CONNECT Arlington SUSTAINABLE TRANSPORTATION PLAN

July 2021

ACKNOWLEDGEMENTS

The Town of Arlington wishes to thank the following resident volunteers, Town staff, and consultant staff that made this plan possible. Their thoughtful, dedicated work for more than a year—during a pandemic no less—is a testament to their dedication to making Arlington a better place for travel by all modes, now and in the future.

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PART 1: EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The ability for a community's transportation system to move people and goods effectively, efficiently, and equitably is fundamental to quality of life, economic opportunity, and sustainability. **The Connect Arlington Sustainable Transportation Plan** is a 20-year strategy (2021-2041) to ensure that residents, workers, business owners and visitors are provided a safe, reliable, multimodal transportation network that meets the needs of all people of all ages and abilities.

A highly connected sustainable transportation network is critical to Arlington's future.

Transportation is not just a means to an end. Yes, transportation systems link people to their jobs, goods and services, and educational opportunities essential to their daily lives; but transportation also links people to their friends and family, to recreation, and to the larger community—both within and outside of Arlington's borders. Transportation is critical to the movement of goods—locally, regionally, and nationally—that all people rely on, and increasingly for delivery of household goods directly to people's doorsteps.

Transportation also has a major impact on climate and the natural environment, whether from greenhouse gas emissions from cars, trucks, and buses; from stormwater impacts from large swaths of impervious surfaces including paved roadways, sidewalks, and parking lots; and from heat island impacts from these same surfaces. A truly sustainable transportation plan and implementation strategy must address all of the above in a coordinated fashion to provide both the means for people to move about as they need to and address these environmental impacts on the planet.

CONNECT ARLINGTON VISION AND GOALS

In 20 years, Arlington is a community that offers a transportation network that provides:

A. **Safe facilities for all users**, no matter how they travel.
B. **Mobility options that meet the needs for diverse populations** and people of all ages and abilities.
C. **A pedestrian first, walk-friendly environment.**
D. **A low-stress bicycle network** connecting people in all areas of Arlington on dedicated, comfortable facilities.
E. **A transit rich environment** with more local and regional options, improved connections, reduced travel times, and enhanced user comfort for all who live, work, and visit Arlington.
F. **A system that reduces the climate impacts from travel in Arlington through** sustainable roadway design and incentivizing reduction in drive-alone trips.
G. **Infrastructure and policies to support the local economy** including efficient movement of goods and services.
H. **Responsive and transparent transportation decision-making** to address critical safety concerns, keep people informed, and allocated resources effectively.

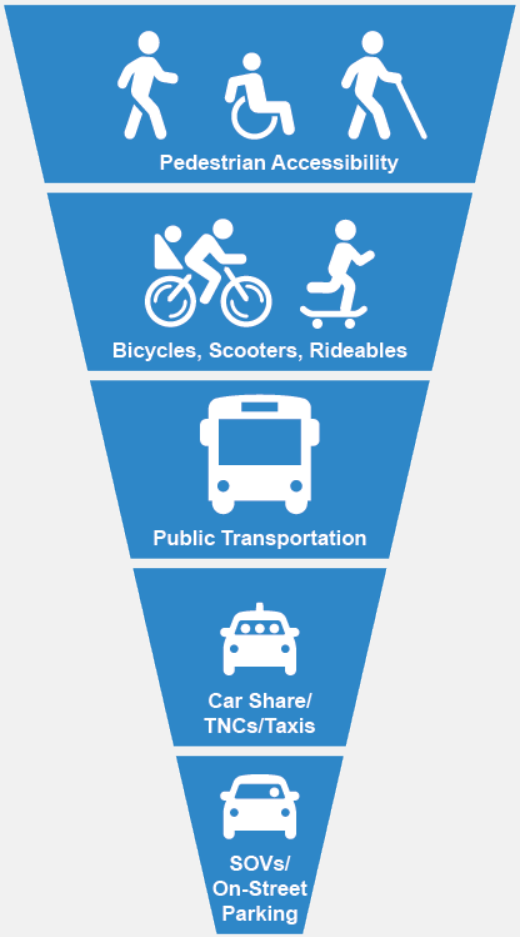
WHAT IS A SUSTAINABLE TRANSPORTATION PLAN?

A sustainable transportation plan provides a comprehensive planning and implementation framework to ensure a community's transportation network provides multiple ways to move around in a manner that is accessible, safe, convenient, and affordable for all users regardless of their age, race, gender, ability, disability, ethnicity or income, throughout different stages of their lives. Essentially, sustainable transportation provides a system of choice that connects people to where they want and need to be in a manner that is equitable, maintainable, fiscally viable and environmentally responsible.

As a sustainable transportation plan, the strategy must address three key elements:

1) Providing all people with a safe, well maintained, accessible transportation network of choice—multiple ways to accomplish a trip;
2) Managing auto congestion by providing reliable alternatives to the car to ensure people and goods are able to move about with minimal trip delays (and enhance productivity); and
3) Minimizing negative transportation impacts on the environment, primarily through the reduction of greenhouse gas emissions (GHGs).

To do so requires a new way of thinking about how people and goods move about town and the region. The more people rely on non-polluting transportation options like walking and bicycling, lower polluting (per capita) options like transit, and incorporate "green" practices like electrification and sustainable infrastructure design, the more our Town will be able to meet the goals set forth in this document. Think of this plan as inverting the pyramid of transportation priorities. Whereas in the past, the car was the priority, followed by transit and then bicycling and walking, this plan aims to put more efficient and low-polluting modes first, as well as high-occupancy, shared and commercial vehicles, and put single-occupancy vehicles (SOVs) lowest on the priority list because they are inefficient, polluting and create greater congestion.



CONNECT ARLINGTON PROCESS

The Connect Arlington transportation plan process began in January 2020. Initial tasks included analyzing and synthesizing existing conditions data about Arlington's population and workforce, and for all modes of transportation. Based on these findings, the project team identified transportation needs and gaps in Arlington, and developed strategies to address them over a 20-year timeframe.

Public Engagement

Connect Arlington was informed by the concerns, comments and suggestions of Arlington residents, business owners and workers throughout the process. Despite engagement challenges stemming from the COVID-19 pandemic, more than 1,300 Arlingtonians provided feedback on the plan through online surveys, mapping exercises, virtual public forums, and focus group meetings. To ensure diverse voices were heard, outreach strategies included press releases, social media and targeted strategies to different populations including the use of door hangers to encourage participation. Feedback received ensured that the plan and its strategies are not only informed by, but reflect the values, vision, and goals of the community.

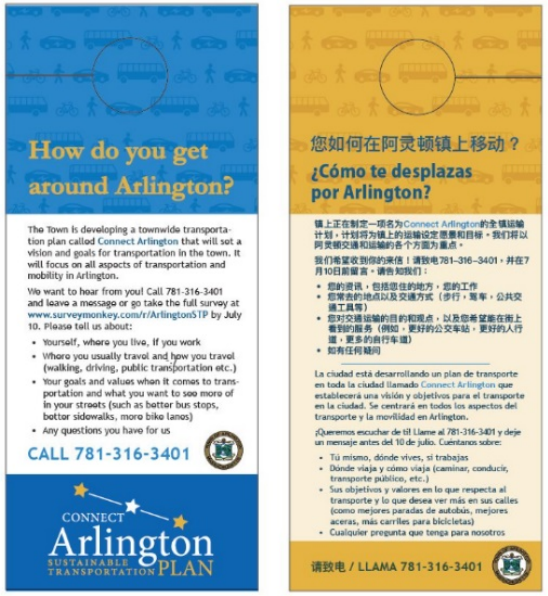
Connect Arlington Sustainable Transportation Plan

Building on the findings from the existing conditions work, and input from the public, the final Connect Arlington Sustainable Transportation Plan was developed to reflect the community's vision and goals. The final plan is presented in four parts:

1) **Connect Arlington Executive Summary**
2) **Connect Arlington Strategies & Implementation**
3) **Connect Arlington Fact Book**
4) **Public Engagement Summary**

The four sections provide an understanding of Arlington's existing transportation system—its strengths, weaknesses, and deficiencies, how the current system operates, and a roadmap for a more equitable and sustainable multimodal future.

The following pages highlight some key findings from the existing conditions work and an overview of goal strategies. For more information, see the Connect Arlington Strategies section following the **Executive Summary** and the final two sections: **Connect Arlington Fact Book,** and **Public Engagement Summary.**



KEY TRANSPORTATION STATS

Street Infrastructure

137 Miles

of total streets

74%	15%	5%	6%
(101 miles)	*(21 miles)*	*(7 miles)*	*(8 miles)*
Public streets Owned and maintained by the Town	**Private streets** Partially maintained by the Town *(e.g., plowing)* and/or by property owners fronting the roadways *(e.g., paving and upkeep)*	**Other facilities** Partially owned and maintained by the Town (e.g., cemeteries, pathways in parks)	**State streets** Owned and maintained by the State or maintained in part by the Town *(e.g., plowing)*

Active Transportation Infrastructure

132 Miles

(Estimated) of sidewalks owned and maintained by the town

25 Miles

of bicycle and/or multiuse facilities

42 miles	8 miles	5 miles	12 miles
Streets Without Sidewalks *(On either side of street, primarily in hilly areas of town)*	**Multiuse Paths** *(Mostly comprised of the Minuteman Bikeway)*	**Bicycle Lanes**	**Lane Sharing Network** *(Informal, but designated routes)*

Key Transportation Stats *(continued)*

Transit

11 Bus Routes

6 routes	2 routes	3 routes
Provide Connections to Alewife Station *(Red Line and Bus Connections)*	**Service to Harvard Square** *(Red Line and Bus Connections)*	**Connections to Davis Square & Lechmere/East Cambridge** *(Red and Green Line Connections)* **Connection to Medford** *(Orange Line Connection)*

Rail Access

Within short walking or biking distance

Red Line	Commuter Rail
Alewife Station near border with Cambridge	Within ½-mile of Arlington at West Medford (Lowell Line) and Belmont (Fitchburg Line)

SUMMARY - CONNECT ARLINGTON STRATEGIES

A. Safe Facilities[1] for All Users No Matter How They Travel

There are on average over 550 crashes per year in Arlington involving vehicles, pedestrians, and bicyclists. The Town is committed to doing more to eliminate all severe injuries and fatalities on its streets. Ensuring that people not only feel, but are safe, while getting around is critical.

Strategies:

- **Adopt a Vision Zero policy** to ensure streets are designed in a manner that prioritizes safety for all users, with a goal of eliminating traffic deaths and injuries through a holistic approach to reducing roadway conflicts.
- **Ensure all roadway design projects adhere to the Town's adopted Complete Streets Policy** to ensure that all roadway projects are designed for all users—not just cars.
- **Prioritize investments that improve safety at intersections and along road segments with the greatest pedestrian and bicyclist conflicts** including intersections with oblique angles, poor site distances and confusing operations.
- **Develop and implement a Neighborhood Traffic Calming Program** to address safety issues and concerns.
- **Develop educational programs that promote safe travel behaviors by ALL users.**
- **Ensure streetscape plantings do not limit visibility.**
- **Develop policies and guidelines that promote the safe use of emerging mobility devices** including e-bikes and other micro-mobility options.
- **Continue to implement initiatives that enhance safety to and from schools and community facilities** including Safe Routes to Schools (SRTS) projects and programs and Arlington's ADA Transition Plan infrastructure Improvements.
- **Advance plans to enhance safety and reduce user conflicts** along Mass Ave in Arlington Center.

[1] In this document, "facilities" generally refers to infrastructure that accommodates different types of travel modes. "Pedestrian facilities", for example, may include sidewalks, crosswalks, pedestrian-activated lighting or signals, and other elements of the public and private realm.

B. Mobility Options for All Ages, Capabilities, and Incomes

An integrated transportation network with multiple mobility options must be prioritized to ensure that Arlington's residents, workers and visitors of all ages, capabilities and incomes are able to equitably move to, from, within and through Arlington. Active transportation – i.e., walking and biking – also help improve personal and public health by allowing people to exercise while getting to their destination. Programs such as Safe Routes to Schools that are targeted at children ensure they are receiving recommended levels of exercise as well. To provide mobility options for all will require a comprehensive, coordinated strategy.

Strategies:

- **Continue to implement accessibility improvements throughout Arlington** including sidewalk and access improvements (ramps, ADA parking, van parking) at schools, public buildings, recreation facilities and more.
- **Continue to develop and implement Safe Routes to School (SRTS) projects**—programs and infrastructure improvements—that aim to provide safe transportation networks for children to walk and bike from their homes to their schools.
- **Complete the Minuteman Bikeway Study and implement strategies that increase access to and capacity and safety on the pathway** to ensure that it remains a comfortable active transportation facility for all active transportation users—recreational or commuter—including bicyclists, runners, and walkers.
- **Increase car share availability and membership in Arlington** by working with car share companies to add more cars and by promoting membership.
- **Increase access to bike share throughout Arlington** by promoting the system, providing subsidized memberships (to those who qualify) and adding more stations over time.
- **Expand transit options to Arlington residents and workers through local shared transportation programs and services** to provide enhanced, efficient connectivity to and from neighborhoods not proximate to MBTA services, including through locally funded transit services and partnerships with mobility providers (e.g., micro-transit) and neighboring communities.
- **Pursue higher Bicycle Friendly Community Award status and explore other transportation-related award programs** to help examine current practices and promote the Town's successes.

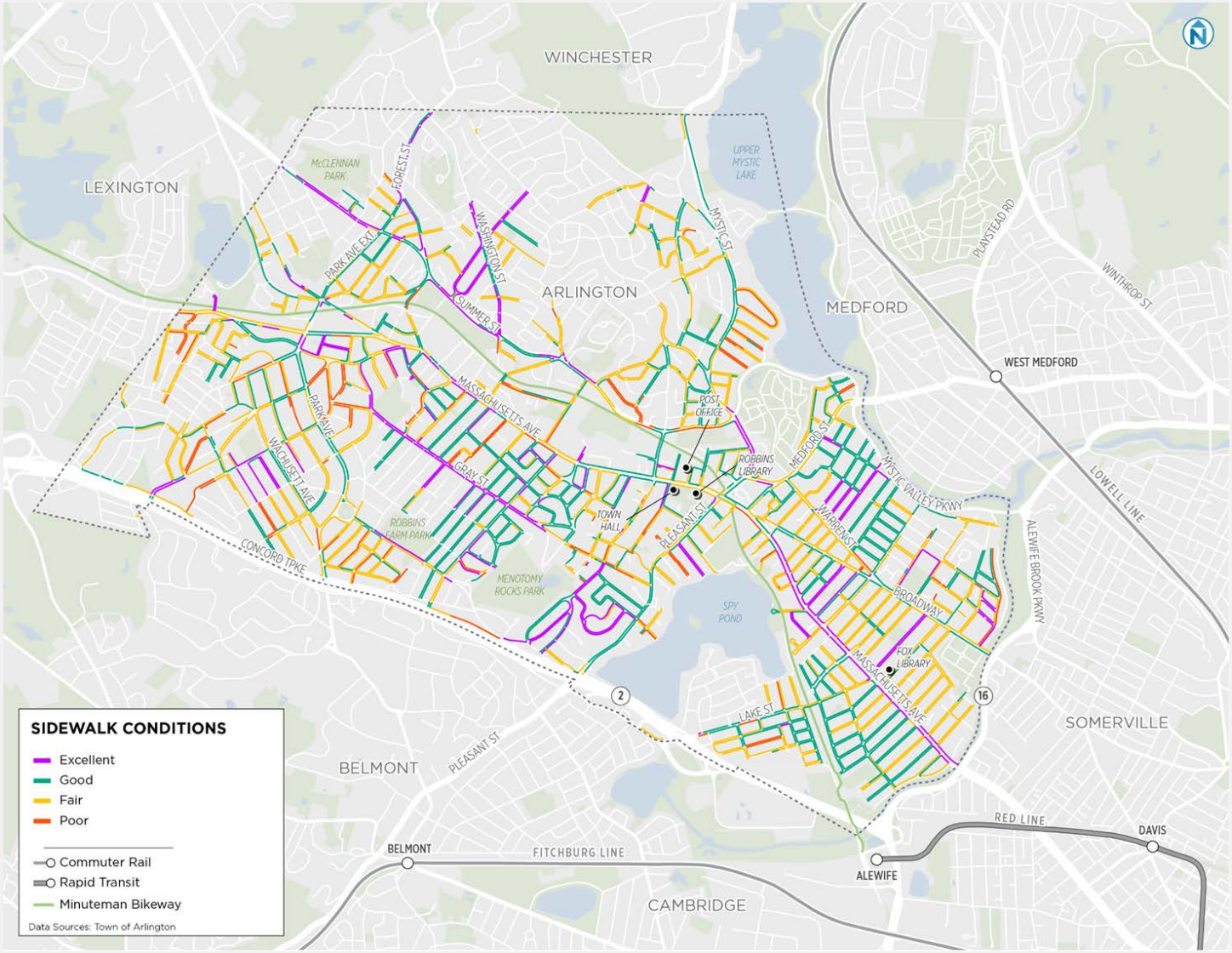
C. A Pedestrian First, Walk-friendly Environment

The most important element of any transportation network is the pedestrian realm. It is the only mode of travel that is a part of every trip, whether the trip is entirely on foot or a component of a car, transit, bicycle or trip by other mode. It is also the most equitable trip type in that the pedestrian realm can be used by all at no charge and is an easy way to exercise and improve health. As such, ensuring that all of Arlington is connected by well-maintained pedestrian infrastructure is paramount.

Strategies:

- **Continue to maintain and upgrade sidewalks for accessibility and communicate planned projects** to ensure all sidewalks throughout Arlington are in good condition, free of tripping hazards, and fully ADA compliant.
- **Create a program and process for prioritizing, funding, and implementing new sidewalk construction** where no sidewalks currently exist in the network.
- **Continue to ensure all pedestrian facilities are fully accessible, ADA-compliant and maintained** to provide equitable access for all, no matter their capabilities.
- **Enhance pedestrian safety through design improvements at intersections and crossings** by reducing pedestrian crossing distances, enhancing visibility, better lighting and warning signals, slowing traffic, and other safety countermeasures.
- **Expand and maintain the existing street tree canopy to improve pedestrian safety and comfort** by providing cooling shade for pedestrians, and through safety strategies to address sidewalk damage caused by tree roots.

SIDEWALK IMPROVEMENT PROGRAM



Proactive planning provides a roadmap to achieve goals in a predictable manner.

Connect Arlington recommends building on the Town's completed sidewalk conditions analysis to develop a comprehensive sidewalk improvement program to implement and allocate funding to ensure the pedestrian network is safe and proactively maintained.

D. A Low-Stress Bicycling Environment

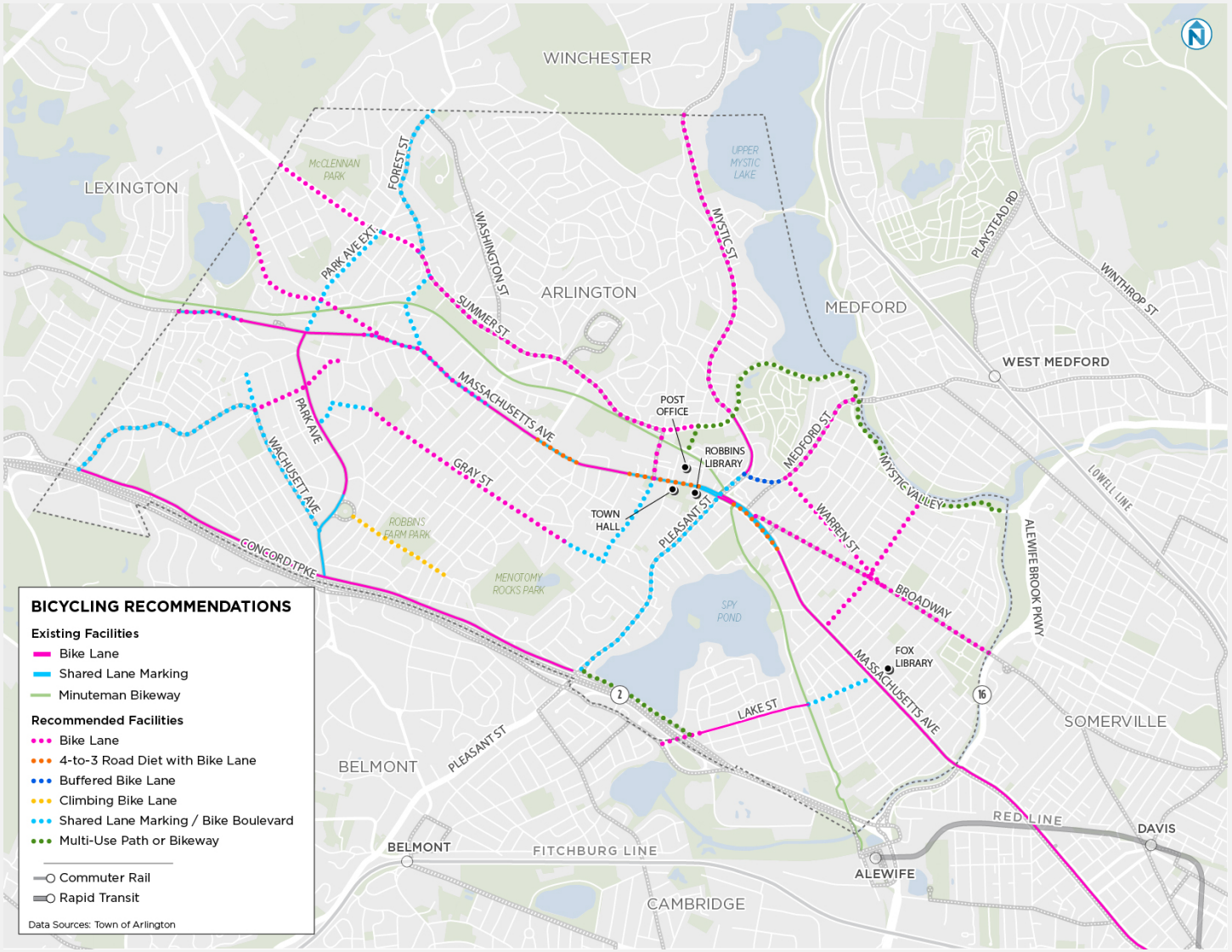
Developing a robust, interconnected network of dedicated bicycle facilities and amenities will make bicycling a safe, comfortable, and practical option—a preferred choice—for more of Arlington's residents, workers and visitors, no matter their comfort level—from beginner to experienced. More bicycling will also help to reduce greenhouse gas emissions and provide health benefits to users.

While a comprehensive Bike Master Plan should be considered to develop a truly comprehensive strategy, this plan recommends the below initiatives to achieving a low-stress bicycling network.

Strategies:

- **Prioritize new bicycle facilities along corridors currently designated as Arlington's "lane-sharing network"** including completing the bicycle lane network on all of Mass Ave, and prioritizing projects that connect to existing facilities including schools and other public facilities.
- **Construct a multiuse path from the Minuteman Bikeway at Arlington Center to the Mystic River Path along Summer Street and the Mystic Valley Parkway.**
- **Establish preferred bike routes ("bike boulevards")** on low-volume streets that provide safer bicycle travel parallel to high traffic roadways - on roadways that connect to neighborhoods and schools.
- **Add or upgrade existing bicycle parking along commercial corridors and at public facilities** to encourage more to choose a bicycle over a car trip because they know their bicycles can be parked easily and locked up safely.
- **Study potential to redesign major intersections and rotaries/roundabouts** to encourage more bicycling by providing improved rider safety and comfort.

RECOMMENDED BICYCLE NETWORK



Map edited 8/5/21 to correct location of proposed bike lane on Bates Rd and River St.

Developing a highly connected network of dedicated, preferably separated, bicycle lanes and facilities is a priority recommendation of Connect Arlington.

Building out a town-wide network would provide safer, more comfortable, and convenient facilities to encourage bicyclists of varying levels of experience and comfort to move around, reducing the need or preference to drive.

E. A Transit-Rich Environment

Arlington residents were clear about their desire for improved transit service throughout the planning process, even during the COVID-19 pandemic where physical distancing requirements resulted in decreases in transit use throughout the region. They recognized that transit could move more people, more effectively and efficiently over long distances than, or in combination with, other modes. Since most transit users get to their transit stop by walking, increasing transit use can also improve public health.

To provide more reliable, faster, and comfortable transit, and encourage ridership, Connect Arlington priorities include:

Strategies:

- **Increase bus frequency on highest ridership bus routes**—e.g., Route 77—to reduce crowding and provide greater comfort.
- **Study potential for and implement bus priority initiatives to reduce transit trip times and achieve (near) Bus Rapid Transit service in Arlington** including through providing more bus priority lanes, queue jumps, transit signal priority (TSP) and intelligent transportation systems (ITS), level boarding platforms and other strategies that expedite bus travel, particularly in locations where congestion significantly increases transit travel time.
- **Enhance the bus stop experience to provide greater rider comfort and increase convenience** by providing more shelters and seating at MBTA stops, more bicycle parking, co-locating bike share stations, investing in technology infrastructure and implementing micro-mobility hubs at bus stops along Mass Ave.
- **Expand local transit options for Arlington residents and workers** to enhance connectivity within Arlington and to and from neighboring towns and cities. Options include funding a local fixed-route service, contracting with a third-party micro-transit service, and/or partnering with neighboring communities to fund fixed-route services that enhance local connectivity.

F. Reduced Climate Impacts from Travel in Arlington

Transportation services and facilities are among the largest contributors to climate change. Reducing car trips, especially drive-alone trips, and implementing sustainable policies and investing in sustainable infrastructure is essential to help reduce climate impacts. To accomplish this goal, Connect Arlington recommends the following:

Strategies:

- **Manage travel demand to reduce single-occupancy vehicle trips and emissions** by promoting mode shift from single-occupancy vehicle trips to alternatives like walking, biking, carpooling and transit use, and through coordinated land use and transportation planning (e.g., mixed-use development near transit and jobs).
- **Implement mobility recommendations included in the Town's Net Zero Action Plan** to reduce greenhouse gas emissions stemming from the transportation network and its users.
    - **Create and implement a plan to expand public electric vehicle charging** at libraries, business districts, public parking and other facilities, both on- and off-street.
    - **Adopt a zero-emission municipal fleet and charging infrastructure plan and policy** that commits to a complete transition to zero emission vehicle purchases by no later than 2030.
    - **Advocate for improved utility rate designs** to facilitate smart electric vehicle charging and accelerate EV adoption.
- **When designing and constructing any transportation facilities, include low impact, "green" design interventions and construction techniques to reduce climate impacts** including those that reduce impermeable surfaces to the greatest extent, reduce heat island impacts, increase water retention on-site, etc.

G. Infrastructure and Policies to Support the Local Economy and Quality of Life

Local businesses rely on all modes of transportation to connect customers to their businesses, workers to their jobs, and to deliver goods and services sold at or sent from their location. Connect Arlington recommends curbside access and parking strategies that support local businesses and improve resident quality of life.

Strategies:

- **Ensure Arlington's roadways and off-street parking are maintained** to support local business activity and resident safety.
- **Consider changes to parking regulations and policies that more effectively manage public on- and off-street parking** including allocating funding to study parking along all of Mass Ave with an emphasis on East Arlington and Arlington Heights.
- **Rethink the curb and design it to support competing users and needs more effectively,** including designating zones for pick-up and drop-off activity, zones for increased service and delivery needs, and repurposing on-street parking areas for other modes including bus and bicycle travel, or recreation (e.g., parklets).

H. Responsive and Transparent Transportation Decision-Making

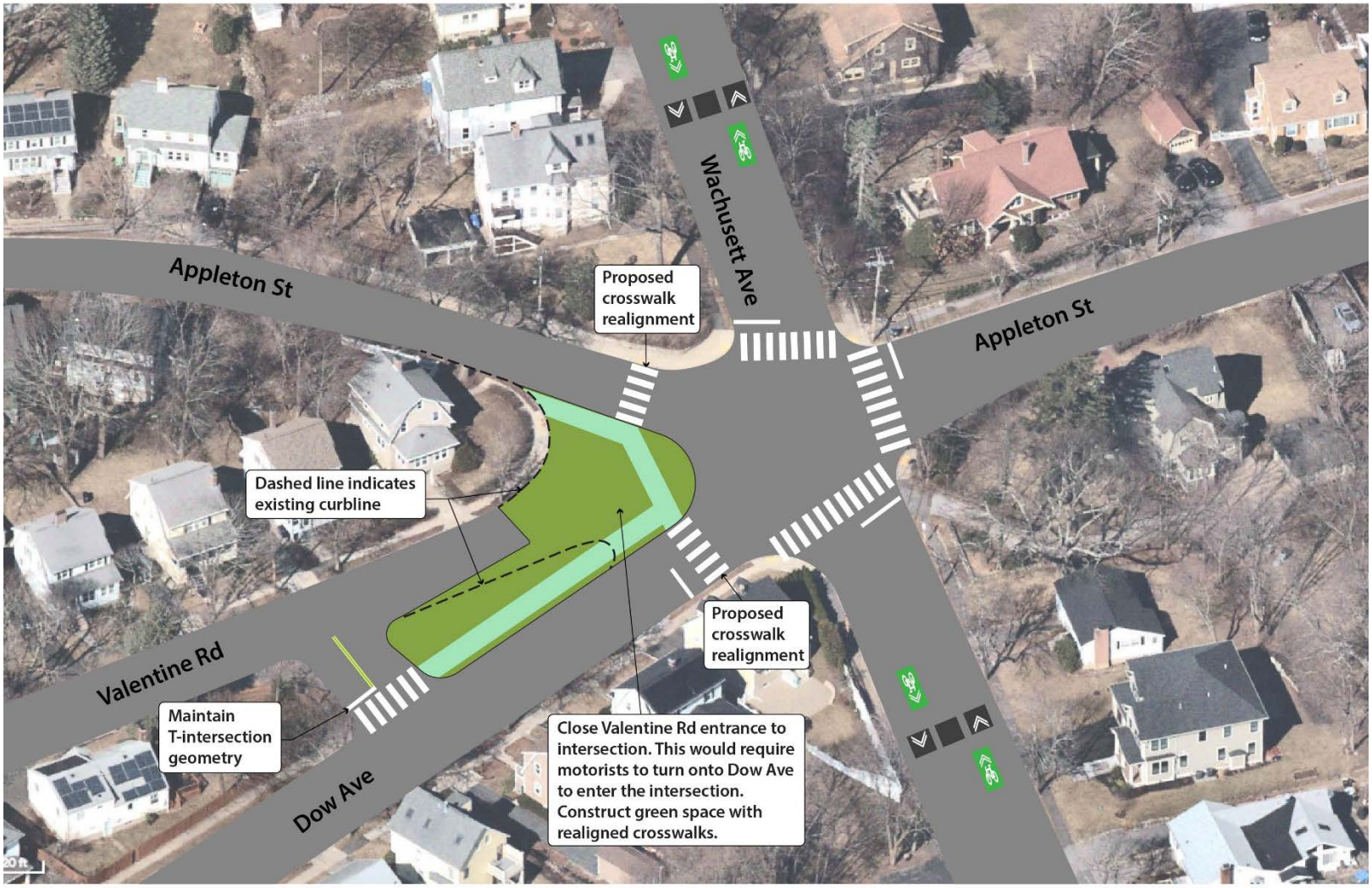
To provide a transportation network for all users and abilities, it is imperative that decision-making at all levels is clearly communicated and transparent. When and why specific programs and projects are prioritized and funded in any given year is essential given the competing needs for dollars available.

Strategies:

- **Create a process for communicating transportation project updates, construction impacts and other service issues proactively**—in advance to residents, workers and visitors makes for a better, less stressful, and safer experience.
- **Develop and regularly update a Local Transportation Improvement Program (LTIP),** to provide all Town departments and the public with a clear understanding of which transportation initiatives are in the pipeline, where in the process each initiative is, when it is planned for completion, and which funding is available (or potentially available, e.g., grants).
- **Test before you invest by implementing "tactical" infrastructure projects using low-cost, temporary materials** to rapidly address a traffic or safety issue, or to test out alternative street layouts to provide facilities for other modes not currently provided.
- **Analyze and track key data over time** to inform transportation decision making and prioritization.

TEST BEFORE YOU INVEST: TRAFFIC CALMING PROJECTS

Wachusett Avenue - Bike Boulevard - Dow Avenue Inset



NOT TO SCALE

PART 2: STRATEGIES & IMPLEMENTATION

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1. CONNECT ARLINGTON: STRATEGIES & IMPLEMENTATION PLAN

INTRODUCTION

The Town of Arlington has made considerable progress over the last 20 years to develop a more multi-modal and pedestrian and bicycle friendly community. This work has been accomplished through the work of hundreds of Town staff, volunteers, and numerous stakeholders all with a shared commitment to ensuring people can get around Arlington in multiple ways safely, efficiently, and equitably. However, although progress has been made, the Town and its residents know that more work needs to be done. **Connect Arlington** is a 20-year sustainable transportation plan to ensure that all Arlingtonians, workers, business owners and visitors are provided a safe, reliable, multimodal transportation network that meets the needs of all people of all ages and abilities.

Arlington's unique location within the Boston region puts it close enough to the Commonwealth's major employment centers to allow for reasonable commutes by many different modes, but distant enough for the town to have retained a close-knit, community feel. Compared to its neighbors to the south, Arlington's streets are calmer and mainly residential, with obvious exceptions along its commercial corridors, especially Massachusetts Avenue (locally known as Mass Ave). However, travel conditions and disparities are found throughout town.

- Some areas are very walkable and accessible, whereas other areas lack sidewalks or existing sidewalks require maintenance.
- Some areas of Arlington have good bicycle connectivity—e.g., neighborhoods abutting the Minuteman Commuter Bikeway and Mass Ave—while others have few or no bicycle accommodations.
- Travel time reliability of transit is poor given MBTA buses operate in congested traffic en route to rapid transit and employment centers, and because some routes have insufficient frequency.
- Areas west of Pleasant Street (roughly the western two-thirds of town) are hilly and can be challenging for those who may opt to walk, bike, or connect to and from bus transit, whereas areas east of Pleasant are flat and more maneuverable for all modes.
- The Minuteman Bikeway is high quality commuting infrastructure for non-motorized users throughout town, but conflicts between bicyclists and pedestrians are frequent, especially due to different traveling speeds.

Transportation Terms

What is Multi-modal Transportation?

A system that incorporates multiple modes of transportation, including pedestrians, bicycle, transit, vehicular and emerging mobility options and technologies.

CONNECT ARLINGTON VISION AND GOALS

No plan can be achieved without a set of goals to inform decision making and set priorities. To be useful, they must be grounded in the real world, but also represent aspirations for better outcomes. Think of the goals as the roadmap for what the plan must accomplish over the next 20 years to be considered a success.

VISION Statement

In 20 years, Arlington's transportation network provides:

A. **Safe facilities for all users**, no matter how they travel.

B. **Mobility options that meet the needs for diverse populations** and people of all genders, ages, and abilities**.**

C. **A pedestrian first, walk-friendly environment.**

D. **A low-stress bicycle network** connecting people throughout Arlington on dedicated, comfortable facilities.

E. **A transit rich environment** with more local and regional options, improved connections, reduced travel times and enhanced user comfort for all who live, work, and visit Arlington.

F. **A system that reduces the climate impacts from travel in Arlington** through sustainable roadway design and incentivizing reduction in drive-alone trips.

G. **Infrastructure and policies to support the local economy** including efficient movement of goods and services.

H. **Responsive and transparent transportation decision-making** to address critical safety concerns, keep people informed, and allocated resources effectively.

By ensuring the plan addresses and meets these goals, the sustainability of Arlington's transportation network will be achieved through providing residents and workers with transportation choice and less reliance on vehicular travel.

Transportation Terms

What is an SOV?

Single-occupancy vehicles (SOVs) generally refer to privately-owned vehicles whose only occupant is the driver, even though they are capable of and designed to carry multiple people.

CONNECT ARLINGTON STRATEGIES

The Connect Arlington Sustainable Transportation Plan aims to achieve multiple goals through policies, programs, and infrastructure strategies. While some are presented as mode-specific (e.g., pedestrian, bicycle or transit), when considered as pieces of the entire network, the intent is for them to work in tandem with one another to ensure the overall system is connected between modes. One of the aspirations of the plan is to create a transportation system of choice, with multiple options of travel to meet the needs of all users and improve public health by making active transportation an easy and preferred choice.

A. Safe Facilities for All Users No Matter How They Travel

Ensuring that people not only *feel* safe but *are* safe while getting around Arlington is paramount. As noted in the **Fact Book** (Section 3) on average there are over 550 crashes per year in Arlington involving vehicles, pedestrians, and bicyclists. And while the Town has worked hard to prevent crashes through roadway infrastructure safety initiatives, such as by lowering the town-wide speed limit to 25mph, it must maintain its commitment to doing more to eliminate all severe injuries and fatalities on its streets. Safety promotes public health not only by preventing crashes but also by making active transportation modes an easy and comfortable choice for residents and visitors.

The following strategies provide the framework for Arlington to ensure its transportation network is safe for all.

A.1 Adopt a Vision Zero policy.

The Town of Arlington should adopt a Vision Zero policy to ensure streets are designed in a manner that prioritizes safety for all users, with a goal of eliminating traffic deaths and injuries through a holistic approach to reducing roadway conflicts. In doing so, Arlington would join a growing list of communities in the region with Vision Zero policies—Cambridge, Somerville, Boston—and would benefit from aligning its policy with these communities, as well as learn and coordinate with others through the **Vision Zero Network**[2], a national nonprofit project committed to eliminating all traffic fatalities and severe injuries.

Key to Vision Zero is prioritizing the safety of those most vulnerable to serious injury or fatality—pedestrians and bicyclists. Vision Zero policies must first provide policy and design initiatives that ensure those walking or riding are able to move about with minimal conflict between themselves and larger, more dangerous cars, buses, and trucks. Reducing crossing distances for pedestrians,

[2] The Vision Zero Network is a nonprofit project, committed to defining, building momentum and advancing Vision Zero in communities across the U.S. This collaborative campaign helps communities reach their goals of Vision Zero—eliminating all traffic fatalities and severe injuries—while increasing safe, healthy equitable mobility for all. The Network convenes leaders in the realms of public health, transportation planning and engineering, policy, community advocacy, and the private sector to develop and share promising strategies and to support strong distributed leadership that make Vision Zero a reality.

providing protected or buffered bicycle lanes, removing slip lanes, and providing pedestrian lead times at signals all help to reduce conflicts between users and must be prioritized.

Vision Zero practices also make roadways safer for drivers. It is essential for roadways to be designed and used in a manner that drivers are provided safe networks. Design strategies to reduce speeds, provide clear, intuitive use (e.g., clear road markings, signage and more), will help drivers to avoid conflicts and crashes with each other, not just pedestrians and bicyclists. Many of the strategies included in this plan address these concerns.

Transportation Terms

Vision Zero

Vision Zero is a policy and strategy introduced by the Swedish Parliament in the late 1990s that sought to eliminate traffic fatalities and serious injuries by the year 2020. Since then, cities throughout the United States have adopted Vision Zero policies, including Boston, Cambridge, and many others. Core principles of Vision Zero include that traffic deaths and injuries are preventable, safety is the primary consideration in transportation decision-making, and traffic safety solutions must be addressed holistically.

A.2 Ensure all roadway design projects adhere to the Town's adopted Complete Streets policy and guidelines.

Complete Streets policies are intended to ensure that all roadway projects are designed for all users and modes—vehicles, transit, bicycle, and pedestrian. However, when right-of-way (ROW) is limited, design often prioritizes the car over other modal improvements. The result is projects that minimize, reduce, or eliminate many of the pedestrian, bicycle and transit improvements that make a street a complete facility for all users.

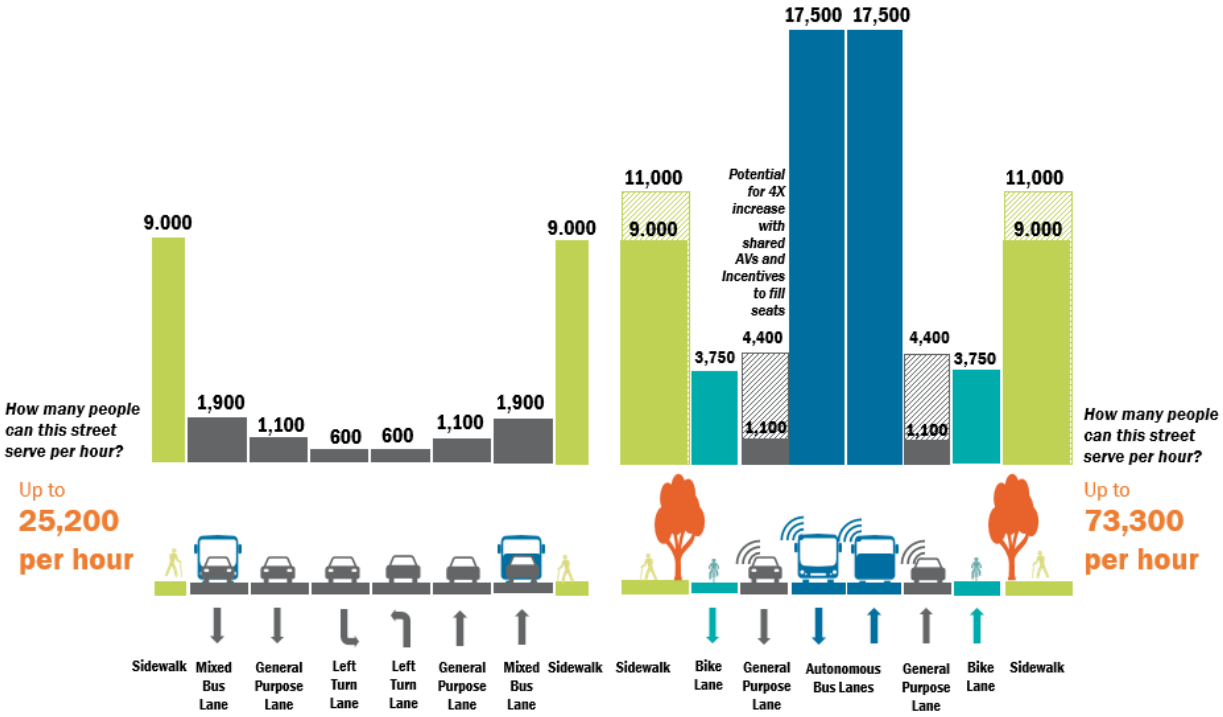
The Town of Arlington has adopted a Complete Streets policy. And although the Town has demonstrated strong adherence to its policy, the work to ensure that all modes are given equal weight and standing throughout the design process over time and changes in leadership must continue to reduce conflicts for the many users of its streets. Transparency is critical to the success of these projects. While it is ultimately the responsibility of Town departments—Public Works, Police, Fire, Planning & Community Development—to ensure projects meet the Complete Streets design standards, the design process should also include review by Town Boards and Commissions, advocacy groups and include a public process from the start to identify key mode priorities for different projects, particularly larger projects where there is insufficient right-of-way (ROW) to equally serve all users.

A.2.1 Update the Town of Arlington's Complete Streets Prioritization Plan and align it with Connect Arlington Priorities.

The Town's State-approved Complete Streets Prioritization Plan includes a list of priority projects eligible to receive grant implementation (i.e., construction) funding from the State. The Town successfully received funding for its first project in 2017 which added sidewalks to Gray Street near Ottoson Middle School.

The current plan is eligible for an update in May 2021 and should include many of the priorities identified in this plan as part of the update. The Prioritization Plan should be updated regularly—at least every five years—given that changes to transportation patterns, preferences, behaviors, and options may cause the priority projects to shift over time. Ensuring the Prioritization Plan is updated regularly will better position the Town to apply for funding on projects most important or likely to receive funding given State funding priorities.

Figure 1 Complete Streets move more people, more efficiently and safely.



Source: Nelson\Nygaard

A.2.2 Implement the Town's Complete Streets Prioritization Plan.

Once the updated Prioritization Plan has been approved by the Massachusetts Department of Transportation (MassDOT), the Town should prioritize implementation of these projects, both through applying for funding through the Complete Streets Program and leveraging Town resources. Funding through the State program is allocated annually, but only available to communities without an active project already funded and/or under construction. Once a project that received funding is complete, the municipality may apply for their next project. Arlington should be prepared to apply for funding whenever eligible. Eligible projects must be in the final design phase and provide estimated construction costs. As such, allocating funding for design services should be included in Town budgets to line up potential projects. Although Complete Streets grants are not guaranteed through the program, having project designs and costs can be used for other grant opportunities or to request Town funding.

A.3 Prioritize investments that improve safety at intersections and along road segments with the greatest pedestrian and bicyclist conflicts.

The cause of many roadway crashes is human error—poor judgement, distraction—or weather conditions. However, locations where multiple crashes occur, especially those with similar crash characteristics, often point to roadway design concerns or conditions that may contribute to crashes, and where initiatives to enhance safety should be a priority. Figure 2 summarizes areas in Arlington where safety enhancements should be prioritized or tracked. The map is based on crash assessment findings—high crash locations and clusters where pedestrians and bicyclists were involved—as described in the project **Fact Book** (Section 3), as well as intersections where visibility and/or confusing geometries create additional safety concerns for pedestrians and bicyclists.

Initial priorities should focus on locations where improvements have not been made in recent years, or where crashes have resulted in fatalities or injuries. For locations where large projects are underway or are under study (e.g., Appleton Street and Mass Ave, the proposed study of connecting the Minuteman

Transportation Terms

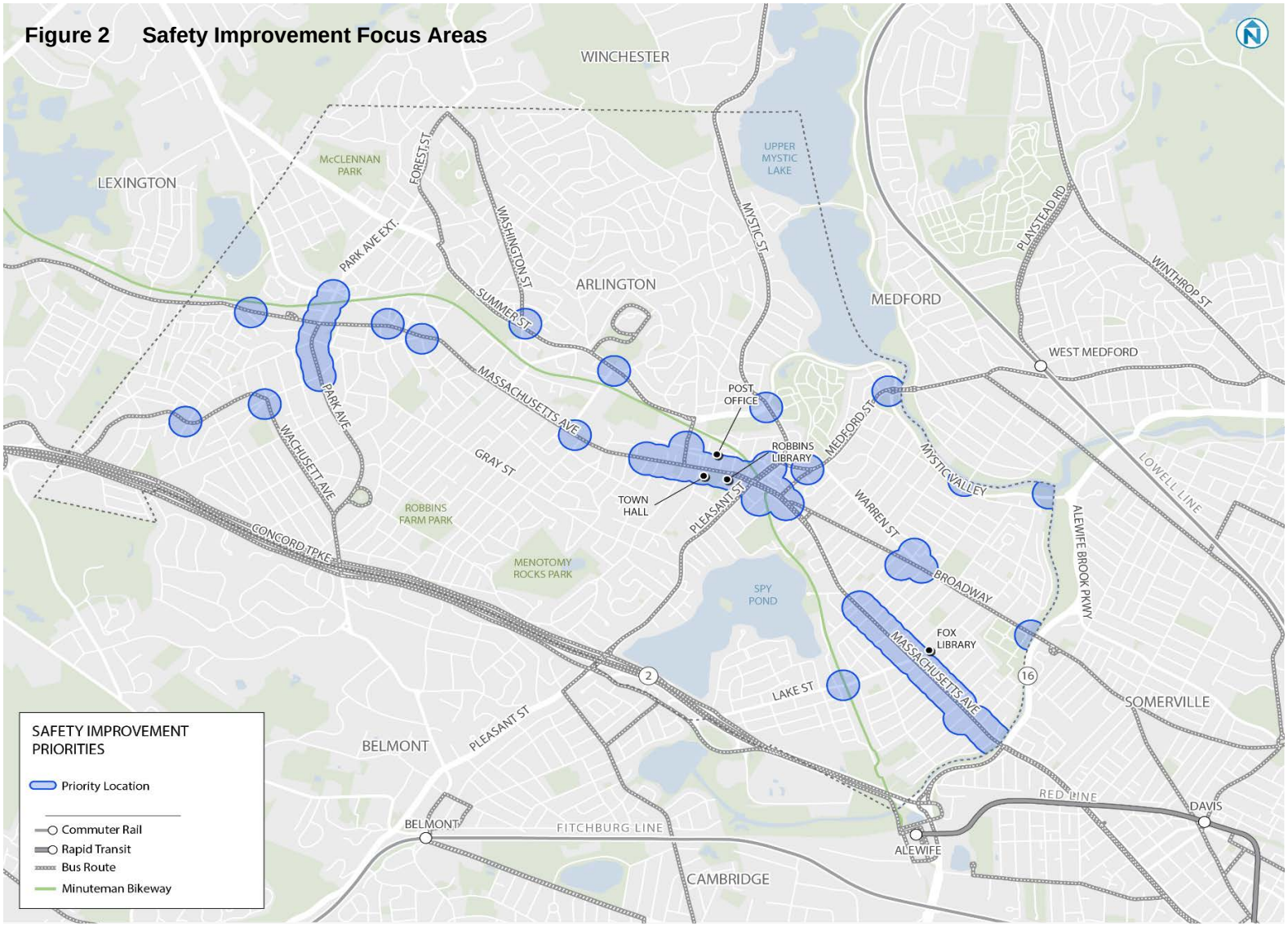
Complete Streets

As defined by *Smart Growth America*, "Complete Streets are streets for everyone. They are designed to prioritize safety, comfort, and access to destinations for all people who use the street, especially people who have experienced systemic underinvestment or whose needs have not been met through traditional transportation approaches, including older adults, people living with disabilities, people who cannot afford or do not have access to a car, and Black, Native and Hispanic or Latino/a/x communities. Complete streets make it easy to cross the street, walk to shops, jobs and schools, bicycle to work, and move actively with assistive devices. They allow buses to run on time and make it safe for people to walk or move actively to and from train stations. This means that every transportation project will make the street network better and safer for people walking, biking, driving, riding transit, and moving actively with assistive devices—making your town a better place to live."

https://smartgrowthamerica.org/program/national-complete-streets-coalition/publications/what-are-complete-streets/

Bikeway to the Mystic River Path submitted by the Town for MassTrails funding), projects should be reviewed to ensure they prioritize safety and never just to increase vehicular throughput. And for those that have been completed in the last few years (e.g., Mass Ave in East Arlington and Arlington Center) crashes and public concerns should be tracked to determine if additional safety initiatives may be needed.

Figure 2 Safety Improvement Focus Areas

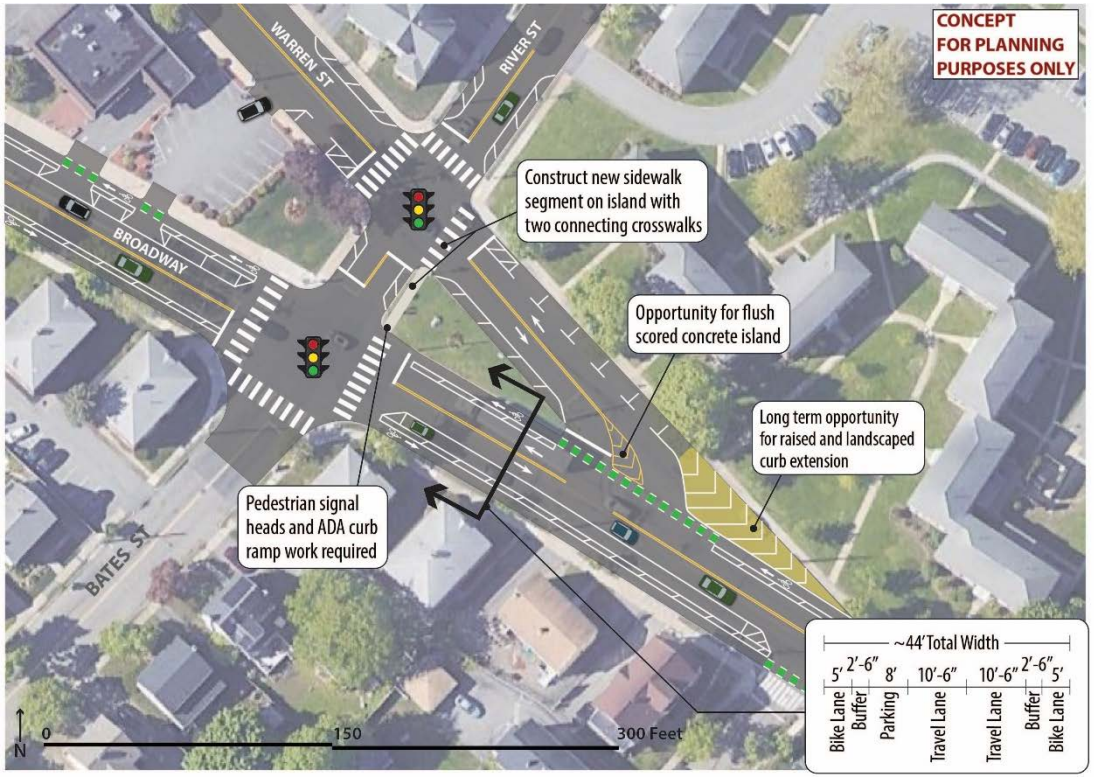


A.3.1 Address safety at roadway intersections with oblique angles, poor site distances, and confusing operations.

There are many intersections in Arlington where multiple roadways intersect, visibility is limited, and car throughput and speeds are prioritized to create confusing and dangerous conditions for all users. The Town should prioritize projects that enhance safety through slowing cars, squaring off intersections, reducing pedestrian crossing distances, improving visibility and more. Example intersections include:

- Mass Ave at Appleton Street
- Mass Ave at Lowell Street
- Appleton Street at Wachusett Ave, Valentine Road and Dow Ave
- Park Ave at Wollaston Ave and Paul Revere Road
- Park Ave at Lowell Street, Westminster Ave, and Bow Street
- Mystic Street at Mystic Valley Parkway and Summer Street
- Broadway and Warren Street (see Figure 3)

Figure 3 Broadway and Warren Street Safety Improvement
(Concept for Planning Purposes Only)



A.3.2 Eliminate slip lanes from relevant intersections to slow down cars and better protect more vulnerable users (e.g., pedestrians and bicyclists).

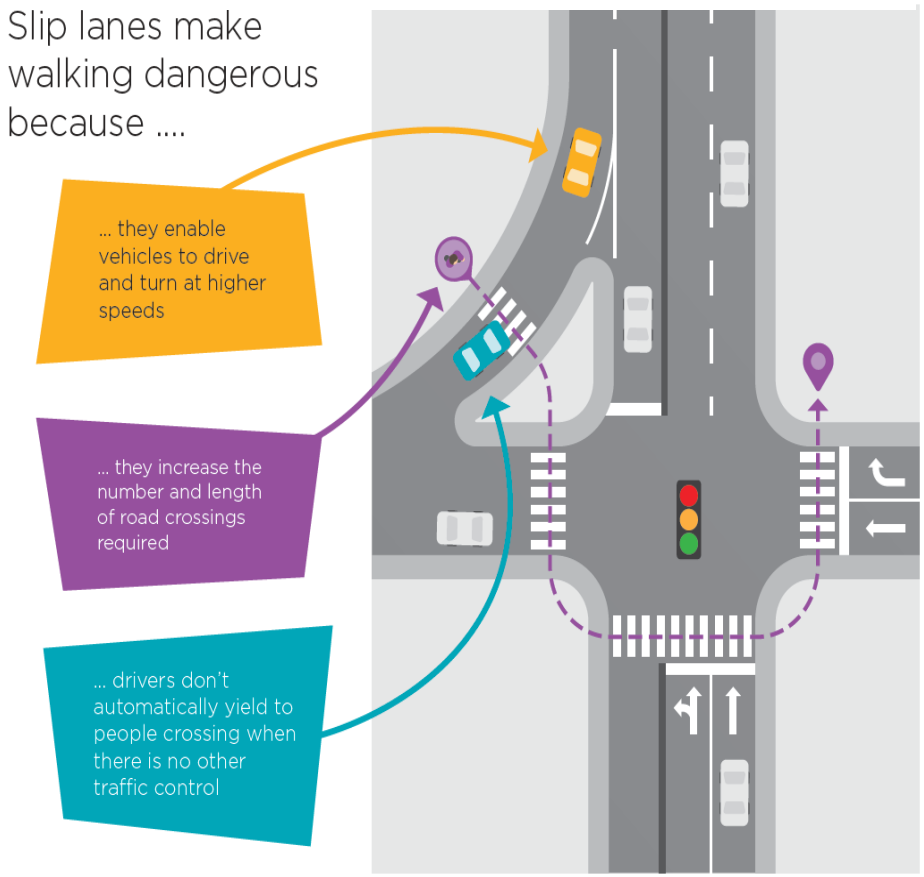
Slip lanes are designed to expedite vehicular travel to the detriment of pedestrian safety. They encourage cars to travel at higher speeds and require multiple crossing for pedestrians. (See Figure 4). Removing slip lanes slows cars by requiring a sharp right turn and reduces the number of crossing for pedestrians. Locations to study include:

- Mystic Street and Chestnut Street
- Medford Street and Chestnut Street

A.3.3 Design, fund and implement projects that enhance pedestrian and bicycle safety.

Pedestrian and bicyclist safety is a key priority of this plan. Please see **Goal Areas C and D** for more information accessibility and safety improvements.

Figure 4 Slip Lane Conflicts



Source: Nelson\Nygaard

A.4 Develop and implement a Neighborhood Traffic Calming Program to address safety concerns.

Residents and other stakeholders often know where safety is a major concern but may not be discernable from crash or other traffic related data. This includes neighborhood streets where speeding is excessive, extra wide intersection crossings that present crash concerns, and more. The Town should develop a program where resident and other stakeholder groups may request a project to calm traffic within their neighborhood, work with the Town to analyze the issue and identify a strategy, and allocate funding to address these neighborhood traffic and safety concerns using tactical materials to "test" before making a more costly permanent investment.

It is important that the program clearly define what a neighborhood traffic calming initiative is and what it isn't, and to provide examples of project types that are possible. For example, neighborhood traffic calming typically includes:

- Small-scale, inexpensive projects (e.g., costing less than $20,000) to slow down traffic on local, residential streets.
- Projects that use temporary or semi-permanent materials to test ideas that can become permanent if successful.
- Projects that narrow streets though signage, bump outs, neck downs; or that improve sidewalks, pedestrian crossings (e.g., speed cushions/bumps); add bicycle lanes and separation where possible.
- Signage, raised medians and other elements that divert traffic.

Any program developed should include data collection before and after implementation to determine if an intervention achieves the speed reduction intended.

Figure 5 Neighborhood Traffic Calming Techniques

Temporary Speed Humps and Flex Posts

Bump outs to reduce speeds

Rubber Traffic Tables

Source: Nelson\Nygaard

A.5 Develop educational programs that promote safe travel behavior by ALL users.

Safe travel is every user's responsibility—drivers, bicyclists, pedestrians, and personal mobility users (e.g., electric scooters, skateboards, etc.). Developing educational materials including signage, online materials, presentations, pamphlets, and more can encourage safe behavior by providing greater knowledge about user protocols and rules that make getting around safer for all. Potential initiatives could include:

- **Bicycle Safety Programs,** for example through MassBike in partnership with MassDOT, the RMV and Safe Routes to School (SRTS) program, that teach children how to safely ride bicycles including traffic rules (e.g., stop at red lights), how to use a one-direction bike lane, and more. Similar programs targeted at adults should be promoted as well.
- **Provide Bike Safety Equipment** like helmets to students through grant opportunities and/or partnerships with local businesses and organizations, for example, through White & Gluck's Project KidSafe[3] program and others, like the Arlington Bicycle Advisory Committee, who in the past has provided helmets to Arlington residents.
- **Safe Routes to School (SRTS)** program route maps should include safe bicycle connections/routes, not just walking routes. Additionally, educational materials for parents and school staff should be provided to address safety concerns between walkers and vehicles during arrival and dismissal.
- **Share the Path** – The Minuteman Bikeway is a heavily used multiuse path. Developing a comprehensive safety program through enhanced signage, pavement markings (see Figure 6), separated uses, and other user information would help to inform those not versed in how to properly share the path. The Town has provided Community Preservation Act (CPA) funding to study potential safety improvements along the Minuteman Bikeway.

Figure 6 Shared Path Pavement Markings

Source: Nelson\Nygaard

[3] In 2018, 50 helmets were donated to Pierce Elementary School through Boston-based law firm, White & Gluck's KidSafe Program, which as of 2018 had donated over 20,000 bicycle helmets to children across the Commonwealth. https://arlington.wickedlocal.com/news/20180417/peirce-students-get-new-bike-helmets, https://www.bwglaw.com/project-kidsafe.html

- **Driver Education Programs,** including new- and long-term driver education, about user behavior (e.g., heavy/car yields to light/pedestrian, sharing roadways with other users), and promoting non-driving for short trips that can be accomplished by other modes.

A.6 Ensure streetscape plantings do not limit visibility.

Dense and overgrown plantings like shrubs and decorative grasses limit visibility along roadways (more than trees), particularly at street corners, driveways, and roadway medians and at bump outs, where they limit visibility of all users. Policies to ensure plantings do not impact safety could include:

A.6.1 Develop educational materials and distribute to property owners about responsible plantings on private property that improve visibility and safety.

The use of groundcover instead of shrubs, planting or moving shrubs further into the property and trimming hedges below two feet are good examples of plantings that would not obstruct visibility.

A.6.2 On public property–bump outs, medians, sidewalk (corners)—only allow plantings 2.5 feet high or lower.

Within 20 feet of a corner, median intersection, pedestrian, or bike crossing, avoid tall shrubs and grasses that block views, tall planters, street trees, etc. Planting locations and types should be considered in all roadway infrastructure projects, particularly those addressing high pedestrian areas. Additionally, individuals or groups responsible for streetscape plantings—e.g., garden clubs, merchant groups, and others—often require education about roadway safety and plantings.

A.7 Develop policies and guidelines (design and user guidelines) that promote the safe use of emerging mobility devices and services including e-bikes and other micro-mobility options.

Micro-mobility includes existing mobility options like bike share, as well as an expanding list of options from e-bikes and e-scooters (shared and private), electric skateboards, and future personal mobility technologies. In addition to pending legislation at the State level for e-bike and e-scooters, it is recommended that Arlington develop its own guidelines and/or regulations for where and how different devices should travel so that all roadway users are aware of what is and isn't allowed to travel on a facility. For example, should e-scooters be allowed on a multi-use path, in a bike lane, or in a vehicle travel lane? What about higher speed e-bikes? (See **Strategy F.2,** for transportation initiatives related to the Arlington *Net Zero Action Plan*.)

Design guidelines should also be established to inform future roadway and trail design projects. For example, multi-use paths should be wider if they are intended to allow e-bikes and other e-assist devices which travel at higher speeds. Regardless, restrictions on speeds should be posted and enforced. Pedestrians should be separated from these users wherever possible to avoid conflicts and potential crashes, and not discourage their use.

A.7.1 Require shared mobility providers to implement "low speed" zones for electric or e-assist devices.

Shared mobility providers can limit maximum speeds of electric or e-assist bicycles, scooters, and other devices within defined areas through geofencing technology. When an electric device enters the geofenced area, speed is automatically lowered to a predetermined limit (such as 5 mph or 10mph) while in the georeferenced zone. When the device leaves the zone, speed can increase. For example, Bluebikes is developing a hybrid dock and dockless model for e-bikes that is not yet available. To allow for shared e-bikes to use the Minuteman Bikeway in the future the Town could require Bluebikes to geofence the corridor for their e-bikes with a maximum speed to be determined.

A.8 Continue to implement initiatives that enhance safety to and from schools and community facilities including Safe Routes to Schools projects and programs and Arlington's ADA Transition Plan infrastructure improvements.

(Please see strategies included in **Section B: Mobility Options for All**)

A.9 Advance plans to enhance safety and reduce user conflicts along Mass Ave in Arlington Center.

Mass Ave is heavily traveled by all modes through Arlington Center, the Town's primary Civic Center and home to Town offices, retail, restaurants, and cultural amenities. It is also where the Minuteman Bikeway crosses Mass Ave, where several transit routes provide service, and where three state routes converge—Route 60, Route 2A, and U.S. Route 3. As highlighted in the **Fact Book** (Section 3), Mass Ave through Arlington Center is a State-designated pedestrian and bicycle crash cluster. Recent initiatives undertaken and completed to improve safety include the $1.7 million Safe Travel Project to better connect the Bikeway through the Center, and the Arlington Center Sidewalk Improvement Project to repair and replace sidewalks on Mass Ave between Mystic/Pleasant Street and Franklin Street, and along Broadway and Medford Street. The Town worked with a consultant to create conceptual plans for a more extensive reconstruction of this area with the Mass Ave Phase II project. The Town went through a public process to identify a preferred concept for reconstructing Mass Ave through Arlington Center that would enhance bicycle and pedestrian facilities and repair aging infrastructure. The project aimed to continue the Mass Ave reconstruction that occurred from Route 16 at the Cambridge

line to Pond Lane. The Town was unable to get support for this segment of the project from MassDOT District 4 and has since worked on project segments, including sidewalk reconstruction and improvements to Whittemore Park in the Center. Additional roadway work remains and should be prioritized.

Given Connect Arlington's emphasis on enhancing pedestrian, bicycle, and transit connectivity, it is recommended that the project be revisited to determine if the selected design for the project would meet the goals and vision of this plan. For example, the Phase II plans prioritize vehicle throughput over other modes and does not enhance the transit experience. The opportunity to proactively reimagine how Arlington Center functions from the perspective of all modes, and to design it move more people—not just cars—could address multiple strategies in this plan.

One potential design refinement to enhance pedestrian safety, provide safer bicycle facilities and slow vehicle speeds would be exploring a 4-to-3 lane road diet, with one travel lane in each direction and a center turning lane, a similar configuration as found west of Bartlett Avenue. The Town could also explore a three-lane section similar to the one implemented in East Arlington with the Mass Ave Redesign Phase I. The road diet would reduce crossing distances for pedestrians, provide room for separated bicycle lanes (parking protected where possible), and potentially bus priority lanes (during peak travel times), and slow vehicle speeds.

Figure 7 Mass Ave Phase II Conceptual Master Plan (2016, Design Plan by VHB)

Source: VHB

B. Mobility Options for All Ages, Capabilities, and Incomes

B.1 Continue to implement accessibility improvements throughout Arlington.

B.1.1 Continue to allocate funding to implement transportation improvement projects identified in the Town's recently updated Americans with Disabilities Act (ADA) Transition Plan.

Ensuring transportation facilities are accessible to all ages and abilities (including those who are vision or hearing impaired) must be prioritized for Arlington to be a connected community for all. Numerous initiatives are identified in the ADA Transition Plan including sidewalk and access improvements (ramps, ADA parking, van parking) at schools, public buildings, recreation facilities and more. The Town currently allocates funding for these improvements; however, it is unclear how much money is dedicated to these projects, or which projects have been prioritized. Including all ADA improvement projects in the recommended Local Transportation Improvement Project (LTIP, see **Strategy H.2** for more information) would provide transparency into the process and decision-making and provide a mechanism for input into priorities from users and advocacy groups.

B.1.2 Require all sidewalks to be constructed with materials that are accessible to all.

While many like the aesthetic appeal of brick sidewalks, they are not an optimal option for those with mobility impairments. Brick sidewalks typically provide rougher surfaces which inhibit travel for those with mobility limitations. To ensure sidewalks are accessible, all sidewalks in commercial areas, town facilities and along major pedestrian connections should be constructed using concrete. Decorative brick or stamped concrete could be included for edge treatments, but only where space allows (see Figure 8). When brick is used, wire-cut bricks that provide a smoother surface should be required. Areas adjacent to handicap parking spaces should be concrete.

Figure 8 Accessible Sidewalk

The recently completed Arlington Center Sidewalk Project replaced brick sidewalks with concrete with a stamped brick border.

Source: Nelson\Nygaard

B.2. Continue to develop and implement Safe Routes to School (SRTS) projects.

Several thousand children attend Arlington's schools. Encouraging them to walk or bike to school is not only good for their health, but it also reduces traffic congestion and greenhouse gas emissions. Safe Routes to School (SRTS) programs and infrastructure projects aim to provide safe transportation networks for children to walk and bike from their homes to their schools. Arlington was one of the first communities in the country to set up a SRTS program.

Funding for the program can come from both the State through MassDOT and the town. Although State funding has been limited in recent years, Arlington should prioritize local investments that enhance connectivity to and from schools throughout town. It should also consider school connectivity in all major projects whether its directly connected with the project or not. For example, any roadway project that potentially impacts a child's walk or bike to school must address their safety.

In 2019, Arlington received funding from MassDOT to implement a SRTS infrastructure project near Stratton Elementary School. The allocation will be made available in Federal Fiscal Year 2024 (FFY2024). Arlington continues to work with the Massachusetts SRTS program and its regional coordinator on other projects to address safety concern around other schools, including Dallin Elementary School and Thompson Elementary School.

B.3. Complete the Minuteman Bikeway Project and implement recommendations that increase access to and capacity and safety on the pathway.

The Minuteman Bikeway is the central active transportation spine through Arlington, providing a picturesque, separated multi-use path for bicyclists and pedestrians connecting to Lexington and Bedford to the north and Cambridge to the south. The facility serves as both a recreational amenity for bicyclists, runners and walkers, and a convenient commuting route for residents and workers, connecting to the Red Line at Alewife Station in Cambridge and to the Somerville Community Path and Davis Square. Its popularity and heavy use have also resulted in conflicts among different users—especially bicyclists and pedestrians—and vehicles at roadway crossings.

The Town has allocated Community Preservation Act funding to engage a consultant to study options to expand capacity and improve safety long the Minuteman Bikeway. The study should be comprehensive in its analysis and recommendations; however, at a minimum, priorities to study and implement recommended changes should include:

B.3.1 Prioritize opportunities to separate bicyclists from pedestrians to expand capacity and enhance comfort and safety.

During the Connect Arlington planning process, numerous comments were received about the conflicts between bicyclists and pedestrians along the Minuteman Bikeway. Based on findings from the Bikeway study to be completed by the Town soon after the completion of this plan, opportunities to increase capacity through separate facilities designed for different speeds would add comfort and improve safety for both pedestrians and bicyclists along the pathway. Given that many segments of the pathway do not provide enough right-of-way (ROW) to provide fully separated uses, opportunities to widen the path and provide preferred use areas for each mode should be explored.

Figure 9 User Separation

There are many design strategies to provide user separation. The Missouri Greenway includes areas for faster bicycle travel in the center, with areas for pedestrians on each side.

Source: Great Rivers Greenway

B.3.2 Develop and implement comprehensive wayfinding and user safety program for the bikeway.

Signage to educate new and returning users about how the pathway should be used, or which pathway to use (if separate facilities are constructed) would help to reduce user conflicts. Wayfinding signage could also be used to encourage users to stop in Arlington's commercial centers and support local businesses.

B.3.3 Install lighting to increase visibility and safety along the pathway at night.

Based on input received during focus groups and other plan engagement activities, many would like to see lighting added to the pathway from the Red Line to the Lexington line to increase safety of all users, and encourage more to use the facility at night, particularly during winter months when commuting hours are dark.

Developing a lighting plan to illuminate the bikeway would attract more use, particularly in darker months when many commuters return home after sunset. Lighting would not only reduce crash risks between users and pathway obstructions (e.g., vegetation on the path, uneven surfaces) but would also improve personal safety by providing increased visibility. Systems that direct light onto the path are recommended to minimize light impacts on residential abutters.

Lighting could be installed along the entire pathway as one large project, or could be implemented in phases, beginning with segments from the Cambridge line to Arlington Center.

B.3.4 Improve and add additional neighborhood connections.

Ensure that all neighborhood connections, where they exist or can be added with minimal effort, are designed to accommodate all users safely. Connector paths should be no less than 8 feet wide to provide space for both bicyclists and pedestrians, which travel at different speeds. Adding connections to reduce distances between entry and exit points (combined with lighting) will also increase personal safety of users by providing more opportunities to exit the pathway when uncomfortable or potentially dangerous situations occur.

B.4 Increase car share availability and membership in Arlington.

Reducing car ownership helps to eliminate car trips that could be easily and conveniently made using other modes. Further, not every individual or household wants to or can afford to own a car, or more than one car. Currently, the car share provider Zipcar offers a few options in town for car share. However, providing shared vehicles throughout Arlington would help more residents to live a car-free or "car light" lifestyle by providing convenient options to use a vehicle when needed, and encouraging the use of other modes when not. There are many options for the Town to increase car share availability, including:

B.4.1 Work with car share companies (e.g., Zipcar, Getaround, etc.) to explore additional locations, including on- and off-street locations.

B.4.2 Develop a Community Car Share program of Town-owned vehicles managed by a third-party entity.

More and more communities are opting to own (and contract with a third party to operate) their own fleets of car share to increase access for their residents and businesses. Getaround, for example, is used to manage municipally-owned car share programs.

B.4.3 Include car share as part of parking requirements in new multi-family, or larger commercial developments.

Requiring car share at larger developments can reduce the need to own a car, or more than one car. This not only reduces monthly household expenses but can lower the overall development costs when less parking is needed.

B.4.4 Incentivize car share memberships.

Provide free or subsidized memberships and rides to incentivize and increase use of car share. This could include car share memberships to all Town employees to decrease drive-alone trips to work by providing a car option only when needed.

B.5 Increase access to bike share throughout Arlington.

B.5.1 Promote and provide free or subsidized bicycle share memberships.

Bike share (Bluebikes) provides an alternative transportation choice to many who cannot afford or do not wish to own a personal bike. Bluebikes offers an income-eligible program to those with an EBT Card, reducing the monthly membership to $5 or annually to $50. This may still be out of reach for some. Providing additional local subsidies—e.g., free memberships to qualifying people—would make bike share available to all. Additionally, providing free or reduced memberships to Town staff would encourage non-auto commutes and other trips taken during the workday. Establishing a Bluebikes enrollment center at Town Hall or at other location(s) would also better promote bicycle share membership and use.

B.5.2 Identify funding for more bike share stations to improve neighborhood bicycle connectivity.

The Town should explore funding opportunities—Town funding, grant funding, sponsorships, TDM requirements—to provide additional bike share hubs and make connections proximate to residents in neighborhoods away from the Mass Ave spine. Stations could be located adjacent to parks and the Minuteman Bikeway.

B.6 Expand transportation options to Arlington residents and workers through local shared transportation programs and services.

Currently, 11 MBTA bus routes run through Arlington[4]; however, all are designed to funnel passengers to rail connections, most notably the Red Line at Alewife Station, and are not always convenient for accessing shopping, entertainment, or social trips. For many, bus routes do not provide efficient connectivity to and from neighborhoods, or are too far for many to walk to, particularly those with mobility challenges exacerbated by challenging topography. Arlington could provide supplementary local services to bridge the gap.

B.6.1 Partner with TNCs to provide door-to-door connectivity, including subsidized rides to qualifying residents, to those who do not or choose not to drive.

TNCs (Transportation Network Companies) like Uber and Lyft provide door-to-door services through mobile applications at a premium cost not affordable or accessible to all users, including those without a smartphone or knowledge of how to use the applications. The Town could partner with TNCs so that rides could be arranged in advance and by phone through Council on Aging transportation services or another entity. Partnerships with TNCs are active in communities like Needham for medical appointments, and through several community service organizations in Attleboro as part of the CAR: Community Access to Rides program.[5]

B.6.2 Explore opportunities to launch local transit service through contracting with a third-party micro-transit service.

See **Strategy E.4**. for details.

B.6.3 Explore opportunities to partner with abutting communities to fund fixed route services that enhance local connectivity.

See **Strategy E.4**. for details.

[4] This includes Route 79 which is suspended at the time of this writing due to the MBTA Forging Ahead changes.

[5] http://www.svdpattleboro.org/district/CAR%20Brochure-SVDP%20version.pdf

B.7 Pursue higher Bicycle Friendly Community Award status and explore other transportation-related award programs to help examine current practices and promote the Town's successes.

The Town has been designated a Bicycle Friendly Community by the League of American Bicyclists since 2012 and had its designation upgraded in May 2021 to the Silver level – one of only four communities in Massachusetts to receive the Silver award. This award shows that Arlington has made strong commitments to improve bicycling and the application process provides a way for the Town to self-examine its processes and practices related to bicycling. Other award programs, such as the Walk Friendly Community program, also provide an opportunity for the Town to review how it could make improvements to walkability and establishes a baseline on how "friendly" Arlington is for getting around on foot. The Town should explore transportation-related award programs, as time allows, to examine how the town compares with peer cities and nationally and to promote the good work being done on transportation in Arlington. Health-related recognition programs are also applicable as active transportation is key element in improving individual and overall public health within communities. These award programs may also allow the town to be able to receive grant funding from certain organizations or can be used to show the Town's commitment to transportation improvements for competitive grant applications. Additional programs to explore and review include AARP Age-Friendly Communities (Arlington has been a member since 2017) and the CityHealth initiative (neighboring communities Cambridge and Boston have been assessed for this ranking). At minimum, the Town should pursue Gold Bicycle Friendly Community status by 2040 or earlier, and explore programs geared toward walking- or transit-friendliness.

Figure 10 Arlington Bicycle Friendly Community Award

Source: Town of Arlington

C. A Pedestrian First, Walk-Friendly Environment

The most important element of any transportation network is the pedestrian realm. Walking not only has health benefits in that it is an active form of transportation and emits no greenhouse gases; it is the only mode of travel that is a part of every trip, whether a whole trip, or at the beginning or end of a trip via car, transit, bicycle or other mode. Walking is also the most equitable trip type in that the pedestrian realm can be used by all at no charge. As such, ensuring that all of Arlington is connected by well-maintained pedestrian infrastructure is paramount. (The pedestrian environment refers to sidewalks and street crossings for users of all abilities, including those with limited mobility, or those that require an assistive device such as a cane or wheelchair.)

C.1. Continue to maintain and upgrade sidewalks for accessibility and communicate planned projects.

As shown in the **Fact Book** (Section 3), existing sidewalks vary in quality and condition. Arlington used to allocate $500,000 annually for sidewalk improvements to enhance the pedestrian environment, but this number has fluctuated and been reduced in recent years. The Town uses the ADA Transition Plan and ranks areas based on certain criteria to address existing sidewalks in poor condition or not ADA-accessible. However, it is not always clear how sidewalk maintenance improvements are being planned or prioritized.

The Town should develop a transparent sidewalk maintenance program to provide all residents with a better understanding of what is planned, why it is planned, which projects are currently funded, and when future projects are anticipated. Because sidewalks have varying levels of foot traffic depending on their location and purpose, the plan should balance improvements (and funding) to address needs in high traffic pedestrian areas (e.g., commercial areas), pedestrian routes to schools (e.g., Safe Routes to Schools), recreation and transit routes, and with lower pedestrian traffic on neighborhood side streets. A program would also provide opportunities for public input into the process. (See **Strategy H.2** for more information.)

Figure 11 Sidewalk Improvement Program Priority

Providing a sidewalk on the eastern side of River Street approaching the Mystic Valley Parkway should be a Sidewalk Improvement Program priority.

Source: Nelson\Nygaard

C.2. Create a program and process for prioritizing, funding, and implementing new sidewalk construction where no sidewalks currently exist in the network.

The Town of Arlington has a robust sidewalk network, and most work related to sidewalks is to preserve and maintain this infrastructure. However, in many neighborhoods and along some major streets, there are gaps in sidewalk or no sidewalks at all. This includes parts of Arlington Heights which developed with lower densities and more focused around the automobile, some private roads, and even in dense parts of East Arlington. Installing sidewalks where none exist can make walking safer and become a feasible option for residents who wish to walk to parks, schools, commercial areas, or for exercise. Although the Town installs small stretches of sidewalks in some limited cases, there is no defined sidewalk construction program to prioritize and build out new sidewalk networks where they would be beneficial. This program should include additional funding beyond existing funds for sidewalk maintenance that can be used to design and construct new sidewalks, as well as be used to provide matching funds for state or federal grants.

C.3. Continue to ensure all pedestrian facilities are fully accessible, ADA-compliant and maintained.

All sidewalks should be designed, constructed, and maintained to ensure that they are accessible to all and meet criteria to ensure ADA-compliance. This includes crosswalks, which indicate to pedestrians and drivers alike where roadway crossings should occur—a critical component of roadway safety. Ensuring crosswalks are visible and well defined and accessible encourages more to walk. Throughout Arlington, there are many crosswalks that are faded, that have non-compliant ramps or in some cases no ramps at all and are located at intersections that lack accessible pedestrian signals.

C.3.1 As part of the sidewalk improvement plan, develop a plan to install, upgrade and maintain accessibility ramps, tactile warning strips and other infrastructure to become (or remain) fully ADA-compliant.

All crosswalks are required to be fully-ADA compliant; however, upgrading those that are not will take time. Crosswalks in high pedestrian traffic areas should be prioritized. In addition to CDBG funds, which the Town allocates for these improvements annually, additional grant and Town funds should be allocated when available to expedite accessibility improvements.

C.3.2 Require accessible pedestrian signals for all new traffic signal installations, and proactively upgrade existing signals to increase safety for those with visual and hearing impairments.

Accessible pedestrian signals include devices that communicate information about "Walk" and "Don't Walk" times at signalized intersections and crosswalks in visual and audible ways. Additionally, consider automated pedestrian signals which remove the need to press a button.

C.4. Enhance pedestrian safety through design improvements at intersections and crossings.

C.4.1 Minimize pedestrian crossing distances and increase visibility at intersections where crashes involving pedestrians are highest.

The less time a pedestrian is in a roadway, the less likely they are to be struck by a vehicle. To improve pedestrian safety, the Town should prioritize projects that improve visibility and reduce time in the roadways—especially those with more than two lanes. This could include enhanced lighting, reduced crossing distances across roadways through road diets, continued investment in bump outs, adding pedestrian refuges where possible, removing adjacent on-street parking that block crosswalks, regular vegetation maintenance, and signalization (including traditional signals where warranted and warning beacons such as Rectangular Rapid Flashing Beacons [RRFBs]). Additional measures, such as adjusting pedestrian signal times to provide more time for walkers with mobility impairments should also be assessed to provide sufficient time to cross the roadway. Given that resources are limited, improvements to pedestrian crossings should be prioritized based on different factors, including roadway geometry, volume of vehicles and pedestrians, vehicle speeds, and proximity to trip attractors like schools or commercial areas. Less expensive visibility improvements such as expanding the crossing flag program started by the Transportation Advisory Committee and painting curbs to highlight no parking areas near crosswalks should also be explored. The Town should develop guidance for improving existing crossings and installing new crossings based on these factors.

C.4.2 Review unsignalized pedestrian crossings along major roadways and implement measures to enhance pedestrian safety.

Unsignalized crosswalks along high-traffic, high-speed roadways are especially challenging for pedestrians to use. Finding a gap in traffic is more difficult due to high traffic volumes, multiple lanes, and higher speeds; speeding makes crossings less comfortable for pedestrians and drivers need greater distance to stop. On-street parking near crosswalks, which may be heavier and more in demand on major roads in commercial areas, contributes to poor sight distance by blocking the ability of drivers to see pedestrians and vice versa. All unsignalized crossings of Mass Ave, Summer Street, Mystic Street, Pleasant

Street, Park Ave, and Broadway should be reviewed to ensure visibility is good and whether additional enhancements are needed to create safe and predictable crossings.

C.4.3 Enhance lighting at intersections and other crossings to improve pedestrian visibility.

The Town should prioritize lighting enhancements through a combination of brighter overhead lights at crosswalks, flashing light systems (e.g., RRFBs) at mid-block crossing locations, pedestrian actuated light path systems including in-road flashing lighting, focused pedestrian crossing lighting, and more. The Town should develop clear guidelines for when and where to install enhanced lighting systems for currently unsignalized crosswalks. RRFBs in particular have been shown to significantly increase driver yielding to pedestrians in uncontrolled crosswalks and are being used at many locations in neighboring communities. However, they require additional funding to install and maintain and so should be located thoughtfully.

C.4.4 Pilot intersection lighting improvements that focus on the pedestrian, and pedestrian crossings, to improve visibility and safety.

Lighting at intersections in Arlington is provided by overhead streetlights that generally illuminate the entire roadway, not specific locations where pedestrians are most vulnerable: crosswalks. Designing and installing new lighting technologies that focus lighting on the pedestrian crossing and the pedestrians themselves, can provide greater pedestrian visibility to oncoming vehicles in darker hours. Initial locations could include intersections along Mass Ave where multiple pedestrian crashes have occurred, and Minuteman Bikeway crossings. (See Figure 11 for examples.)

C.4.5 Ensure signalization policies and infrastructure are developed and/or installed to enhance pedestrian safety.

In addition to ensuring intersections are ADA compliant (including accessible signals), additional policies for signalization should be in place to ensure crossings are safe and intuitive for pedestrians, bicyclists, and drivers alike. The Town should ensure the following are in place:

1) Update all signal timing to meet new Manual on Uniform Traffic Control Devices (MUTCD) guidelines to provide adequate time for people to cross the intersection.
2) Establish policy for when exclusive or concurrent pedestrian phases should be implemented. When concurrent signals are used, ensure LPI—Leading Pedestrian Interval—is included to give pedestrians the opportunity to enter an intersection three to seven seconds before vehicles to provide pedestrian priority and greater visibility before vehicles are given the green light.

3) Explore using pedestrian-specific signals (e.g., RRFBs) at locations where pedestrian crossing activity is high but does not warrant full signalization.

Figure 12 Pedestrian-oriented Lighting

Lighting advances that focus light at crosswalks and that "spotlight" the pedestrian increase visibility and reduce crashes. (Sources: Left Image: https://www.aspentimes.com/news/aspen-mulls-pedestrian-lighting-system; *Right Image:* https://www.howardindustries.com/products/ped-crossing-signs*)*

C.5 Expand and maintain the existing street tree canopy to improve pedestrian safety and comfort.

Street trees are not only an aesthetic complement to our roadways. Street trees have been shown to decrease vehicle speeds by more clearly defining right of way (ROW) reserved for vehicles by reducing the perceived roadway width. Slower vehicle travel creates a safer, more comfortable pedestrian network. Street trees also provide cooling shade for pedestrians on sidewalks, reduce heat island impacts during warmer months, and absorb CO2. As such, transportation projects should strive to avoid removal of mature trees and develop creative solutions to maintain existing street trees.

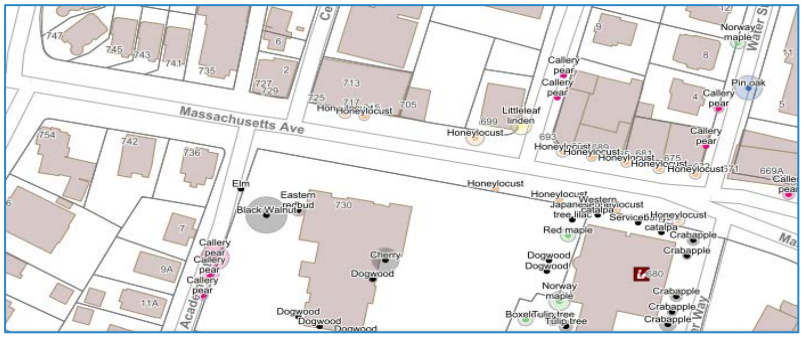
C.5.1 Implement Arlington's 2018 Tree Management Program and refine as needed to enhance pedestrian comfort and safety.

The Town adopted a tree management program in 2018 based on the street tree inventory conducted in August 2017. Ensuring that resources are allocated to the multiyear strategy improve comfort and safety for users of Arlington's streets.

C.5.2 Define policies and strategies to address sidewalk damage caused by tree roots to ensure sidewalks are accessible to all users, and free of tripping hazards.

Street tree roots cause many sidewalks to crack, buckle, and spall, resulting in tripping hazards and in some cases impeding access (particularly those with mobility impairments). Given the importance of street trees for many reasons—aesthetics, sustainability, pedestrian comfort—multiple interventions should be used to more effectively repair or prevent sidewalk damage from tree roots.

Figure 13 Arlington Street Tree Inventory



The street tree canopy varies greatly along different segments of Mass Ave. For example, the block between Water Street and Court Street has five street trees, whereas there are none two blocks to the west.

Source: Town of Arlington Tree Inventory

Potential solutions include using more flexible sidewalk materials around trees that are able to withstand roots more effectively, "shaving" protruding sidewalk edges to smooth transitions by reducing tripping hazards, selecting street tree species with deeper root systems, constructing sidewalk extensions into the "parking lane" to provide an accessible path, requiring larger ADA-compliant tree grates, and potential root removal/excavating techniques as deemed appropriate by the Tree Warden.

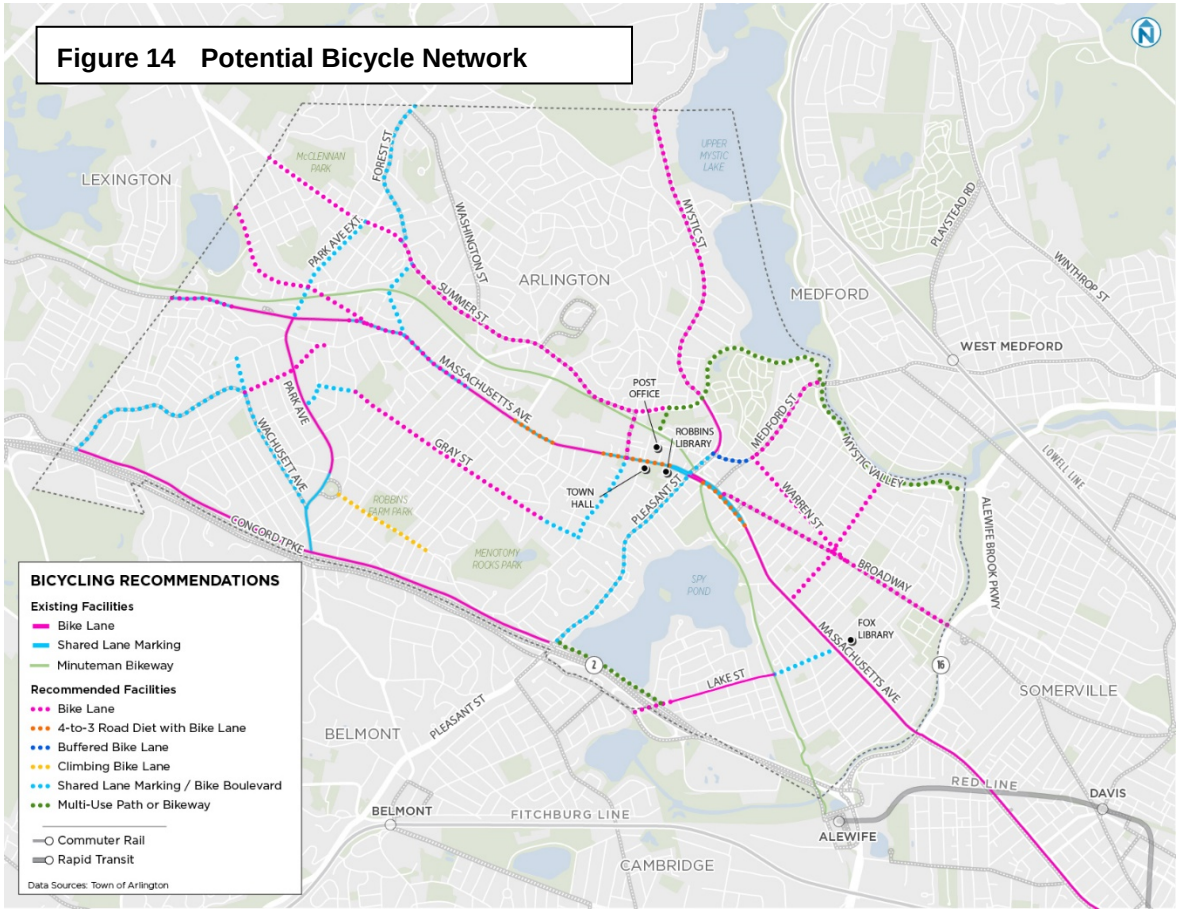
D. A Low-Stress Bicycling Environment

A key strategy in reducing the need to drive, particularly for short- and medium-range trips, is to provide an interconnected network of dedicated bicycle facilities and amenities that make bicycling a safe, comfortable, and practical option—a preferred choice—for more residents and workers. More bike trips also support other sustainability goals—they emit no greenhouse gasses and provide health benefits to users.

Arlington is fortunate to have a major off-road bicycling east-west spine—the Minuteman Bikeway—and a growing secondary on-road route along much of Mass Ave, especially in East Arlington. What the town currently lacks are safe, comfortable facilities feeding neighborhoods, schools, and recreational spaces to and from these key routes. As such, a key goal of this wplan is to connect more people to these facilities by expanding the network, prioritizing projects that connect to the spine, radiating out over time to create a connected network without gaps.

While a comprehensive Bike Master Plan should be considered to develop a truly comprehensive strategy, this plan recommends the below initiatives to achieving a low-stress bicycling network.

Figure 14 Potential Bicycle Network



Map edited 8/5/21 to correct location of proposed bike lane on Bates Rd and River St.

D.1 Prioritize new bicycle facilities along corridors currently designated as Arlington's "lane-sharing network".

As described in the **Fact Book** (Section 3), certain roadways are designated as the Town's "lane-sharing network": corridors that connect neighborhoods to commercial centers, schools, and regional transportation networks. Although designated as key bicycling corridors, many of these roadways do not currently have bike lanes. And while some segments do have shared lane markings (also known as sharrows), these markings do not contribute to a comfortable network because they require mixing and merging with faster-moving, heavier cars.

In 2014 ABAC and TAC developed the Context Sensitive Bike Facility Design Guide Matrix[6] to assist Public Works in determining when there is enough curb-to-curb width to install bike lanes during repaving, depending on several factors. This document is still a helpful tool in understanding the contextual issues around incorporating bicycle accommodations on particular streets. However, this plan recommends a more ambitious approach to creating a low-stress bike network which may require tradeoffs with other uses (such as on-street parking) to complete the bicycle network in Figure 14, and creative designs such as the conceptual diagram in Figure 15. Streets recommended for bicycle facilities on the current "lane-sharing network" include:

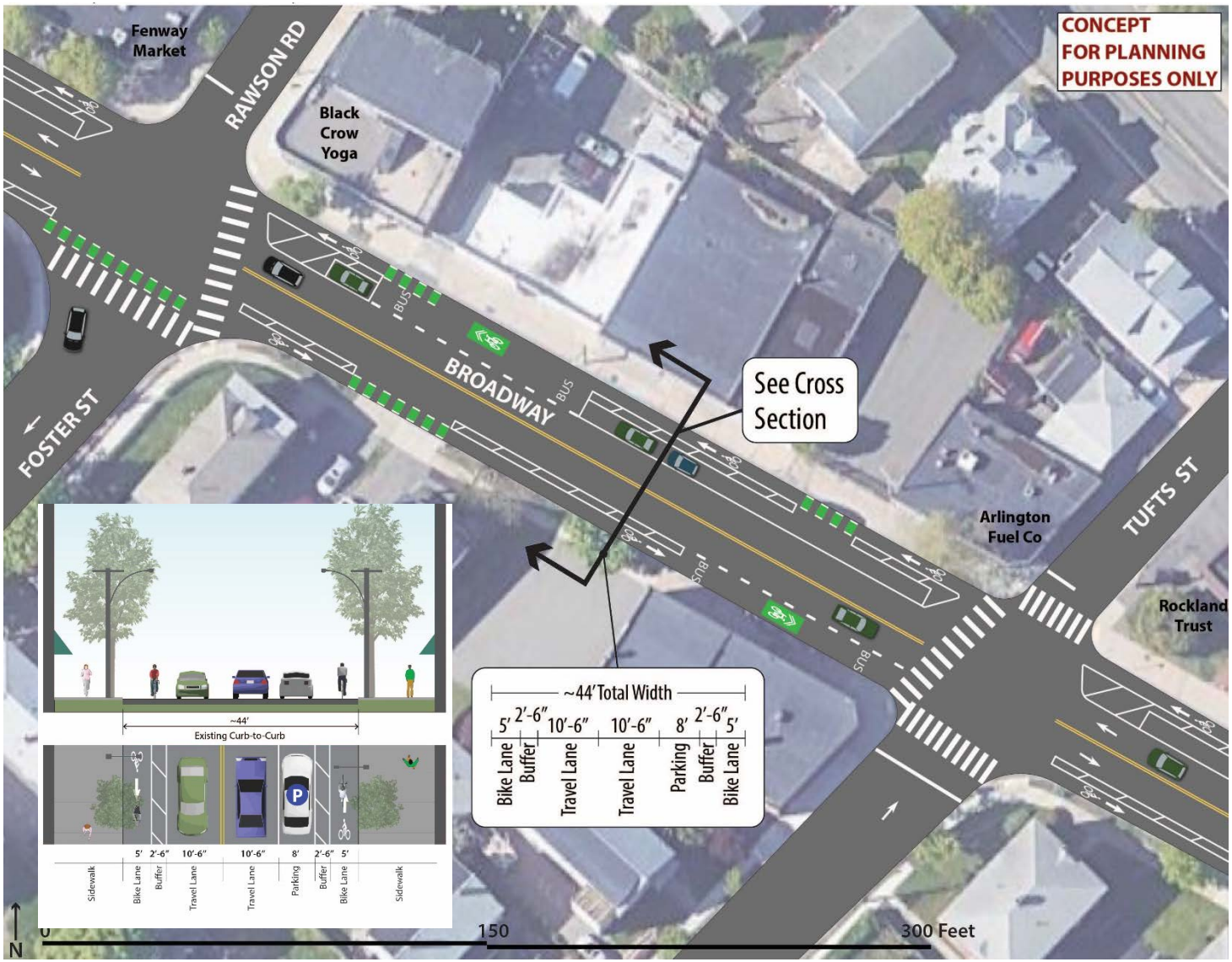
- **Mass Ave** including all areas not currently served by a bicycle lane;
- **Foster Street/Rawson Road** between Mass Ave and Mystic Valley Parkway;
- **Medford Street** between Mystic Street and Mystic Valley Parkway;
- **Mill Street** between Summer Street and Mass Ave;
- **Mystic Street** between Mystic Valley Parkway and the Winchester town line;
- **Summer Street** between Mystic Street and the Lexington town line;
- **Pleasant Street** between Mass Ave and Route 2;
- **Park Avenue Extension** between Mass Ave and Summer Street;
- **Park Avenue** between Park Circle and Concord Turnpike;
- **Broadway** from Arlington Center to Alewife Brook Parkway; and
- **Warren Street** between Medford Street and Broadway.

Best Practices at Work: Lake Street Bike Lanes

Arlington is already taking steps to create a connected bicycling network. The Town recently added dedicated bike lanes on Lake Street between the Minuteman Bikeway crossing to Route 2. The project shows the importance of connecting new facilities to the existing network. These dedicated lanes not only provide increased safety and comfort for those using them, but they were also designed to feed bicyclists from low stress neighborhood streets to Lake Street to connect to the Minuteman Bikeway.

[6] Arlington's Context Sensitive Bike Facility Design Guide Matrix

Figure 15 Broadway Bicycle Lane Concept



D.1.1 Complete the bicycle lane network along all of Mass Ave.

Approximately half of Mass Ave has dedicated bike lanes, the largest contiguous portion of which was completed through the roadway's redesign in East Arlington. Northwest of Arlington Center features a combination of bike lanes connected by shared lane markings. Areas with sharrows should be converted to bike lanes. Given the roadway dimensions, this could require removal of parking on at least one side of the road. The Town should design a project that meets the needs of both bicyclists and abutting property owners.

D.1.2 Prioritize new bicycle lane projects that connect to existing bicycle facilities to create a safe, contiguous bicycle lane network.

An important consideration when planning for and achieving a town-wide bicycling network is developing facilities that feed into and provide direct connectivity to existing facilities to form contiguous, continuous dedicated facilities that will appeal to riders of all comfort levels. Initial bike lane priorities should focus on segments of the lane sharing network that connect to or are a short distance from the Minuteman Bikeway, Mass Ave, and other existing facilities.

For example, one potential project could include adding bicycle lanes to short segments like Mill Street between Mass Ave and Summer Street; combined with the segment of Summer Street between Mill Street and Mystic Street. This would provide a contiguous bicycle network between the Minuteman Bikeway to Mass Ave. bike facilities (See **Strategy D.1.1.**) and connect to existing on-road bike lanes on Mystic street.

D.1.3 Prioritize corridors that provide safe facilities to schools and other community facilities.

In addition to completing bike facilities along Mass Ave, which better connects all of Arlington to the high school, prioritizing bicycle lanes on corridors that enhance connectivity to Arlington schools would make bicycle trips safer. Providing safer routes could encourage more parents not to drive their children to school, reducing peak hour congestion and decreasing their carbon footprint. Priority corridors to add lanes could include: Foster Street/Rawson Road, Bates Road/River Street, and others. (See **Strategy D.2** for additional strategies to better connect schools by bicycle travel.)

D.1.4 Create dedicated bike lanes on corridors that connect Arlington residents and workers more efficiently to regional transit.

Getting more residents and workers to commute by means other than the car is a key strategy to reducing overall congestion and impacts on the environment from cars. Adding dedicated bicycle lanes along corridors that more efficiently and safely connect residents and workers to transit stations should be a priority. This includes:

- **Medford Street** between Mass Ave and the Medford line;
- **Bates Road/River Street** to better connect to the West Medford commuter rail station (½-mile from the Arlington line);
- **Broadway** which will connect to the future Green Line station in Ball Square (Somerville), and helps connect to Davis Square; and
- **Other connections** (e.g., Mill Street) to the Minuteman Bikeway that connect to Alewife Station in Cambridge.

D.1.5 Work with neighboring cities and towns to build bike facilities that connect to those in Arlington to enhance regional bicycle connectivity.

Bicycle travel will be safer and more efficient if they connect across municipal borders. The Town of Arlington should work with neighboring cities and towns to develop and build bike lanes on roadways that meet with bicycle lanes in Arlington to create a greater regional network. Corridors that lead to transit connections, commercial centers and other important destinations should be prioritized. Potential examples include working with the following communities:

- **Medford** to provide bicycle facilities on High Street between Arlington and West Medford (commuter rail);
- **Belmont** along Lake Street and/or Pleasant Street to connect to Belmont Center;
- **Somerville** along Broadway; and
- **Cambridge** to coordinate improved bicycle access at Mass Ave and Route 16, and the Minuteman Bikeway.

D.1.6 Stripe bike lanes along the remaining "lane sharing network".

Each of the corridors presents design challenges due to limited ROW as they are too narrow to accommodate all the competing uses: driving lanes, parking lanes, bicycle lanes, sidewalks, etc. The Town should study each of the corridors and develop a short- to medium-term implementation plan to provide safe, dedicated bicycle facilities on each—with buffered or separated lanes, wherever possible. *MassDOT's Separated Bike Lane Planning & Design Guide*[7] and/or NACTOS's *Urban*

[7] https://www.mass.gov/lists/separated-bike-lane-planning-design-guide

Bikeway Design Guide[8] provide many design options that may be applicable to different segments of the lane sharing network. Based on the Project Team's assessment, the primary trade-off to providing bike lanes on these routes will be the removal of on-street parking along some segments. (The Town should engage with abutters from the outset to understand the impacts that may result from removal of on-street parking.)

To ensure progress is being made, the Town could prioritize implementation along corridors that require minimal removal of on-street parking, while ongoing outreach and design strategies are developed for corridors that require more trade-offs. Initial corridors could include:

- Mystic Street from Mystic Valley Parkway to the Winchester line; and
- Summer Street from Mill Street to Mystic Street, which look to be possible with minimal removal of on-street parking (if off-street parking could be provided for users of Buzzell Field Park).

D.2 Construct a multiuse path from the Minuteman Bikeway at Arlington Center to the Mystic River Path along Summer Street and the Mystic Valley Parkway.

D.2.1. Work with DCR to design the multi-use path.

Although the Minuteman Bikeway connects to the Mystic River via the Alewife Brook Greenway on the east side of Arlington, there is an opportunity to make a direct connection to the west along Mystic Valley Parkway and Summer Street to where the Bikeway passes by Buzzell Field. This connection is currently challenging for cyclists and pedestrians due to unsafe intersections, limited accessibility to nearby neighborhoods, and poor path quality between Medford Street and River Street. The existing pathway along the Mystic Valley Parkway should be designed to be a high-capacity multiuse facility for bicyclists, walkers, and runners, and the intersections of Mystic Street/Summer Street/Mystic Valley Parkway and Route 60 (Medford Street)/Mystic Valley Parkway must be made safer for non-motorized users. Given much of the corridor provides considerable area, Arlington should work with DCR and advocate for separated facilities—one for higher speed bicycles and another for pedestrians—to make for a comfortable and safe facility for all active users. During this process, the Town of Arlington applied for a MassTrails grant to study this opportunity but had not been notified at the time of this plan's completion. Particular attention should be paid to the Medford Street crossing where the presence of a rotary on each side of the river makes for an extremely difficult crossing for both bicyclists and pedestrians. (See **Strategy D.5.2** for more.)

[8] https://nacto.org/publication/urban-bikeway-design-guide/

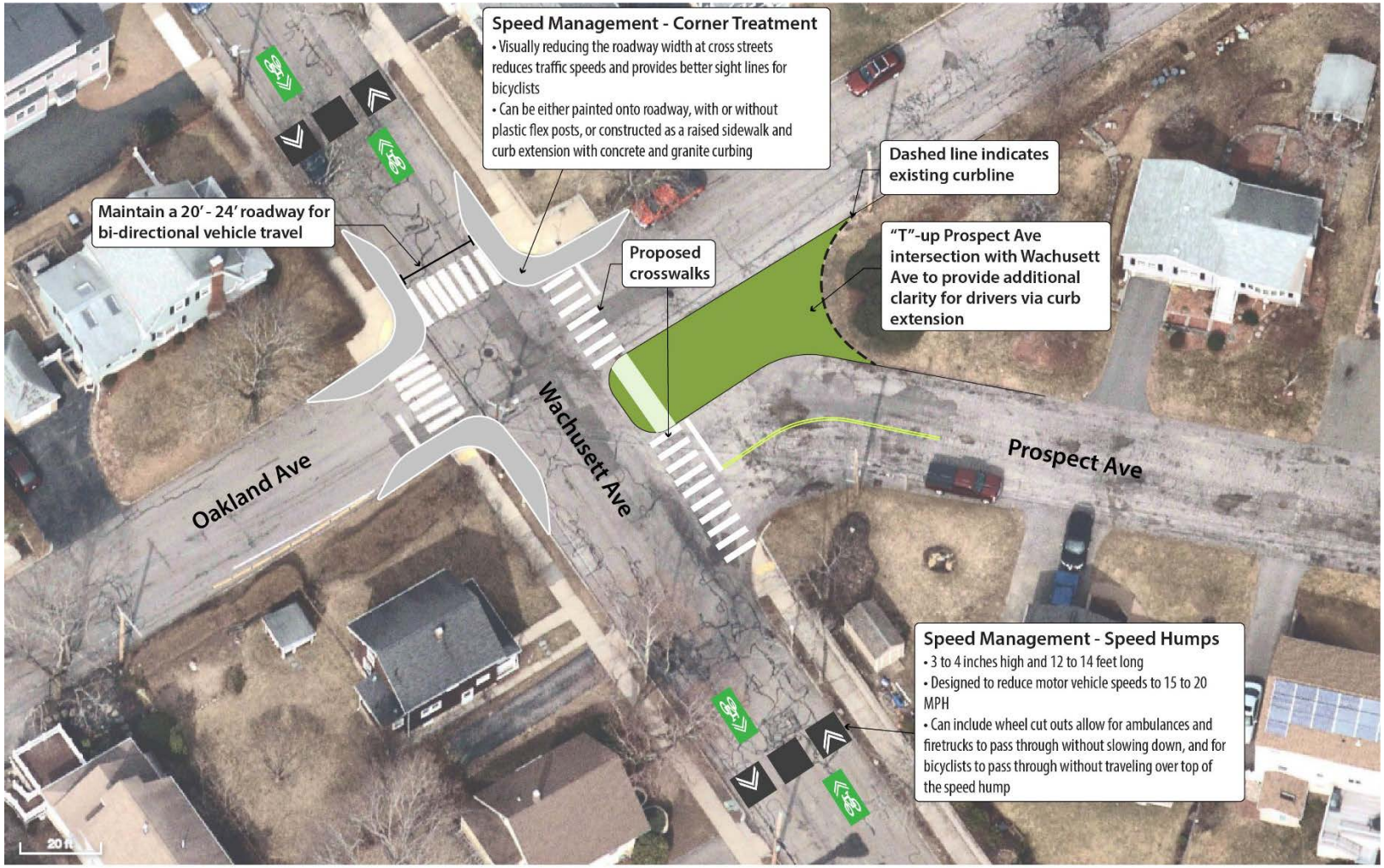
D.2.2 Partner with DCR to construct the multi-use path.

Identify funding—e.g., DCR funding, Complete Streets, Town funding, other grant programs—to construct the project.

D.3 Establish preferred bike routes, or "bike boulevards," on low-volume roadways that connect to neighborhoods and schools.

Roadways not currently included in the Town's lane sharing network should be considered for additional bicycle lanes, or as established preferred shared bicycle routes. Routes that enhance connectivity town wide for bicyclists, as well as those that improve access to schools and other public amenities should be prioritized. This could include bike lanes on Gray Street, portions of Wollaston Ave (east of West Street and Tanager Street), as well as shared roads—"bike boulevards"—on low-volume streets that provide safer bicycle travel parallel to high traffic roadways, and/or that lead to schools. To ensure that designated bike boulevards are comfortable and safe for bicyclists, vehicle through traffic should be discouraged or diverted, routes should be clearly marked with signage, and where necessary, traffic calming measures should be implemented. (See Figure 15 and **Strategy A.4** for more strategies to calm traffic on neighborhood streets.)

Figure 16 Wachusett Avenue Bike Boulevard Design Concept



NOT TO SCALE

D.4 Add or upgrade bicycle parking along commercial corridors and at public facilities.

Providing more and better-quality bicycle parking (in conjunction with more bicycle lanes) will encourage many to take a bicycle somewhere when they know their bicycles can be locked up safely. Beginning with the $25,000 allocated for new bike parking in FY21, upgraded bicycle parking should be installed at the following locations:

- Major Commercial Areas (Arlington Center, East Arlington, Arlington Heights);
- Small Commercial Clusters (Broadway at Rawson, Tufts and Oxford streets; Summer Street at Mystic Street and Mill Street);
- High ridership MBTA bus stops; and
- Public facilities including parks, public buildings and more.

Figure 17 Long Term Bicycle Parking

Source: King County Metro

Arlington recently created bicycle parking guidelines (https://www.arlingtonma.gov/home/showdocument?id=48389) that should be referred to when adding new bicycle parking. In areas where longer term bike parking is likely (e.g., schools, major bus stops), covered bike parking kiosks, bike cages or individual bike lockers should also be considered where room is available.

D.5 Study potential to redesign major intersections and rotaries/roundabouts to provide dedicated bicycle lanes that improve rider safety and comfort.

Major intersections, particularly those with awkward geometries (e.g., no right angles), as well as rotaries and roundabouts are challenging and dangerous to travel through for all but the most experienced bicyclists.

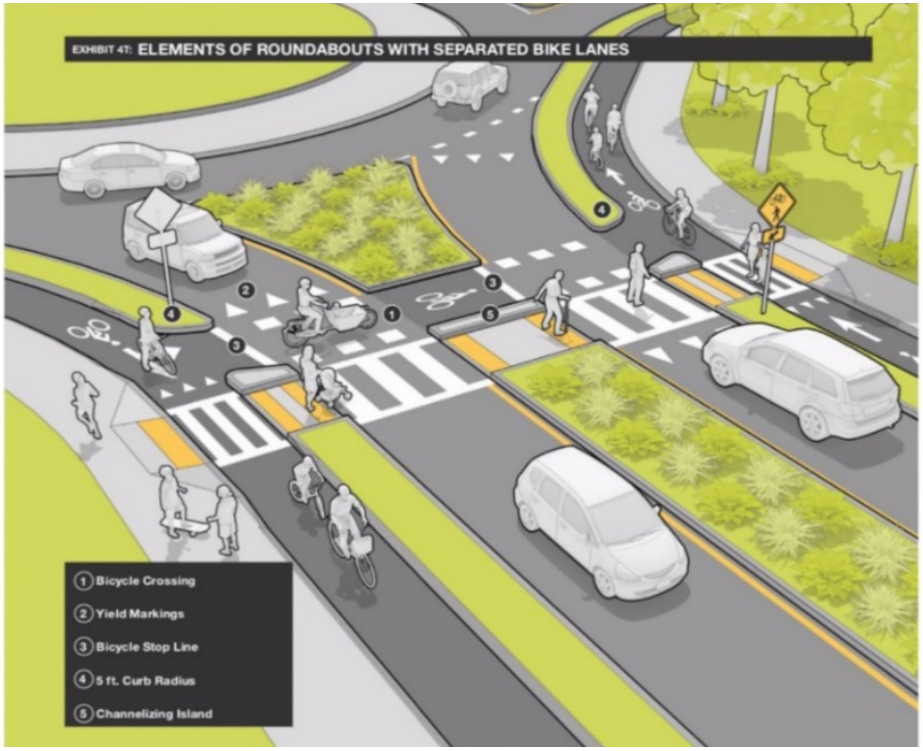
Redesigning and reconstructing these facilities to provide bike lanes that carry through intersections—instead of bike lanes that stop before intersections and require bicyclists to mix with traffic—would encourage more bicycling by providing comfort to more riders. (See also **Strategy A.3.1**, for additional intersection safety improvement strategies.)

D.5.1 Identify and redesign high conflict intersections to improve bike safety.

As the Town's bicycle network expands, ensuring bicyclists can travel safely through challenging intersections is essential. When projects are identified, the Town should refer to the *MassDOT Shared Bike Lane Planning & Design Guide* and *NACTO Urban Bikeway Design Guide* for initial guidance. Both resources provide best practice intersection design examples to enhance bicyclist safety. Potential intersections to redesign for bicycles could include:

- Mystic Street and Chestnut Street;
- Mystic Street and Mystic Valley Parkway;
- Mass Ave and Park Ave; and
- Broadway and Warren Street (see Figure 4).

Figure 18 Roundabout Design with Separated Bike Lanes (MassDOT)



Source: MassDOT Separated Bike Lane Design Guide, Chapter 4

D.5.2 Explore options for redesigning the Medford Street/Mystic Valley Parkway rotary to incorporate dedicated facilities that allow for safer bicycle (and pedestrian) movement and slow vehicle travel.

Rotaries are often difficult to maneuver and unsafe for bicyclists. There are many resources available, including the *MassDOT Guidelines for the Planning and Design of Roundabouts,*[9] offering best practice design strategies to provide separated bicycle lanes through rotaries/roundabouts.

Funding sources for implementing these projects could include Complete Streets funding (if the project is included in the approved Complete Streets Prioritization Plan), MassWorks grants (if tied to economic development), non-profits and foundations, and local Town funding.

[9] https://www.mass.gov/lists/guidelines-for-the-planning-and-design-of-roundabouts

E. A Transit-Rich Environment

Arlington residents were clear about their desire for improved transit service throughout the planning process, even during the COVID-19 pandemic where physical distancing requirements resulted in decreases in transit use throughout the region. They recognized that transit could move more people, more effectively and efficiently over long distances than, or in combination with, other modes.[10] As noted elsewhere, greater transit use can also improve overall public health since most transit users walk to their transit stop. Increased transit usage can have other health benefits as well, such as by reducing the number of automobiles using the network and lowering overall emissions from the transportation sector.

E.1 Increase bus frequency on highest ridership bus routes to reduce crowding and provide greater comfort.

The Town should advocate for and proactively work with the MBTA to increase bus frequency, particularly along high ridership routes like the 77 and routes with high connectivity, to both provide greater convenience to riders through shorter headways (i.e., wait times between buses), and to reduce overcrowding to provide greater comfort. Additionally, providing more commuters with the ability to sit can increase productivity during longer commutes by allowing them to work while they commute.

E.2 Study potential for and implement more bus priority initiatives to reduce transit trip times and achieve (near) Bus Rapid Transit service in Arlington.

Travel times and predictability are negatively impacted when buses travel in mixed traffic, particularly on heavily congested roadways. Strategies to prioritize the movement of buses over single occupancy vehicles can reduce travel times considerably and make for more predictable bus scheduling and convenience.

In partnership with the MBTA, the bus priority project pilot in East Arlington successfully decreased bus trip times by expediting bus travel through repurposing the parking lane along a heavily congested segment of Mass Ave in East Arlington. Exploring opportunities for more bus priority lanes combined with initiatives like transit signal priority (TSP), queue jumps, level boarding platforms and other strategies to expedite bus travel along high ridership routes would help Arlington achieve (near) Bus Rapid Transit (BRT) service. Routes for further study include:

[10] In response to reduced commuting during the COVID-19 pandemic, two bus routes were suspended and service on others was significantly reduced; however, they are anticipated to return once impacts from the pandemic lessen.

- **Mass Ave/East Arlington:** Extend the bus priority lane to Lake Street in East Arlington and beyond that towards Arlington Center, with TSP, level boarding platforms and other strategies to further reduce morning peak bus travel times.
- **Mass Ave/Arlington Center and Arlington Heights:** Study potential for additional bus priority investments along all of Mass Ave and identify segments and initiatives with greatest potential to expedite bus travel. Priority areas would include Arlington Center and Arlington Heights.
- **Broadway:** Study potential for bus priority initiatives to expedite trips between Arlington and Somerville to the Red Line Station at Davis Square and the Green Line Extension at Ball Square.

(Note: It will be important to consider accommodating bicycle users along many of these routes with a combination bus-bike lane when right-of-way is constrained, or a fully separated bike lane.)

E.3 Enhance the bus stop experience to provide greater rider comfort and increase convenience.

A transit experience that is comfortable, convenient, and predictable contributes to repeat and regular use. This extends beyond the bus ride and to the bus stop. While Arlington does not have the authority to change MBTA routes or schedules, it can invest in and improve station areas to provide a more comfortable and convenient transit experience.

E.3.1 Ensure sidewalks are well maintained and ADA-compliant (including ramps) at all bus stops.

Ensuring sidewalks are well maintained and accessible makes it easier for people of all abilities to use transit. Ensuring sidewalks are smooth, free of tripping hazards and other impediments must be prioritized. This includes rapid snow removal in winter months.

Many bus stops in Arlington received a “low” accessibility score as part of the MBTA’s Plan for Accessible Transit Infrastructure (PATI) project, meaning there are significant access issues. Additionally, only some MBTA bus stops offer shelters and few (if any) provide adequate seating. Arlington should continue to work with the MBTA to ensure deficiencies at bus stops are addressed, including defects in sidewalks, ramps, and other paths of travel. The Town should also advocate for the MBTA to provide more shelters with seating or allocate Town funding to do so at or near all bus stops (where feasible). Combined, these initiatives would make sidewalks and bus stops more accessible, and provide protection from weather and more seating, particularly for those unable to stand for long periods of time between buses. Shelter and seating design consistent with or complimentary to existing bus shelters would visually connect Town provided amenities to the bus stop.

E.3.2 Provide bike parking at or near all bus stops. Locations with highest boardings and alightings should be prioritized.

Providing bike racks at bus stops encourages more people to bike to transit knowing that there is a place to park and lock their bike securely. At a minimum, an inverted-U bike rack should be included at all bus stops. At high ridership stops, multiple racks should be provided. Where sidewalk space is not adequate, using roadway space for bike corrals (bike parking in car parking spaces), ideally separating the bus stop from parking, should be used.

E.3.3 Where supported, co-locate bike share stations at major bus stops.

As the Bluebikes bike-share program grows over time, co-locating hubs at major bus stops (such as the Arlington Heights Busway, Mass Ave and Broadway in Arlington Center, and along Mass Ave in East Arlington), particularly stops with convenient access to the Minuteman Bikeway, will provide more of a seamless transition from transit to active transportation connections.

E.3.4 Partner and coordinate with the MBTA and other partners to enhance transit technology at bus stations to improve convenience, communication, and comfort.

As part of the MBTA Automated Fair Collection 2 (AFC 2.0) program, fare machines will be added at some bus stops to expedite boardings. While this technology will improve travel times, additional investments would enhance communication, convenience, and comfort. Over time, the Town should partner with the MBTA and third parties (e.g., digital advertising vendors) to install technology able to communicate bus route, schedule and real-time arrival information, travel alerts and weather impacts, local announcements and more. Systems that provide free Wi-Fi, device charging (for phones, tablets and other devices) and other amenities would further enhance the transit experience.

E.3.5 Design and implement micro-mobility hubs at key locations/bus stops along Mass Ave.

To increase transit use and convenience, bus stops along Mass Ave in Arlington Heights, Arlington Center and East Arlington should be adapted to become neighborhood-serving mobility hubs. Mobility hubs collocate multi-modal services and amenities, often at transit stops, to provide convenience, flexibility, and mode choice. This could include bicycle parking, bike share hubs, on-street reserved car-share parking, TNC pick-up and drop-off zones, information kiosks, and seating. Hubs must be designed to be accessible to all ages and abilities including those with vision and hearing impairments.

E.4. Expand local transit options for Arlington residents and workers.

As noted above, the Town of Arlington has limited ability to change MBTA bus service. However, it can provide additional local transit options to enhance connectivity within Arlington and to and from neighboring towns and cities.

E.4.1 Explore opportunity to launch local transit service through contracting with a third-party micro-transit service.

Micro-transit services are launching in communities across the country. These third-party contract transit services typically offer on-demand rides and often door-to-door service in smaller ADA-accessible vehicles (e.g., vans) within a defined geography. Rides can be requested either through a mobile app or by phone through a dispatcher. Micro-transit services can be limited to specific populations (e.g., seniors or low-income residents) or used by all. Communities like Newton, MA have switched to micro-transit for their Council on Aging (COA) services, whereas other communities like Salem, MA are exploring options to serve all residents, particularly those not within an easy walk of existing MBTA bus transit.

The Town should conduct a study to define the best micro-transit options to meet its needs and issue an RFI to better understand the level of service and costs to operate such a system.

Figure 19 Micro-transit Systems in the Region

The cities of Salem and Newton have both launched micro-transit services to better meet the needs of their communities by providing an affordable transit option that provides convenience and flexibility, particularly for those who need to travel to or from locations with limited or no existing transit services.

Sources: Left Image: Salem News Right Image: Newton Patch

E.4.2 Explore opportunities to partner with abutting communities to fund fixed route services that enhance local connectivity.

Operating a fixed route transit service can incur significant costs, and in many cases, the ridership does not justify the investment of Town funding. However, opportunities to partner with neighboring communities to provide additional transit service should be explored whenever possible to provide enhanced local connectivity to goods and services within and across town lines. For example, Lexington's locally-operated service—Lexpress—provides service to and from Alewife Station. Additional funding from Arlington could be leveraged to add stops in Town, increasing options for Arlington residents.

F. Reduced Climate Impacts from Travel in Arlington

F.1. Manage travel demand to reduce single-occupancy vehicle trips and emissions.

Transportation Demand Management (TDM) includes policies and strategies that enhance livability and convenience, primarily by promoting mode shift from single-occupancy vehicle trips to healthier alternatives like walking, biking, carpooling and transit use. TDM comes in many forms including commuter programs, tax incentives, parking management, land use planning and more.

F.1.1 Continue to refine and promote Transportation Demand Management (TDM) requirements and strategies that reduce car trips.

In addition to TDM strategies included in zoning (e.g., charging for parking on-site), through its TDM Ordinance the Town requires new developments to provide incentives that reduce car trips, but only when the developer is seeking a reduction in required parking. TDM programs include "free ride home" options, discounted transit passes, bikeshare memberships, carpool incentives, remote work allowances, and for larger development projects, incentives, or requirements to reduce parking, incorporate bike and pedestrian infrastructure and amenities, and more. The Town could lead by example by developing its own program to encourage Town employees to leave their car at home. The Town should also explore requiring all new developments or changes of use to include TDM measures that reduce car trips. The City of Cambridge's TDM programs provide a best practice model.

F.1.2. Continue to encourage and incentivize mixed-use, higher density development near transit and jobs.

People who live or work in or adjacent to mixed-use environments, and especially those served by transit, often drive less because it is more convenient to walk or bike to eat, shop, or hop on a public transit option. In so doing, they reduce their carbon footprint by reducing or eliminating single-occupancy vehicle trips. Arlington allows for mixed-use higher density zoning in its commercial districts and should continue to explore more programs and incentives that integrate land use considerations with transportation needs.

F.1.2.1 As recommended in the Net Zero Action Plan, establish a Chapter 40R Smart Growth Zoning Overlay District to allow for dense residential and mixed-use development.

Smart Growth Overlay Districts (40R) encourage municipalities to establish higher-density residential and mixed-use zoning districts near transit stations and services and other existing development concentrations like existing town centers and villages and include a higher percentage of affordable housing. Districts must be approved by the State,

and once approved, communities are eligible for Chapter 40R payments for each unit created and may qualify for Chapter 40S reimbursements for costs associated with school children residing in 40R developments.

Establishing a 40R Smart Growth Zone along portions of Mass Ave and other select areas would benefit Arlington beyond providing more affordable housing. It would concentrate higher densities along major transit routes to encourage car-light lifestyles, provide units to qualifying low-income households in locations near transit and goods and services, and provide more customers to local businesses without the need to add additional public parking.

F.1.2.2 Consider zoning amendments and incentives to reduce the need to drive, with parking maximums (not minimums), increased bike parking requirements, and other mechanisms.

Parking maximums limit the total parking allowed within a development to reduce driving and encourage residents and workers to use other modes of travel. Parking maximums typically work best in mixed-use areas proximate to essential goods and services—such as grocery stores—and frequent transit service or alternative transportation options. In Arlington, this would include all of Mass Ave and Broadway. Additional zoning strategies, like increased bicycle parking requirements to at least one per unit and car-sharing space provisions should also be considered. Car-share would offer residents a car option when needed.

In addition to encouraging non-auto trips, zoning requirements that reduce parking lower the total development or redevelopment costs, which can lead to more affordable housing options, and reduce household expenses associated with owning a car (e.g., monthly loan or lease payments, parking costs, gasoline, and insurance). The Metropolitan Area Planning Council's (MAPC) *Perfect Fit Parking Study*[11] found that a large percentage of parking required by zoning and built as part of new residential development goes unused—they have much more parking than necessary. Developments within Arlington were included in the study. The Town should work with MAPC to better understand local parking demand and amend parking requirements to reflect real demand, and to encourage other modes of travel.

F.1.3 Create a Transportation Information page on the Town website.

Create a dedicated page—a "One Stop Shop"—to provide information about and links to transportation resources and services for those who live a car-free or car-light lifestyle. The page should include information about car-share options and locations, bike share locations, transit routes, schedules, and real-time transit information, and more.

[11] https://perfectfitparking.mapc.org/

F.2. Implement mobility recommendations included in Arlington's Net Zero Action Plan to reduce greenhouse gas emissions stemming from the transportation network and its users.

The Town of Arlington's Net Zero Action Plan includes numerous strategies to reduce emissions stemming from the transportation network and its users. The framework includes many of the recommendations considered during the Connect Arlington planning process—including the need to increase electric automobile charging stations, transitioning to an all-electric municipal fleet of vehicles and more. Several of the Net Zero mobility recommendations are already included as part of other strategies—e.g., promoting car share and zoning changes. In addition, the Town should work to implement the following recommendations included in the Net Zero Action Plan:

F.2.1 Create and implement a plan to expand public electric vehicle charging at libraries, business districts, public parking, and other facilities, both on- and off-street.

F.2.2 Adopt a zero-emission municipal fleet and charging infrastructure plan and policy that commits to complete transition to zero emission vehicle purchases by no later than 2030.

F.2.3 Advocate for improved utility rate design to facilitate smart electric vehicle charging and accelerate electric vehicle (EV) adoption.

F.3 When designing and constructing any transportation facilities, include "green" design interventions and construction techniques to reduce climate impacts.

This includes design and construction methods that reduce impermeable surfaces to the greatest extent, reduce heat island impacts, increase water retention on-site, etc.

G. Infrastructure and Policies to Support the Local Economy and Resident Quality of Life

Local businesses rely on all modes of transportation to connect and attract customers to their businesses, workers to their jobs, and to deliver goods and services sold at or sent from their location. In addition to strategies discussed in previous sections of this plan, it is essential for local business activity (including movement of freight) and resident quality of life to ensure Arlington's roads are in good condition. Additionally, a critical component of Arlington's transportation infrastructure that supports local business activity and resident quality of life is the curb. The curb, considered by many as a place to park, is increasingly competitive real estate as more uses and users seek to repurpose it to support local business and recreational activity.

G.1 Ensure Arlington's roadways and off-street parking are maintained to support local business activity and resident quality of life.

The condition of roadways impacts how people, goods and services can move around safely and efficiently. Roadways that are in poor condition create more than inconveniences—they create safety hazards for all users and can result in damage to personal property. They can also reduce productivity by creating delays and damage to vehicles. Ensuring that Arlington's roadways are maintained allows all users—drivers, bicyclists, pedestrians, transit riders—to move about more safely and efficiently.

G.1.1 Regularly update and implement the Town's pavement management program.

Roadways that are resurfaced proactively and regularly provides for safer movement by all users through the repair of cracking, potholes and other issues that result when maintenance is deferred. Ongoing, proactive maintenance also reduces costs over time.

Repaving is an opportune time to add bicycle facilities and make pedestrian improvements such as crosswalks and bump outs. The Department of Public Works, Department of Planning and Community Development, Arlington Bicycle Advisory Committee, and the Transportation Advisory Committee should proactively work together to ensure opportunities are not missed to improve access for all modes.

G.1.2 Allocate adequate funding for the maintenance and upkeep of Arlington's roadways.

The Town receives an annual allocation of funding for roadway improvements and maintenance through the State's Chapter 90 program; however, these funds are rarely adequate to address Town infrastructure maintenance. The Town should

identify total funds needed to keep its roadway infrastructure in a state of good repair and allocate additional funds annually to meet the needs. Deferring roadway maintenance results in higher repair costs in the future.

Funding for maintenance must also include snow and ice removal from roadways, bike lanes, shared-paths, and sidewalks in the winter; leaf and debris removal; and general sweeping.

G.1.3 Ensure off-street parking lots are maintained and feel safe.

Parking to support local business activity must be convenient, accessible and feel safe. Ensuring that off-street parking is easy to find through wayfinding must be a priority, as should sidewalk conditions connecting the parking facilities to the commercial uses. Just as important is the perception of safety. The Town should improve lighting in, to and from all off-street parking to ensure people are visible at night, when many people feel less safe. For example, the Russell Common parking lot needs upgrades—sidewalk and lighting—which the Town is working to address.

G.2 Consider changes to parking regulations and policies that more effectively manage public on- and off-street parking throughout Arlington.

Public on- and off-street parking does not simply provide locations for residents, customers, and employees to park; it influences travel patterns and mode choice, and when managed and designed inefficiently, can lead to increased congestion from circling cars searching for parking, double parking, and other illegal parking. The Town should continue to study public parking and identify strategies to manage and operate existing facilities and revise regulations and policies to maximize their use more effectively. Parking management is a more cost-effective way to maximize the use of limited parking resources than constructing new facilities, which are costly to build and to maintain over time. (See also **Strategy F.1.2.2** for zoning strategies to reduce parking demand.)

G.2.1 Allocate funding to study parking along all of Mass Ave with an emphasis on Capitol Square/East Arlington and Arlington Heights.

Conducting a comprehensive parking study for all of Mass Ave.—including updating inventory and utilization gathered as part of previous initiatives like the 2009 East Arlington Parking Study, 2017 Arlington Center Parking Study, and more recent Arlington Heights Occupancy Study—would provide a complete picture of parking along Arlington's central roadway spine. Data collected for the study would provide information necessary to adjust and better manage parking along the whole corridor in ways that encourage turnover, and to identify locations where parking could potentially be removed to support other modes including bus priority and/or bike lanes.

G.2.2 Study parking in neighborhoods adjacent to commercial concentrations and/or transit and consider additional regulations where warranted.

Parking spillover from commercial areas or adjacent to transit connections can add to parking pressures in neighborhoods. For example, as identified in this study and in Arlington's Master Plan, Red Line users that park in East Arlington, or Mass Ave users that park on adjacent neighborhood streets, likely add to resident parking pressures. The Town should study neighborhood parking impacts and consider neighborhood parking regulations where appropriate. Should additional regulations be required—for example, time limits, resident parking only, or other—the Town should allocate resources to ensure enforcement occurs. Absent enforcement, regulations will be ignored, and parking concerns will persist.

G.3 Rethink the curb and design it to support competing users and needs more effectively.

The curb, often considered the "parking lane," has traditionally been reserved for on-street car parking, the result of decades of transportation planning focused on accessing business districts by car, including in Arlington. Changing travel preferences combined with new and growing transportation options (e.g., Uber, Lyft, bike share, car share, e-scooters) and increased delivery services (e.g., the "Amazon Effect," food delivery), require more nuanced approaches for use of valuable curbside real estate. (For more information, see the Boston MPO's report, *Future of the Curb*[12]*.)*

G.3.1 Identify locations for dedicated curbside zones for pick-up and drop-off activity.

More and more people (of all ages) access commercial centers, particularly those with concentrations of eating and drinking establishments and cultural attractions, by ride hailing services like Uber and Lyft. When there is no location for ride hailing vehicles to pull over to pick-up and drop-off passengers, vehicles stop in the roadway, putting riders at risk, and/or creating unnecessary congestion.

TNC use is expected to increase in coming years, particularly as autonomous vehicles become a reality. Establishing pick-up and drop-off zones proximate to multiple attractions expedites the process by concentrating activity, removes TNC vehicles from travel lanes to improve safety and reduce congestion, and reduces the need for adding parking capacity where spaces are limited. Ride hailing also enhances roadway safety by removing potential driving under the influence situations.

12 https://www.ctps.org/data/pdf/studies/other/Future-of-the-Curb.pdf

G.3.2 Designate additional locations to accommodate increased service and delivery needs.

Providing additional locations for delivery vehicles convenient to multiple businesses and residences reduces the need for delivery vehicles including those large and small to double park, which causes congestion. Given the collection of businesses in Arlington, hybrid service/pick-up and drop off zones may be an option given most commercial deliveries occur during the day, whereas ride-hailing increases for social purposes during evening hours.

G.3.3 Repurpose on-street parking where possible to prioritize other modes including bus and bicycle travel, or to provide additional open space in commercial areas.

In areas with sufficient off-street parking to meet residential and/or business demand, repurposing the "parking lane" for transit priority, bicycle lanes, and/or bicycle parking (including Bluebikes stations as the system grows in Arlington) would help to move more people, more efficiently along bus and bicycle routes by decreasing transit times and encourage more to bike. On-street parking can also be repurposed for parklets—small "parks" within the parking lane—for people to dine or relax outdoors in areas where sidewalk space is limited. Repurposing parking for other uses can enhance the transit and bicycle experience and reduce the need to drive (and park), while supporting local business and the customer experience. Allowing for customer parking on side streets within a specified distance of a commercial street to replace customer parking is also recommended.

Figure 20 Arlington Parklet Program

In 2020, the Town of Arlington (through MassDOT Shared Streets and Spaces grant funding), repurposed on-street parking spaces for use as public parklets to enhance outdoor dining, ensure pedestrian safety, and provide additional bike parking.

Source: Nelson/Nygaard

H. Responsive and Transparent Transportation Decision-Making

To provide a transportation network for all users and abilities, it is imperative that decision-making at all levels is clearly communicated and transparent. When and why specific programs and projects are prioritized and funded in any given year is essential given the competing needs for dollars available.

H.1 Create a process for communicating transportation project updates, construction impacts and other service issues proactively.

People rely on the transportation network to get them to and from where they need to go within a particular amount of time based on experience. While not all elements can be controlled—e.g., delays from vehicle crashes—delays caused by construction, equipment failure, and special events can be planned for, and better information can be provided to the public. Providing as much information about planned or known impacts in advance to residents, workers and visitors makes for a better, less stressful, and safer experience.

Formal channels of and plans for communicating transportation impacts should be established and followed. This could include advance signage, text announcements, social media postings, email listings, robocalls, and more, including the transportation page on the Town's website—a "one-stop shop" for all initiatives related to transportation. (See also **Strategy H.2.3** for more information to be included on the website.)

H.2 Develop and regularly update a Local Transportation Improvement Program (LTIP).

There are dozens of transportation initiatives underway, in planning, or under consideration at any given time in Arlington. Multiple departments are tasked with these initiatives, through funding allocated as part of the Town Budget and Town Meeting process, through grants received (by different departments), and through the State for larger projects. Given the numerous entities responsible for the planning, design, construction, and implementation, it can be difficult to fully understand all that is approved or planned to be implemented, or how they are being prioritized across departments, in any given year or time period. Having one tracking mechanism, a Local Transportation Improvement Program (LTIP), will provide the Town Manager and departments, Town Meeting members, the Finance Committee, and the public with a clear understanding of what initiatives are in the pipeline, where in the process each initiative is, when it is planned for completion, and which are funded, or in need of funding through the budget process (or could potentially get funding through available grants). An LTIP will also provide transparency to the community by clearly communicating the many initiatives planned or considered, give stakeholders an opportunity to provide input into priorities, and create a more inclusive decision and prioritization process.

An LTIP should be formalized as follows:

H.2.1 Establish an internal LTIP working group to develop the initial LTIP.

The LTIP Committee should be comprised of representatives from Public Works, Police, Fire, Planning & Community Development, Council on Aging, and other departments and town committees as needed, such as the TAC, ABAC, and Disability Commission. To begin, each representative would provide a list of all transportation-related projects and provide to a designated staff person to consolidate the initial program. Information should include the project name, status, estimated completion date, and funding allocated (or needed).

The Town Manager should designate the staff person responsible for initiating and maintaining the list.

H.2.2 Update the LTIP quarterly.

Given the many projects, potential project changes or funding availability, it is recommended that the LTIP be updated biannually and aligned with the Town budget process to ensure it is up-to-date and effective. It is recommended that the internal committee representatives meet quarterly to review the list and provide updates on projects.

H.2.3 Provide the LTIP on the Town of Arlington website.

Given the many departments in charge of transportation projects, it is recommended that all transportation projects be listed at one location on the Town's website. This will provide the public a convenient location to learn about various initiatives, and how, where and when they are able to provide input. All initiatives should include a staff point of contact.

H.3 Test before you invest.

Transportation infrastructure projects are costly to plan, design, and construct, and often take years to complete from start to finish. In many cases, the project intent—to enhance safety, provide facilities for other modes, etc.—is successful; however, in some cases it does not improve conditions adequately, and in others the result does not justify the cost. For projects addressing critical safety issues, traditional practices also take far too much time to address the issue.

Communities are increasingly turning to "tactical" projects to address safety and other transportation concerns. Tactical roadway initiatives include projects that are implemented using low-cost, temporary materials, to address a traffic or safety issue, or to test out an alternative street layout to provide facilities for other modes not currently provided (e.g., bike lanes).

H.3.1 Implement tactical projects rapidly to address safety issues and concerns.

In locations where safety is a concern, particularly at locations where a crash involving a pedestrian or bicyclist has occurred, changes to enhance safety should be implemented as rapidly as possible. Temporary and tactical projects such as increased signage, speed bumps, road diets using flex-posts, dedicated lanes for bicyclists and more can be implemented quickly to slow traffic, increase visibility and more to reduce conflicts. Arlington has already worked on Shared Streets tactical pilots, which used signage, sawhorses, traffic cones, and other temporary materials to reallocate street space for pedestrians and bicyclists. See Figure 20 for more information.

It is important that the Town work with neighborhood groups, school PTOs, business owners and groups, and relevant Town committees such as the TAC and ABAC to ensure these projects address the issues effectively, and to gain support in areas impacted.

H.3.2 Develop and implement a Neighborhood Traffic Calming Program to address safety concerns.

Many neighborhood traffic calming initiatives do not require significant investments to address safety problems. Low-cost tactical and short-term projects that slow traffic and provide dedicated space for pedestrians and bicyclists often address the issues in a cost-effective manner and should be used both to test strategies, or as semi-permanent solutions. (See **Strategy A.4** for more information.)

Figure 21 Shared Streets Pilot Project

In response to COVID-19 physical distancing needs, Arlington implemented two shared streets pilot projects, one on Brooks Avenue and one on Mary Street.

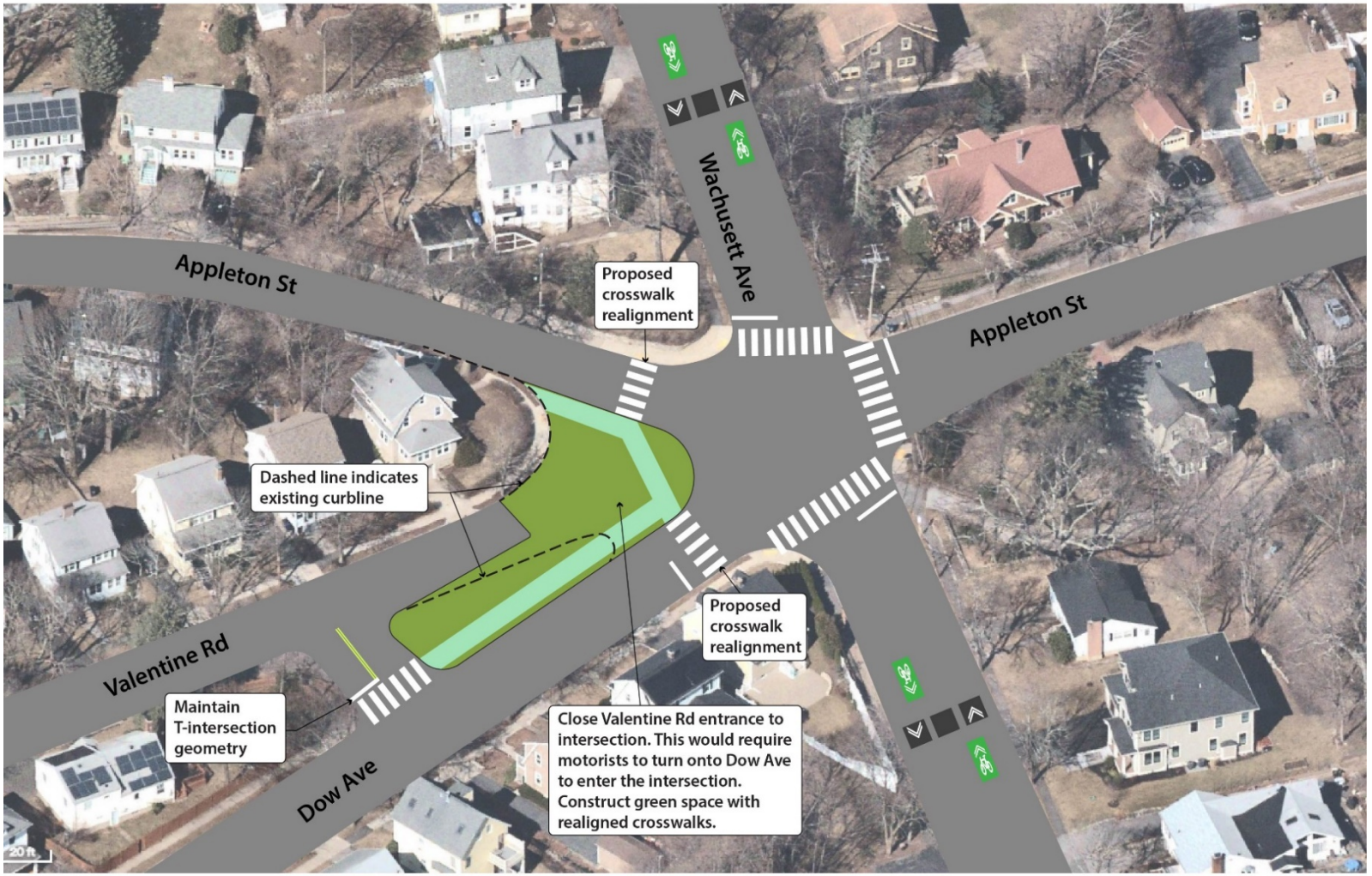
For the pilot projects, street space was reallocated for walking and active travel, and closed off to non-local vehicle traffic. Reallocating the space provided the opportunity for people to move about with greater distance between each other than a sidewalk would allow.

Similar pilots could be used to test potential for bike lanes, pick-up/drop-off zones and more.

Source: Neighborways

Figure 22 Neighborhood Traffic Calming Concept

Wachusett Avenue - Bike Boulevard - Dow Avenue Inset



NOT TO SCALE

H.4 Analyze and track key data sets over time to inform transportation decision making and prioritization.

Key to the success of any plan is to identify mechanisms to track plan implementation and progress. To that end, Connect Arlington includes a set of easily monitored metrics that Town staff can track over time to determine the effectiveness of initiatives recommended in the plan.

Tracking progress not only provides the Town the ability to identify and celebrate successes, but also the ability to pivot when initiatives underperform, or additional or alternative strategies are needed. These metrics will help to ensure that Town leadership and staff remain committed to achieving the plan goals, and the public the ability to see progress resulting from Town investments.

The metrics highlighted below were identified because they are simple to collect data and track on a yearly and multi-year basis. They are intended as potential measurements for the Town to track; however, additional or different measures could be identified over time should they be deemed to more effectively track progress. In addition, more detailed analysis needs to be conducted to identify meaningful targets that are ambitious but realistic.

The targets below for 2040 are ideal goals for the Town to work towards over the next 20 years. The Town should also consider setting interim targets (such as for 2030) to check progress and reorient as necessary to get on track to meet the 2040 goals.

	CRASHES	MODE SHARE		TRAVEL TIME	BIKE LANE MILES	SIDEWALK INVESTMENTS
METRICS	Annual number of crashes in Arlington to track progress of enhancing safety. - Total - Crash Type - Severity - Location/Patterns	Based on American Community Survey (ACS) Census data and the Annual Town Survey, how Arlington residents get around for work and other trips. Total: - Drive - Transit - Bike - Walk - Combination	**Supplemental** Conduct and track counts year to year at specific locations. This could include: - Multimodal traffic counts at key intersections - Minuteman Bikeway counts - Pedestrian Counts	Based on ACS data, review travel commute data to track the value of infrastructure and technological improvements to shorten trip times. Also, MBTA and/or transit data to determine public transit travel time improvements.	Track total linear mileage of bicycle lanes and bicycle boulevards to see how much progress has occurred to develop town-wide network. Also track investments in bike parking.	Track total investment in sidewalks over time to measure progress.
BASELINE	2019 Crashes (MassDOT Crash Data)	2019 Mode Share (ACS)	2019 Counts	2019 Avg Trip Time (ACS)	2019 Total Mileage	2019 linear feet of sidewalk constructed/repaired; curb ramps improved
DATA TRACKED	Annual # crashes	Annual Mode Share	Annual Counts	Average Travel Time (measured annually), trip time reduction for specific projects (like bus lanes)	Annual/when completed or installed	Annual/when completed or installed
TARGET BY 2040	Zero fatalities and major injuries	Reduce percentage of commuters driving alone, increase share of commuters bicycling and taking public transit (target percentages TBD)		Reduce average commute time by 10% for all modes	100% completion of recommended bike lane network	TBD

2. IMPLEMENTATION

As Connect Arlington is a 20-year plan, it is expected to take years for all the strategies in this document to be fully completed and the projects to be built-out. Given this extended time frame it should also be anticipated that this plan will need to be updated regularly – at least every five years – to ensure that the goals and strategies contained within still meet the community's goals and vision for the transportation system. Successes and completed strategies should be recognized, while additional challenges or necessary adjustments to the plan's implementation should be analyzed.

The table on the following pages provides an overview of Connect Arlington goals and strategies. For each strategy, entities responsible for implementation are included as are general costs and timeframes. Strategies in blue bold text represent priority and/or early win initiatives. Some strategies may require further detail work and analysis to implement. Endorsement of this plan by the Sustainable Transportation Plan Advisory Committee and Select Board does not automatically approve all elements of this plan, and specific changes and proposals may need to be brought to the Board, Town Meeting, or other public bodies for approval.

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
Safe facilities for all users no matter how they travel.	A.1	Adopt a Vision Zero Policy	A.1	Adopt a Vision Zero policy.	Planning & Community Development Public Works Police	$	Short-term
	A.2	Ensure all roadway design projects adhere to the Town's adopted Complete Streets policy and guidelines.	A.2.1	Update the Town of Arlington's Complete Streets Prioritization Plan and align it with Connect Arlington priorities.	Planning & Community Development Public Works Police	$	Short-term
			A.2.2	Implement the Town's Complete Streets Prioritization Plan.	Public Works Planning & Community Development	$$$$	Short-term Ongoing
	A.3	Prioritize investments that improve safety at intersections and along road segments with the greatest pedestrian and bicyclist conflicts.	A.3.1	Address safety at roadway intersections with oblique angles, poor site distances and confusing operations.	Public Works Planning & Community Development	$$ - $$$$	Short-term (tactical) Medium-term (permanent)
			A.3.2	Eliminate slip lanes from relevant intersections to slow down cars and better protect more vulnerable users.	Public Works	$$-$$$	Medium-term
			A.3.3	Design, fund and implement projects that enhance pedestrian and bicycle safety.	Public Works Planning & Community Development Transportation Advisory Committee Bicycle Advisory Committee Police	$ - $$$$	Short-term Ongoing
	A.4	Develop and implement a Neighborhood Traffic Calming Program to address safety concerns.	A.4	Develop and implement the program.	Planning & Community Development Public Works Transportation Advisory Committee Police	$ - $$$	Short-term Ongoing
	A.5	Develop educational programs that promote safe travel behavior by all users.	A.5	Develop and implement programs.	Planning & Community Development Transportation Advisory Committee Bicycle Advisory Committee	$	Short-term Ongoing

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
Safe facilities for all users no matter how they travel.					Arlington Public Schools Disability Commission Police		
	A.6	Ensure streetscape plantings do not limit visibility.	A.6.1	Develop educational materials and distribute to property owners about responsible plantings on private property that improve visibility and safety.	Planning & Community Development Tree Warden	$	Short-term
			A.6.2	On public property - bump outs, medians, sidewalk corners - only allow plantings 2.5 feet high or lower.	Tree Warden	$	Short-term Ongoing
	A.7	Develop policies and guidelines that promote the safe use of emerging mobility devices and services including e-bikes and other micro-mobility options.	A.7	Develop policies and guidelines.	Planning & Community Development Transportation Advisory Committee Bicycle Advisory Committee Police	$	Short-term
			A.7.1	Require shared mobility providers to implement "low speed" zones for electric or e-assist devices.	Planning & Community Development Town Manager's Office	$	Medium-term
	A.8	Continue to implement initiatives that enhance safety to and from schools and community facilities including Safe Routes to Schools projects and programs and Arlington's ADA Transition Plan infrastructure improvements.	A.8	See Strategy B for more	Arlington Public Schools Disability Commission Planning & Community Development Police	$ - $$	Ongoing
	A.9	Reconfigure Mass Ave. in Arlington Center to enhance safety by reducing user conflicts.	A.9	Design and implement.	Planning & Community Development Public Works Transportation Advisory Committee Bicycle Advisory Committee Police	$$$$	Medium- to Long-term

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
Mobility options for all ages, capabilities, and incomes.	B.1	Continue to implement accessibility improvements throughout Arlington.	B.1.1	Continue to allocate funding to implement transportation improvement projects identified in the Town's recently updated ADA Transition Plan.	Public Works Disability Commission	$$-$$$$	Ongoing
			B.1.2	Require all sidewalks to be constructed with materials that are accessible to all.	Public Works	$	Short-term
	B.2	Continue to develop and implement Safe Routes to School (SRTS) projects.	B.2	Develop and implement programs and projects.	Arlington Public Schools Planning & Community Development Public Works Police	$-$$$$	Ongoing
	B.3	Complete the Minuteman Bikeway Planning Project and implement recommendations that increase access to and capacity and safety on the pathway.	B.3	Complete and implement Project	Planning & Community Development Bicycle Advisory Committee	$$$	Short-term
			B.3.1	Prioritize opportunities to separate bicyclists from pedestrians to expand capacity and enhance comfort and safety.	Planning & Community Development Bicycling Advisory Committee Public Works	$$$	Medium-term
			B.3.2	Develop and implement comprehensive wayfinding and user safety program for the bikeway.	Planning & Community Development Bicycle Advisory Committee	$$	Short- to Medium-term
			B.3.3	Install lighting to increase visibility and safety along the pathway at night.	Public Works Planning & Community Development Bicycle Advisory Committee Disability Commission	$$$	Medium-term
			B.3.4	Improve and add additional neighborhood connections.	Public Works Bicycle Advisory Committee	$$	Short-term
	B.4	Increase car share availability and membership in Arlington.	B.4.1	Work with car share companies to explore additional locations, including on- and off-street locations.	Planning & Community Development	$	Short- to Medium-term

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
Mobility options for all ages, capabilities, and incomes.			B.4.2	Develop a Community Car Share Program of Town-owned vehicles managed by a third-party entity.	Planning & Community Development Transportation Advisory Committee Town Manager's Office	$$$	Medium- to Long-term
			B.4.3	Include car share as part of parking requirements in new multi-family or larger commercial developments.	Planning & Community Development	$	Short-term
			B.4.4	Incentivize car share memberships.	Planning & Community Development Transportation Advisory Committee	$	Short-term
	B.5	Increase access to bike share throughout Arlington.	B.5.1	Promote and provide free or subsidized bicycle share memberships	Planning & Community Development Bicycle Advisory Committee	$	Ongoing
			B.5.2	Identify funding for more bike share stations to improve neighborhood bicycle connectivity.	Planning & Community Development Bicycle Advisory Committee	$$$	Medium-term
	B.6	Expand transportation options to Arlington residents and workers through local shared transportation programs and services.	B.6.1	Partner with TNCs to provide door-to-door connectivity, including subsidized rides to qualifying residents, to those who do not or choose not to drive.	Planning & Community Development	$$	Short-term
			B.6.2	Explore opportunities to launch local transit service through contracting with a third-party micro-transit service.	See Strategy E.4.	$$$$	Medium-term
			B.6.3	Explore opportunity to partner with abutting communities to fund fixed route services that enhance local connectivity.	See Strategy E.4.	$$$$	Medium-term
	B.7	Pursue higher Bicycle Friendly Community Award status and explore other transportation-related award programs to help examine current practices and	B.7	Apply for recognition programs.	Planning & Community Development	$	Short- to Medium-term

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
		promote the Town's successes.					
A pedestrian first, walk-friendly environment.	C.1	Create and implement a sidewalk improvement program.	C.1	Develop and implement.	Public Works Transportation Advisory Committee	$-$$$$	Short-term
	C.2	Create a program and process for prioritizing, funding, and implementing new sidewalk construction where no sidewalks currently exist in the network.	C.2	Create program	Public Works Planning & Community Development	$$-$$$	Short-term
	C.3	Continue to ensure all pedestrian facilities are fully accessible, ADA-compliant and maintained.	C.3.1	As part C.1, develop a plan to install, upgrade and maintain accessibility ramps, tactile warning strips and other infrastructure to become (or remain) fully ADA-compliant.	Public Works Disability Commission	$$-$$$$	Ongoing
			C.3.2	Require accessible pedestrian signals for all new traffic signal installations, and proactively upgrade existing signals to increase safety for those with visual and hearing impairments.	Public Works Disability Commission	$$$	Short-term
	C.4	Enhance pedestrian safety through design improvements at intersections	C.4.1	Minimize pedestrian crossing distances and increase visibility at intersections where crashes involving pedestrians are highest.	Public Works	$-$$$$	Short-term
			C.4.2	Review unsignalized pedestrian crossings along major roadways and implement measures to enhance pedestrian safety.	Planning & Community Development Public Works Transportation Advisory Committee Police	$-$$$	
			C.4.3	Enhance lighting at intersections and other crossings to improve pedestrian visibility.	Public Works	$$-$$$	Short-term

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
A pedestrian first, walk-friendly environment.			C.4.4	Pilot intersection lighting improvements that focus on the pedestrian, and pedestrian crossings, to improve visibility and safety.	Public Works Planning & Community Development	$$-$$$	Medium-term
			C.4.5	Ensure signalization policies and infrastructure are developed and/or installed to enhance pedestrian safety.	Public Works	$ - $$	Short-term Ongoing
	C.5	Expand and maintain the existing street tree canopy to improve pedestrian safety and comfort	C.5.1	Implement Arlington's 2018 Tree Management Program, and refine as needed to enhance pedestrian comfort and safety	Public Works Tree Warden	$$-$$$	Ongoing
			C.5.2	Define policies and strategies to address sidewalk damage caused by tree roots to ensure sidewalks are accessible to all users, and free of tripping hazards.	Public Works Tree Warden	$ - $$$	Short-term Ongoing
A low-stress bicycling environment.	D.1	Prioritize new bicycle facilities along corridors currently designated as Arlington's "lane sharing network."	D.1.1	Complete the bicycle lane network along all of Mass Ave.	Public Works Planning & Community Development Bicycle Advisory Committee	$$$-$$$$	Short- to Medium-term
			D.1.2	Prioritize new bicycle lane projects that connect to existing bicycle facilities in high conflict areas to create a safe, contiguous bicycle lane network.	Public Works Planning & Community Development Bicycle Advisory Committee	$$ - $$$$	Short- to Medium-term
			D.1.3	Prioritize corridors that provide safe facilities to schools and other community facilities.	Public Works Planning & Community Development Bicycle Advisory Committee	$$ - $$$	Short- to Medium-Term
			D.1.4	Create dedicated bike lanes on corridors that connect Arlington	Public Works Planning & Community Development Bicycle Advisory Committee	$$ - $$$	Medium-term

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
A low-stress bicycling environment.				residents and workers more efficiently to regional transit.			
			D.1.5	Work with neighboring cities and towns to build bike facilities that connect to those in Arlington to enhance regional bicycle connectivity.	Planning & Community Development Public Works Bicycling Advisory Committee	$ - $$$	Short-term Ongoing
			D.1.6	Stripe bike lanes along the remaining "lane sharing network."	Public Works Planning & Community Development Bicycle Advisory Committee	$$ - $$$	Long-term
	D.2	Construct a multiuse path from the Minuteman Bikeway at Arlington Center to the Mystic River Path along Summer Street and the Mystic Valley Parkway.	D.2.1	Design the path.	Planning & Community Development Bicycling Advisory Committee DCR	$$$$	Short-term
			D.2.2	Construct the path.	Public Works DCR	$$$$	Medium-term
	D.3	Establish preferred bike routes - "bike boulevards" - on low-volume roadways that connect to neighborhoods and schools.	D.3	Design and build.	Planning & Community Development Public Works Bicycle Advisory Committee	$$-$$$	Short- to Medium-term
	D.4	Add or upgrade bicycle parking along commercial corridors and at public facilities.	D.4	Implement bike parking.	Planning & Community Development Public Works Bicycle Advisory Committee	$$	Short-term
	D.5	Study potential to redesign major intersections and rotaries/roundabouts to provide dedicated bicycle lanes that improve rider safety and comfort	D.5.1	Identify and redesign high conflict intersections to improve bike safety.	Planning & Community Development Public Works	$$ - $$$	Short-term (tactical) Long-term (permanent)
			D.5.2	Explore options for redesigning Medford Street/Mystic Valley Parkway rotary to incorporate dedicated facilities that allow for safer bicycle and pedestrian movement and slow vehicle travel.	Planning & Community Development Public Works Bicycle Advisory Committee Police	$$$$	Medium- to Long-term

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
A transit-rich environment.	E.1	Increase bus frequency on highest ridership bus routes to reduce crowding and provide greater comfort.	E.1	Advocate for increased frequency.	Planning & Community Development Transportation Advisory Committee Town Manager's Office	$	Short-term Ongoing
	E.2	Study potential to implement more bus priority initiatives to reduce transit trip times and achieve (near) Bus Rapid Transit service in Arlington.	E.2	Study and Implement	Planning & Community Development Public Works Transportation Advisory Committee MBTA	$$$-$$$$	Short- to Medium - term
	E.3	Enhance the bus stop experience to provide greater comfort and increase safety.	E.3.1	Ensure sidewalks are well maintained and ADA-compliant (including ramps) at all bus stops.	Public Works Disability Commission MBTA	$$-$$$	Short-term Ongoing
			E.3.2	Provide bike parking at or proximate to all bus stops.	Public Works Bicycle Advisory Committee Planning & Community Development	$$-$$$	Short-term Ongoing
			E.3.3	Where supported, co-locate bike share stations at major bus stops.	Planning & Community Development Public Works Bicycle Advisory Committee	$$$-$$$$	Medium-term
			E.3.4	Partner and coordinate with MBTA and other partners to enhance transit technology at bus stations to improve convenience, communication, and comfort.	Planning & Community Development Transportation Advisory Committee MBTA	$$-$$$$	Medium-term
			E.3.5	Design and implement micro-mobility hubs at key locations/bus stops along Mass Ave.	Planning & Community Development Public Works Transportation Advisory Committee	$$$-$$$$	Long-term
	E.4	Expand local transit options for Arlington residents and workers.	E.4.1	Explore opportunity to launch local transit service through contracting with a third-party micro-transit service.	Planning & Community Development Town Manager's Office Transportation Advisory Committee	$$$$	Medium- to Long-term
			E.4.2	Explore opportunities to partner with abutting communities to fund fixed	Planning & Community Development Town Manager's Office Transportation Advisory Committee	$$$$	Medium- to Long-term

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
				route services that enhance local connectivity.			
Reduced climate impacts from travel in Arlington.	F.1	Manage travel demand to reduce single-occupancy vehicle trips and emissions.	F.1.1	Continue to refine and promote TDM requirements and strategies that reduce car trips.	Planning & Community Development	$	Short-term
			F.1.2	Continue to incentivize mixed-use, higher-density development near transit and jobs.	Planning & Community Development	$	Short-term Ongoing
			F.1.2.1	Establish Chapter 40R Smart Growth Overlay District.	Planning & Community Development	$	Short- to Medium-term
			F.1.2.2	Consider zoning amendments and incentives to reduce the need to drive.	Planning & Community Development	$	Medium-term
			F.1.3	Create a transportation information page on the Town website.	Planning & Community Development Public Works Town Manager's Office	$	Short-term Ongoing
	F.2	Implement mobility recommendations included in Arlington's Net Zero Action Plan to reduce greenhouse gas emissions stemming from the transportation network and its users.	F.2.1	Create and implement a plan to expand public electric vehicle charging at libraries, business districts, public parking, and other facilities.	Planning & Community Development	$$$	Short- to Medium-term
			F.2.2	Adopt a zero-emission municipal fleet and charging infrastructure plan and policies that commits to complete transition to zero emission vehicle purchases by not later than 2030.	Planning & Community Development Public Works Town Manager's Office	$$$$	Medium-term (full implementation)
			F.2.3	Advocate for improved electricity rate design to facilitate smart electric vehicle charging and accelerate EV adoption.	Town Manager's Office	$	Short-term Ongoing

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
Reduced climate impacts from travel in Arlington.	F.3	When designing and constructing any transportation facilities, including "green" design interventions and construction techniques to reduce climate impacts.	F.3	Adopt standards.	Public Works	$	Short-term
Infrastructure and policies to support the local economy and resident quality of life.	G.1	Ensure Arlington's roadways and off-street parking are maintained to support local business activity and resident quality of life.	G.1.1	Regularly update and implement the Town's pavement management program.	Public Works	$$$$	Ongoing
			G.1.2	Allocate adequate funding for the maintenance and upkeep of Arlington's roadways.	Public Works Town Manager's Office	$$$$	Ongoing
			G.1.3	Ensure off-street parking lots are maintained and feel safe.	Public Works Parking Advisory Committee	$$$	Ongoing
	G.2	Consider changes to parking regulations and policies that more effectively manage public on- and off-street parking.	G.2.1	Allocate funding to study parking along all of Mass Ave. with an emphasis on Capitol Square/East Arlington and Arlington Heights.	Planning & Community Development Parking Advisory Committee Police	$$$	Short-term
			G.2.2	Study parking in neighborhoods adjacent to commercial concentrations and/or transit and consider additional regulations where warranted.	Planning & Community Development Parking Advisory Committee Police	$$	Medium-term
	G.3	Rethink the curb and design it to support competing users and needs more effectively.	G.3.1	Identify locations for dedicated curbside zones for pick-up and drop-off activity.	Planning & Community Development Parking Advisory Committee Public Works Police	$$	Short-term
			G.3.2	Designate additional locations to accommodate increased service and delivery needs.	Planning & Community Development Parking Advisory Committee Public Works Police	$$	Short-term

Goal Area	Strategy		Action		Responsible Parties	Cost	Timeframe
			Priority Strategies are highlighted in yellow		Top Entity: Lead Lower Entities: Supporting	$: < $10K $$: $10K - $25K $$$: $26K-$100K $$$$: > $100K	Short-term: 1-3 years Medium Term: 4-10 years Long-term: 11-20 years
			G.3.3	Repurpose on-street parking where possible to prioritize other modes including bus and bicycle travel, or to provide additional open space in commercial areas.	Planning & Community Development Parking Advisory Committee Public Works Disability Commission Police	$$	Short-term
Responsive and transparent transportation decision-making.	H.1	Create a process for communicating transportation project updates, construction impacts and other service issues proactively.	H.1	Create and implement.	Planning & Community Development Public Works	$	Short-term
	H.2	Develop and regularly update a Local Transportation Improvement Program (LTIP)	H.2.1	Establish an internal LTIP working group to develop the LTIP	Planning & Community Development Town Manager's Office Public Works LTIP Working Group	$	Short-term
			H.2.1	Update the LTIP quarterly.	LTIP Working Group	$	Ongoing
			H.2.3	Provide LTIP on the Town of Arlington website.	Planning & Community Development	$	Ongoing
	H.3	Test before you invest.	H.3.1	Implement tactical projects rapidly to address safety issues and concerns.	Planning & Community Development Public Works Police	$ - $$ (per project)	Short-term Ongoing
			H.3.2	Develop and implement a Neighborhood Traffic Calming Program to address safety concerns.	Planning & Community Development Public Works Transportation Advisory Committee Police	$ - $$ (per project)	Short-term Ongoing
	H.4	Analyze and track key data sets over time to inform transportation decision making and prioritization.	H.4	Track metrics	Planning & Community Development	$	Ongoing (Annually)

PART 3: FACTBOOK

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PART 3: Connect Arlington Factbook

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1 INTRODUCTION

TRANSPORTATION PLAN CONTEXT

A Sustainable Transportation Plan for Arlington will provide a vision for the development of the transportation system in Arlington over the next 20 years, building upon past planning and recommendations. Community-led goal-setting and a wide-reaching engagement effort will help inform policy, program, and project identification, selection, and identification to help Arlington chart a path towards a vision of greater sustainability in the way it travels. The plan will focus on all aspects of transportation and mobility and how they relate to the unique qualities of the Arlington community.

The Sustainable Transportation Plan Advisory Committee (STPAC) is tasked with advising the project team on the creation of this plan. The committee consists of Town staff, community advocates, and business leaders.

Sustainable Transportation

Sustainable transportation planning balances and optimizes mobility improvements across all means of travel, tailoring such improvements to mitigate the climate footprint of travel as much as possible while serving the widest spectrum of socio-demographic needs and pragmatically responding to structural and spatial constraints. Arlington is committed to achieving a more sustainable future through transportation policies, programs and infrastructure investments. As part of that commitment, the plan will embrace and engage those that would benefit the most from more access and non-motorized travel improvements.

Communities throughout Greater Boston no longer have the land available to further increase road capacity significantly. In Arlington, the Town must explore opportunities to do more with transportation right-of-way (ROW) to move the most people safely and with a high quality experience. This is key for Arlington to implement its commitment to promoting climate stabilization and meeting other charted environmental, as well as housing and economic development, goals.

Local and Regional Transportation Context and History

Arlington's unique location within the Boston region puts it close enough to the Commonwealth's major employment centers to make the commute sustainable, but distant enough for the town to have retained a close-knit, community feel. Crossing the Alewife Brook Parkway from Cambridge into Arlington brings with it a feeling of comfort and ease – streets are calmer, and more distance is perceived between streets and driveways. Arlington as a community is mainly residential, with the obvious exceptions along its commercial corridors, including business districts along Massachusetts Avenue (locally known as Mass Ave), and industrial areas. Even if Arlington residents work nearby, there are travel time disparities between driving and other modes of transportation: the travel time reliability of transit is poor given MBTA buses operate in congested traffic en route to rapid transit and employment centers. Topography west of Pleasant Street poses a challenge for those who may opt to walk, bike, or connect to and from bus transit. The Minuteman Bikeway is high quality commuting infrastructure, but conflicts between types of users are frequent, especially with many different modes at different speeds.

How to use the Factbook

This factbook documents Arlington's demographic and transportation conditions and sets the stage for a more sustainable transportation future. It is structured as follows:

- People and Place: who lives here, where, and how the town is laid out as a community
- Streets: transportation assets, qualities, and safety
- How People Travel: how infrastructure influences travel choices and patterns

This factbook lays the foundation for community feedback and for subsequent phases of building and planning sustainable transportation strategies.

Sustainable Transportation Solutions

The Town of Arlington has been implementing numerous transportation policies, programs and projects with the goal of developing a more sustainable transportation future.

Throughout this fact book, several of these initiatives are called out in boxes like this both to recognize and inform the public about strong examples already completed.

Recommendations developed as part of this Sustainable Transportation Plan will also look to support and build on these initiatives.

Key Transportation Stats

Street Infrastructure

137 Miles

Of total streets

74%	15%	5%	6%
(101 miles)	*(21 miles)*	*(7 miles)*	*(8 miles)*
Public streets Owned and maintained by the Town	**Private streets** Partially maintained by the Town *(e.g. plowing)* and/or by property owners fronting the roadways *(e.g. paving and upkeep)*	**Other facilities** Partially owned and maintained by the Town (e.g. cemeteries, pathways in parks)	**State streets** Owned and maintained by the State or maintained in part by the Town *(e.g., plowing)*

Active Transportation Infrastructure

132 Miles

(Estimated)
Of sidewalks owned and maintained by the town

25 Miles

Of bicycle and/or multiuse facilities

42 miles	8 miles	5 miles	12 miles
Streets Without Sidewalks *(On either side of street, primarily in hilly areas of town)*	**Multiuse Paths** *(Mostly comprised of the Minuteman Bikeway)*	**Bicycle Lanes**	**Lane Sharing Network** *(Informal, but designated routes)*

Key Transportation Stats *(continued)*

Transit

11 Bus Routes

6 routes	2 routes	3 routes
Provide Connections to Alewife Station *(Red Line and Bus Connections)*	**Service to Harvard Square** *(Red Line and Bus Connections)*	**Connections to Davis Square & Lechmere/East Cambridge** *(Red and Green Line Connections)* **Connection to Medford** *(Orange Line Connection)*

Rail Access

Within short walking or biking distance

Red Line	Commuter Rail
Alewife Station near border with Cambridge	Within ½-mile of Arlington at West Medford (Lowell Line) and Belmont (Fitchburg Line)

2 PEOPLE AND PLACE

Transportation connects people to the places they need and want to be – to where they live, workplaces, educational opportunities, recreational and shopping destinations, and public and private services. Transportation ensures the goods and services that support daily life and the economy are delivered to destinations ranging from warehouses to small shops to your front door.

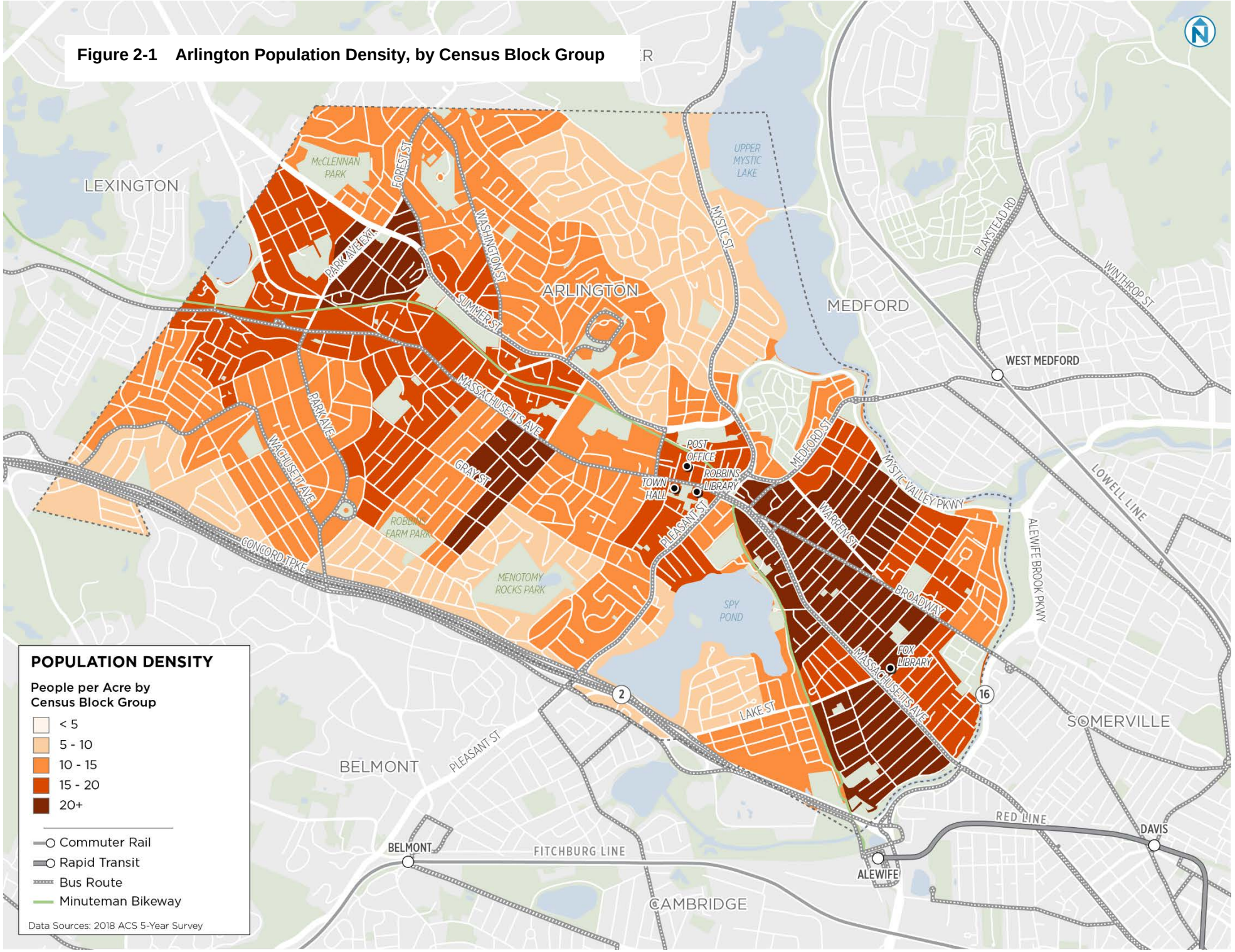
POPULATION AND SOCIOECONOMIC CHARACTERISTICS

Total Population

There are approximately 45,000 people living in Arlington (American Community Survey, 2014-2018). As shown in Figure 2-1,residential densities are generally higher east of Arlington Center – East Arlington – and in western sections of town abutting Mass Ave.

Population density and land use patterns largely mirror topography. Population density is highest in flatter areas like East Arlington and abutting western segments of Mass Ave, and generally decrease in the hilly, higher elevation areas rising up from Mass Ave; for example, in Arlington Heights, Morningside and other neighborhoods.

Figure 2-1 Arlington Population Density, by Census Block Group



Data Source: U.S. Census Bureau (2018). Total Population. 2018 ACS 5-Year Estimates

Age

Arlington's resident population is balanced across the age spectrum; adults aged 25 to 64 are proportionally the most represented groups in the spread of the population (Figure 2-2). Children with ages up to 14 years and older adults aged 65 and older are generally considered to be more vulnerable to mobility challenges. These groups make up over one-third of Arlington's population. Children are more likely to be reliant on adults for transportation, especially for modes other than walking or biking, and are also more likely to be injured or killed by car impacts. Older adults are more likely to have disabilities or mobility challenges and may also be reliant on others for transportation.

Children of preschool, elementary, middle, and high school aged students make up over 15% of the population, and are most heavily concentrated in Arlington Center and East Arlington, areas within a five- to ten-minute walk or bike ride to neighborhood schools (e.g. Thompson and Hardy Elementary, Gibbs Middle School, Arlington Catholic, and Arlington High School, just west of Arlington Center). Preschool and elementary school aged children west of Arlington Center are most heavily concentrated nearer to Mass Ave, while their schools are located uphill to the north and south, making walking and biking trips more challenging.

Figure 2-2 Age Breakdown of Arlington Population

Age Range	Total	% of Total Population
Young Children (Ages up to 5)	3,128	7%
School-Aged Children and Younger Teens (Ages 5-14)	5,086	11%
Older Teens and Young Adults (Ages 15-24)	3,756	8%
Adults (Ages 25-34)	6,254	14%
Adults (Ages 35-54)	13,747	30%
Adults (Ages 55-64)	5,838	13%
Older Adults (Ages 65 and up)	7,338	16%
Total	45,147	100%

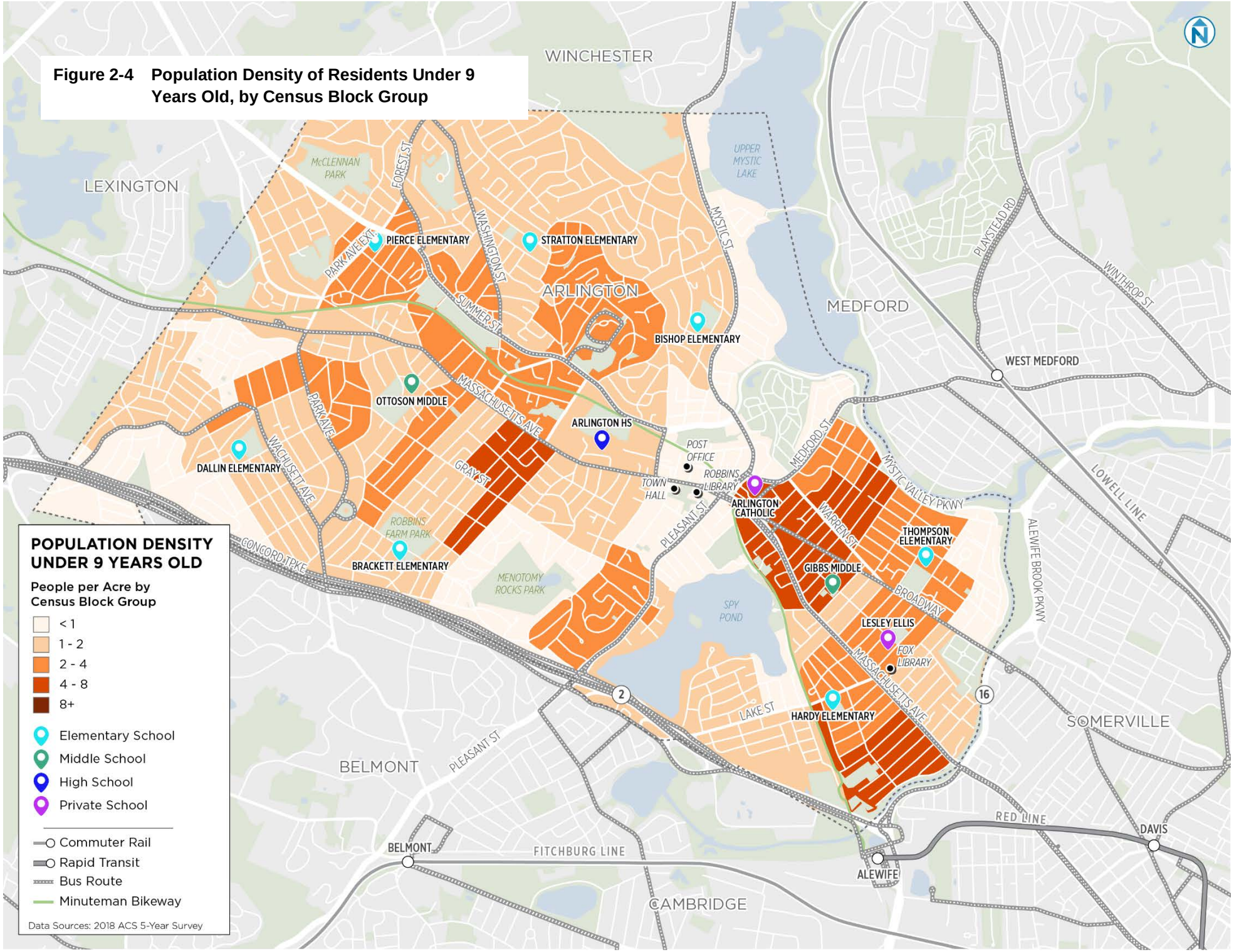
Data Source: U.S. Census Bureau (2018). *Sex by Age.* 2018 ACS 5-Year Estimates.

Figure 2-3 Breakdown of School-Age Population

Age Range	Total	% of Total Population
Elementary School (Ages 5-9)	2,944	7%
Middle School (Ages 10-14)	2,142	5%
High School (Ages 15-19)	2,326	5%
Total	7,412	16%

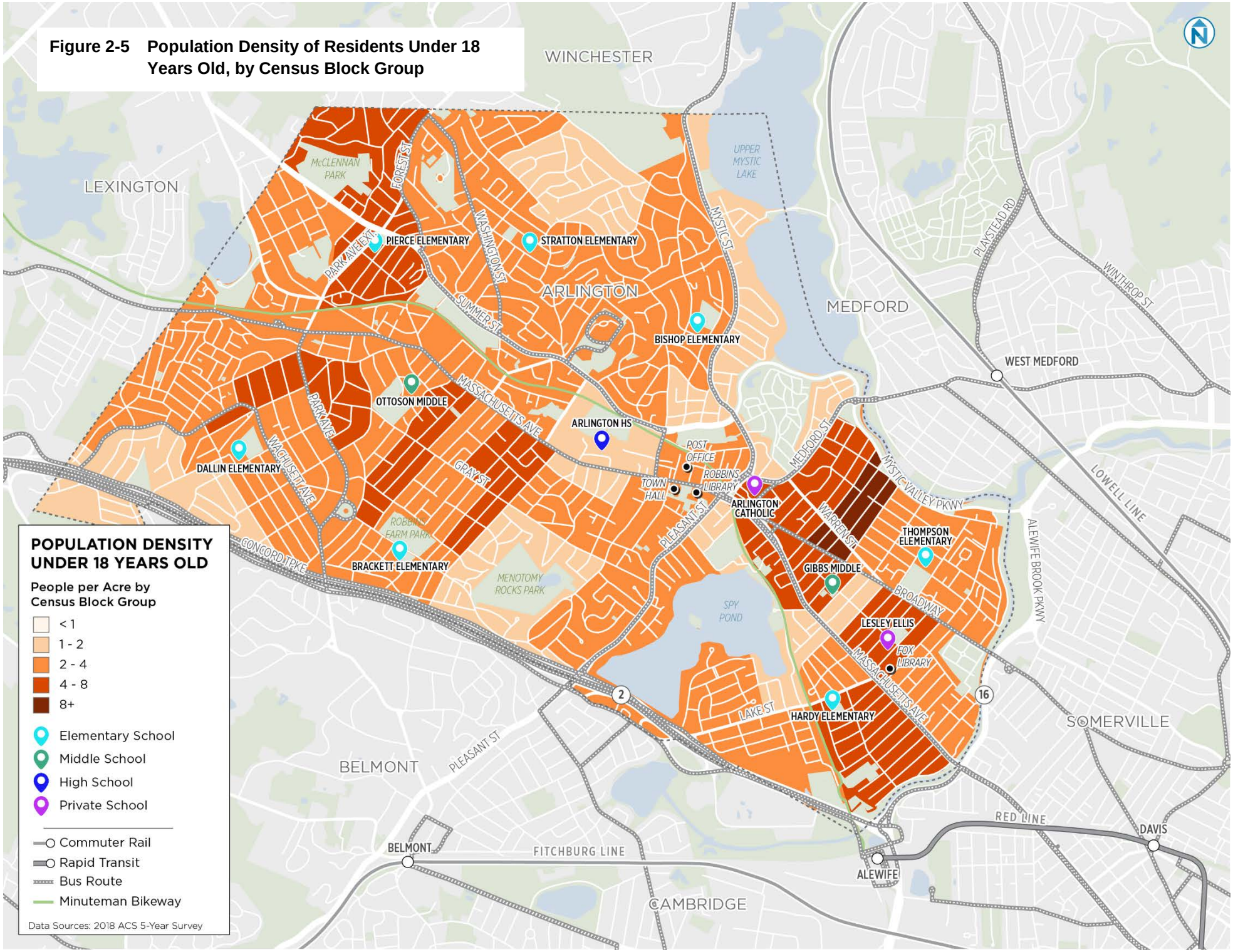
Data Source: U.S. Census Bureau (2018). *Sex by Age.* 2018 ACS 5-Year Estimates.

Figure 2-4 Population Density of Residents Under 9 Years Old, by Census Block Group



Data Source: U.S. Census Bureau (2018). *Sex by Age*. 2018 ACS 5-Year Estimates.

Figure 2-5 Population Density of Residents Under 18 Years Old, by Census Block Group



Data Source: U.S. Census Bureau (2018). *Sex by Age*. 2018 ACS 5-Year Estimates.

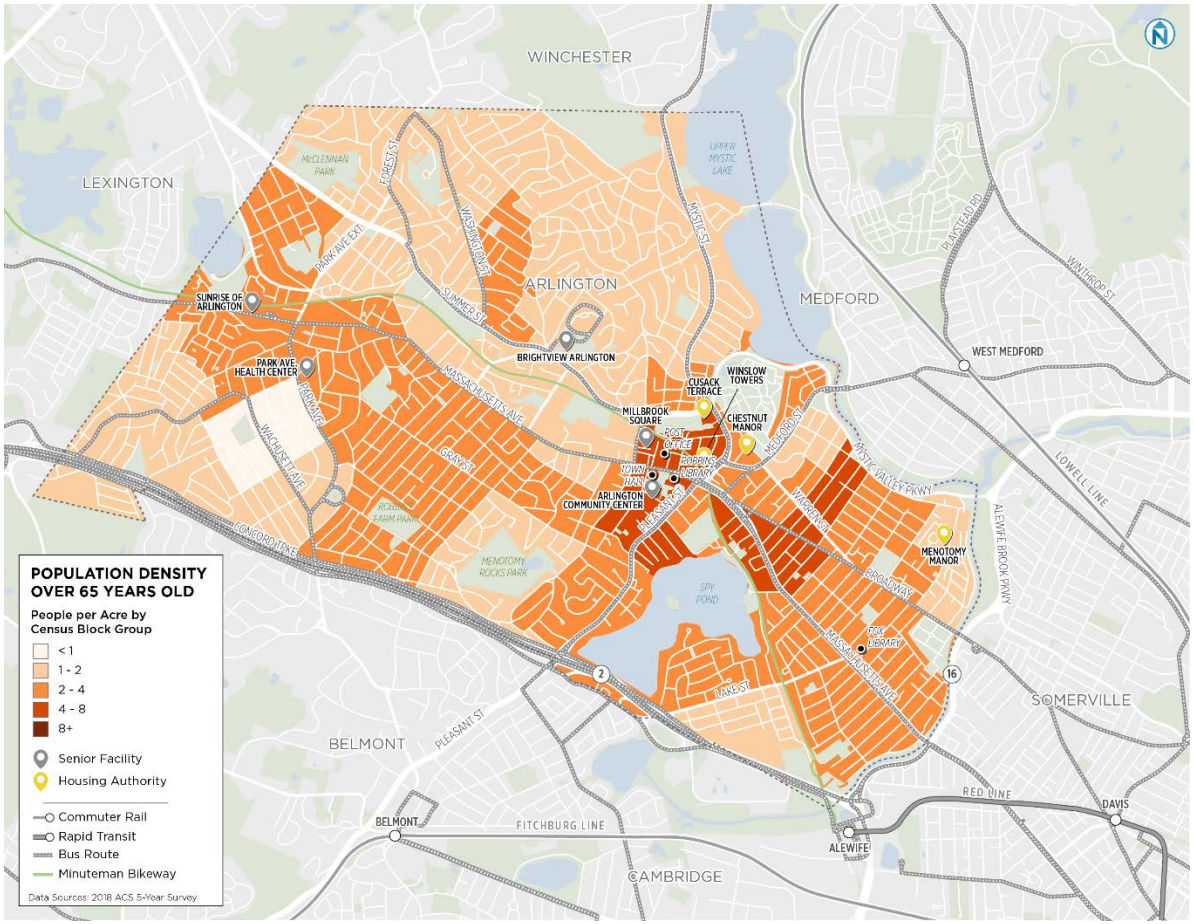
Arlington's older adults (people 65 and over) make up about 16% of the population and are most heavily concentrated in and around Arlington Center proximate to Mass Ave and the Minuteman Bikeway, and within a five- to ten-minute walk to the Arlington Community Center and other nearby civic resources.

Figure 2-6 Arlington Older Adults Population

Age Range	Total Population	% of Total Population
65 to 74 years	3982	9%
75 to 84 years	2300	5%
85 years and over	1056	2%
Total	7,338	16%

Data Source: U.S. Census Bureau (2018). *Sex by Age.* 2018 ACS 5-Year Estimates.

Figure 2-7 Population Density of Residents Over 65 Years Old, by Census Block Group

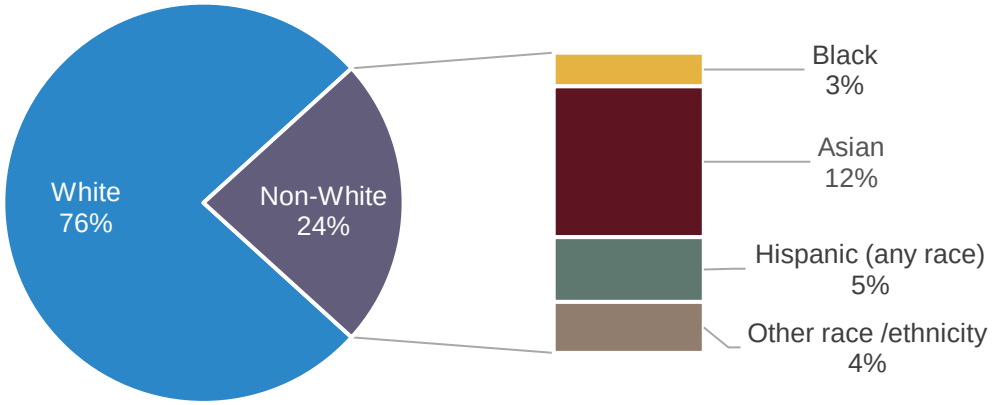


Data Source: U.S. Census Bureau (2018). *Sex by Age.* 2018 ACS 5-Year Estimates.

Race and Ethnicity

Over three-quarters of the population identifies as White (non-Hispanic), 12% identify as Asian, 5% Hispanic (of any race), 3% Black or African American, and 4% identify as other.

Figure 2-8 Race and Ethnic Make-up of Arlington Residents

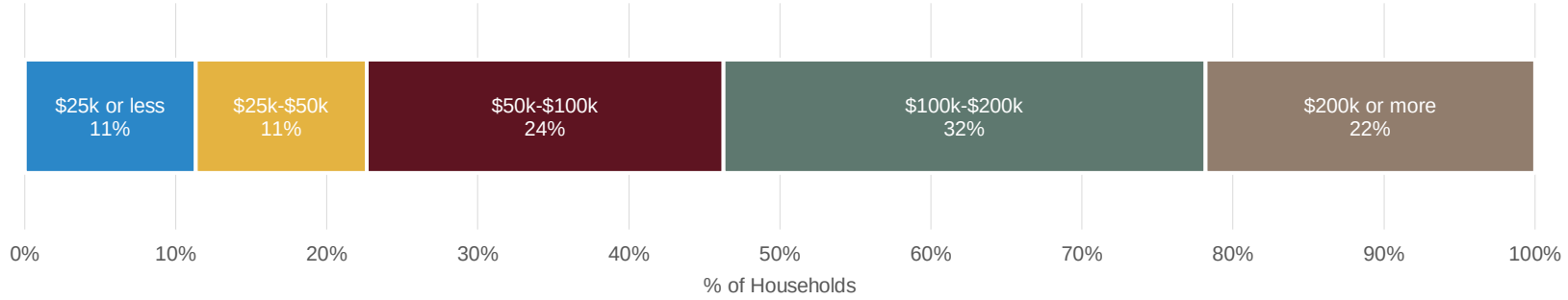


Data Source: U.S. Census Bureau (2018). *Hispanic or Latino Origin by Race*. 2018 ACS 5-Year Estimates.

Income Distribution

Arlington is a relatively affluent community. Over half (54%) of Arlington households have combined incomes over $100k, and there are about twice as many households with incomes over $200k (22%) as households under $50k.

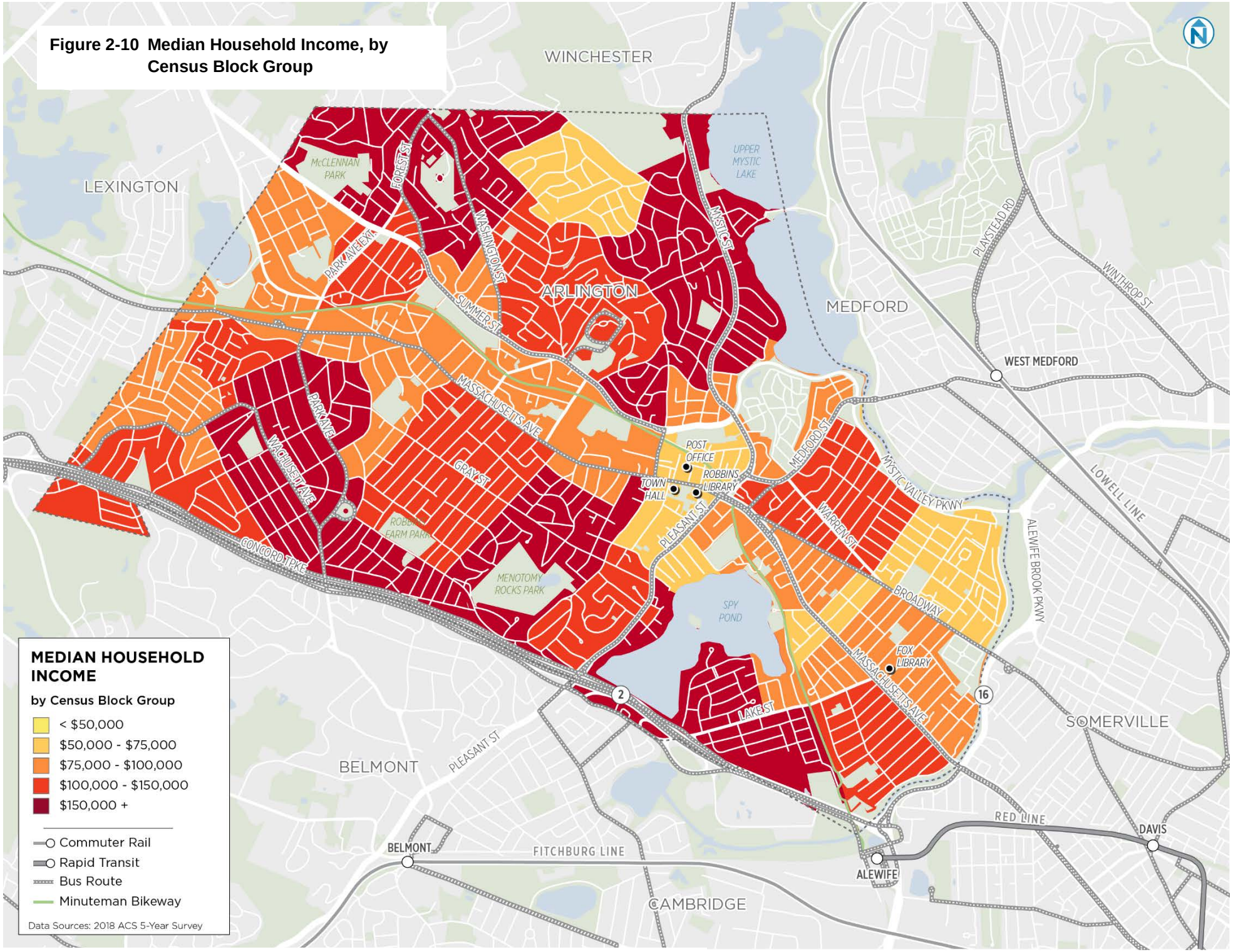
Figure 2-9 Household Income Distribution



Data Source: U.S. Census Bureau (2018). *Household Income in The Past 12 Months (In 2018 Inflation-Adjusted Dollars).* 2018 ACS 5-Year Estimates.

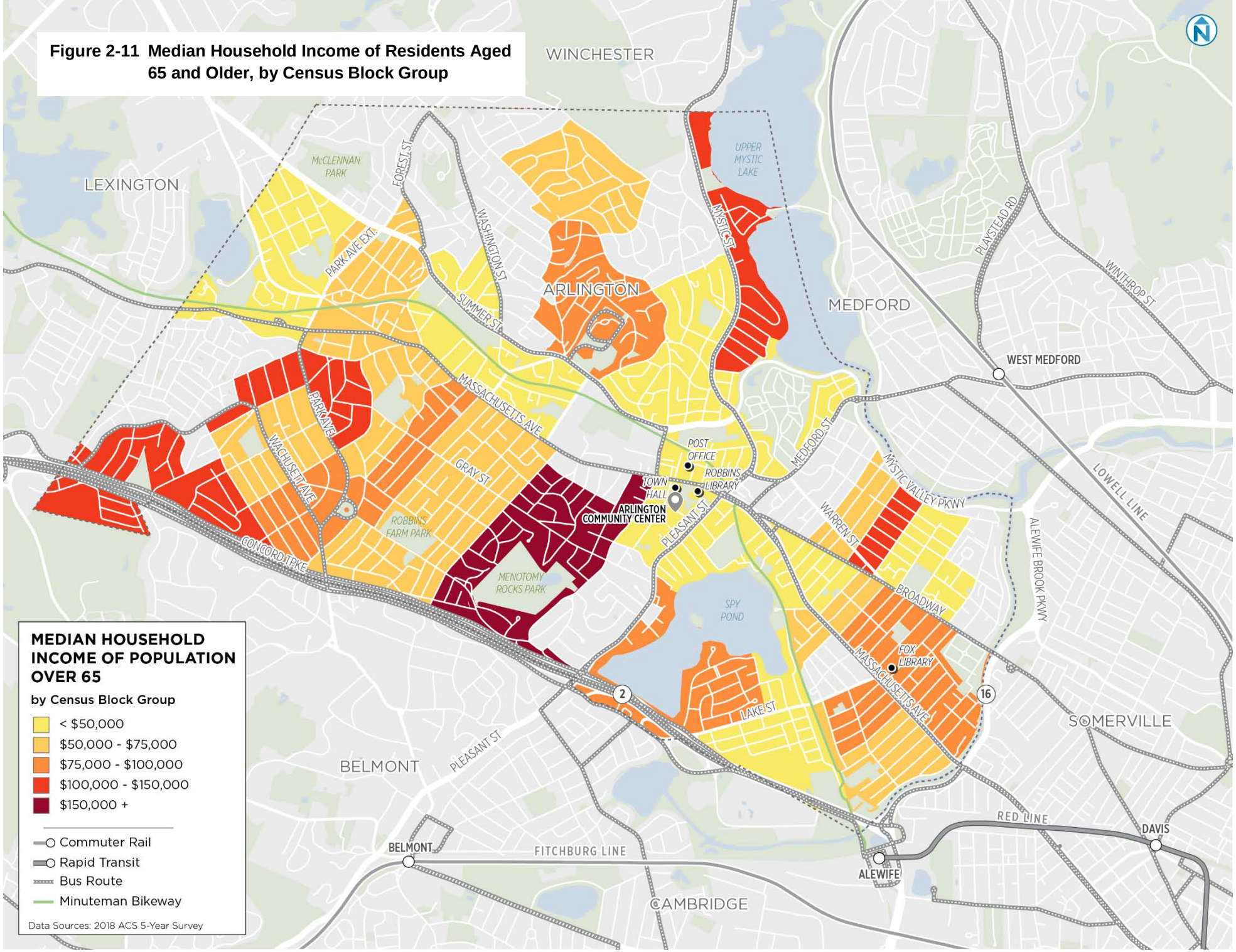
Generally, median household incomes are highest in neighborhoods located furthest from Mass Ave particularly neighborhoods west of Arlington Center, with lower income areas abutting Mass Ave and in East Arlington. Income characteristics correlate with land use and topography, and other demographic characteristics. Generally, higher income areas are located at higher elevations within hillside single family neighborhoods. Lower incomes are found in low-lying sections of town buffering Mass Ave and in East Arlington, areas with more multifamily and/or rental housing, and more older adults on fixed incomes.

Figure 2-10 Median Household Income, by Census Block Group



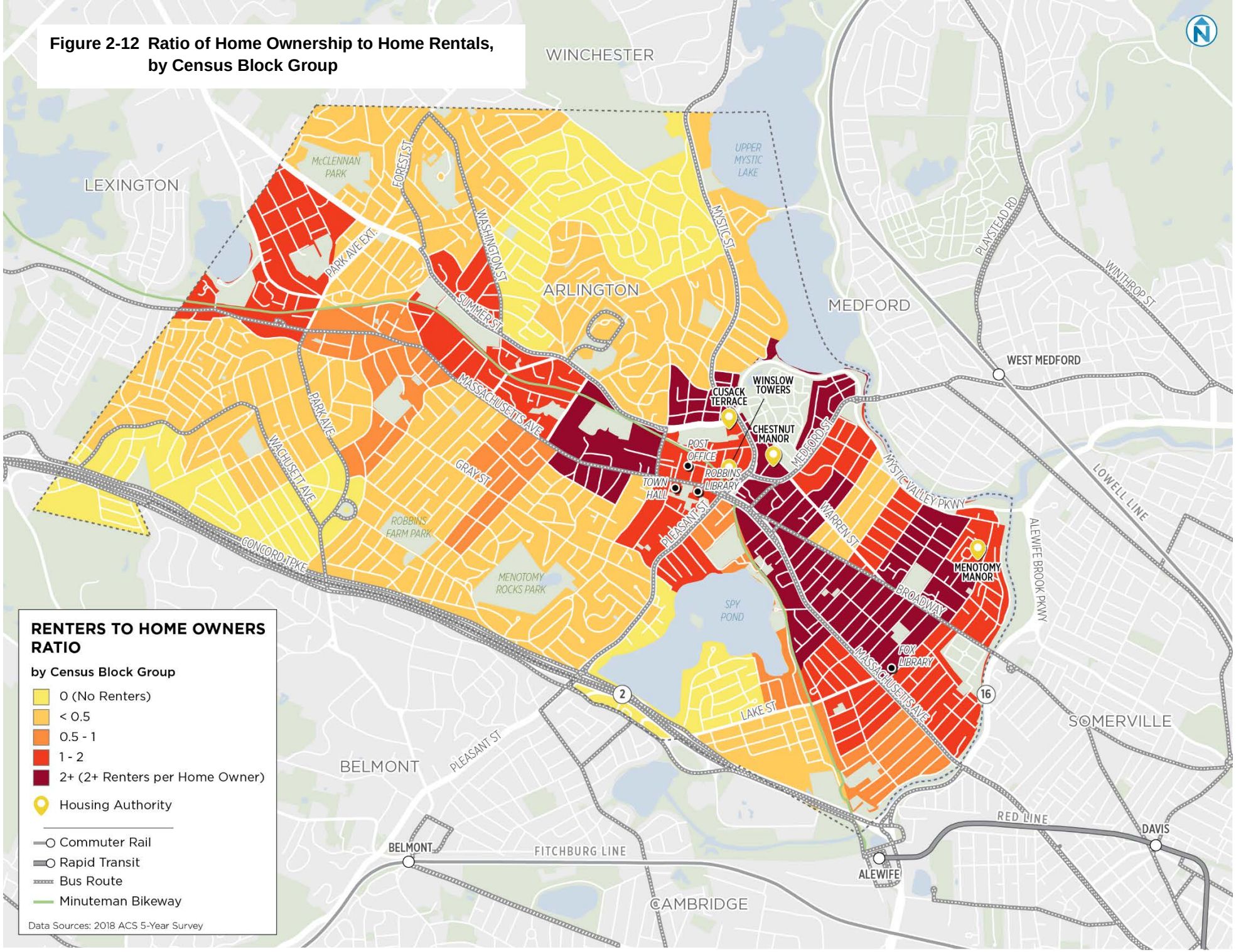
Data Source: U.S. Census Bureau (2018). *Household Income in The Past 12 Months (In 2018 Inflation-Adjusted Dollars).* 2018 ACS 5-Year

Figure 2-11 Median Household Income of Residents Aged 65 and Older, by Census Block Group



Data Source: U.S. Census Bureau (2018). *Household Income in The Past 12 Months (In 2018 Inflation-Adjusted Dollars).* 2018 ACS 5-Year

Figure 2-12 Ratio of Home Ownership to Home Rentals, by Census Block Group



Data Source: U.S. Census Bureau (2018). *Household Income in The Past 12 Months (In 2018 Inflation-Adjusted Dollars).* 2018 ACS 5-Year

PLACE: TRANSPORTATION AND LAND USE

Neighborhoods and centers with a diverse mix of uses and/or higher densities of people are typically more multimodal, offering strong pedestrian, bicycle and transit access and connectivity to move people to where they need to go. Why? Multiple land uses (i.e. destinations) proximate to one another allow for manageable walks, bike rides, and transit service (which requires density) between destinations including work, services, and recreation. Conversely, single-use districts (e.g. residential only areas), particularly less dense single-family neighborhoods farther from commercial and/or mixed-use centers, typically rely heavily on the use of a car. Most destinations in these districts are not close enough to comfortably walk, bike, or support transit service given low population density and the high costs to provide such services in a manner that is accessible, convenient, frequent and reliable.

Land Use

Arlington's land use patterns and transportation systems are influenced largely by its varied topography. The majority of land in town is used for residential purposes, with a narrow spine of commercial, industrial and civic uses running through the center within a short distance of most residences.

Generally, residential uses in low-lying, flat eastern and central areas of town are denser, with a combination of one-, two- and three-family unit structures and multi-family housing. These areas offer a more amenable multimodal transportation environment with pedestrian and bicycle connections along flat pathways to and from Mass Ave's commercial centers, and bus routes serving Mass Ave, Broadway and others. In contrast, residential areas to the west – in hilly areas with significant slopes – are largely single family in nature and more spread apart.

Commercial land uses are located along or within blocks of Mass Ave. Land uses along Mass Ave include major trip generators for residents, workers and visitors alike, including retail and service businesses, restaurants and cafes, cultural and entertainment destinations, professional offices, public facilities and more.

Figure 2-13 Arlington Land Use

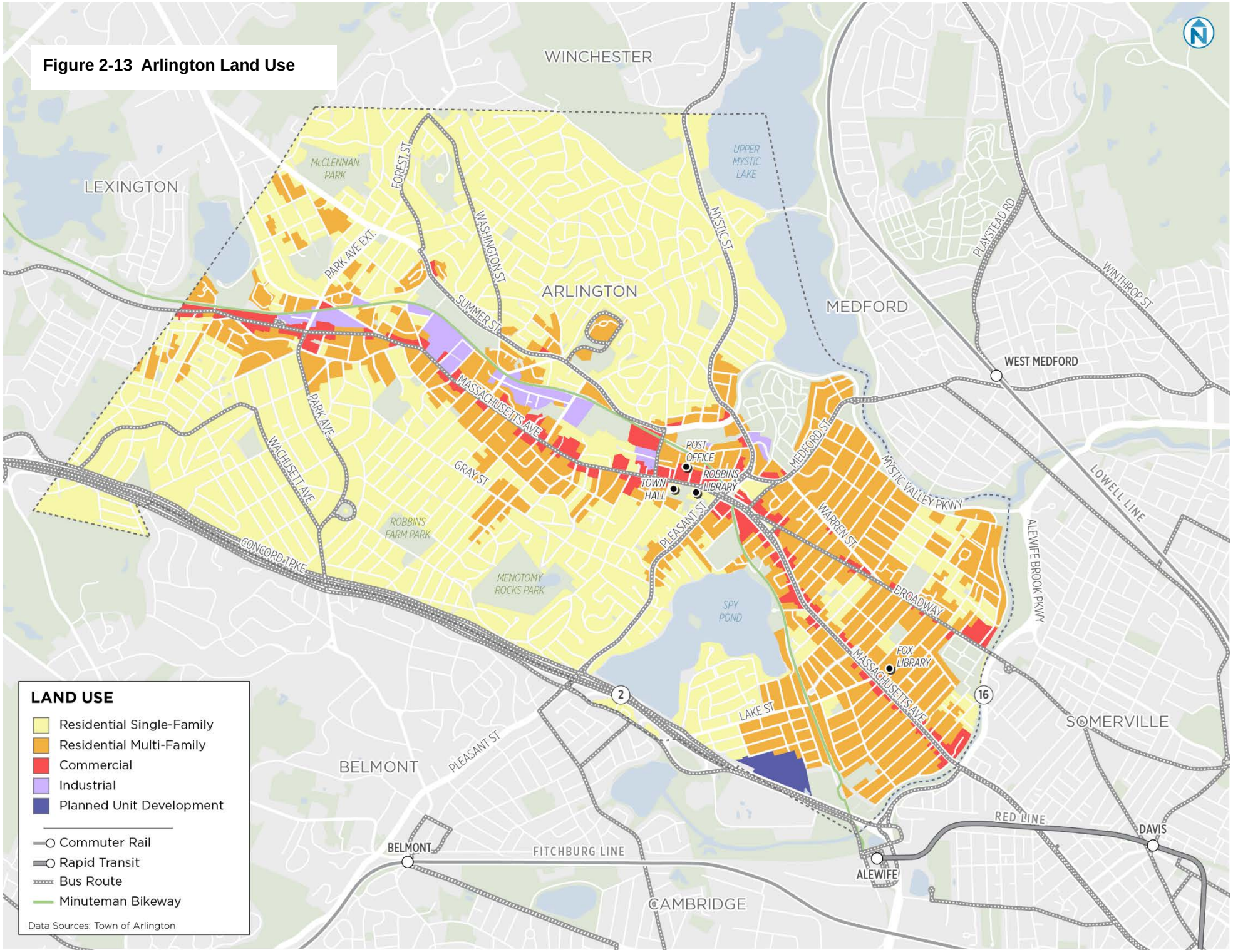
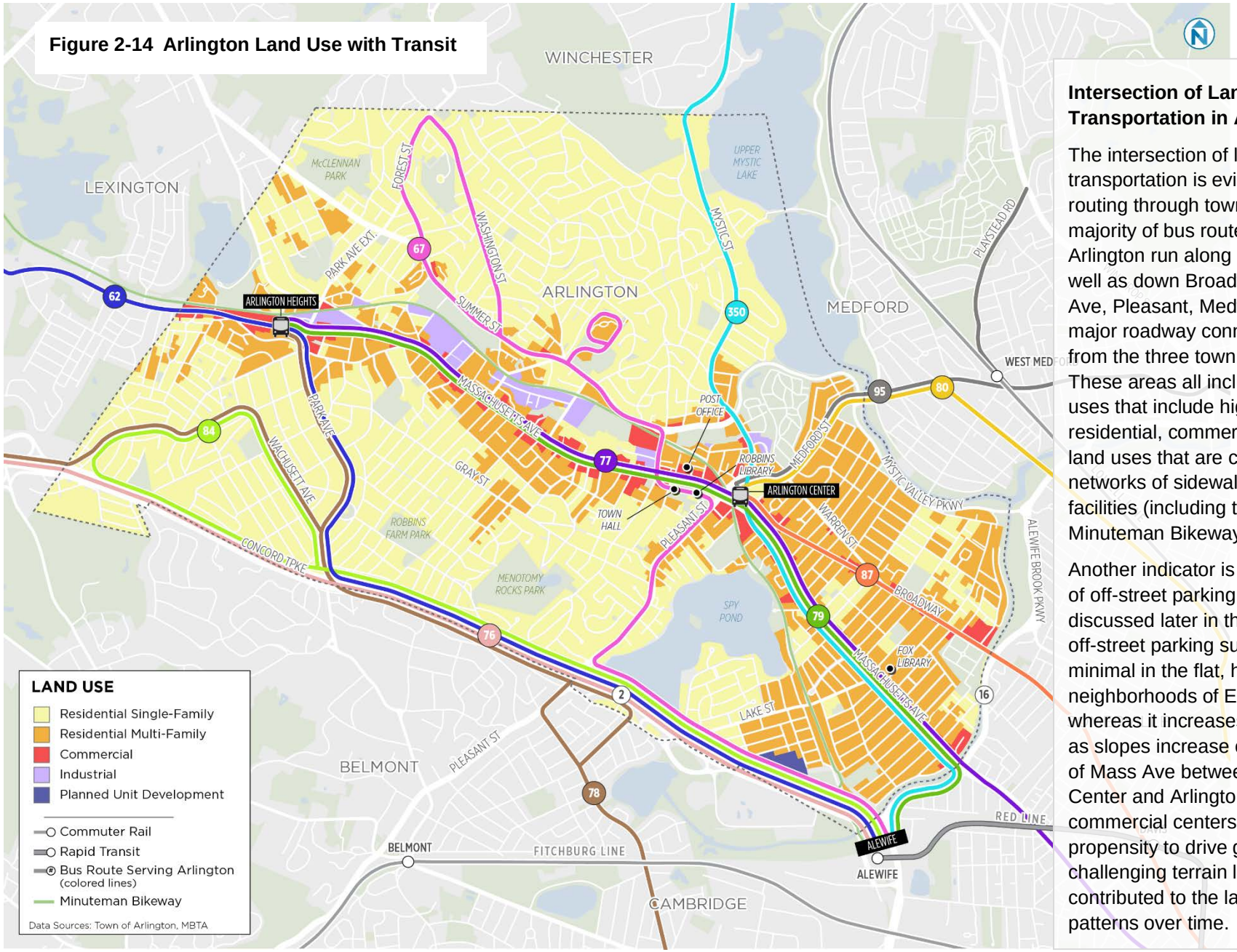


Figure 2-14 Arlington Land Use with Transit



Intersection of Land Use and Transportation in Arlington

The intersection of land use and transportation is evident in bus routing through town. The majority of bus routes serving Arlington run along Mass Ave, as well as down Broadway, Park Ave, Pleasant, Medford and major roadway connectors to and from the three town centers. These areas all include a mix of uses that include higher density residential, commercial and civic land uses that are connected by networks of sidewalks and bike facilities (including to the Minuteman Bikeway).

Another indicator is the presence of off-street parking supply. As discussed later in this factbook, off-street parking supply is minimal in the flat, higher density neighborhoods of East Arlington, whereas it increases significantly as slopes increase on either side of Mass Ave between Arlington Center and Arlington Heights commercial centers. The propensity to drive given the challenging terrain likely contributed to the land use patterns over time.

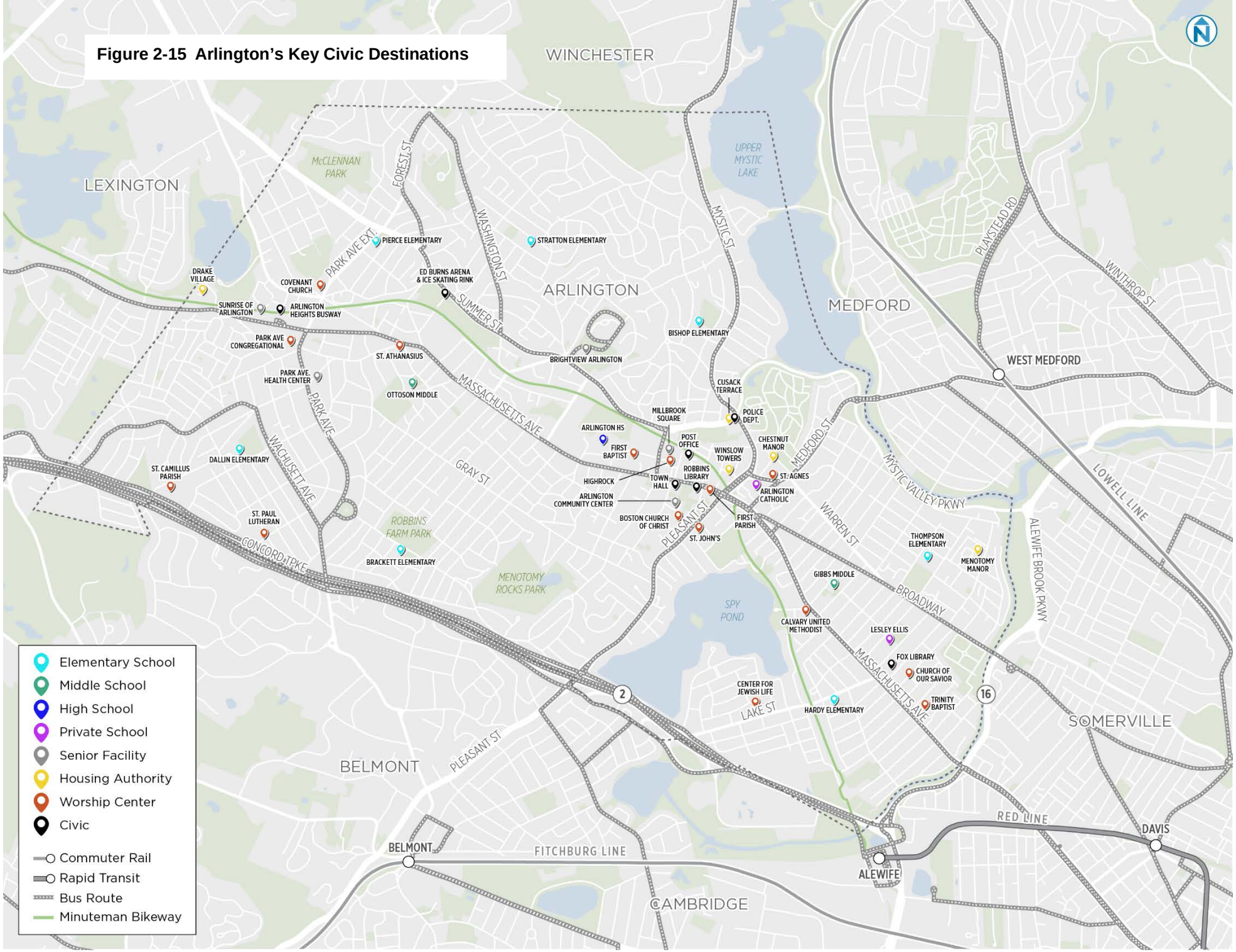
Destinations (Trip Generators)

Most major trip generating destinations in Arlington, including most civic buildings (e.g. Town Hall), houses or worship, retail, restaurants and cultural destinations, professional services, Arlington High School, and senior housing are located in or near Arlington Center. Key destinations to the east of Arlington Center – primarily elementary schools – are located within a few blocks of Mass Ave and the Minuteman Bikeway, or Broadway. West of Arlington Center, elementary schools are located at some of the highest elevations in the town, requiring longer and more physically challenging trips up and down hill far to the north or south of Mass Ave and surrounding neighborhood streets.

Future Sustainable Development

Most new growth/development in Arlington is anticipated to be redevelopment of existing properties and new infill development. Given existing land uses and topography, this growth is most likely to occur along commercial corridors and in industrial areas. To better ensure a more sustainable transportation future, future development, particularly residential and commercial development will need to be designed to support active and shared transportation uses over single occupancy vehicles (SOVs), encourage densities that support transit use, and integrate growing and emerging technologies such as EV charging and electric assist devices (e.g. electric bikes). Providing more parking than is needed as part of development projects promotes an unsustainable level of SOV-driving, adding to congestion and increased emissions.

Figure 2-15 Arlington's Key Civic Destinations



3 STREETS

There are just over 137 linear roadway miles in Arlington. Of the publicly-owned and managed streets (Figure 3-1), 101 miles are owned and maintained by the Town of Arlington, 7 miles are partially owned and maintained by the Town (like cemetery path streets), and 8 miles are State owned and operated. State roads carry the greatest volumes of vehicles and include Route 2/Concord Turnpike and Mystic Valley Parkway. Other high-volume roadways include major and minor arterials such as Mass Ave, Mystic Street, Medford Street, Summer Street, and Pleasant Street, which connect Arlington to adjacent towns and cities including Cambridge, Somerville, Medford, Winchester, Lexington, and Belmont; most of the town's signalized intersections can be found along these routes (Figure 3-2 and Figure 3-3).

Approximately 15%, or 21 miles, of roadways in Arlington are private streets owned, regulated, and maintained by a private individual or organization (or residents association) rather than a public agency. Private roadways are not subject to Town parking regulations; for example, cars may park on-street overnight, which is prohibited on Town-owned roads. Town funding, including Chapter 90 allocations, are not eligible to be used for private roadway repairs; however, the Town does provide limited services like plowing.

Streets are used by bicyclists, pedestrians (on sidewalks but also when crossing the street, or walking where no sidewalks are present), personal mobility devices, on-street parking, and trucks, both heavy freight and urban freight (i.e. on-demand and/or local delivery services). Ensuring roadways are able to handle all modes safely and efficiently is essential for Arlington's transportation future, especially major corridors like Mass Ave that handle commuter traffic, multiple MBTA bus routes, on-street parking, bicyclists and freight. Further, all of these travel modes compete for access to the street's curb and the growing demand for use by transportation network companies (TNCs) - such as Uber and Lyft – adds to this competition for shared curb space. To ensure the Town's future street network better accommodates all, the Town adopted a Complete Streets policy in 2016. (For more on Arlington's Complete Streets policy, see the callout box on the next page).

Maintaining roadways is a costly endeavor, particularly in variable climates like Massachusetts where temperature swings lead to heaving, cracking, and other issues. Maintaining roadways is not only important for the movement of motorists, but also for the safety of more vulnerable street users such as cyclists and pedestrians. Potholes, cracks and heaves contribute to crashes and falls. Given limited State funding available through the Chapter 90 program, additional maintenance work is funded through the Town's Capital Improvement allocation process through the Department of Public Works, which is responsible for all maintenance activities and supervision of contractors.

Sustainable Transportation Solutions: Arlington Complete Streets Policy

The Town of Arlington adopted its Complete Streets Policy in 2016 to enhance access, safety, and quality of life in Arlington. The policy ensures that "complete street elements shall be incorporated into all roadway, bridge and development projects, including new construction, reconstruction, and municipal road repair and expansion wherever possible and where road widths allow." It does so as follows:

- Promotes a sustainable, cohesive, connected transportation network
- Improves access and safety to for pedestrians, bicyclists, motorists, transit riders and freight carriers
- Facilitates better pedestrian, bicycle and transit travel for users of all ages and abilities
- Improves safety and ADA/AAB accessibility for users of all modes of transportation
- Supports and accommodates active transportation modes that promote public health
- Promotes economic development by encouraging accessible, safe and compact business districts

Given width limitations on many streets, not every street can safety accommodate all modes of travel, but all must be considered, and mode priorities identified. As such, some streets may safely accommodate all modes, whereas others may accommodate most or when not possible, should identify an alternate facility nearby.

Figure 3-1 Ownership of Streets

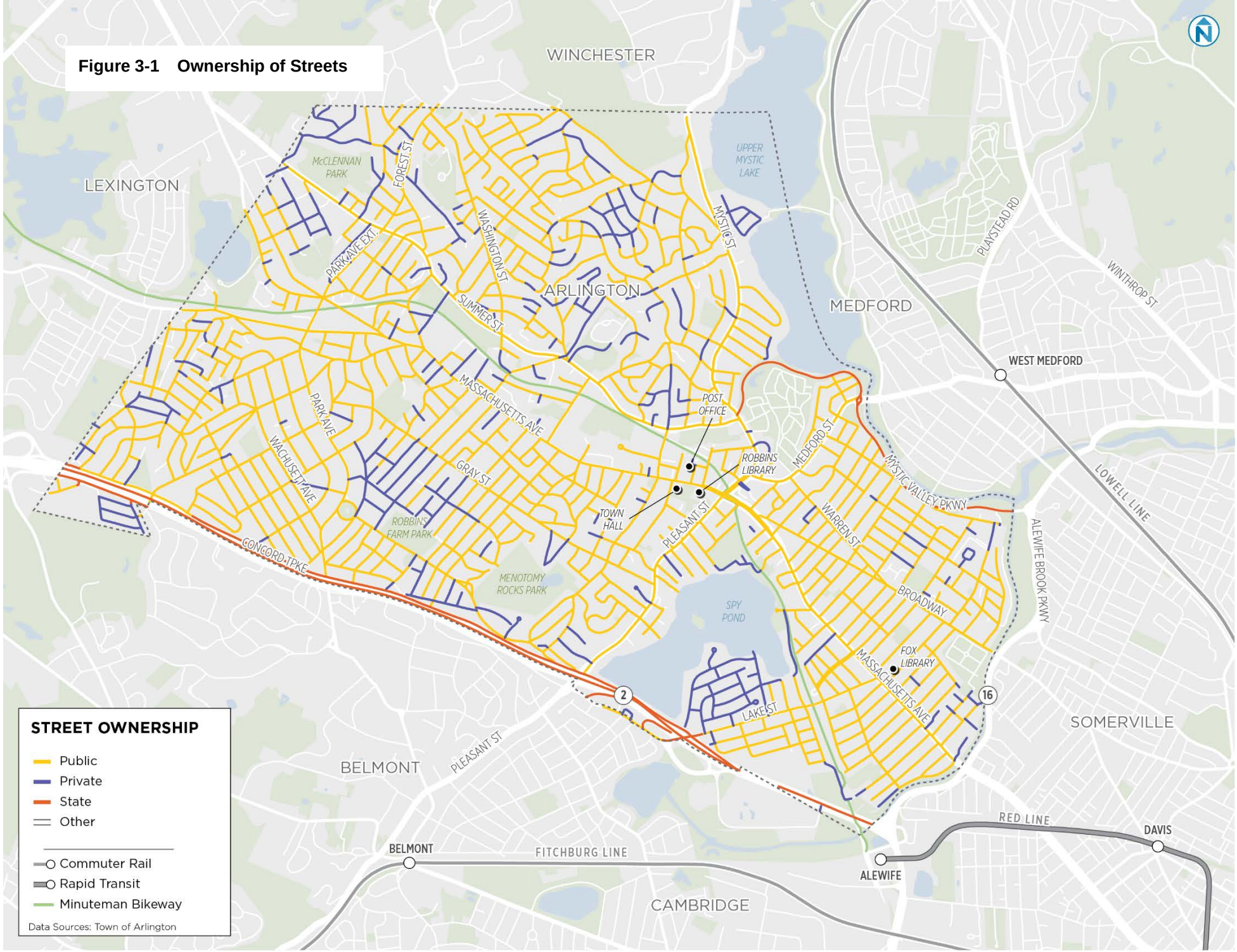


Figure 3-2 Traffic Signal-Controlled Intersections

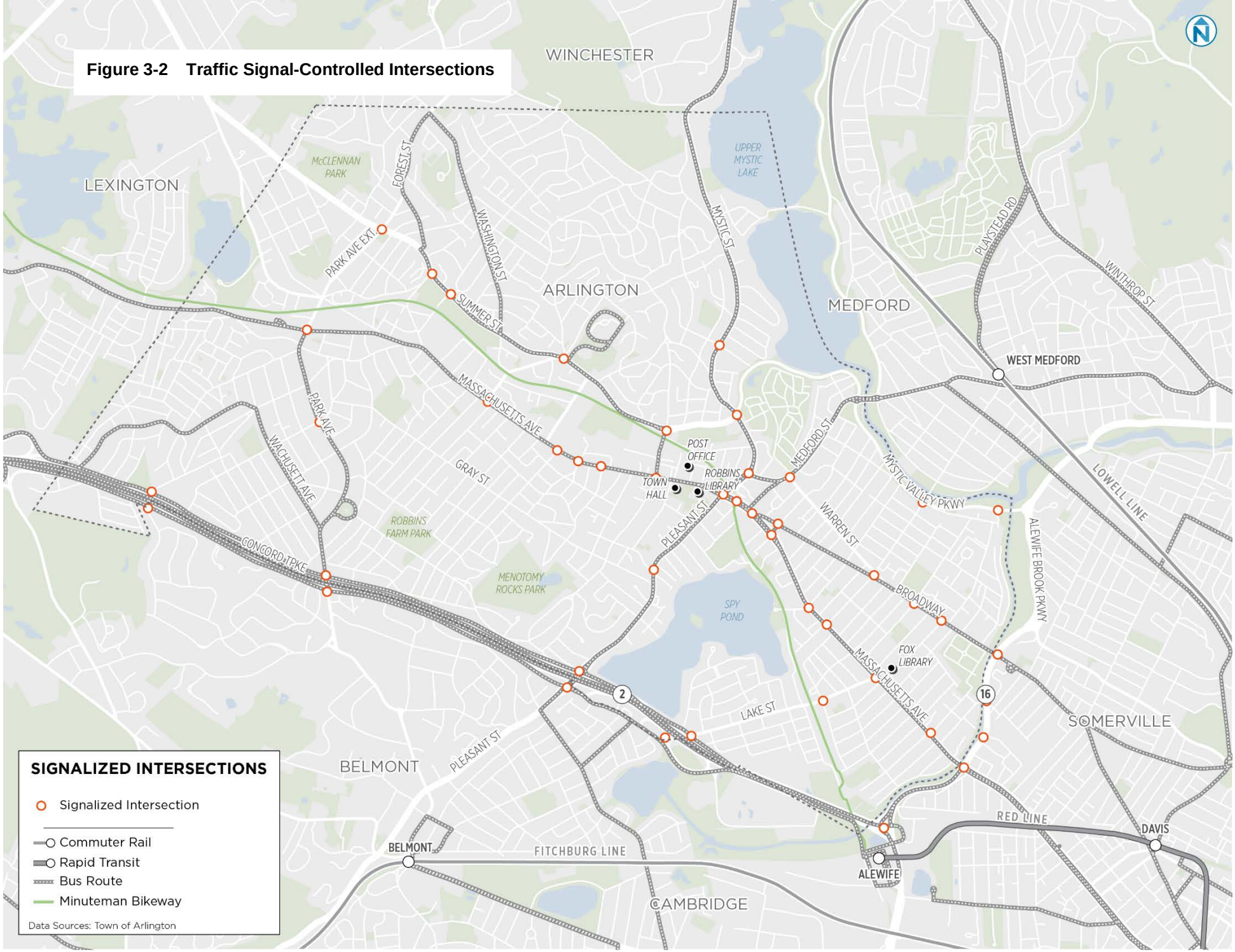
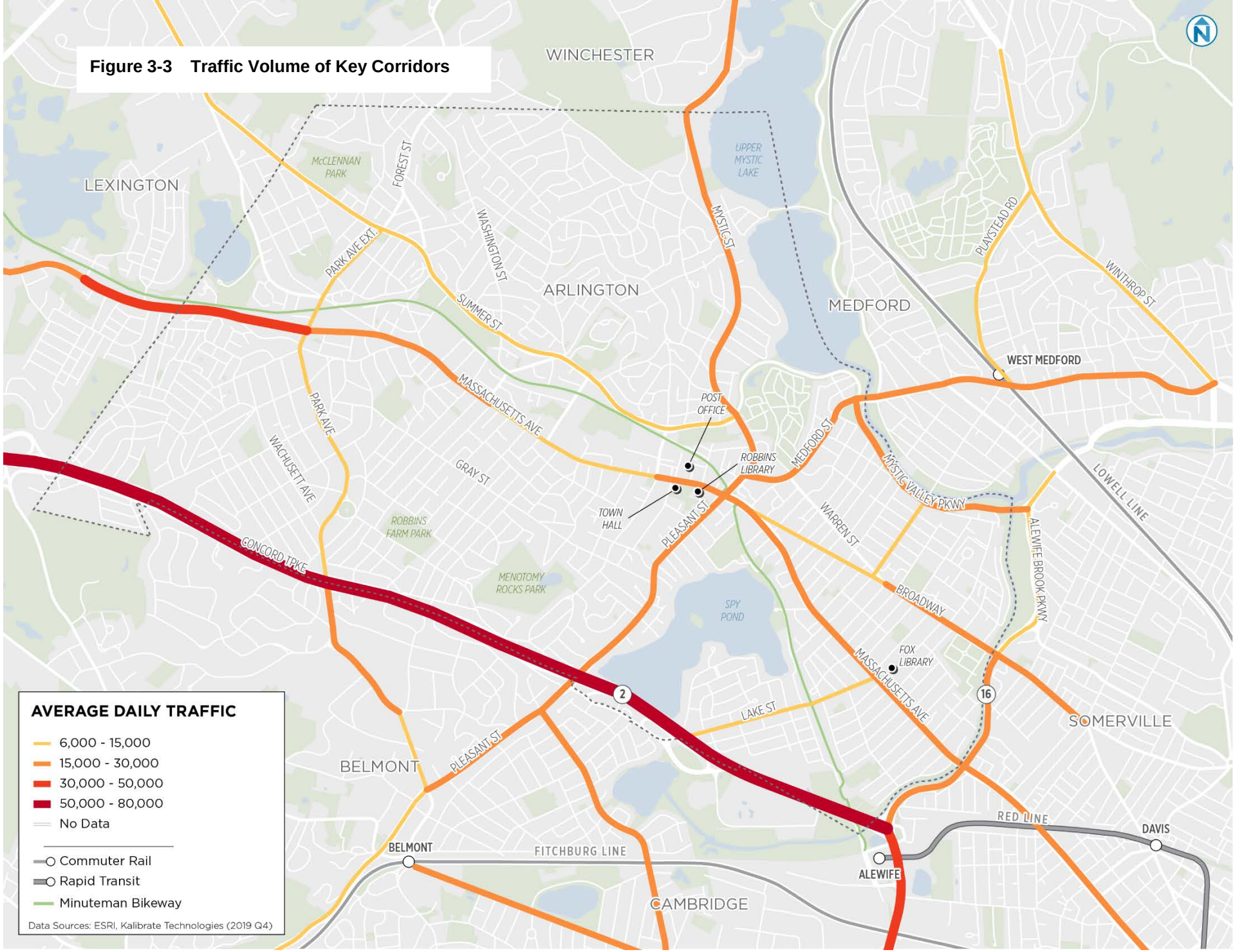


Figure 3-3 Traffic Volume of Key Corridors



Data Source: ESRI, Kalibrate Technologies (2019 Q4). *Average Daily Traffic.* TrafficMetrix©

Parking

On-street parking is allowed on nearly all streets in Arlington. On most residential streets, on-street parking is free and unregulated during the day; however overnight parking is not permitted and is subject to tow. There are limited instances when overnight on-street parking is allowed through the issuance of a permit if approved by the Select Board, specifically for people with disabilities and for short-term visitors. Private ways are also not subject to the overnight parking ban.

Time-limited and/or metered/paid on-street parking is found primarily in Arlington Center. Other segments of Mass Ave such as in Capitol Square/East Arlington and in Arlington Heights are also regulated, the majority of which is unmetered time-regulated on-street parking on both sides of the street. Parking regulations vary for the remainder of the corridor. Some side streets and other major corridors also have time-regulated on-street parking, often because of the street context or requests from residents.

Most of the Town-owned and managed public off-street parking is located in Arlington Center. Outside of Arlington Center, nearly all publicly owned off-street lots are dedicated facilities for municipal services such as schools, libraries, and other civic buildings. Other off-street parking is privately owned, and typically only available for employee or customer use.

Sustainable Transportation Strategies: Electric Vehicle Charging at Town-Owned Parking Facilities

Electric vehicles (EVs) are an important component of any sustainable transportation future as they run on battery power, not greenhouse gas (GHGs) emitting fossil fuels. Arlington recognizes their importance in helping the Town reach its goal of carbon neutrality by 2050. In support of EVs, the Town has and continues to bring public EV charging stations online in public parking lots and on-street spaces using a combination of Town and State grant dollars through programs like EVIP (Electric Vehicle Incentive Program), and programs like Make Ready through Eversource.

Public EV charging stations area available at the following locations:

- Russell Common Parking Lot
- Railroad Parking Lot (near Water Street entrance)
- Park Avenue (on-street) near Mass Ave
- Gibbs School Parking Lot (off Tufts Street)

Other EV charging stations are also available on private properties, including behind the Whole Foods Market on Mass Ave.

Arlington Center Parking Benefit District

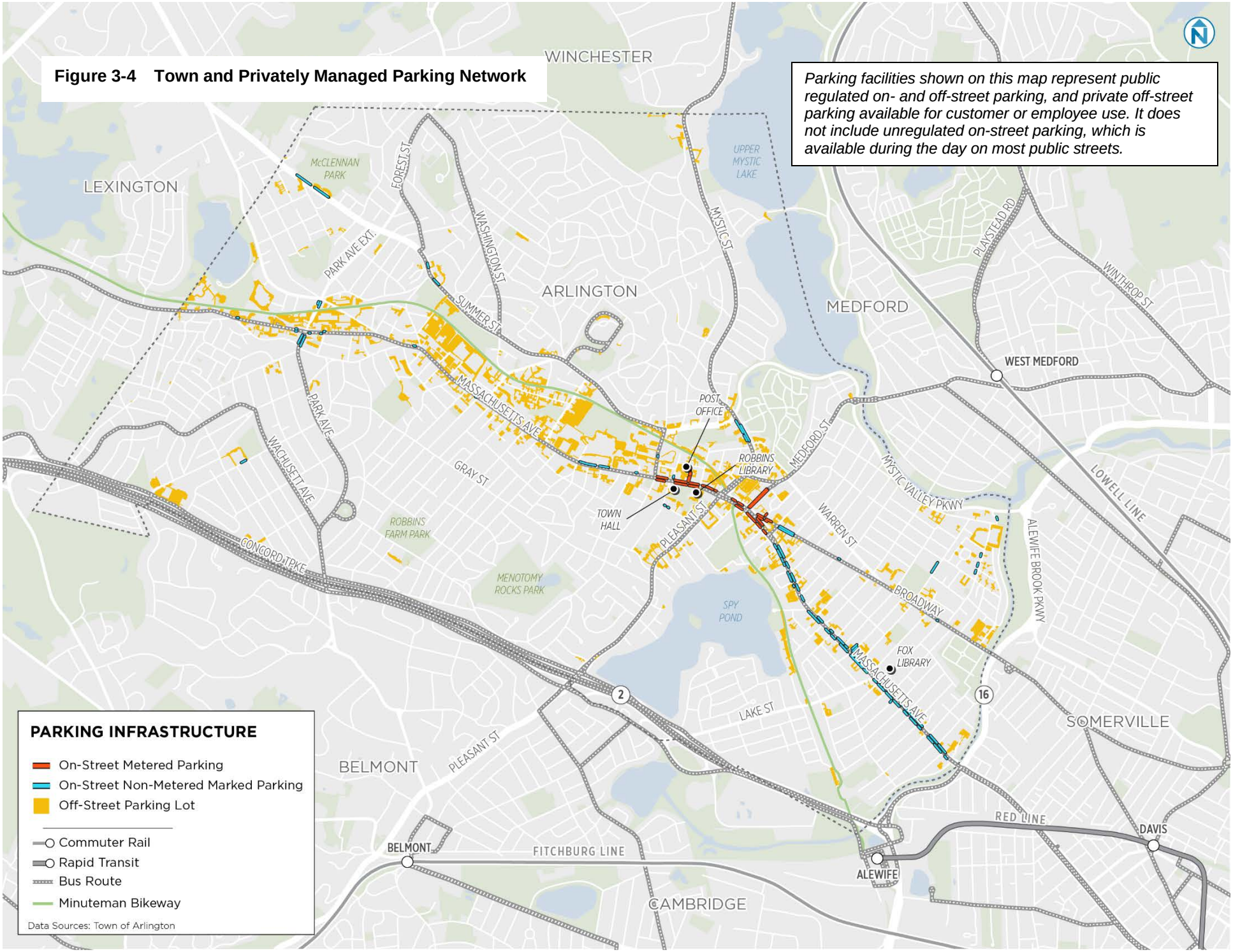
The Town of Arlington became the first municipality in the Commonwealth to officially designate and adopt a Parking Benefit District (PBD) in Arlington Center. PBDs provide a mechanism to direct all or a portion of revenues from parking directly into the designated district to enhance, maintain, fund and support the transportation system. The intent of a PBD is not to create more parking, but to better manage parking within districts, promote greater connectivity to, from and within a district, and promote vibrant business districts.

Revenues from Arlington's on-street and public off-street meters (and kiosks) are paid into a parking fund that reinvests the gross revenues to support the parking system by paying for parking meters and equipment, paying up to half the cost of enforcement, or paying for a portion of

the parking budget. Funds can also be used for infrastructure upgrades that support Arlington Center's transportation system including lighting, streetscape and signage enhancements, accessibility improvements, and more. Revenues from parking violations do not go into the fund.

Figure 3-4 Town and Privately Managed Parking Network

Parking facilities shown on this map represent public regulated on- and off-street parking, and private off-street parking available for customer or employee use. It does not include unregulated on-street parking, which is available during the day on most public streets.



Street Safety

Crash Data

The MassDOT IMPACT system provides electronic crash data for incidents/crashes reported to the Registry of Motor Vehicles by local and state law enforcement. The most recent year of "closed" data is 2017. This represents data that has been vetted and geolocated (if possible) by MassDOT staff. While crash information can/is provided for 2018-2020, these records have not been finalized and may not be complete. For evaluation purposes, crash data are summarized for the most recent 10 years of "closed" data.[1]

MassDOT crash data documents 5,674 crashes in Arlington between January 2008 and December 2017. As shown in Figure 3-5, the year-to-year crash trend is relatively stable, with an increasing trend peaking in 2013 and decreasing thereafter.

Higher concentrations of crashes occur along Arlington's major and minor arterials, most notably along Mass Ave and arterials like Mystic Street, Broadway, Lake Street, Summer Street and Park Avenue. (See Figure 3-7.) More specifically, intersections that experience the most crashes are as follows:

- Mass Ave and Pleasant Street: 183 crashes (0 fatalities/serious injury)
- Mass Ave and Alewife Brook Parkway: 126 crashes (1 serious injury)
- Mass Ave and Park Ave: 53 Crashes (0 fatalities/serious injury)
- Park Avenue and Concord Turnpike: 33 Crashes (3 serious injury)
- Broadway and Foster Street: 15 crashes (0 fatalities/serious injuries)

Although the highest concentrations of crashes were identified along heavily traveled corridors, many crashes occur frequently on less traveled streets in residential neighborhoods, which indicates safety issues are not restricted to where there are higher volumes. Topography may play a part, as crashes may result more frequently during weather events when wet and/or icy streets may contribute to hazardous driving conditions.

[1] Although not included in the detailed crash analysis, there were an estimated 461 crashes in 2018, 439 crashes in 2019, and 159 crashes in 2020 (partial year).

Figure 3-5 Town-wide Crashes by Year, 2008-2017

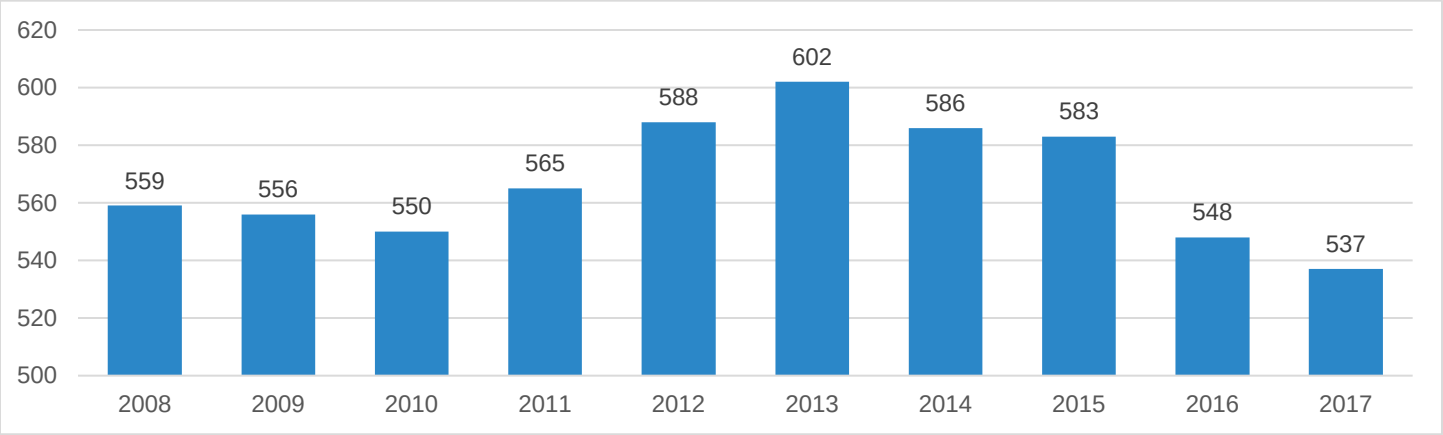
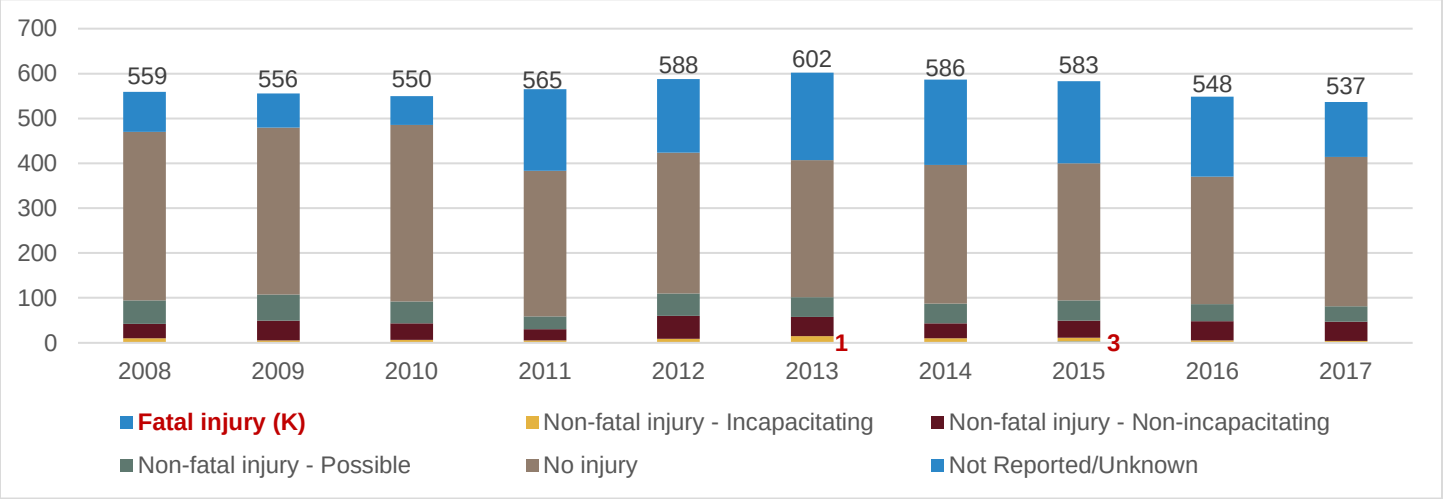


Figure 3-6 Town-wide Crash Severity by Year, 2008-2017



Data Source: MassDOT (2020). *Crash Query and Visualization Tool.* IMPACT

Fatalities and Serious Injury

Four fatal crashes were reported within the 10-year span of 2008-2017, including one (1) in 2013 and three (3) in 2015. Three of these fatalities involved a pedestrian (See Figures 3-7 and 3-8 for locations.) On average, approximately eight (8) serious injuries and 42 minor injuries were reported per year.

Given the concern regarding fatal crashes, the project team also looked back to the beginning of available MassDOT data from 2002-2007 and identified an additional five (5) roadway related fatalities. Five (5) of the overall nine (9) fatalities from 2002-2017 involved a pedestrian over the age of 75. Pedestrians were reportedly crossing the roadway. The remaining four (4) fatal crashes involved a single vehicle striking a fixed object such as a tree, utility pole, or wall. Six of the reported crashes occurred in dark conditions, either overnight or early evening during the fall/winter. In addition, two (2) crashes resulting in a fatality occurred after the data analyzed. One involved an 81-year-old pedestrian in 2019 on Chestnut Street at Chestnut Terrace; and another at Appleton Street and Mass Ave involved a cyclist in May 2020. Based on the data, all pedestrian fatalities identified were elderly residents, and occurred in the early morning or evening hours during darker winter months.

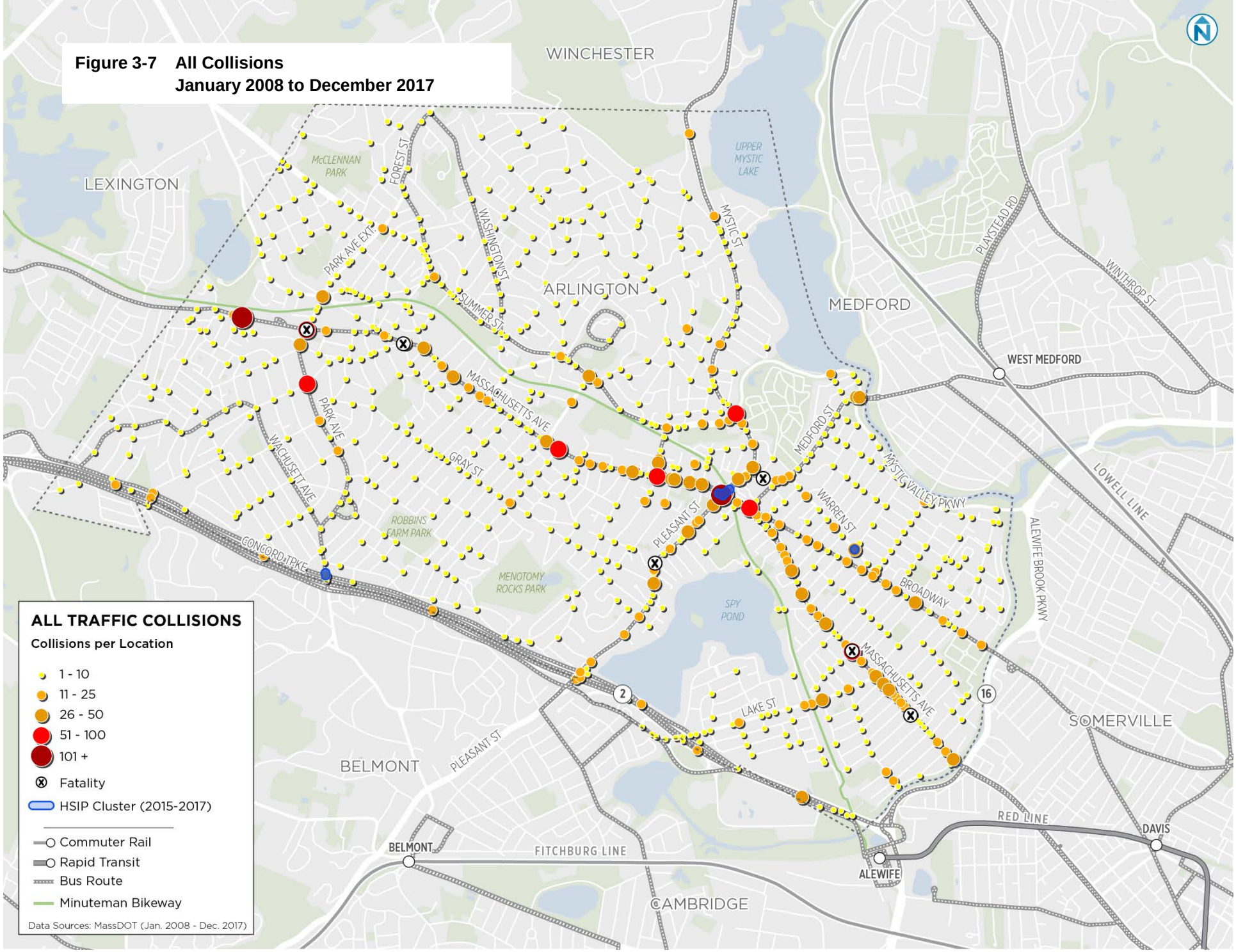
Crash Clusters

The Highway Safety Improvement Program (HSIP) is a data-driven federal program that provides funding to States for improvement of safety along their highways, MassDOT participates in the program by designating areas/"clusters" where the total number of "equivalent property damage only" (EPDO) crashes are within the top 5% in a particular region. The EPDO is a weighted value based on crash severity used to compare clusters. As of 2016, a Fatal or Injury crash is weighted the same as 21 non-injury crashes. Crash Clusters are summarized as vehicle clusters, bicycle clusters, and pedestrian clusters. Vehicle clusters are typically evaluated in three-year increments with the most recent involving crashes dated 2015-2017. Pedestrian and Bicycle clusters are typically summarized in 10-year increments, with the most recent involving crashes dated 2008-2017.

A total of six clusters are defined within the Town of Arlington, including three vehicle, two bicycle, and one pedestrian:

- HSIP Bicycle Crash Cluster: Mass Ave between Bates Road east to Alewife Brook Parkway – 58 crashes (2 serious injuries) – EPDO 658
- HSIP Pedestrian Crash Cluster – Mass Ave between Churchill Avenue and Mystic/Pleasant – 35 crashes (2 serious injuries) – EPDO 435
- HSIP Vehicle Crash Cluster – Mass Ave at Mystic Street – 38 Crashes (0 serious injuries) - EPDO 158
- HSIP Bicycle Crash Cluster – Mass Ave roughly between Mystic/Pleasant and Broadway – 12 crashes (1 serious injury) - EPDO 152
- HSIP Vehicle Crash Cluster – Concord Turnpike at Park Avenue – 13 Crashes (1 serious injury) - EPDO 133
- HSIP Vehicle Crash Cluster – Warren Street at Rawson Road – 15 Crashes (0 serious injury) – EPDO 115

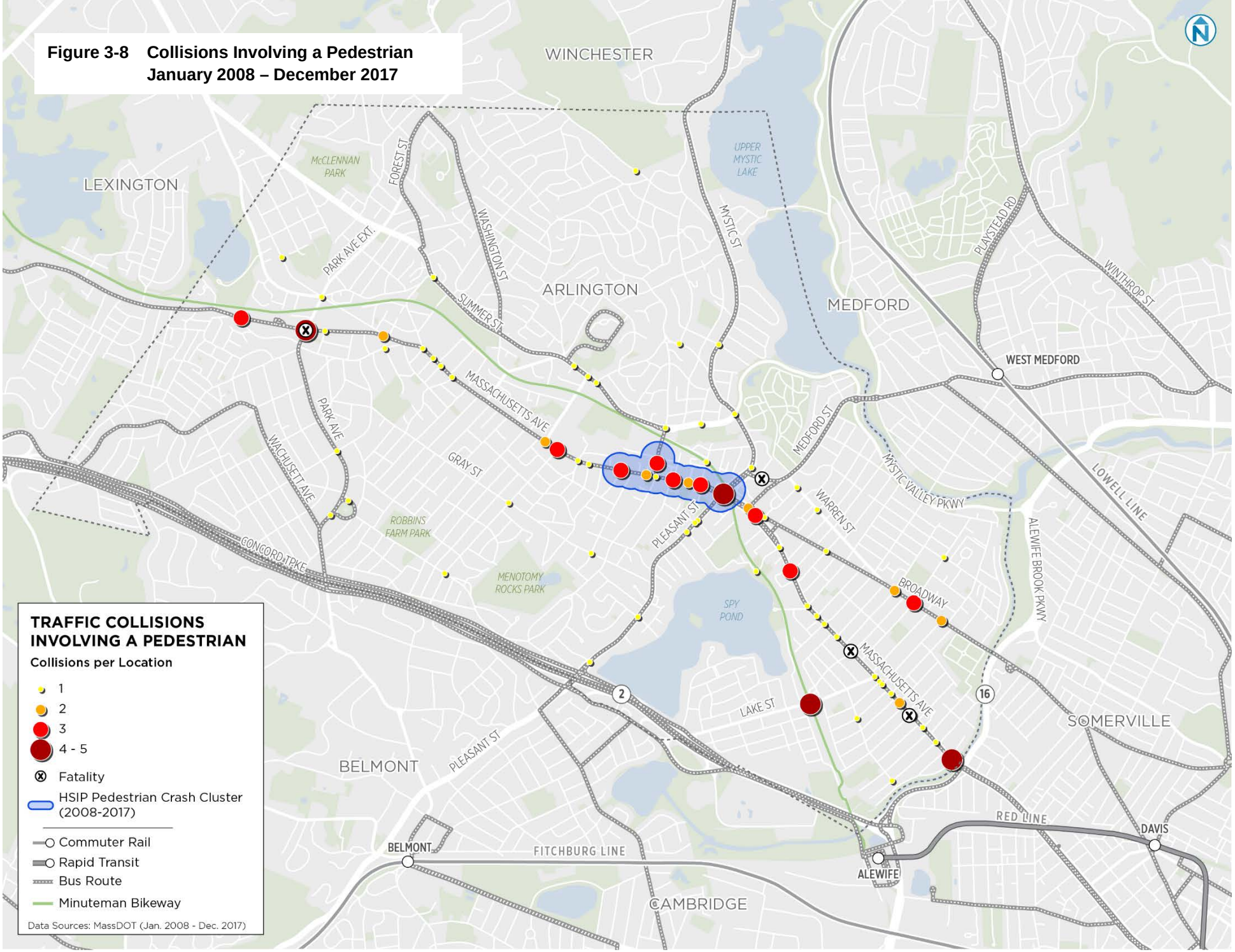
Figure 3-7 All Collisions
January 2008 to December 2017



Data Source: MassDOT (2020). *Crash Query and Visualization Tool.* IMPACT.

Note: 2019 crash at Chestnut Street resulting in a pedestrian fatality, and 2020 crash at Appleton Street at Mass Ave resulting in a cyclist fatality have been added to the map.

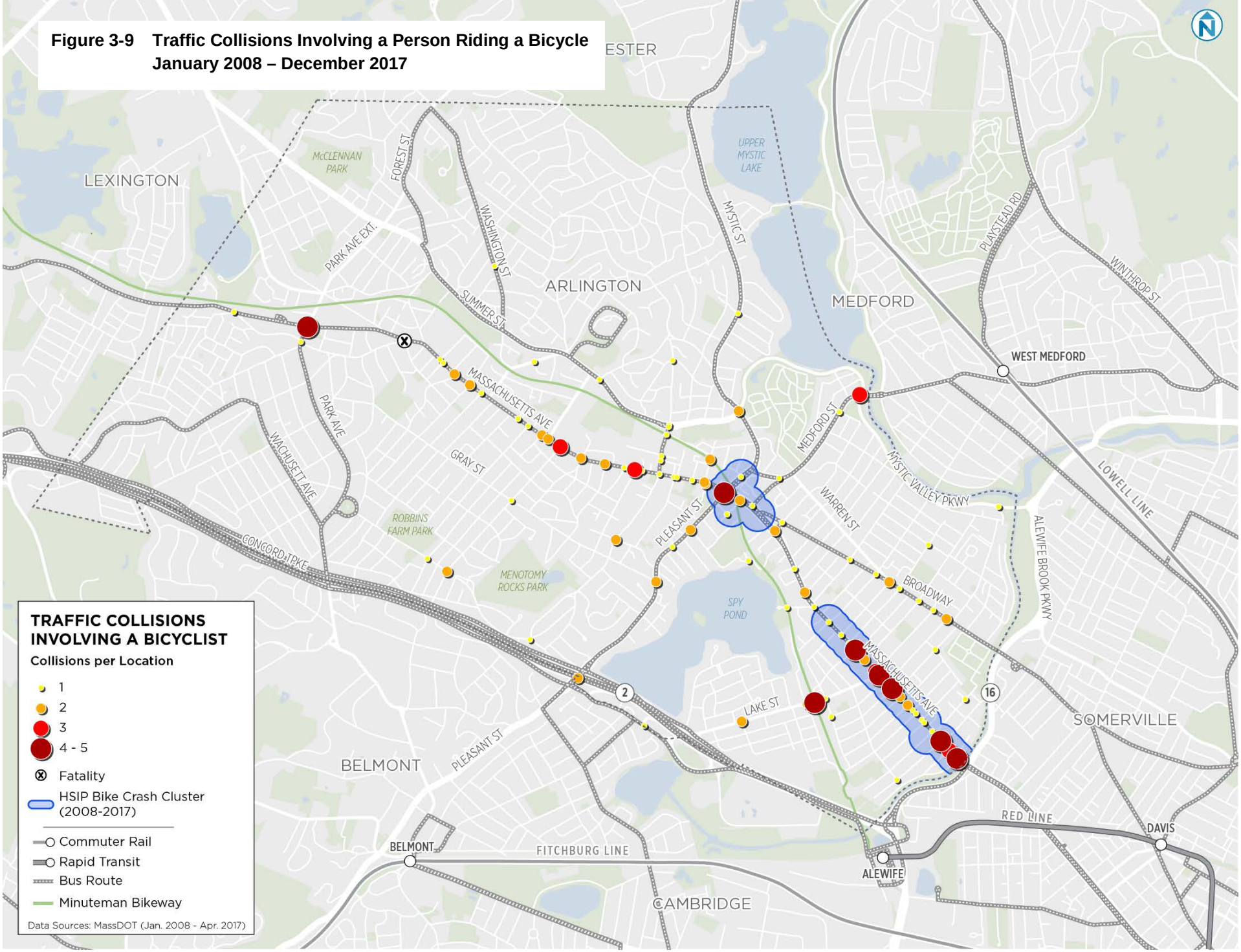
Figure 3-8 Collisions Involving a Pedestrian
January 2008 – December 2017



Data Source: MassDOT (2020). *Crash Query and Visualization Tool.* IMPACT

Note: 2019 crash on Chestnut Street resulting in a pedestrian fatality has been added to the map.

Figure 3-9 Traffic Collisions Involving a Person Riding a Bicycle January 2008 – December 2017



Data Source: MassDOT (2020). *Crash Query and Visualization Tool.* IMPACT

Note: 2020 crash at Appleton Street at Mass Ave resulting in a cyclist fatality has been added to the map.

Sustainable Transportation Solutions: Safety and Sustainability

Street design interventions and infrastructure can achieve multiple goals. For example, at the intersection of Egerton Road and Herbert Road new infrastructure enhances pedestrian safety by narrowing the pedestrian crossing distance while incorporating rain gardens to better manage stormwater drainage on-site, rather than funneling it into the storm sewer network. Natural stormwater retention is an important community resiliency strategy to reduce frequent street flooding from increasing storm events.

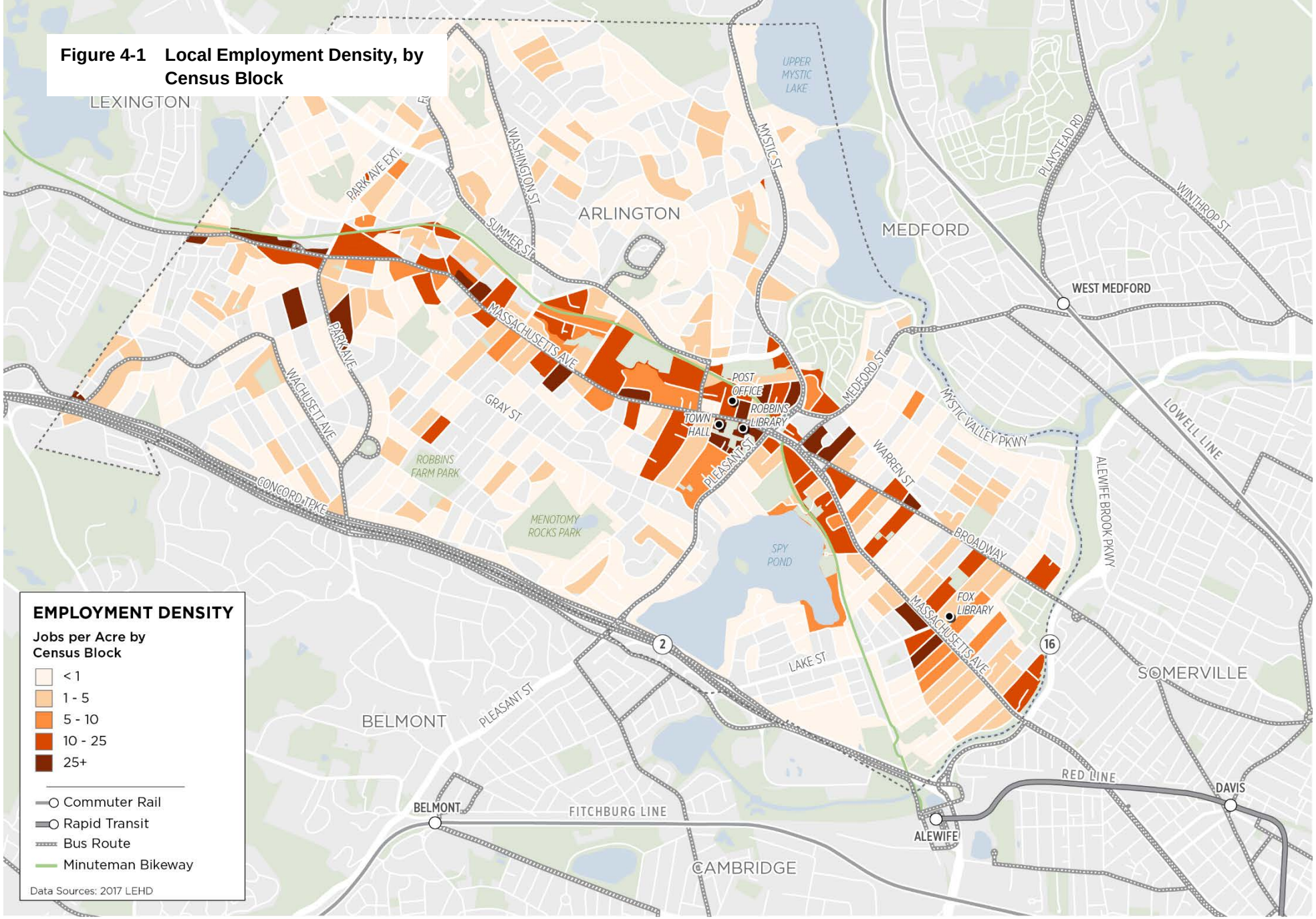
4 HOW PEOPLE TRAVEL

How people get around Arlington – by choice or by necessity – is influenced by many factors. Some places are accessible by all modes, thus provide users with multiple options. Some may choose one mode over another to get around because they feel safe, whereas others make them feel at personal risk. Poor safety, or perception of safety, can be a major impediment to using certain modes of travel, particularly active transportation modes like bicycling or walking. These users are most vulnerable to injury from collisions, particularly from larger, heavier vehicles. Additionally, the topography of Arlington is hilly, making walking and biking more difficult in some areas. Although many streets have sidewalks, these conditions make the landscape particularly challenging to navigate for older adults and residents with mobility impairments. On top of that, New England's climate of hot summers and cold snowy winters create maintenance and comfort challenges which can further compel many to choose the car over active or public transit options. In summary, transportation choices are influenced by trip distance, travel times, mode options, safety considerations, travel schedules and more.

COMMUTING CHARACTERISTICS

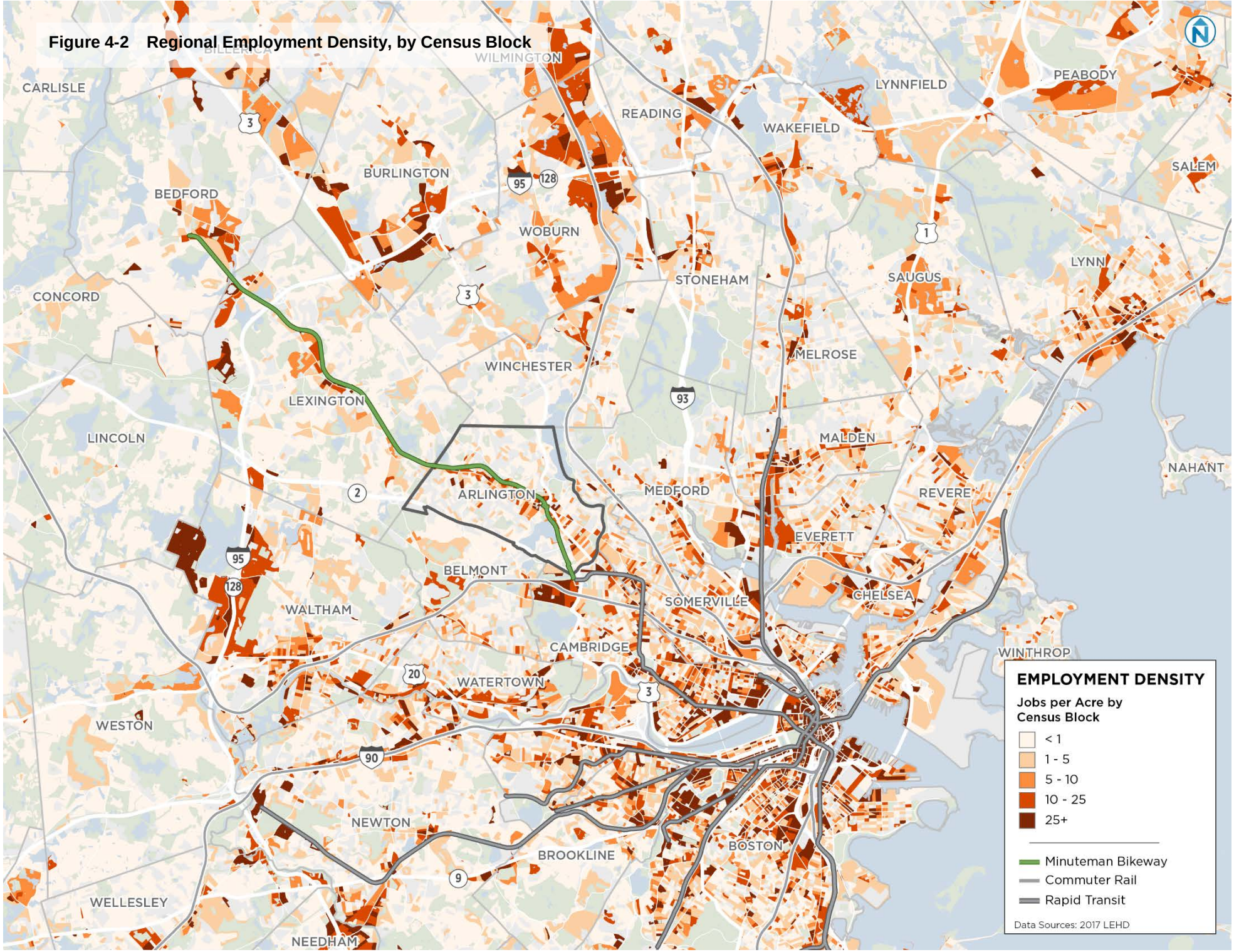
Most jobs in Arlington are located along the Mass Ave corridor and are concentrated most heavily in Arlington center (**Error! Reference source not found.**). Mass Ave, the economic spine of Arlington, is within a five- to ten-minute walk or bike ride of most residents and provides strong transit service. The Minuteman Commuter Bikeway, a shared use path for non-motorized travel which runs parallel to Mass Ave, provides an additional through-route option for active transportation. As shown in Figure 4-2, jobs beyond Arlington are concentrated in Downtown Boston, Cambridge, and the Route 128 Corridor, but many are scattered around the region.

Figure 4-1 Local Employment Density, by Census Block



Data Source: U.S. Census Bureau (2017). *Inflow/Outflow analysis; Home Area and Work Area Characteristics.* Longitudinal Employer-Household Dynamics

Figure 4-2 Regional Employment Density, by Census Block

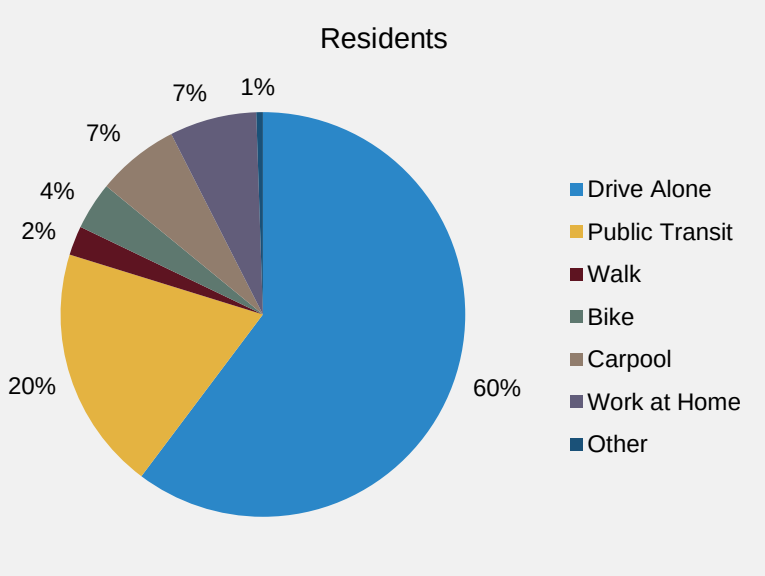


Data Source: U.S. Census Bureau (2017). *Inflow/Outflow analysis; Home Area and Work Area Characteristics.* Longitudinal Employer-Household Dynamics.

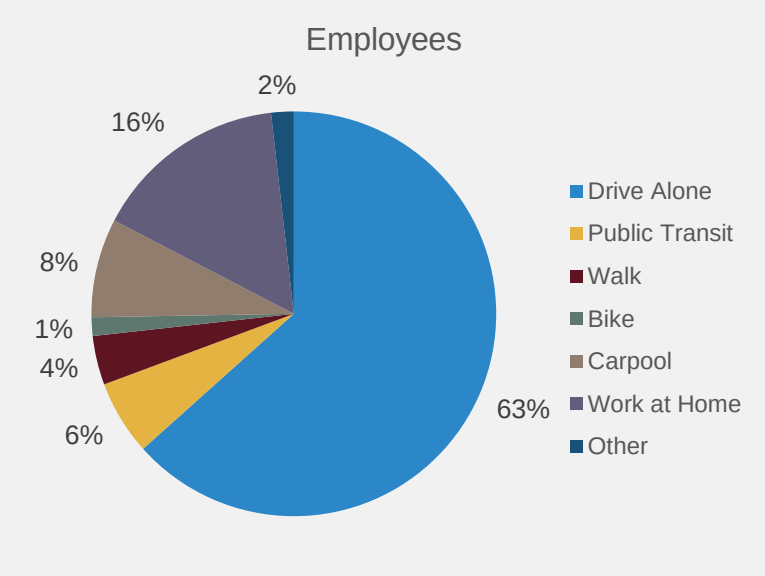
About 60% of Arlington residents drive alone to work, which is roughly the same drive-alone rate of people who work in Arlington and similar to rates in peer communities as shown in Figure 4-4. Arlington residents utilize transit options at more than triple that of Arlington workers.

When comparing commutes of Arlington residents to peer communities nearby, a few interesting outliers point to the importance of providing convenient, safe and accessible alternatives to the car. For example, despite having no direct rapid or commuter rail service connection in town, Arlington commuters use public transit at similar rates as those that do (like Newton and Medford, which have both rapid transit and commuter rail), and Arlington has the highest walk and bike commuter share of those assessed. This is likely due to the Minuteman Bikeway, which provides a direct pedestrian and bike connection to Alewife and the Red Line station. As shown in Figure 4-5, the highest rates of non-driving commuters are in East Arlington closest to the pathway and Alewife. However, pockets of Arlington Heights also have high rates of non-driving commuters, including areas close to Mass Ave and in the Turkey Hill neighborhood where MBTA Route 67 begins and takes commuters to Alewife.

Figure 4-3 Mode Shares of Arlington Residents and Employees

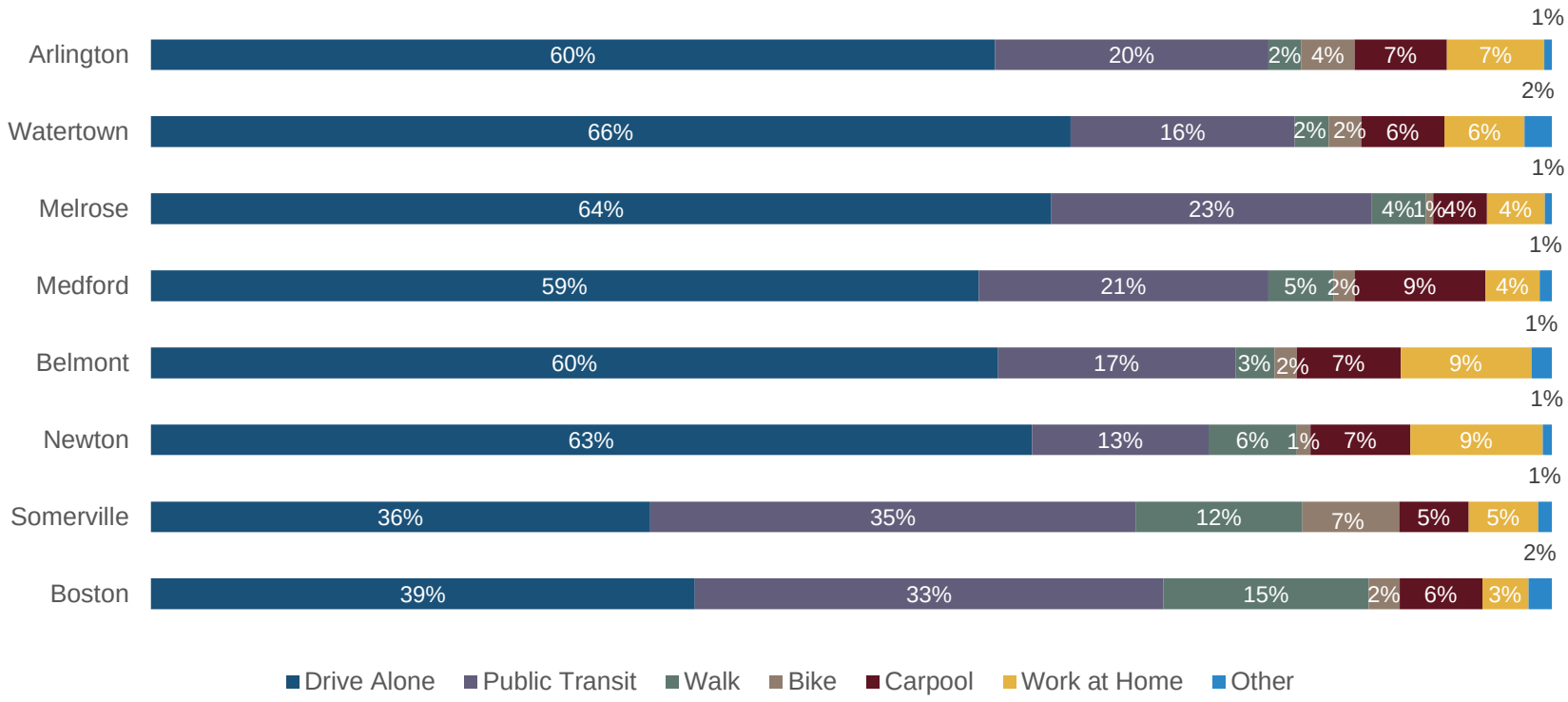


Data Source: U.S. Census Bureau (2018). *Sex of Workers by Means of Transportation to Work*. 2018 ACS 5-Year Estimates.



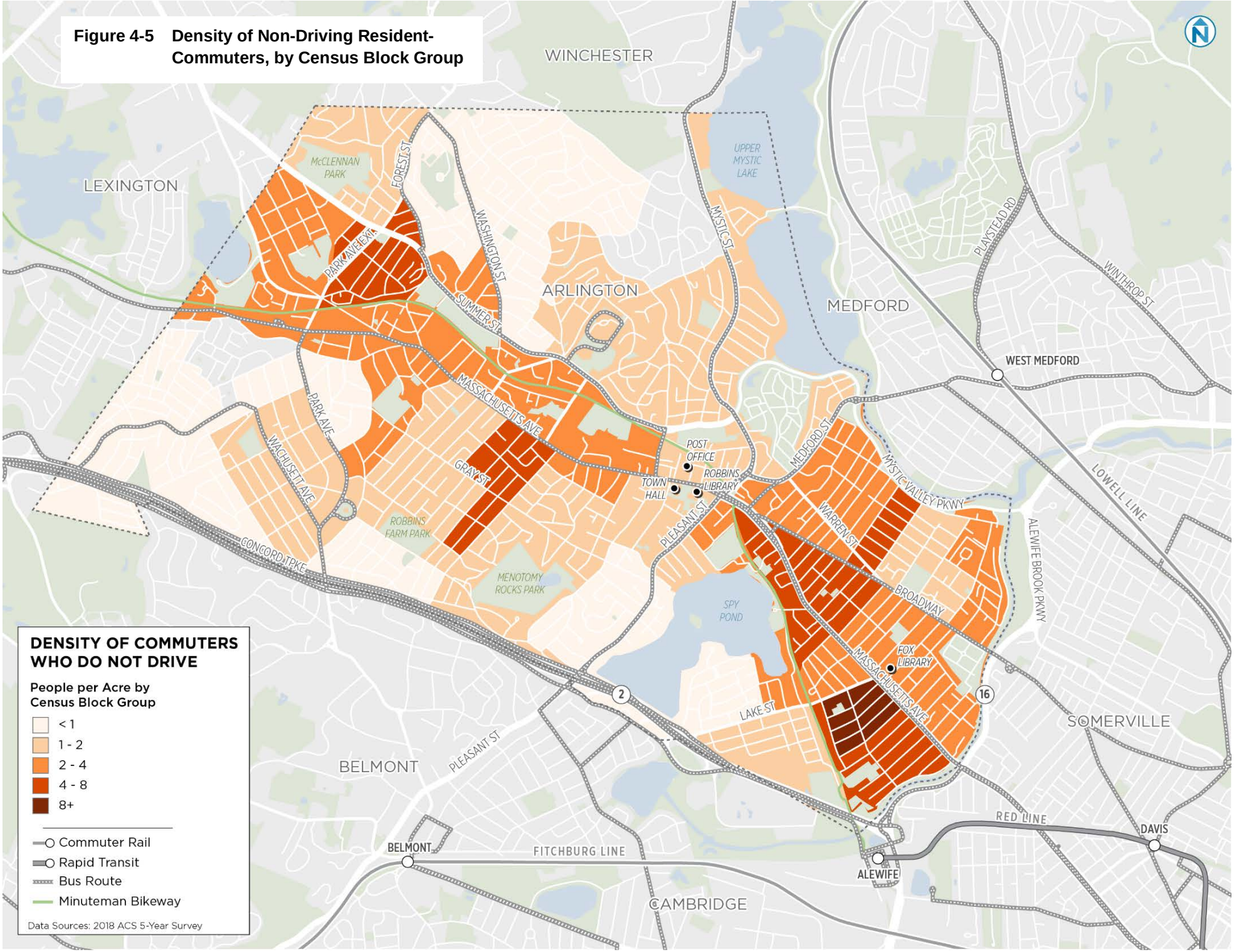
Data Source: U.S. Census Bureau (2018). *Sex of Workers by Means of Transportation to Work for Workplace Geography*. 2018 ACS 5-Year Estimates.

Figure 4-4 Arlington Peer Comparison: Mode



Data Source: U.S. Census Bureau (2018). *Sex of Workers by Means of Transportation to Work*. 2018 ACS 5-Year Estimates.

Figure 4-5 Density of Non-Driving Resident-Commuters, by Census Block Group

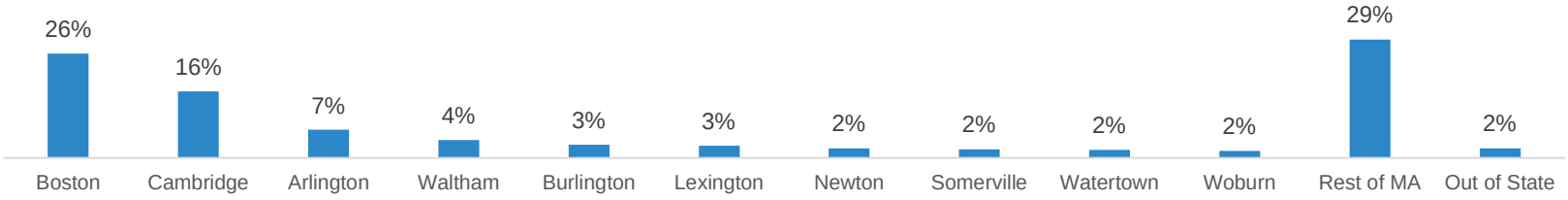


Data Source: U.S. Census Bureau (2018). *Sex of Workers by Means of Transportation to Work*. 2018 ACS 5-Year Estimates.

Employment Locations

The majority of Arlington residents in the workforce are not employed in Arlington. Over 25% of residents work for an employer in Boston, the top employment destination of Arlington residents, and employers in Boston and Cambridge combined account for over 40% of employment destinations for residents. Only 7% of workers are employed within the town itself, and over half work in locations throughout eastern Massachusetts and beyond.

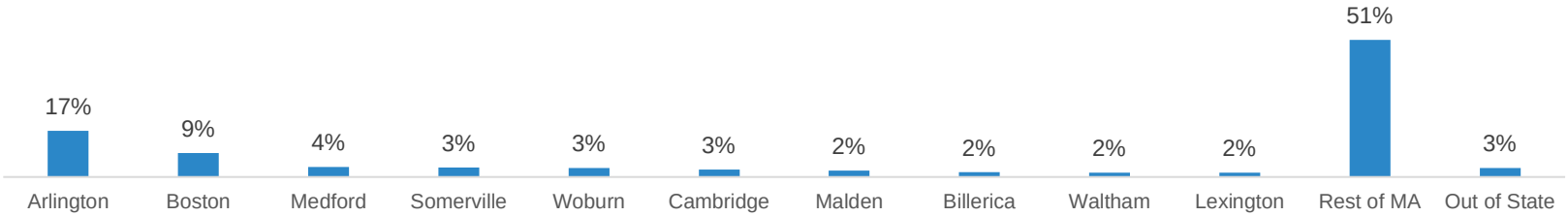
Figure 4-6 Top Work Locations of Arlington Residents



Data Source: U.S. Census Bureau (2017). *Inflow/Outflow analysis; Home Area and Work Area Characteristics.* Longitudinal Employer-Household Dynamics.

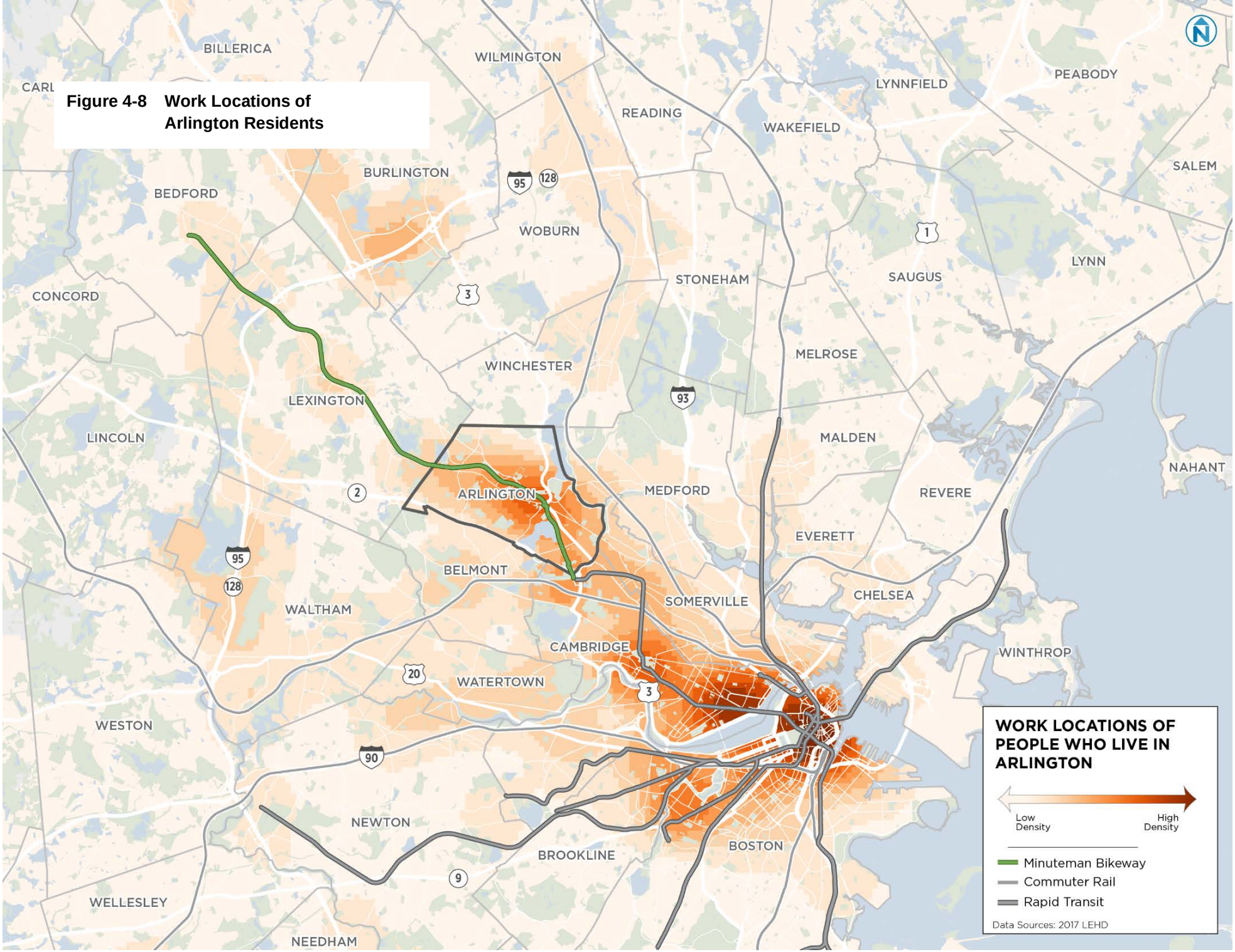
The majority of those employed in Arlington do not live in town. While Arlington is still the top home location for Arlington workers (17%), 83% of the workforce travel from other municipalities in Massachusetts or out of state.

Figure 4-7 Top Home Locations of Arlington Workers



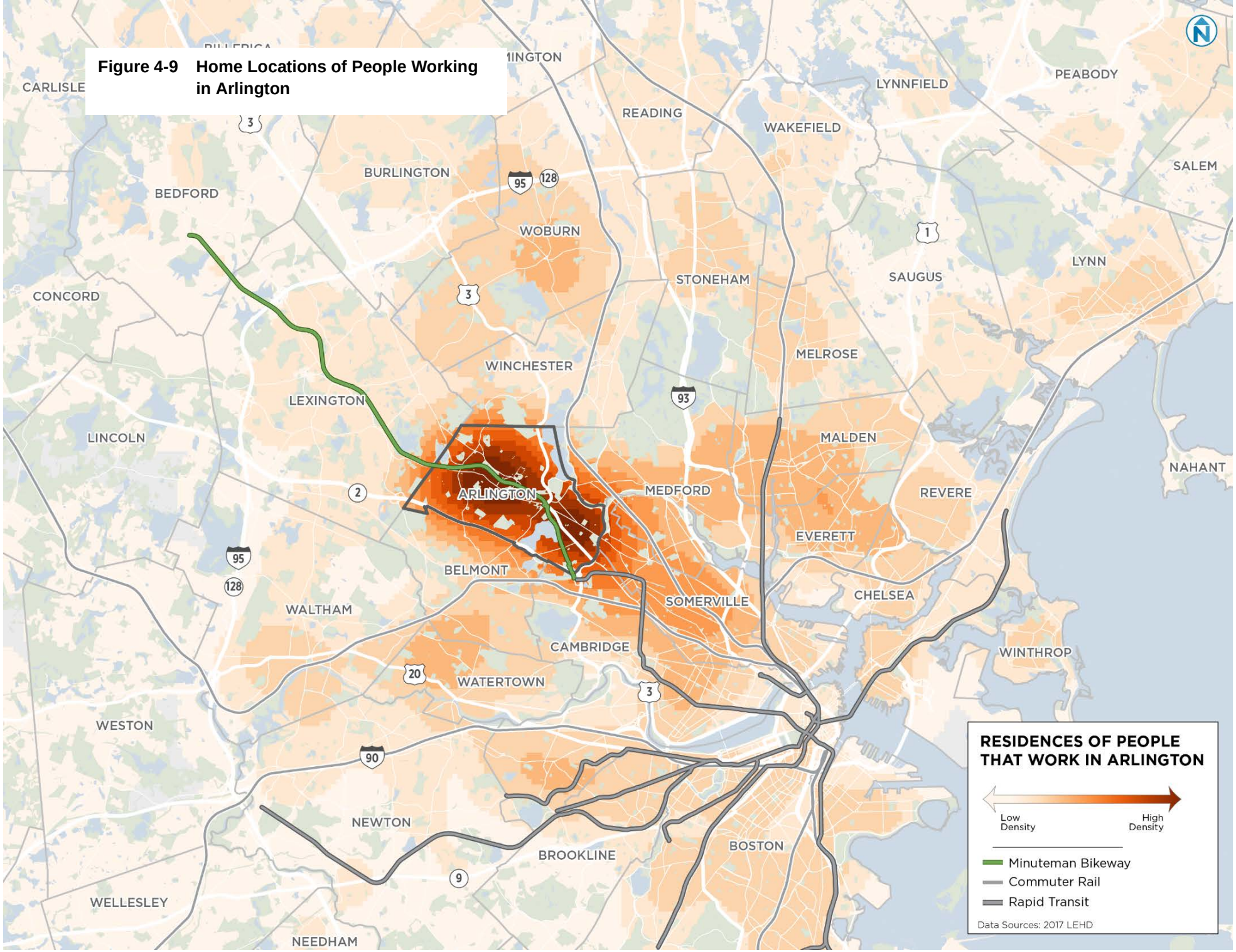
Data Source: U.S. Census Bureau (2017). *Inflow/Outflow analysis; Home Area and Work Area Characteristics.* Longitudinal Employer-Household Dynamics

Figure 4-8 Work Locations of Arlington Residents



Data Source: U.S. Census Bureau (2017). *Inflow/Outflow analysis; Home Area and Work Area Characteristics.* Longitudinal Employer-Household Dynamics.

Figure 4-9 Home Locations of People Working in Arlington



Data Source: U.S. Census Bureau (2017). *Inflow/Outflow analysis; Home Area and Work Area Characteristics.* Longitudinal Employer-Household Dynamics.

Travel for All Ages

School Travel

How children travel to and from school can be a major contributor to traffic congestion, particularly during morning peak travel times when buses and drivers of personal vehicles transporting kids mix with employment trips. Providing convenient and safe alternatives for school travel, particularly safe walking and biking routes, both reduces the need or desire to drive children to school and provides a healthier active option for children and their parents to travel.

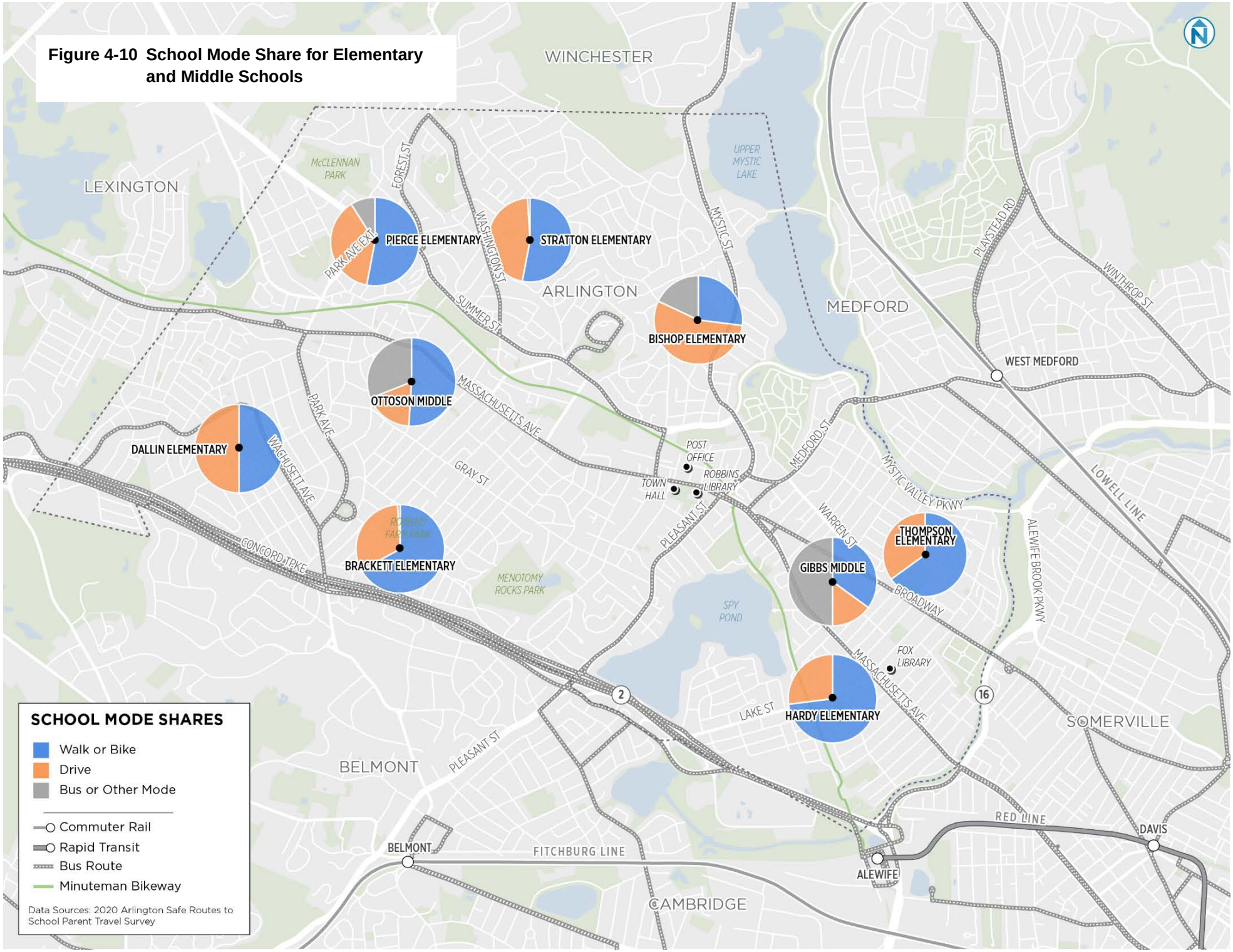
As a neighborhood school district, Arlington's youngest students attend the elementary school closest to their home address – their neighborhood school. In theory, schools are located within walking and/or biking distance from most children's homes. However, this isn't always the case. Many children travel to and from school in personal vehicles driven by their parents or caregivers. There are many reasons for this – personal choice, convenience/time savings (for parents and caregivers), and safety concerns.

Arlington was one of the first communities in the United States to implement a Safe Routes to Schools program (SRTS). According to the 2020 SRTS travel survey conducted for Arlington, more than half of all students either walk or bike to all elementary schools, except for Bishop.[2] However, there are notable patterns between those with higher and lower walk/bike percentages. Elementary schools in flatter sections of town with strong sidewalk and bicycle facilities (e.g. Hardy and Thompson in East Arlington), or with a more defined street grid (e.g. Brackett Elementary) have higher walk/bike rates. Schools with lower walk/bike travel rates are those in hillier areas with greater sidewalk gaps and minimal or no bicycle amenities. (For more information on sidewalk and bicycle facilities and conditions, see Figures 4-11 through 4-13.)

With two middle schools – one in East Arlington and one in Arlington Heights – students travel from farther away. As such, each of the middle schools has a higher bus or other mode share as compared to the more proximate neighborhood elementary locations. However, Ottoson Middle in the Heights has a much higher walk and bike percentage than Gibbs Middle in East Arlington. Notably, Gibbs Middle is located closer to Arlington Center and between Mass Ave and Broadway, an area with heavier car traffic and higher crash rates. This may contribute to the lower walk/bike and higher bus travel. (For more information on crash patterns, see Figures 3-5 through 3-7.)

[2] Note: response rates were lower than normal this year given social distancing and remote learning conditions.

Figure 4-10 School Mode Share for Elementary and Middle Schools



Data Source: Massachusetts Safe Routes to School Program - Arlington Parent Travel 2020 Survey Results

Travel Resources for Older Adults

To supplement on-demand paratransit travel provided by MBTA's The RIDE, The Town of Arlington manages multiple programs designed to help older adults get around Arlington. Residents can inquire and request services by calling 781-316-3400. These services include:

- Council on Aging Van Service for Every Day Living - a fully-accessible van which transports residents between their home and local errands and appointments like the hairdresser/barbershop
- Van Service for Local Medical Appointments – a fully-accessible van which transports residents between their home and medical appointments in Arlington
- Dial a Ride Taxi Program - a subsidized transportation program going anywhere in Arlington (Monday thru Saturday), which requires registration, scheduling a ride through a taxi company directly, and paying a ticket of $5.00 for one-way travel
- Medical Escort Service (MES) - a Volunteer Medical Escort offered to transport residents to medical appointments outside of Arlington, where volunteer drivers utilize their personal vehicles to transport passengers and the passengers schedule a ride at least two weeks prior to the appointment through the Council on Aging and pay a fee for the service in addition to all parking fees and tolls incurred during their trip, if applicable (Not all of these ride requests can be guaranteed based on volunteer availability)
- Medical Rides for Cancer Related Appointments - free rides to local hospitals or medical facilities including Boston, funded through the Sanborn Foundation
- MBTA Senior Charlie Card Registration Events –where the Council on Aging helps older adults procure Charlie Cards
- Helping residents reserve an Uber ride for their medical appointments through a central online system managed by the Council on Aging

Active Transportation

A critical component, in many ways the foundation of a sustainable transportation future, is the ability of Arlington's residents, workers and visitors to move about actively on foot or on bicycle. Active transportation not only helps to eliminate greenhouse gas emissions from each active trip, but also improves public health outcomes.

Off-street, Multi-use Paths

Three multi-use paths serve as the primary active transportation routes to, from, and within Arlington, providing limited conflict points with automobiles and connections to key destinations. They include:

- The **Minuteman Commuter Bikeway** is the spine of the network, creating an east-west route spanning the length of central Arlington. The 10-mile pathway—which starts in Cambridge and travels west through Arlington, Lexington, and Bedford--serves multiple purposes as a quality recreational amenity, regional destination and commuter route, including a direct connection to Alewife Station and the Red Line.
- The **Mystic River Path** runs along the Mystic River (Arlington's norther border) between Medford Street and Alewife Brook Parkway.
- The **Alewife Greenway** runs along the **Alewife Brook Parkway,** along the length of Arlington's eastern border, providing the only separated north-south bikeway in town

Walkability

There are approximately 132 miles of publicly owned sidewalks in Arlington, and several miles more on private roadways.

Mirroring other findings, Arlington's pedestrian facilities are more robust and connected in flatter areas of town such as East Arlington and along and adjacent to Mass Ave and the Minuteman Bikeway. In these areas, nearly all streets have sidewalks on both sides of the street providing connectivity to residences, businesses and institutions (e.g. schools). In western sections of town, walkability varies, with sidewalk facilities along Mass Ave and connecting streets, and limited facilities in many hilly, higher elevation areas; see Figure 4-12. The presence of sidewalks is not the only measure of walkability. For example, streets with minimal shoulders, but high speed car travel, often feel less safe than those with street trees, a wide shoulder, or parking lanes between the sidewalk and travel lane.

Sidewalk conditions affect walkability, as does the presence of crosswalks, ADA accessible curb ramps, pedestrian signals, and the proximity of moving cars to pedestrians. Although a pedestrian conditions assessment was not part of this study, it utilized data from a previous sidewalk conditions assessment conducted by the Town in 2015. Based on site visits and discussions with stakeholders, pedestrian conditions vary considerably throughout town, even along the same roadway (as indicated in Figure 4-11). Many sidewalks throughout town are in need of maintenance and repair, including repointing of bricks; conditions and compliance were also documented as part of a recent ADA Transition

Plan. Additionally, the clearing of landscape debris and snow removal pose challenges for safe and comfortable year-round walkability in Arlington.

Although the Minuteman Bikeway provides a highly used pedestrian connection parallel to Mass Ave and within a five- to ten-minute walk of much of Arlington, the pathway is highly used by bicycles during peak commuting and recreational times (e.g. summer weekends), creating conflicts among users and particularly pedestrians moving at slower rates who often step off the path to avoid cyclists traveling at higher speeds. However, given the Minuteman Bikeway is a level, smooth asphalt surface, many residents of all ages opt to walk along it both for recreation and for commuting – especially to and from Alewife Station.

Figure 4-11 Sidewalk Conditions

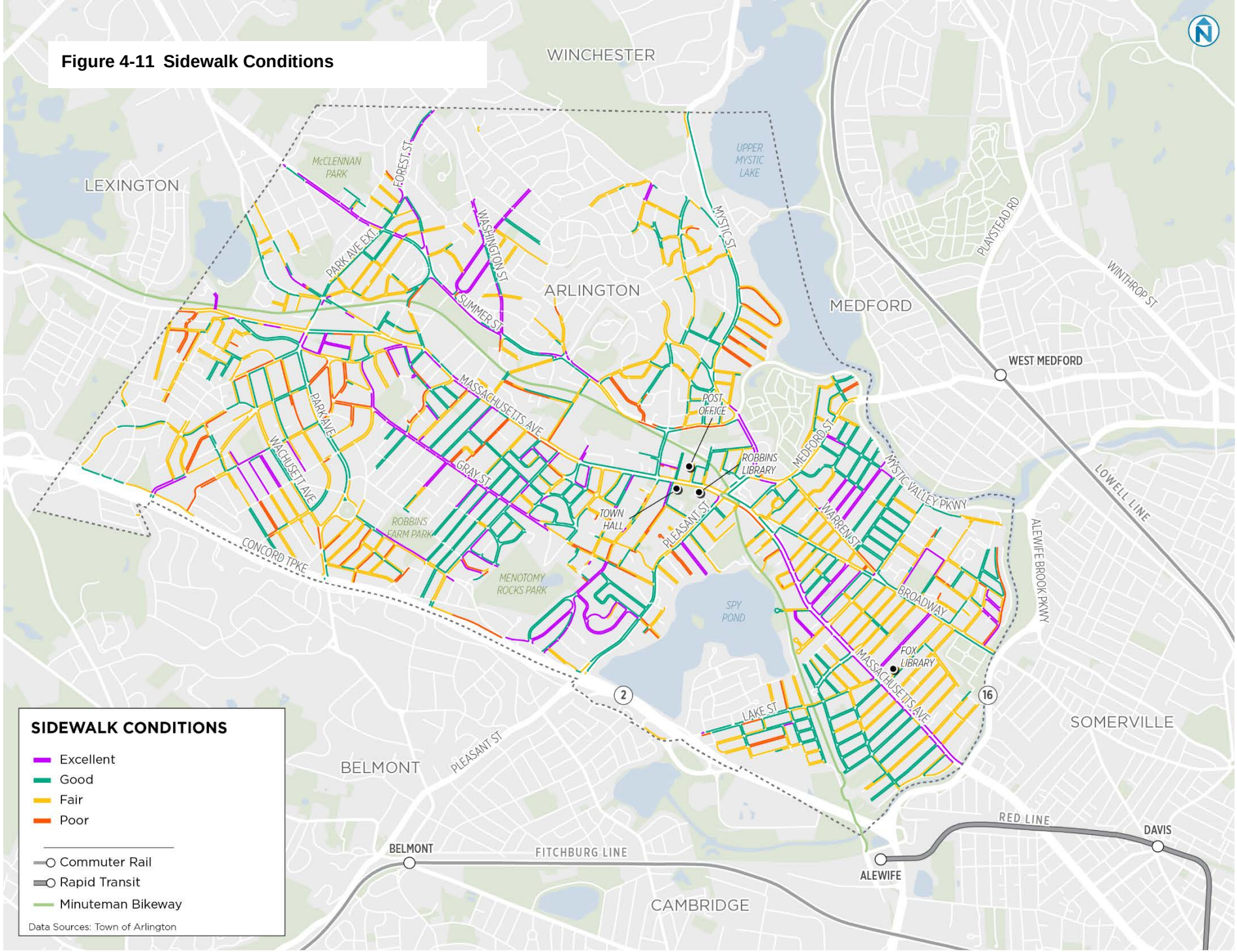
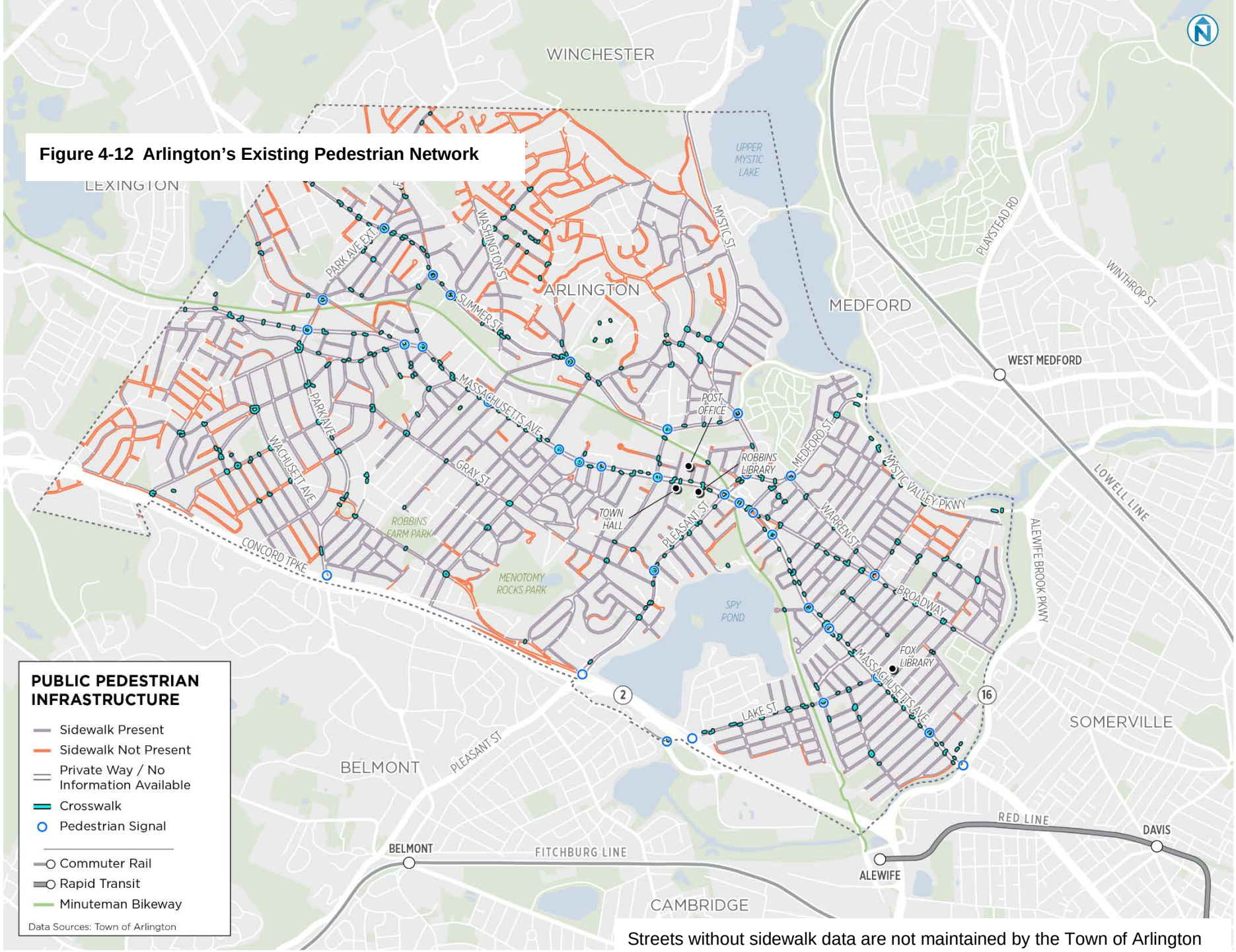


Figure 4-12 Arlington's Existing Pedestrian Network



Streets without sidewalk data are not maintained by the Town of Arlington

Accessibility

A critical component of any mobility strategy is ensuring that all parts of a trip are accessible to all ages and abilities. And while well maintained sidewalks, crosswalks and accessibility ramps are essential, just as important are entrances to public buildings, facilities and open spaces; parking and curbside facilities for personal vehicles, shared vehicles and transit; and bicycle facilities that accommodate different types and sizes of bikes.

Ensuring access, particularly for those who are most vulnerable – the youngest, oldest, and those getting around with a disability – is essential to ensure that Arlington's future transportation network serves all people and that it is equitable. It is a federal requirement through the Americans with Disabilities Act (ADA) to provide the following:

- Mandates the elimination of discrimination against individual with disabilities
- Provides clear, strong, consistent, enforceable standards addressing discrimination against individuals with disabilities
- Ensures that the Federal Government plays a central role in enforcing the standards
- Gives Congressional Authority to enforce the 14th Amendment and regulate commerce in order to address the major areas of discrimination (including accessibility) faced day-to-day by people with disabilities.

ADA requires that all public services provided by a public entity – any State or local government – be accessible, including all sidewalks, roadways, public transportation, and public buildings and facilities (e.g. parks). For more information on ADA, see https://www.ada.gov/pubs/adastatute08.htm#12101b. All municipalities within the Commonwealth are required to have an ADA Transition Plan, which includes an ADA Self Evaluation. ADA transition plans identify barriers to accessibility and define a plan of action to bring non-compliant assets into compliance, including transportation infrastructure and services. Arlington completed its most recent Self Evaluation and ADA Access Plan in November 2019 and continues to implement accessibility programs and upgrades. (For more information, see the plan on the Town website, https://www.arlingtonma.gov/home/showdocument?id=50034.)

Key recommendations within the ADA Transition Plan include:

- Renovate exterior access routes at Town Hall and Annex, schools (e.g. Bishop, Brackett, Dallin, Hardy, Ottoson Middle, Parmenter School, Peirce Elementary, Stratton Elementary), other public buildings such as Cemetery Building A, and recreational facilities like the Bath House at Arlington Reservoir.
- Renovate and/or provide accessible parking spaces and/or bus accessible parking at Town Hall and Annex, Bracket Elementary, Peirce Elementary, Robbins Library, Jefferson Cutter House, 23 Maple Street, Bath House at Arlington Reservoir and more.
- Construct or renovate curb ramps at Hardy Elementary, Brackett Elementary, Ottoson Middle, and more.

Bicycle Network

Arlington's existing bike network consists of 8 miles of multiuse trails and spurs, 5 miles of bike lanes along major corridors, and a 12-mile informal lane-sharing network connecting commercial centers to residential neighborhoods. The Minuteman Bikeway creates the east-west spine of the bike network in Arlington, and the Alewife Greenway runs along Arlington's eastern border as the only separated north-south bikeway in town. The Minuteman Commuter Bikeway carries thousands of bicycle users a day. Counts collected by volunteers during peak commute hours (7:00am to 9:00am for the morning peak and 4:30pm to 6:30pm for the evening peak) in 2019 indicated that more cyclists make use of the trail near Swan Place and more pedestrians make use of the path closer to Alewife, on the boundary of Arlington and Cambridge (Figure 4-13).

Bike Lanes

Three roadways include on-street bike lanes or sharrows. They include:

- **Mass Ave** features bike lanes along portions of the roadway in Arlington Heights to the east and west of Park Ave, two segments to the west of Arlington Center, and a long stretch between Arlington Center and East Arlington which connect to lanes across the Cambridge line.
- **Park Ave** includes dedicated bike lanes from Mass Ave south to Park Circle, continuing as shared lanes (e.g. sharrow markings) from the circle to Concord Turnpike.
- **Mystic Street** bike lanes run between Chestnut Street and Summer Street providing increased comfort to bicyclists approaching or departing Arlington Center.

The above bike facilities provide additional comfort and safety to bicyclists; however, given heavy automobile traffic volumes, the presence of adjacent on-street parking, and major, at times conflict rich, intersections along these routes, these facilities are unlikely to attract bicyclists with low- to mid-comfort levels given the conflicts with cars, trucks, buses, and dooring risk from passengers departing parked cars.

Figure 4-13 Minuteman Bikeway Activity

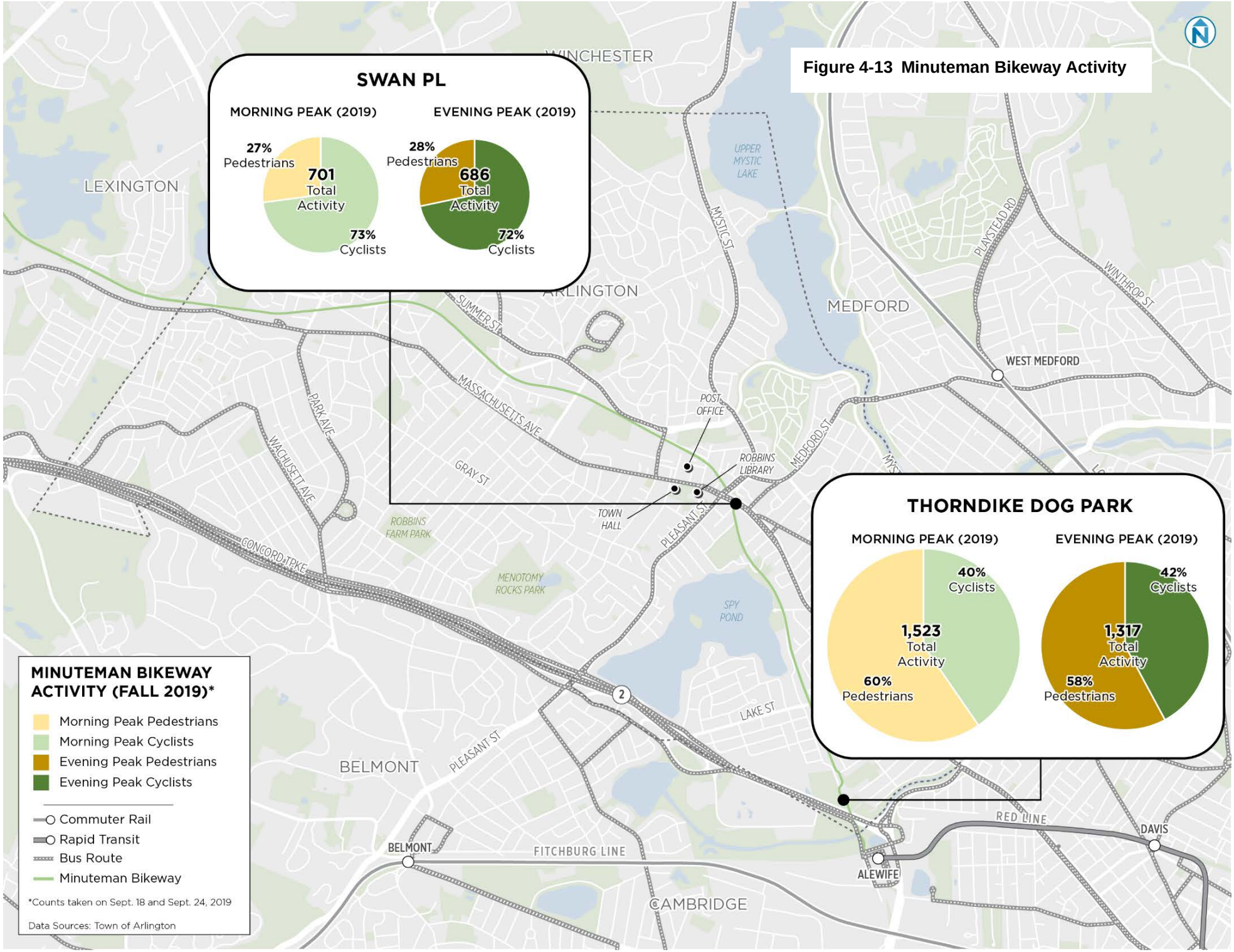
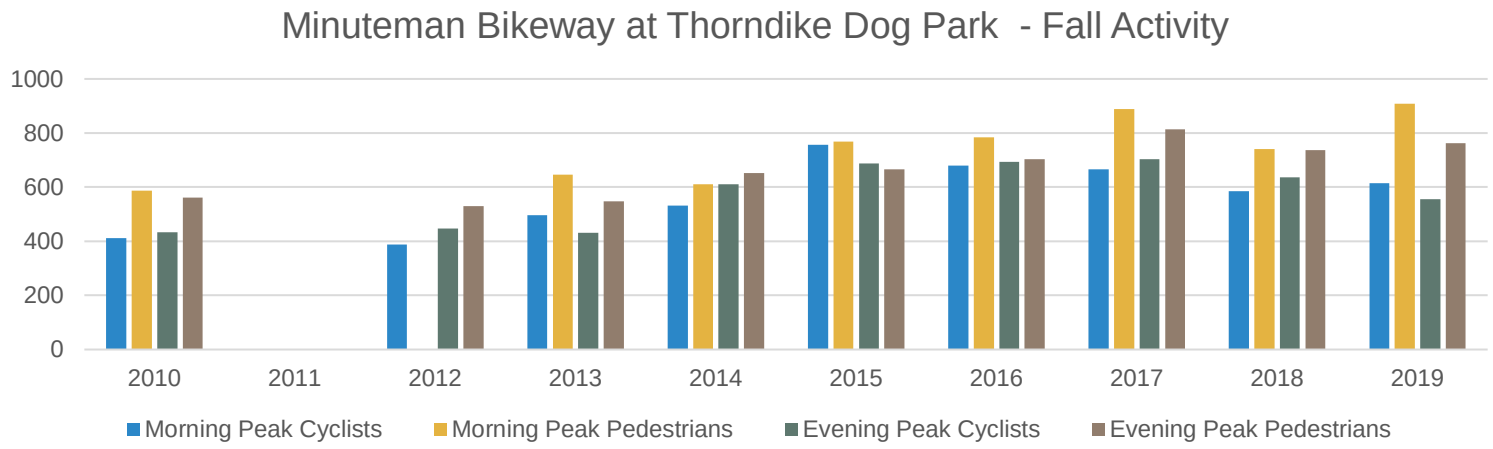
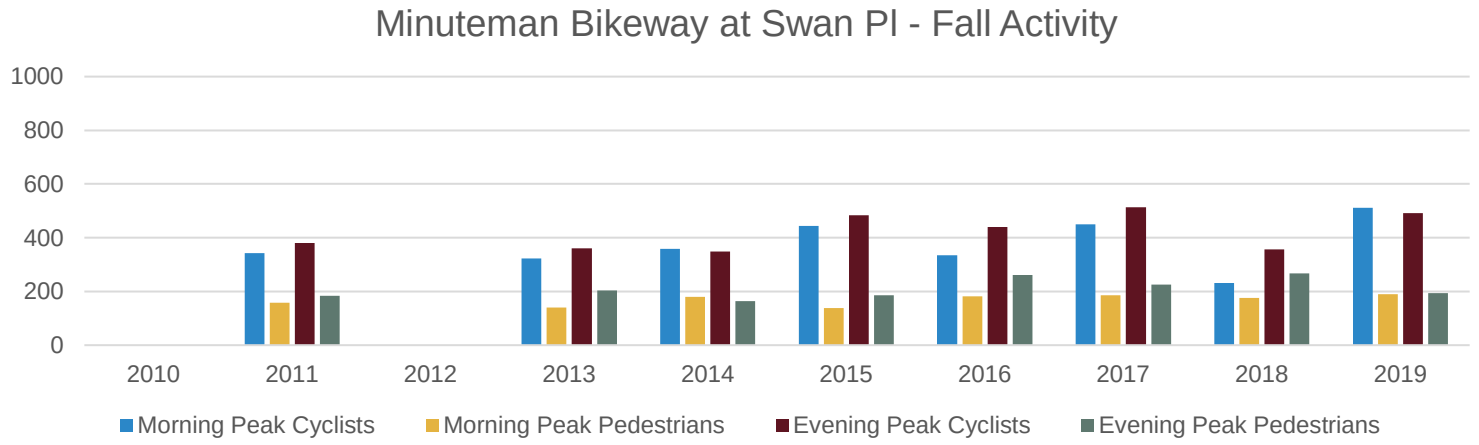


Figure 4-14 Minuteman Bikeway Morning and Evening Cyclists and Pedestrians





Lane Sharing Network

The Town has defined a bicycle “Lane Sharing Network” on major roadways throughout town, the majority of which radiate from Arlington Center, Capitol Square or Arlington Heights commercial centers. This network connects the centers to residential neighborhoods, community amenities and destinations (e.g. Minuteman Bikeway, schools, Town Hall), as well as the neighboring communities of Somerville, Medford (and the West Medford commuter rail station), Winchester, Lexington, and Belmont.

Although defined as a bicycle network, many of these corridors do not have any signage or markings to indicate they are part of the network. In addition, due to physical factors such as limited right-of-way or narrow shoulders, some are not appropriate for or able to accommodate the bicycle and complete streets design treatments necessary to provide comfortable, low-stress connections to residential neighborhoods and wayfinding to key destinations both in and outside of town without major reconstruction of the roadway. Other corridors may have multiple or wide travel lanes and parking lanes that require reallocating roadway space to safely accommodate low-stress bicycle accommodations.

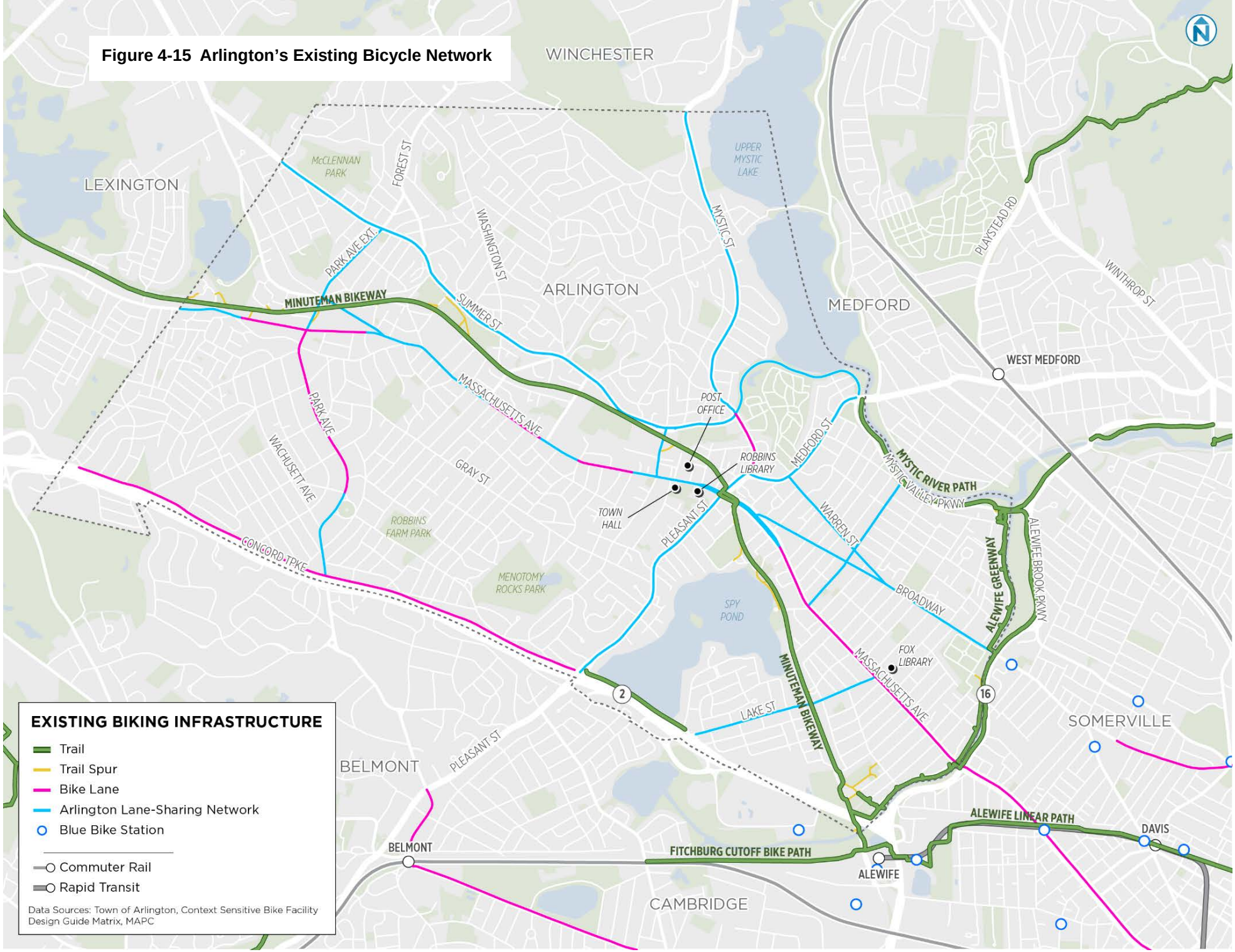
The Lane Sharing Network includes the following streets:

- Mass Ave (sections without bike lanes)
- Pleasant Street
- Broadway
- Medford Street
- Warren Street
- Mystic Street
- Summer Street
- Mill Street
- Park Ave
- Lake Street

Sustainable Transportation Solutions: Street Trees

Street trees are not just attractive neighborhood streetscape enhancements. Street trees provide much needed shade to reduce heat island impacts in highly developed areas and create a more comfortable pedestrian and bicycling environment by providing shade for active users – walkers, runners, cyclists. Any tree removal in Arlington should be reviewed by the Town tree warden and consider the impact on streetscape and mobility. Further, the Town should ensure street trees are adequately maintained so that they do not pose safety challenges for people getting around with disabilities and visual impairments. Finally, trees should be planted with arboriculture technologies designed to ensure tree roots do not buckle the sidewalk, providing hazards to those with mobility challenges and assistive devices.

Figure 4-15 Arlington's Existing Bicycle Network



Transit

The existing transit network serving Arlington is primarily designed to move people to and from Boston and Cambridge, but some intra-town connections and connections to other areas are possible.

Bus Connectivity

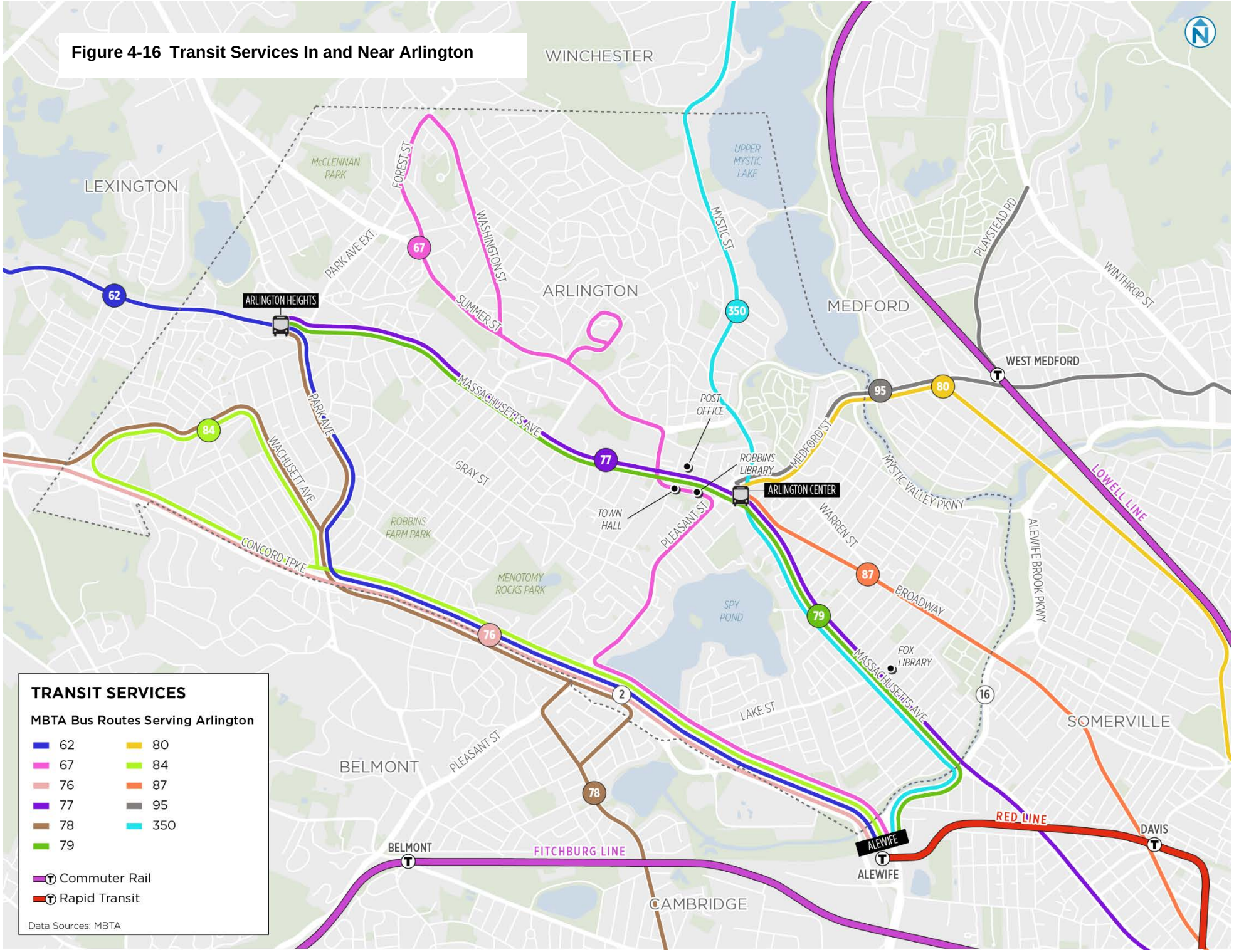
Eleven MBTA bus routes serve Arlington, of which six connect to the MBTA Red Line at Alewife station, two connect to Harvard Square, two connect to Lechmere, and one connects to Sullivan Square. Most connections within Arlington by transit are limited to Mass Ave or require transfers. Mass Ave routes have the highest ridership routes and run through low-lying areas of town – again, the topography influences travel patterns. Lower ridership routes (based on boardings and alightings in Arlington) provide service to residential neighborhoods primarily in Arlington Heights and Morningside. These routes tend to have low frequencies, especially between peak hours, limiting their usefulness for trips for doctor's appointments, errands, and social trips during the day. Although most residents are within a five- to ten-minute walk of bus transit, topography also can be challenging in some areas and may negatively influence decisions to take transit.

Bus routes include:

- **62** – Alewife via Mass Ave/Park Ave/Rte 2 (Red Line, Bus Connections)
- **67** – Alewife via Summer Street/Mystic Street/Route 2 (Red Line, Bus Connections)
- **76** – Alewife to/from Arlington Heights via Park Ave and Concord Turnpike (Red Line, Bus Connections)
- **77** – Harvard Square via Mass Ave (Red Line, Bus Connections)
- **78** – Harvard Square via Fresh Pond/Brattle (Red Line, Bus Connections)
- **79** – Alewife via mass Ave and Alewife Brook Parkway (Red Line, Bus Connections)
- **80** – West Medford via High Street (Commuter Rail Connection)
- **84** – Alewife via West Service Road (Red Line, Bus Connections)
- **87** – Davis Square (Red Line, Bus Connections) and East Cambridge/Lechmere (Green Line, Bus Connections) via Broadway
- **95** – West Medford or Arlington Center to Sullivan Square Station (Orange Line Connection)
- **350** – Alewife via Alewife Brook Parkway (Red Line, Bus Connections)

Opportunities for direct transit connections between Arlington and other communities or job centers (aside from those in Boston and Cambridge) using the existing transit network are limited. Direct connections either do not exist or trips require multiple transfers, adding considerable time to trips and a loss of productivity.

Figure 4-16 Transit Services In and Near Arlington



Rail Connectivity

Several subway and commuter rail stations are located within walking or biking distance of many Arlington residents and workers. The Alewife Red Line station in Cambridge is located just outside of Arlington's southernmost border. The station is Arlington's nearest and most convenient connection (on foot or bicycle via the Minuteman Bikeway) to the MBTA subway system.

Other rail connections include the Red Line via Davis Square approximately 1-mile to the south in Somerville, a convenient bike ride for many East Arlington residents. Commuter Rail connections can be made to the east via the Lowell Line at West Medford station, and to the west via the Fitchburg Line at Belmont station. Although close by and easily drivable, bus connections are limited or infrequent, and none (except Alewife) includes bicycle lanes or other bike facilities.

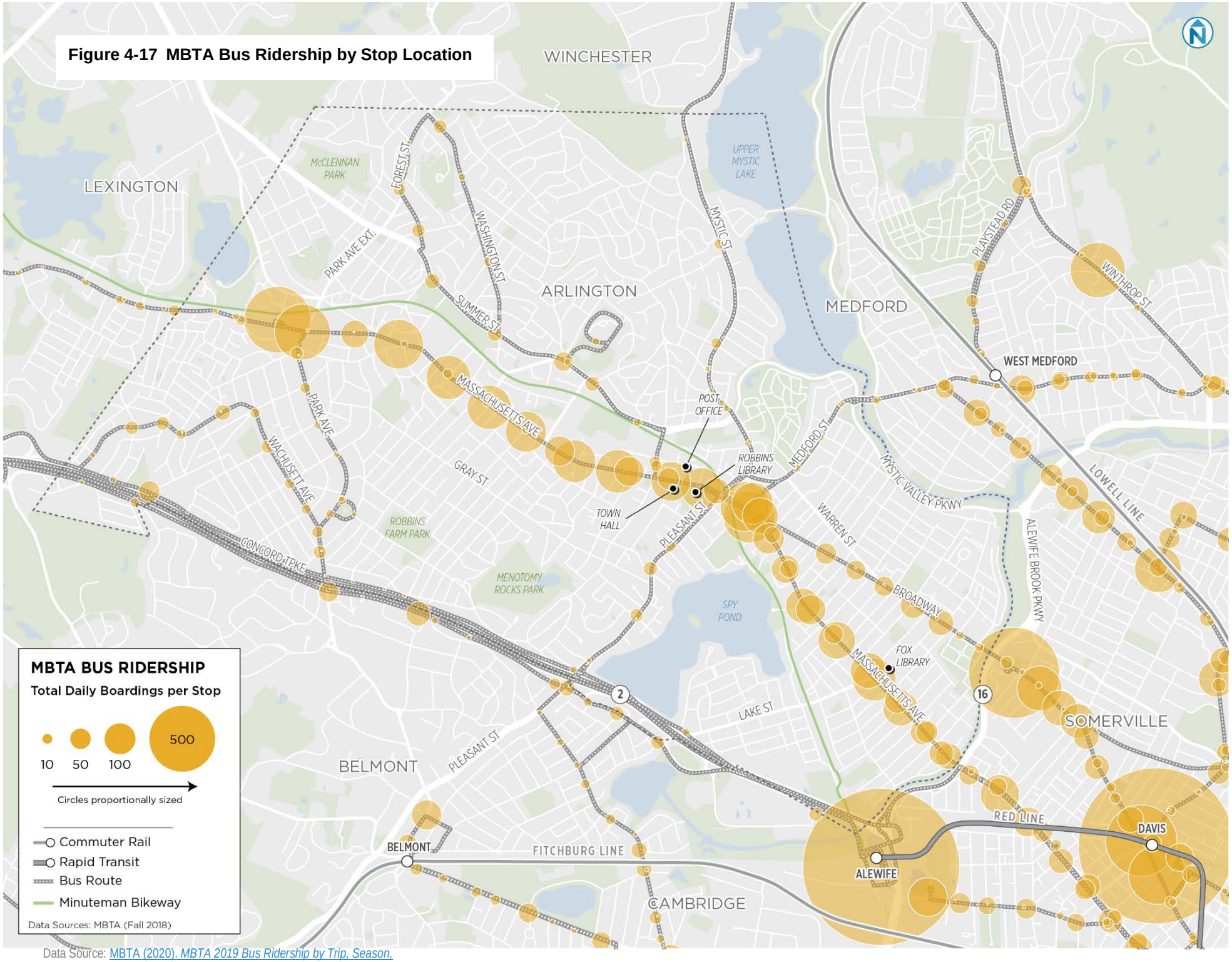
The Green Line Extension, expected to open in December 2021, provides another opportunity for rail connectivity near Arlington at the new Medford/Tufts Station.

Sustainable Transportation Solutions: Mass Ave Bus Priority Lane

The Town of Arlington launched an A.M. peak bus priority lane pilot in Fall of 2018 to expedite bus travel approaching the congested Mass Ave/Alewife Brook Parkway intersection. The pilot found that buses bound for Alewife and Harvard Square saved riders up to 10-minutes every morning; and bus schedules were 64% more reliable. People bicycling can also share the bus lane, and surveys conducted found that cyclists were also pleased with the improved function of the roadway.

Based on the success, the bus lane was made permanent in 2019. The project also included transit signal priority and the relocation of a bus stop. This project represents an innovative, cost-effective strategy to prioritize transit and move more people, more efficiently than would be possible with single-occupancy vehicles. Opportunities to expand bus priority could encourage more people to choose transit over driving alone.

Figure 4-17 MBTA Bus Ridership by Stop Location



Data Source: MBTA (2020). *MBTA 2019 Bus Ridership by Trip, Season, Route/Line, and Stop*. Open Data MBTA.

Figure 4-18 Transit Stop Walkshed

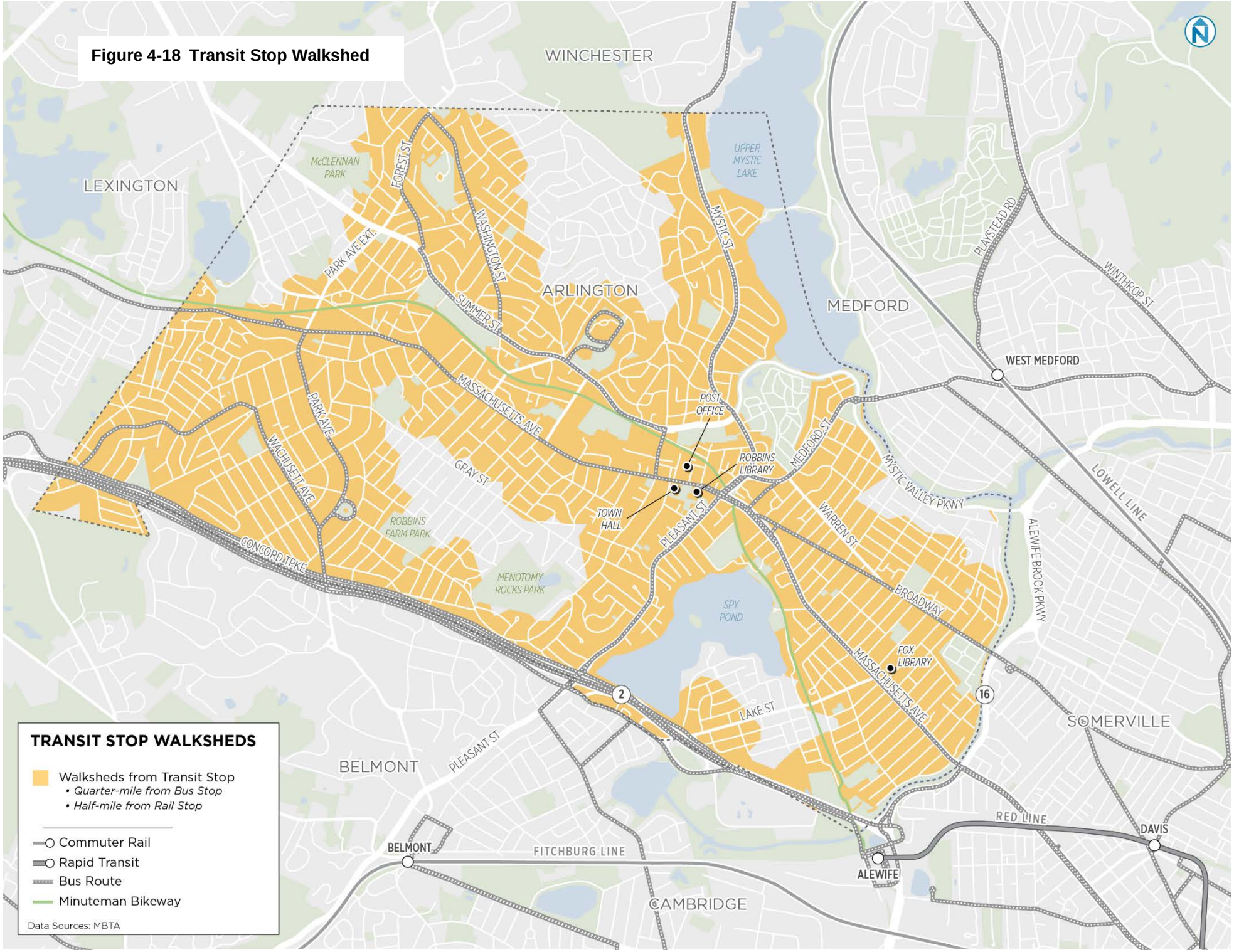
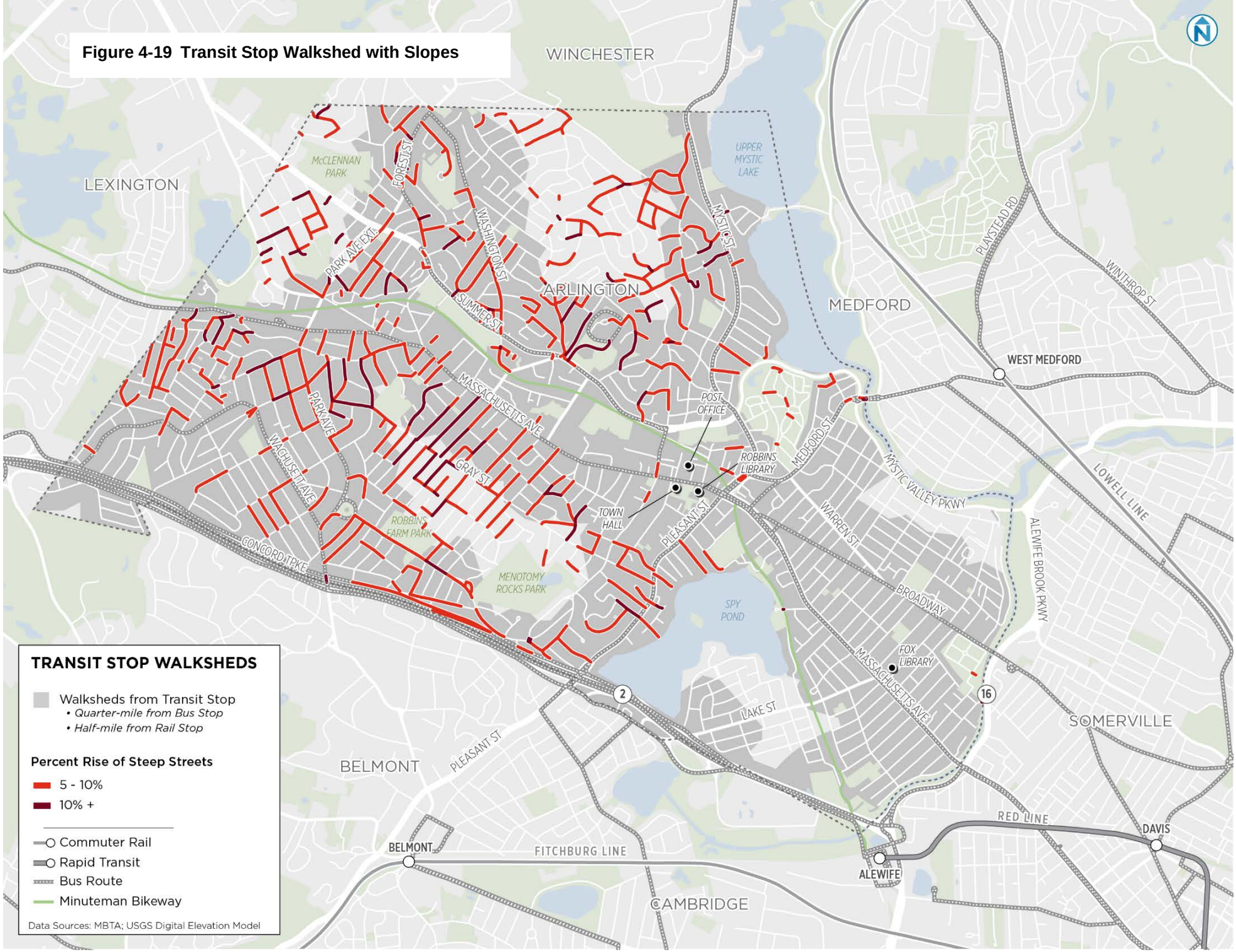


Figure 4-19 Transit Stop Walkshed with Slopes



Emerging Mobility and Shared Services

Transportation is changing due to emerging technologies that allow for more on-demand, personalized, and shared user-friendly experiences for getting around. App-based ride hailing and sharing services such as Uber and Lyft have fundamentally changed how people get around, as well as how the curb is used and needs to be programmed in the future. Other emerging and shared mobility options include car share, bike share, scooter share, and microtransit options that have the potential to provide more frequent, predictable, and cost-effective service delivery. Another major shift in transportation is the growing consumer demand for home delivery of products and services of all kinds including groceries, prepared foods, retail goods and merchandise and more.

Emerging Mobility Options in Arlington

Car Share

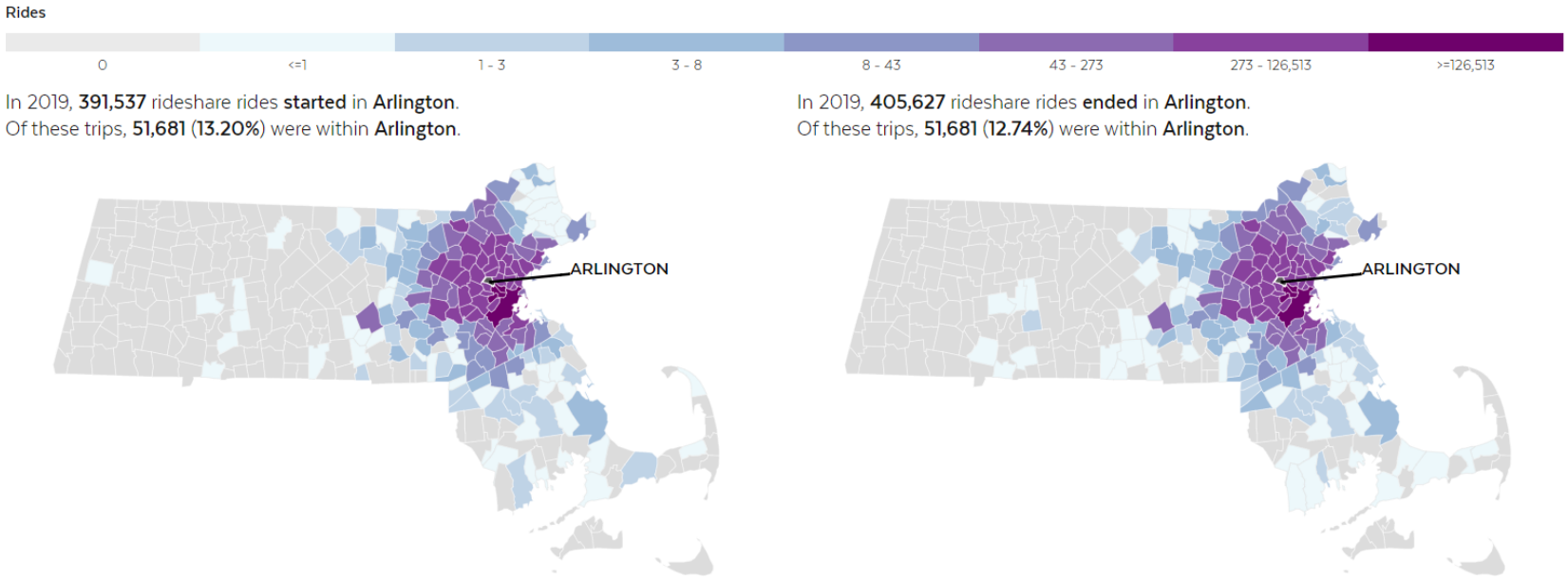
Car share through Zipcar is currently available in three locations, all around Arlington Center. For car-share to more effectively encourage "car light" households, more options are likely required.

Transportation Network Companies (TNCs)

TNCs are app-based transportation services that allow for on-demand or reserved rides for a fee. This includes companies such as Uber and Lyft, but also scooter companies like Bird, Lime and others. TNCs have fundamentally changed the way many get around, no more so than with Uber and Lyft. These services provide convenient point-to-point service and require no direct exchange of money. However, as indicated in many studies, these services have added thousands of daily trips to regional roadways, contribute to increased congestion, and if a fossil-fuel burning vehicle, more GHGs. They are also not affordable to many and are largely not accessible to those without a smart phone. They have also changed how the curb is used. With more people using these services, drop-off and pick-up locations are needed to manage their use. Absent such areas, many trips begin and end with double parked cars along high traveled corridors, a condition that is unsafe for both the driver and the passenger, but also exacerbates congestion by blocking traffic.

Obtaining trip information from TNCs has proved difficult as many of the technologies are proprietary and the need for user privacy is paramount. Thus, in most places, TNC usage is difficult to obtain. However, in Massachusetts, ride-sharing companies are regulated more than in many parts of the country. According to the Massachusetts 2019 Ride Share Report, 391,537 ride share trips started in Arlington, or 9.14 trips per person, and 405,627 trips ended in Arlington. Of trips that started in Arlington, the majority ended in either Boston or Cambridge (32% and 18%, respectively) with 13% ending in Arlington. Of those that ended in Arlington, again, the majority began in either Boston or Cambridge (30% and 21%, respectively), with nearly 13% starting in Arlington. However, as shown below, Arlington TNC affiliated trips began or ended in communities throughout the region.

Figure 4-20 Rideshare Trip Data

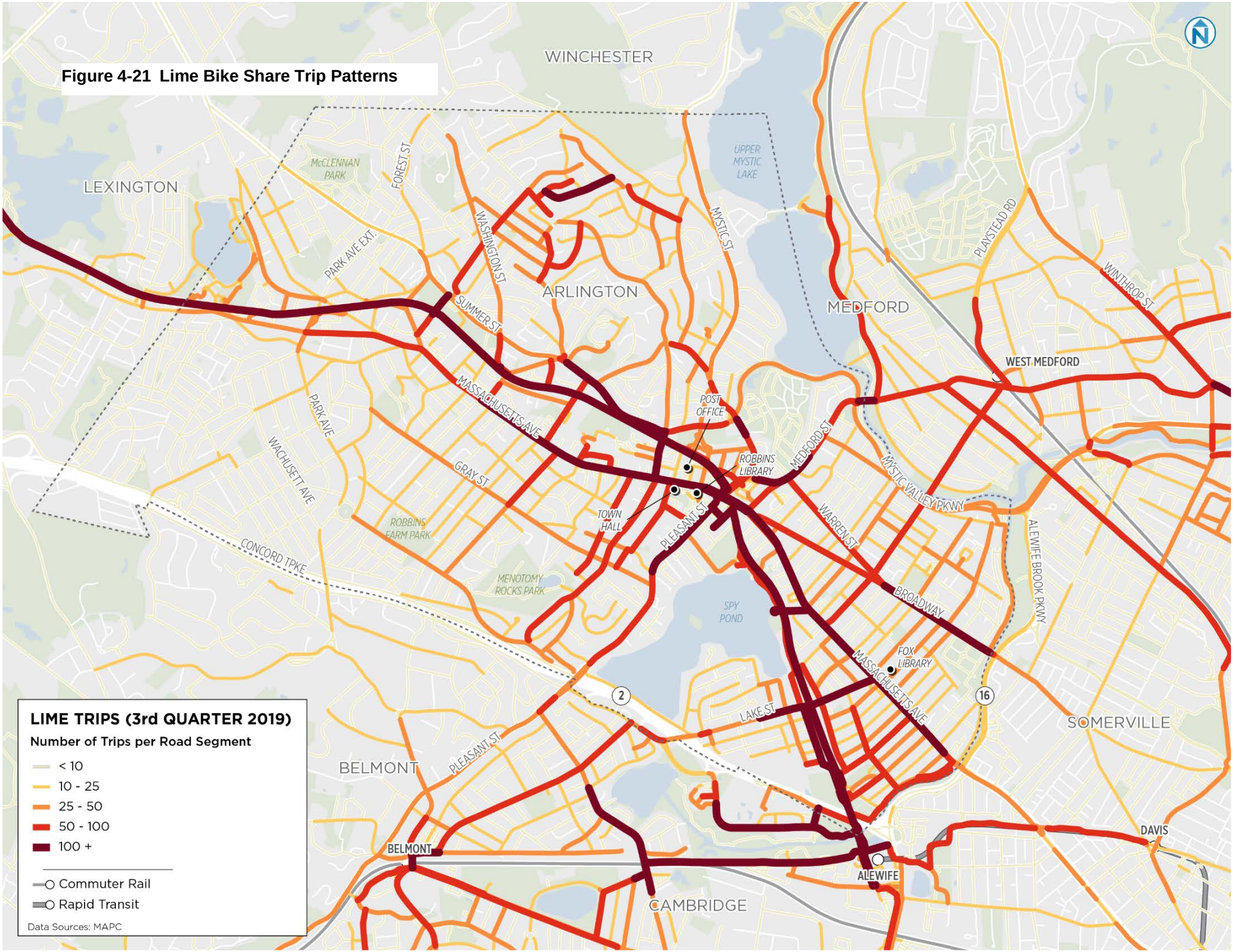


Data Source: 2019 Ride Share Report
https://tnc.sites.digital.mass.gov/#:~:text=In%202019%2C%20there%20were%20about,64.8%20million%20rides%20in%202017.&text=For%20example%2C%20in%20Wareham%2C%20ridesharing,more%20rides%20than%20in%202018.

Bike Share

Arlington was part of the regional Lime Bike dockless system, which ceased operation at the end of 2019. As shown in Figure 4-21, the program was highly successful, with the highest ridership along separated, off-street paths like the Minuteman Bikeway. Arlington will be joining Bluebikes in fall 2020, and the initial expansion of the system to Arlington is anticipated to include 38 bicycles across six docked stations.

Figure 4-21 Lime Bike Share Trip Patterns



PART 4: PUBLIC ENGAGEMENT

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APPENDIX A: FACTBOOK PUBLIC ENGAGEMENT

Despite the many challenges associated with the COVID-19 pandemic, public engagement continues to be a critical component of successfully developing and implementing a community wide transportation plan. The goals for public engagement for the Arlington Sustainable Transportation Plan are as follows:

- **Build awareness of and excitement for the plan:** acknowledge community concerns; share plan goals, progress, timeline, and next steps; and communicate why feedback is important and how it is being used
- **Reach a variety of constituents and community interests to create recommendations that are comprehensive and equitable:** target traditionally underrepresented stakeholders in the public process; learn about perceived issues and whether those vary by user group; provide varied types of activities and venues through which to provide feedback; and leverage existing stakeholder networks to engage the wider community
- **Inform plan priorities and actions:** Identify where the public experiences issues and what scenarios need to be addressed; generate solutions for future projects and maintenance that are sensitive to sustainability concerns; identify programming opportunities; and communicate next steps and foster ongoing community support

ENGAGEMENT STRATEGY

During the development of the Factbook, the Town communicated information to the public throughout the Sustainable Transportation Plan process using a combination of press releases, a project website, social media, and fliers and postcards. This public engagement effort included multiple opportunities for public input, including:

- **Online survey**: to obtain initial thoughts and opinions about transportation priorities, as well as how people travel in Arlington, how they choose travel mode, and what they would like to see change about transportation in Arlington
- **Doorhangers and survey hotline:** to promote the project safely door-to-door and allow people to give feedback through voicemail
- **Online input mapping**: to gather input about specific locations and needed transportation amenities geographically on a wikimap
- **Online public forums**: adapted from a traditional in-person public forum, to present project information to the community via video call and phone and allow time for feedback during and after the meeting
- **Focus groups**: to learn about and discuss topics and issues in which many stakeholders are directly liked, with a goal of engaging voices less heard in Arlington's planning processes

SURVEY SUMMARY

To gather information about transportation goals and travel patterns, as well as COVID-19 impacts, the Town conducted an online survey for residents of Arlington. This survey was created with SurveyMonkey and publicized through a variety of communication platforms.

Survey Respondents

1,087 Arlington residents answered the Sustainable Transportation Plan survey. As shown in Figure A-1, survey respondents encompass both newer residents and those who have lived in Arlington for over 20 years. 82% of survey respondents own their home (Figure A-2), which is a rate greater than those who answered the town survey (78%) and U.S. Census 2017 American Community Survey (ACS, 61%).

Figure A-1 Years in Arlington

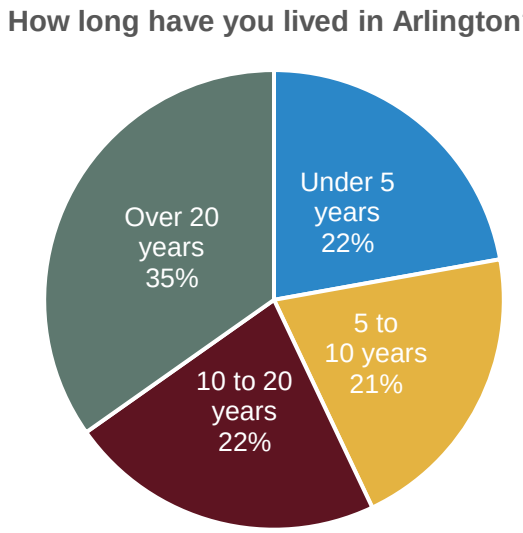
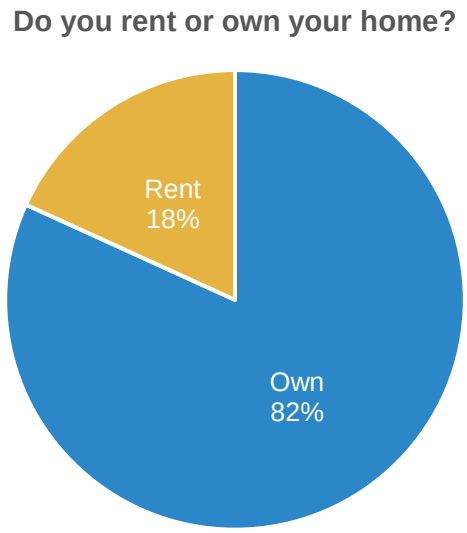


Figure A-2 Home Ownership



Households with members of all ages participated in the survey. The largest age group for respondents is adults ages 40 to 64 years (Figure A-3). As shown in Figure A-4, about half of households have members of multiple age groups. Additionally, out of adults ages 80 or older, about half live with other age groups. Other forms of public engagement will also be conducted to target the transportation needs of older adults.

Figure A-3 Age Groups

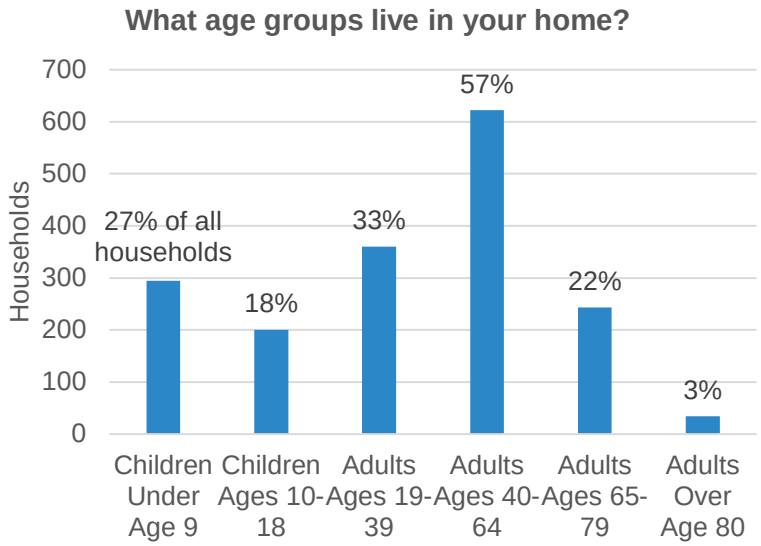
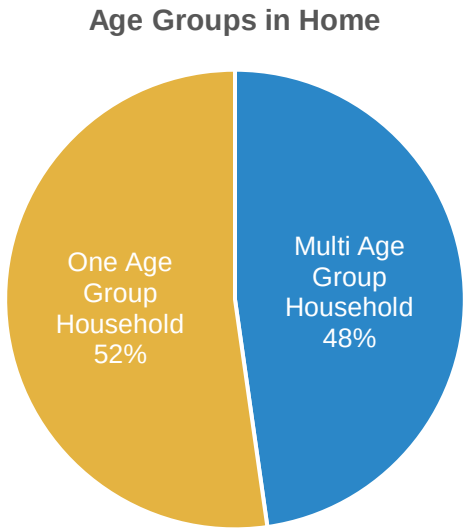


Figure A-4 Number of Age Groups



There were high levels of participation from Arlington's higher income households, with about half of survey respondents with an annual household income of over $150,000 (Figure A-5). Though Arlington is a relatively high-income town, survey respondents tend to have a greater income than the general population (based on 2017 ACS).

Additionally, many neighborhoods were represented in survey responses, as shown in Figure A-6. Over half of respondents live in East Arlington or Arlington Heights, with a sizeable proportion living in Arlington Center or Turkey Hill/Mount Gilboa.

Figure A-5 Household Income

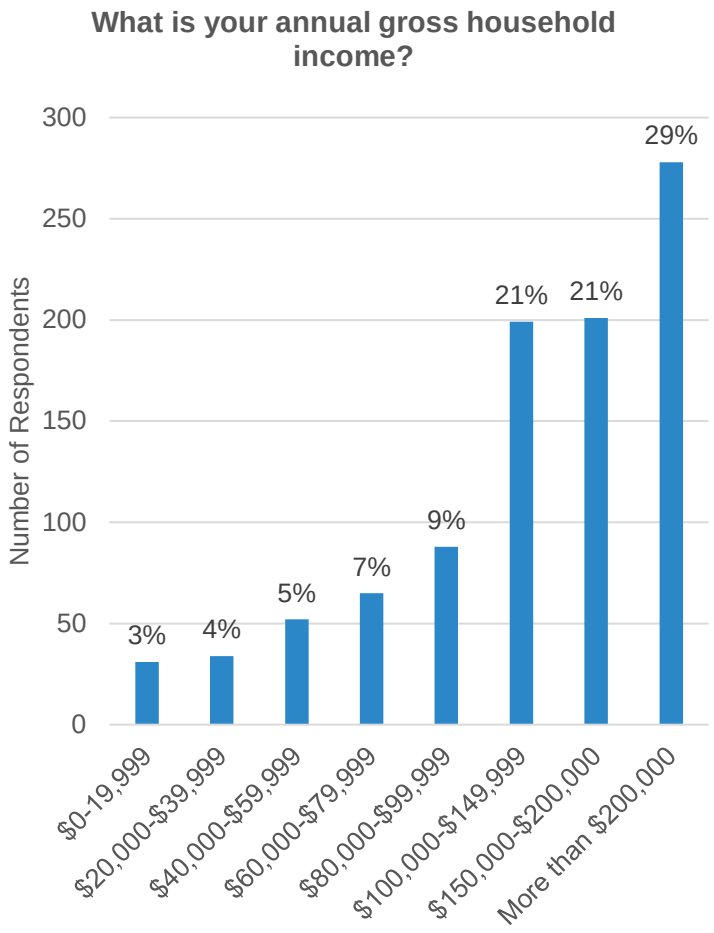
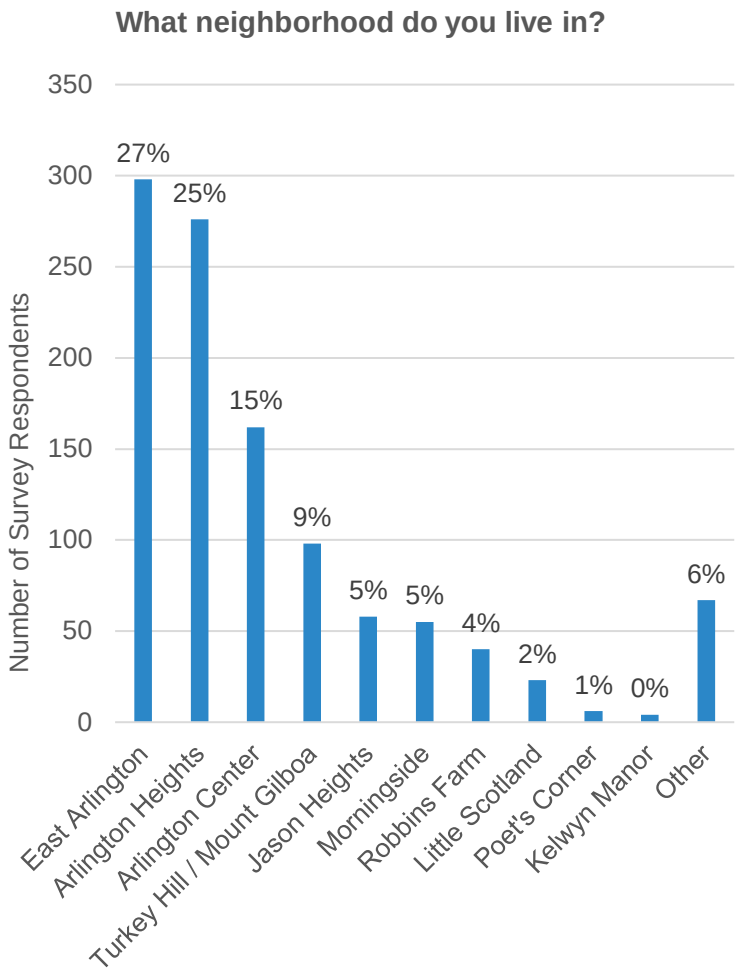


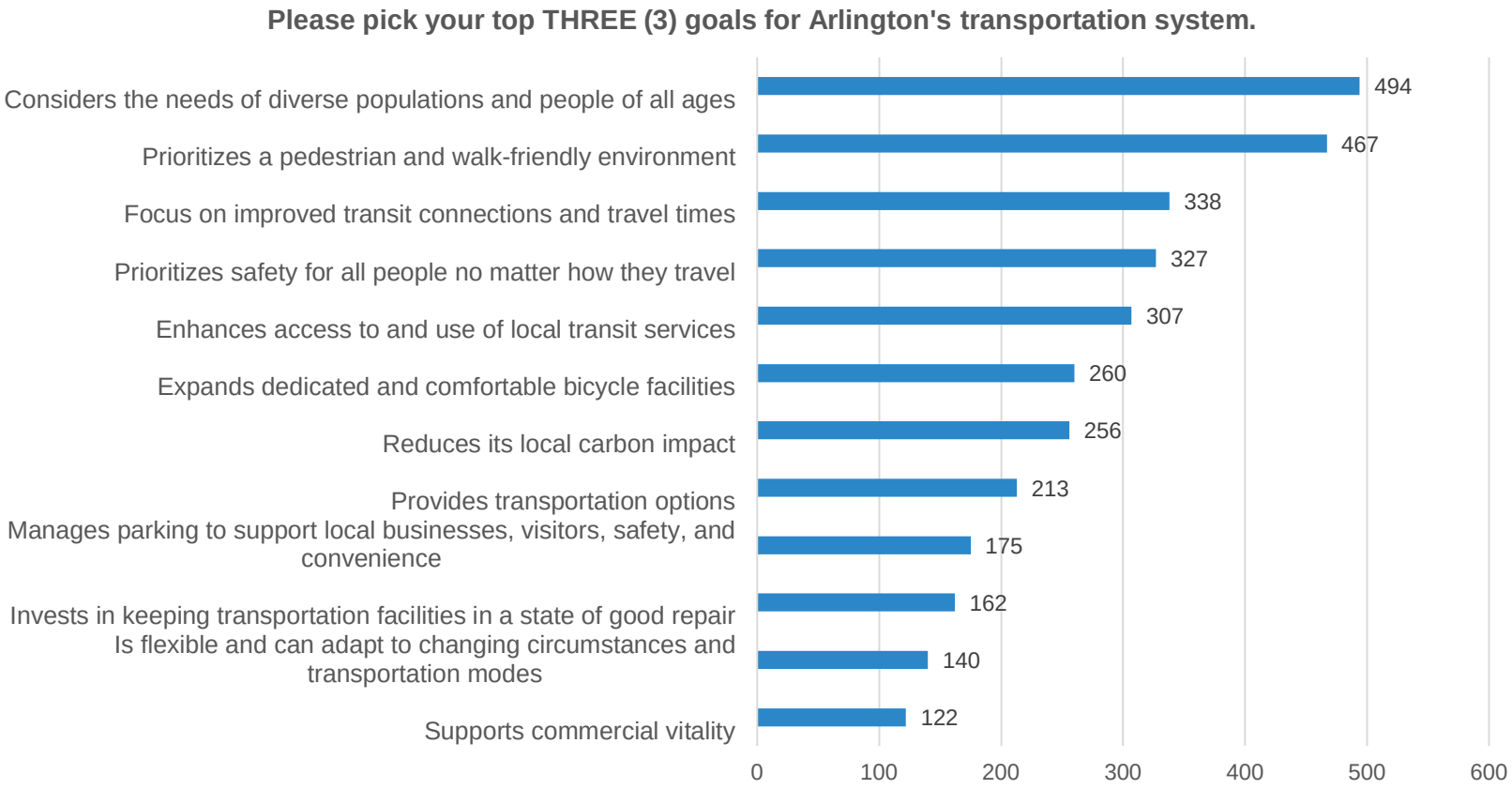
Figure A-6 Neighborhood of Survey Respondents



Transportation Goals

The survey asked respondents to prioritize goals for Arlington's transportation system. Results are shown in Figure A-7, with "Consider the needs of diverse populations and people of all ages" and "Prioritizes a pedestrian and walk-friendly environment" as the top goals.

Figure A-7 Transportation Goals Prioritization



Commute and Travel Patterns

The survey asked respondents a series of questions pertaining to their typical commute patterns before the COVID-19 pandemic. As shown in Figure A-8, the biggest job centers for Arlington residents are Downtown Boston, Kendall Square, within Arlington, and the Route 128 Corridor. Over 20% of survey respondents primarily work from home or do not work.

Figure A-8 Work Location

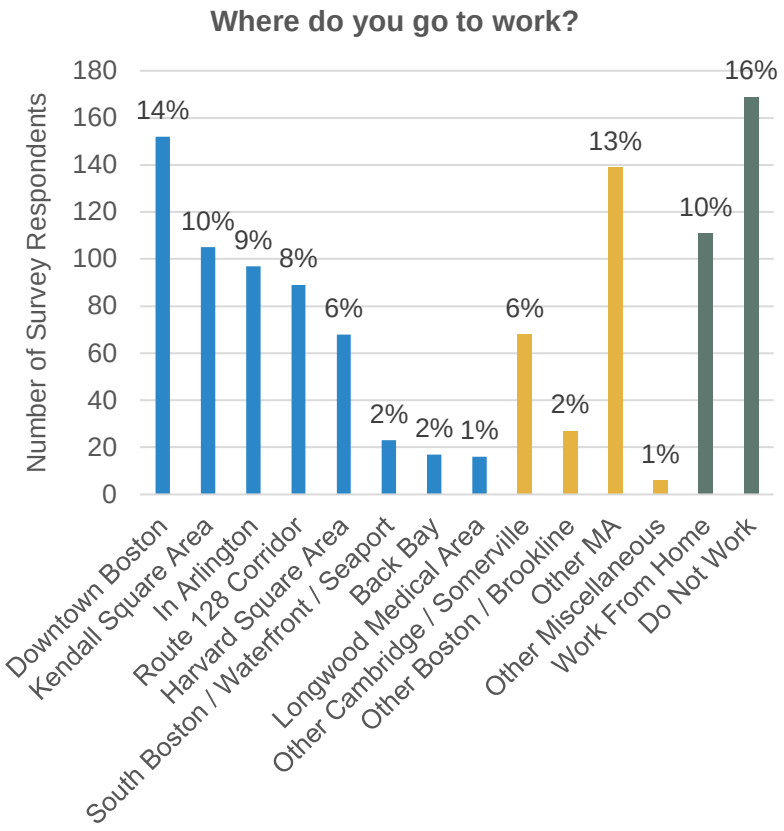
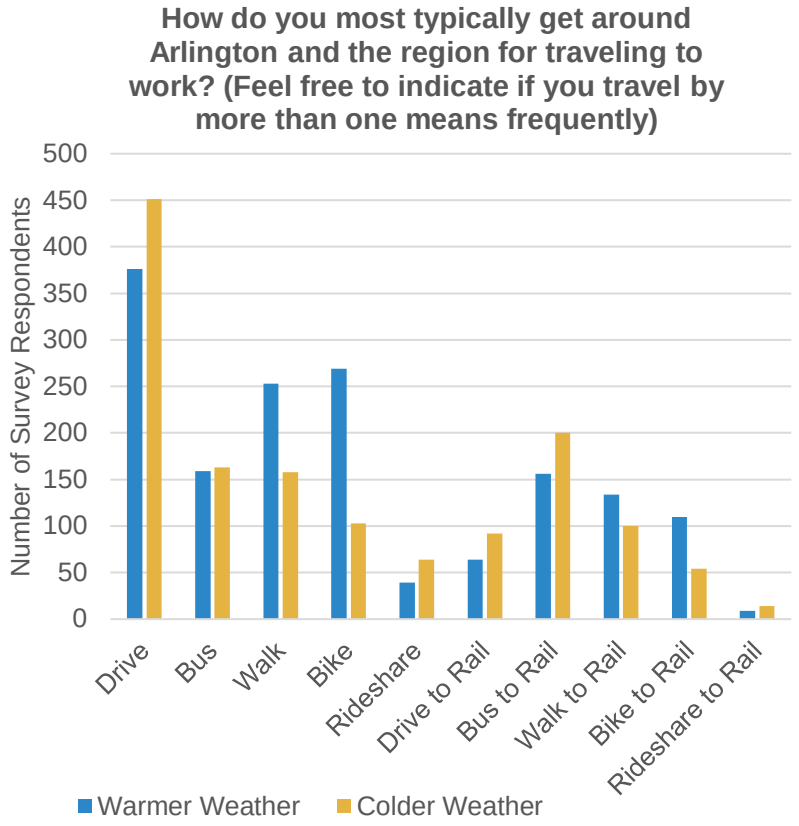


Figure A-9 Work Mode



As shown in Figure A-9, driving is the most typical commute mode, with about half of respondents driving frequently. Arlington residents walk and bike to work more in warmer weather than colder weather. People get to rail transit through a large variety of modes, with bus as the most common. Commute patterns also vary by day and time. About half of survey respondents travel to work five days a week (Figure A-10). As shown in Figure A-11, most commutes are between 20 and 45 minutes, but many are also between 45 and 60 minutes.

Figure A-10 Days Commuting Per Week

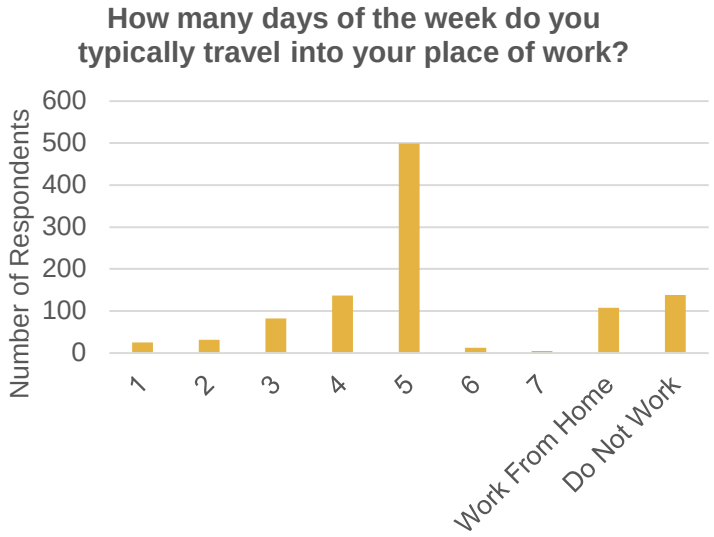
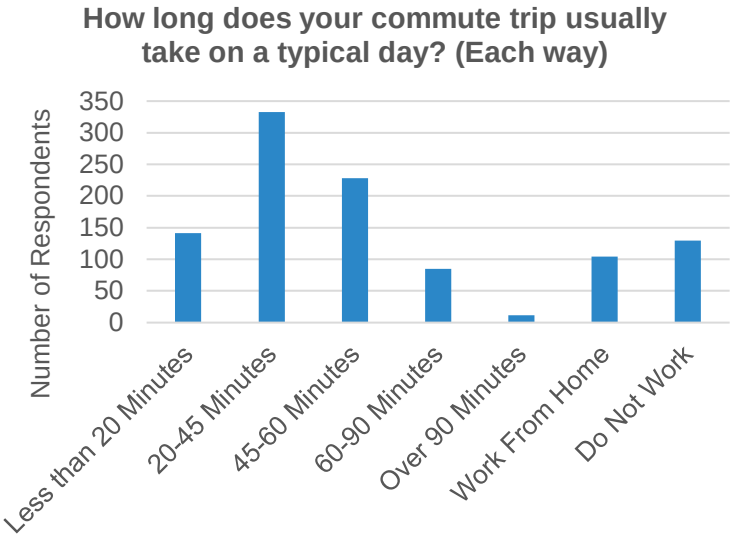
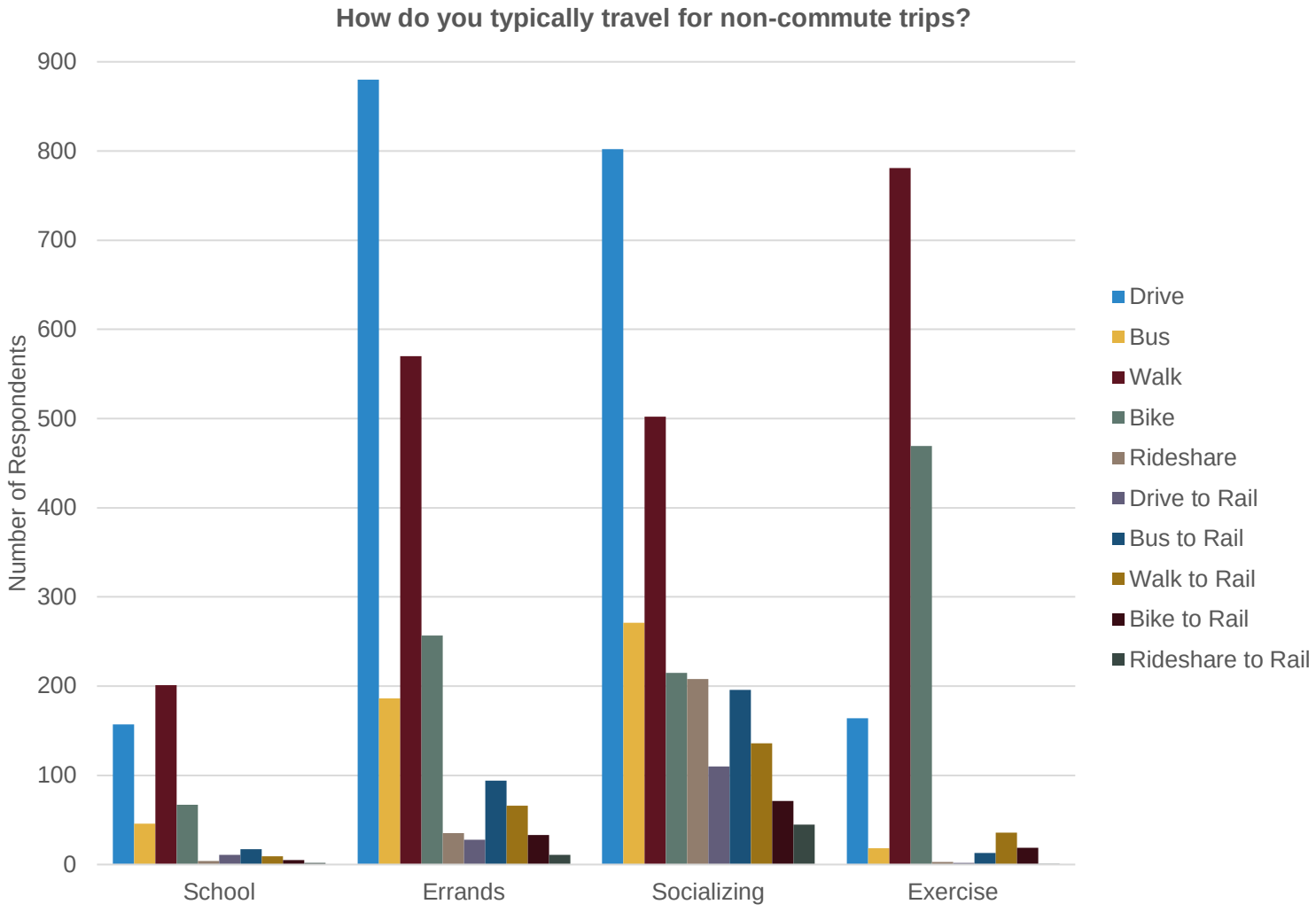


Figure A-11 Commute Time



When looking at non-work travel, Arlington residents also use a variety of transportation modes, as shown in Figure A-12. Driving is the most common mode for non-commute trips. Most people currently drive or walk to get to school, run errands, or socialize. Socializing trips also have the largest share of rideshare trips. For exercise, people overwhelmingly walk or bike.

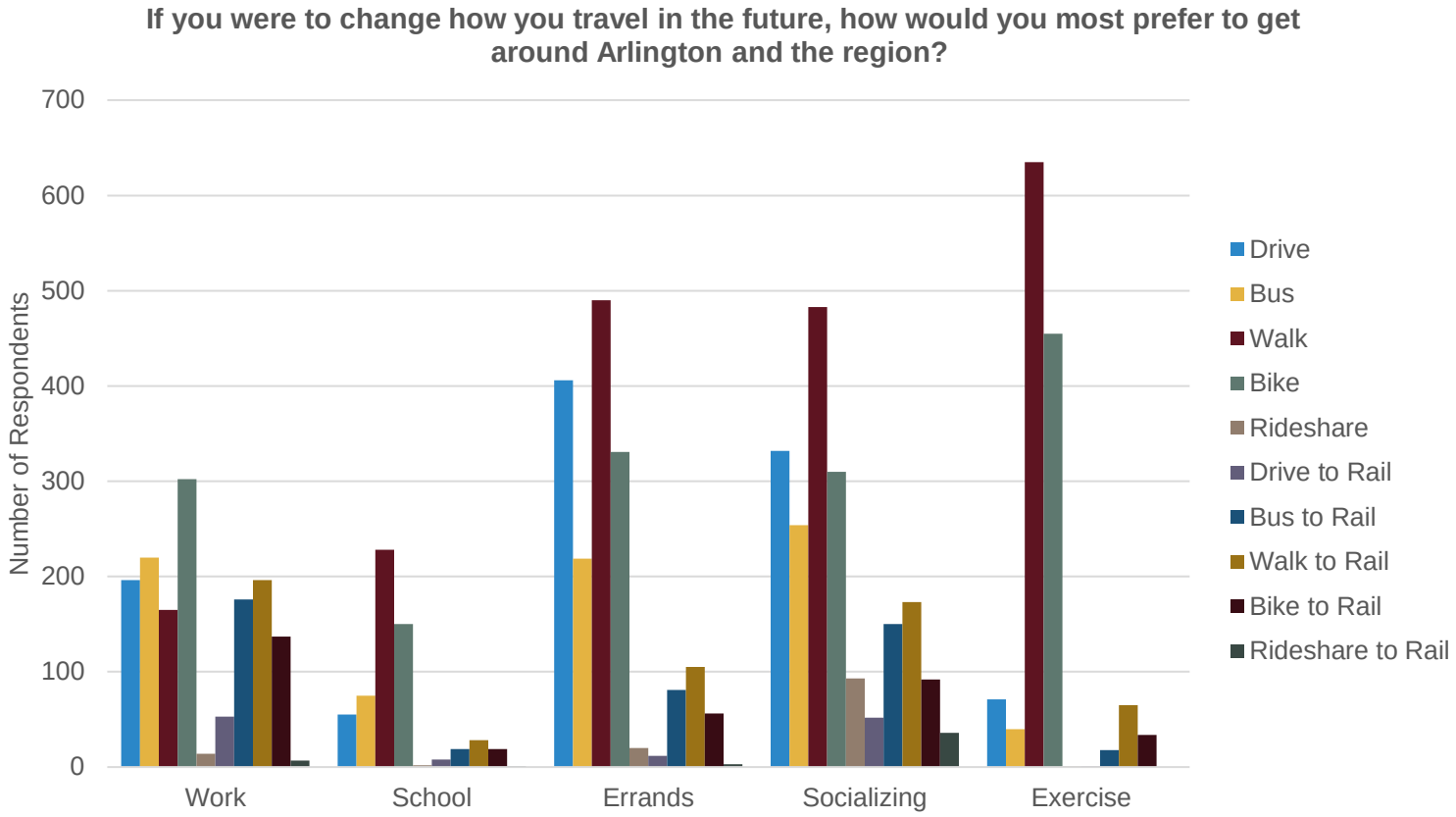
Figure A-12 Non-Commute Travel Mode



Transportation Preferences

In addition to asking respondents about their current travel patterns, the survey also asked about transportation preferences and motivations. When asked how they would prefer to get around Arlington and the region in the future, respondents said that they would prefer to walk or bike more (Figure A-13). Biking is the preferred method of getting to work. However, people would like to maintain driving trips for errands or socializing.

Figure A-13 Travel Preference in the Future



Participants were asked to rank their primary motivations for travel mode choice and the factors that restrict them from travelling their preferred modes. These rankings were then converted into scores (with the factors ranking first getting the highest score) for comparison across the whole pool of survey respondents. For primary motivations for travel mode choice, people ranked convenience the highest, followed by environment and safety (Figure A-14). As shown in Figure A-15, trip time and trip distance are the primary restrictions for people from changing to their preferred travel mode.

Figure A-14 Travel Mode Choice Motivations

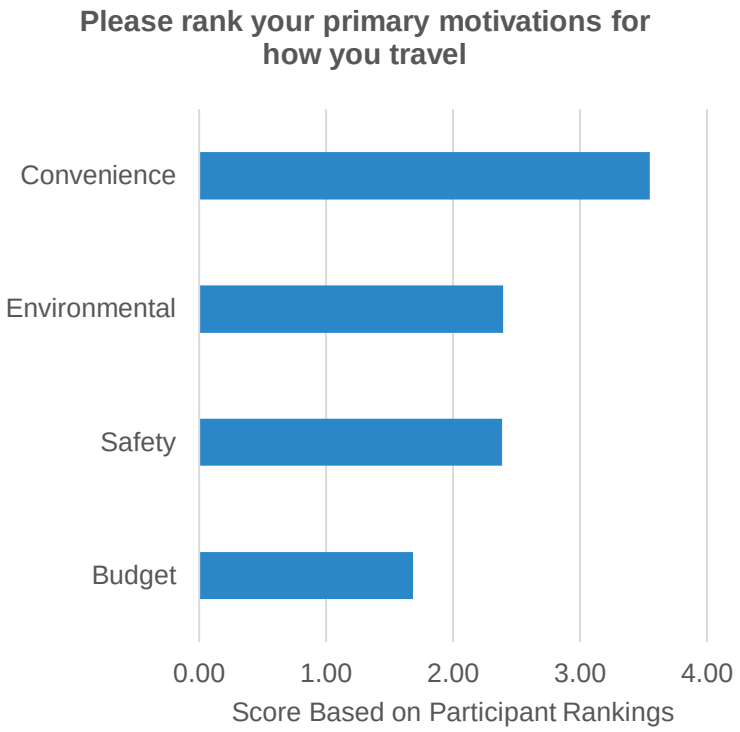
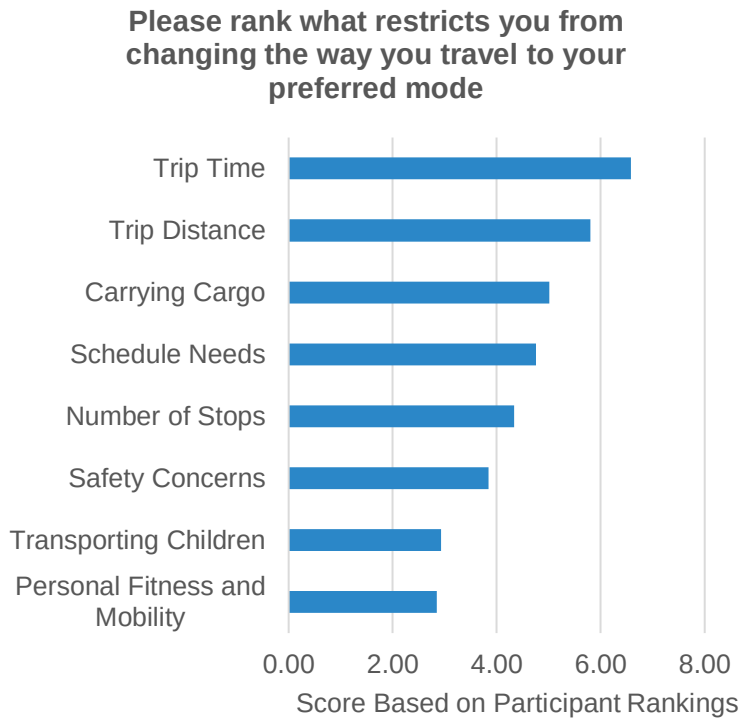
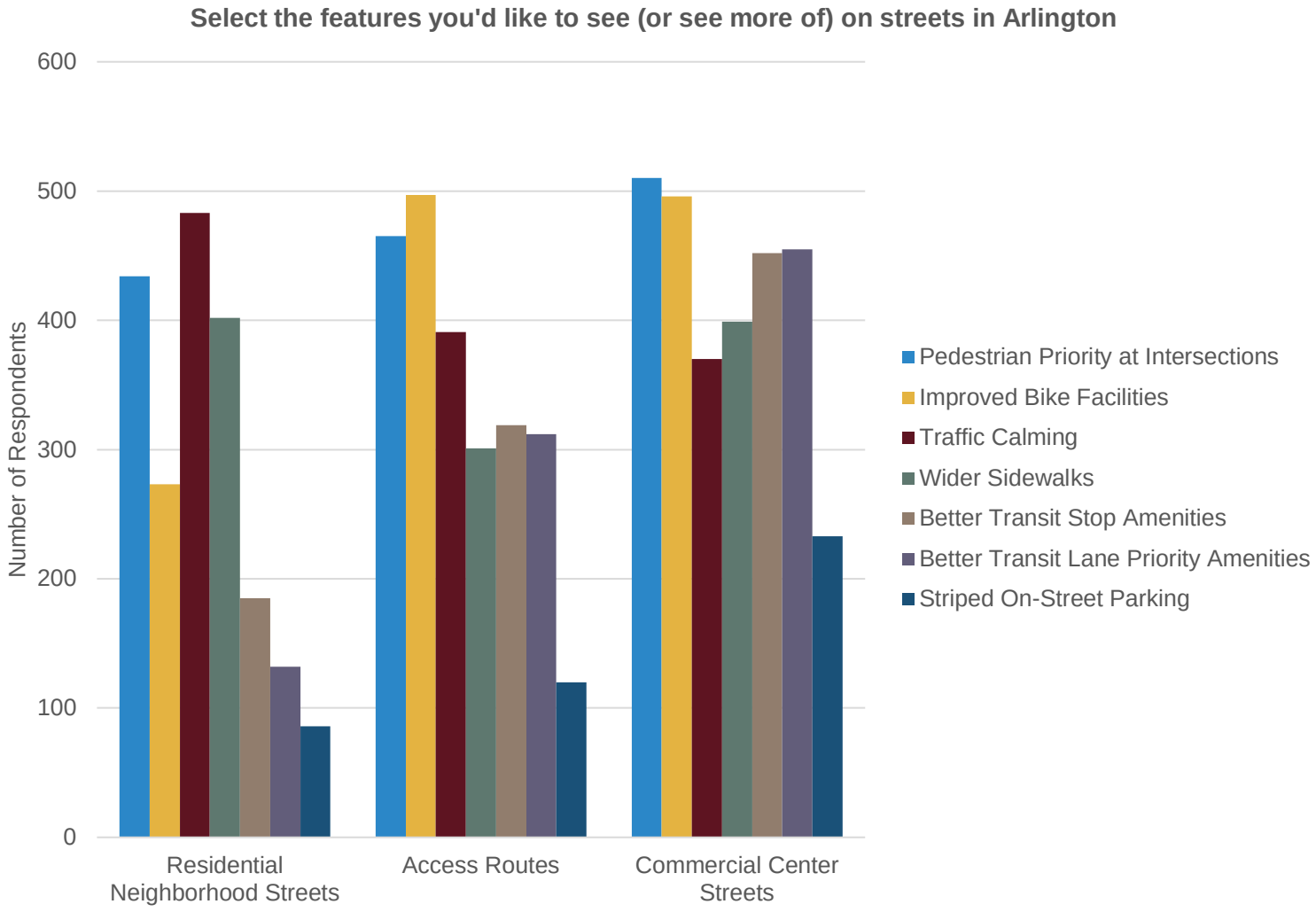


Figure A-15 Travel Mode Choice Restrictions



The survey also asked respondents what street features they would like to see more of on the streets of Arlington (Figure A-16). On residential streets, people would like to see more traffic calming and pedestrian facilities. On access routes, pedestrian priority and improved bike facilities are most requested. Lastly on commercial streets, transit amenities in addition to pedestrian and bike amenities are requested.

Figure A-16 Street Features



COVID-19 and Stay-At-Home

The survey questions discussed prior asked respondents to answer based on their pre-COVID-19 travel patterns. The last two questions of the survey asked how transportation choices have changed given COVID-19. As shown in Figure A-17, 61% of residents have changed how they use neighborhood streets. In the comment box attached to this question, respondents cited reasons such as walking around the neighborhood more, leaving the house less, and avoiding major streets more. 39% of residents have not changed how they use neighborhood streets, citing reasons such as being essential workers and staying inside the house and not using the streets.

As shown in Figure A-18, most residents anticipate changing their travel habits after the stay-at-home advisory is lifted. 56% of residents think their travel will change citing reasons such as working from home more often, travelling less often and using transit less when they do travel, and only returning to travel and transit once they feel safe from the virus to do so. 44% of residents who do not think their travel will change cited reasons such as the fact that there is the same infrastructure on the street, continued reliance on transit, and that they were already working from home pre-COVID.

Figure A-17 During Stay-At-Home

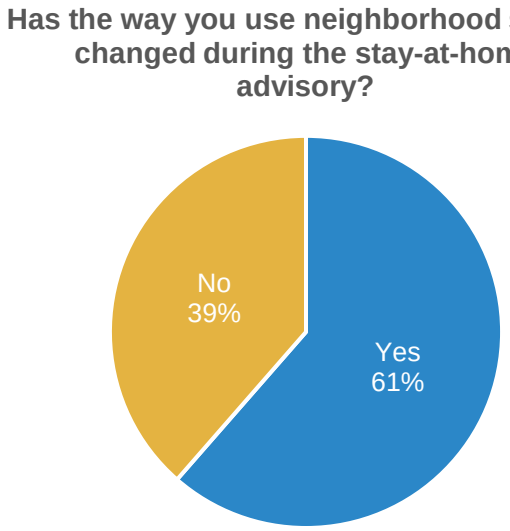
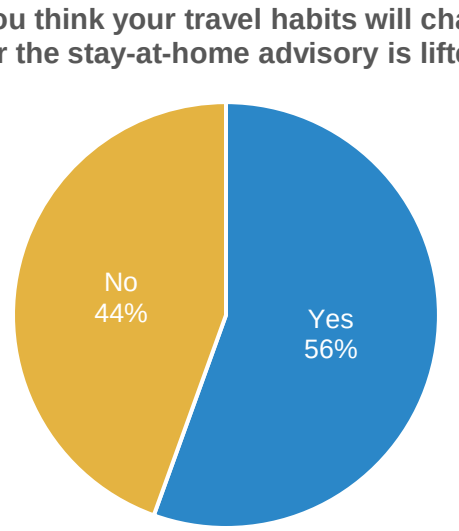


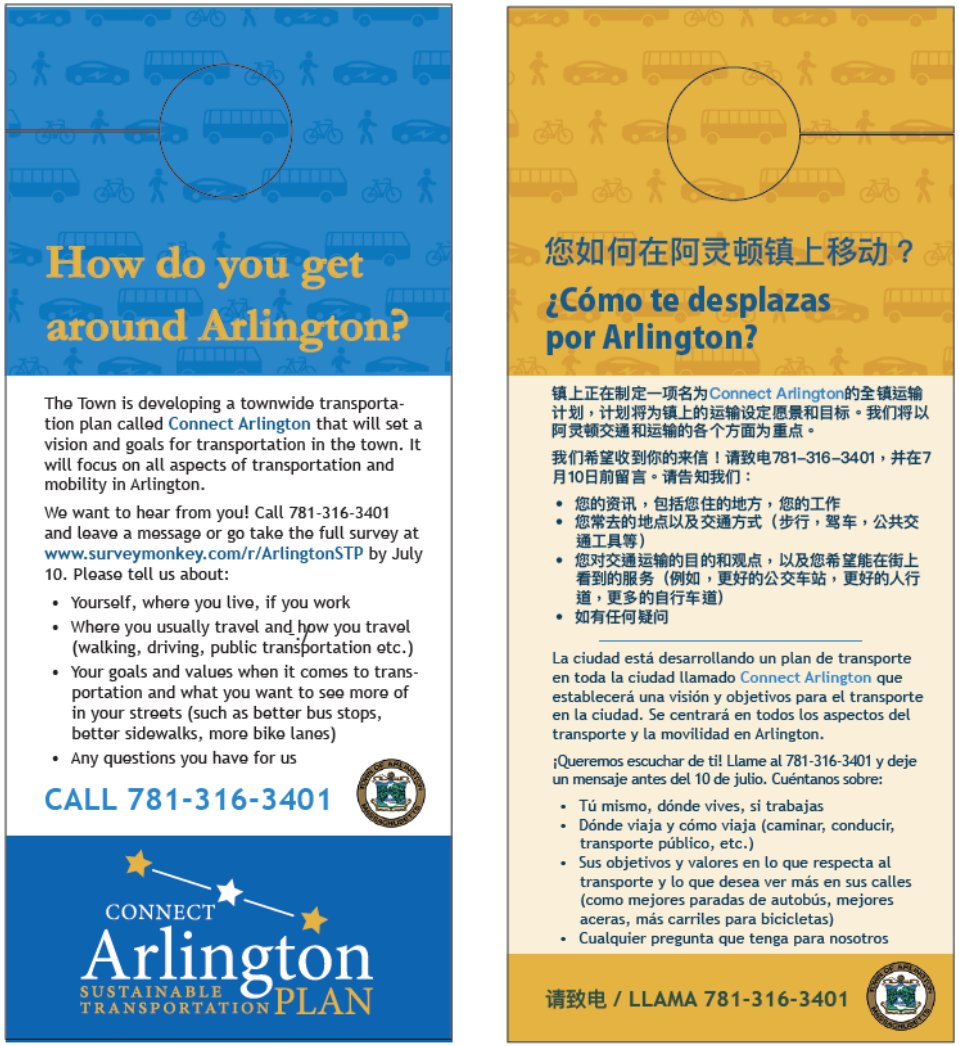
Figure A-18 After Stay-At-Home



DOORHANGERS PROMOTION

In order to gather feedback from older adults on this plan, the Council on Aging distributed doorhangers to housing units for older adults and older adults with low incomes. The doorhangers informed people of a phone number they can call to leave public comments via voicemail, as well as take the online survey (Figure A-19). The comments received via voicemail were incorporated into other survey responses above.

Figure A-19 Doorhangers



WIKIMAP RESULTS

In order to gather location-specific feedback, the Town used a Wikimap where public participants could go online and pinpoint areas on a web map that they wanted to comment on. The Wikimap was publicized via press release and social media, as well as the Committee page and town website.

Interested Arlington residents placed 220 pins on the Wikimap, pertaining to the following topics: walking, biking, driving, transit, and parking. Figure A-20 shows a map of the concentration of responses within the town. Pins are concentrated along major corridors in Arlington Center and Arlington Heights.

Pedestrian Community Suggestions

As shown in Figure A-21, participants placed pins on the Wikimap in order to improve the town's walking conditions in three topic areas: enhanced crosswalks, narrow sidewalks, and safety concerns. Pins for "Enhanced Crosswalk/Pedestrian Crossing Needed" are spread throughout Arlington, including along Massachusetts Avenue, Park Avenue, Pleasant Street, Broadway, and many residential streets. Comments associated with these pins include the following:

- Ramps needed at multiple crosswalks for wheelchairs, walkers, and strollers
- Signal timings for walking are too short and/or waiting to walk are too long
- Greater pedestrian visibility needed on roads with high speeds
- Traffic calming needed on roads with high speeds

Participants placed pins for "Narrow Sidewalk" are in the areas surrounding Arlington Center, as well as a couple pins in East Arlington. Most of the comments are about the condition of the sidewalks, as well as the sidewalks being too narrow for an enjoyable walk. The last pedestrian-related category for pins is "Safety Concern or Point of Conflict," which are concentrated along major avenues such as Massachusetts Avenue, Park Avenue, Pleasant Street, Medford Street, Broadway, and Mystic Street. Comments include:

- Dangerous walking conditions due to sidewalk condition, lighting, and other factors
- Cars travelling at high speeds without safe places for pedestrians to cross
- Traffic calming needed near schools and other areas with high pedestrian density

Figure A-20 Community Suggestions – All Input

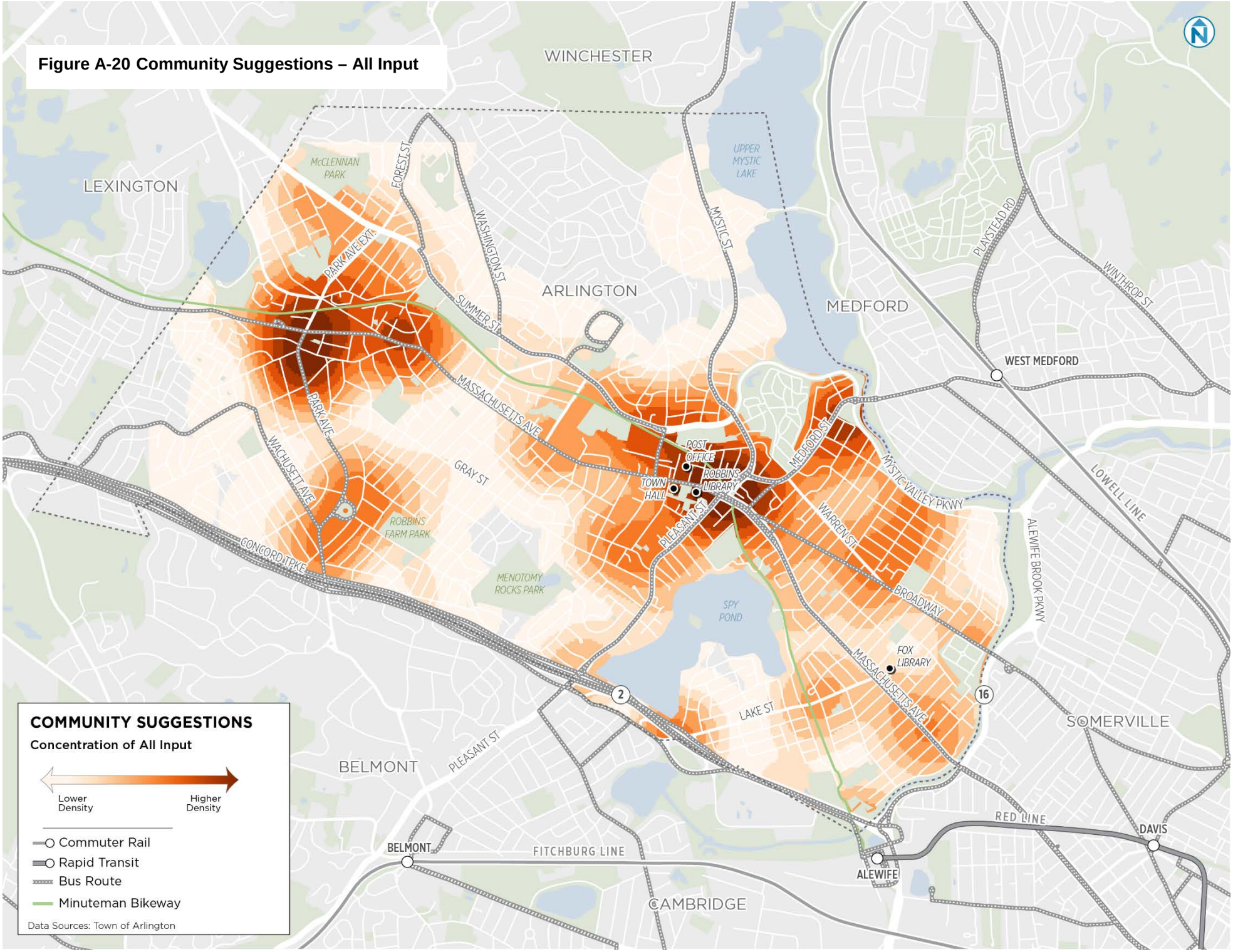
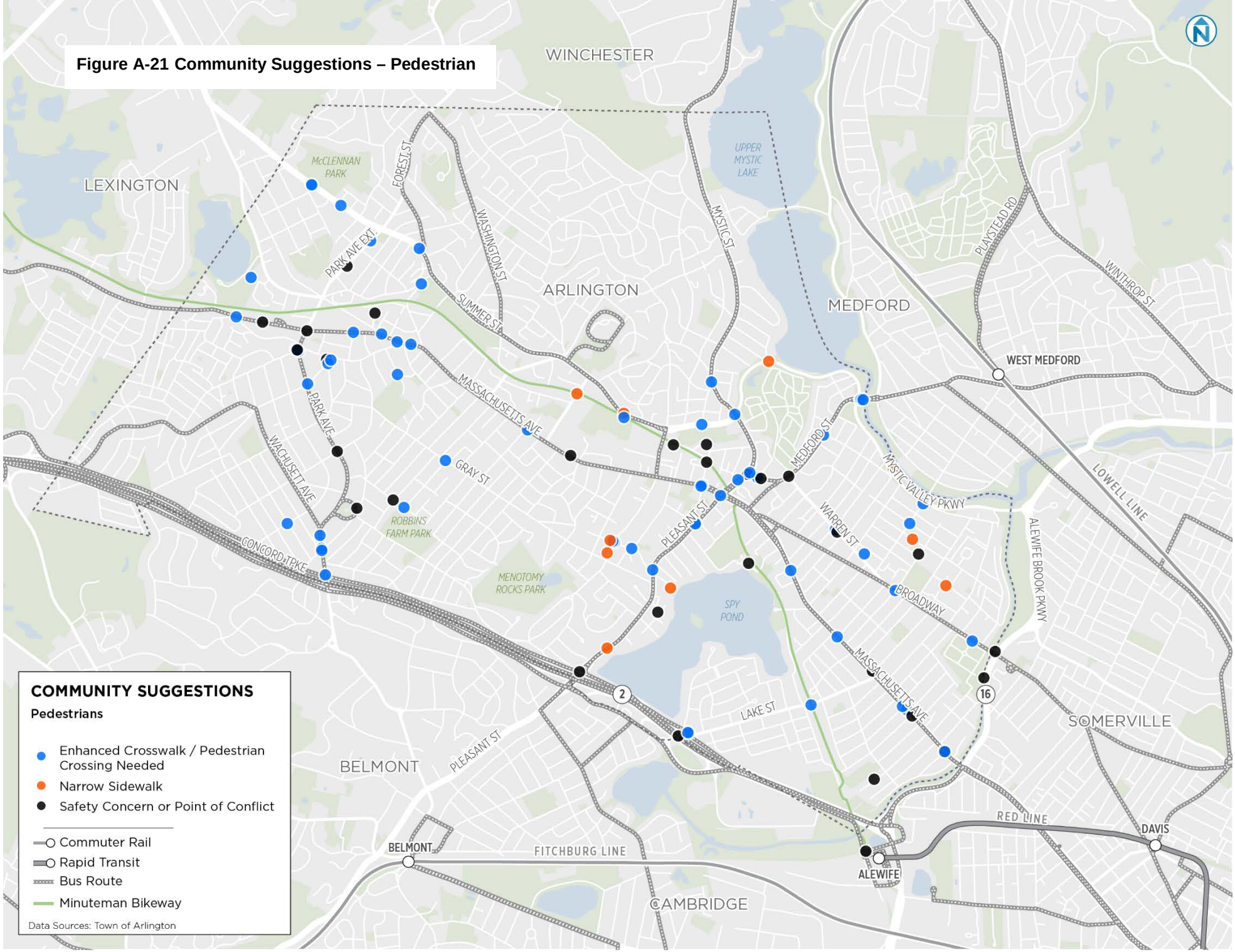


Figure A-21 Community Suggestions – Pedestrian



Bicycling Community Suggestions

As shown in Figure A-22, Arlington residents placed pins to show where bicycle improvements are needed. Pins were concentrated along major corridors, such as Massachusetts Avenue and the Minuteman Bikeway. Comments pertaining to "More Buffer/Protection for Cycling Needed" include:

- More buffered and separated bike lanes needed around town
- Improve connections to major activity centers and bordering cities and towns

Comments pertaining to "Safety Concern or "Point of Conflict" include:

- Dangerous and/or confusing intersections
- Poor paving conditions on bike lanes
- Poor visibility between people cycling and people driving

Driving Community Suggestions

Driving-related pins are shown in Figure A-23. Pins concerning "Road Maintenance" are in Turkey Hill and north of Arlington Centers, with multiple commenters suggesting that private streets that are badly maintained be taken over by the Town and publicly maintained. Pins denoting "Traffic Signal Issue" are spread throughout the town, mostly at major intersections, and included the following comments:

- Improve traffic signal phasing to streamline traffic flow
- Removing or adding No Turn on Red signs
- Removing or adding left turn signals and left turn lanes

Safety concerns are concentrated along Park Avenue, Massachusetts Avenue, and the northeastern area of Arlington Heights. Comments include the following:

- Residential streets used as shortcuts with too much fast driving
- Blind corners and intersections unsafe for kids biking and walking
- More stop signs and traffic calming measures needed

Figure A-22 Community Suggestion – Bicycling

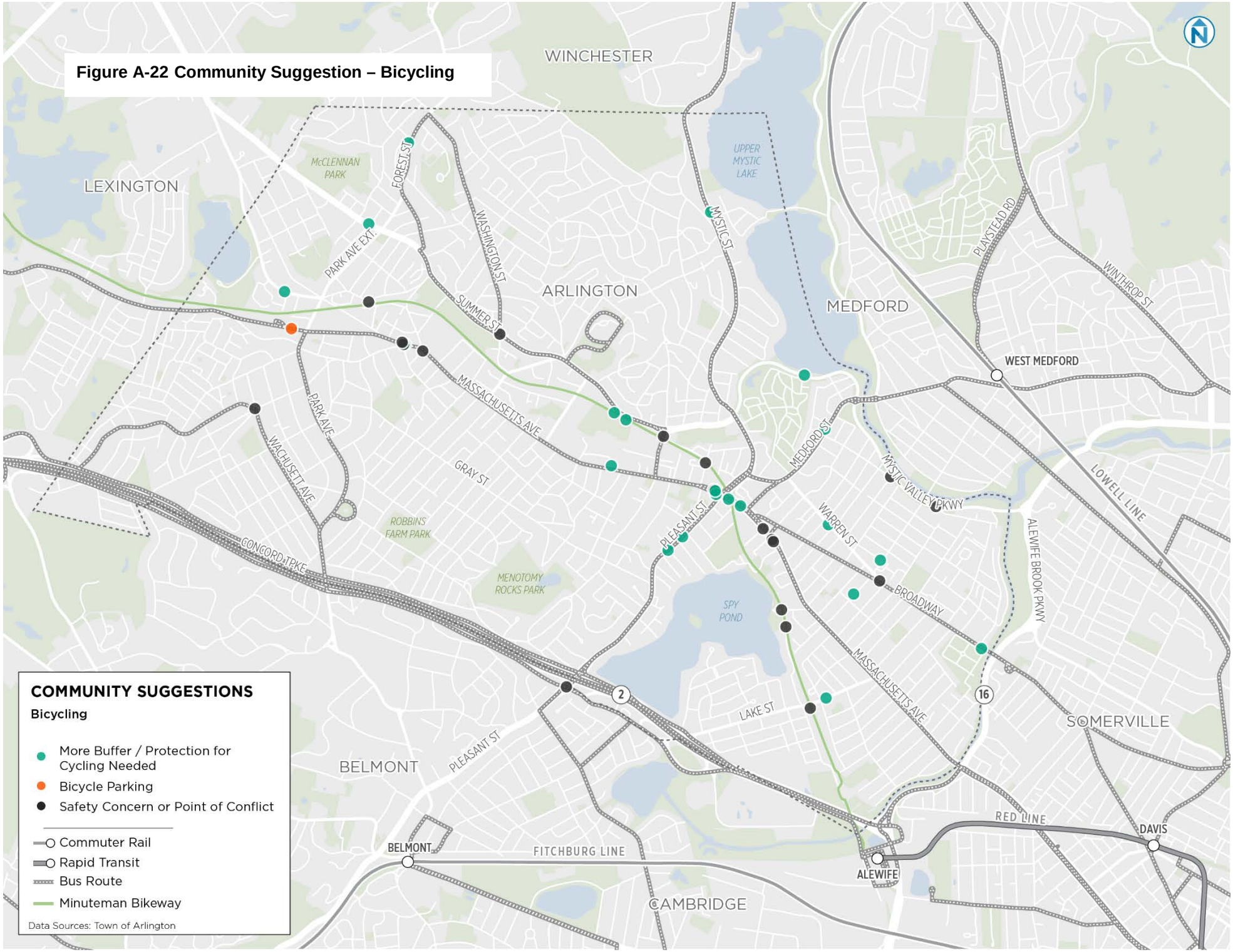
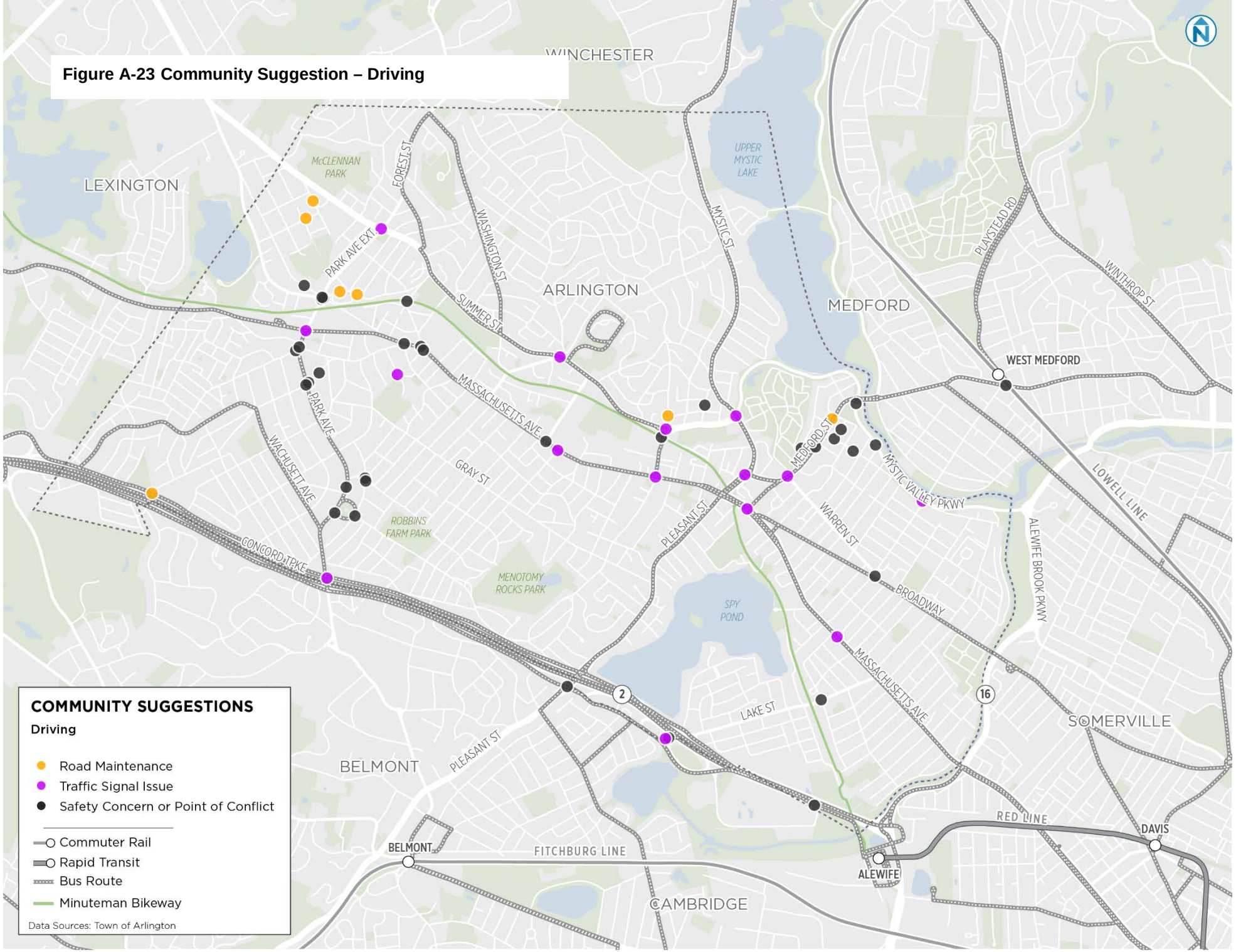


Figure A-23 Community Suggestion – Driving



Transit Community Suggestions

As shown in Figure A-24, relatively fewer pins were placed for transit-related improvements than walking, biking, or driving improvements. Residents commented on how bus priority improvements are especially needed near Alewife Station. Bus stops that need better walking access are located along Massachusetts Avenue and can use a variety of improvements including better crosswalks and trash cans that do not block bus doors. Better bus stop amenities, especially shelters, are needed along Massachusetts Avenue and Pleasant Street.

Parking Community Suggestions

Lastly, participants gave comments on the state of parking around Arlington, as shown in Figure A-25. Comments revolved around:

- Restricting parking during rush hour to allow for more lanes of car and bike traffic
- Cars parked on both sides of narrow road, which leads to essentially one-lane traffic through a two-lane road and increased congestion

Figure A-24 Community Suggestion – Transit

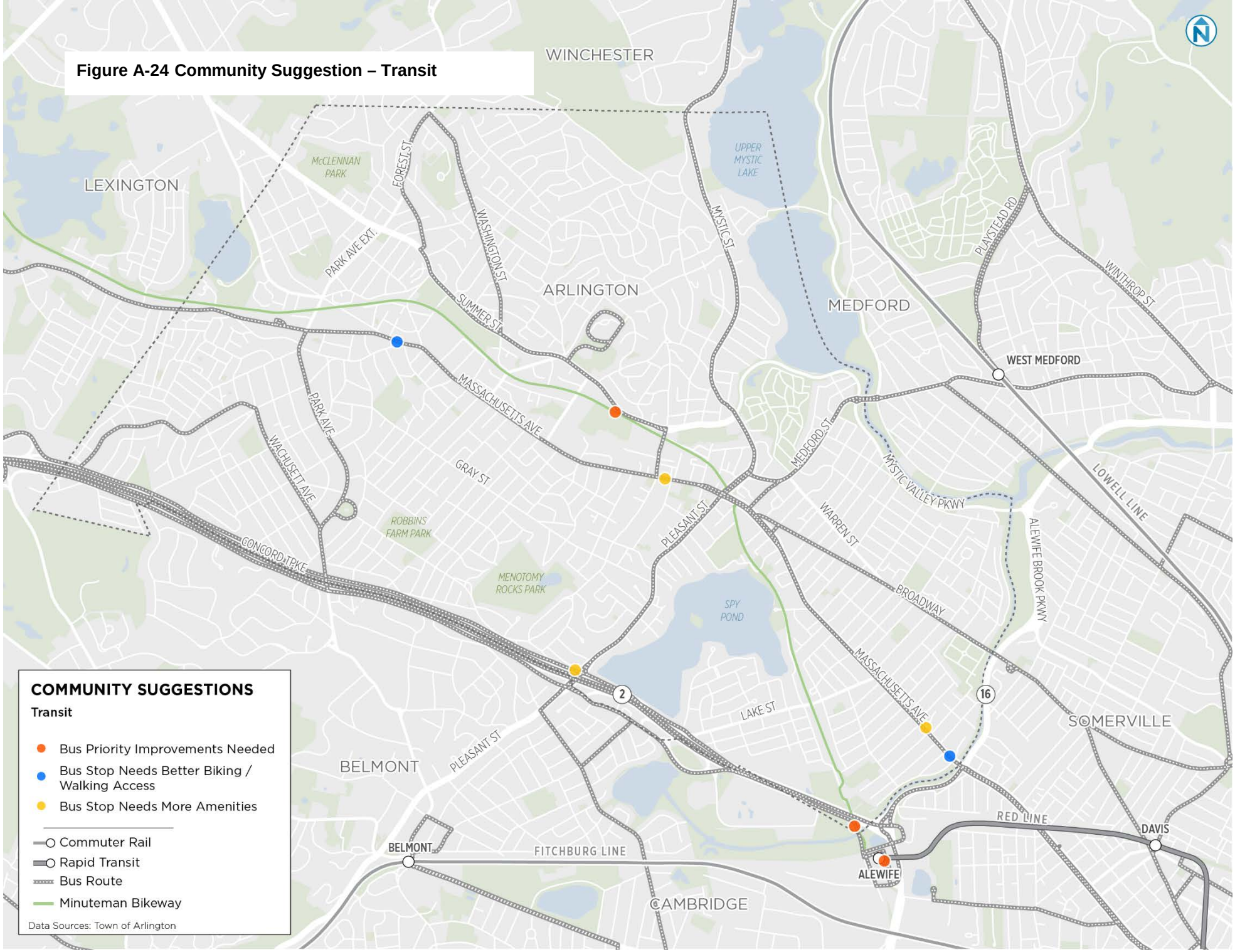
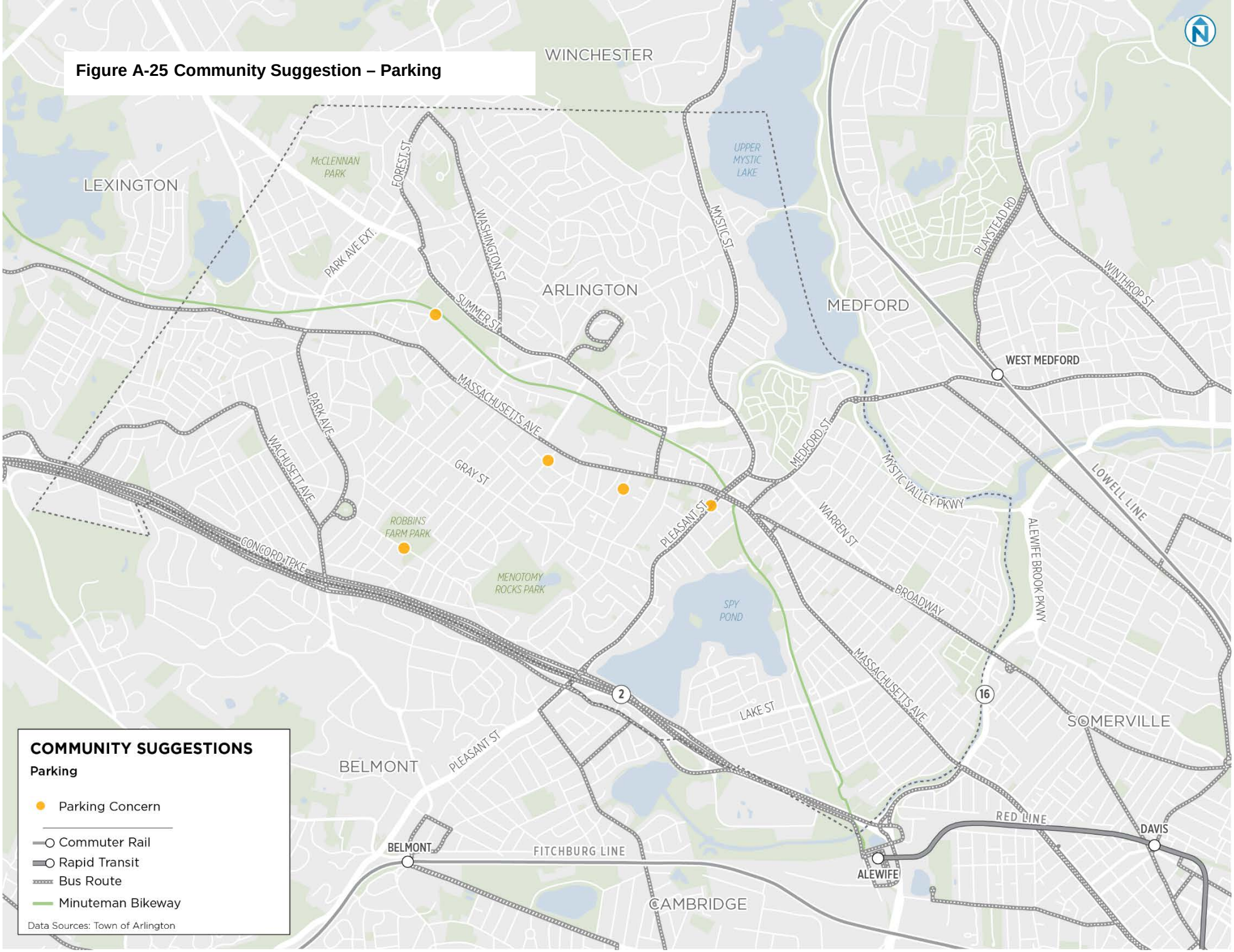


Figure A-25 Community Suggestion – Parking



ONLINE TOWN FORUM FEEDBACK

On July 30, 2020, the Town hosted a virtual community forum to present work done to date on the Sustainable Transportation Plan. Community members, both those who attended the forum and who could not, were invited to contribute their feedback using an online form, which also included a recording of the forum.

On this online feedback form, participants were shown the responses to the Connect Arlington survey conducted in June, in which respondents were asked to indicate their top three goals for Arlington's transportation system (see prior section on survey and Figure A-7). The form asked participants the degree in which they agreed with the following five top-ranked goals from 1 (agree) to 5 (disagree):

- Considers the needs of diverse populations and people of all ages
- Prioritizes a pedestrian and walk-friendly environment
- Focuses on improved transit connections and travel times
- Prioritizes safety for all people no matter how they travel
- Enhances access to and use of local transit services

The form received feedback from 71 people, and they overwhelmingly agreed with these five goals. The average score for all five goals was 1.7, on the 1 (agree) to 5 (disagree) scale. Respondents were also asked, if they thought a different goal should be prioritized, which one was a higher priority. The two goals that the greatest number of respondents deemed a higher priority were:

- Expands dedicated and comfortable bicycle facilities
- Reduce its local carbon impact

The last two questions on the feedback from were open-ended. The first asked: "If you could wave a magic wand and change something about transportation in Arlington, what would you change?" Responses include:

- Extend the MBTA Red Line into Arlington as originally planned last century
- Increase bus service and bus frequencies
- Serve neighborhoods with smaller buses, circulators, and/or shuttles
- Better bike lanes and for people who bike to follow traffic laws
- Electrification of cars and buses
- Reduce congestion

The last question asked: “What is standing in the way of making changes about transportation and what are some ways to make them happen?” Most of the responses cited money as the major obstacle to transportation change. Other responses include:

- Opposition to walking, biking, and transit projects from car users
- Lack of vision and urgency at the government level
- Ingrained reliance on cars
- Perception of transit, including during COVID-19 pandemic

FOCUS GROUP NOTES

Between April and August of 2020, the Town held a series of focus groups on Zoom for the Sustainable Transportation Plan. The purpose of these focus group was to gather feedback on issues relevant to specific subsects of the Arlington population or for specific topic areas. The seven groups were:

- Getting Around with Disabilities, plus separate one-off calls with blind members of the public for whom Zoom is not a suitable platform
- Business and Culture
- Walking and Biking
- All Ages and Abilities
- Environment and Sustainability
- Neighborhood Transportation
- Public Transit

Getting Around with Disabilities

The Getting Around with Disabilities focus group discussed the following topics:

- **Sidewalk obstacles:** A variety of factors were cited as making sidewalks difficult or impossible to navigate, including snow, bicyclists, poles and other vertical obstructions, cars overhanging from driveways, and overgrown bushes, shrubs, and trees.
- **Age-friendliness:** Arlington has a lot of older adults, and there is a feeling that funding and resources have been focused on kids and youth (schools, cycling, etc) rather than older adults.

- **Bus Stop Amenities:** Many bus stops lack basic amenities such as seating and shelters, and many people with disabilities cannot stand and wait at a bus stop for a long time. Electric wheelchairs also need a shelter if it is raining or snowing.
- **The RIDE:** The focus group cited the RIDE as a lifesaver, but also the cost, time commitment, and unreliability are barriers to people using it.
- **Overemphasis on Bicycling:** Members of the focus group felt that there is often an overemphasis on bicycling, when there are many who cannot bike (or take transit) to get to jobs and other services.

The project team also had two one-on-one conversations with blind members of the public. In addition to similar comments as the above focus group, these conversations gave the following insights:

- **Sidewalk quality:** The quality of pavement makes navigating while walking difficult, as does brick sidewalks.
- **Walk signals:** Many audio signals at intersections are broken or nonexistent, which leads to risky crossings.
- **Reporting:** DPW does not reply when calling to report an issue with sidewalks or streets.
- **Riding the Bus:** Sometimes it is difficult to get the bus driver's attention to stop at a bus stop, and buses are hard to board if it's not close to the sidewalk.

Business and Culture

The Business and Culture focus group discussed the following topics:

- **Art**: The Arlington Commission for Arts and Culture has done great programming along bike path and sidewalks. Would like to see more art in store windows to make pedestrian environment more comfortable, but landlords are slow to embrace this.
- **Parking:** Parking needs to be better managed, especially when two or more properties share the same parking lot or street parking. Crowding cycles overlap, and there are competing uses. Signage should also be improved.
- **Walking and Biking**: There is excitement for Blue Bikes coming into Arlington. The group mentioned how sidewalks should be better and more accessible.
- **Transit**: There is often bus overcrowding, specifically near the Gibbs School during the school year. The buses along Mass Ave are full of students, so people trying to get to work starts their long commute with chaos. Proposed solutions include a school bus program or shifting students to bikes. People would also like to see more bus routes in general.

Walking and Biking

The Walking and Biking focus group discussed the following:

- **Inclusive Transportation System:** The group would like to see an inclusive transportation system, where having a car-free lifestyle is possible, but also ensuring the needs of aging and disabled populations are met. Connections to other towns through all modes also need to be improved.
- **Minuteman Bikeway Improvements:** The group discussed a variety of issues with the Bikeway, including how it gets icy in the winter and the lighting is not enough for people (especially women) to feel safe.
- **Inconsistency of Transportation Infrastructure:** There is a large divide between the hilly areas and the flatter areas of Arlington when it comes to transportation infrastructure, in that the hilly areas have much less bus service and bike facilities. The quality of sidewalks, bike lanes, and the Bikeway can also vary a lot throughout its route.

All Ages and Abilities

The All Ages and Abilities focus group discussed the following topics for making Arlington livable for all:

- **Sidewalk Conditions:** Many sidewalks are in bad condition, especially brick sidewalks which cause people to trip.
- **Snow Removal:** Walking conditions are dangerous when sidewalks are not shoveled, but many older adults cannot remove snow by themselves.
- **Crosswalks:** Crosswalk timings are sometimes too short for older adults and people with disabilities.
- **Transit:** The group would like to see benches at bus stops, new bus stops near housing complexes with older adults, and improved transit for those who are temporarily disabled and may not qualify for the RIDE.

Environment and Sustainability

The focus group on environment and sustainability discussed the following topics:

- **Bike Facilities:** Bike lanes need more protection and buffer from car traffic, in a way that also does not compete with buses. Lighting can also be improved along the Bikeway to make it safer.
- **Sidewalk Coverage:** Sidewalk coverage and quality is poor in areas that need it, such as around schools and public housing complexes.

- **Trees:** Street trees are crucial but not currently done well, with tree pits too narrow and roots breaking into roads and sidewalks. Tree planting standards may be needed and improved upon.
- **Electric Vehicles:** Members of the group would like to see more public electric vehicle charging, as well as more fast chargers.

Neighborhood Transportation

The Neighborhood Transportation focus group discussed the following:

- **Process:** The group expressed a desire for a more transparent mechanism to bring up concerns and learn about town actions.
- **Pedestrian and Bike Safety**: The Town has been historically designed for cars, and the group would like to see pedestrian friendly zones expanded around commercial centers, as well as safety for children playing on the street. The bike portion of the plan should consider all ages and abilities, but there are currently bike-to-bike conflicts between fast commuters and recreational bikers.
- **Crash Clusters**: The group discussed two specific areas with many crashes and near-crashes, Downing Square at Park Ave/Park Ave Ext/Lowell Street and Appleton Street near both Park Ave and Mass Ave.
- **Safe Routes to School**: A change in culture is needed, since people are currently dependent on driving their kids to school. The group would like to see a Safe Routes to School program revived.

Public Transit

Lastly, the focus group on Public Transit discussed the following:

- **Bus Service:** It takes a long time to reach Downtown Boston, especially compared to those on commuter rail lines who live farther away. The group would like to see increased frequencies and reduced bunching, as well as turning the 77 bus into a trolley.
- **Bus Routing:** Shorter bus routes may make buses more reliable. Additionally, the focus group would like to see better connections to Alewife, but also the Orange Line, Green Line, and West Medford commuter rail station.
- **Bus Stops:** There is a desire for more crosswalks at bus stops, shelters for people waiting, and lighting enhancements.
- **Sidewalk Maintenances:** Sidewalks must be maintained and cleared of snow faster so that people can get to transit.

APPENDIX B

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APPENDIX B: STRATEGIES & PRIORITIES PUBLIC ENGAGEMENT

RECAP OF DRAFT STRATEGIES AND PRIORITIES TOWN FORUM

On December 14th, 2020, the Town hosted a second and final virtual community forum to recap the planning findings to date and to present and seek feedback on draft strategies and priorities for Connect Arlington. About 30 members of the community attended and provided feedback. An online survey component was created as an extension of the online forum to provide multiple means of garnering input.

At the forum, an introduction was delivered which:

- framed the goals of the planning process;
- summarized the key findings informing the development of draft strategies;
- recapped the plan vision and goals developed through the first survey and guidance from the Sustainable Transportation Plan Advisory Committee; and
- presented a new approach to thinking about the modal hierarchy of planning movement and transportation-related investments, which prioritizes the most vulnerable users of the roadway first.

The heart of the forum was focused on presenting and recording a definition of the draft set of sustainable transportation strategies, what they involve, and how they would work and help in a context like Arlington. The forum helped field and respond to questions around each of the strategies.

PRIORITIZATION SURVEY SUMMARY

A final survey was open to the public from November to December 2020 to provide an opportunity for Arlington's residents, workers, and visitors to rank and prioritize plan goals and objectives, as well as potential avenues of improvement for the transportation network. This survey was created with SurveyMonkey and publicized through a variety of communication platforms.

Survey Respondents

About 280 participants answered this final survey. As shown in Figure B-1, survey respondents encompass both newer residents and those who have lived in Arlington for over 20 years. 81% of survey respondents own their home (Figure B-2), which is a rate that is slightly greater than those who answered the Annual Town Survey (78%), and much greater than data on the owner-renter breakdown for the area from the 2017 American Community Survey (61%).

Figure B-1 Years in Arlington

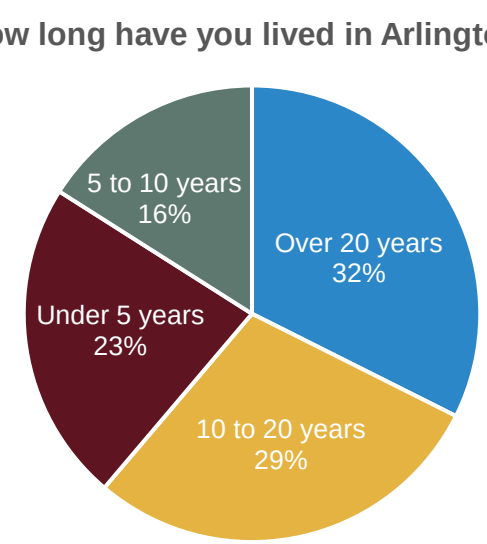
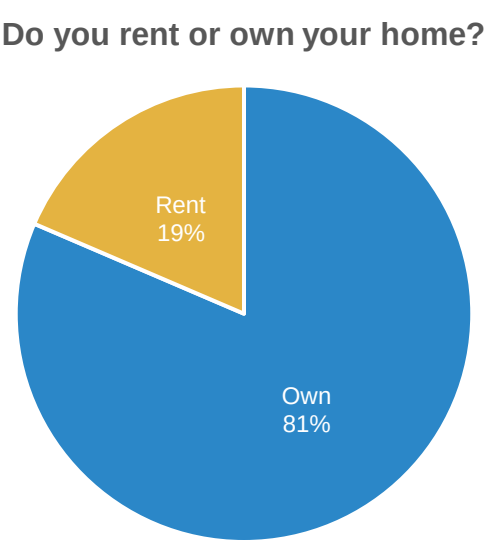


Figure B-2 Home Ownership



Households with members of all ages participated in the survey. The largest group of age cohorts in respondents' homes were adults ages 40 to 64 years (Figure B-3). As shown in Figure B-4, There were high levels of participation from Arlington's higher income households, with

nearly 60% of survey respondents with an annual household income of over $150,000. Though Arlington is a relatively high-income town, survey respondents tended to have a greater income than the general population (based on 2017 ACS data).

Figure B-3 Age Groups

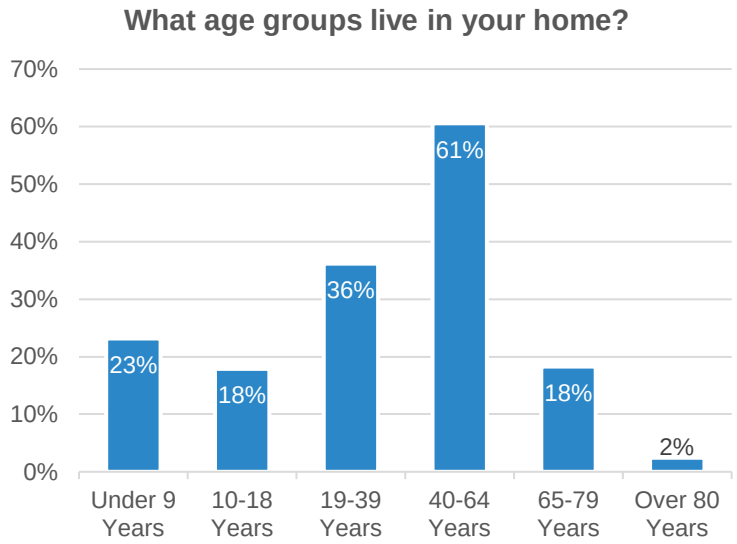
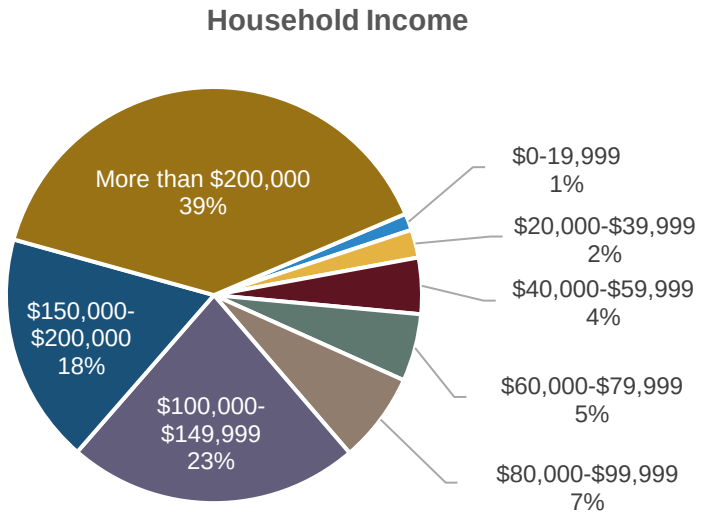


Figure B-4 Number of Age Groups



Many neighborhoods were represented in survey responses, as shown in Figure B-5, though nearly two-thirds of respondents live in East Arlington or Arlington Heights. Pre-pandemic work locations of participants were spread widely throughout the greater Boston area and beyond, as seen in Figure B-6, and only 7% of respondents work in Arlington. Of note, 16% of respondents were already working remotely and not commuting before the onset of the pandemic, which does not include the further 11% of respondents that do not work, either through retirement, unemployment, or any other reason.

Figure B-5 Home Neighborhood of Respondents

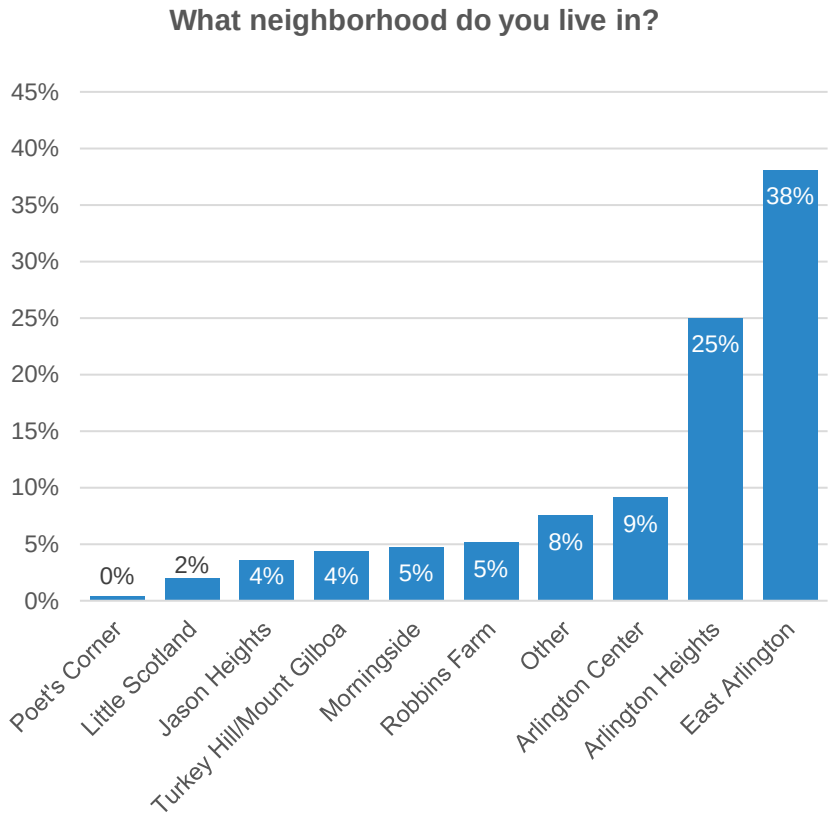
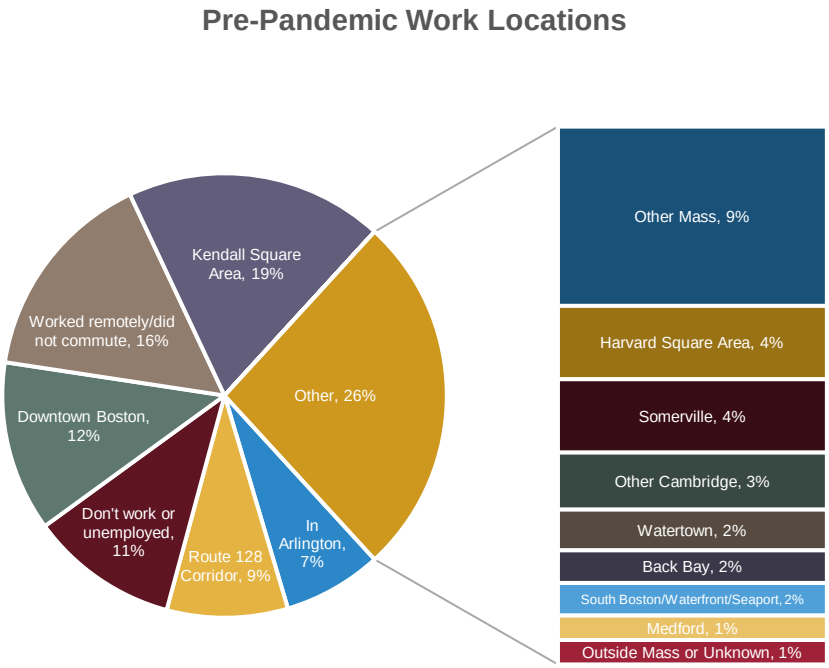


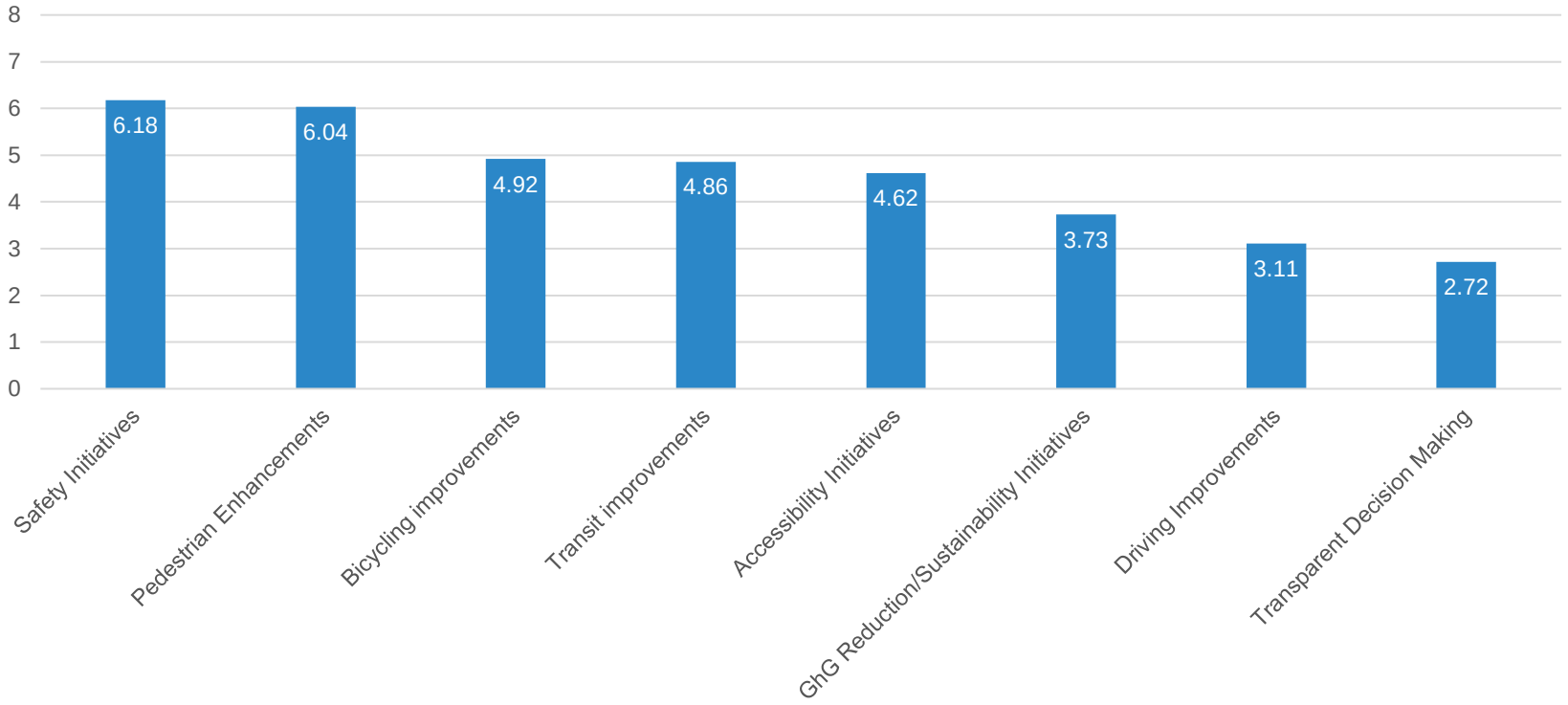
Figure B-6 Pre-Pandemic Work Locations of Respondents



Transportation Initiatives Prioritization

The survey asked respondents to prioritize (rank) the plan's initiatives to improve Arlington's transportation system. Results are shown in Figure B-7, with "Safety Initiatives" and "Pedestrian Improvements" achieving the highest-ranking score. The "Transparent Decision Making" initiative had the lowest ranking score, indicating a high level of trust in the process among respondents, followed by "Driving Improvements," indicating the desire to create a diverse, quality mobility environment over continued focus on car travel.

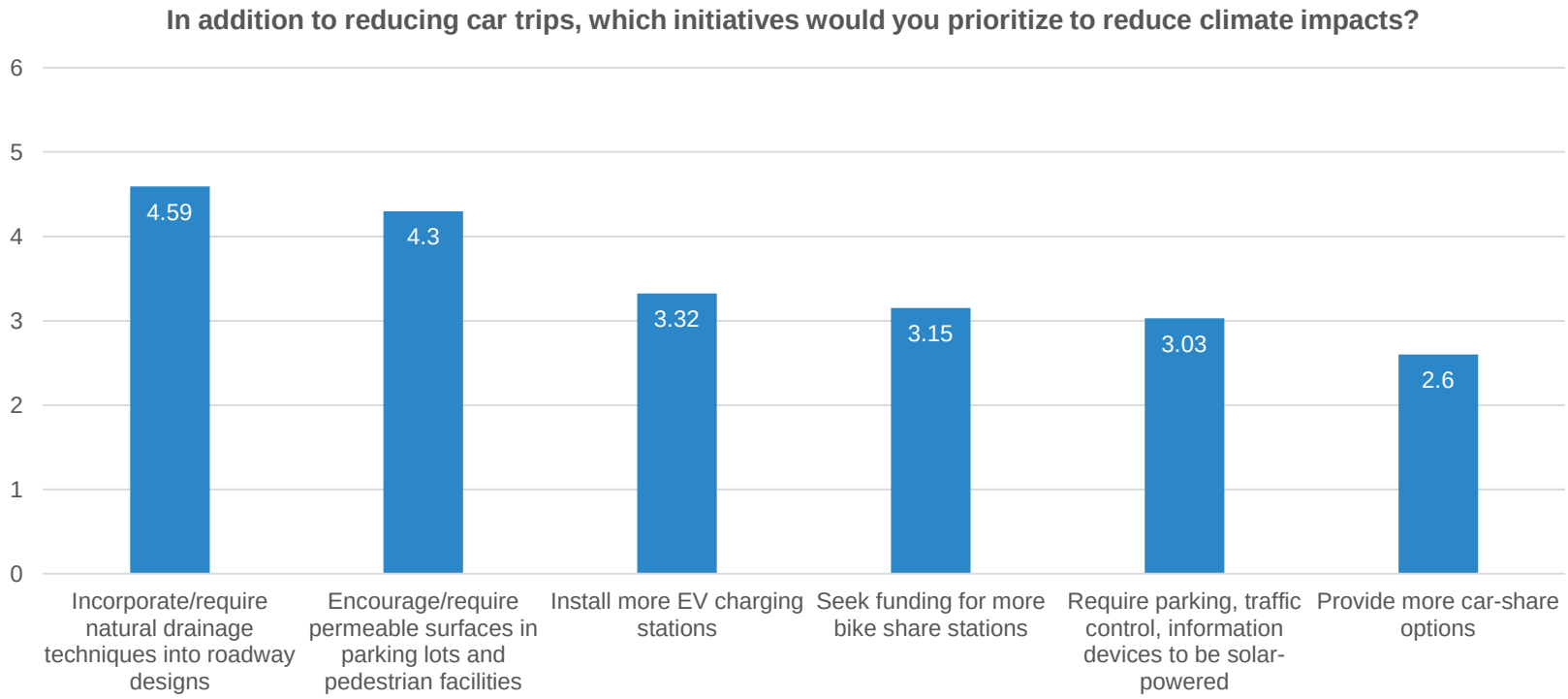
Figure B-7 Transportation Improvement Initiatives Prioritization



Recognizing that climate impact mitigation is a key Arlington goal, and that reductions in automobile trips and vehicle miles traveled are the most effective transportation-related tools towards this goal, survey participants were asked to prioritize (rank) additional measures to reduce

climate-related impacts in the Town. The top-ranking initiatives were incorporating or requiring natural drainage techniques in roadway designs (such as rain gardens, bioswales and other stormwater retention) in all roadway and development projects to protect waterways and wetlands by reducing stormwater outflows during storm events, and encouraging or requiring permeable pavement or surfaces in parking lots and pedestrian facilities to reduce stormwater runoff and erosion.

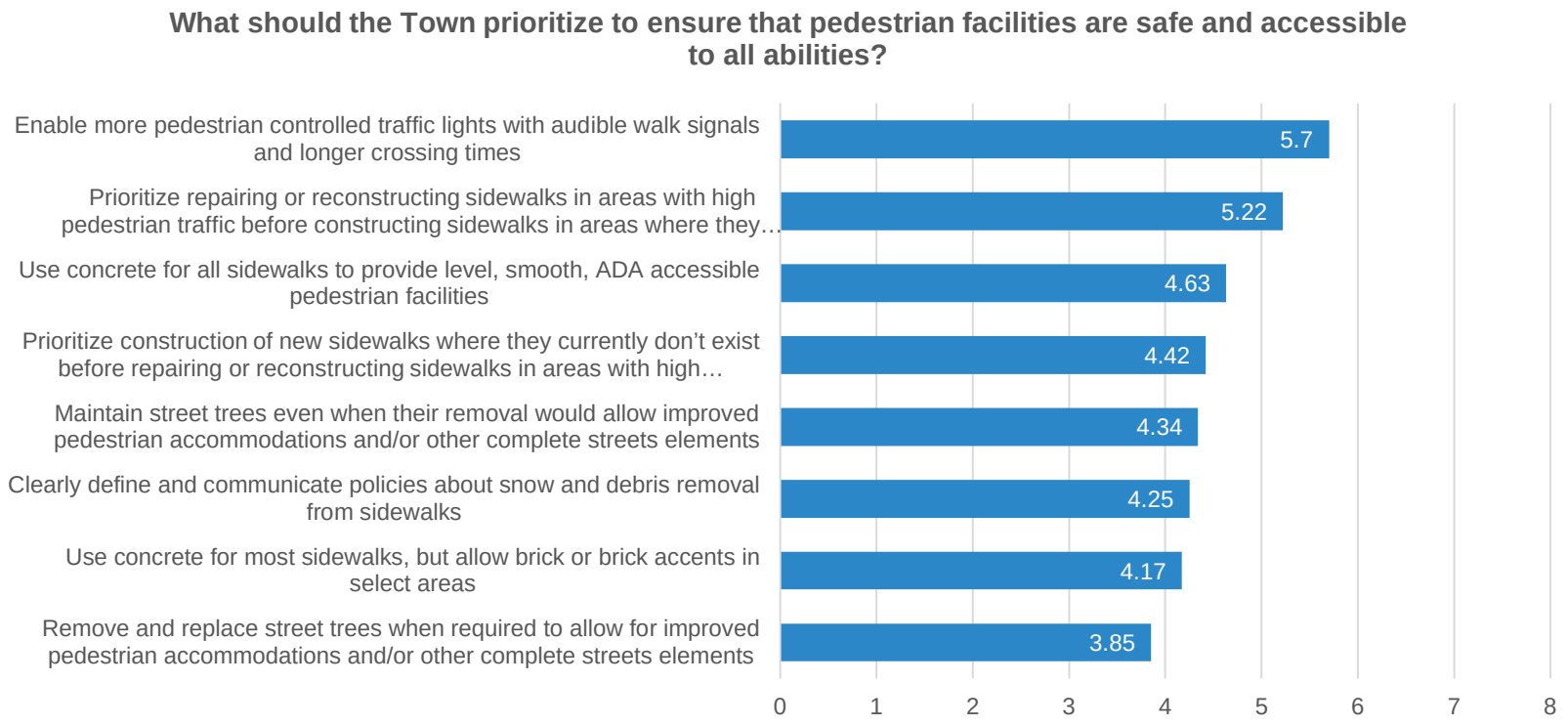
Figure B-8 Climate-Impact Initiative Prioritization



Pedestrian and Bicycle Priorities

The survey asked respondents a series of questions pertaining to pedestrian and bicycle safety and access initiatives. As shown in Figure B-9, improving the crossing infrastructure and operations at signalized intersections and prioritizing repairing or reconstructing sidewalks in areas with high pedestrian traffic before constructing sidewalks in areas where they don't exist were the top-ranking priorities. Outside of these two initiatives, all but one of the remaining initiatives had scored above the mean, indicating that most initiatives were similarly favorably ranked. The remaining initiative, removing and replacing street trees to provide space for projects, was the only initiative to score below the mean.

Figure B-9 Pedestrian Safety and Accessibility Improvement Priorities



In terms of crossing safety initiatives, as shown in Figure B-10, installing pedestrian-oriented lighting was the top scoring initiative, but the other two projects were similarly scored to each other, with both scoring at nearly the mean, indicating that they were similarly favorably ranked.

As shown in Figure B-11, establishing “bike boulevards” to serve as the primary bicycle routes was the clear top-ranking priority for growing the town-wide bicycle network, followed by building more bicycle lanes even if it requires the removal of parking on one or both sides of a given street, and providing high-quality connections to the Minuteman Bikeway whenever possible, which had nearly the same score. Participants clearly prioritized building additional bicycle lanes over retaining on-street parking lanes if right-of-way space would allow for only one or the other, as retaining parking over building bike lanes was both the lowest scoring initiative and the only initiative to score below the mean.

Figure B-10 Pedestrian Crossing Initiative Priorities

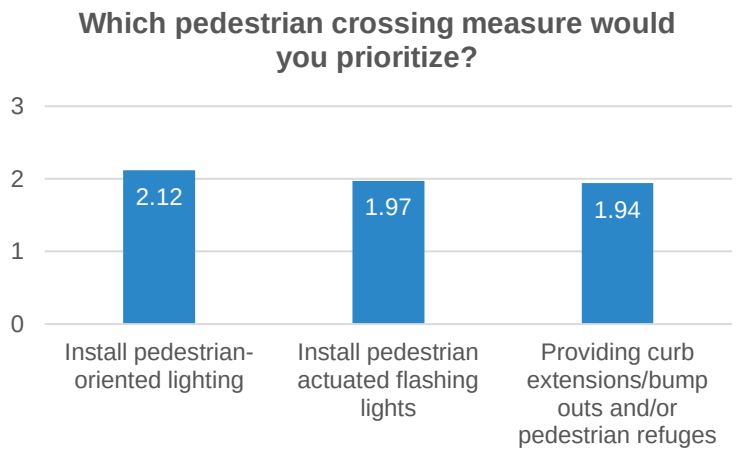
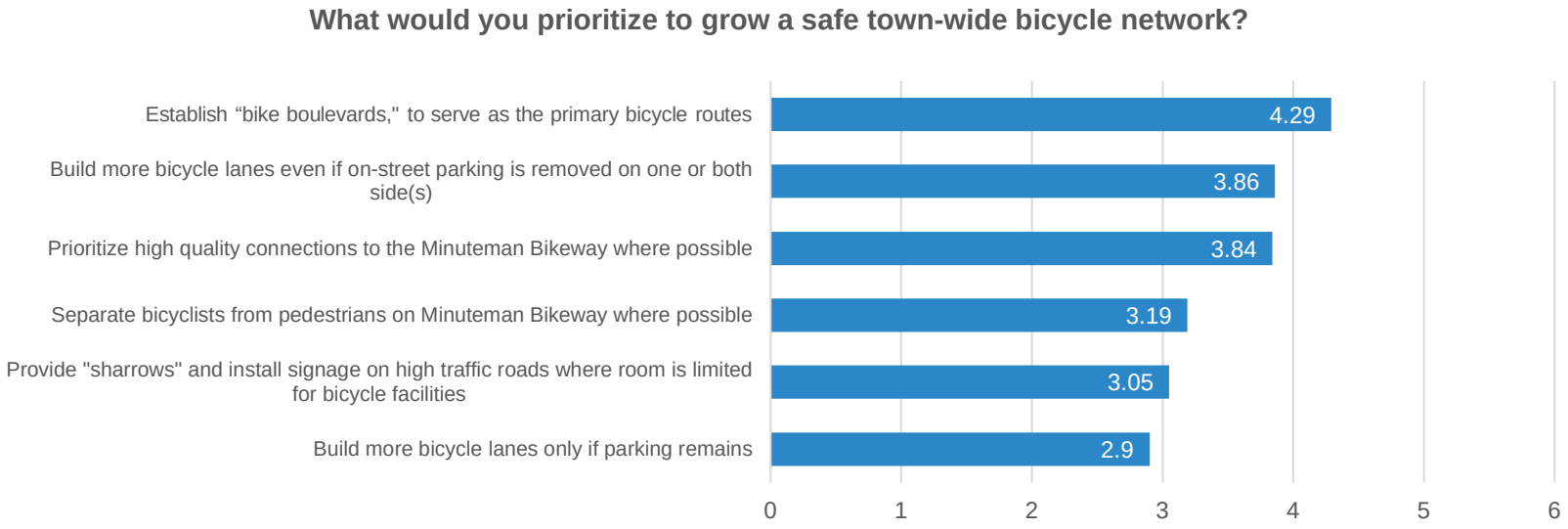


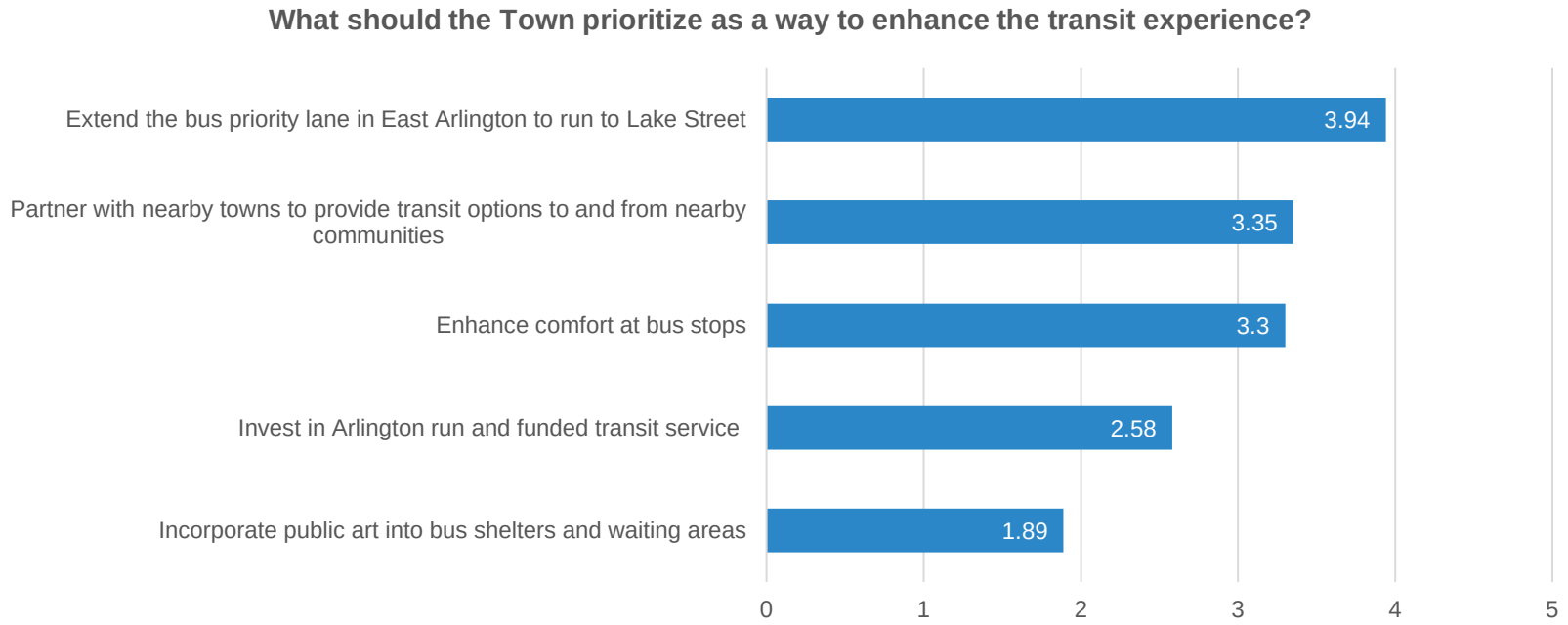
Figure B-11 Bicycle Network Growth Prioritization



Transit and Access Priorities

The survey presented participants with initiatives to improve transit and services, including for people who are mobility challenged due to age or disability or other reasons. As shown in Figure B-12, an extension of the East Arlington bus priority lane from its current position to Lake Street was clearly the top priority, followed by partnering with nearby towns to provide, expand, or improve transit connections to and from Arlington and nearby communities, and enhancing comfort at bus stops. However, incorporating public art into bus stops and waiting areas was by far the lowest scoring initiative, suggesting that bus stop comfort initiatives need be of substance, and not merely cosmetic.

Figure B-12 Transit-Experience Initiatives Priorities



While enhancing comfort at bus stops proved a well-scoring initiative for improving the transit *experience*, it was the least ranked initiative for improving transit *service*. As shown in Figure B-13, increasing the frequency of transit services on high-ridership routes and adding bus priority lanes wherever possible are the top scoring initiatives, with improving bus stop amenities falling much further behind.

In terms of transportation access programs for people with mobility challenges, as shown in Figure B-14 seeking opportunities to expand on the existing services currently being offered by the Council on Aging (COA) was easily the top scoring option, followed by initiatives that take advantage of emerging mobility opportunities, with Micro Transit options and TNC programs and partnerships both scoring above the mean. Continuing COA service operations as currently constructed was the lowest scoring initiative, and the only one to score below the mean.

Figure B-13 Transit Service Improvement Priorities

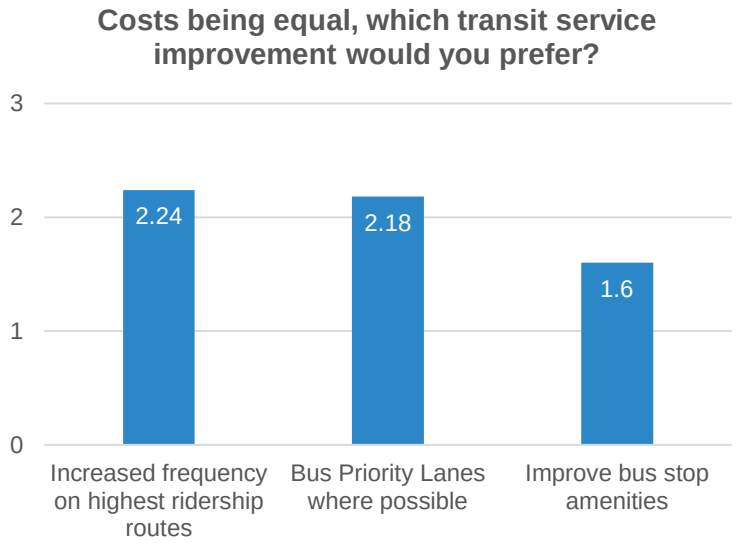
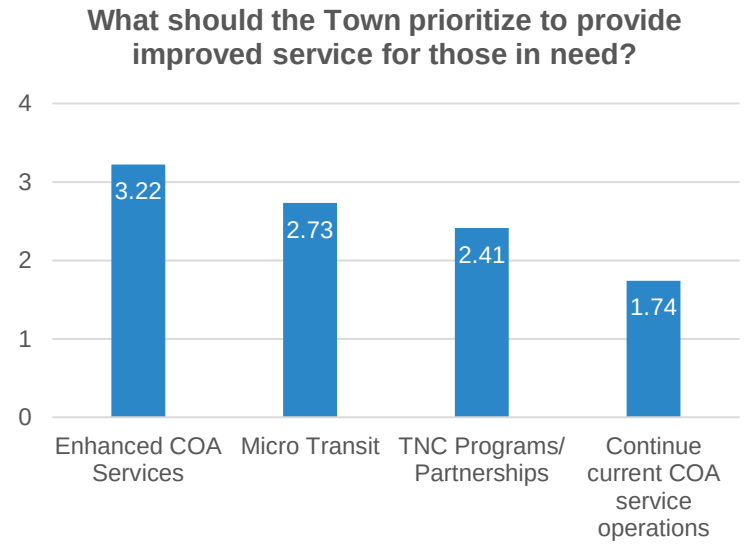


Figure B-14 Mobility/Access Service Prioritization



Right-of-Way Allocation and Curbside Management

Given the realities of space constraints in the right-of-way on many town streets, as well as the realities of competing uses at the curb, the survey asked participants to prioritize trade-offs associated with initiatives when they occur on space constrained roads or as they may conflict with activity at the curb. As seen in Figure B-15, participants prioritized pedestrian improvements in particular, but also bicycle improvements, over motor vehicle movement when considering transportation initiatives on space-constrained roads. In terms of curbside use prioritization, as seen in Figure B-16, if on-street parking were to be removed or repurposed, providing bus-priority lanes take priority over providing bike lanes, and providing bike lanes takes priority over establishing pick-up/drop-off zones for TNC's or commercial deliveries.

Figure B-15 Prioritization on Space-Limited Roadways

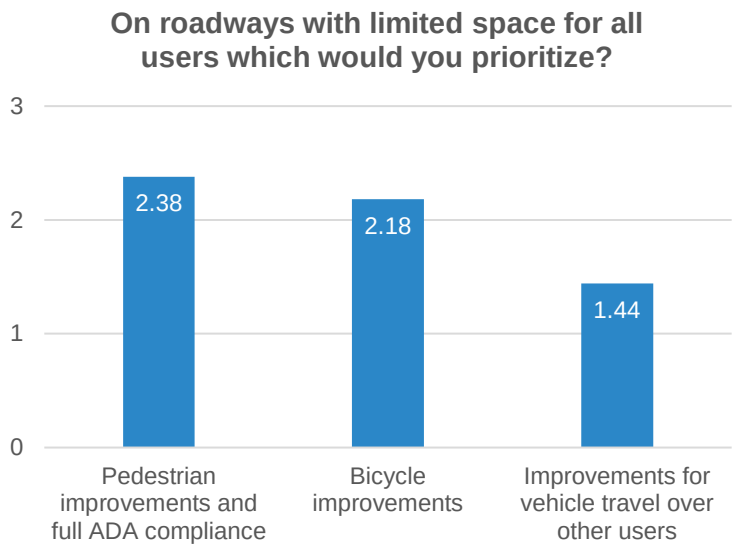
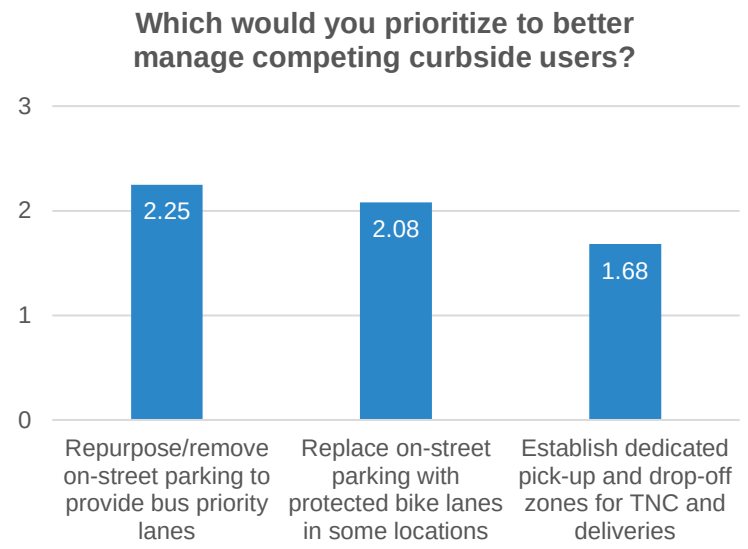


Figure B-16 Curbside Management Prioritization



SUSTAINABLE TRANSPORTATION PLAN ADVISORY COMMITTEE REVIEW

The Sustainable Transportation Plan Advisory Committee (STPAC) was a guiding body created and appointed by the Select Board to manage this planning process. Each of the meetings hosted by the committee was open to the public to attend, with notices, agendas, and minutes for each posted on the committee page of the Town website. The consulting team kicked off the plan with this group and met with them five times over the course of the plan to vet and see feedback on project process, methods, and draft planning material. The group provided significant guidance throughout the project timeline, providing edits to surveys and to draft reports. The committee met twice before the plan commenced to charter the scope and goals of the plan and the committee met a total of eleven times between and including the plan kickoff and the final presentation of the plan to the Select Board.

The Members of the Sustainable Transportation Plan Advisory Committee

Daniel Amstutz, Department of Planning and Community Development
Heather Barber, Arlington Business Community
Linda Butt, Parking Advisory Committee (served 2019-2020)
Adam Chapdelaine, Town Manager
Darcy Devney, Disability Commission
Lenard Diggins, Transportation Advisory Committee
Phil Goff, East Arlington Livable Streets Coalition
Doug Mayo-Wells, Arlington Bicycle Committee
Mike Rademacher, Department of Public Works
Officer Corey Rateau, Arlington Police Department
Kristine Shah, Health & Human Services Department
Rachael Stark, Walking in Arlington
Ezekiel Wheeler, Arlington Business Community

DRAFT PLAN BOARD AND COMMITTEE REVIEW

To inform and review the draft strategies and implementation of the plan, Town staff from the Department of Planning and Community Development led a series of meetings with advocacy groups and town committees. Once the final draft plan was completed, the Town of Arlington presented the plan and its key contents to a selection of committees including:

- The Arlington Bicycle Advisory Committee (ABAC) in February 2021
- The Transportation Advisory Committee (TAC) in February 2021
- East Arlington Livable Streets on March 4th, 2021
- The Master Plan Implementation Committee on April 30th, 2021

Town staff also delivered periodic updates to the Arlington Select Board during the planning process. A presentation on the progress of the plan was provide to the Board at their June 29th, 2020 meeting, which also functioned as a preface before the first town forum. Towards the final months of the planning process, the Department of Planning and Community Development and Town Manager's Office hosted one-on-one meetings with each Select Board member to confirm understanding and comprehension of the plan results, strategies, and its documentation. The Department of Planning and Community Development anticipates presenting the complete plan to the full Select Board in June 2021, at which they will have the chance to vote on the endorsement and adoption of the plan.