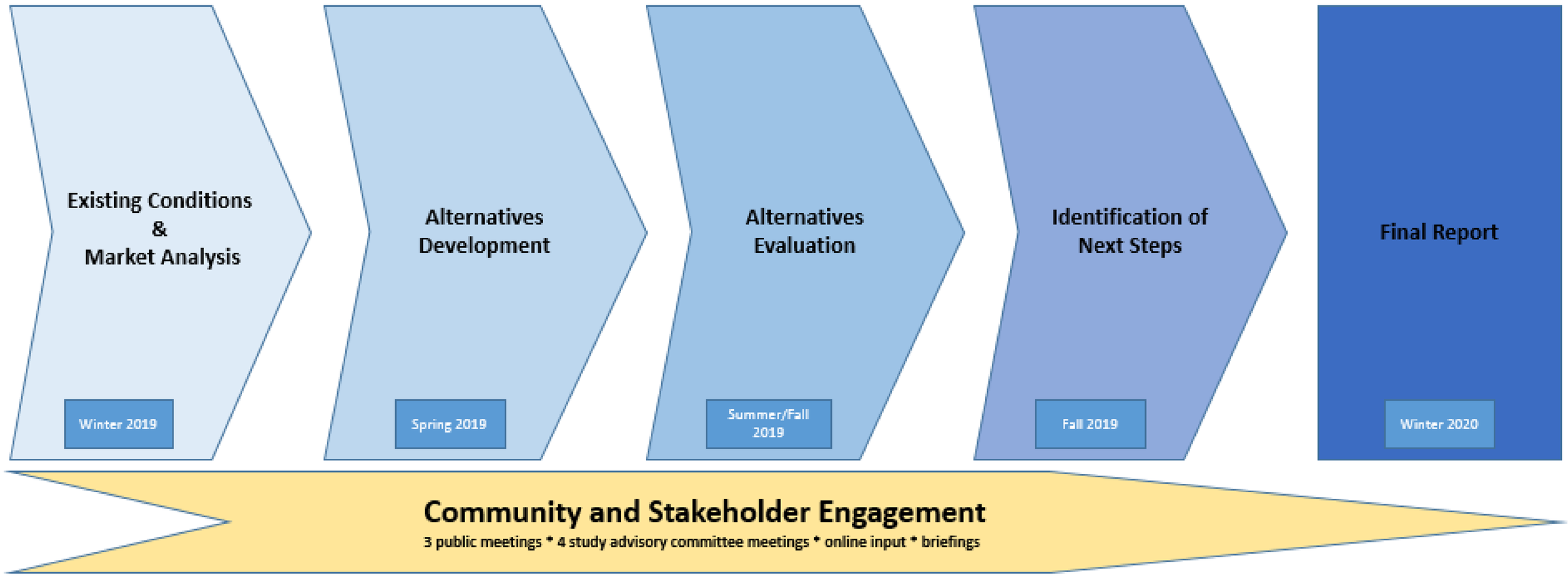
EAST-WEST PASSENGER RAIL STUDY

Information Boards For
Public Meeting #1
March 12, 2019

Study Overview

Purpose: To conduct an evaluation of the benefits, costs, and impacts of a range of alternatives for rail service between Boston and Pittsfield, including high speed rail options.



Who Are Potential Rail Riders?

These perspectives, describing example travelers, are an initial attempt to help us understand the needs, challenges, and priorities of travelers who might use an East – West Passenger Rail service.

JANET

Business Manager
Lives in Chicopee
Works in Springfield, travels to Boston several times a month

PRIORITIZED FEATURES:
Travel Time – Off-Peak Service – Multimodal Connections – Cost – ***Amenities***

Janet manages an insurance company's office in Springfield, commuting by car from Chicopee every day. She has meetings with the managers of the other New England offices one or two times a month at headquarters in downtown Boston. She also has frequent week-long work trips requiring her to fly in and out of Logan Airport, since service at the Hartford Airport was reduced. Today, she travels to Boston by car because it is the fastest way to get there.

Rail Service Preference: Janet would like to use a rail service to get to Boston 3 to 4 times a month so she can use her travel time more productively, save mileage on her car, and avoid Boston traffic – especially as traffic to get to the airport is getting worse. With a rail service, she would be able to meet with her Boston colleagues in-person more frequently. Since her company would cover the fare costs, she is not too concerned about the price. She would like some flexibility in when she travels to Boston, so frequency is a moderate priority. Janet's highest priorities are travel time that would be competitive with driving and access to amenities like Wi-Fi and tray tables that would make her train trips productive.

MARK

Graduate Student
Lives in Westfield
Travels to Boston suburbs to visit family and friends

PRIORITIZED FEATURES:
Travel Time – ***Off-Peak Service*** – Multimodal Connections – ***Cost*** – ***Amenities***

Mark is a graduate student at Westfield State University who visits his family and friends in Arlington once or twice a month for weekend trips. He doesn't own a car, so he takes the bus to South Station and connects to MBTA rapid transit. The bus can get crowded and the trip can take a long time due to Boston area congestion and the several stops that the bus makes along the way.

Rail Service Preference: Mark would like to use a rail service for his weekend trips to the Boston region if it would provide a quicker and more comfortable journey. However, as a graduate student, Mark is very sensitive to price, though he is willing to pay slightly more than the average bus ticket price.

EAST
WEST

Who Are Potential Rail Riders?

FRANK

Retired
Lives in Springfield
Seeks access to medical care in Boston

PRIORITIES:
Travel Time – ***Off-Peak Service*** – ***Multimodal Connections*** – ***Cost*** – Amenities

Frank is retired and has lived in Springfield his whole life. In the past few years, he has had several health issues that require him to seek care in hospitals in Boston. He currently drives to these appointments. He has never quite been comfortable driving in the Boston-area traffic and finds it difficult to book appointments that will ensure he does not need to drive long distances at night.

Rail Service Preference: Frank would like to use a rail service to access the Boston hospitals for his appointments. He would need to make the last-mile connection on transit, so connections to buses and rapid transit are important. It is important for him that any service have enough off-peak trips to accommodate his midday appointments and that the fare price be affordable, so that they do not exceed his out-of-pocket costs for driving.

ROSA

Works 9-5 in downtown Boston
Lives in Cambridge
Seeks a more affordable place to live

PRIORITIES:
Travel Time – Off-Peak Service – ***Multimodal Connections*** – Cost – ***Amenities***

Rosa, originally from the Pioneer Valley, now lives in Cambridge and works at an architecture firm in Boston. She bikes to work in the nice weather and takes rapid transit in the winter. Her spouse drives to a job at a technology firm in Framingham every day. They like living in Cambridge, but the rent keeps increasing and they find it difficult to imagine raising a family there. Rosa's firm recently released a policy allowing employees to work remotely, which has enabled Rosa and her spouse to think more seriously about relocating back to the Pioneer Valley. However, the move would only make sense if they could get to Boston in 90 minutes or less.

Rail Service Preference: Rosa would like to use a rail service to commute to Boston once or twice a week from the Springfield area and her spouse would like to use it to commute more regularly to Framingham. They could only really imagine taking this type of service if it provided travel times of 90 minutes or less between Boston and Springfield – or else the commute would be too burdensome. A service with WiFi and tray tables would better enable them to work while they commute. This type of service would enable Rosa and her spouse to remain a single-car household and find more affordable housing closer to family in the Pioneer Valley, while retaining their current jobs.

LISA

Vacationer
Lives in Boston
Travels to a weekend time-share in Western Massachusetts

PRIORITIES:
Travel Time – ***Off-Peak Service*** – ***Multimodal Connections*** – Cost – Amenities

Lisa lives and works in Boston, but her family spends most of the summer in a time-share in the Berkshires. Her spouse is a middle school teacher and is able to stay at the time-share for a full month during the summer with their three children, but Lisa needs to split her time between weekends in the country and work weeks in the city. Today, Lisa makes the trip driving the family's sole car, which leaves the rest of the family with limited mobility during the week.

Rail Service Preference: Lisa would like to use a rail service to go back and forth between her vacation spot in Western Massachusetts on the weekends. It would be important to her for there to be a stop close to the family's vacation house, so that her spouse could pick her up and drop her off. This type of service would provide her and her family more flexibility and enable them to share their sole car.

EAST
WEST

How Would You Use Rail Service?

Use the dots to show who you identify with or a stickie to tell us about your own perspective.

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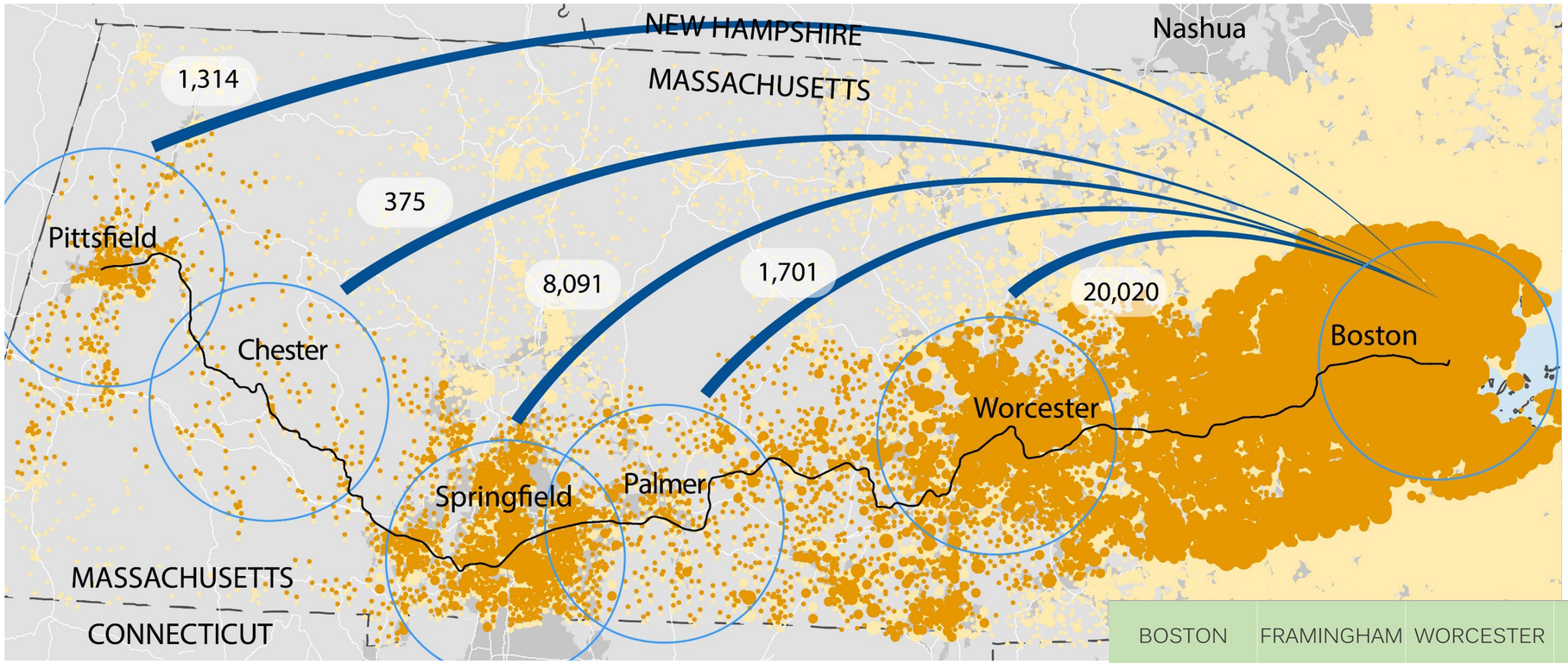
Employment along the East-West Corridor



Workers with Primary Employment Location in Boston
Source: 2015 Census Longitudinal Employer-Household Dynamics Survey

Today, thousands of workers from across the corridor cite Boston as their main employment location. Many might commute multiple times a week, even with significant travel times. However, the demand for travel between other major cities along the corridor is also significant.

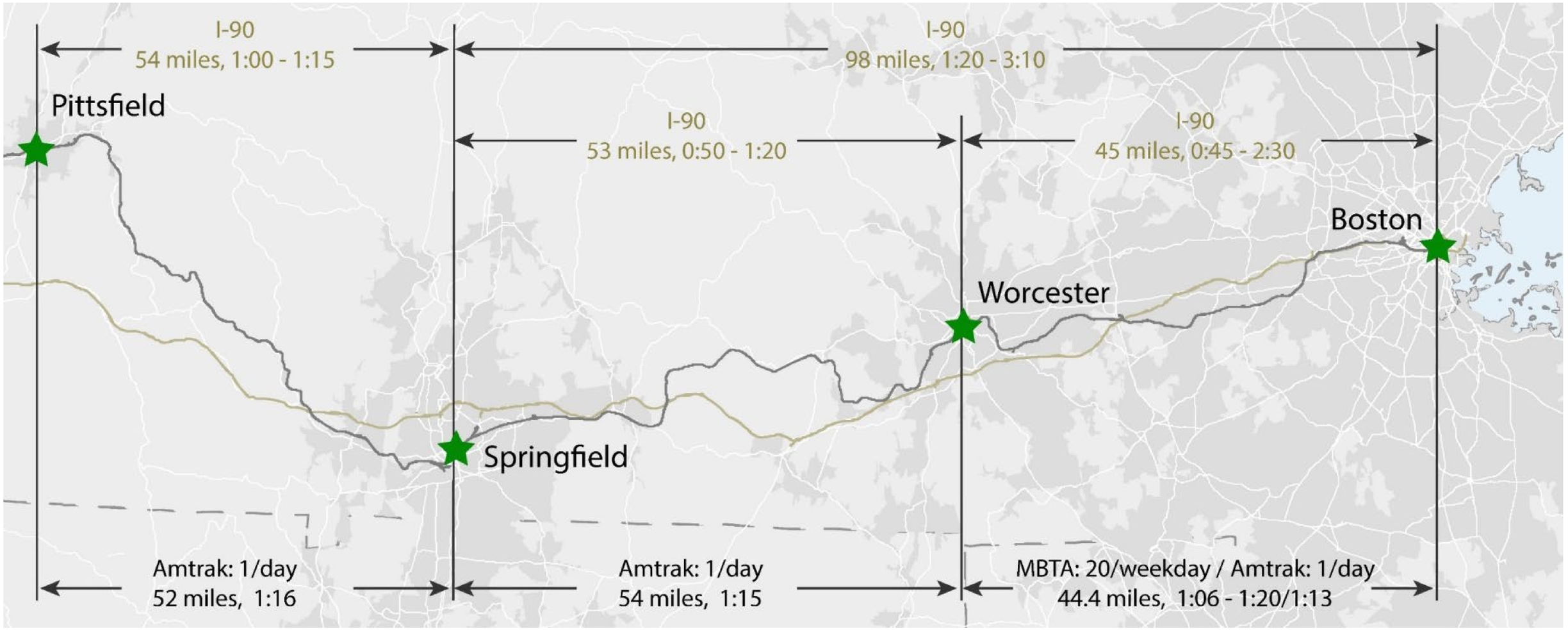
Commuting trips are one type of trip that rail can serve.

Changes in where people are working and living, the ability to work from home, and new technology may affect these patterns in the future.

	BOSTON	FRAMINGHAM	WORCESTER	PALMER	SPRINGFIELD	CHESTER	PITTSFIELD
BOSTON		32,261	7,086	178	3,967	56	512
FRAMINGHAM	61,898		8,845	106	1,398	24	156
WORCESTER	20,020	29,522		549	3,593	20	329
PALMER	1,701	829	2,063		8,743	30	115
SPRINGFIELD	8,091	2,566	4,151	2,877		612	1,150
CHESTER	375	117	279	57	2,715		819
PITTSFIELD	1,314	337	523	43	1,338	500	

Preliminary Analysis: Home (Row Names) and Primary Employment Location (Column Names)
Source: 2015 Census Longitudinal Employer-Household Dynamics Survey

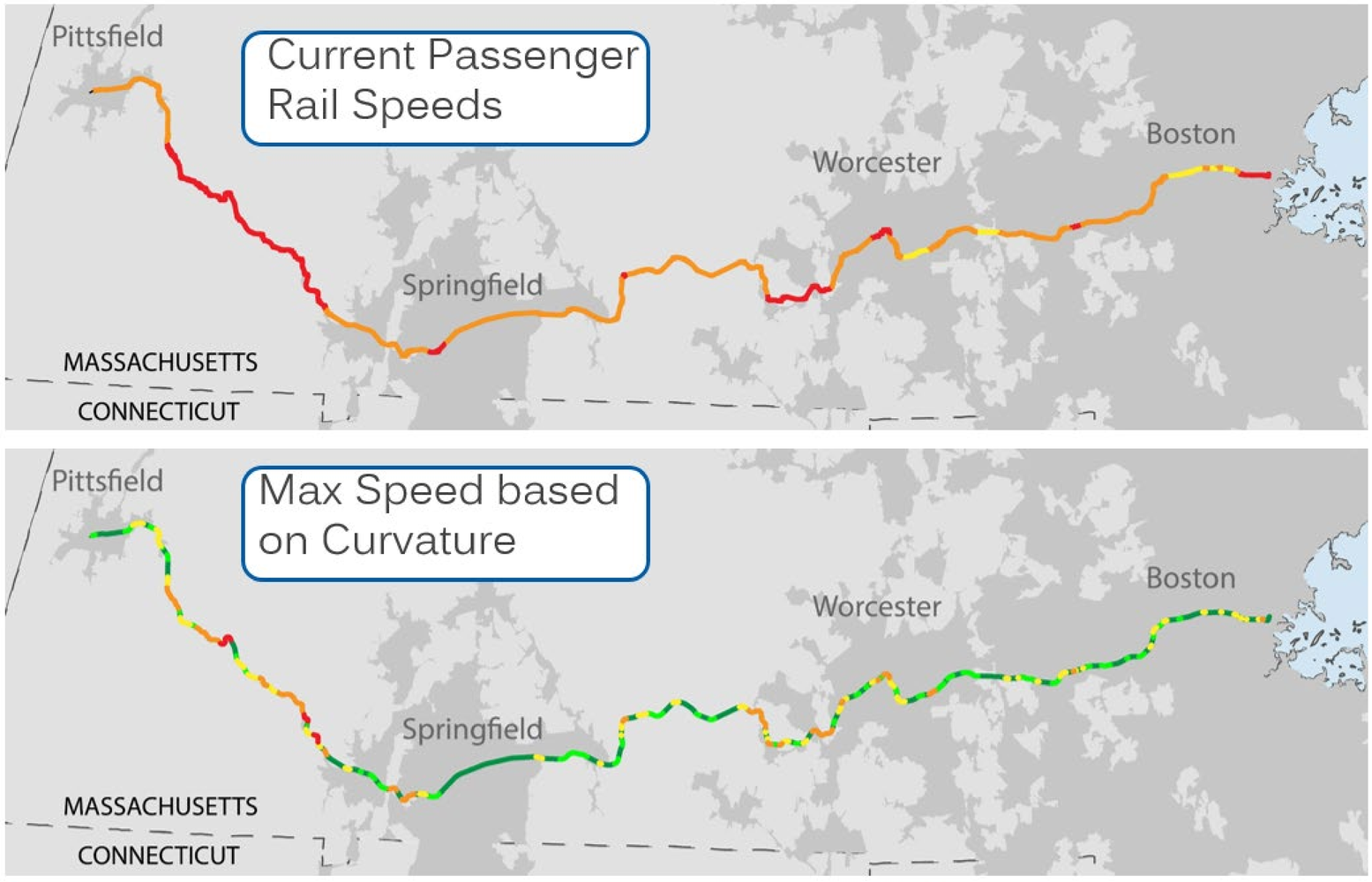
Travel Times by Mode along the East-West Corridor



Current rail service between Worcester and Boston operates at a high frequency during peak hours and drive times are unreliable.

Current rail service Pittsfield and Worcester operates at a low frequency and drives times are more reliable.

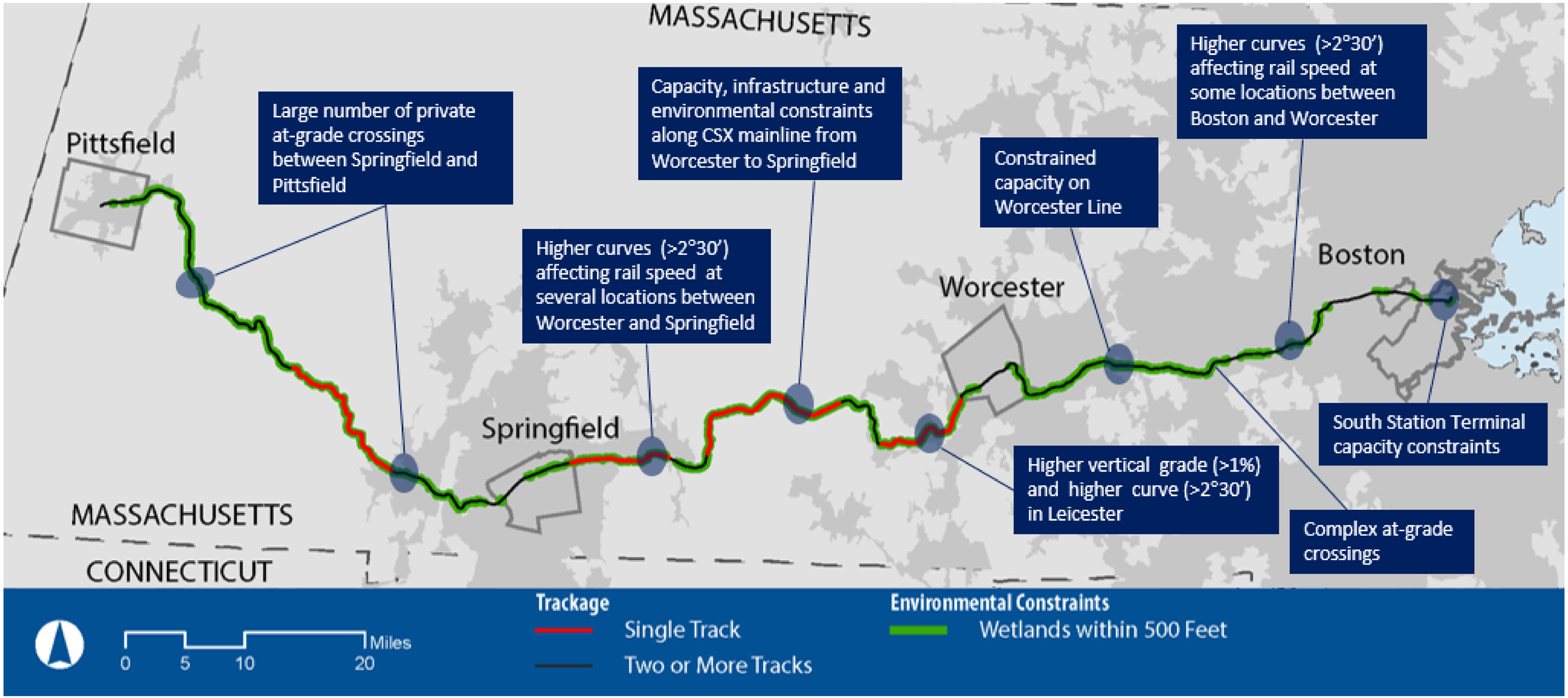
Speeds along Existing Rail Corridor



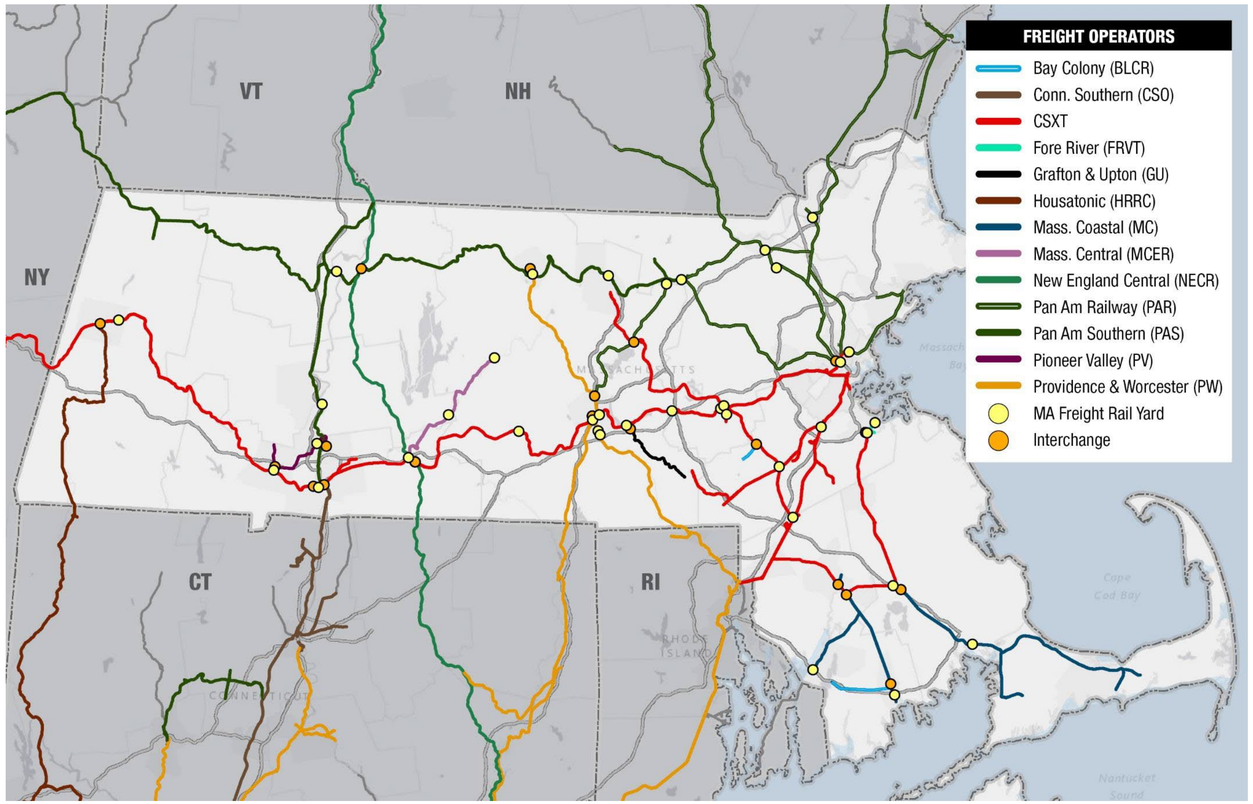
Factors affecting speed:

- Track maintenance standards (Track Class)
- Terrain
- Curves (see map)
- Grade crossings
- Station stops
- Vehicle type

Physical Conditions along Existing Rail Corridor



Freight and Passenger Operations on the Existing Corridor



Freight routes in Massachusetts and connections

Source: 2018 MassDOT State Rail Plan Update

Freight – CSX Operations:

CSX's intermodal facility in Worcester handles 140,000 freight loads annually, providing a connection to over 4,000 large and small business.

- Operates as the State's only Class 1 freight corridor
- Connects to every main rail route in New England
- Reaches ports and main commercial centers
- Recent enhancements have increased capacity and efficiency for freight operations between Worcester and New York
- CSX intermodal yard in Worcester handles roughly 140,000 freight operations per year

Passenger Rail – MBTA and Amtrak Operations:

The East-West Corridor is the MBTA's second highest ridership commuter rail line.

- 54 weekday trips between Worcester and Boston including express and local service
- The Worcester Line experienced a 45% increase in ridership between 2012 and 2018, reaching over 18,000 weekday riders

The existing once daily Amtrak train experiences an on-time performance of under 40%.

Typology of Potential Service Alternatives

Corridor Type	Alternative	Travel Time Range BOS-SPG (Hr:Mn)	Travel Time Range BOS-PIT (Hr:Mn)	Max Speed Range (mph)	Frequency Range (Round-Trips)	Stations
Shared Rail Corridor (Existing Right-of-Way (ROW))	No Build (Existing Amtrak)	2:28	3:44	60 mph	1	Pittsfield, Springfield, Worcester, Framingham, Back Bay, Boston
Shared Rail Corridor (Existing Right-of-Way (ROW))	Existing Track	2:10 – 2:30	3:20 – 3:45	60 – 80 mph	2 – 10	Local or Express
Shared Rail Corridor (Existing Right-of-Way (ROW))	Upgraded Track	1:55 – 2:10	3:00 – 3:20	60 – 80 mph	2 – 10	Local or Express
Shared Rail Corridor (Existing Right-of-Way (ROW))	Upgraded Track + Bus (Hybrid)	1:55 – 2:10	3:00 – 3:20	60 – 80 mph	4 – 20	Local or Express
Shared with Improvements (Expanded ROW)	Expanded ROW and Upgraded Track	1:30 – 1:45	2:20 – 2:45	80 – 110 mph	6 – 20	Local or Express
Separate Corridor (I-90)	Bus B (BRT Lanes)	1:50 – 2:10	2:45 – 3:20	60 – 65 mph	20 – 40	Express
Separate Corridor (I-90)	High Speed Rail	0:55 – 1:05	1:20 – 1:40	110 – 150 mph	20 – 40	Express
Separate Corridor (I-90)	Maglev	0:50 – 1:00	1:15 – 1:30	125 – 175 mph	20 – 40	Express

All Time, Speed, Frequency and Station Stops are approximate, pending detailed analysis

Rail Construction Costs Vary by:

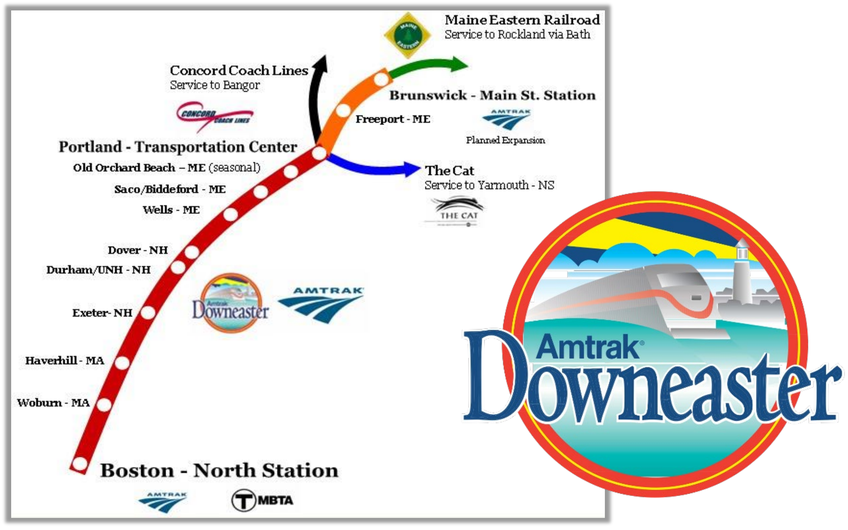
- Corridor Type
- Corridor Conditions
- Location

TYPE OF CORRIDOR	RANGE OF REPRESENTATIVE PER MILE CONSTRUCTION COSTS ($ MILLIONS)
SHARED CORRIDOR	Less than 10
IMPROVED SHARED CORRIDOR	5 – 50
SEPARATE CORRIDOR	40 - 125

Shared Corridor Examples

Downeaster Amtrak Service

Boston to Portland/Brunswick, ME



145 miles in 2 hours 35 minutes, with an average speed of 44 mph and a max speed of 80 mph.

- Operates on existing Pan Am Railways Main Line and MBTA Haverhill Line (no upgrades)
- 10 weekday trips
- Approx. 500,000 annual riders
- Commuter, Business, Leisure Markets

Brightline

West Palm Beach to Miami, FL

66 miles in 1 hours 15 minutes, with an average speed of 52 mph and a max speed of 90 mph.

- Operates on an upgraded shared corridor
- 16 weekday trips
- Approx. 180,000 in first six months
- Business, Leisure Markets

Separate Corridor Examples

Shinkansen

Tokyo to Osaka

320 miles in 2 hours 53 minutes, with an average speed of 142 mph and a max speed of 177 mph.

- Electrified grade separated
- Every 4 minutes during peak period
- Approx. 160 million annual riders
- Business, Leisure Markets

Maglev

Suburban Shanghai to Pudong International Airport

19 miles in 8 minutes, with an average speed of 139 mph and a max speed of 186 mph (peak periods).

- Aerial alignment on pylons
- Service every 15-20 minutes
- Approx. 4 million annual riders
- Airport access (market)