	No. of meetings with local Chamber of Commerce, and the 128 Business Council, # expanded transportation services across Town lines	Town of Wellesley, Chamber of Commerce and the 128 Business Council	Inform successful programs for regional transit and transit access
SB, CAC	N/A	MAPC/MPO			
SB, CAC	N/A	MAPC	TBD		

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA			
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region	
2. PRIORITIZE PEDESTRIANS & BICYCLISTS							
2.1 Expand the Sidewalk Network							
2.1.1 Close critical gaps in the sidewalk network by constructing sidewalks in new locations and reconstructing sidewalks in poor condition		X		MEDIUM	HIGH	HIGH	
2.1.2 Re-evaluate sidewalk plowing prioritization	X			LOW	MEDIUM	MEDIUM	
2.1.3 Use quick-build elements to expand pedestrian spaces	X			LOW	MEDIUM	LOW	
2.2 Expand the On-Road Bicycle Network							
2.2.1 Conduct a "low-stress network" study to determine priorities for bicycle infrastructure improvements	X	X		MEDIUM	HIGH	HIGH	
2.2.2 Expand the bicycle network within existing rights-of-way by implementing road diets on key corridors with excess pavement		X	X	MEDIUM	HIGH	HIGH	
2.2.3 Deploy technology to improve the bicycling experience	X			LOW	MEDIUM	MEDIUM	

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
SB/BPW/TC	$$	MassDOT	Segments within 1 mile of schools, transit stops, activity centers		
BPW/SC	N/A	MASSDOT			
SB/BPW/TC	$	MAPC, MASSDOT			
SB/BPW/TC	$$	MAPC	Boston MPO: Level of Traffic Stress	Field collection, MassDOT roadway inventory (state roads)	Determine low stress network. Use to track changes to low stress network over time
SB/BPW/TC	$$$	MASSDOT	Miles of on-road bike lanes, Connectivity of on-road lane segments, Origin-Destination (O-D) for bicyclists		
SB	$	MAPC			

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA		
	SHORT <2 Years	**MEDIUM** 2-10 Years	**LONG** 10+ Years	**REDUCE** Greenhouse Gas Emissions	**EXPAND** Sustainable Modes of Transportation	**CONNECT** People to Town Destinations and the Region
2.3 Improve the Safety & Connectivity of the Trails Network						
2.3.1 Install improvements at trail road crossings to improve pedestrian and bicyclist safety	X			LOW	HIGH	HIGH
2.3.2 Fill key gaps in the trails network		X		LOW	HIGH	MEDIUM
2.3.3 Establish a liaison at the Department of Conservation and Recreation to help advocate for Town priorities		X		MEDIUM	HIGH	HIGH
2.4 Develop a "Culture of Biking and Walking"						
2.4.1 Promote bicycle and pedestrian activity in activity centers by implementing periodic pedestrian-only days on key retail/commercial streets and promoting retail/commercial uses in activity centers that serve as a gathering spots	X			MEDIUM	HIGH	LOW
2.4.2 Support and increase visibility of "Bike to Work"/"Walk to Work" and "Walk to School Days"/"Bike to School Days" and add local biking events	X			MEDIUM	HIGH	LOW
2.4.3 Install sheltered secure bicycle parking at commuter rail stations, multi-family housing units, affordable housing units, and middle and high schools to facilitate bike usage	X			MEDIUM	MEDIUM	MEDIUM

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
SB/TC/Trails	$	MASSDOT	No. and location of trail crossing improvements	Town of Wellesley; state	Track the pace of trail network improvements
SB/TC/Trails/ NRC	$$	MASSDOT	No. and location of trail improvements	Town of Wellesley; state	Track the pace of trail network improvements
SB/Trails/NRC	N/A	MAPC, DCR	No. of engagements with DCR	Town of Wellesley; DCR	
SB/CAC	$	MAPC	No. of open streets events, attendance, repeat attendees, increased cycling	Town of Wellesley, surveys of attendees and business community	Track whether/how open streets events increase cycling trips; Track benefits of open streets events
SB/CAC/SC/ WPD/NFP Partners	N/A	MAPC, Safe Routes to SChool	No. of bike to/Walk to School and Work day events; attendance at events, increased walking and cycling		
SB/PB/ZBA/ SC	$	MAPC	No. of new secure bike facilities per location type; usage	Town of Wellesley, field data collection	Track the number and usage of facilities

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA			
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region	
3. ACCELERATE REDUCTION IN VEHICLE GHG EMISSIONS							
3.1 Accelerate the Shift to Electric Vehicles							
3.1.1 Explore and implement incentives for electric vehicle adoption		X		HIGH	LOW	LOW	
3.1.2 Educate residents and municipal employees about the benefits of buying and driving electric vehicles, including federal and state grant opportunities and operating cost savings		X		HIGH	LOW	LOW	
3.1.3 Update the municipal Fuel Efficient Vehicle Policy to accelerate the transition to electric vehicles	X			HIGH	LOW	LOW	
3.1.4 Support electric vehicle charging in residential, commercial and multi-home developments		X		HIGH	LOW	LOW	
3.1.5 Establish an EV Charging Working Group	X			HIGH	MEDIUM	HIGH	

| ADDITIONAL CONSIDERATIONS | | | INDICATORS / PERFORMANCE METRICS | | |
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
CAC/MLP	$	Energy New England	Rebates	State	effectiveness of rebate program
		Energy New England	Percentage of residents with electric vehicles	Town of Wellesley	Town of Wellesley
CAC/SB/BPW/SC	N/A	Energy New England	Percentage of municipal vehicle fleet using alternative fuels	Town of Wellesley	Track purchases to meet goal
CAC/PB	$$	Energy New England	Number of charging facilities for electric vehicles	New development (site plans); Retrofits (survey)	Accessibility to EV charging (more difficult in MF than SF homes)
CAC, Traffic Committee, SB, SC	$				

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA			
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region	
3.2 Promote Low-Impact Transportation Options							
3.2.1 Evaluate a potential pilot program for docked, shared electric bikes and or electric scooters at commuter rail stations, affordable housing units, and middle and high schools	X			MEDIUM	HIGH	HIGH	
3.2.3 Install sheltered, secure parking at key locations to facilitate bike, electric bike, and/or electric scooter usage		X		MEDIUM	HIGH	HIGH	
3.3 Educate about Low- or No-Emission Transportation Options							
3.3.1 Promote federal tax credits and MA state rebates	X			HIGH	LOW	LOW	
3.3.2 Actively promote zero-carbon mobility for commuting to school and work	X			HIGH	LOW	LOW	
3.3.3 Reduce community wide vehicle idling through education and ticketing	X			HIGH	MEDIUM	LOW	
3.3.4 Research state and federal funding for electric school transportation and vehicle-to-grid battery storage technology and share with Wellesley Public Schools and school transportation vendors to facilitate the migration to electric vehicles	X			HIGH	MEDIUM	LOW	

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
SB/PB/BPW/ CAC	$		Ridership; trip substituion	Micromobility company data; rider surveys	Track GHG reductionrelated to reduced car trip
SB/BPW/TC/ PB	$$		Number/map of publicly available charging	Property surveys, Micromobility companies	Track Micromobility installations (# vehicles, location)
CAC	N/A	Energy New England	Rebates, tax credits	State	effectiveness of rebate and tax programs
CAC/SB/WPS	N/A		Self-reported trip substitution (miles)	Household travel survey	Track car miles avoided
CAC	N/A	Energy New England	No. of Welleslyans who consumed information on sustainable mobility	Surveys, Focus Groups	Effectiveness of educational campaigns, message effectiveness/ focus group
CAC	N/A				

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA			
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region	
4. PROMOTE SMART GROWTH							
4.1 Implement Smart Growth Policies							
4.1.1 Increase the number of Town residents who live within a 15-20 minute walk of most basic needs by 2030			X	HIGH	HIGH	HIGH	
4.1.2 Review zoning bylaws to further incentivize mixed-use development and promote compact development designs in activity centers		X	X	HIGH	HIGH	HIGH	
4.1.3 Add Vehicle Miles Travelled (VMT), Multimodal Level of Service (MLOS), and other measures as the criteria used to assess new developments and infrastructure projects	X			MEDIUM	HIGH	MEDIUM	
4.1.4 Position Wellesley to support innovation around low-emission delivery zones and future mobility and micro-transit options		X		HIGH	HIGH	MEDIUM	
4.1.5 Review all overlay zones and districts through a climate action and sustainable mobility screening process		X		HIGH	HIGH	MEDIUM	

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
PB/SB/CAC	N/A	MAPC	Percent of residents with access to basic services by walking, biking or transit	Town of Wellesley - GIS data layers of housing and key destinations	Track number and location of housing not located near everyday needs
PB/SB	N/A	MAPC	No. and type of incentive packages; usage	Town of Wellesley, state	Track utility of incentives and effectiveness for attracting meaningful use mix for lowering travel-related GHG
PB/CAC	N/A	MAPC	No. of times alternative development approval criteria used during site plan review an approval; comparison of traditional measures versus new measures for effectively tracking GHG	Boston MPO: Vehicle Miles Traveled, MAPC, state; field collection	To institute better methods for evaluating development impact and assessing site plan conditions or developer concessions
CAC/PB	N/A	MAPC	No. of low emission delivery vehicles in the logistics fleets; smaller low emissions vehilces	delivery company data, surveys	Track reduction in GHG related to delivery and logistics
CAC, PB	N/A	MAPC	Development of audit tool; no. of audits; no. ofoverlay zone recommendations and changes for GHG reduction	Audit tool	Update overlay zones to add GHG reduction

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA		
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region
4.2 Actively Manage Parking						
4.2.1 Initiate an information campaign about the impacts of parking, best policy practices, and alternatives	X			MEDIUM	LOW	LOW
4.2.2 Establish performance-based parking for sustainable mobility	X	X		MEDIUM	MEDIUM	LOW
4.2.3 Continue Shared Streets programming for parklets and outdoor dining as well as infrastructure to support low-impact travel modes	X			LOW	MEDIUM	LOW
4.2.4 Maximize shared parking downtown		X		LOW	MEDIUM	LOW

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
SB/TC/CAC/PB	$	MAPC	No. of Welleslyans who consumed information on parking and GHG; # times citizens mention parking as a GHG reduction strategy	Town of Wellesley, Surveys, Focus Groups	Effectiveness of educational campaigns, message effectiveness/ focus group
SB/TC	$	MAPC	No. of plan and code parking recommendations/ changes	Town of Wellesley, MAPC	MAPC has a "Perfect Fit Parking" program that can be used in Wellesley
SB/TC/BPW	$	MAPC	No. of open/shared streets events, attendance, no. of attendees arriving on foot or by bike, repeat attendees, business revenue	Town of Wellesley, surveys of attendees and business community	Track whether/how open and shared streets events increase walking and cycling trips; Track benefits of open/shared streets events
SB, TC, BPW	$	MAPC	Surveys, Focus Groups	Fine tune codes and incentives for shared parking	

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA			
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region	
5. OFFER SAFE FACILITIES FOR ALL MODES OF TRAVEL							
5.1 Increase Intersection and Roadway Safety							
5.1.1 Adopt a Vision Zero policy of proactively redesigning roadways for safety and systematically addressing the factors leading to crashes	X			LOW	MEDIUM	MEDIUM	
5.1.2 Improve pedestrian and bicyclist crossings along Wellesley's major traffic corridors		X		LOW	HIGH	MEDIUM	
5.1.3 Make school walking/ biking routes safer		X		LOW	HIGH	MEDIUM	
5.1.4 Establish annual meetings with MassDOT and identify advocates for Wellesley to facilitate funding opportunities		X		LOW	MEDIUM	MEDIUM	
5.2 Undertake Educational Efforts to Promote Traffic Safety							
5.2.1 Undertake educational campaigns to promote safety	X	X		LOW	LOW	LOW	
5.2.2 Provide opportunities for bicyclists and drivers to learn about how to use bicycle infrastructure, such as bike boxes and two-stage turn boxes	X			LOW	HIGH	MEDIUM	

| ADDITIONAL CONSIDERATIONS | | | INDICATORS / PERFORMANCE METRICS | | |
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
SB/WPD/TC	$	MAPC, MA Vision Zero Coalition	Adoption of Vision Zero Program	Town of Wellesley	Use in grant applications for safety improvements
SB/TC/BPW	$$	MassDOT	Intersection crash rates; intersections with perceived hazardous conditions	MPO, MassDOT crash database; surveys on near misses	Determine highest risk intersections and prioritize for improvements
SB/SC/BPW	$	MassDOT, Safe Routes to School			
SB/BPW/TC	N/A	MassDOT	No. of meetings with the state; increased notification of grant opportunities; increased number of grants	Town of Wellesley and state (MassDOT)	Increase safety improvement funding
WPD/SC	$	Safe Routes to Schools			
SB/WPD/TC	$	MAPC			

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA			
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region	
6. PROVIDE DIVERSE & ACCESSIBLE MOBILITY OPTIONS							
6.1 Achieve Compliance with State and Federal Accessibility Guidelines							
6.1.1 Perform an ADA self-evaluation of all Town facilities and develop a transition plan for replacing any non-compliant infrastructure	X			LOW	MEDIUM	MEDIUM	
6.1.2 Establish a schedule for replacing pedestrian signals with the latest accessible version		X		LOW	MEDIUM	LOW	
6.2 Provide Viable Low-Cost Transportation Options for All Users							
6.2.1 Investigate methods of improving the mobility of housing developments not located near activity centers		X		MEDIUM	HIGH	HIGH	
6.2.2 Work with local bike shops to organize group purchases of bikes and e-bikes at a discounted rate and pass on these savings to residents	X			MEDIUM	HIGH	MEDIUM	
6.2.3 Investigate a loaner program for electric or regular bikes and cargo/kid carrier bikes	X			MEDIUM	HIGH	HIGH	

	ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
	LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
	SB/TC	$				
	SB/TC	$$				
	PB/SB/WHA	$	MAPC			
	Local NFP Partners	$	MAPC			
		$	MAPC			

ACTION PLAN (CONT.)

	TIMEFRAME			EVALUATION CRITERIA			
	SHORT <2 Years	MEDIUM 2-10 Years	LONG 10+ Years	REDUCE Greenhouse Gas Emissions	EXPAND Sustainable Modes of Transportation	CONNECT People to Town Destinations and the Region	
6.2.4 Implement a pilot program for municipal employees to purchase bikes or e-bikes pre-tax through their employer and advocate for similar programs with local employers		X		MEDIUM	HIGH	MEDIUM	
6.3 Promote Independent Mobility for Users of All Ages							
6.3.1 Work with the Council on Aging to increase awareness of the CatchConnect and other shuttles with older residents	X			LOW	MEDIUM	HIGH	
6.3.2 Apply for a used vehicle donation from MWRTA to help transport kids to camp in the summer	X			LOW	MEDIUM	HIGH	

ADDITIONAL CONSIDERATIONS			INDICATORS / PERFORMANCE METRICS		
LEAD	COST Order of Magnitude	REGIONAL PARTNERS	PERFORMANCE METRICS	DATA SOURCES	HOW DATA SHOULD BE USED
SB	$	MAPC			
SB/COA	N/A				
SB/Youth Commission	N/A	MWRTA			

APPENDIX A
TOWN FORUM MEETING

April 15, 2021
Virtual Zoom Meeting

AREA IS INTENTIONALLY BLANK

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MOBILITY COMMITTEE

Allison Burson *NRC Member and Bicycle Advocate*	**Amy Frigulietti** *Assistant Exec. Director*	**Brandon Schmitt** *Natural Resources Commission Director*	**Catherine Johnson** *Planning Board Member*	**Catherine Mirick** *School Committee Member*
Colette Aufranc *Select Board Member*	**Dave Cohen** *DPW Director*	**Don McCauley** *Planning Director*	**Marlene Allen** *Chair of the Council on Aging*	**Martha Collins** *Sustainable Energy Committee & Transportation Advocate*
Cindy Mahr *Assistant Superintendent of Schools – Transportation Coordinator at Schools*	**Scott Showstead** *Lieutenant Police, Heads up Traffic and Parking*	**Valerie Oorthuys** *Planner*	**Jack Pilecki** *Chief of Police*	**Marybeth Martello** *Sustainable Energy Director*

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EP/WGI TEAM

Jim Fitzgerald
PE, LEED AP (EP)
PROJECT MANAGER

Scott D. Turner
PE, AICP, LEED AP ND (EP)
PLANNING & SUSTAINABILITY LEAD

Lisa Nisenson
(WGI)
NEW MOBILITY &
CONNECTED COMMUNITIES LEAD

Margot Schoenfelder
PE, AICP (EP)
TRANSPORTATION PLANNING

Lian Plass
(WGI)
DATA STRATEGY & ANALYSIS

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STAKEHOLDERS

Slide 5 of 14

PROJECT BACKGROUND

Slide 6 of 14

Slide 7 of 14

MOBILITY IS... rethinking transportation to focus less on cars and more on access and options

SUSTAINABILITY IS... meeting the needs of the present without compromising the ability of future generations to meet their own needs

Slide 8 of 14

THE GREEN CONNECTION

- Green Schools Initiative

- Sustainability Committee

- **Sustainable Mobility Plan**

- Climate Action Plan

UNIFIED PLAN MOBILITY IMPROVEMENTS

- Mobility Networks

- Mobility Committee

- Transit

- Transit-Oriented Development

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Slide 12 of 14

Slide 13 of 14

Slide 14 of 14

APPENDIX B
ONLINE SURVEY RESULTS

The Sustainable Mobility Plan featured a series of surveys to gather input and insights from the public related to travel decisions. This section summarizes the results, including comments submitted to open-ended questions.

Note: Results may not add up to 100%.
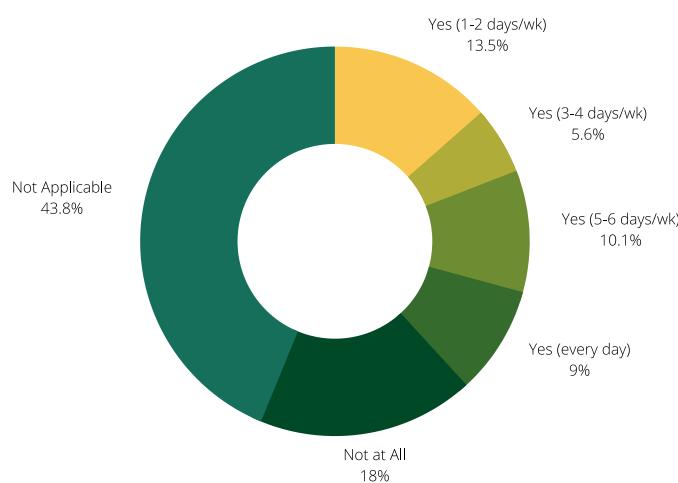
SURVEY NO. 1
WORK FROM HOME
146 Responses

QUESTION 1-1
What is your **employment status**?

Other
11.2%

Unemployed
4.5%

Employed Part Time
11.2%

Employed Full Time
31.5%

Retired
41.6%
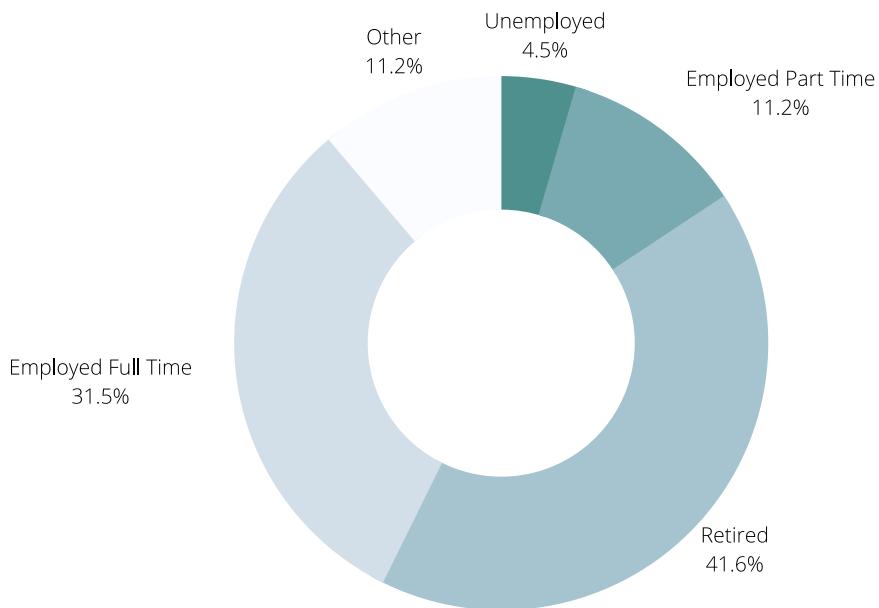
QUESTION 1-2
Were you **working from home prior** to the COVID-19 Pandemic?

Yes (1-2 days/wk)
13.5%

Yes (3-4 days/wk)
5.6%

Yes (5-6 days/wk)
10.1%

Not Applicable
43.8%

Yes (every day)
9%

Not at All
18%

QUESTION 1-3
Are you **currently working from home** due to the COVID-19 pandemic?

Yes (1-2 days/wk)
6.7%

Yes (3-4 days/wk)
6.7%

Yes (5-6 days/wk)
18%

Not Applicable
47.2%

Yes (every day)
14.6%

Not at All
6.7%
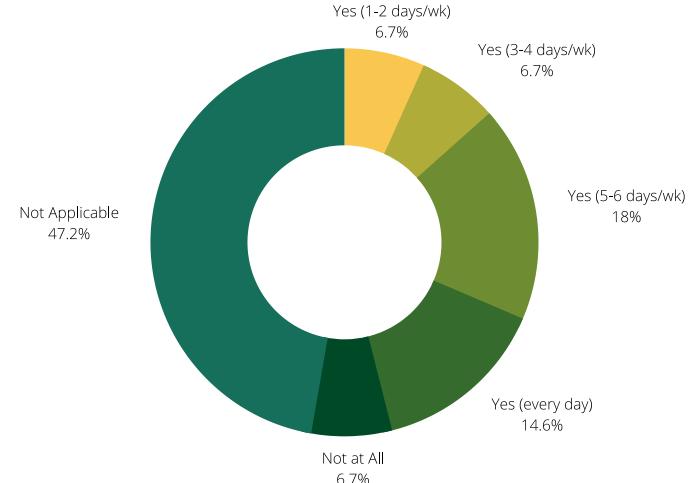
QUESTION 1-4
If you are **not working from home**, do you work in

Wellesley
7.6%

Boston
30.8%

Other
61.6%

THE "OTHER" CATEGORY INCLUDES
Woburn, Providence, Natick, Marlborough, Chestnut Hill, and Cambridge as well as Northeast travel and traveling throughout the U.S.
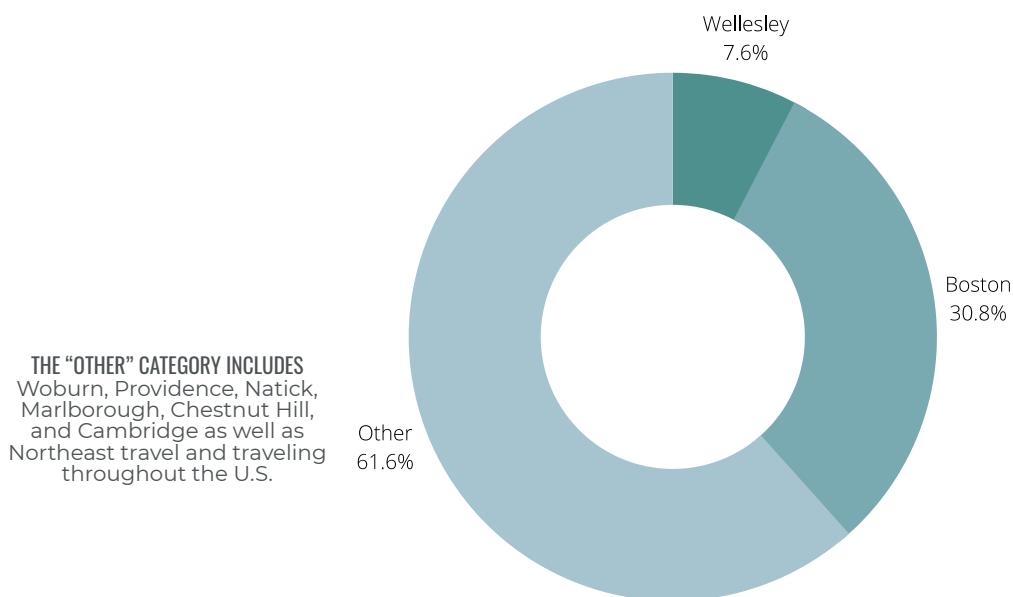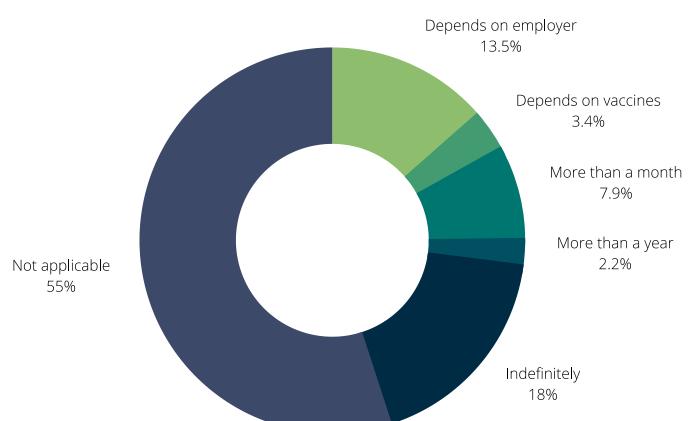
QUESTION 1-5
What is the **primary mode of travel** you use to get to work?

4

3

2

1

0

Car   Rail   Bus   Walking   Bike   Other
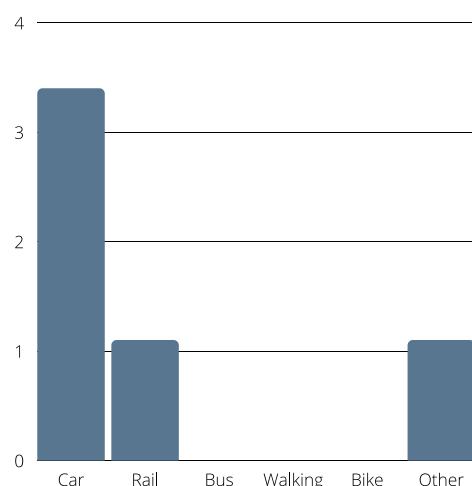
QUESTION 1-6
How long do you **anticipate working from home** due to COVID-19?

Depends on employer
13.5%

Depends on vaccines
3.4%

More than a month
7.9%

More than a year
2.2%

Not applicable
55%

Indefinitely
18%
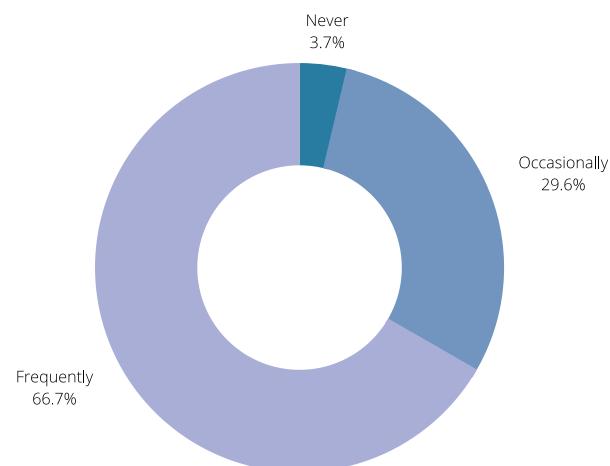
QUESTION 2-7.1
Please rate the following modes of transportation based on **how frequently you use them**

BIKE
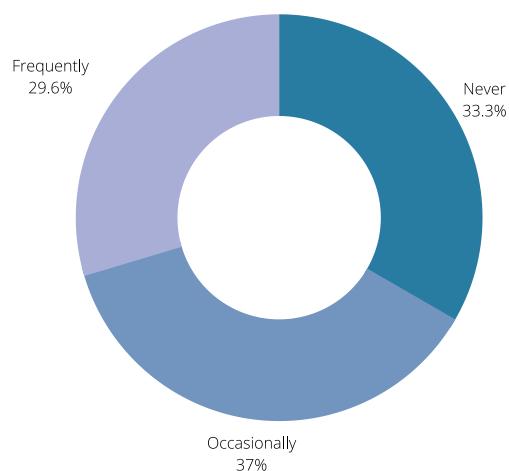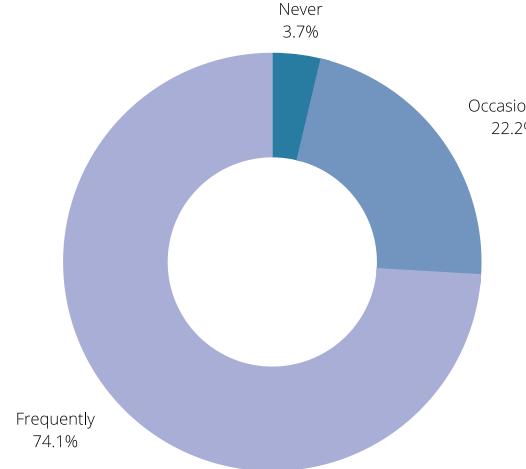
Frequently
29.6%

Never
33.3%

Occasionally
37%

FOOT

Never
3.7%

Occasionally
29.6%

Frequently
66.7%

BUS

Occasionally
10%

Never
90%

CAR

Never
3.7%

Occasionally
22.2%

Frequently
74.1%

CARPOOL

Unresponsive
3.8%

Occasionally
18.5%

Never
77.7%

RIDESHARE

Unresponsive
2.9%

Occasionally
11.1%

Never
86%

SHUTTLE

Unresponsive
2.9%

Occasionally
11.1%

Never
86%
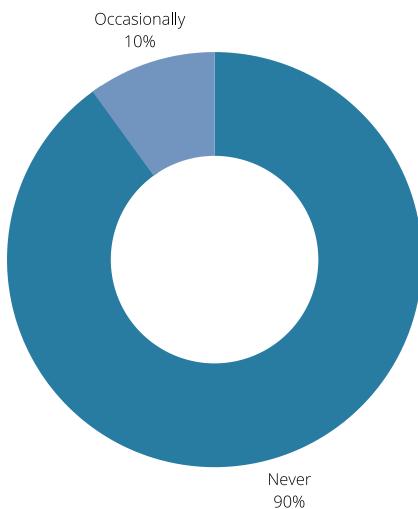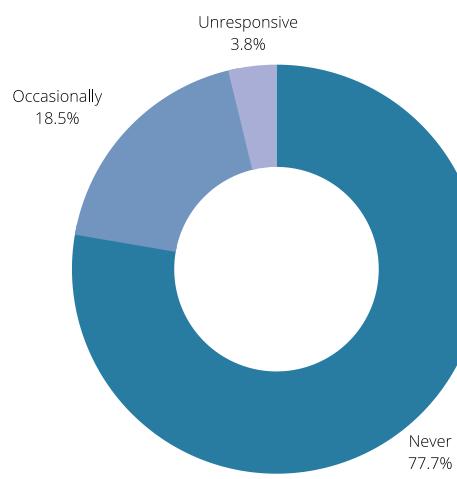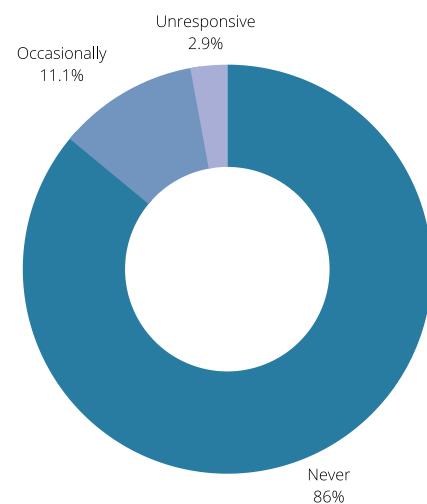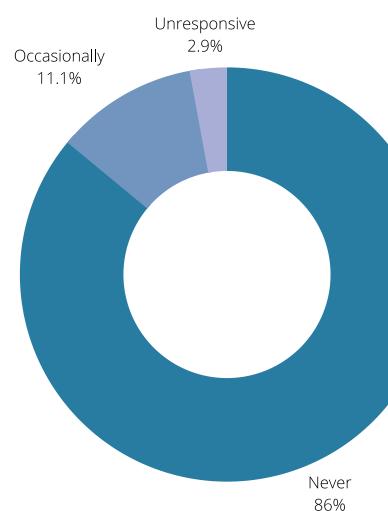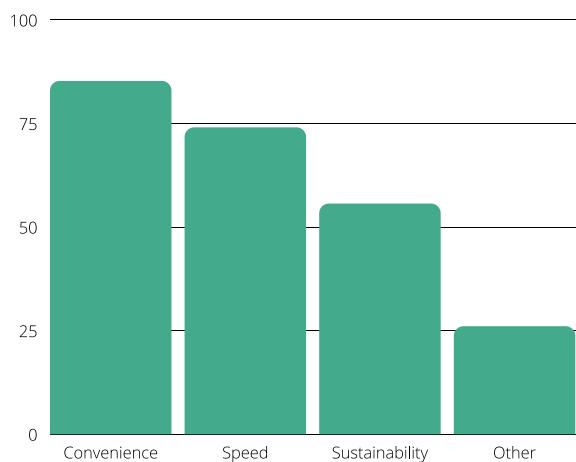
QUESTION 2-7.2
Please **rate your experience** getting around
within the Town on each mode

| | N/A | Excellent | Good | Fair | Poor | Unresponsive |
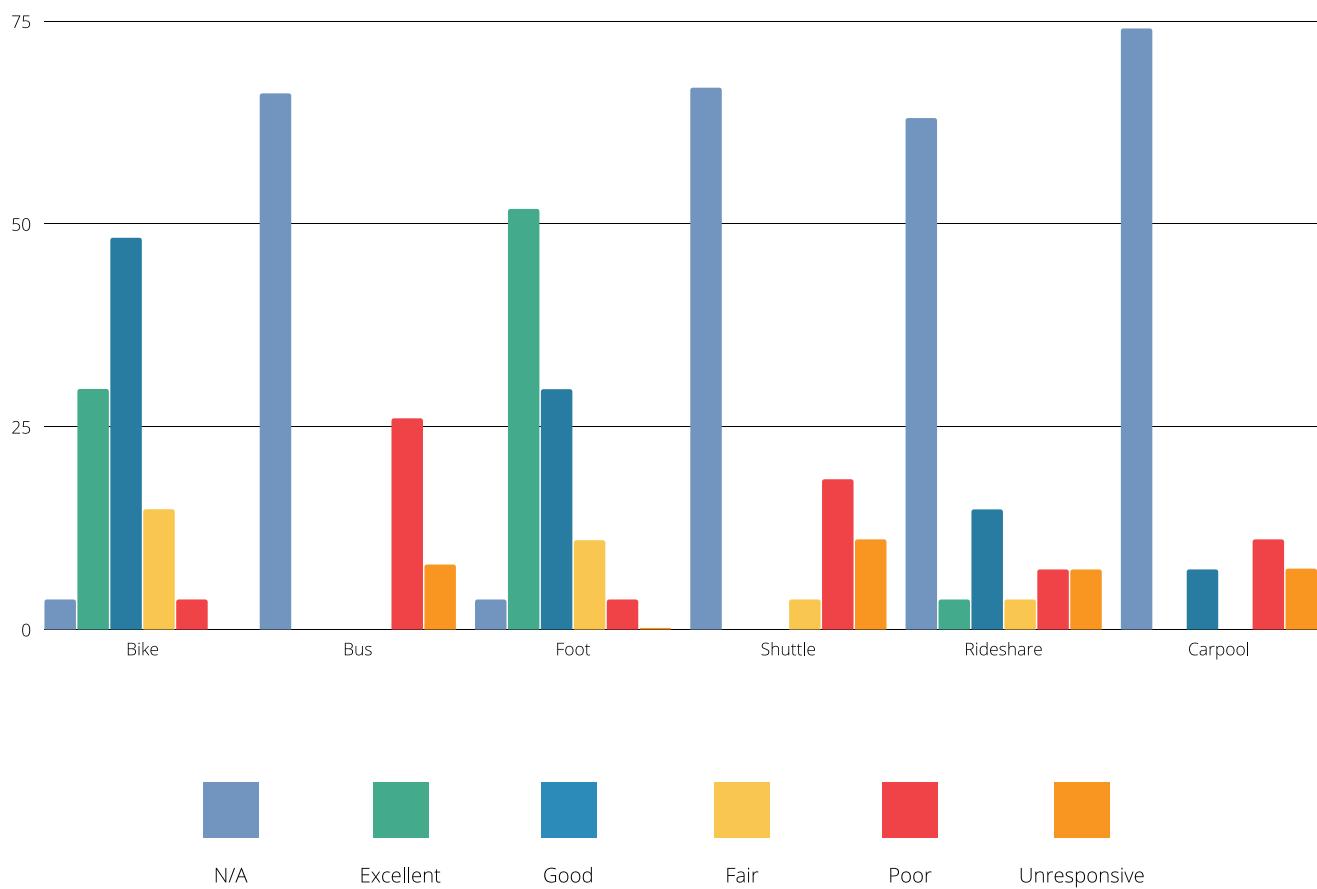
* One question in this survey contained reporting errors: Would you
consider using a bicycle to visit destinations other than your place of
work?
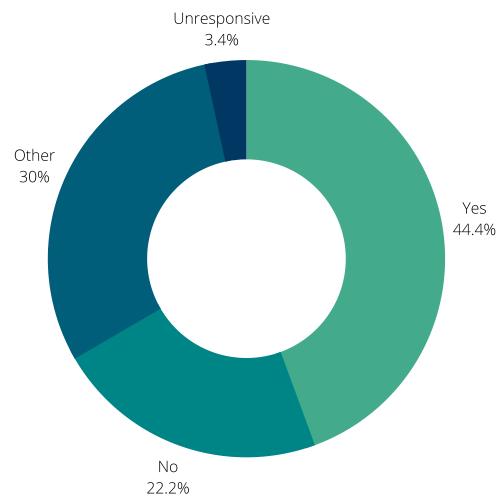
QUESTION 2-7.3
What **appeals to you** about the modes of transportation you use most frequently?
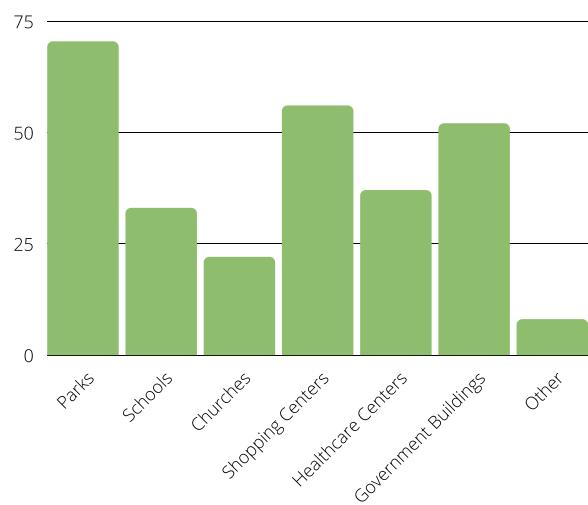
QUESTION 2-7.4
Would you **consider using a bicycle** to commute to work within the Town of Wellesley?

Unresponsive
3.4%

Other
30%

Yes
44.4%

No
22.2%
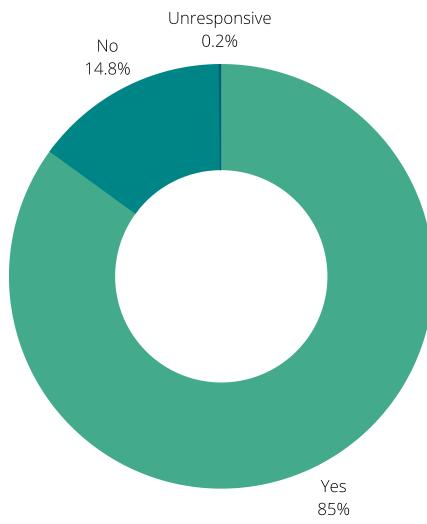
QUESTION 2-7.5
What **kinds of places** would you visit on a bicycle or E-bike within the Town of Wellesley?

QUESTION 2-7.6
Have you **ever used Wellesley's trails** as a cyclist or pedestrian to access your destination?

Unresponsive
0.2%

No
14.8%

Yes
85%

SURVEY NO. 3
USE OF RIDESHARES
34 Responses

QUESTION 3-1
Do you **presently use Uber, Lyft, or any other rideshare** app to get around?

No
40%

Yes
60%
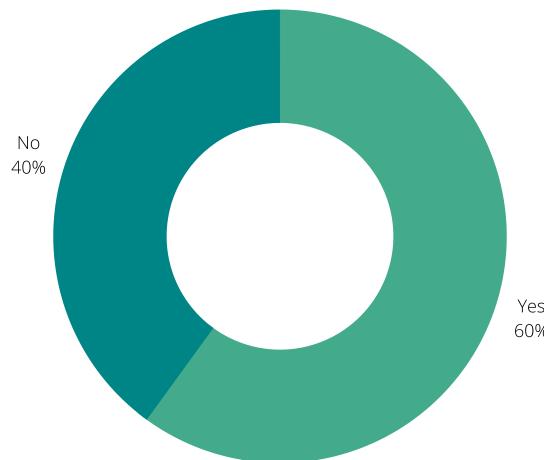
QUESTION 3-2
What **destinations** do you visit using rideshare apps?

Within Wellesley
5.7%

Unresponsive
17.2%

Other
5.7%

Outside Wellesley
71.4%
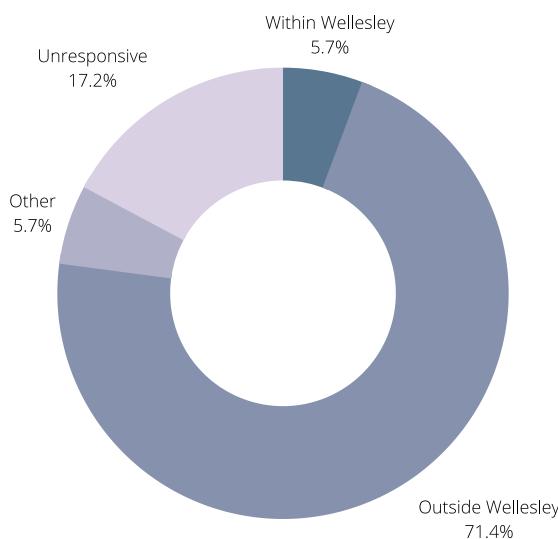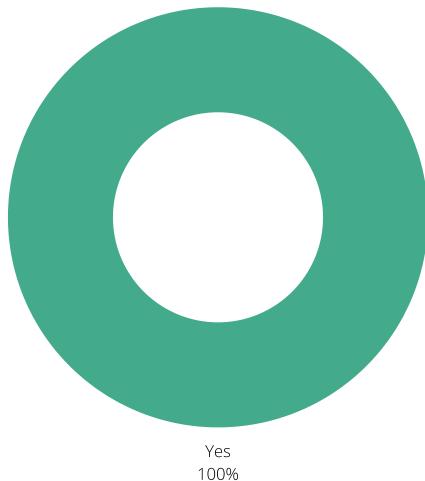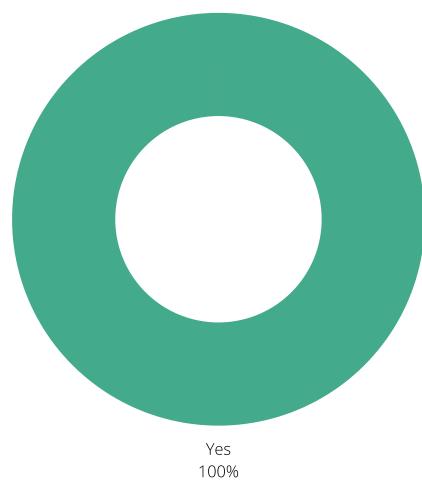
QUESTION 4-1
Do you presently use e-commerce sites such as Amazon or eBay?

Yes
100%
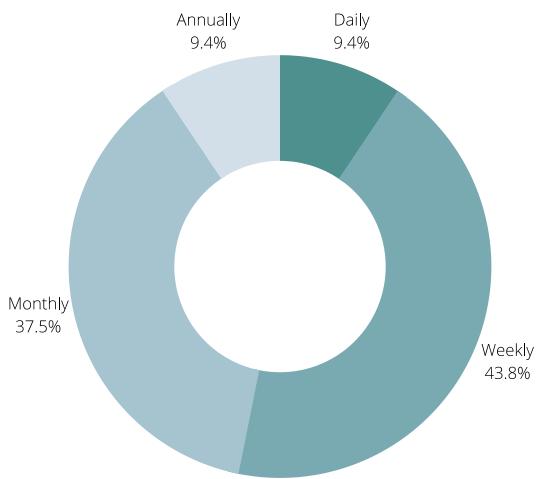
QUESTION 4-3
Did you use e-commerce sites such as Amazon or eBay prior to the COVID-19 Pandemic?

Yes
100%
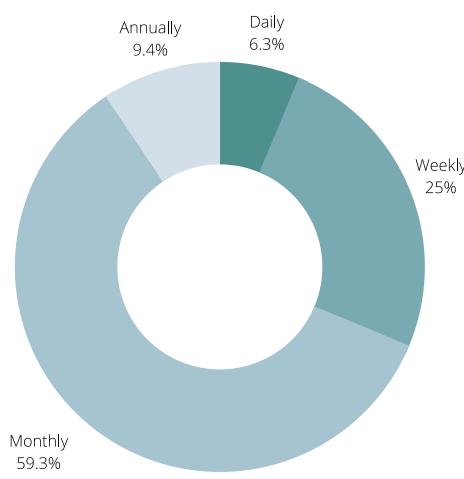
QUESTION 4-2
How frequently do you currently use e-commerce sites such as Amazon or eBay?

Annually
9.4%

Daily
9.4%

Monthly
37.5%

Weekly
43.8%
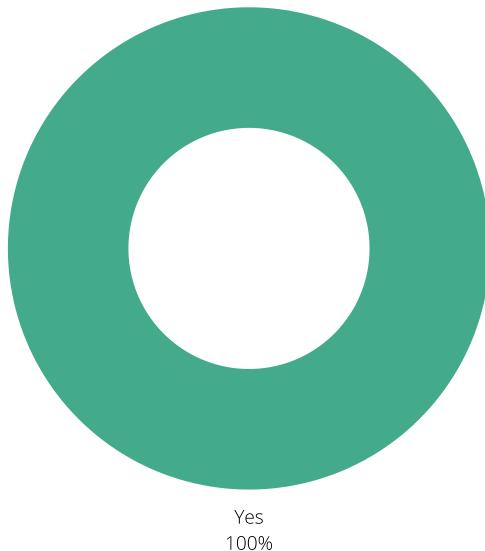
QUESTION 4-4
How frequently did you use e-commerce sites such as Amazon or eBay prior to the COVID-19 Pandemic?

Annually
9.4%

Daily
6.3%

Weekly
25%

Monthly
59.3%

SURVEY NO. 4 (CONT.) | E-COMMERCE | 31 RESPONSES

QUESTION 4-5
Will you **continue to use e-commerce**
sites such as Amazon or eBay
in the next 1-5 years?

Yes
100%

DIFFERENT PERSPECTIVES

"I don't do a lot of online ordering so I try to keep it to one vendor, one delivery day and it's for **environmental reasons**."

"They are **extremely convenient** for full-time working parents of young children."

"Would **prefer to shop local**"

"Convenience, **selection and price.**"

- Would prefer to shop local

- We became big users of Amazon during the pandemic. But we much prefer to buy local and have begun to scale back on Amazon use

- They make it really easy to get standard items. Would not use them for specific items such as clothing.

- They are extremely convenient for full-time working parents of young children.

- They are excellent. Fast and low priced delivery, reliable service and products, fair pricing and consumer friendly return policies.

- The use of eCommerce sites is here to stay and will increase as younger people who grew up online become consumers.

- The convenience is unmatchable with physical stores. The competition between vendors within Amazon or across different sites is stronger than the competition between physical stores. The only time I visit physical stores are when I need something immediately or I'm shopping as an activity: bookstores, boutiques.

- Our use is probably closer to quarterly - not monthly but 4-5 times a year. Less choices in stores, more online.

- I wish I didn't need to, but they are so dang convenient, good selection, and for us, necessary during the pandemic.

- Convenience, selection and price.

- My goal is to stop using Amazon but it's tough to say 'No' to their selection and delivery service. Don't like supporting a company that isn't environmentally friendly.

- Shopping online is so much easier and more efficient than shopping in person. I hate schlepping to a store and taking the time to make a trip to find out that a store doesn't have what I need. I also hate how much traffic there is in Wellesley's business districts. It makes it unpleasant to walk, bike, or drive to them. I wish we had better bike facilities so it was really comfortable to bike to our local businesses. Then it would be fun to zip over to local shops to check and see if they had something and I'd get exercise and get to be outside enjoying the day too! I also hope local stores will continue to improve their shop online platforms so I can order online and swing by to pick up. Since I work 9-5, it can be really hard to get to local businesses when they are open, and I don't want to waste my weekend schlepping around to go shopping.

SURVEY NO. 4 (CONT.) | E-COMMERCE | 31 RESPONSES

QUESTION 4-6 (CONT.)
**Tell us your thoughts about using
e-commerce sites:**
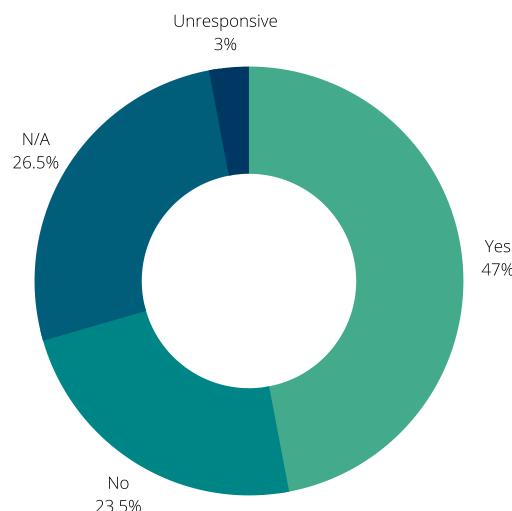
- I wish I didn't feel I have to use them, and I don't actually use them "monthly"; every couple of months would be more accurate. I use them because they've become the dominant way of finding what you're looking for easily and at a reasonable price-- something that is virtually impossible to do in too many cases in a town like Wellesley.

- Because there aren't affordable local shops for general goods, and the prices are better at Amazon, I do a lot of shopping this way. Not driving means having very limited access to shopping locally - Wellesley does not have basic home goods at low prices.

- I will have more and more things delivered. Maybe two-three times a week. The exception will be groceries/produce. I want to see before choosing. I consider my car essential, however, as its use is schlepping things too heavy to carry and most of my errands/travel takes me outside of Wellesley to destinations that are not reachable by public transportation or walking.

- I buy locally as much as I can, but the variety of choice is just too good online, and not very good at our stores.

- I try to minimize my purchasing from the "big" online retailers, but there are times when it's the only way to find a particular item. My first choice is to buy local (in person or online), second is online from a smaller/specialty retailer, third is Amazon.

- I have switched to consolidating items for delivery and using a "delivery day" (i.e. - everything comes together in one package on a Monday) after hearing about the concerns over Amazon delivery traffic.

- I don't do a lot of online ordering so I try to keep it to one vendor, one delivery day and it's for environmental reasons.

- Fast, easy and most times, less expensive.

- E-commerce sites are handy when you want items not found in locations near enough to drive to. They do not, however, substitute for in person shopping for me.

- Ease, convenience, price (Wellesley local is expensive).

QUESTION 5-1
Do you (student) or any of your children attend school in Wellesley?

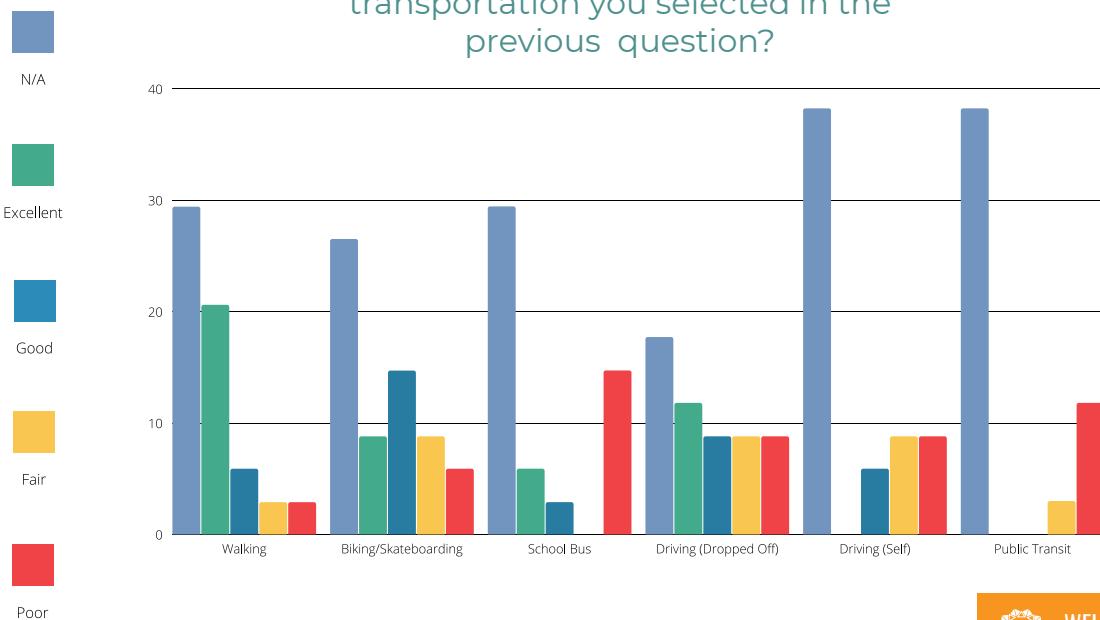Unresponsive
3%

N/A
26.5%

Yes
47%

No
23.5%

QUESTION 5-2
How do you (student) or your child typically travel to school each day?

QUESTION 5-3
How would you rate the modes of transportation you selected in the previous question?

N/A
Excellent
Good
Fair
Poor

SURVEY NO. 5 (CONT.) | STUDENTS, SCHOOL TRAVEL & CHILDCARE | 33 RESPONSES

QUESTION 5-4
For drivers, what is the top reason you drive to school?

QUESTION 5-5
How would you rate current transportation options for you or your child's travel to and from school?
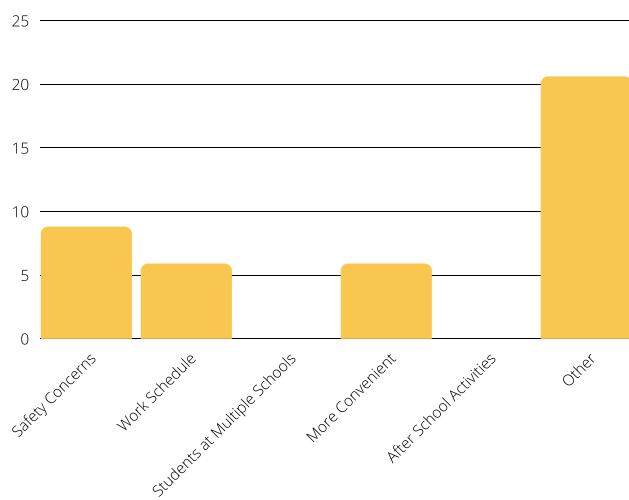
QUESTION 5-6
In your view, what would make it easier for you or your child to use alternative modes of transportation to get to school?

- Wellesley officials need to acknowledge the problems families express regarding walking and biking to school on busy, noisy, streets in town, as well as exposure to the exhaust produced by cars and trucks. For example, has any town official actually walked these routes on Weston Road to get to Hardy from the furthest area of that district (about 30 minutes)? Wellesley needs better bike lanes on the roads. Also, Wellesley should create and make public maps showing best biking/walking routes that include off-street paths that connect neighborhoods. Or help support car pool systems for families to reduce the number of cars driving to schools, especially in the morning.

- We live very close to all three schools - walking and biking has always been easy from our location - faster than driving. It takes a mindset - you need to get into the habit of walking and being willing to do so in pretty much all weather. Unless it's really downpouring, you can still walk. Snow is fun!

- Reduce or eliminate cost for busing Increase frequency Increase cost of HS parking Actively discourage carline Add blue bikes and docking station at middle and high school.

- Redistrict elementary schools to take into account safe walking routes. We are in the Fiske district, and it is safer, easier, and faster to walk or bike to every other elementary school in town. We could also reach Hunnewell Elementary school entirely on trail. It's insane that kids in our neighborhood have to travel to the school least convenient to where they live.

- Protected bike lanes on Washington street.

- More frequent bus pick-ups/drop-offs.

- Look at districts. I travel 2 miles when there is a school one mile away. Sidewalks and crosswalks with lights.

- Living close enough to a school to enable walking. Period. Full stop.

- Less expensive school busing, safer bike paths (dedicated lane)

- Less expensive school bus options. More options for times for drop off and trips home.

- Improved cell service and sidewalks.

- I don't have children in the schools, but every time I drive by a school, the bike racks are loaded beyond capacity, sometimes piled on top of each other on the ground. Thanks for the opportunity to comment!

- Friendly, reliable, inexpensive service. Would also help to have friends on the bus.

- A dedicated bike lane. Crossing guards at the busy intersections.

- Flexibility in busing and free busing. More like a small van service that does different loops.

- Biking or walking to school would be safer with either more police presence on Wellesley Ave at school start and end times, more crossing guards at all crosswalks at these times, stiffer penalties for offenders, or more signage or lights at crosswalks.

- Bike/walk - don't drive - especially when the weather is not hazardous.

- Better bicycle infrastructure. Painted dedicated bike lanes. Poles to keep cars out of the bike lanes. Protected bike lanes (via curbs or parked cars on the traffic-side of the lane) well-plowed paths in winter. Flashing crosswalk indicators near all schools.

- A clear bike path to WHS

COMMON CONCERNS

Sidewalk safety
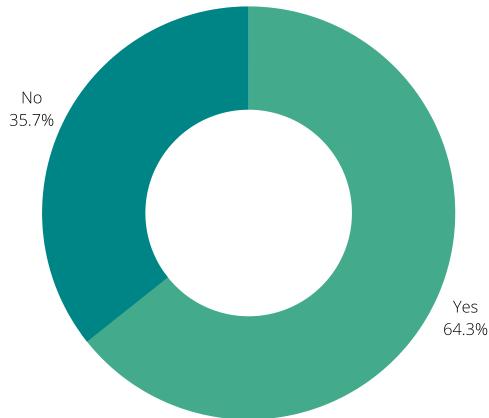
Cost of busing

Need for dedicated bike lanes

SURVEY NO. 6
AUTONOMOUS SHUTTLES
13 Responses

QUESTION 6-1
Do you see autonomous vehicles as a potential alternative mode of transportation in the coming years?

No
35.7%

Yes
64.3%

QUESTION 6-2
Why or why not?

- The technology needs to improve. Currently, I believe that autonomous vehicles need curbing to navigate. I could be wrong. However, MANY of the streets in Wellesley have either NO curb or a Cape Cod berm. I would support them, however, especially if the speed could be regulated at 20 MPH or less

- The technology is changing rapidly, improvements made each year. It is totally feasible to see this as part of our future within the next 5 to 10 years

- Safety concerns. Still too new and untested

- In the next 5-10 years, I don't expect them to navigate pedestrian-heavy roads with heavy snowfall and complex intersections, but I expect simple trips between major parts of town to be easily doable. I hope the town provides bus-like service all around the town with real-time trip mapping updates for active destination-changes. Like a glorified lyft/uber, but you ride with the public. Like a bus. a green, smart, bus. It is *very* important to me that this service be free or super-low-cost so that mid-to-low income workers can ride it to work in town.

- I don't expect the technology to be ready for widespread use any time soon.

- I believe they will be helpful for the aging population.

- Do they exist yet?

- Because it's possible.

- Based on technological advances, I see autonomous vehicle transportation as a viable and desirable option in the future. I believe (and hope) it will reduce traffic speed to within speed limits and make driving, and walking, far less stressful.

- Autonomous vehicle will be programed to take the quickest route to avoid traffic, fewer accidents and greener transportation

- 1. Unsafe. 2. AI can be hacked.

QUESTION 6-3
Tell us the degree to which you agree or disagree with the statements below.
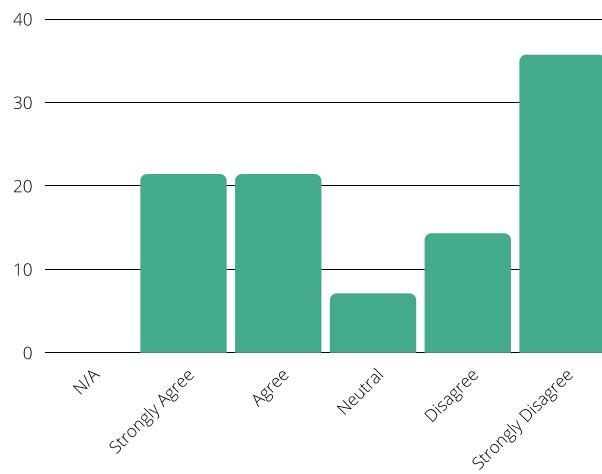
6-3.1
Autonomous vehicles will improve roadway safety within the Town of Wellesley
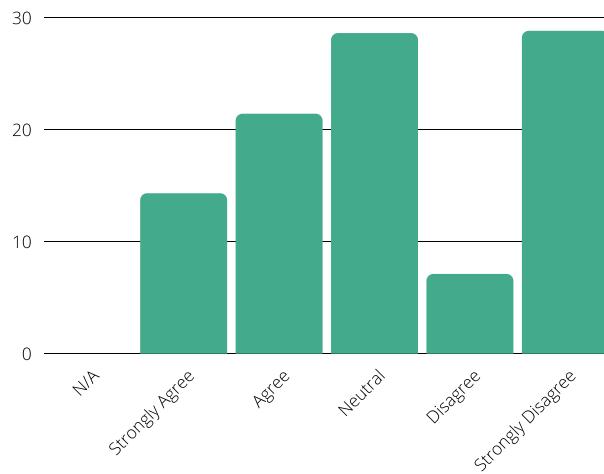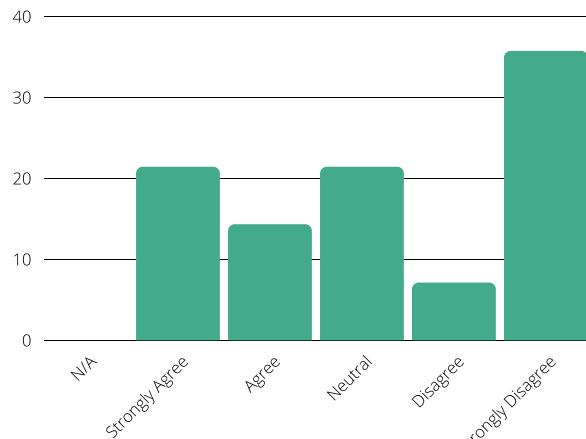

6-3.3
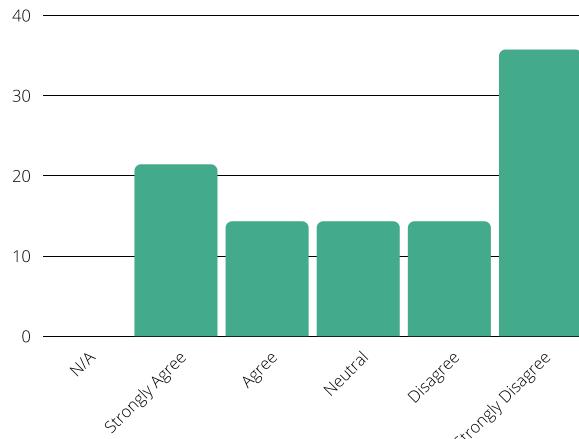Autonomous shuttles will help me reduce my carbon footprint

6-3.2
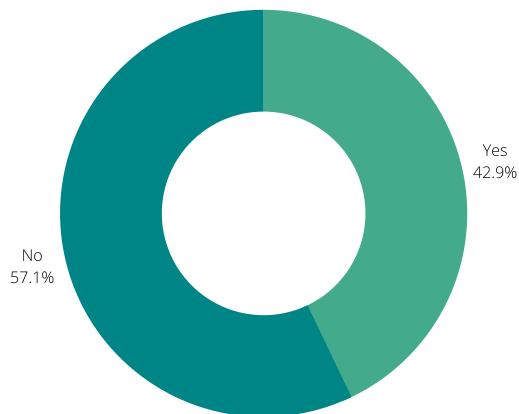I would rather take an autonomous shuttle than drive my personal vehicle

6-3.4
I would rather own a fully autonomous vehicle than my current vehicle

SURVEY NO. 6 (CONT.) | AUTONOMOUS VEHICLES | 13 RESPONSES

QUESTION 6-4
Would you personally use autonomous shuttles to get around the Town of Wellesley?

Yes
42.9%

No
57.1%

QUESTION 6.5
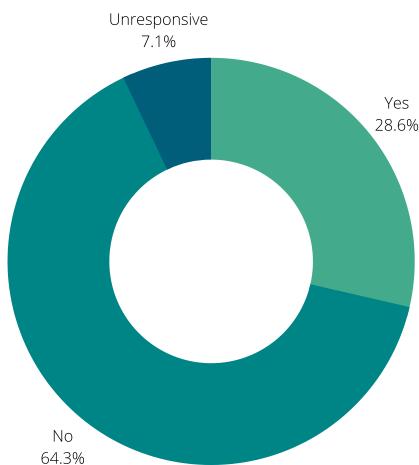Please use the space below to tell us a bit more about why or why not

- You probably needed to provide a bit more detail on autonomous vehicle to preface this survey. People may not even know what is meant/intended. Autonomous EVs will probably be better, at least initially, in predictable routes within a small area. Up and down Washington Street from Woodland MBTA to Wellesley College is a good example, or north/south in Weston Road or Glen Road.

- The community should be walking for better health to destinations within 1.5 - 2 miles of thier home.

- Safety concerns. Still too new and untested.

- In town autonomous shuttles will be part of our future. I'd feel very comfortable using these as a mode of travel within the town.

- In the next 5-10 years, I don't expect them to navigate pedestrian-heavy roads with heavy snowfall and complex intersections, but I expect simple trips between major parts of town to be easily doable. I hope the town provides bus-like service all around the town with real-time trip mapping updates for active destination-changes. Like a glorified lyft/uber, but you ride with the public. Like a bus. a green, smart, bus. It is *very* important to me that this service be free or super-low-cost so that mid-to-low income workers can ride it to work in town

- I use my vehicle for: convenience; lugging or hauling stuff (RDF, groceries in the same round trip with multiple stops), and to get to my office in Weston. How would an autonomous vehicle transport people out of town if the destination does not allow autonomous travel?

- I prefer to walk or bike around Wellesley when I can. However, if the schedule was frequent, I would consider it.

- I don't expect the technology to be sufficiently developed for safe use on Wellesley roads any time soon. Not even sure I would trust it yet in Chandler, Arizona, and Wellesley is a far cry from Chandler in the complexity of its road layout and variability of driving conditions

- I believe autonomous vehicles can be programmed to drive safely within speed limits and within all traffic regulations. It will prevent cars from driving through red lights and prevent speeding and traffic violations which cause danger to drivers, bikers and pedestrians.

- For reasons listed above. timely, efficient for energy use, safety, and reduces traffic issues

- Because we can!

- Autonomous vehicles are not appropriately regulated, and are not yet designed with safety of people walking and biking taken into account appropriately.

QUESTION 6-6
Would you personally use autonomous shuttles to get around the Town of Wellesley?

Unresponsive
7.1%

Yes
28.6%

No
64.3%

QUESTION 6.7
Please use the space below to tell us a bit more about why or why not

- Safety concerns. Still too new and untested.

- Not sure I'd want a personal vehicle for this mode of travel.

- Most of my travel goes outside of Wellesley and back in. This seems to be creating a solution where a problem doesn't exist.

- It's faster and more fun to bike.

- I'd prefer an electric bicycle, or walking. Being outdoors is much better than riding in even the nicest car. I feel a much stronger sense of connection to my community when riding a bike or walking than i do when riding in a personal vehicle. They're so isolating. Make autonomous vehicles feel communal, and I'd be in favor of them a lot more.

- I think it will reduce carbon emissions and be better for the planet and human well being.

- I prefer to walk or bike around Wellesley when I can.

SURVEY NO. 8
FOOD DELIVERY SERVICE
5 Responses

QUESTION 8-1
Do you use food delivery services such
as Grubhub, Peapod, or Instacart?

Yes (Weekly or Monthly)
40%

No
60%
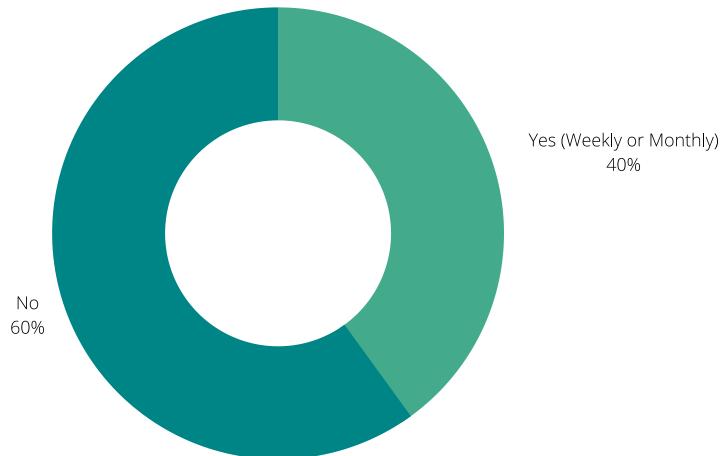
QUESTION 8-2
What might influence your decision to use
food delivery services post-COVID-19?

- Used such services weekly for a few months early in the COVID-19 period, now use only when there is some special situation that makes it difficult or impossible for me to get to the grocery store on my usual schedule. Barring further lockdowns, I expect that to continue.

- Reasonable price and convenience.

- Inability to get to the grocery store during business hours due to work schedule or lack of child care.

- If delivery were more local / faster we'd use it more.

SURVEY NO. 9
MICROTRANSIT
5 Responses

QUESTION 9-1
Can you see yourself using microtransit to get around the Town of Wellesley?

No
40%

Yes
60%

QUESTION 9-2
Why or why not?

- Not really sure what microtransit is.

- Maybe - depends on the particulars of the service

- I don't know what microtransit is.

- For health and the environment.

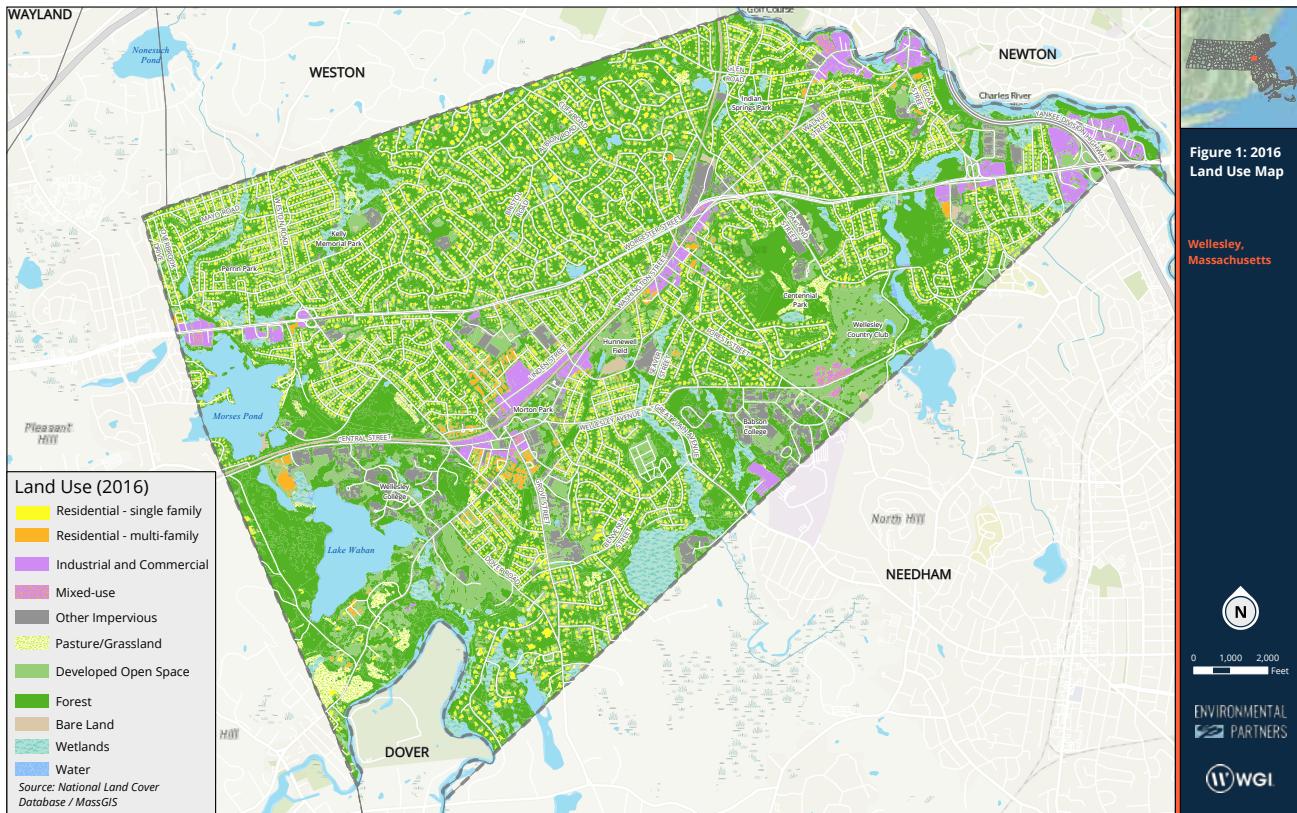- Any public transit is better than single driver/single use transport.

LAND USE

Any discussion of travel behavior must consider land use. A community's land use patterns have a strong influence on how people choose to travel; neighborhoods with a mix of uses and higher densities allow people to reach a variety of destinations in a shorter distance, making it easier to swap out car trips with walking and biking. In contrast, single-use neighborhoods, such as residential-only areas, are typically heavily dependent on cars since many destinations are not sufficiently close to make walking or biking a convenient alternative. Similarly, low population densities make it more difficult for transit services to operate frequently and conveniently enough to make it an attractive travel mode.

15-MINUTE CITY

The '15-Minute City' is a planning concept in which all residents of a community are able to meet most, if not all, of their needs within a 15-minute walk or bicycle ride from their home. Under this concept, towns and cities become more decentralized, composed of "complete" and connected neighborhoods. The 15-Minute City has gained recognition in the U.S. when COVID spurred demand for nearby amenities to serve the rise in at-home workers. The focus on satisfying daily needs has co-benefits in strengthening a sense of community, improving communities' sustainability and livability, and promoting health and wellbeing.
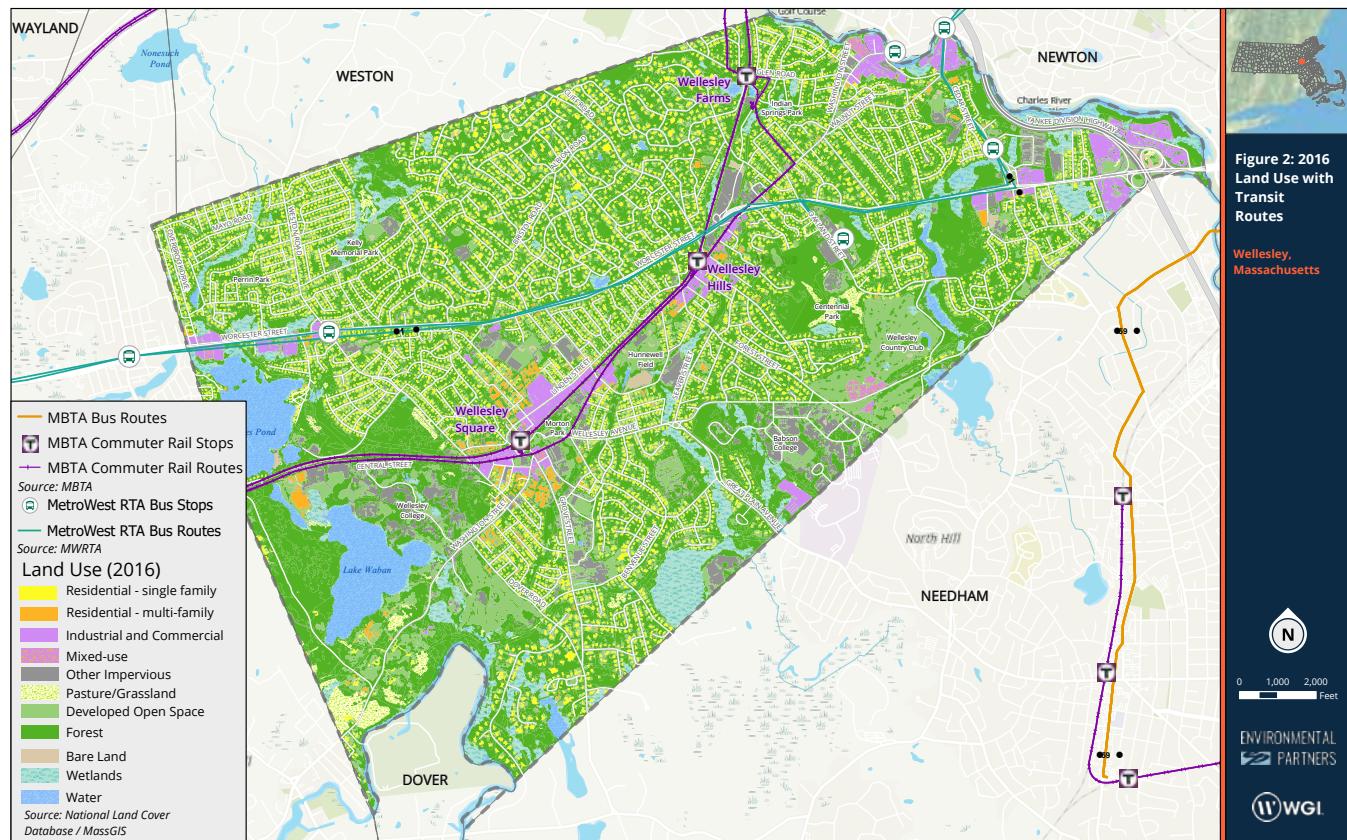
MAP 1 – LAND USE

The majority of land in Wellesley is used as single-family housing. Commercial and industrial uses are largely limited to Washington Street and Worcester Street and several office parks located along the eastern town line on either side of I-95. Pockets of multi-family housing and mixed-use development are present in the Wellesley Square and Wellesley Hills neighborhoods.

Figure 1: 2016 Land Use Map

Wellesley, Massachusetts

Land Use (2016)
- Residential - single family
- Residential - multi-family
- Industrial and Commercial
- Mixed-use
- Other Impervious
- Pasture/Grassland
- Developed Open Space
- Forest
- Bare Land
- Wetlands
- Water

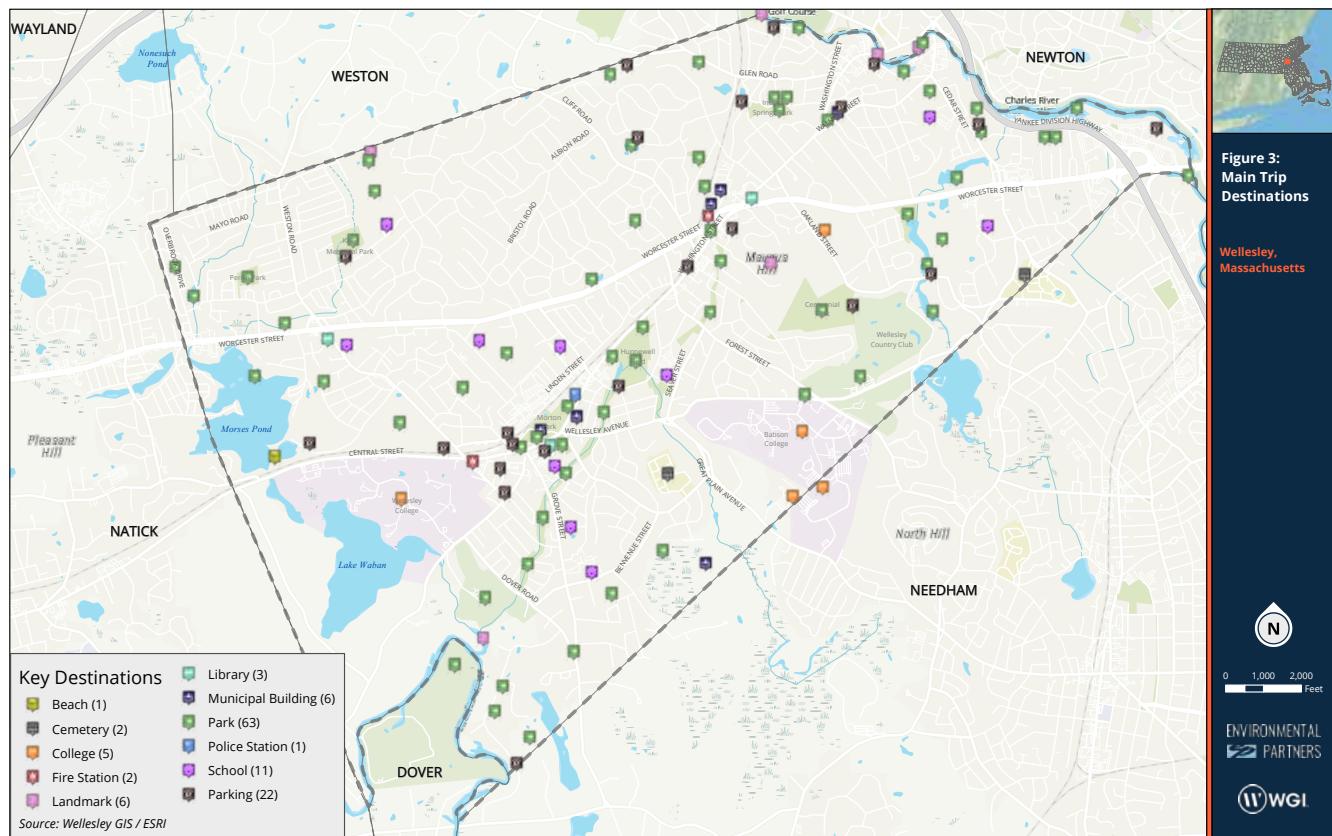*Source: National Land Cover Database / MassGIS*

MAP 2 – LAND USE WITH TRANSIT ROUTES

This map illustrates the connection between transit services and land use. Much of the higher-density land uses in Town run alongside the MBTA commuter rail line, with the Wellesley Square, Wellesley Hills, and Wellesley Farms stations serving as anchor points for commercial, mixed use, civic, and multi-family uses. The connection between land uses and the MWRTA Route 1 bus route is less distinct, with single-family residential uses representing the majority of the land use along the route within Town limits.

Figure 2: 2016 Land Use with Transit Routes

Wellesley, Massachusetts

Legend:
- MBTA Bus Routes
- MBTA Commuter Rail Stops
- MBTA Commuter Rail Routes
- Source: MBTA
- MetroWest RTA Bus Stops
- MetroWest RTA Bus Routes
- Source: MWRTA

Land Use (2016)
- Residential - single family
- Residential - multi-family
- Industrial and Commercial
- Mixed-use
- Other Impervious
- Pasture/Grassland
- Developed Open Space
- Forest
- Bare Land
- Wetlands
- Water

Source: National Land Cover Database / MassGIS
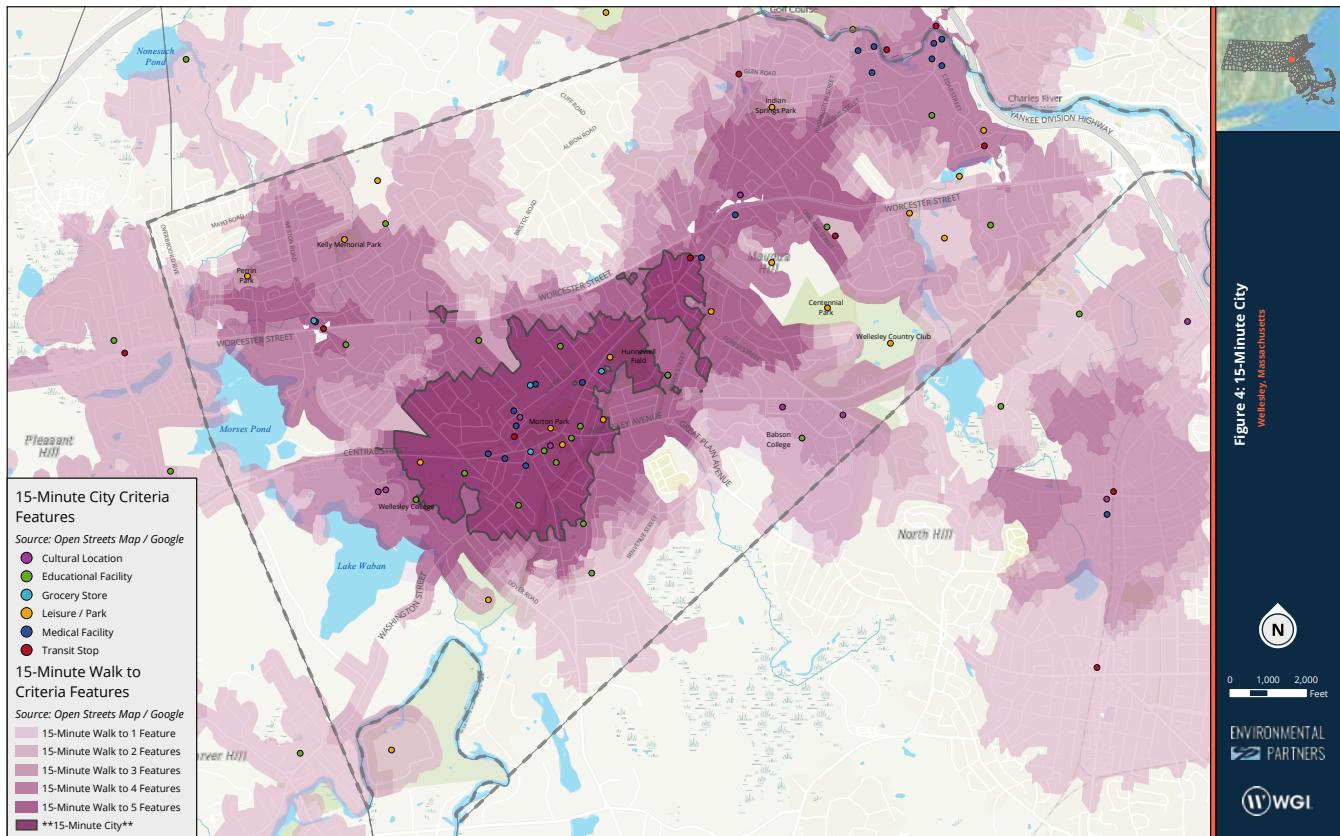
ENVIRONMENTAL PARTNERS

WGI

MAP 3 – MAIN TRIP DESTINATIONS

The majority of the trip-generating destinations within Wellesley, including municipal buildings, retail, and restaurants, are located in the Wellesley Square and Wellesley Hills neighborhoods. However, open space destinations, including parks, landmarks, and a beach (at Morses Pond), are scattered throughout town, providing a local destination for almost every neighborhood. Elementary and high schools, as well as Wellesley College, Babson College, and MassBay Community College, also generate a significant amount of trips within town by both residents and workers.

Figure 3: Main Trip Destinations
Wellesley, Massachusetts

Key Destinations
- Beach (1)
- Cemetery (2)
- College (5)
- Fire Station (2)
- Landmark (6)
- Library (3)
- Municipal Building (6)
- Park (63)
- Police Station (1)
- School (11)
- Parking (22)

Source: Wellesley GIS / ESRI

MAP 4 – 15-MINUTE CITY

This map illustrates the portion of Wellesley that is categorized as a "15-Minute City" based on the existing destination locations, with more than 5 destination types within a 15-minute walk. Approximately 9 percent of the land within Wellesley falls into this category, concentrated within the Wellesley Square and Wellesley Hills neighborhoods.
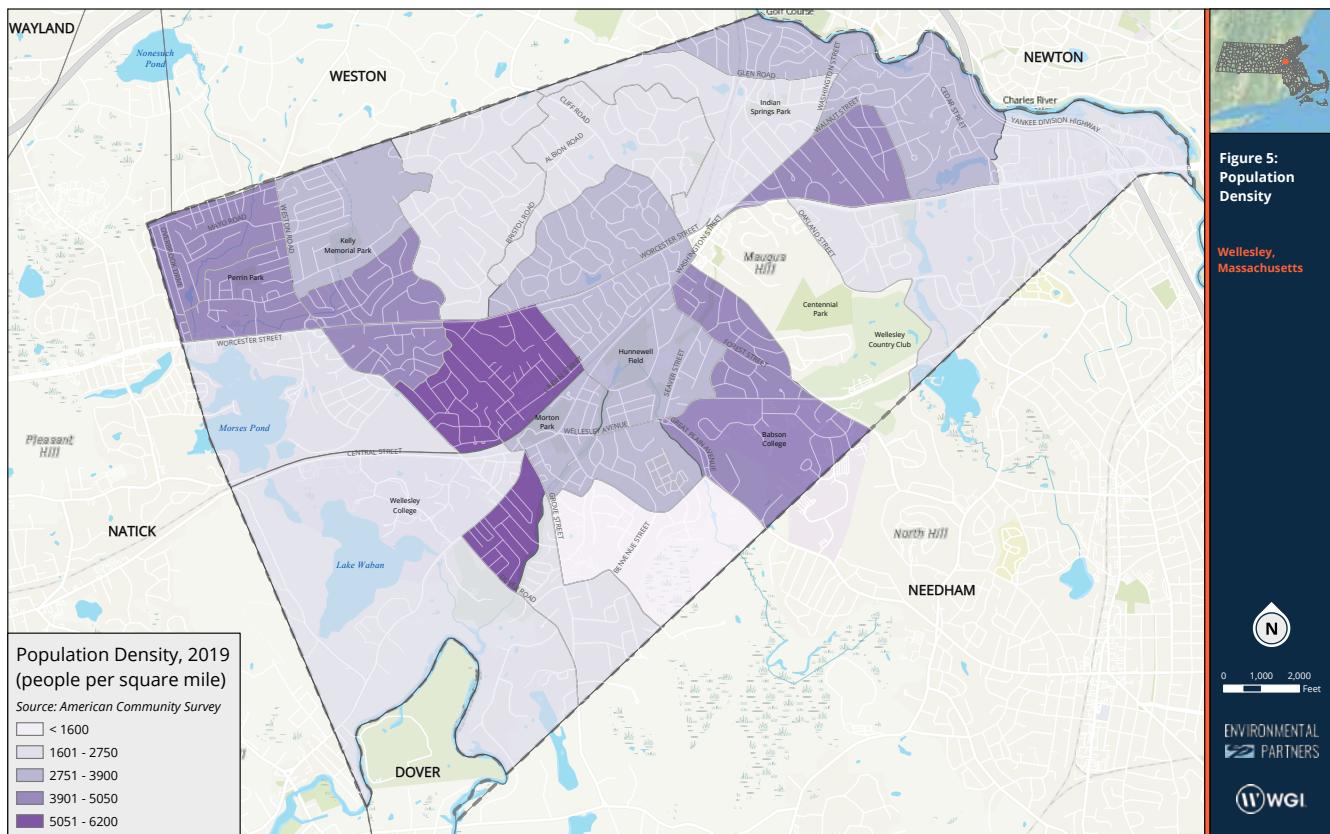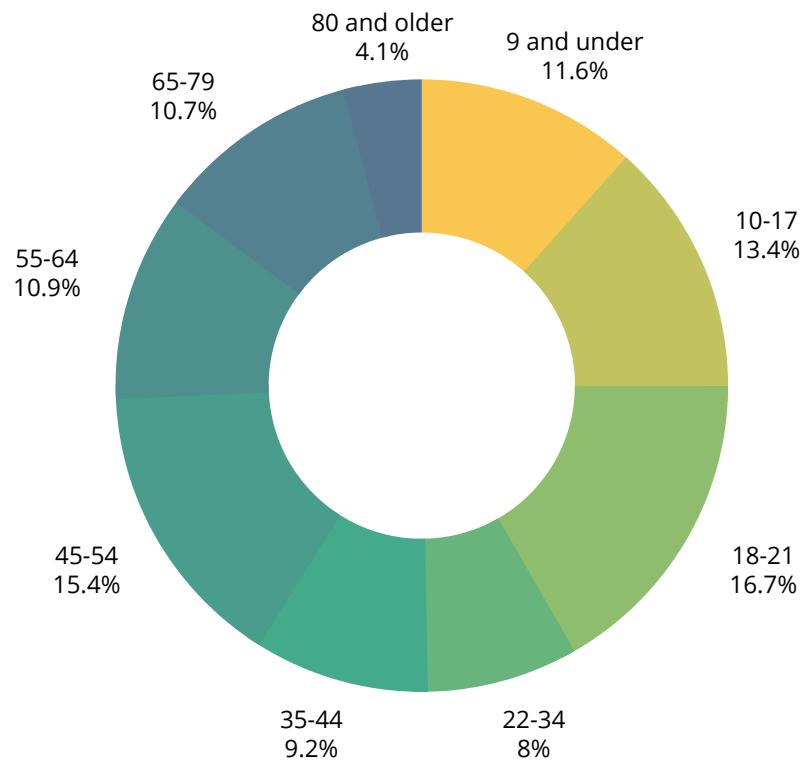

Figure 4: 15-Minute City
Wellesley, Massachusetts

15-Minute City Criteria Features
Source: Open Streets Map / Google
- Cultural Location
- Educational Facility
- Grocery Store
- Leisure / Park
- Medical Facility
- Transit Stop

15-Minute Walk to Criteria Features
Source: Open Streets Map / Google
- 15-Minute Walk to 1 Feature
- 15-Minute Walk to 2 Features
- 15-Minute Walk to 3 Features
- 15-Minute Walk to 4 Features
- 15-Minute Walk to 5 Features
- **15-Minute City**

PEOPLE

Wellesley is home to over 28,000 people[130] and nearly 19,000 jobs[131]. Residents are relatively older and primarily high income, with a median age of 35.6[132] and a median household income of $197,132[136].
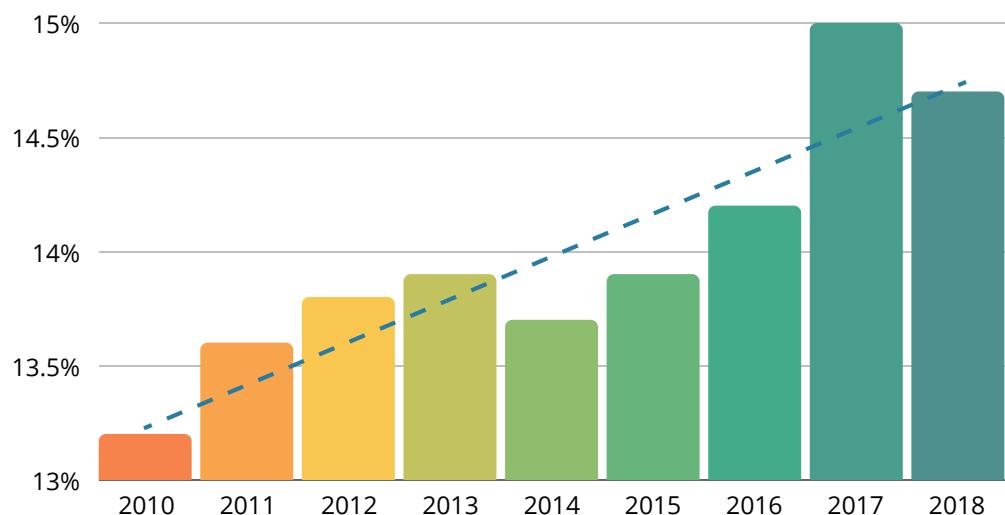
MAP 5 – POPULATION DENSITY

Wellesley's average residential population density is 4 people per acre[133]. Residential density is highest around Wellesley Square and near Wellesley College and Babson College. The areas of lowest residential density are primarily along the Weston-Wellesley border and east of Oakland Street.

Population Density, 2019
(people per square mile)
Source: American Community Survey

< 1600
1601 - 2750
2751 - 3900
3901 - 5050
5051 - 6200

Figure 5:
Population Density

Wellesley,
Massachusetts

POPULATION BY AGE (2019 ACS DATA)

- 80 and older: 4.1%
- 65-79: 10.7%
- 55-64: 10.9%
- 45-54: 15.4%
- 35-44: 9.2%
- 22-34: 8%
- 18-21: 16.7%
- 10-17: 13.4%
- 9 and under: 11.6%

PERCENTAGE OF POPULATION 65 YEARS OF AGE OR OLDER

MAP 6 – POPULATION UNDER 18 YEARS OF AGE AND SCHOOL LOCATIONS

Children under 18 years of age comprise approximately 25 percent[134] of Wellesley's population and are largely concentrated in the neighborhoods north of Worcester Street and east of Oakland Street. Because children are dependent on carpooling, walking, biking, and transit when making trips, this population is particularly vulnerable from a mobility perspective compared to the general population.
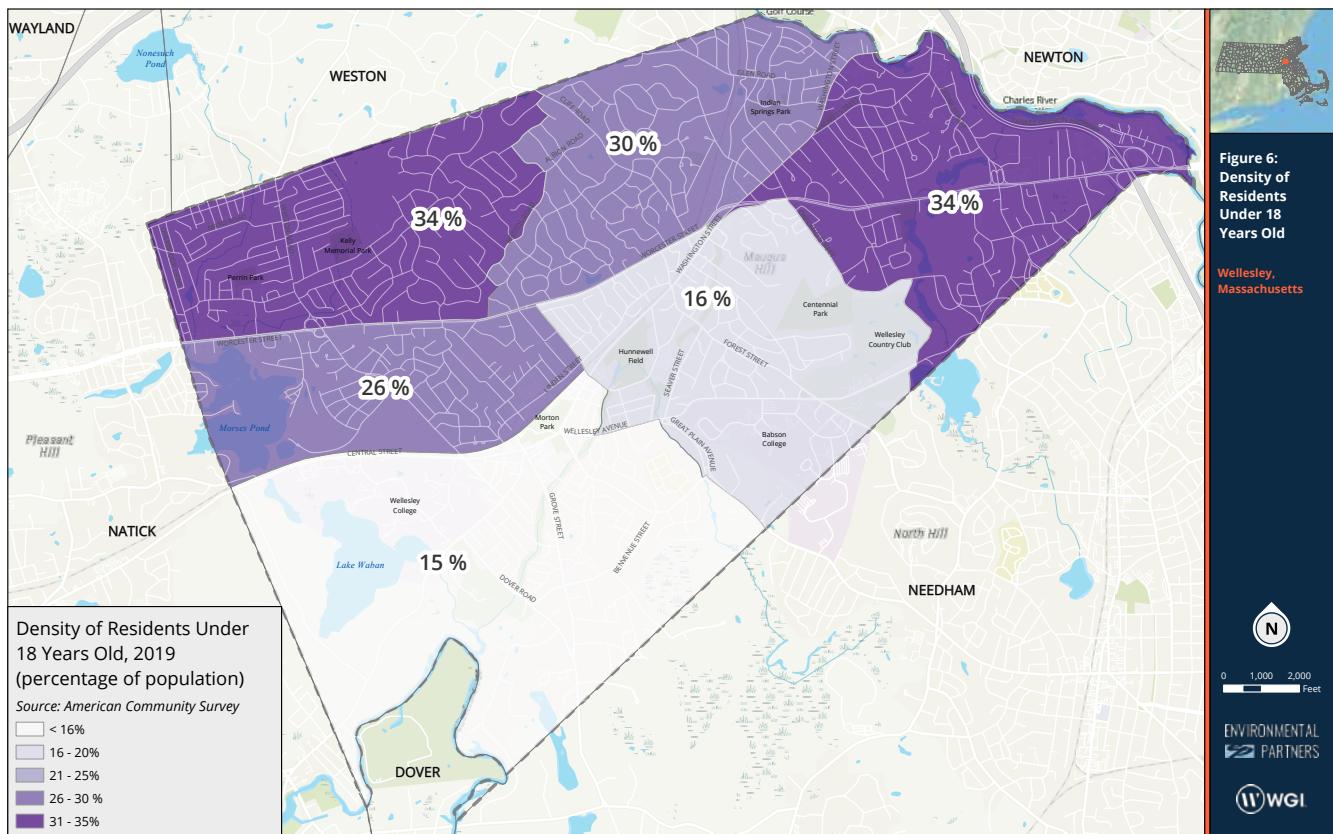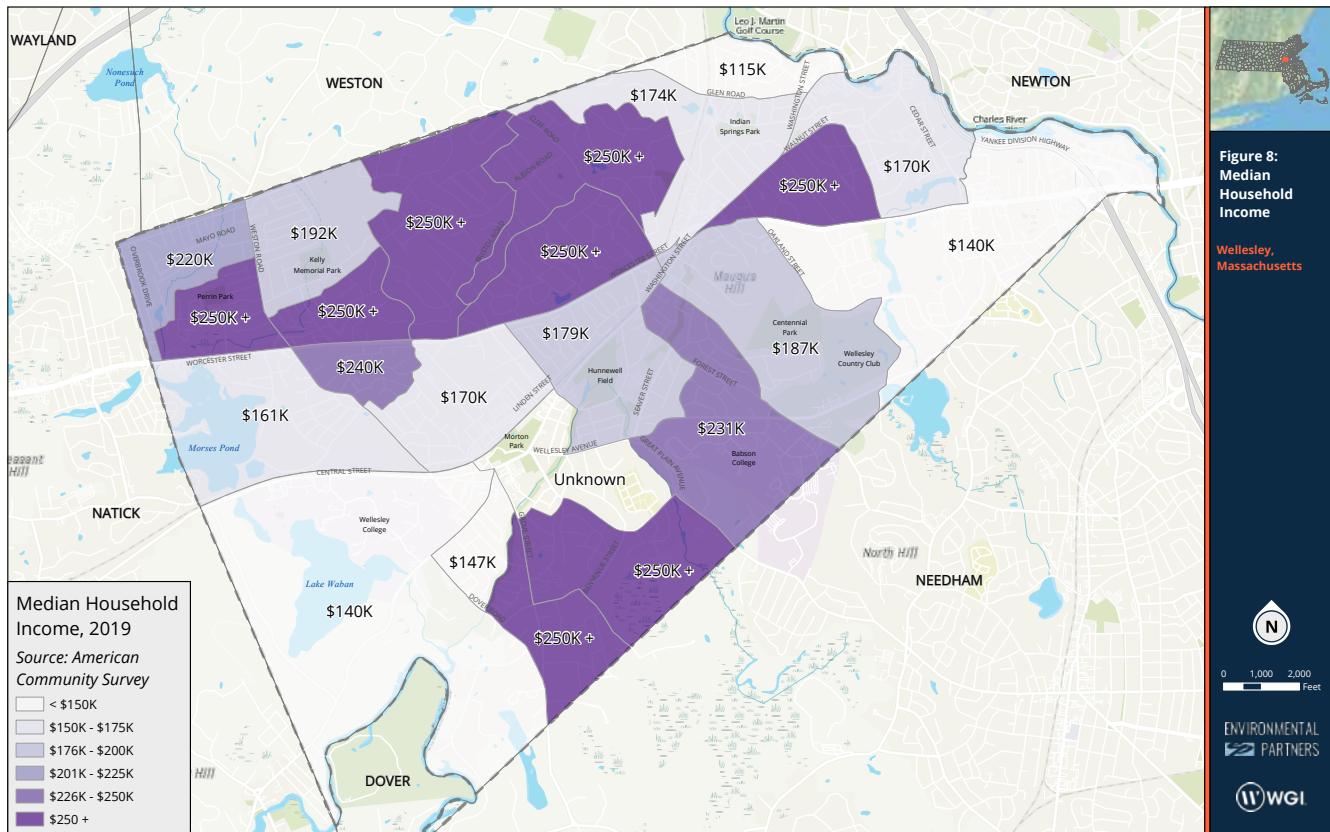
MAP 7 – DENSITY OF RESIDENTS OVER 65 YEARS OLD

Adults over 65 years of age account for approximately 15 percent[135] of Wellesley's population, and this proportion has been steadily increasing over the past 10 years. Adults over 65 years of age are mainly concentrated on the north and west sides of town. Older adults often become less willing to drive by themselves as they age, relying on shuttle or transit services or being driven by their spouses/children. The areas with the highest percentages of those over 65 are well served by the Wellesley Square and Wellesley Hill village centers, as well as MBTA and MWRTA transit services, providing access to desirable destinations within short distances.

Figure 7: Density of Residents Over 65 Years Old

Wellesley, Massachusetts

Density of Residents Over 65 Years Old, 2019 (percentage of population)
Source: American Community Survey
- < 13 %
- 13 - 15.5 %
- 15.6 - 17.5 %
- > 17.5 %
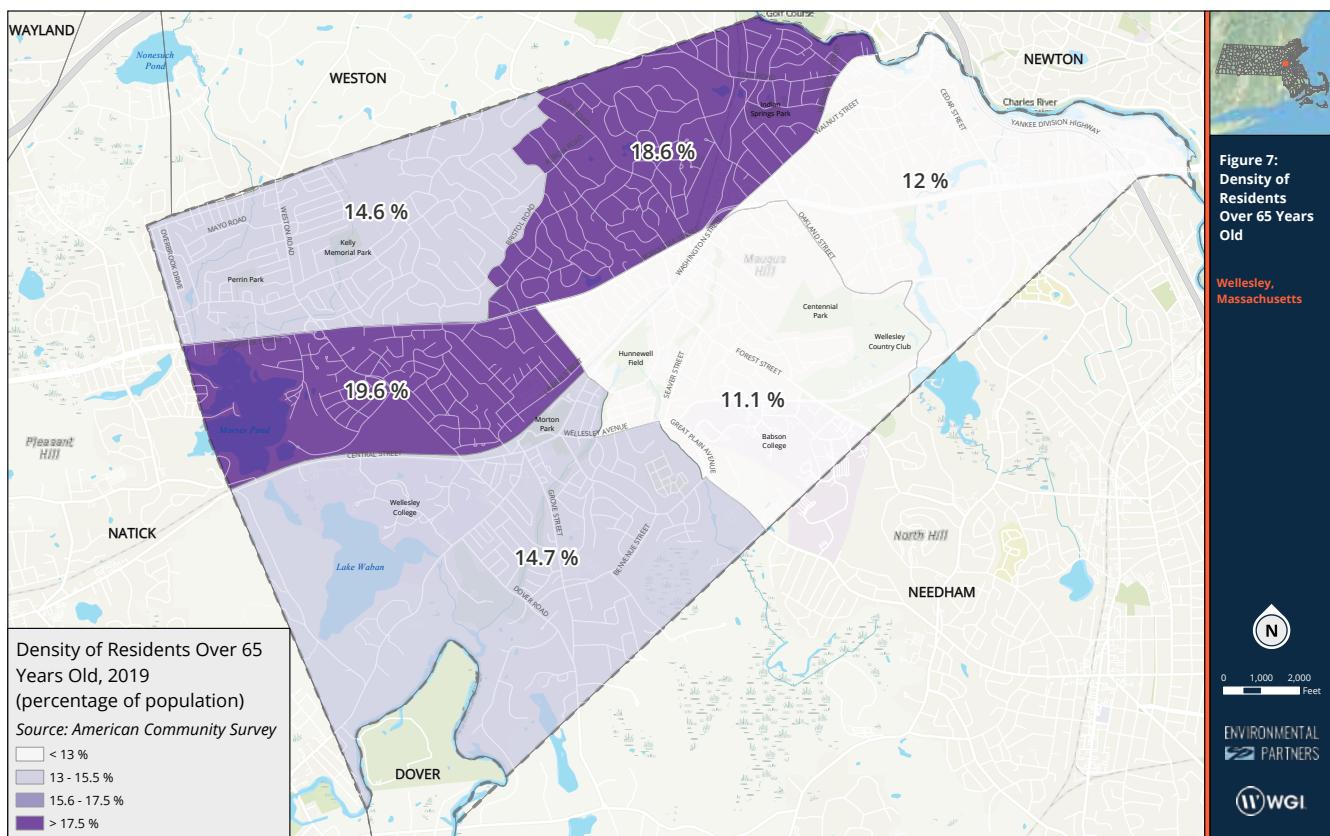
MAP 8 – MEDIAN HOUSEHOLD INCOME

Wellesley is a relatively affluent community, with a median household income of $197,132[136] and a poverty rate of 4.4 percent[137]. Lower median household incomes are found along the Natick-Wellesley border and Newton-Wellesley border. Due to the high costs of vehicle ownership, those with lower incomes may be more likely to rely on transit services or biking to get around.

Figure 8: Median Household Income

Wellesley, Massachusetts

Median Household Income, 2019

Source: American Community Survey

< $150K
$150K - $175K
$176K - $200K
$201K - $225K
$226K - $250K
$250 +

MAP 9 – HOUSEHOLD VEHICLE OWNERSHIP

Vehicle ownership plays a significant role in the travel decisions that an individual makes; overall, approximately 95 percent[138] of Wellesley households own at least one vehicle, and there are an average of 1.98 vehicles[139] per household town-wide. Vehicle ownership is highest in the northwest area of town, with less than 2 percent of households without a vehicle, and lowest on the Wellesley and Babson college campuses and in the Wellesley Farms neighborhood, with nearly 10 percent of households without a vehicle.

Figure 9: Household Vehicle Ownership

Wellesley, Massachusetts

Percentage of Households without a Vehicle, Five Year Average (2015-2019)

Source: IPUMS National Historic GIS and U.S. Census

- 8% - 10%
- 6% - 7.9%
- 4% - 5.9%
- 2% - 3.9%
- < 2%

ENVIRONMENTAL PARTNERS

WGI
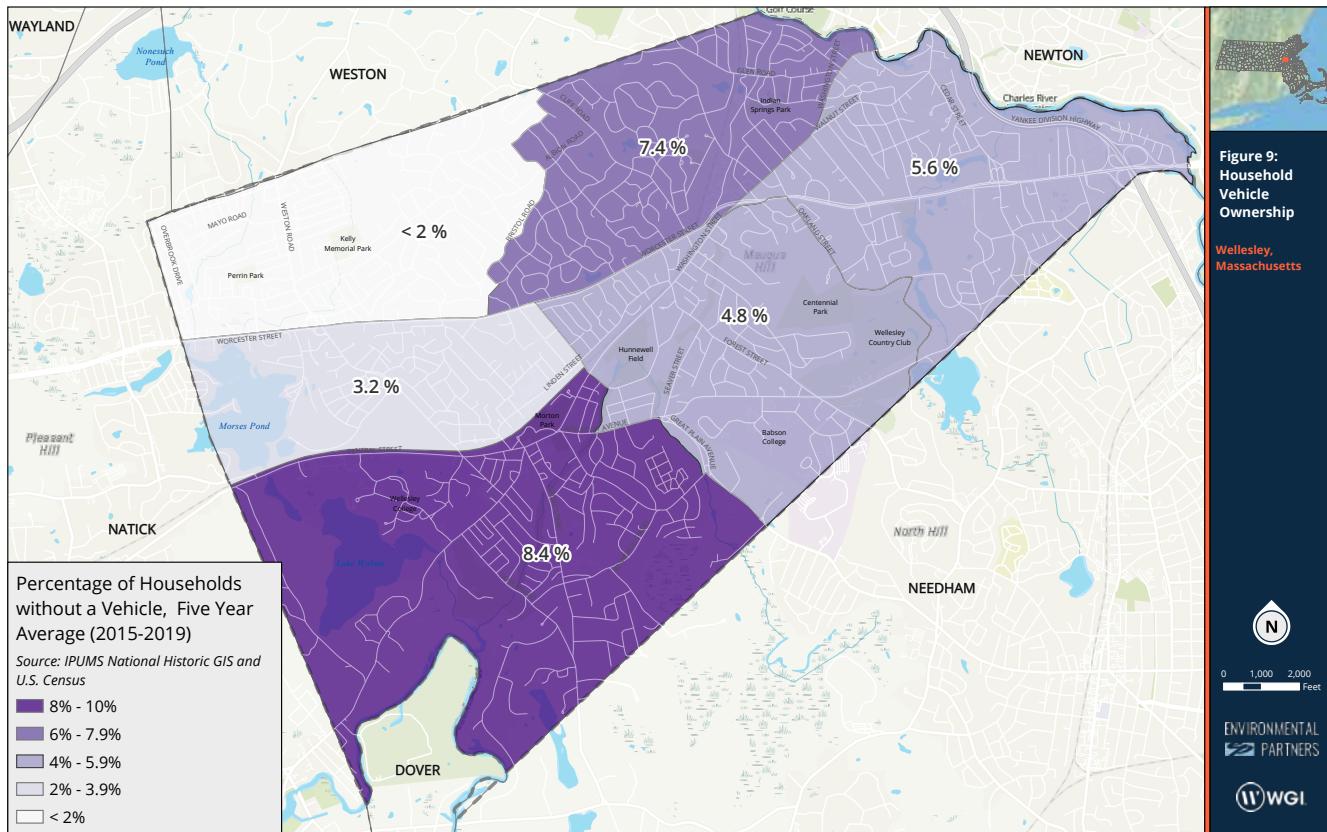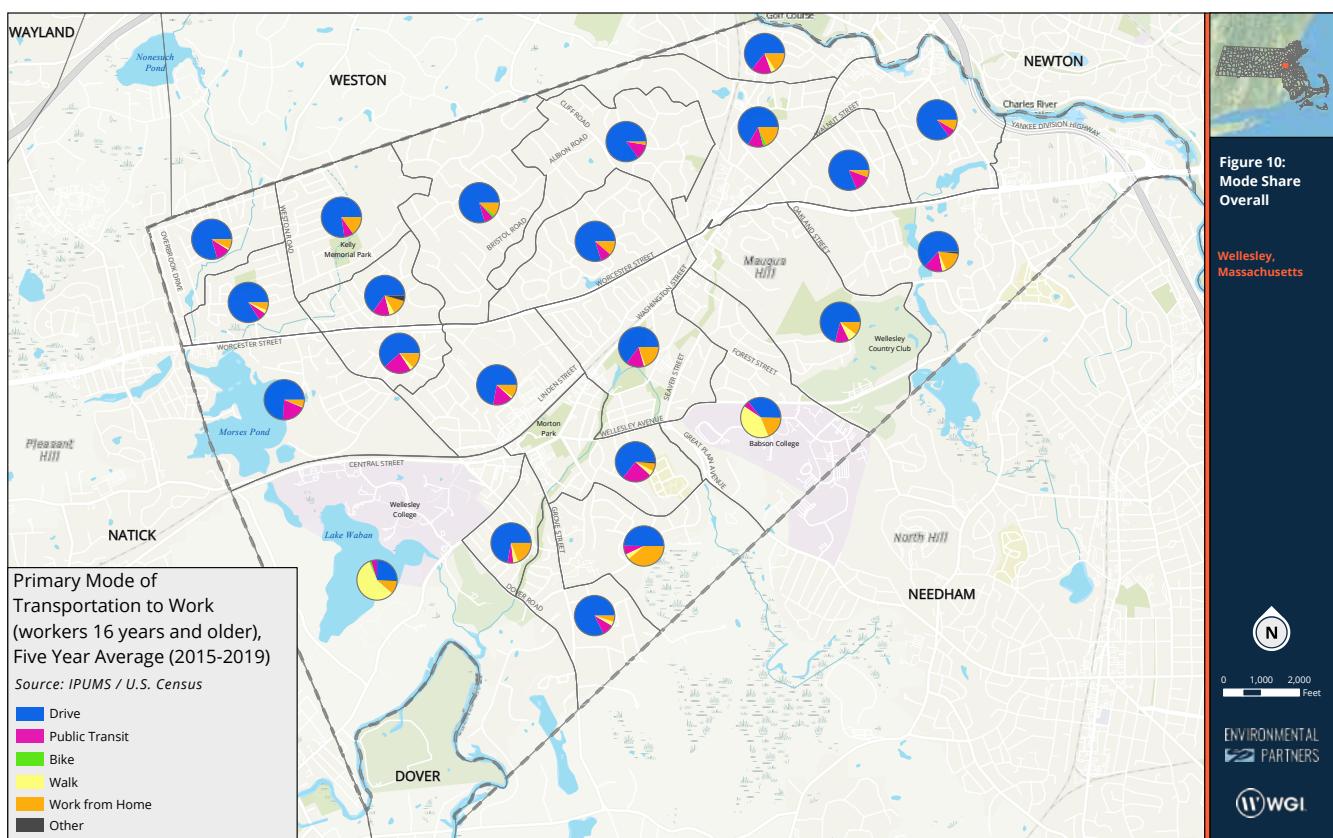
TRAVEL PATTERNS

The way in which Wellesley residents travel to work, school, and other destinations is influenced by many factors, including the convenience of different travel options, the distance of the trip, schedules, and other factors.

MAP 10 – COMMUTING CHOICES WITHIN WELLESLEY

Nearly two-thirds of Wellesley residents drive to work alone. Of the remaining third of working residents, 10% take public transit, 13% walk to work, and less than 1% bike to work. Walk-to-work trips are highly concentrated around the Wellesley and Babson College campuses, and transit commuting trips are most common within the Wellesley Square neighborhood.

Since 2013, the proportion of Wellesley residents driving to work alone has steadily decreased from approximately 61% to 56%, reflecting a shift toward lower-impact travel modes. The proportion of residents walking to work has also steadily decreased, from approximately 15% to 12%, and those biking to work has remained unchanged over the same time period, suggesting that further interventions are needed to make more residents view walking and biking as viable commuting alternatives. The travel modes exhibiting increases in use since 2013 include public transit, carpooling, and working from home, with percentage increases of 15%, 61%, and 34%, respectively.

MODE SHARES OVER TIME

Legend: 2013, 2014, 2015, 2016, 2017, 2018, 2019
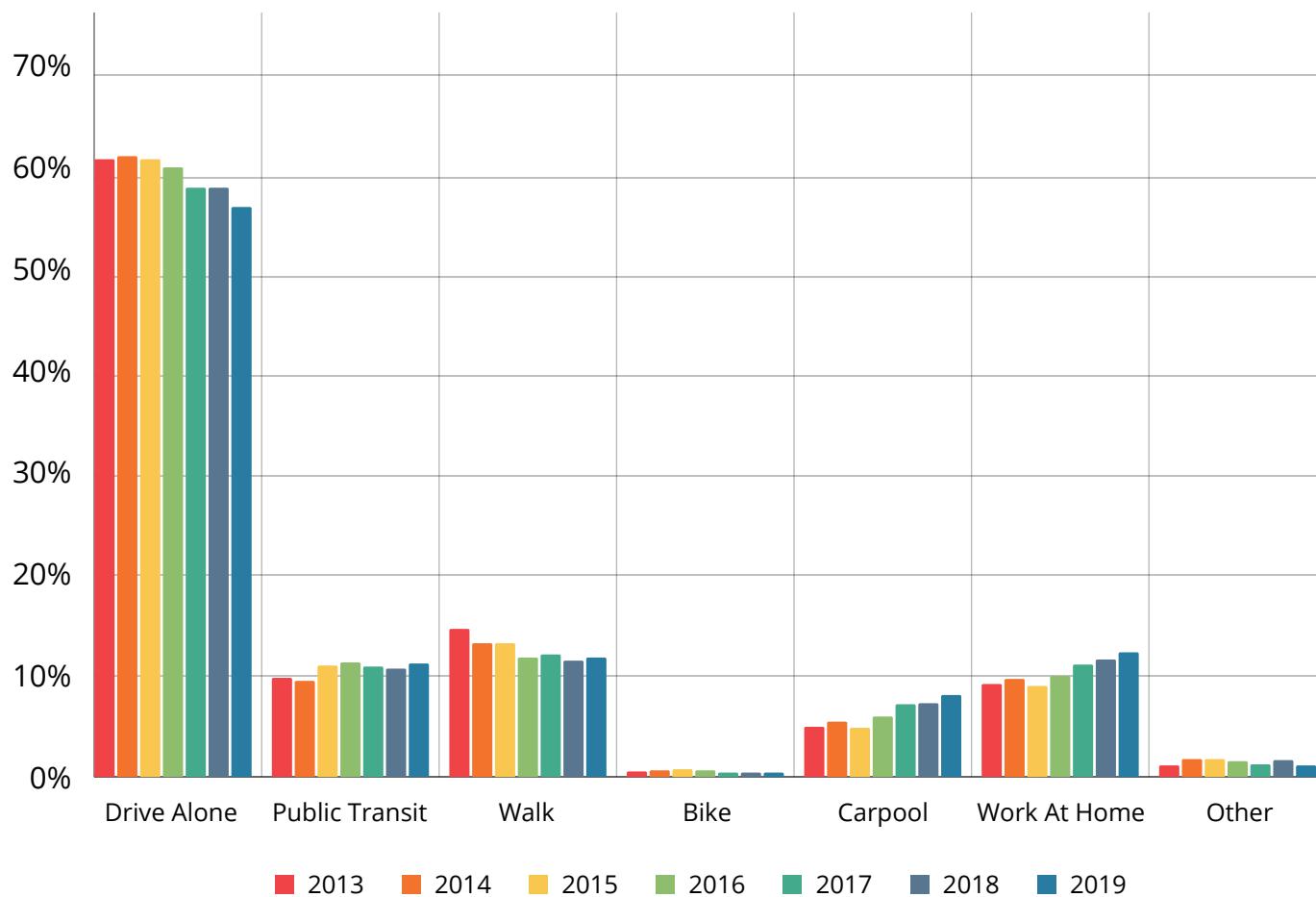
A comparison of the commuting patterns of Wellesley residents to those of adjacent communities provides some interesting findings. Wellesley residents are least likely to drive to work alone of the communities considered, largely due to the greater proportion of residents that walk to work in Wellesley. Public transit use in Wellesley is in line with that in adjacent communities despite the fact that there are limited transit services beyond the commuter rail line, whereas communities such as Newton have numerous bus lines servicing their community. The regional comparison also illustrates that the low proportion of bike-to-work trips in Wellesley is not an anomaly; in fact, none of the peer communities considered have a bike mode share of more than 1%.

TRAVEL MODE TO WORK: REGIONAL COMPARISON
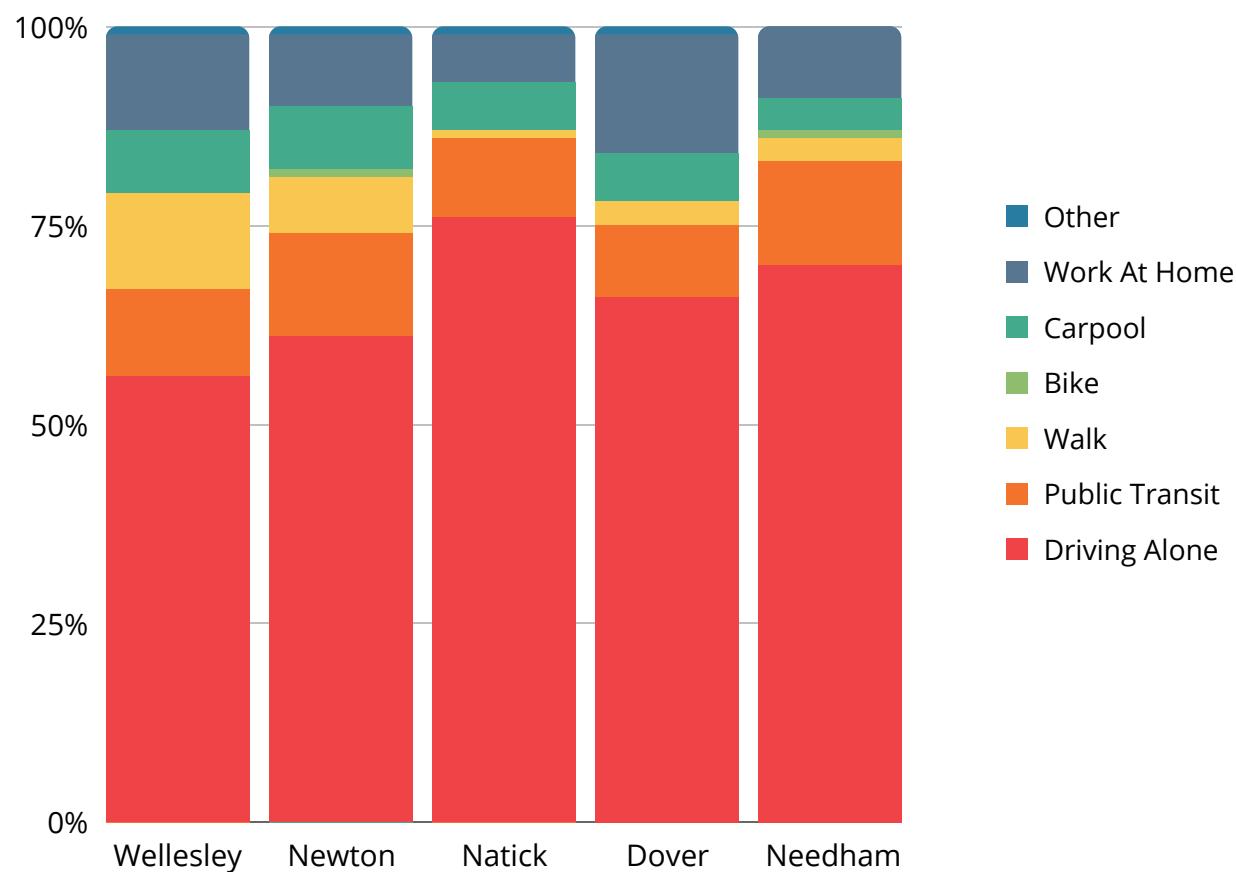
MAP 11 – WORK LOCATION OF WELLESLEY RESIDENTS

The top employment location for Wellesley residents in the workforce is Boston, accounting for 31.2 percent[140] of all employment destinations. Other common employment destinations include Cambridge, Waltham, Natick, and Newton. Only 12.2 percent[141] of residents work within the town itself.

Figure 11: Work Location of Wellesley Residents

Wellesley, Massachusetts

Commuter Rail
Source: MBTA
Highways
Source: MassDOT
Employment Density
Source: LEHD / U.S. Census
Least Dense
Most Dense
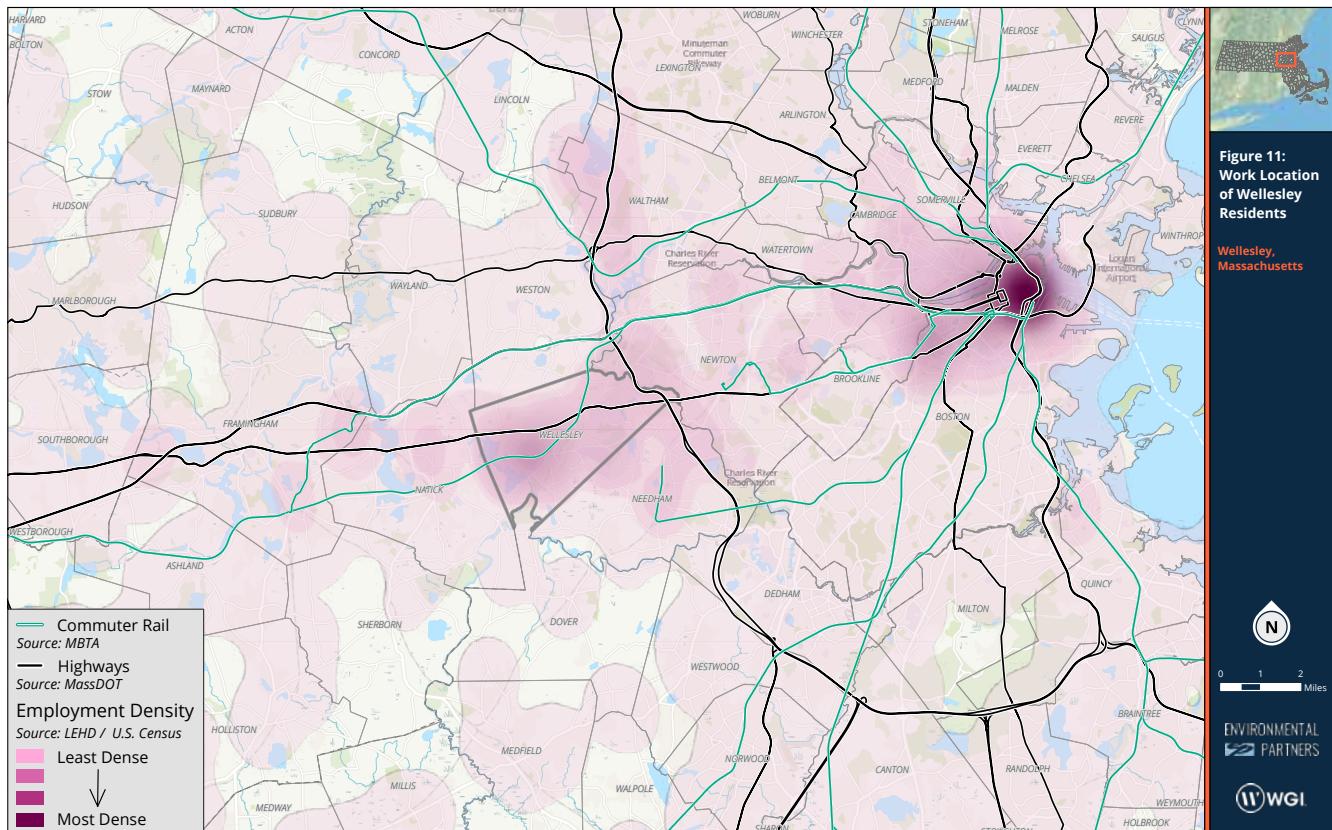
MAP 12 – HOME LOCATIONS OF PEOPLE WORKING IN WELLESLEY

The home locations of those working with Wellesley are fairly uniformly distributed throughout the metropolitan region. Trips originating from adjacent towns along the Worcester MBTA commuter rail line, including Framingham, Natick, Newton, and Brookline, account f[140140]of all employment trips into Wellesley.

Figure 12:
Home Location
of People
Working in
Wellesley

Wellesley,
Massachusetts
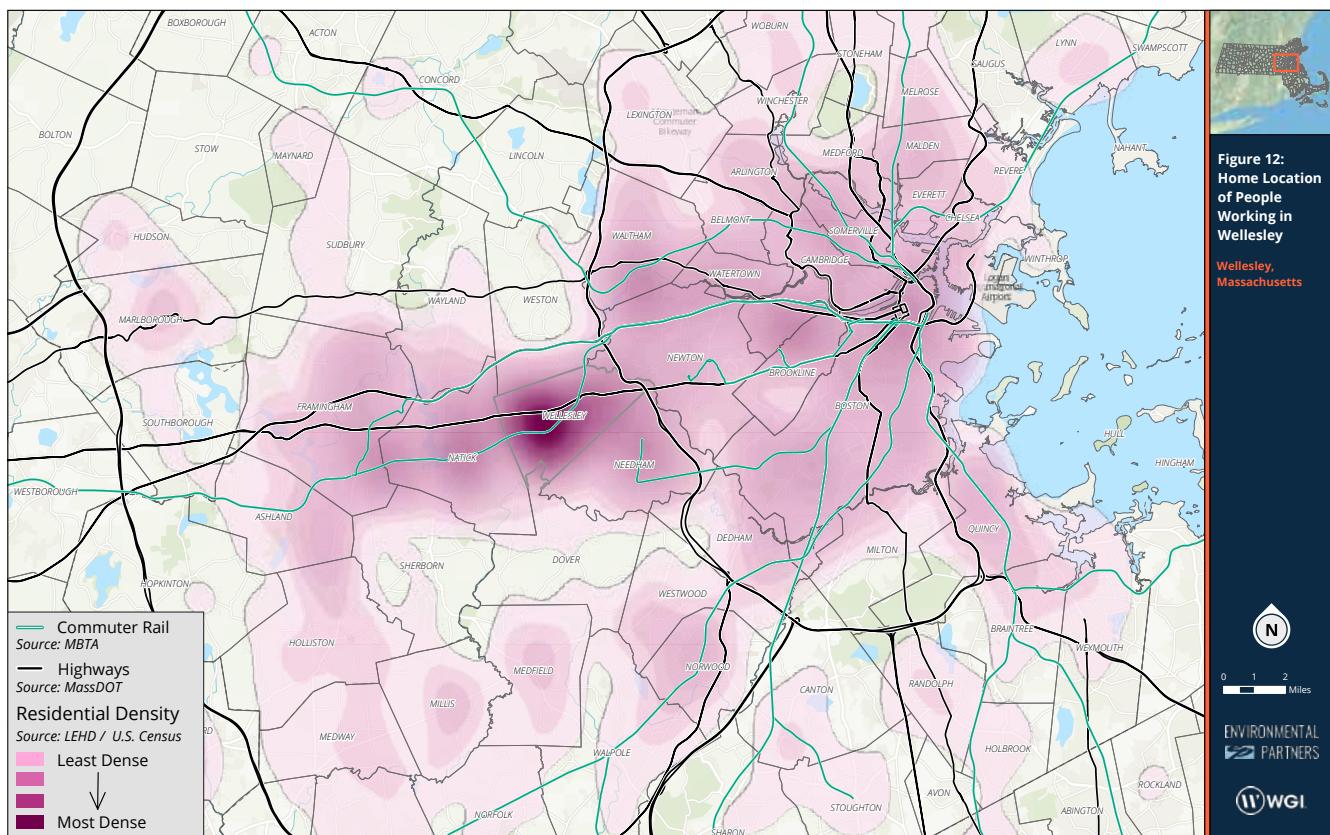
SCHOOL TRAVEL

School-related traffic congestion has been identified as a significant issue in Wellesley; the Unified Plan highlighted the fact that traffic congestion around schools at the beginning and end of the school day accounts for approximately 30% of traffic in Wellesley on school days.

A look at the travel modes for school trips by elementary school illustrates the considerable variations in travel mode even within town, which likely arises from several factors, such as neighborhood walkability, the size of the school's catchment area (i.e., how far away children may live from the school), and socioeconomic factors.

At nearly all elementary schools, a majority of children are both dropped off and picked up by car, with the share of driving trips representing two thirds of all trips at certain schools. Although all elementary schools have transportation demand management policies in place, there are no restrictions or fees associated with parents or caregivers being able to drop off and pick up their children.

School buses or vans are consistently the least common mode choice for all elementary schools, representing between 6% and 26% of trips. Transportation via school bus or van is currently provided by Wellesley Public Schools for elementary school students free of charge if the student lives more than 2 miles from the school and for a fee to those living less than two miles from the school.
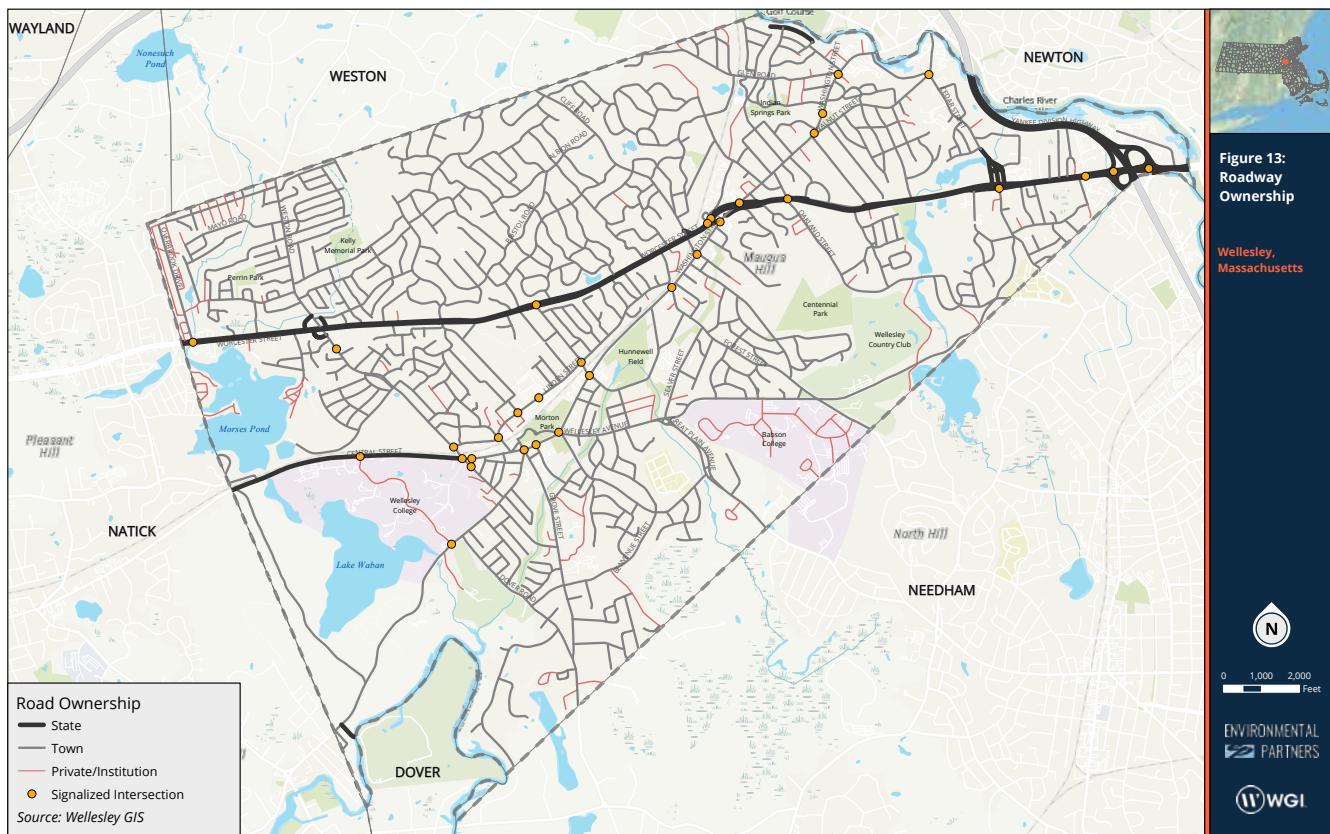
For children in grades 7-12, a fee is charged for school bus usage regardless of the distance that the student lives from the school.

TRAVEL MODE BY ELEMENTARY SCHOOL

Legend:
- Bus/Van
- Walk
- Car

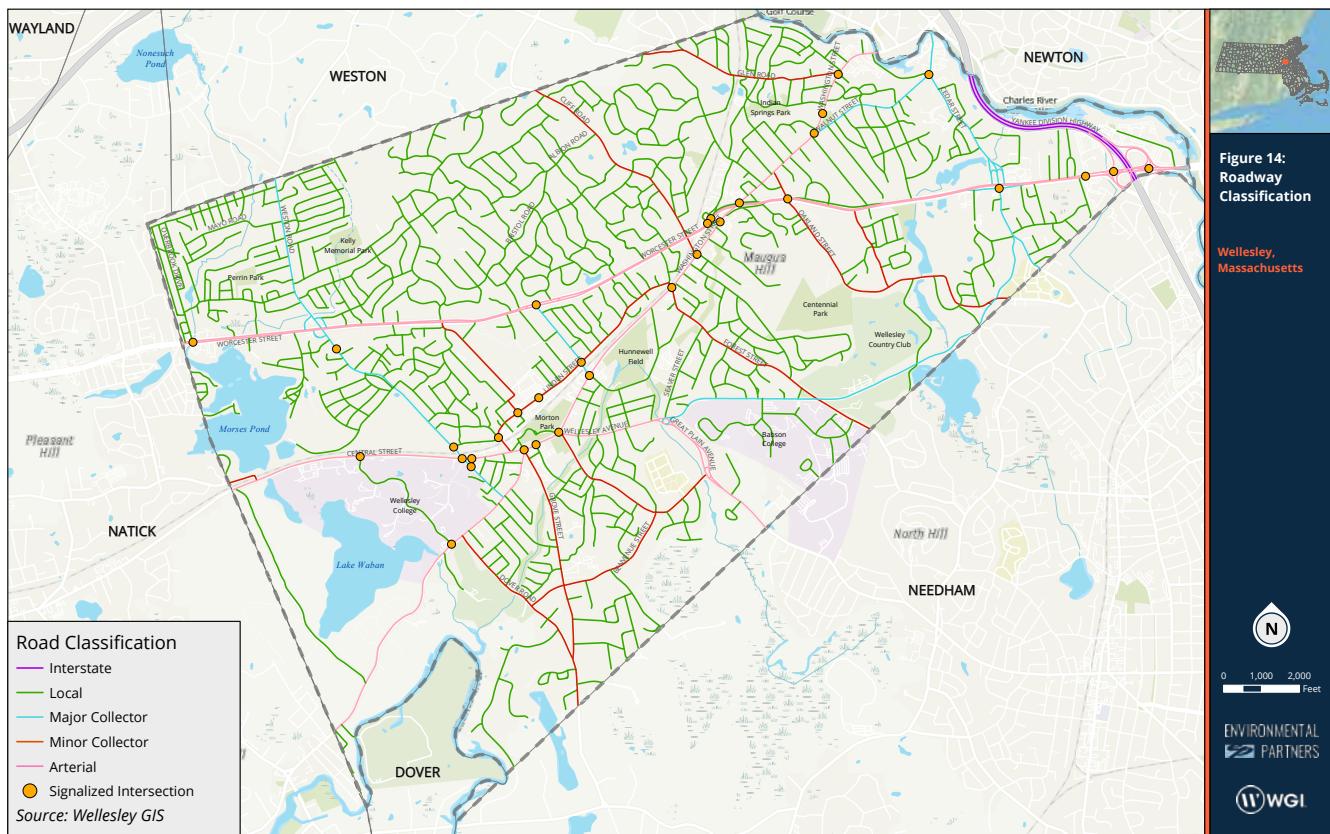A - Arrivals
D - Departures
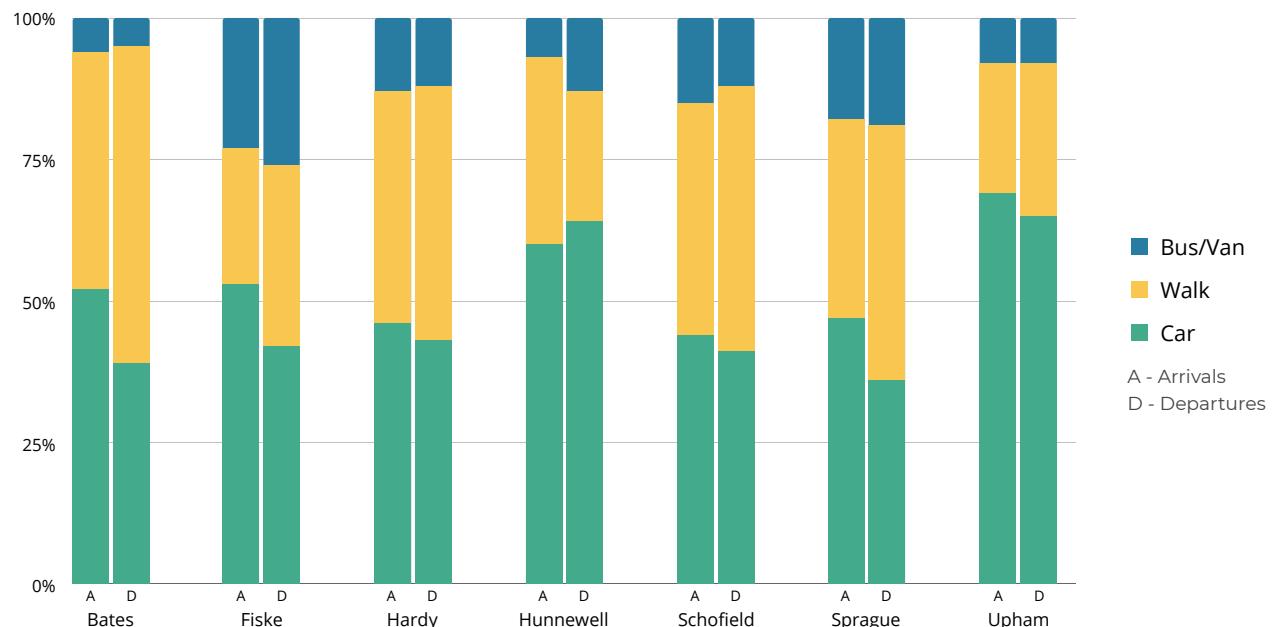
MAP 13 – ROADWAY OWNERSHIP

The majority of roadways in Wellesley are owned and maintained by the Town. Only three roads – Worcester Street, Central Street, and I-95 – are owned and maintained by the state through the Massachusetts Department of Transportation (MassDOT). Approximately 10.13 percent[143] of the roadways in Wellesley are private streets that are owned and maintained by private organizations or institutions, such as a college or resident association.

Figure 13: Roadway Ownership

Wellesley, Massachusetts

Road Ownership
- State
- Town
- Private/Institution
- Signalized Intersection

Source: Wellesley GIS

MAP 14 – ROADWAY CLASSIFICATION

Roadways are classified based on the degree to which they provide access to local neighborhoods or provide a method of moving a traveler from point A to point B as efficiently as possible. The majority of roadways in Wellesley are classified as "local", providing the highest degree of access to properties and having relatively low speed limits. Arterial roadways, such as Worcester Street (Route 9), act as regional connectors, processing high volumes of high-speed traffic. Both Worcester Street (Route 9) and Central Street (Route 135)/Washington Street (Route 16) bisect Wellesley longitudinally, providing for efficient east-west connections. In contrast, efficient north-south connections within town are limited. Minor collectors, such as Cliff Road and Forest Street, act as the main thoroughfares but terminate upon reaching an arterial instead of providing an uninterrupted route through town.

Figure 14: Roadway Classification

Wellesley, Massachusetts

Road Classification
- Interstate
- Local
- Major Collector
- Minor Collector
- Arterial
- Signalized Intersection

Source: Wellesley GIS

MAP 15 – STIP/CIP PROJECTS

Several roadway and intersection projects are under design or construction within the Town limits. Since implementing a Complete Streets Policy in 2019 and a Complete Streets Prioritization Plan in 2020, Wellesley has received MassDOT funding for the Great Plain Traffic Circle, which was proposed with the goals of improving pedestrian and bicycle accommodations and reducing traffic congestion. Other projects include sidewalk improvements along Linden Street and Weston Road and pedestrian crossing improvements at key locations.

Figure 15: TIP/STIP/CIP Projects

Wellesley, Massachusetts
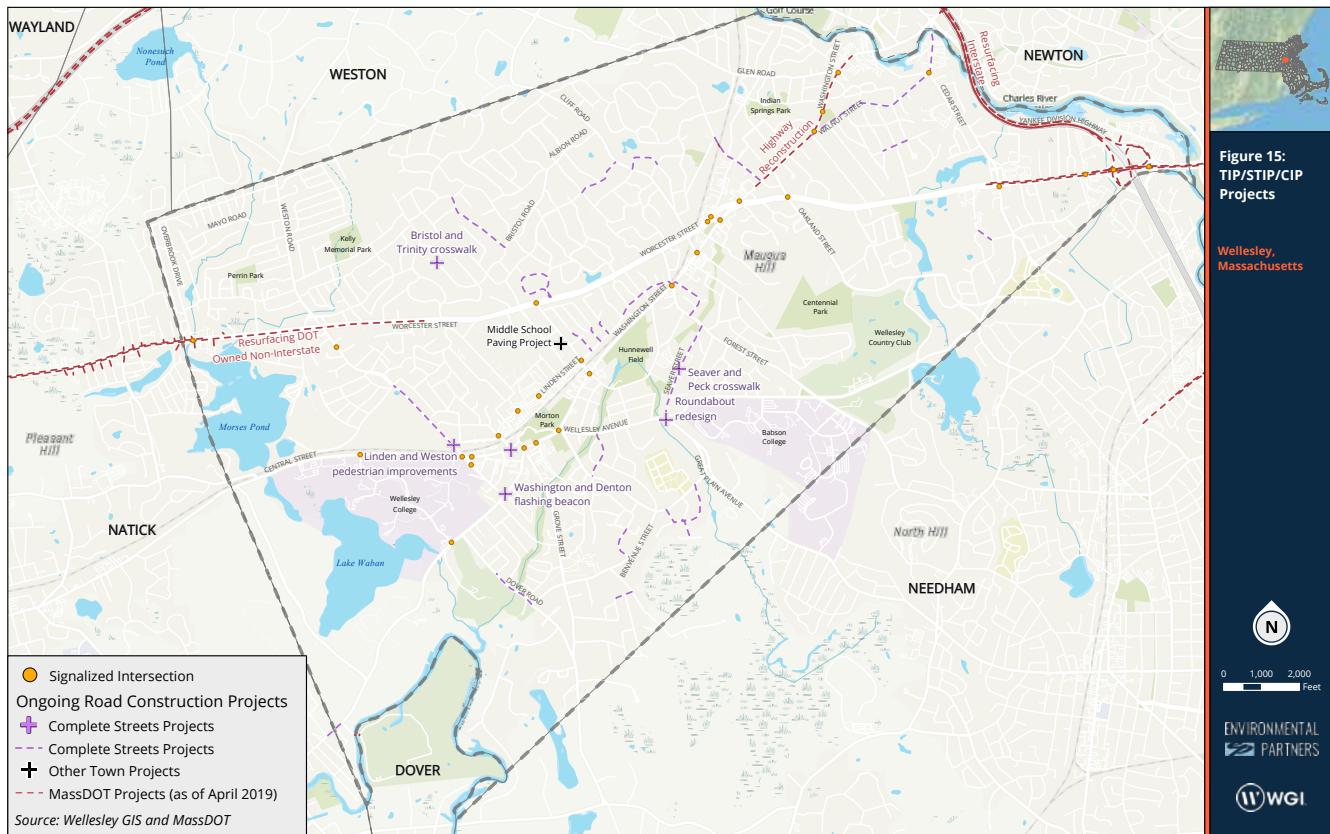
TRANSIT

Wellesley is served by the Framingham/Worcester Line of the Massachusetts Bay Transit Authority (MBTA) Commuter Rail service, with three stops at Wellesley Square, Wellesley Hills, and Wellesley Farms. In addition, the MetroWest Regional Transit Authority (MWRTA) Route 1 bus services Wellesley along Worcester Street and Cedar Street. Both the commuter rail line and Route 1 bus cross through Town as east-west routes. MWRTA's Route 8 bus, which also serviced Wellesley, was discontinued as of February 15, 2021 and replaced by the Catch Connect micro-transit program.

The Catch Connect service provides curb-to-curb microtransit service within Wellesley, servicing any address within Town as well as Newton Wellesley Hospital, Natick Community Center, the Woodland MBTA station, and the Waban MBTA station. Fares have been waived for this service since it was first implemented in February 2021 but will be $2.00/ride once collection resumes. The service runs on weekdays only, with hours from 6:45AM-6:45PM.

MWRTA also provides service to Wellesley residents with disabilities and to residents who cannot independently access fixed route buses through the MetroWest RIDE, with a one-way trip cost of $2.00 within the MetroWest RIDE service area. The MWRTA's Boston Hospital Shuttle also provides Wellesley residents with shuttle service to hospitals within the Boston area on Tuesdays, Wednesdays, and Thursdays.

In addition to transit services provided by the MBTA and MWRTA, the following shuttles operate within Town:

- **Council on Aging (COA) Bus:** service from 8:45AM to 3:30 PM on weekdays, offering on-demand service to specific destinations within Wellesley, Newton, and Natick
- **Wellesley-MIT Exchange Bus:** transportation between Wellesley and MIT on weekdays for Wellesley and MIT students, faculty, and staff only
- **Springwell Medical Escort Program:** provides seniors aged 60 years or older with rides to and from medical appointments within Belmont, Brookline, Needham, Needham, Waltham, Watertown, Wellesley, Weston, surrounding towns and Boston hospitals
- **Employer Shuttles:** Several employers within Town provide shuttle service to employees only

WHAT IS MICROTRANSIT?

Many transit agencies are implementing microtransit services as a more convenient alternative to traditional public transportation. With vehicle sizes ranging from vans and shuttles to buses, microtransit provides small-scale, on-demand public transit service, allowing for flexible pick-up and drop-off points. Microtransit can be coupled with traditional transit services by simply providing first- and last-mile connections to traditional public transit stops, or it can act as a stand-alone ride-hailing service, similar to Uber or Lyft.
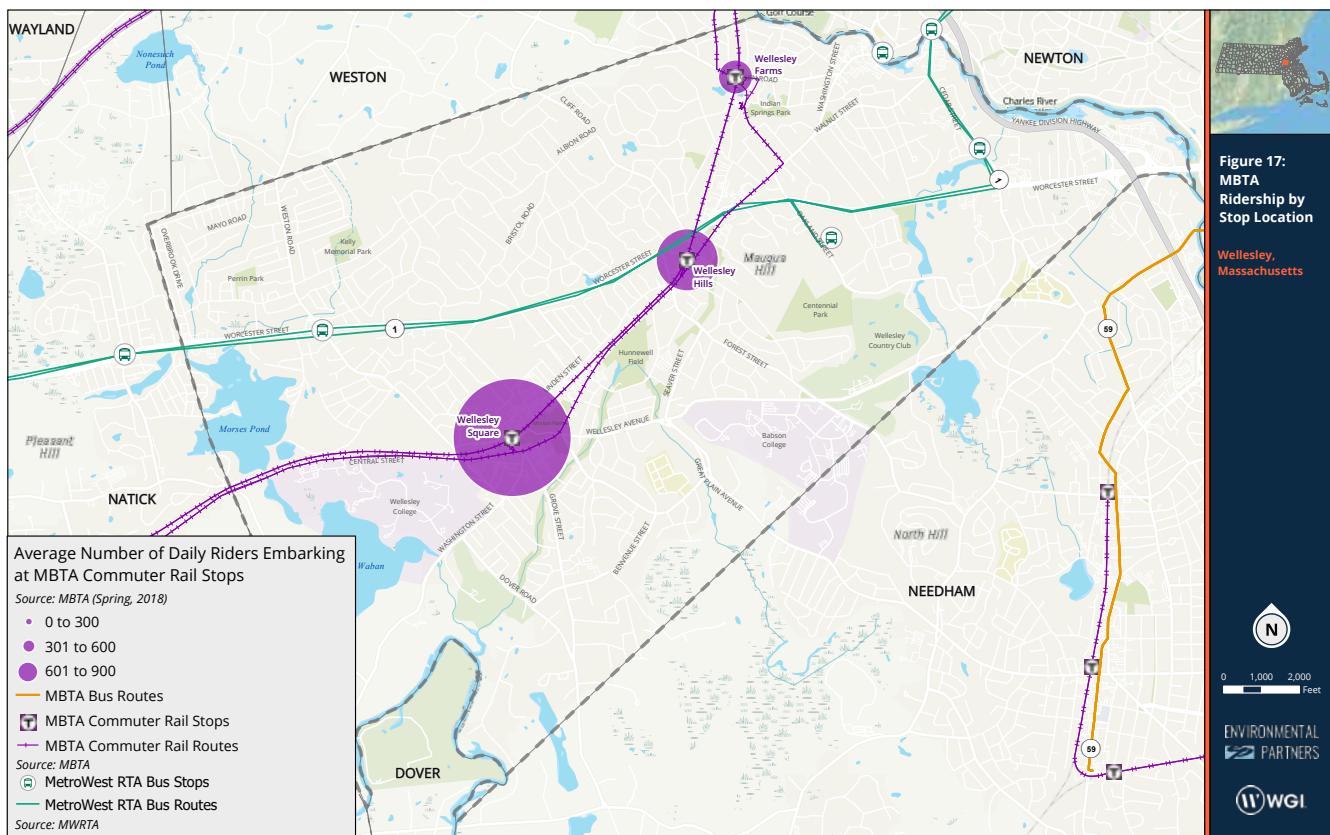
MAP 16 – PUBLIC TRANSIT IN WELLESLEY

Figure 16:
Public Transit in Wellesley
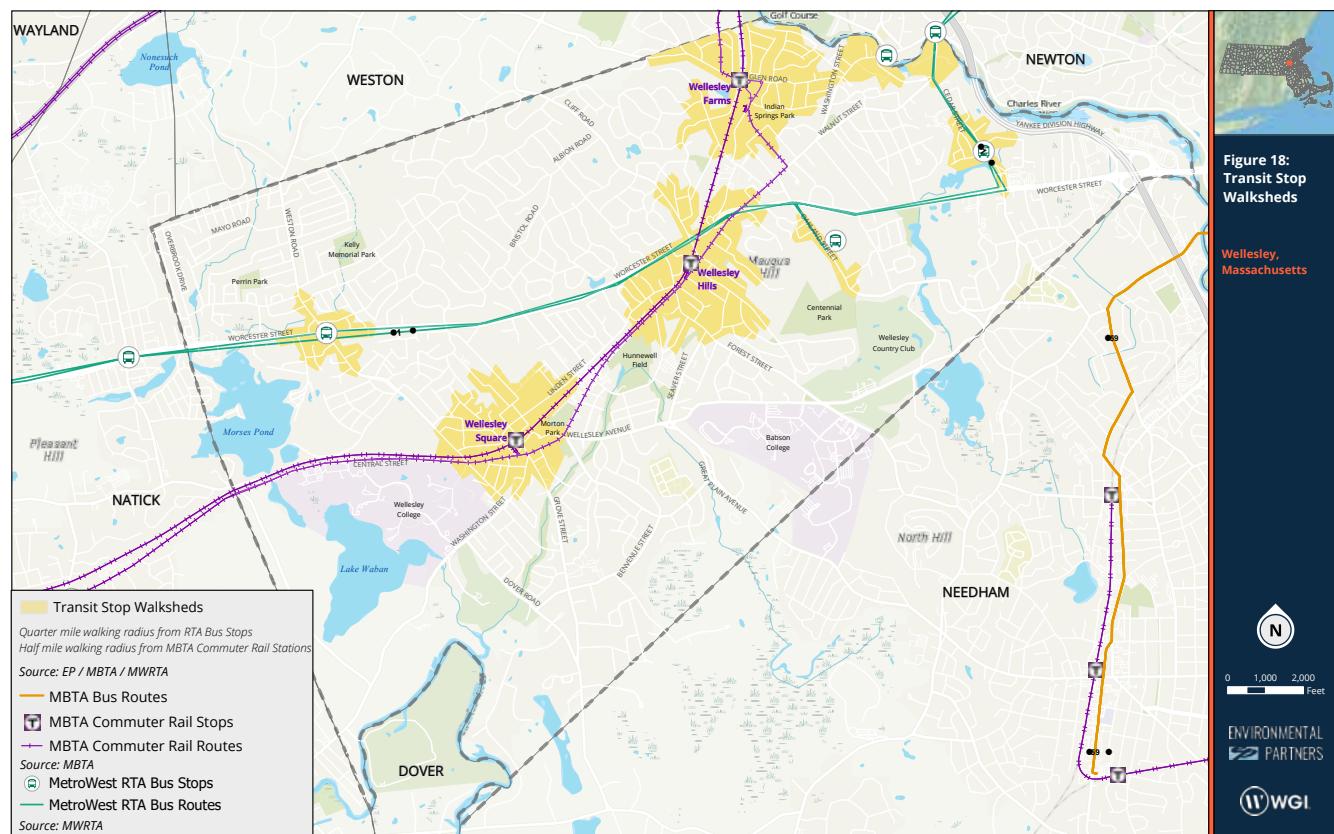
Wellesley, Massachusetts
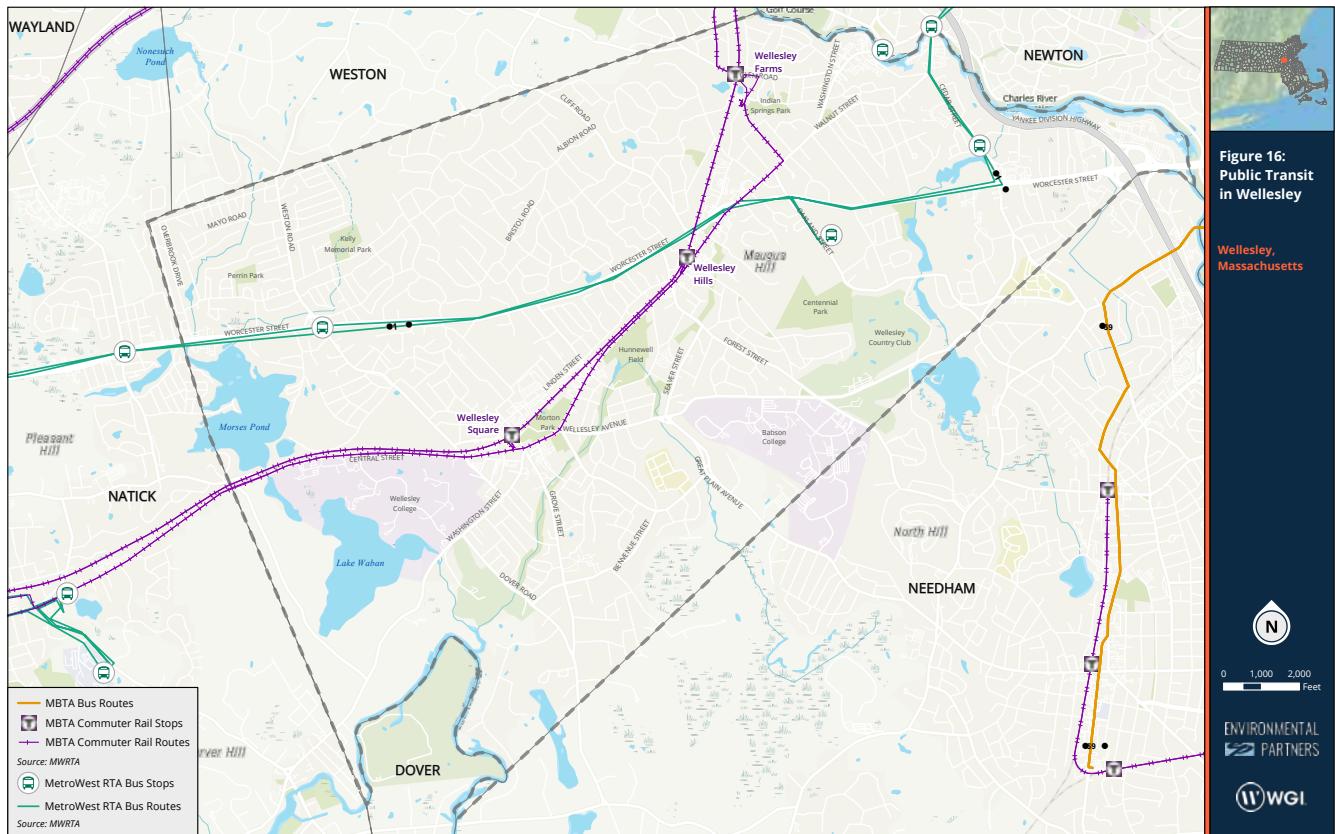
MAP 17 – MBTA RIDERSHIP BY STOP LOCATION

Of the three commuter rail stations in Wellesley, Wellesley Square has the highest ridership, with an average of 626 riders embarking daily. An average of 336 and 298 riders[144] embark at the Wellesley Hills and Wellesley Farms stations daily, respectively.
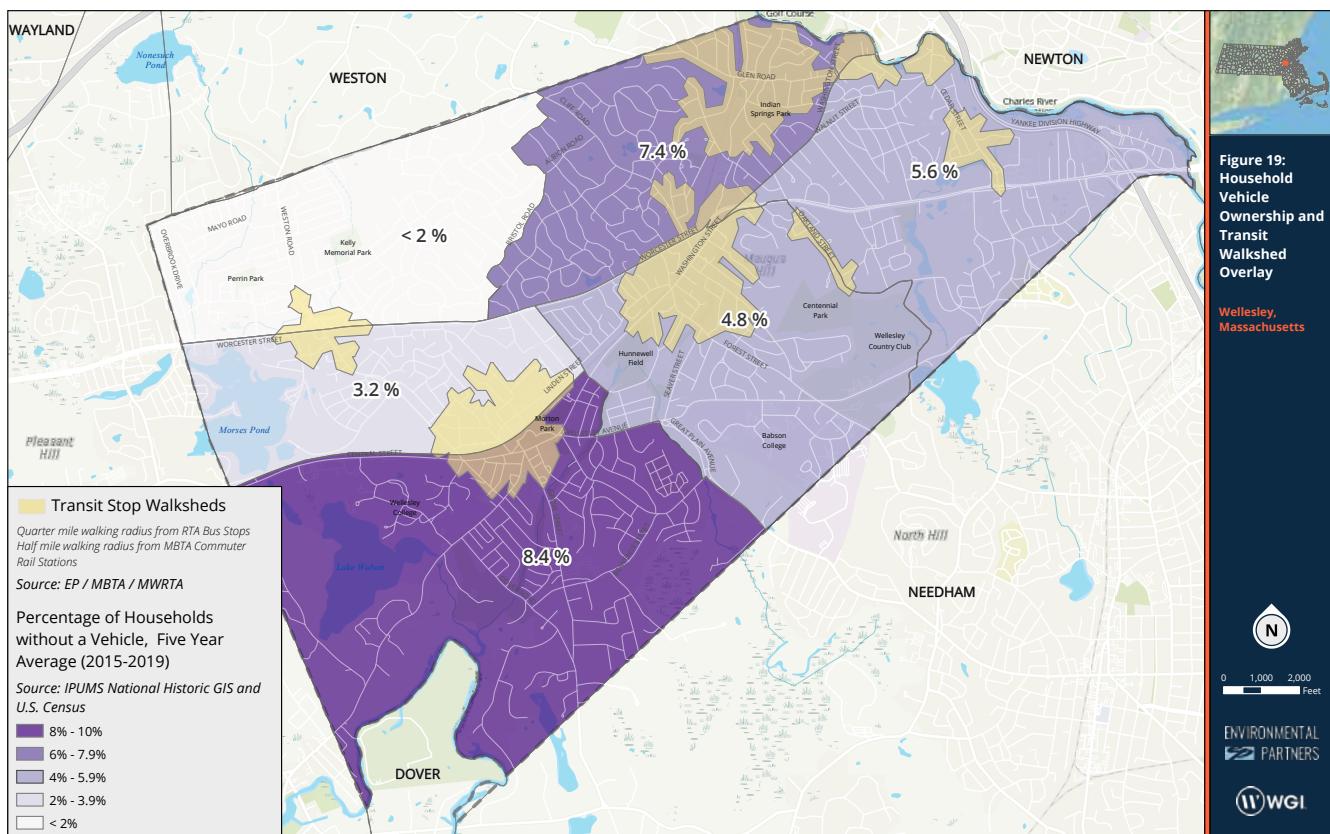

Average Number of Daily Riders Embarking at MBTA Commuter Rail Stops
Source: MBTA (Spring, 2018)
- 0 to 300
- 301 to 600
- 601 to 900
— MBTA Bus Routes
⊞ MBTA Commuter Rail Stops
+ MBTA Commuter Rail Routes
Source: MBTA
ⓐ MetroWest RTA Bus Stops
— MetroWest RTA Bus Routes
Source: MWRTA

Figure 17: MBTA Ridership by Stop Location

Wellesley, Massachusetts

MAP 18 – TRANSIT STOP WALKSHEDS

The "average" person is willing to walk for up to 10 minutes (½ mile) to reach a rapid transit station (e.g., commuter rail) and up to 5 minutes (¼ mile) to reach a bus stop. Currently, only 2.4 percent[145] of the land within Wellesley falls within the walkshed of the MBTA and MWRTA fixed-route transit services.
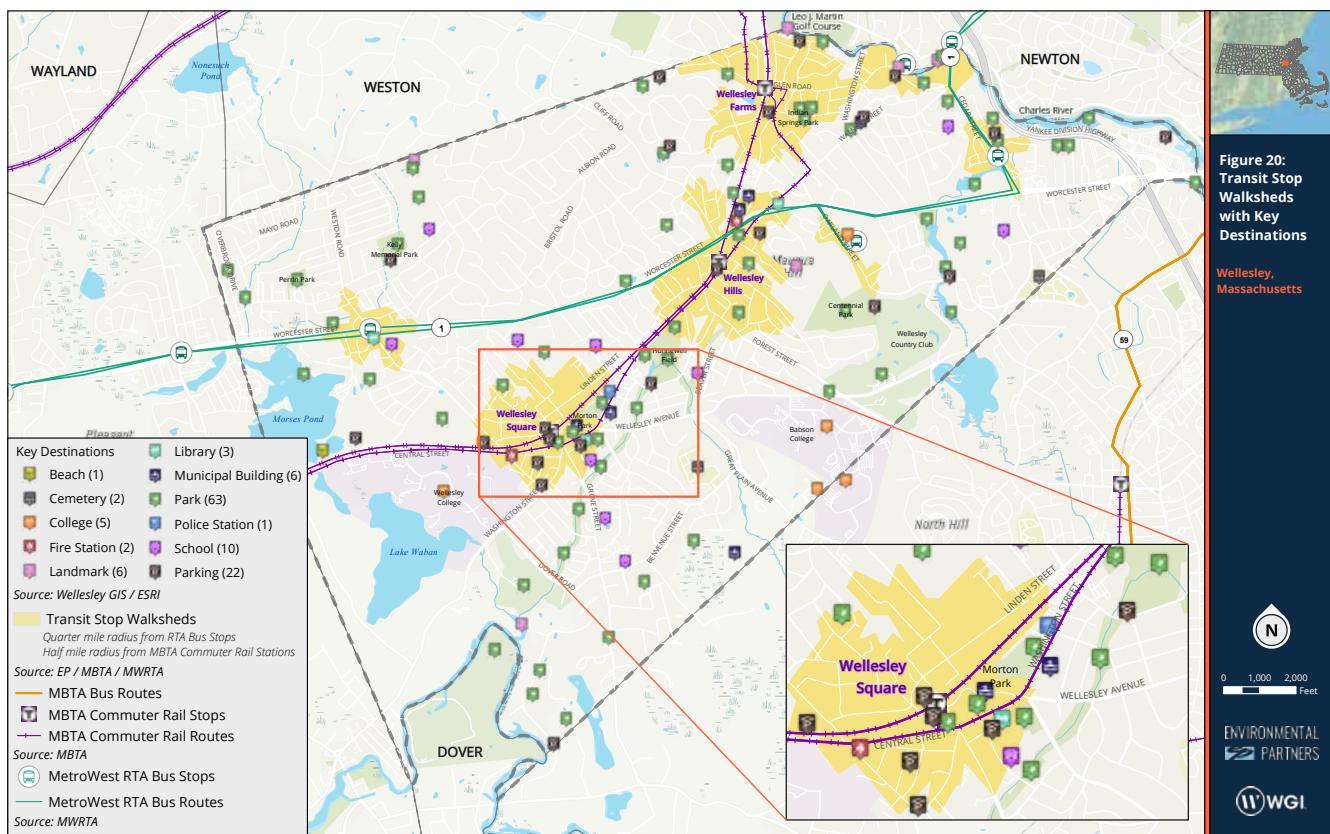

Figure 18: Transit Stop Walksheds

Wellesley, Massachusetts

MAP 19 – HOUSEHOLD VEHICLE OWNERSHIP & TRANSIT WALKSHED OVERLAY

Many of the households within Town that are least likely to own a vehicle lie outside the walksheds of fixed-route transit services, indicating that certain households have to walk further to access transit services or must rely on other transportation options, such as on-demand shuttles or carpooling, to reach destinations not accessible via walking or bicycling.

Figure 19: Household Vehicle Ownership and Transit Walkshed Overlay

Wellesley, Massachusetts

Transit Stop Walksheds
Quarter mile walking radius from RTA Bus Stops Half mile walking radius from MBTA Commuter Rail Stations
Source: EP / MBTA / MWRTA

Percentage of Households without a Vehicle, Five Year Average (2015-2019)
Source: IPUMS National Historic GIS and U.S. Census

- 8% - 10%
- 6% - 7.9%
- 4% - 5.9%
- 2% - 3.9%
- < 2%

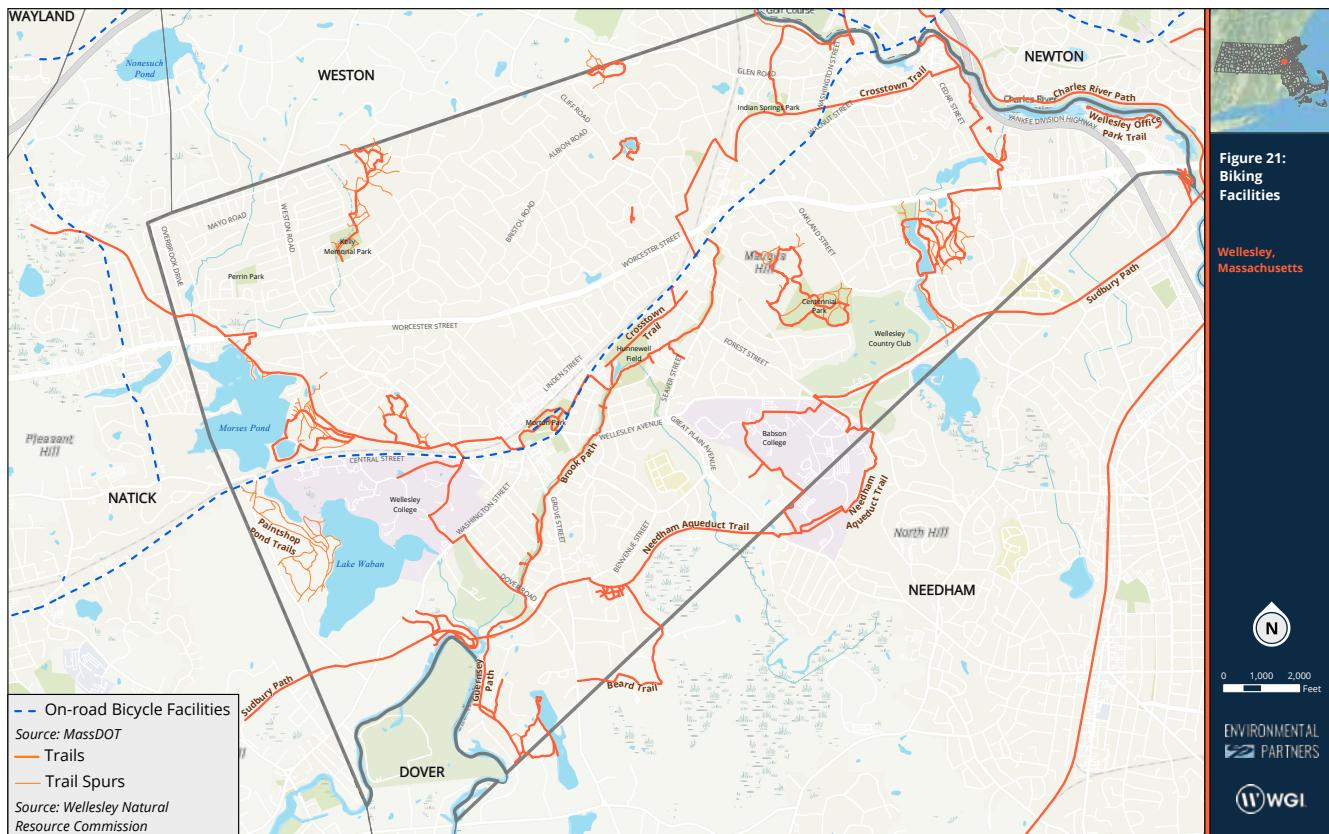# MAP 20 – TRANSIT STOP WALKSHEDS WITH KEY DESTINATIONS

Many of the key destinations within Wellesley, including the village centers, civic uses, and landmarks, are well-served by transit. However, destinations that are more uniformly distributed within Town, such as parks, are largely outside of the transit stop walksheds. This map also illustrates the significant number of parking lots that are currently located within transit stop walksheds.
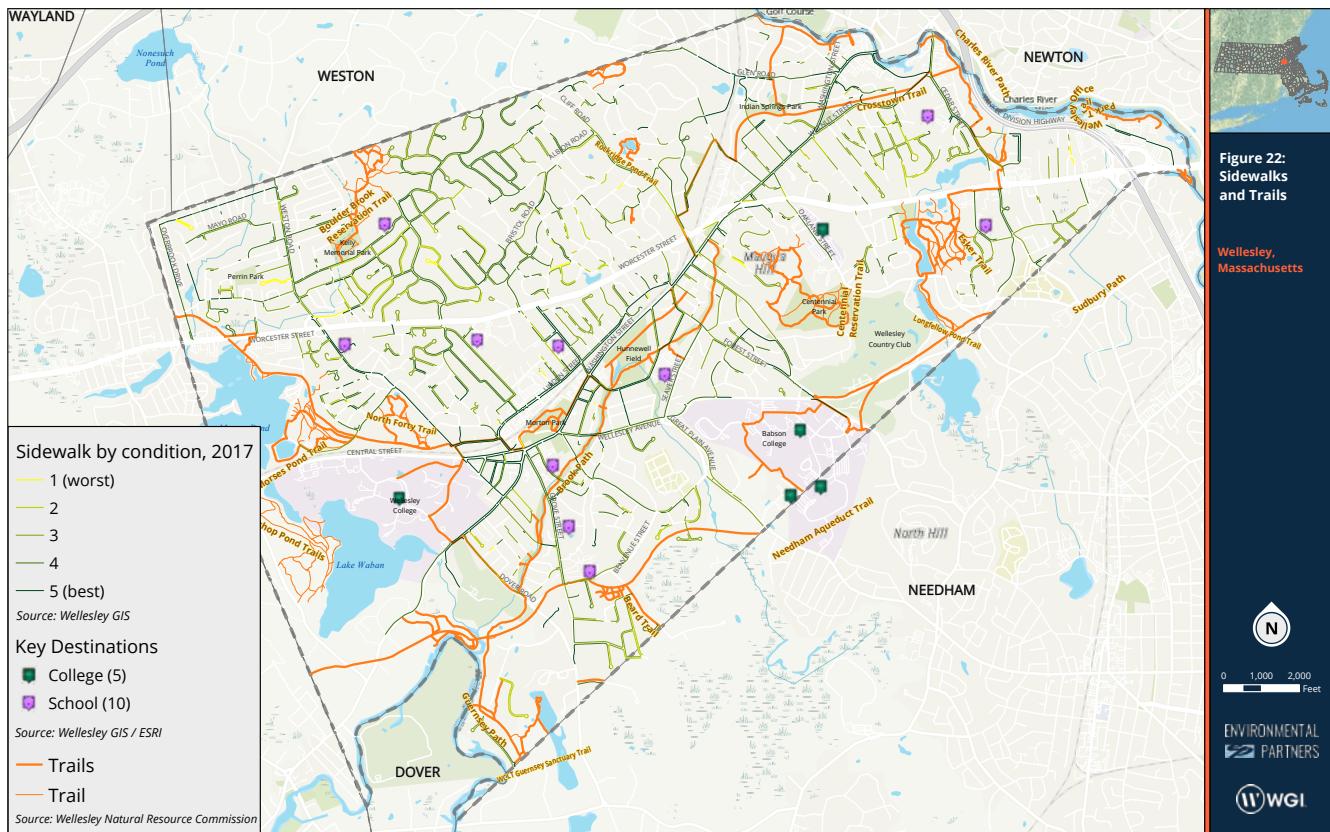

Figure 20: Transit Stop Walksheds with Key Destinations

Wellesley, Massachusetts

Key Destinations

Beach (1)		Library (3)	
Cemetery (2)		Municipal Building (6)	
College (5)		Park (63)	
Fire Station (2)		Police Station (1)	
Landmark (6)		School (10)	
		Parking (22)	

Source: Wellesley GIS / ESRI

Transit Stop Walksheds
Quarter mile radius from RTA Bus Stops
Half mile radius from MBTA Commuter Rail Stations
Source: EP / MBTA / MWRTA

MBTA Bus Routes
MBTA Commuter Rail Stops
MBTA Commuter Rail Routes
Source: MBTA

MetroWest RTA Bus Stops
MetroWest RTA Bus Routes
Source: MWRTA

ACTIVE TRANSPORTATION

MAP 21 – BIKING FACILITIES

Wellesley currently has limited bicycle routes and accommodations. There is only one on-road bicycle route on a portion of Washington Street, with "sharrows" provided where a bike lane is not available to indicate that bicyclists can use the full travel lane. Bicyclists are able to use Wellesley's extensive off-road trail network, with several trails connecting to the larger regional trail network.
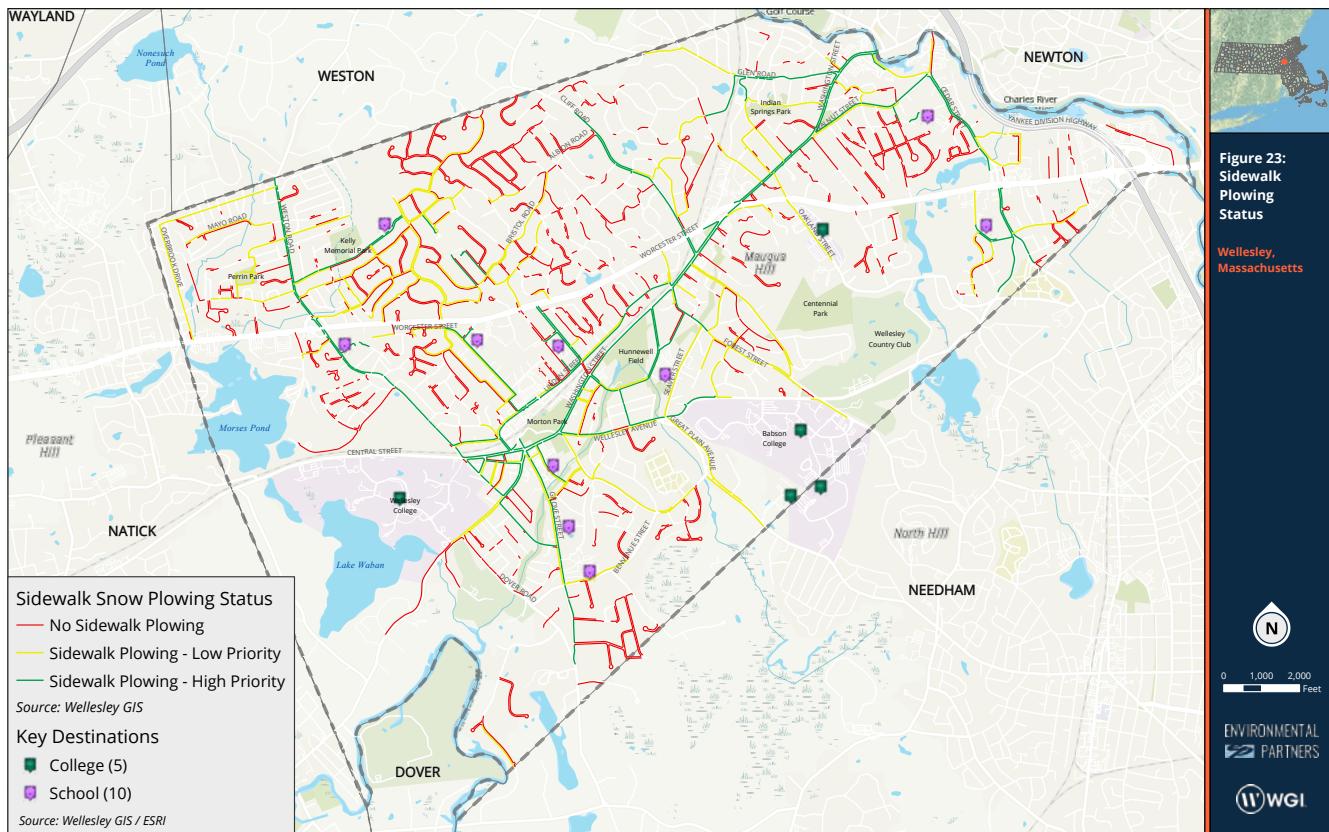

Figure 21: Biking Facilities

Wellesley, Massachusetts

Legend:
- - - On-road Bicycle Facilities
  Source: MassDOT
— Trails
— Trail Spurs
  Source: Wellesley Natural Resource Commission

MAP 22 – SIDEWALKS & TRAILS

Wellesley's sidewalk network is fairly extensive, with the majority of streets in town having a sidewalk in good condition on at least one side of the street. Pedestrian facilities are most robust in and around activity centers, whereas lower-volume residential roadways, particularly those not adjacent to a school, are more likely to have gaps in sidewalk coverage or no sidewalk at all. The Town's extensive off-road trail network also provides connectivity for pedestrians between neighborhoods.

Figure 22: Sidewalks and Trails

Wellesley, Massachusetts

Sidewalk by condition, 2017
- 1 (worst)
- 2
- 3
- 4
- 5 (best)

Source: Wellesley GIS

Key Destinations
- College (5)
- School (10)

Source: Wellesley GIS / ESRI

- Trails
- Trail

Source: Wellesley Natural Resource Commission

MAP 23 – SIDEWALK PLOWING STATUS

In addition to sidewalks being present and in good condition, sidewalk plowing is important for ensuring that the facilities are functional year-round. Sidewalk plowing is currently prioritized around the town centers, main thoroughfares, and some, but not all, schools. In certain locations, sidewalks adjacent to schools have low plowing priority or are not plowed by Town forces, which may reduce the number of kids walking/biking to school during the winter months.

Figure 23: Sidewalk Plowing Status

Wellesley, Massachusetts

Sidewalk Snow Plowing Status
— No Sidewalk Plowing
— Sidewalk Plowing - Low Priority
— Sidewalk Plowing - High Priority
Source: Wellesley GIS

Key Destinations
■ College (5)
🛡 School (10)
Source: Wellesley GIS / ESRI

SAFETY

On a town-wide level, compared to neighboring communities, Wellesley has the highest volume of motor vehicle crashes when normalized to population (i.e., crashes per 1,000 people). The number of crashes in Wellesley remained fairly constant at 30 crashes per 1,000 people annually during the 2010-2018 timeframe, whereas the numbers of crashes in the other communities increased slightly during that time, with the exception of Natick.

Of the neighboring communities considered, Wellesley ranks third in terms of the number of motor vehicle crashes that resulted in non-fatal injuries.

MOTOR VEHICLE CRASHES PER 1,000 PEOPLE

Legend:
- Dover
- Needham
- Natick
- Newton
- Wellesley
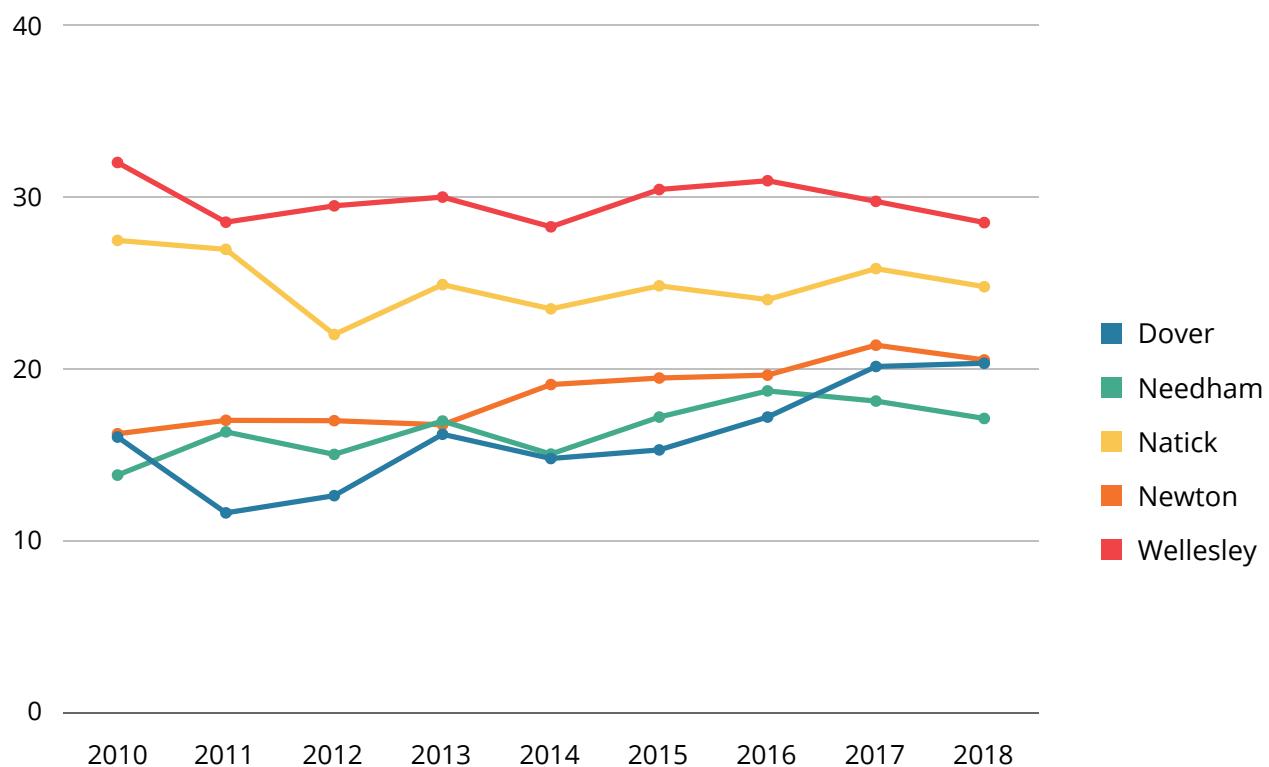
Five fatal injuries were reported within the 9-year span of 2010-2018, including three on Worcester Street (Route 9), one on I-95, and one at the Weston Road / Linden Street intersection.

During the 2015-2017 timeframe, three intersections within Town -- Worcester Street (Route 9) at Overbrook Drive/Kimball Road, the I-95 SB off-ramp at Worcester Street (Route 9) WB, and the I-95 SB off-ramp at Worcester Street (Route 9) EB -- were classified as crash clusters eligible for Highway Safety Improvement Program (HSIP) funding. An HSIP-eligible cluster is one for which the total number of "equivalent property damage only" crashes is within the top 5% in the region. Such locations are eligible for funding to be used for safety projects that address a specific safety problem.

MOTOR VEHICLE CRASHES RESULTING IN NON-FATAL INJURIES PER 1,000 PEOPLE

MAP 24 – CRASH LOCATIONS

Figure 24: Crash Locations Involving Bikes or Pedestrians

Wellesley, Massachusetts

2016 MassDOT Vehicle Crash Data
- Vehicle/Cyclist Crash (10)
- Vehicle/Pedestrian Crash (8) test
- Other Crashes (884)

Source: MassDOT
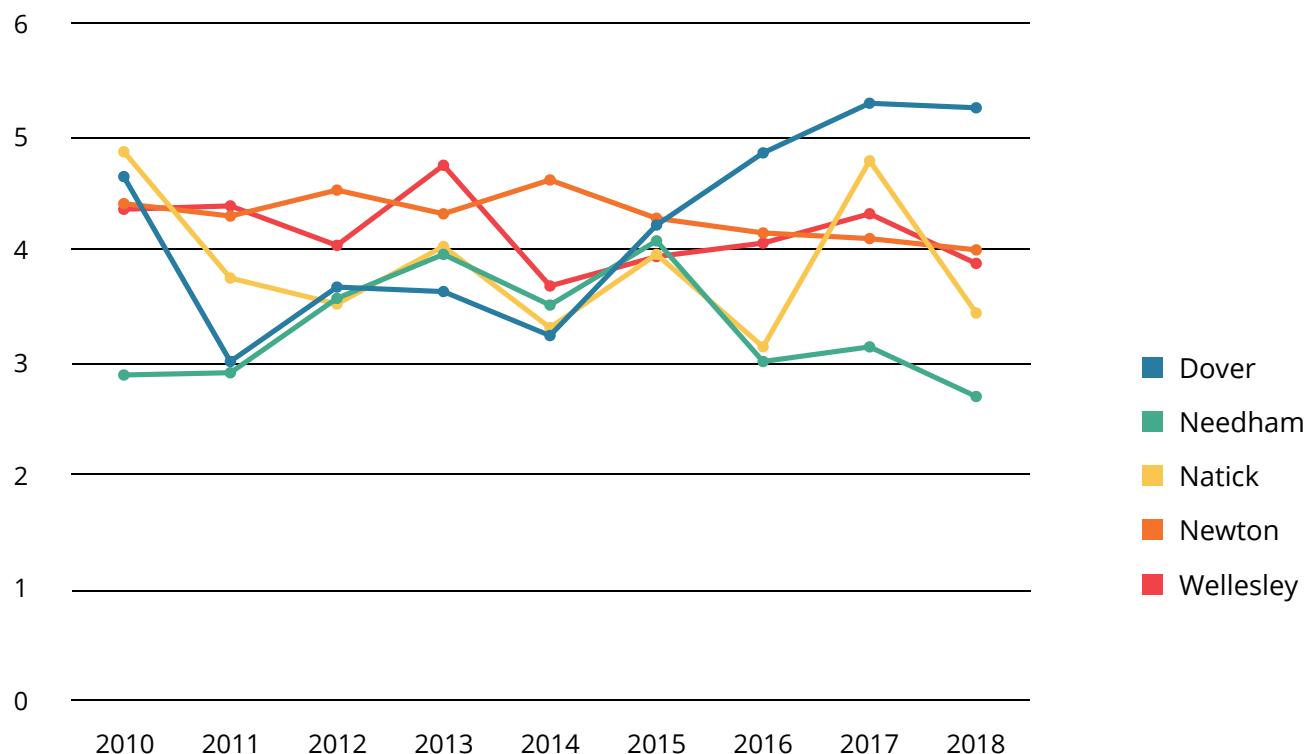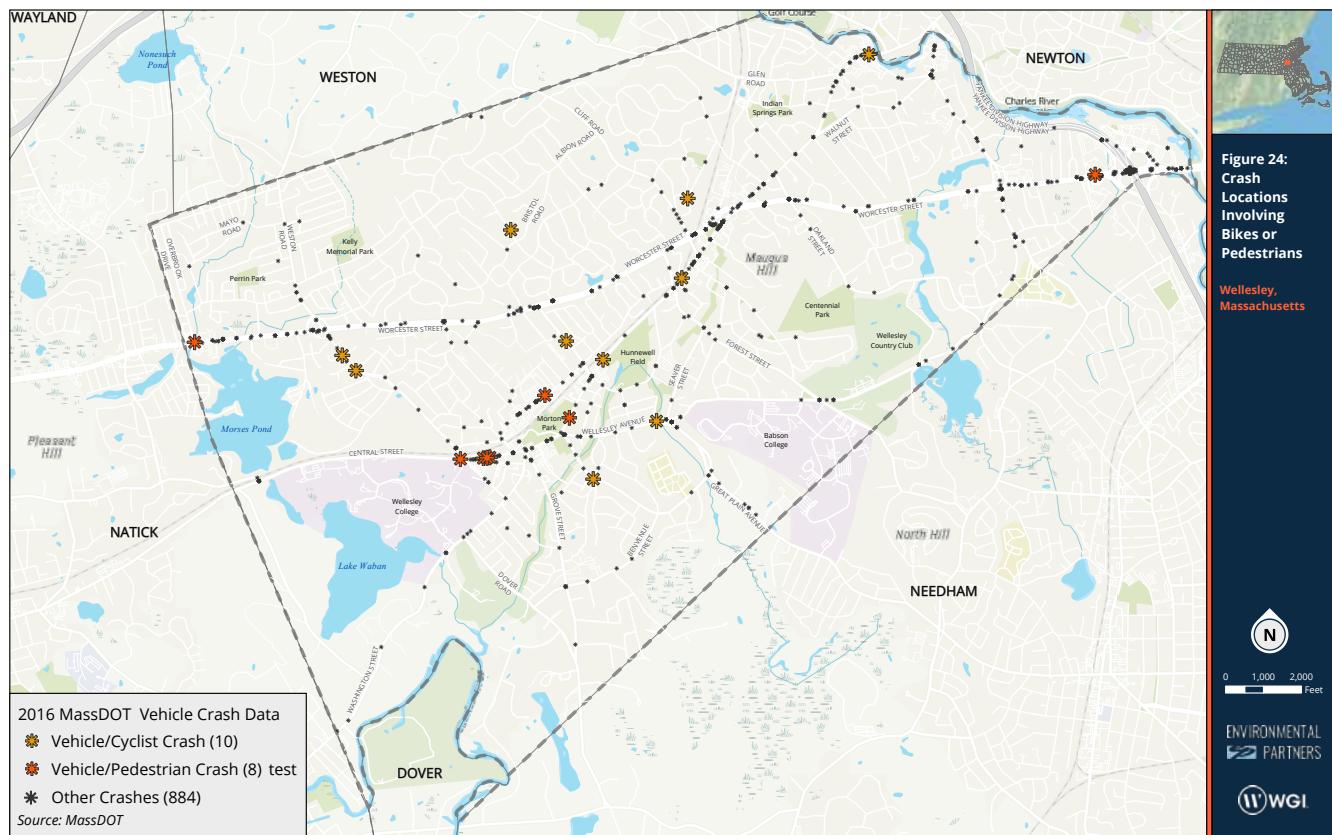
Most of the crashes within Wellesley occurred along roadways with higher traffic volumes, such as Worcester Street (Route 9) and Central Street (Route 135)/Washington Street (Route 16), and within the Wellesley Square and Wellesley Hills village centers.

Crashes involving a pedestrian were largely concentrated within the Wellesley Square village center, with the remainder occurring along Worcester Street (Route 9). Crashes involving a cyclist were more dispersed, largely occurring on roadways with lower traffic volumes and outside of the village centers.

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