Chapter Transportation and Connectivity

Introduction

The core of Dedham's transportation system is its road network with 110 miles of streets and roadways, over two-thirds of which are Town controlled. While infrastructure for active transportation modes is lacking in many areas, community members have expressed strong interest in creating a town that allows for better and safer walking, biking and rolling routes between destinations. Complimentary to active transportation improvements, the MBTA bus and rail transit options have opportunities to serve more people commuting in and out of Boston, as Dedham is a significant connector into the city for many people in the region.

A successful transportation network plans for the efficient, enjoyable, and safe movement of people and goods and provides multiple options for people to get where they want to go. Transportation affects land use and development as well as the environment, including air quality, noise, and water quality. The existing transportation network also affects the health and safety of all users, particularly those without access to an automobile who use transit, walking, and cycling to connect to their daily needs. As such, an equitable, well-designed and functional transportation network can have positive impacts on economic development and quality of life for the entire community.

Transportation and Connectivity



Make Dedham safe and reliable for any form of travel with a priority to improve walking or biking where you want to go.

Themes Highlights

- Traffic volume and congestion have been increasing in Dedham between 2014 and 2019 according to MassDOT data.
- Additional investments in sidewalks and bicycle infrastructure are needed.

42% of Dedha

of Dedham's streets do not have a sidewalk on at least one side.

Source: MassDOT GIS Municipal Dashboard

 Ridesharing has grown more quickly in Dedham than the statewide averages according to the MA Department of Public Utilities.

8.25

Rideshare trips per resident in 2018 (total of 204,000 trips)



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Source: Mass.gov TNC, MA Department of Public Utilities

Companion and related plans and studies

- Providence Highway Corridor Study (2021)
- Complete Streets Prioritization Plan (2018)



Goal/Strategy Highlights

- Make travel in Dedham safe and reliable in any form, with a focus on improving the ability to walk or bike to desired destinations.
- Reduce safety risks for all roadway users and address locations where crashes are clustered.
- Improve support, communication, and coordination around implementation of transportation improvements.

Comparison of Select Traffic Counts

Boston Providence Turnpike



Source: Massachusetts Department of Transportation (MassDOT) traffic volume data

- Dedham Corporate Station: Creating a Connected Neighborhood (2017)
- Dedham and Westwood Bicycle and Pedestrian Network Plan (2013)

Defining transportation terms

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Complete Streets

Streets that are designed and operated for everyone. Streets that prioritize safety, comfort, and accessible options for all modes of travel including walking, biking, transit, and motorized vehicles, anticipating the needs of all ages and abilities.

Environmental Justice Population

In Massachusetts, a neighborhood is defined as an Environmental Justice population if any of the following are true:

- The annual median household income is not more than 65% of the statewide annual median household income;
- Minorities comprise 40% or more of the population;
- 25% or more of households lack English language proficiency; or
- Minorities comprise 25% or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150% of the statewide annual median household income.

Source: https://www.mass.gov/info-details/environmental-justice-populations-inmassachusetts

Functional classification of roads

The process by which streets and highways are grouped into classes, or systems, according to the character of traffic service in order to help plan appropriate design components for each type of roadway facility.

Level of service (LOS)

A concept and measure defined in the Highway Capacity Manual (HCM) and other resources that relates the quality of traffic service of a roadway or intersection to a given flow rate. Six levels are defined (A, B, C, D, E, and F) with A denoting the best quality of service and F denoting the worst.

Modes of travel

The variety of ways to move people or goods from one location to another including walking, biking, transit, and motorized vehicles, among others.

"TMA" (Transportation Management Association)

Non-profit membership organizations comprised of employers, developers, and property managers collaborating to address transportation, air quality, and commuter issues in a defined geographic area.

"TNC" (Transportation Network Company)

The general phrase used to refer to specific technology companies that provide a platform for sharing rides such as Uber and Lyft.



Transportation and Connectivity In Dedham today

Transportation themes

Increase in traffic volume and congestion over the last five years

According to MassDOT data, most streets in Dedham saw a 5% to 11% increase in average daily traffic between 2014 and 2019. The one exception was Washington Street near Dedham Square, which saw a 17% reduction in traffic over the last five years. An increase in traffic affects most Dedham residents,



Comparison of Select Traffic Counts

as 80% of employed Dedham residents drove to work prepandemic. Although the COVID-19 pandemic has shifted patterns, 11% of employed residents took transit to work, 5% worked from home, 4% walked biked, or took some other mode of travel. This represents an opportunity to increase the availability, reliability, and safety of transit and micro-mobility (for example e-scooters) options in Dedham in order to address the increasing traffic volume and congestion on Dedham's street network. In 2020, the COVID-19 pandemic changed commuting patterns in and around Dedham and caused traffic volumes to decrease by 50-60% statewide in the spring of 2020. Many typical nineto-five commuters began working from home, schools pivoted to remote learning, and many other resources closed. Overall, traffic was down in Norfolk County by 9% from pre-pandemic levels. According to some estimates, as of the end of the summer of 2021, traffic is close to returning to 2019 volumes.

In 2019, MassDOT completed a traffic congestion study of major corridors serving the Boston region, including Interstate 95 and Boston-Providence Highway in Dedham. Most of the morning congestion on I-95 occurs between 7:00 am and 9:00 am. Congestion on Boston-Providence Highway also begins at 7:00 am but extends an extra hour until 10:00 am. During this time the roads have segments that are highly congested (greater than two times free flow) as well as congested (one and a half times to two times free flow). In its analysis of traffic congestion in the region, MassDOT found that the Longwood-Dedham corridor (connecting Route 128 to Longwood Medical area) had a travel time of



31-32 minutes, but with 1 in 10 days averaging 41 minutes. The Longwood-Dedham 10-mile corridor, was considered generally reliable compared to other major regional commuting corridors.

More people commute into Dedham than out of it every day

Over 17,000 workers commute into Dedham during the workday, compared to approximately 13,000 workers that commute out of Dedham. The transportation connections both in and out of Dedham that facilitate these commutes, especially in high employment areas, are crucial to evaluate for improvements to support resident access and economic development.



Chapter: Transportation and Connectivity DRAFT FOR REVIEW For the 13,000 workers leaving Dedham, Boston is the largest employment destination with 31% of Dedham workers headed there, followed by 9% who work in Dedham. Newton, Cambridge, and Needham round out the top five workplace destinations for employed Dedham residents. Over 47% of Dedham commuters work in other locations distributed throughout the greater Boston region.

In Dedham, there are employment clusters near Legacy Place, Dedham Mall, Dedham Corporate Center, and Readville. As of 2017, there were nineteen thousand jobs in the Town. On a typical workday, about 4,800 more workers would commute into Dedham from other locations, compared to those commuting out of Dedham to work elsewhere. The largest share of workers commuting into Dedham live in Boston (17%).

More sidewalks are needed

58% of Dedham's streets have a sidewalk on at least one side. If the walking infrastructure is expanded and enhanced, many local trips that are currently most likely to be taken by car could be made by walking. In the Master Plan community surveys, Dedham residents prioritized improved infrastructure for walking. Walk Score is a private company that provides a public access walkability index that assigns a numerical walkability score to any address in the United States. Walk Score rates Dedham as "car dependent" with "some transit" and without bike lanes, but notes that areas such as "Downtown" (Dedham Square), East Dedham, and Oakdale as most walkable.



Providence Highway is a major barrier to pedestrian and cyclist connectivity in Dedham. There are only five signalized locations to cross the highway within the Town limits. Some of the signalized crossings are separated by one to two miles. As noted in the crash data highlighted later in this chapter, many of the recent crashes, including crashes for pedestrians and cyclists, have occurred along the Providence Highway.



Lack of bike infrastructure

The number of people using bikes as a primary or occasional form of transportation has been steadily increasing in the region and has increased rapidly during the COVID-19 pandemic. Although there are bike racks available in the business centers, on-street bike lanes and off-street paths are lacking. Since 2017, there have been 27 reported vehicular collisions with pedestrians or cyclists, all of which have been in locations without bike infrastructure.

Dedham has limited dedicated pedestrian and bicycle facilities, and 58% of the streets have a sidewalk on at least one side. There are almost no bicycle facilities, and few trails.

¹⁵ Ridership on the Franklin Line commuter rail has increased

Dedham is served by two Commuter Rail stations, Dedham Corporate Center and Endicott. Both stations saw increases in ridership between 2012 and 2018, with the total number of boardings doubling in 2018 compared to 2012. The Dedham Corporate Center has seen a 97 percent increase in commuter rail ridership. While these ridership increases have not continued through the COVID-19 pandemic, ridership should increase as traffic continues to increase on the roadway network, particularly during peak morning and evening commute times. As traffic increases in the Boston region, more people rely on the commuter rail for daily transportation.

MBTA Route 34/34E bus is a main connector, but it is unreliable

Route 34/34E is the most important connector for Dedham as it serves the largest geography, has the highest ridership, and has the best service in Dedham. It connects key nodes along Washington Street and maintains a frequency of 20-30 minutes in each direction during most weekdays. The 34/34E averages nearly 6,500 riders per day (pre-pandemic), accounting for 11% of the entire bus route. Even though the Route 34/34E bus is highly important for network connectivity, it has poor on-time performance.

In December 2019, the MBTA made changes to Route 34/34E



through their Better Bus Project. Service to the Dedham Mall, which used to be served by Route 34E was replaced by Route 34. Route 34 will make 2 stops (At Home and Stop & Shop) at Dedham Mall during the mall's hours of operation. This change allowed the MBTA to provide earlier, later, and more frequent service to Dedham Mall while reducing travel times for Route 34E riders traveling past the mall. The most popular stop to get off the bus on this route is at the most northern end at Forest Hills Station. Boardings are fairly steady throughout the route, with more boardings towards the northern end of the route in Roslindale.

Ridesharing is growing quickly and could signal unmet needs

In 2017, the Massachusetts Department of Public Utilities began collecting basic trip-level information about rides taken using transportation network companies (TNCs), such as Uber and Lyft. That year alone, nearly 150,000 trips originating in Dedham were taken using these ridehailing services, which equates to approximately 6 trips per resident. Compared to other municipalities statewide, Dedham ranked 25th in highest origin-based rides per capita, behind inner core communities such as Cambridge, Boston, and Somerville, and college towns such as Wellesley and Amherst. However, from 2017 to 2018, the number of TNC trips increased by 36% to just over 204,000, or an average of 8.25 trips per resident. In the same time period, the total number of trips statewide increased just 24%. In other words, ridesharing in Dedham is growing more quickly than in other municipalities.

In 2019, Transportation Network Companies (TNCs) like Uber and Lyft, provided over 262,000 rides that started in Dedham. Of those, nearly twenty three percent were within Dedham. The average TNC ride distance was 6.7 miles, a distance that could be traveled by bike or public transit if those modes were more convenient. While the number of rides has decreased during the COVID-19 pandemic, a return to pre-pandemic patterns should be anticipated as more in-person activity resumes.

8.25 Rideshare trips per resident in 2018 (total of 204,000 trips)





Transportation and Connectivity In Dedham today

Additional context and data

Vehicle ownership

As of 2014, Dedham residents own approximately 1.76 vehicles per household, and the average household drives about 46 miles per day. These figures are on par with statewide averages and reflect the most attractive mobility options available within the Town. The relative lack of public transit coverage and opportunities to walk and bike to destinations safely can help explain the low rate of households with no vehicles (<10%), and the tendency for most households to rely on 1 to 2 vehicles.



Journey to work data

Since 1990, average commute times for workers living in Dedham have continued to increase. About 48% of Dedham residents live within a 30-minute commute from their job, which is similar to other municipalities in the Greater Boston region which include about 49% of residents who live within a 30-minute commuter of their job. However, this is significantly less than the statewide average 55% of the residents living within a 30-minute commute from their job. Also noteworthy is that more Dedham residents have commute times shorter than 60 minutes at approximately 90% as compared to the Greater Boston region and Massachusetts municipalities, at 86% and 88% respectively.

In 2000, 25% of Dedham residents had a commute of 15 minutes or less, 32% experienced a 15 to 30 minute commute, 26% spent 30 to 45 minutes commuting, 10% commuted for 45 to 60 minutes, and 7% of residents commuted for an hour or more per trip. The average commute for Dedham residents was 26 minutes, which has increased since 2000. The 2009 Dedham Master Plan notes that the percent of residents commuting longer than 45 minutes increased by 30% from 1990 to 2000, which indicates that commutes for Dedham residents have been increasing over the last 20-25 years.

Over time, Dedham has experienced nominal gains in mode shift towards public transit and working from home. Currently, commuters from Dedham opt to drive more frequently than their counterparts across other municipalities in the Greater Boston region, but about on par with statewide rates. Similar relative proportions hold for public transit ridership, with about the same percent of Dedham commuters opting for a train or bus commute as compared to other Massachusetts commuters, but represent a smaller percentage when compared to commuters in other municipalities in the Greater Boston region.

Prior to the COVID-19 pandemic, Dedham had a relatively high percentage of commuters who worked from home, when compared to the Greater Boston region. A September 2021



Census Household Pulse Survey found that around 35% of Massachusetts workers are currently telecommuting/working from home. A June 2021 survey for the Neponset Valley Route 1/1A Corridor Study found that over 50% of respondents who work and/or live in Dedham stated they are currently working part time or full time from home. While this survey had a high level of respondents who were in the technical fields (i.e., white-collared workers), these recent surveys do suggest that many Dedham residents have been and continue to be working from home during the pandemic.

Existing Transportation Networks

Roads and Streets

Roadways and streets provide critical connectivity in Dedham, particularly along east-west routes that connect with the Providence Turnpike (Route 1) and Washington Street, which are the main north-south roadways. The main east-west corridor consists of West Street, Common Street, and High Street. Townmaintained streets also provide important connections within Dedham, particularly to schools, areas of employment, and neighborhood centers.

Functional Classification of Roadways

Dedham has 110 miles of streets and roadways within its Town limits including three state-maintained facilities – Providence Highway, State Route 109, and State Route 128 (I-95), consisting of just over 11 miles. Over three-quarters of the street network is Town-controlled, with a vast majority of those classified as

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local streets. The map on the following page shows the roadway functional classifications in Dedham.

Pavement Management

According to MassDOT, more than half of the interstate and noninterstate streets and roadways in Dedham are in "excellent" or "good" condition, with some in "fair" or "poor" condition. Areas with "poor" condition are primarily along Route 109, West Street underneath Interstate 95, and the Boston Providence Highway. Between 2016 and 2018, MassDOT repaired 6 potholes, mostly along Boston Providence Highway and Route 1A. As seen in the comparison figure below, the overall condition of interstate roadways is better than non-interstate roadways.





Transportation Roadway Functional Classifications

- Highway Exit Locations
 Roadway Functional Classification
 Interstate
 Principal Arterial
- Urban principal arterial
- Urban collector
- Urban minor arterial





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Traffic Safety

In Dedham, the number of total crashes decreased from 2015 to 2018. In 2019, crashes increased, only to decrease again in 2020 with fewer people traveling due to the COVID-19 pandemic. In Norfolk County, the total number of crashes fluctuated from 2015 to 2019, with a sharp decrease in 2020. While Dedham experienced a 12% decrease from 2015 to 2019, Norfolk County saw only a 4% decrease over the same time period. During the COVID-19 pandemic, both Dedham and Norfolk County saw significant decreases in crashes, partially due to a decrease in vehicles on the roads.



While the overall number of crashes has decreased, the crashes that remain occur in clusters in Dedham. The data show that there are clusters of crashes along the more heavily traveled corridors including Boston-Providence Highway, Route 109, Washington Street, and High Street. There are significant crash clusters of 10 or more crashes on the southern end of Washington Street and Boston-Providence Highway, as well as the intersection of Whiting Avenue and Walnut Street. A significant amount of crashes occur in the identified Environmental Justice areas of Dedham. Street treatments should be prioritized in these locations to reduce or eliminate crashes and increase street safety. The three most recent years of crash data categorized by severity (fatalities, injuries, property damage only, or unknown) are shown on the map on the following page. These include vehicle-to-vehicle crashes as well as pedestrian-to-vehicle and bicycle-to-vehicle crashes. Given the number of crashes over the last three years, this study also looked at the areas that MassDOT mapped as crash clusters and those crashes that involved pedestrians and cyclists. Crash clusters are critical to understanding locations where crashes are more likely to occur. People walking, biking, and rolling are the most vulnerable users of the Town's transportation network and should be prioritized for safety and accessibility in the Town's transportation improvements.

The map on the following page shows the pedestrian and bicyclist crashes overlapped with environmental justice areas. The majority of crashes occur in areas where minority demographic groups comprise 40% or more of the population, as measured by 2020 census data. This has negative implications for active and sustainable transportation for Dedham's communities of color, including increased crash rates, reduced safety, and reduced transportation options.

The locations with the most frequent bike and pedestrian crashes occur in the areas around Boston-Providence Highway/ Washington Street, and Needham Street/Route 109. These areas border or overlap with environmental justice areas in Dedham, and therefore should be a top priority for the Town to address. These pedestrian and bicycle crash areas are in neighborhoods with a higher concentration of zero or one vehicle households relative to the Town averages indicating an increased dependence on non-vehicular modes of transportation.



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Transportation Vehicle Crashes & EJ Populations

MassDOT Crash Data for Non Motorists (2019, 2020, 2021) Non Motorist Type Involved

PedestrianPedacyclistOther

Environmental Justice Populations, by block group

Highway Safety Improvement Program (2015-2017)

10 Vehicle Crash Clusters

Vehicle Crash Clusters are the top locations where reported collisions occurred have been identified by MassDOT. The crash cluster analysis methodology for the crashes uses a fixed meter search distance of 25 meters (82 ft.) to merge crash clusters together.





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Pedestrian and Bicycle Crash Data

Since 2017, there have been 27 reported vehicular collisions with pedestrians or cyclists. 60% of these crashes involved pedestrians and 40% involved cyclists. About half of pedestrian crashes happened in locations without sidewalk infrastructure and the entirety of Dedham's cyclist crashes were located in areas without bike lanes. 85% of these collisions resulted in fatal or non-fatal injuries to the pedestrian or cyclist involved, whereas 30% of motorist-motorist crashes in Dedham over the same time period resulted in fatal or non-fatal injuries. Cyclists and pedestrians involved in accidents are nearly three times more vulnerable to bodily harm than motorists in Dedham. Despite there being 50x more reported vehicular collisions than those involving pedestrians and cyclists from 2017 to 2019, Dedham experienced two pedestrian fatalities but only one motorist death. The Town should use this data to further expand pedestrian and cyclist safety infrastructure.

One third of accidents occurred within the Dedham Square area, reflecting the multimodal nature of the commercial area; when there are more pedestrians, cyclists, and vehicles mixing in a shared space, accidents are more likely to occur. All these accidents happened during normal business hours (8AM to 9PM), though two occurred after sunset when visibility may have been an issue. Though the Square is equipped with the most pedestrian and cyclist infrastructure comparatively, upgrades to signalization, lighting, and the installation of bike lanes may help to reduce the frequency and severity of collisions.

Other clusters of pedestrian and cyclist crashes can be found along busier, connector roads including Bridge Street (3 pedestrian crashes), Washington Street (2 cyclist crashes and 1 "other"), East Street (2 pedestrian crashes and 1 cyclist), and Milton Street (1 pedestrian and 1 cyclist crash). Over the last three years, the Town's two pedestrian fatalities occurred on a 0.2 mile stretch of Bridge Street/Route 109, in the dark. Though there are sidewalks along the road, the pedestrian crossings are not signalized or lit. Because this is a high speed, high traffic roadway that abuts residential and commercial uses and contains a significant crash cluster, pedestrian and cyclist infrastructure upgrades should be prioritized.

Freight

From a review of the 2018 Massachusetts Freight Plan, the I-95 corridor, which runs along the southern and western borders of Dedham, is one of the major National Highway Freight Network corridors in the Boston region. Although no bottlenecks for freight were identified in Dedham, a bottleneck was identified just south of Dedham at the I-95 and I-93 intersection in Canton.

There are no critical urban or rural freight corridors in Dedham. However, Dedham has industrial warehouse areas along Sprague Street as well as some areas along Rustcraft Road and along Meadow Road which may contribute to local freight traffic or localized trucking routes.





Current Transportation Improvement Projects

The Town, in partnership with adjacent municipalities and state agencies including MassDOT, has planned for recent transportation improvements.

The Boston Region Metropolitan Planning Organization (MPO) Transportation Improvement Program (TIP)

- (2021) Pedestrian improvements along Elm Street and Rustcraft Road Corridors (\$2,706,712)
 - Improvements along the Elm Street and Rustcraft Road corridor will primarily consist of the installation of new curbing, sidewalks, and ramps on both sides of the corridor. This area will also require drainage improvements to modify stormwater management from sheet flow to catch basins, which is necessary with the installation of new curbs and sidewalks. Minor roadway widening is anticipated to achieve a minimum roadway width to accommodate a five-foot bicycle lane. An offroad area for drop off and pick up at the Dedham Corporate Center Station on the MBTA commuter rail has already been constructed by the Town of Dedham. (Source: https://www.ctps.org/data/pdf/plans/TIP/FFYs-2021-2025-TIP.pdf)
- (2023) Pedestrian improvements along Bussey Street, including superstructure replacement, D-05-010, Bussey Street over Mother Brook (\$5,355,932)

 Improvements along the Bussey Street corridor will include resetting and setting the curb and reconstructing ADAcompliant sidewalks and ramps on both sides of the roadway. Some area of pavement reconstruction may be necessary to obtain the necessary curb reveal. Minor geometric improvements are expected at the intersection with Colburn Street and Clisby Avenue to make them more pedestrian friendly, current conditions include expansive pavement width. Shared bicycle accommodations are planned. (Source: https://www.ctps.org/data/pdf/plans/ TIP/FFYs-2021-2025-TIP.pdf)

MassDOT Shared Streets and Spaces Grants

- September 2020 Dedham received \$285,915 to construct 1,550 feet of new sidewalk, ADA-compliant wheelchair ramps, new road striping and signage, and crosswalks along the south side of Cedar Street, providing new and safer connections to residential neighborhoods. (Source: https:// www.mass.gov/news/baker-polito-administrations-sharedstreets-spaces-program-funding-total-increasing-to-10)
- February 2021 Dedham received \$40,000 to reinstall three temporary, ADA-compliant outdoor seating locations in Dedham Square, including safety barriers, through the removal of existing on-street parking. This is a reinstallation of facilities successfully piloted in 2020. (Source: https://www. mass.gov/news/massdot-announces-32-million-in-shared-winterstreets-spaces-program-funding-awards)

There are no major Dedham infrastructure projects planned in the Boston MPO's Destination 2040 long-range transportation plan.

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Designing Dedham 2030: Town of Dedham Master Plan 🕦

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Public Transit

Bus

Four MBTA bus routes service the Town of Dedham including the 33, 34/34E, 35 and 52. Dedham had a local bus that was eliminated in 2018 due to low ridership. The local bus route was a loop that connected various trip generators such as Endicott Square, Dedham Square, Dedham Mall, Oakdale Square and East Dedham Square.

Commuter Rail

Dedham is served by two stations in Zone 2 on the Franklin Line: Dedham Corporate Center and Endicott. As of 2018, Dedham Corporate Center had 8 morning peak inbound trains and 4 mid-day inbound trains, with 5 outbound mid-day trains and 6 evening peak outbound trains, as well as inbound and outbound evening service. Dedham Corporate Center also has a 500 space park and ride lot, with a fee of \$2 daily. According to the MBTA's website, the station also has bike parking. Endicott is a walk-up station with a ramp for accessibility, limited parking for Dedham residents, limited bike parking, and has fewer trains.

Transportation Management Association (TMA) and Employee Shuttles

Dedham is a member of the Neponset Valley Transportation Management Association (TMA). There are no TMA shuttles operating in Dedham, and no known private shuttles operating in Dedham.

Paratransit and Senior Transportation

Dedham is within the MBTA The Ride service area that provides

curb to curb transportation for persons with disabilities. The Town's Council on Aging also operates two handicap-accessible vans and offers Dedham seniors (55 and over) and disabled residents curbside transportation to local medical appointments, local grocery shopping, local errands, and local food pantry.

School Transportation

The Town also provides school bus transportation to students per the Commonwealth's pupil transportation requirements. Students who live within two miles of school must pay a fee in order to use the school bus service.

Walking and Cycling

LandLine Greenway Network

The LandLine Regional Greenway Network is being developed by the Metropolitan Area Planning Council (MAPC), the regional planning agency, in partnership with each of the Greater Boston region's 101 communities. The greenway corridors identified as part of this regional network are planned to be prioritized for active transportation use and are separate from vehicular traffic to the greatest extent feasible, or traffic calmed to allow for sharing the road among different types of users. Corridors identified as part of the existing and future LandLine network are ideally shared-use paths, or separated bicycle lanes and sidewalks clearly separated from vehicular traffic. However, limited right of way may not allow complete separation, and, the corridors also include sharing lower traffic streets, and implementing traffic calming measures to prioritize walking and cycling.



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Designing Dedham 2030: Town of Dedham Master Plan 🕦

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Today, Dedham has minimal trail coverage. Dedham's single paved path is located near the Readville Commuter Rail Station, stretching approximately 0.5 miles from Sprague Street west until Ernest Avenue. In June 2020, Dedham residents voted to reject an advisory referendum regarding a proposed 1.3 mile shared use path called the Dedham Heritage Rail Trail between Atkins Street to East Street.

There are several natural surface footways in the western portion of Dedham, near the Wilson Mountain Reservation and Charles River Watershed. However, these footways have poor connectivity to the existing sidewalk infrastructure.

Sidewalks

Dedham is partially and unevenly served by sidewalk infrastructure. The western quadrant of the Town, beginning at the intersection of Bridge and Ames Street, has little to no sidewalk coverage. The southwestern portion of the Town is also underserved. Although a majority (58%) of Dedham's streets have a sidewalk on at least one side, these are largely located in the Town's central and eastern residential neighborhoods.

Dedham Square, the Town's most walkable district, has nearly complete sidewalk coverage, including minor streets abutting the commercial area. Pedestrian infrastructure within the Square includes signalized, visually distinct red brick street crossings, street furniture such as benches, bike racks, and plants, and light fixtures. These amenities encourage visitors to park in one location and walk to nearby shops, chaining trips as a pedestrian, and spending more time in the public realm. The Town's second most walkable district, East Dedham Square, is similarly served by sidewalks and on-street parking, however, the streets lack pedestrian or cyclist-friendly street furnishings and amenities.

Bicycle Facilities

Dedham has little to no bike infrastructure. As previously discussed, there is one incomplete trail running from Readville Station to East Street that accommodates cyclists. There are two on-road facilities: one stretching from the northern Dedham border along Bridge Street and down Ames Street until terminating at High Street, and the second from the East and Cedar Street rotary to Route 128. Very few bike racks have been installed throughout the Town, further reflecting the lack of cyclistoriented connectivity. Similarly, Dedham is not served by any bikeshare system.

Local Access Score and WalkScore

MAPC developed an online mapping tool called Local Access Score (localaccess.mapc.org) to help communities prioritize sidewalk and bike route improvements. The tool looks at the utility or usefulness for a given segment of street or road for active transportation, and provides a quantitative estimate of current or potential roadway utility. The tool provides an active transportation network utility score for the roadway segment to indicate how useful that segment is for connecting residents with local schools, shops, restaurants, parks and transit stations. The Local Access Score is calculated using travel demand software that uses input data on population and destinations to estimate the number of trips households are likely to make in a given

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day, the likely destinations of those trips, and the most direct routes connecting households to their destinations. The dataset contains a separate score for four different types of destinations (school, shops and restaurants, transit stations, and parks) and two different modes (walking and biking), for a total of eight basic scores. These scores are combined and weighted to produce walking and biking scores as well as an overall composite score. In other words, the more utility a segment has in terms of population, potential destinations, and connectivity, the higher the overall score.

Streets with the highest composite scores in Dedham include Washington Street, High Street, East Street, and Eastern Avenue. Portions of Providence Highway, particularly near Legacy Place, also score highly. While many of these streets have sidewalks, some segments are narrow or have worn crosswalks and do not meet the Commonwealth's complete street standards.

Complete Streets Program

Complete streets are those that provide safe and accessible options for all travel modes – walking, biking, transit, and motorized vehicles – for people of all ages and abilities. Complete Streets can improve safety by reducing the severity and number of crashes, and support health benefits by promoting walking, running, and cycling, and improve the livability of neighborhoods. The MassDOT Complete Streets Funding Program was created to reward municipalities that demonstrate a commitment to embedding Complete Streets in local policies and practices. The program provides funding for technical assistance and construction. Dedham adopted a complete streets policy in 2017, and a prioritization plan in 2018. Communities that have a policy and prioritization plan are eligible for technical assistance and funding for projects through MassDOT's Complete Streets program.

Safe Routes to School

The Massachusetts Safe Routes to School (SRTS) program, a program under MassDOT, works to increase safe biking and walking among elementary and middle school students throughout the state. The program exists in approximately 65% of Massachusetts schools. SRTS utilizes the six E's to implement its program including Education, Encouragement, Engagement, Evaluation, Engineering, and Equity. The program can provide technical assistance with important school planning measures like arrival and dismissal plans, walk and bike audits, and developing safe walking and biking routes for students.

In Dedham, five schools were partnered with SRTS in 2021. The schools partnering with SRTS include Avery Elementary School, Dedham Middle School, Greenlodge Elementary School, Oakdale Elementary School, and Riverdale Elementary School. SRTS programs at these schools could improve arrival and dismissal traffic, as well as increase the physical activity of students before and after school.

Ridehailing/Transportation Network Company (TNC) Trips

Growth in ridehailing trips is contributing to the increase in vehicles on Dedham's roadways leading to more congestion, wear and tear on streets, and double parking to pick-up and drop-off passengers. However, Massachusetts assesses a fee for

each transportation network company (TNC) trip taken within the state, distributing a portion of the revenue raised to the trip's municipality of origin. In this way, an increase in TNC trips also results in a nominal increase in funding for transportationrelated maintenance and improvement projects. Dedham received \$35,380 from TNC trips taken in 2017 and 2018, which the Town used to improve Town-operated bus service. If TNC ridership continues an upward trajectory and the State legislature passes more aggressive fee structures and data reporting requirements, Dedham could see an increase in funds to improve active transportation infrastructure. The Town may also consider using pick-up and drop-off data to designate TNC loading zones in commercial areas to reduce the impacts of double parking.

In 2020, Dedham along with municipalities throughout the state saw a significant decrease in TNC usage due to fewer trips being taken due to the COVID-19 pandemic. Dedham saw a decrease of 54% in TNC usage, which was less impacted than other municipalities statewide which saw an average decrease of 62%. Although this is a significant decrease, the rideshare numbers still speak to the important role that ridehailing plays in the local transportation network and the pre-pandemic patterns would be expected to return in the future.

Parking

Dedham is a vehicle-oriented Town with limited transit service and pedestrian or bike infrastructure. This points to the importance of parking as a component of convenient circulation in the Town. In general there is a large parking supply near destinations of interest, such as employment, commercial, and recreational centers. At the Dedham Mall, Dedham Square, Providence Highway South, Legacy Place, and Stergis Way, there are about 10,000 total commercial parking spaces. Parking that is not properly managed, combined with the lack of nondriving alternatives, can lead to resident or user frustration with parking, and can cause a perceived loss of business. However, oversupplying parking is associated with tradeoffs as well. It can lead to higher development costs, underutilized space, and can encourage driving over alternative modes of transportation.

Each of the ten centers of economic activity defined in the Economic Development chapter has sufficient, if not overly abundant parking supply available. In areas where parking is underutilized, such as Dedham Mall, Providence Highway South, and Legacy Place, these spaces could be temporarily or permanently repurposed. Examples for creative reuse include reallocating space for: farmer's markets or craft fairs, green space, or TNC pick-up and drop-off zones.

Transportation and Connectivity Community Priorities

As part of the Master Plan process, through the extensive community engagement process detailed in Chapter 1 including community surveys, community open houses, and other opportunities for community conversation, themes and priorities heard from the community were identified related to transportation and are summarized here. While the themes and priorities heard from the community are reflected in the transportation themes earlier in this chapter, these items deserve additional recognition and in some cases repetition due to the frequency these themes and priorities were mentioned by the community.

Proximity to Boston is an asset

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Dedham's location in the Greater Boston region is seen by many residents as a key asset. Particularly, as a suburb of Boston, many people who live in Dedham find the proximity to Boston to be useful for many reasons, such as commuting to work or convenient access to other amenities and resources. Approximately one third of Dedham residents commute to Boston for work, meaning that reliable and frequent roadway and transit connections to the city are essential. The value of this proximity is reduced when moving around is made more difficult due to congestion or lacking infrastructure.

T2 Traffic congestion remains a main challenge

The greatest challenge identified in the community survey and one

of the most frequently repeated and important topics to address in the Master Plan was traffic congestion. Dedham is car-centric with 80 percent of residents driving to work. Even with reduced commuting traffic in 2020 due to COVID-19, residents noted that traffic congestion remains a challenge. Presently, driving is the easiest way to get around. By funding and building new infrastructure such as bus improvements, more bike lanes and sidewalks, Dedham can reduce its reliance on cars and help to reduce congestion on the roadways.

Pedestrian and bike safety remains a challenge

Strengthening safe walking and biking in the Town was identified as the number one transportation challenge facing Dedham through the community survey. Since 2017, there have been 27 reported vehicular collisions with pedestrians or cyclists. Of those, 60 percent involved were pedestrians and 40 percent involved were cyclists. Half of the pedestrian crashes were in areas without sidewalks, and all bike crashes were in areas without bike infrastructure.

14 Improved sidewalks would best meet travel needs

Improved sidewalks were identified as the transportation improvement that would best serve respondent's needs with walkability selected as the top priority in the community survey.





Summary: Make Dedham safe and reliable for any form of travel with a priority to improve walking or biking anywhere you want to go.

Goal 1: Prioritize walking, biking, and rolling infrastructure improvements with a focus on neighborhood business districts, schools, and access to transit in order to decrease traffic congestion and increase healthy, sustainable modes of transportation.

Both walking and biking are desirable forms of transportation for Dedham residents, yet safe infrastructure doesn't exist throughout the Town. Building out a network of connected walking and biking routes would be beneficial to increasing physical activity and decreasing traffic congestion by providing a safe, convenient and attractive alternative to driving for some trips.

Strategy T1.1: Improve the experience for walking, biking, and rolling by upgrading curb and sidewalk conditions and improving regulations (for example, requiring property owners to be responsible for snow removal on the sidewalk(s) adjacent to their property or ending parking on neighborhood sidewalks).

Strategy T1.2: Reinvigorate Dedham's Safe Routes to School program to create a safe walking, biking, and rolling environment for students and decrease vehicle traffic around schools.

Strategy T1.3: Review the 2014 Bike and Pedestrian plan for Dedham and evaluate roadway and streets for pedestrian and bicycle improvements including pilot projects to test new ideas.

Strategy T1.4: Integrate bike and pedestrian improvements with upcoming and planned infrastructure and maintenance projects such as adding bike racks at all parks and public buildings.





Goal 2: Reduce risk of traffic related injuries and fatalities and increase safety and convenience for all types of travel.

Crashes are clustered in many areas of Dedham, and there are multiple clusters in Dedham's environmental justice areas. An environmental justice area is an area in which the annual median household income is not more than 65% of the statewide annual median household income, or minorities comprise 40% of more of the population, or 25% or more of households lack English language proficiency, or minorities comprise 25% or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150% of the statewide annual median household income. The Town should focus its initial street safety efforts on these focused areas, and create a proactive policy and procedures to improve other unsafe areas in its street network.

Strategy T2.1: For upcoming repaving and/or reconstruction projects, design for reduced speed using elements such as reducing travel lane width, reducing travel lanes, adding speed humps, signage, reducing streets to one-way travel to make space for sidewalks and bike lanes, and other traffic management design items.

Strategy T2.2: Create a safer environment for all by planning

multimodal streets that support active transportation and decrease the Town's reliance on vehicles by adding crosswalks, flashing beacons, improved street lighting.

Strategy T2.3: Continually review traffic crash data and other data to determine the top areas where safety improvements and additional traffic enforcement are needed.



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Goal 3: Optimize streets, parking, and transportation infrastructure to create more vibrant, people-centered, and flexible spaces.

In Dedham's business districts, parking availability is seen as a challenge at peak times. Some parking management strategies, such as implementing parking meters and adopting dynamic pricing, can help to increase turnover of spaces during high demand times and increase parking availability. In areas with excess and unused parking, Dedham could designate transportation network company (TNC) such as Uber and Lyft pick up/drop off areas and delivery areas, or programs to convert strategic locations to other uses, such as outdoor dining, additional green space, or amenities.

Strategy T3.1: Evaluate parking uses and requirements throughout the Town to determine if a portion of the space could be used in a more vibrant, flexible way.

Strategy T3.2: Consider repurposing street space in economic centers (squares and neighborhood centers) to be flexible for various purposes.

Strategy T3.3: Identify locations where vehicular infrastructure could be reduced to provide more space for non-vehicular travel, including reducing lane widths, removing travel lanes, etc.





Goal 4: Improve safe, comfortable access to existing transit stops, improve local conditions for reliability, and advocate for an increase in frequency of rail and bus service to encourage mode shift away from vehicles and towards more sustainable modes of transportation.

Enhance transit with local interventions such as improved first and last mile connections, micro-transit options, and transit-oriented development. Ridership at the Dedham Corporate Center commuter rail stop nearly doubled between 2012 and 2018. The 34/34E bus route has significant opportunities for improvements, such as dedicated bus lanes and queue jumps, that would make it more reliable for daily users. Although current transit ridership is down due to COVID-19, Dedham should plan for long-term improvements to ensure bus and rail service is not negatively impacted once daily traffic increases and more regular commuting patterns resume.

Strategy T4.1: Evaluate walking and biking conditions to and from transit stops that could be enhanced/improved to reduce the need to drive and park at key stops.

Strategy T4.2: Improve transit efficiency with local interventions, such as dedicated bus lanes through congested areas.

Strategy T4.3: Evaluate senior and other localized transit services in Dedham and surrounding towns to determine if a coordinated dispatch system would create a more efficient and effective service.



Goal 5: Plan for electric and autonomous vehicles, as well as other potential future transportation technologies.

The future of transportation will be different than it is now. Over the next 10 years changes in the vehicle fleet are likely to impact infrastructure needs. Particularly, increased use of electric and autonomous vehicles will require responding with appropriate infrastructure and policies. The Town should take advantage of electric vehicle incentives at the state level and be flexible in parking requirements and design to support electric vehicle adoption, including adoption in the Town's fleet of vehicles. Electric vehicles will need designated spaces with charging capabilities. Autonomous vehicles may not need as much parking and may require additional designated curb-side pick-up and drop-off areas.

Strategy T5.1: Develop more electric vehicle infrastructure in Dedham, both for public parking spaces and private spaces that are part of new development.

Strategy T5.2: Rethink parking minimums (potentially switch to parking maximums) to address future uses of autonomous vehicles.

Strategy T5.3: Plan for potential new micro-mobility options such as scooters, bikeshare, e-bikes, mopeds, and other non-automobile possibilities.



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Goal 6: Expand the tools for transportation implementation including regional coordination, collaboration with Transportation Management Associations, and temporary pilot improvements to decrease local and regional traffic congestion.

Currently, there is not a Dedham staff position that is responsible for transportation, including grant pursuit, coordination with neighboring municipalities, and coordination with the Neponset Valley Transportation Management Association (TMA). All transportation projects should be viewed as an opportunity to implement Town transportation goals, including current Department of Public Works (DPW) plans, roadway repaving plans, and other upcoming transportation projects. To address capacity challenges, the Planning Director could work with existing transportation committees to identify funding opportunities and upcoming projects to incorporate transportation improvements.

Strategy T6.1: Coordinate with transportation planning in neighboring communities, and Neponset Valley TMA.

Strategy T6.2: Prioritize pilot and temporary/quick build projects to test new ideas, and involve the public in project evaluation. For example, pilot quick fix solutions (painting the curb, artwork on the sidewalk, additional parking enforcement, etc.) that would reduce the likelihood of cars parking on neighborhood sidewalks, gather data on what works, and expand the application of effective solutions.

Strategy T6.3: Price parking appropriately to better manage parking in high demand areas and increase parking enforcement in these areas.

Strategy T6.4: Continuously evaluate new forms of data such as TNC, Census, Smartphone-based travel data, etc. to understand changing travel needs post-COVID-19 Pandemic.





Goal 7: Define clear responsibilities for Dedham's transportation committees and Town staff and involve diverse perspectives of the public to inform decision-making.

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In order to leverage the transportation efforts that are undertaken on behalf of the Town, the committees and Town staff should clearly communicate ongoing activities with the broader community and define responsibilities for advancing the transportation goals.

Strategy T7.1: Define a specific process for establishing, evaluating and implementing projects with a public-facing dashboard showing project objectives and details. Create a workplan if necessary.

Strategy T7.2: Disseminate information about Dedham's transportation committees (including how to find info and how to join) to the general public through various sources. Also share outreach information with the general public to educate and inform about important laws and regulations for vehicular, pedestrian, and bicycle uses in the public realm.

Strategy T7.3: Determine how to ensure that the membership on the committee and the decisions that are being made are reflective of Town demographics and address concerns of the most vulnerable residents.



Transportation and connectivity Implementation

Critical next steps

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In the Implementation Chapter of the Master Plan, a more detailed level of actions is added under each goal and strategy. The actions are associated with responsible parties, a suggested timeframe, and potential external funding or resources that may be helpful, if available. The following critical next steps highlight several of these actions that would provide tangible steps toward progress on the top priorities that have been identified for transportation and connectivity.

Identify weak, missing, or unsafe areas in the pedestrian network that need improvement, especially first/last mile connections and crossings for Providence Highway. Prioritize adding elements such as wide shoulders, shared-use paths, roadside paths, or traffic calming to these gaps.

This action would set the stage for regular and systemic improvements to the transportation infrastructure prioritizing the most critical connections first to build-out the network of walkable places in Dedham. The lead responsibility would be the Town of Dedham Planning Department in close coordination with the Town of Dedham Engineering Department and the Transportation Advisory Committee. The timeframe for this action would be midterm, to occur within 4 to 6 years of the conclusion of the Master Plan process. Potential resources include the 2014 Dedham Bicycle and Pedestrian Plan at https://www.mapc.org/wpcontent/uploads/2017/11/Dedham-Westwood-Network-Plan-April2014.pdf. The MAPC Local Access Score website at https:// localaccess.mapc.org/ which includes tools that can help prioritize routes. The MAPC Trail Implementation Toolkit at https://www. mapc.org/resource-library/trail-implementation-toolkit/ and the Massachusetts Department of Transportation (MassDOT) Municipal Resource Guide for Walkability.

T2 Review the Town maintenance plan to ensure that sidewalks, crosswalks, and bike infrastructure are properly maintained after installation.

This action would bring considerations for sidewalks, crosswalks, and bike infrastructure to the same level as the roadway surfaces that are serving cars. The lead responsibility would be the Town of Dedham Engineering Department. The timeframe for this action would be near-term, to occur within 1 to 3 years of the conclusion of the Master Plan process. Potential external resources include several street design guides including Smart Growth America Complete Streets resources at https://smartgrowthamerica.org/resources. The MassDOT Municipal Resource Guide for Walkability at https://www.mass.gov/files/documents/2018/09/17/

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MunicipalResourcesGuideForWalkability_2018-08-24.pdf. And, the National Association of City Transportation Officials (NACTO) Global Street Design Guide, at https://nacto.org/publication/ global-street-design-guide.

T3 Consider creating temporary, flexible changes first through temporary paint, signage and flex posts to evaluate different safety strategies to slow vehicular traffic and better separate pedestrian, bicycle, and vehicular traffic

This action would expedite implementation efforts by testing solutions to improve safety regardless of the availability of funding for more permanent investments. The low-cost temporary solutions would further define the appropriate solutions and allow additional data to be collected. The lead responsibility would be the Town of Dedham Department of Public Works in close coordination with the Town of Dedham Planning Department, Engineering Department, and the Transportation Advisory Committee. The timeframe for this action would be near-term, to occur within 1 to 3 years of the conclusion of the Master Plan process. Potential resources include case studies of similar improvements at https://smartgrowthamerica.org/resources and MAPC Shared Streets: https://www.mapc.org/resource-library/ shared-streets.

