OUR CUSTOMERS: Massachusetts Transportation System Usage

- Each day, up to **5 million vehicles** from Massachusetts and surrounding states collectively travel over 154 million miles on all roads across the Commonwealth. These volumes are generated from nearly **4.75 million** licensed Massachusetts drivers, plus over **200,000** more from out-of-state.

- The total MBTA system and regional transit agencies are estimated to serve about **half a million people** each day.
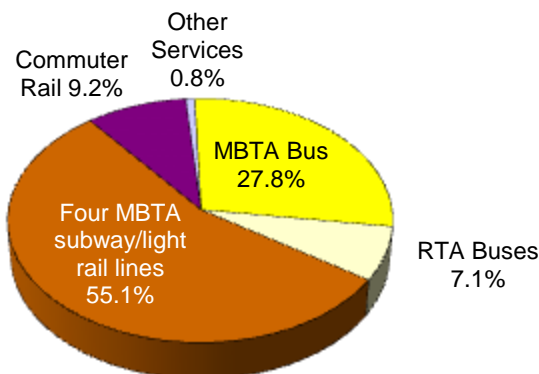
ROADS AND DRIVERS

- Using a network of roads totaling over 36,000 miles statewide, Massachusetts drivers collectively travel nearly 56.3 *billion* miles and consume nearly 3.2 *billion* gallons of gas each year, or about 621 gallons per registered vehicle (2013).

- With an estimated population of over 6.79 million Massachusetts residents, about 80% (over 5.42 million) are of driving age (16 and over), while about 70% of all residents (4.75 million) are licensed drivers (Mass RMV and 2015 UMass Donahue Institute).

- Within the City of Boston, the entire Central Artery/Tunnel project processes about 536,000 vehicles per weekday. This includes 323,000 vehicles entering on the expressways, and 213,000 from all local ramps (including the Logan tunnels).

- The single highest traffic volume location in the state is the I-93/I-95(128) Interchange in Woburn and Reading. This crossing of two busy highways processes around 375,000 vehicles per weekday.

PUBLIC TRANSPORTATION

For *all* public transportation trips, the roughly 500,000 people using our transit systems take nearly 1.4 million trips each weekday in Massachusetts – with most all on the MBTA system. The following graph illustrates the proportions of each of the major transit service categories:

Massachusetts Public Transportation Trips

Source: Ridership data from MBTA for 2014, from RTAs for 2013 (National Transit Database).

- On the MBTA system, nearly 774,000 daily trips are made on the subway system, over 390,000 trips by bus, and about 129,000 trips on commuter rail.

- Other miscellaneous services (water ferry, paratransit, and other contracted bus) serve over 11,500 daily trips in total (2014).

- Collectively, there are about 100,000 daily bus trips taken on the other 15 regional transit authorities (RTAs).

AERONAUTICS

- Massachusetts has 39 public use airports (including Logan and Hanscom), serving national and international flights and the approximately 2,400 aircraft based in the Commonwealth.

- These airports collectively contain about 49 miles of paved runways and 4½ miles of turf runways. 23 runways are at least 5,000 feet long.

- There are about 2.7 miles of designated water landing area at the two seaplane bases in Massachusetts.

- Collectively, Massachusetts airports have 12 Air Traffic Control Towers, 21 Instrument Landing Systems, and 59 GPS approaches – including 33 "LPV" (higher precision) approaches – to assist pilots, especially in inclement weather or limited visibility.

- Based on 2013 rankings, Logan International Airport is the 19th-busiest airport in North America in terms of passenger volume and 19th in terms of aircraft movements. In 2013, Logan served over 30.2 million arriving and departing passengers and over 361,000 total flight operations (landings and take-offs).

FREIGHT TRANSPORTATION

- Massachusetts contains 14 freight railroads with over 1,000 miles of track. Each year, more than 450,000 train cars carry over 18 million tons of goods (estimates from 2010 Massachusetts Freight Plan).

- Massachusetts' ports process 17.3 million tons of waterborne freight annually, with 68% (11.7 million) foreign and 32% (5.6 million) domestic. The Port of Boston alone handles over 16.3 million tons (all 2012 data).

- In 2013, Logan International Airport handled over 269,000 tons of air freight cargo consisting of mail, packages, and other types of freight.
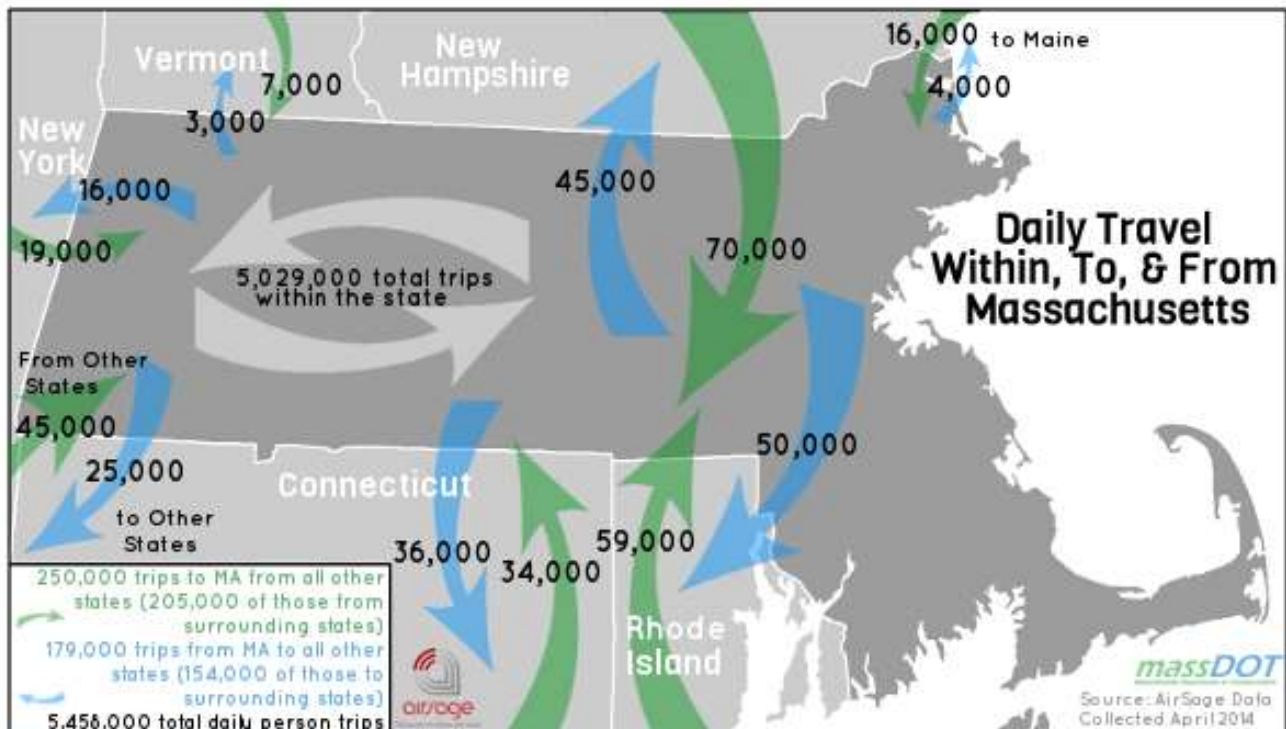
OTHER TRANSPORTATION

- Amtrak offers intercity and regional passenger rail service throughout Massachusetts, with 11 station stops and over 3.1 million annual passenger boardings and alightings. Boston's South Station is the 6th busiest in the national Amtrak System.

- The Steamship Authority provides year-round ferry service between Cape Cod, Martha's Vineyard, and Nantucket. In 2013, the Steamship Authority transported over 2.8 million passengers and 600,000 vehicles.

- Massachusetts contains nearly 600 miles of "shared-use" paths, suitable for recreational or commuting purposes. Primarily for bicycle and pedestrian use, these facilities are a combination off-road and on-road routes, some exclusively paths and some with dedicated lanes on existing roadways.

OUR CUSTOMERS: Travel Patterns

The more than 6.5 million people in Massachusetts have many reasons to travel and several ways to get to their destinations. Each weekday, over 5 million residents travel within the Commonwealth. In addition, approximately 250,000 people travel to Massachusetts from other states, and approximately 179,000 residents leave to travel elsewhere. The graphic below – based on location data from millions of (anonymous) mobile devices, shows the average number of persons traveling within, to, or from the state during a typical weekday:
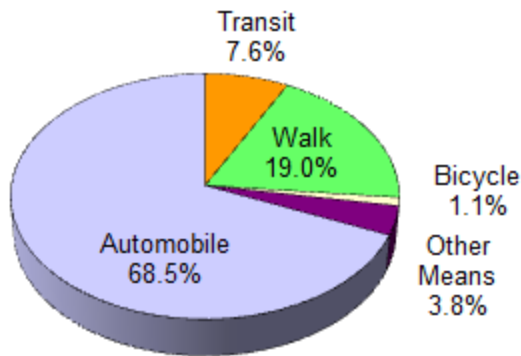
MASSACHUSETTS TRANSPORTATION FACTS (continued)

HOUSEHOLD TRAVEL SURVEY RESULTS

The Massachusetts Travel Survey, conducted in 2010-2011, gathered detailed travel information from over 15,000 households throughout the Commonwealth to help us better understand our customers. Every day, each person takes an average of 4.1 trips (and every household averages 10.2), which equals over 26.6 *million* trips* for all purposes (work, school, shopping, recreation, etc.). The primary modes of travel are as follows:
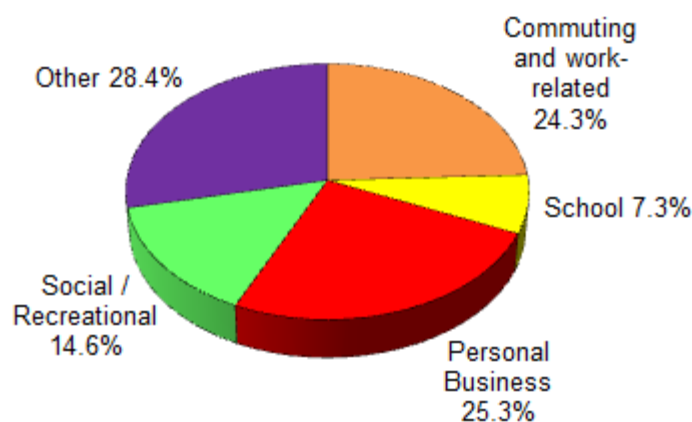
Massachusetts Daily Trips by Mode:

Source: 2010-11 Massachusetts Travel Survey

*Note: A "trip" is defined as direct travel from one location to another, which is determined by any stops made (for example, home to day care to coffee shop to work each morning equals three trips, not one).

Why so many trips? While many are due to work or school, the majority of trips are made for less "mandatory" activities. Transportation planners analyze these activities to better gauge current and future demand. General categories of trip purposes are as follows:

Massachusetts Primary Trip Purposes:

Note: "Personal Business" includes routine shopping like groceries, clothing, and home improvement, as well as major appliance and car shopping, vehicle service trips, health care, and household errands. "Social/Recreational" includes civic and religious activities, vacation travel, and visiting friends and relatives. "Other" includes dining out, volunteer activities, drop-off or pick-up, and "loop trips" (neighborhood walks).
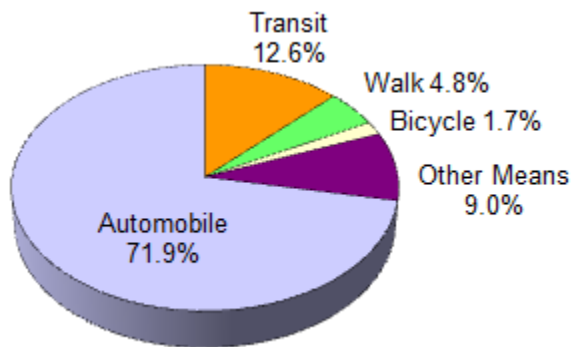
Source: 2010-11 Massachusetts Travel Survey, OTP staff calculations

MASSACHUSETTS TRANSPORTATION FACTS (continued)

Nearly one-third of all trips do not originate (or return to) home – they are based from other locations. For example, of work-related trips, only 13.4% of all trips are for commuting from home to a job and then from job back to home. For these commuting trips, we use autos and transit at greater rates than for all trips:
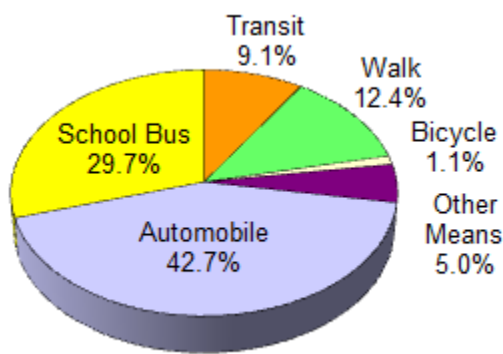
- Each day, over 3.2 million workers living in Massachusetts commute to their workplaces. Over 2.3 million, or **72 percent**, **drive** their car. (86.1% nationwide)

- Of the rest: Around 405,000, or **12.6 percent**, takes **transit**. (5.0% US)

- About 153,000 (**4.8%**) **walk** to work (2.9% US)

- About 56,000 (**1.7%**) ride a **bicycle** to work (0.5% US)

- The rest (290,000 - 9%) use other means, including 6.5% who work at home (5.1% US)

Massachusetts Daily Work Trips by Mode:

Source: 2010-11 Massachusetts Travel Survey, American Community Survey for U.S. data

Massachusetts Daily School Trips by Mode:

For reaching school (at all educational levels), the traditional school bus is still a significant way to get there. We also walk to school at a much greater rate than for work trips – which underscores the importance of healthy transportation and MassDOT's "Safe Routes to School" program.

Source: 2010-11 Massachusetts Travel Survey