



**Massachusetts Bay
Transportation Authority**

Weekend Bus Diversion Policy

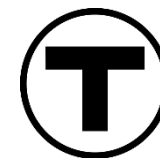
Fiscal & Management Control Board

July 31, 2017



Overview

- The MBTA needs to apply a consistent approach to evaluating and providing bus diversion service for upcoming weekend commuter rail service disruptions
- The Rockport/Newburyport bus shuttle has been a success with high ridership, but survey data indicates that ridership on other lines might be lower
- Staff wants FMCB feedback on the variables to consider for planning replacement bus service and what type and level of service is desirable



Positive Train Control, 2017 Calendar

Line	No. of Weekends	Dates	Estimated Ridership*	Estimated Cost**
<i>Newburyport / Rockport</i>	13	<i>July 8 to September 30</i>	59K	\$1,028K
<i>Lowell</i>	9	<i>August 5 to October 1</i>	19K	\$371K
Needham	10	September 23 to November 26	5K	\$129K
Haverhill	11	September 23 to December 3	24K	\$508K
Fairmount	5	November 24 to December 24	3K	\$170K

* Estimated ridership equals total one-way trips for all affected weekends

** Estimated cost equals assumed Saturday and Sunday costs multiplied by the number of affected weekends
(Note: No Sunday service currently provided on the Needham Line)

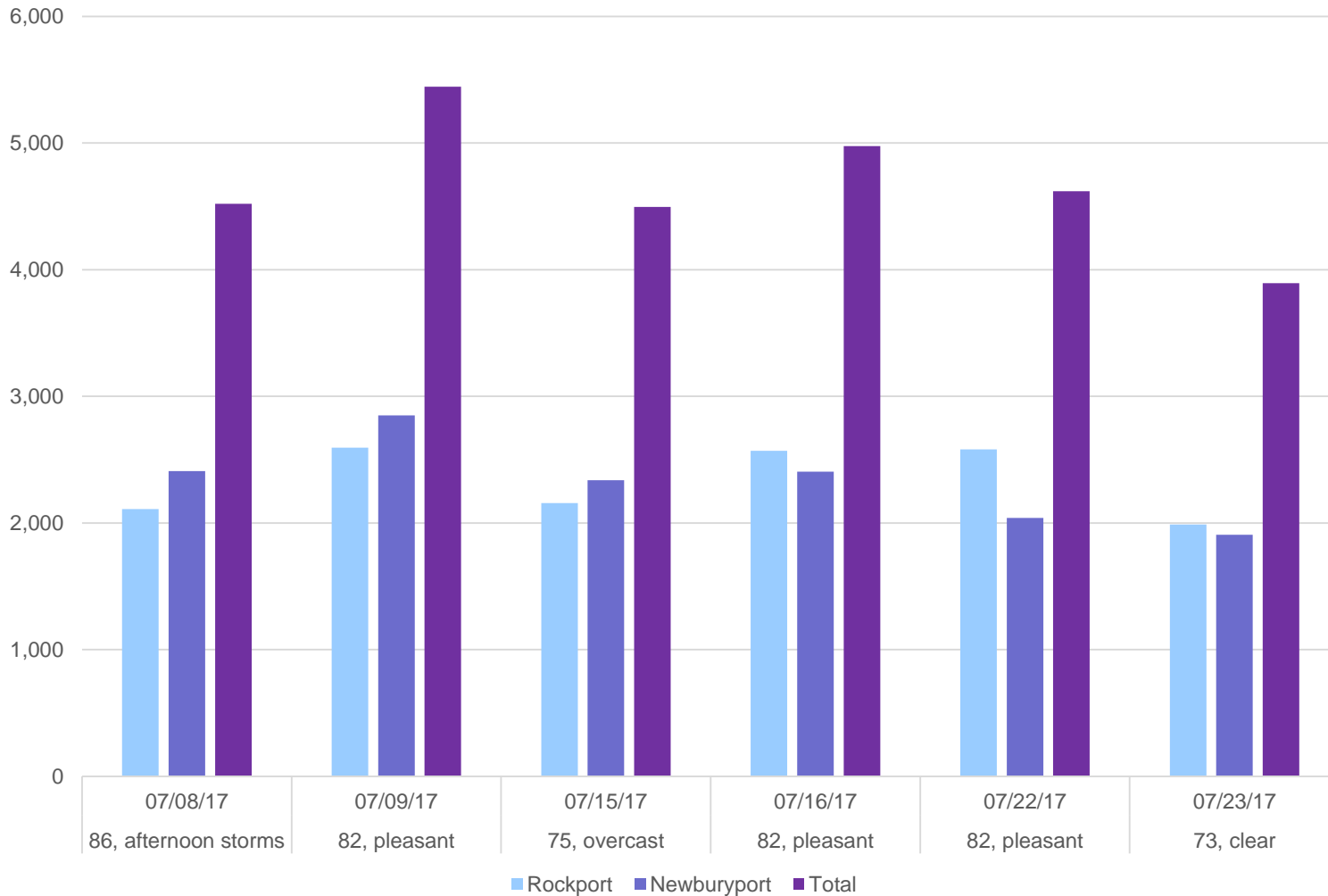


Current Practices for Bus Diversions

Type of Service	Example	Past Practice
Commuter Rail weekend	PTC installation	There have been weekend closures with no replacement service
Commuter Rail weekday	Beverly drawbridge	Bus replacement service
Rapid Transit weekend/nights	Longfellow bridge, winter resiliency	Bus replacement service at same or better frequencies
Rapid Transit weekday	Comm. Ave bridge	Bus replacement service at same or better frequencies
Long-term station closures	Wollaston	Multiple mitigations, including bus shuttles



Weekend Shuttle Bus Ridership: Counts, 3,900 to 5,600 passengers/day





Ridership on Rockport/Newburyport Bus Diversion

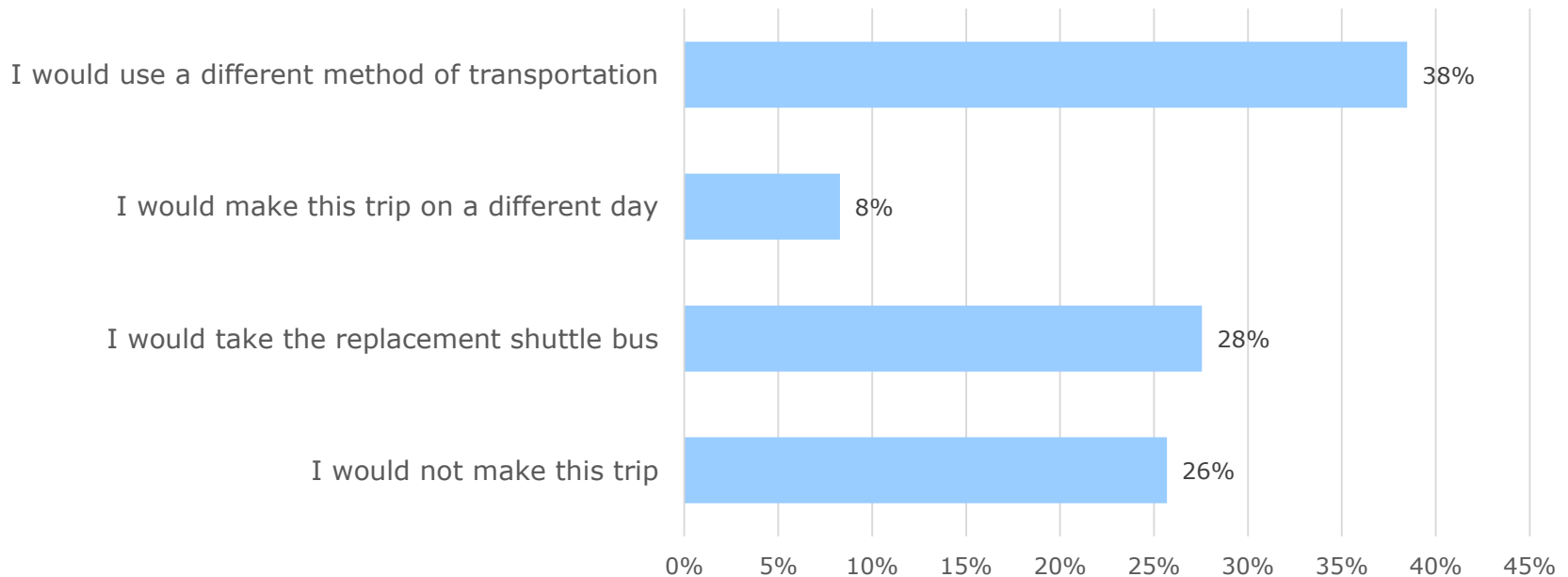
- Ridership during the first 3 weekends of bus diversion fell an average of 3% versus Spring 2017
- Ridership was relatively steady because of increased ridership at Salem, already the busiest station after North Station on both lines
- Rockport/Newburyport has destinations that attract weekend summer ridership
- Unfortunately we don't have ridership data from last summer to be able to account for seasonality in ridership comparisons



Survey Data on Commuter Replacement Service

28% of respondents report that they would take a weekend commuter replacement bus shuttle

If you found out that a shuttle bus were replacing **weekend commuter rail service** on a day you were planning a trip, how would this affect the way you make your trip?





Option for Weekend Replacement Service

Offer **no replacement** service

Replicate CR line entirely (*most costly option*)

Customize service for specific closure and line

- Some but not all stops on CR line
- Provide shuttle to nearest point of connection to rapid transit system

Which service models are acceptable?

How many transfers should customer have to make to reach the terminus of their Commuter Rail line?



Variables to Consider when Planning Service

Car ownership – Percent of zero vehicle households provides an indication of whether riders have other personal alternatives

Alternative service available- MBTA, RTA, private carrier, Amtrak

Minority Line- Title VI classification of Commuter Rail line to ensure equity in decision-making

Ridership- number of weekend riders

Subsidy/trip for shuttle options- impacted by ridership, route length, and ease to replicate commuter rail service on parallel road network

Weekend demand- Destinations and events that increase weekend travel (e.g. Salem, beaches, Red Sox games), weekend work trips

Are these the right variables? Are we missing any?

Should we consider all alternative service types the same?



Level of Replacement Service

Capacity- What percent of the average weekend ridership should we plan to carry on buses (impacts cost of shuttle)?

Should we try to guarantee no one left behind or use best data on usage?

Span- What time should the time the first and last bus trips be?

Frequency – Should buses run as frequently as the CR schedule?
Since bus run times are longer and layover locations different, the span and frequency will impact the cost of the shuttle. Planning for the same span and frequency might end up with more service.

What level of service is acceptable?



Proposed Fares

If a diversion on a Commuter Rail line **covers the entire line** the fares will be a flat fare that is less than half of the one-way fare for maximum zone.

If a diversion on a Commuter Rail lines **end at a midpoint Commuter Rail station**, the fare is free for the bus shuttle and all passengers must pay the fare for the Commuter Rail at the zone where they transfer to the Commuter Rail.

If a diversion on a Commuter Rail line **ends at a Rapid Transit station**, the fare is free for the bus shuttle and the passengers must pay the Rapid Transit fare when they transfer.

Does this fare structure make sense?

Should we charge for parking?



Bus Shuttles Require Internal Resources and Staff Time

Estimates staff hours to plan and coordinate diversion	Newburyport / Rockport - Weekday & Weekend -	Lowell - Weekend -
Bus Ops	220	30
Test Runs	280	30
Service Planning	120	40
Railroad Ops – Communications	120	60
Railroad Ops	200	40
Keolis	150	40
Platform Attendants	500	200
	1,590 hours	440 hours



Summary of Input Needed

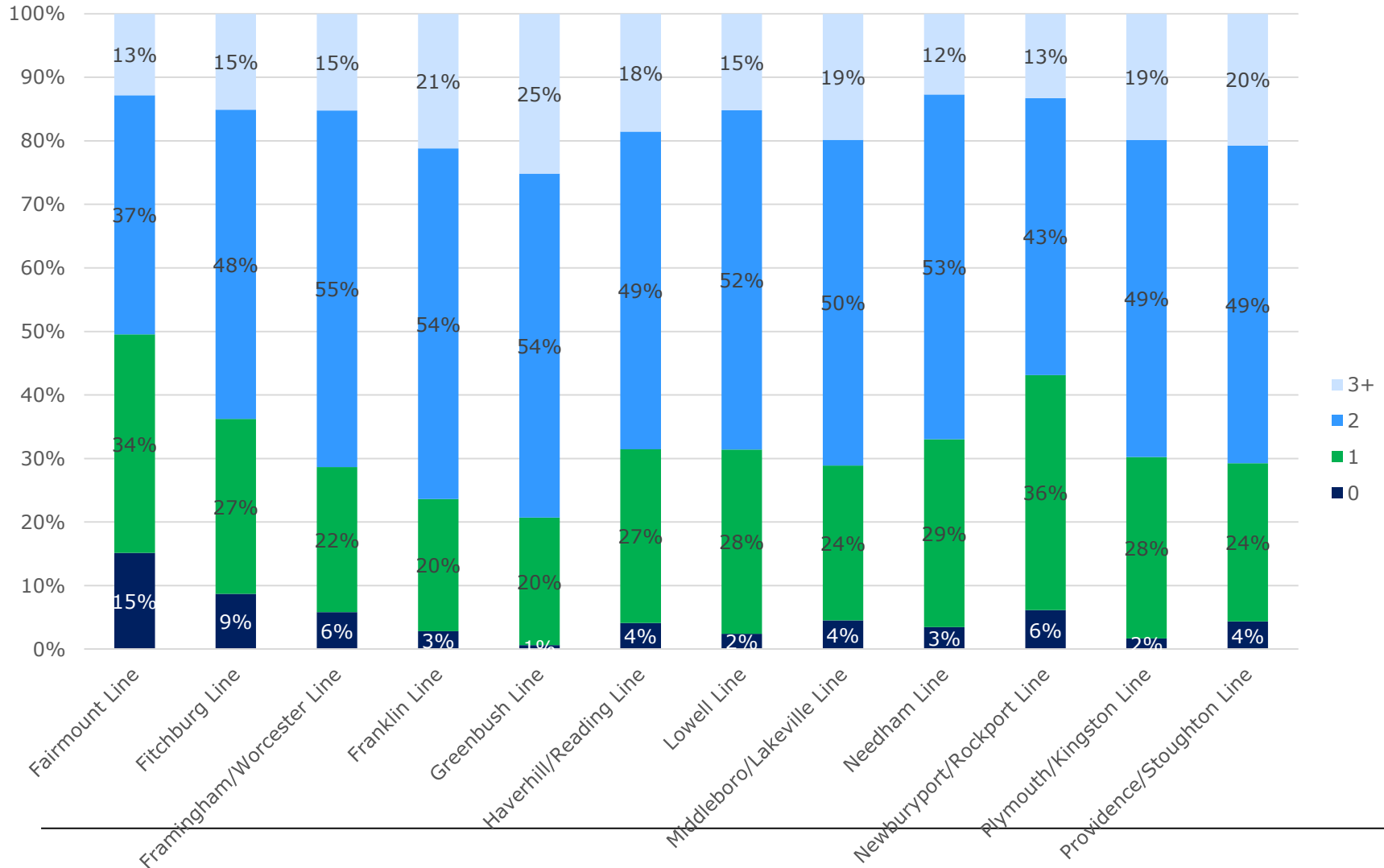
- Variables to Consider
 - *Do we have the right variables? Should we consider all alternative service types the same?*
- Replacement service model
 - *Which service models are acceptable? How many transfers are acceptable?*
- Level of replacement service
 - *What level of service is acceptable?*
- Fares and parking
 - *Does this fare structure make sense? Should we charge for parking?*



Appendix



Car Ownership by Commuter Rail Line





Spring Weekend Ridership by Line

Line	Saturday	Sunday
Lowell	1399	1113
Haverhill	814	719
Newburyport/Rockport	2839	2441
Fitchburg	1192	1629
Franklin	1311	949
Framingham/Worcester	1506	1762
Providence/Stoughton	3581	1493
Fairmount	511	319
Middleborough	998	719
Kingston/Plymouth	575	325
Greenbush	475	270
Needham	541	0

Source: March 25-26 2017, terminal counts

Alternatives To Commuter Rail - Needham Line





Minority Lines

In the existing Title VI plan the minority lines are:

Fairmount

Middleborough

Framingham/Worcester

This classification will be updated over the next month.