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

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

* 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)
<table>
<thead>
<tr>
<th>Type of Service</th>
<th>Example</th>
<th>Past Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commuter Rail weekend</td>
<td>PTC installation</td>
<td>There have been weekend closures with no replacement service</td>
</tr>
<tr>
<td>Commuter Rail weekday</td>
<td>Beverly drawbridge</td>
<td>Bus replacement service</td>
</tr>
<tr>
<td>Rapid Transit weekend/nights</td>
<td>Longfellow bridge, winter resiliency</td>
<td>Bus replacement service at same or better frequencies</td>
</tr>
<tr>
<td>Rapid Transit weekday</td>
<td>Comm. Ave bridge</td>
<td>Bus replacement service at same or better frequencies</td>
</tr>
<tr>
<td>Long-term station closures</td>
<td>Wollaston</td>
<td>Multiple mitigations, including bus shuttles</td>
</tr>
</tbody>
</table>
Weekend Shuttle Bus Ridership: Counts, 3,900 to 5,600 passengers/day

- 07/08/17: 86, afternoon storms
- 07/09/17: 82, pleasant
- 07/15/17: 75, overcast
- 07/16/17: 82, pleasant
- 07/22/17: 82, pleasant
- 07/23/17: 73, clear

The chart shows the ridership on different days with the weather conditions. The ridership ranges from 3,900 to 5,600 passengers per 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?

- I would use a different method of transportation: 38%
- I would make this trip on a different day: 8%
- I would take the replacement shuttle bus: 28%
- I would not make this trip: 26%

Source: June and July 2017 Customer Opinion Panel, question was only asked to respondents who answered that they have ever taken the commuter rail on the weekend, n=546
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

<table>
<thead>
<tr>
<th>Estimates staff hours to plan and coordinate diversion</th>
<th>Newburyport / Rockport</th>
<th>Lowell</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Weekday &amp; Weekend -</td>
<td>- Weekend -</td>
</tr>
<tr>
<td>Bus Ops</td>
<td>220</td>
<td>30</td>
</tr>
<tr>
<td>Test Runs</td>
<td>280</td>
<td>30</td>
</tr>
<tr>
<td>Service Planning</td>
<td>120</td>
<td>40</td>
</tr>
<tr>
<td>Railroad Ops – Communications</td>
<td>120</td>
<td>60</td>
</tr>
<tr>
<td>Railroad Ops</td>
<td>200</td>
<td>40</td>
</tr>
<tr>
<td>Keolis</td>
<td>150</td>
<td>40</td>
</tr>
<tr>
<td>Platform Attendants</td>
<td>500</td>
<td>200</td>
</tr>
</tbody>
</table>

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

Source: MBTA Systemwide Passenger Survey 2015-2017, sample mostly weekday riders
## Spring Weekend Ridership by Line

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

*Source: March 25-26 2017, terminal counts*
Alternatives To Commuter Rail - Needham Line

Legend
- GREEN
- ORANGE
- Needham Line

MBTA Weekend Route
- Bus Route 35
- Bus Route 36
- Bus Route 37
- Bus Route 39

5 Mi Buffer
RTA Area
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.