

# A Rider's View

A Summary of Recommendations

To Improve MBTA Bus Service



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# Introduction

Transportation has been a lifelong interest of mine. From collecting bus schedules and memorizing the order of subway stops in my youth, to going on “fan trips” around the system and learning about what it takes to actually run the system when I was older, I have always felt a connection to mass transit. Over the years, I have learned quite a bit about Boston’s transportation system; its history, its technical aspects, and its day to day operations.

I had several questions in mind when I set out to create this list of recommendations. Why is it that I commonly see two buses traveling together on the same route and going in the same direction? Why is it that during rush hour, someone may choose to wait for the next bus as the one that has arrived is filled to capacity? Why is it that more often than not, the printed schedule does not seem to reflect the actual service provided? I wanted answers, to find the root to these problems and perhaps even fix them.

I have not intention of “vilifying” the MBTA. I understand the various constraints that the MBTA must work under to operate such a system. Moreover, this list of recommendations is not meant to be a substitution for the MBTA’s service analysis and planning process. I simply want to provide a rider’s perspective on service and offer my insights. I am creating a picture of what it is like to ride the system each day and in some instances depend on it as a sole means of transportation. Hopefully, the MBTA and its staff will read through my recommendations and (perhaps with some minor tweaking) put them into place to improve service for the riders.



# The Routes

I have spent the past several months analyzing the following bus routes:

Route 01 Dudley Station – Harvard Square via Massachusetts Avenue

Route 15 Ruggles Station – Kane Square via Uphams Corner

Route 16 Andrew Station – Forest Hills Station via Columbia Road

Route 22 Ruggles Station – Ashmont Station via Talbot Avenue

Route 23 Ruggles Station – Ashmont Station via Washington Street

Route 28 Ruggles Station – Mattapan Station via Dudley Station

Route 32 Forest Hills Station – Wolcott Square via Hyde Park Avenue

Route 39 Forest Hills Station – Back Bay Station via Huntington Avenue

Route 44 Ruggles Station – Jackson Square Station via Humbolt Avenue

Route 45 Ruggles Station – Franklin Park via Blue Hill Avenue

Route 66 Dudley Station – Harvard Square via Allston

Route 749 Dudley Station – Downtown Crossing (SILVER LINE)

In picking these routes I first noted their average weekday ridership. Routes

01, 23, 28, 39, 66, and 749 all carry over 10,000 passengers per weekday.

Second, I took into account how dependent the riders were on the route.

Many of these routes operate in Dorchester, Roxbury, and Mattapan where the bus is often the primary mode of transport for residents, as subway service may not be readily accessible to them. The last factor in deciding which routes to study, while it may seem somewhat superficial, was the route's reputation. For example, many of the riders that I spoke with viewed Route 28 as being a crowded, late, and often quite unreliable bus route and were quick to point out its flaws. The passengers' perception of a route is a good indicator of the level of service. If the service were good, would the riders be complaining? Route 749, although classed as Bus Rapid Transit, operated in a somewhat similar fashion as regular bus routes.

I rode each route several times, noting typical traffic conditions and patterns, points along the route where crowding was most common, the average total trip time (and comparing that with the scheduled runtime), the frequency of buses versus the posted headway, and factors that contributed to delays. In addition, I interviewed riders asking them what they thought of service and if anything needed to be improved. I talked with bus drivers and inspectors as well, to get their perspective on service. Based on my observations and interviews, I have come up with a list of recommendations that may help resolve the service issues.

# The Recommendations

The following is a list of my recommendations to improve MBTA bus service and a brief description of why I proposed them and what impact they would have on service.

## Recommendation #1:

Have MBTA dispatchers tell operators on CAD/AVL (*Computer Aided Dispatch/Automatic Vehicle Location*) equipped routes to hold their positions if their bus is following another bus too closely so that buses will not bunch together and to maintain the proper headway.

Routes 01, 15, 23, 28, 32, 39, 66, and 749 (SILVER LINE) are currently equipped with CAD/AVL systems that enable dispatchers to chart a bus along its route. Despite having such a system in place, bunching is still a serious issue on these routes that causes large gaps in the headway, meaning a much longer wait for passengers. If a dispatcher notices a group of buses traveling together, they should have the ability to make a “schedule adjustment” by holding a bus so that they are spread out more evenly.

## Recommendation #2:

Adjust rush hour runtimes on Routes 01, 15, 22, 23, 28, 39, 44, 45 and 66.

With the current runtimes in place, many drivers on these routes have told me that they felt pressured to make their trips on time and will rush along the route. The MBTA does factor in traffic when it creates its schedules, however there is little if any “padding” that would allow a bus running late to get back on schedule. Thus the bus arrives late at its destination and is late for its return trip, and so on. Outbound trips on Routes 15, 23, 28, 44, and 45 lose much time at the intersection of Tremont Street and Malcolm X Boulevard (Roxbury Crossing), spending as many as three light cycles there. Similarly, there is heavy congestion in the Dudley Square area that causes buses to lose another three or four minutes on their trips. Many buses arrive at Dudley Station seven to ten minutes late and find it almost impossible to make up the time lost and stay on schedule. Route 01 and 66 buses may take nearly an hour to travel from Dudley Station to Harvard Square during rush hours. Running late, the trips are often more crowded as more passengers are waiting at each stop. Traffic appears to have a greater impact on service than the current schedules allow for. On many of my rides, the bus only arrived at its destination 10-12 minutes late. If as little as five to ten minutes were

added to the runtimes that could significantly improve schedule adherence and route reliability. Drivers will also be under less stress and would work more efficiently.

### Recommendation #3:

Have MBTA officials at Dudley Station use handheld CharlieCard validators to speed up boarding on Routes 23 and 28.

During the height of rush hour there may be 15-20 people waiting for Routes 23 and 28 at Dudley Station. Arriving Silver Line buses simply add more to those already waiting. When a bus does arrive, people often crowd the front door and if the line at the farebox is very long or moving slowly, drivers will open the rear doors and allow passengers to board there, resulting in lost fare revenue. Buses often spend several minutes boarding passengers, placing the bus further behind schedule. (Please see the “Data Charts” section for sample dwell times at Dudley Station for Routes 23 and 28). With the validators, an inspector may go and board riders at the rear door, collecting all the fares, and limiting the dwell time. This would be similar to the Green Line’s “Show & Go” program.

#### Recommendation #4:

Operate one articulated bus on Routes 22 and 28 during the rush hour to combat crowding.

Crowding is a major issue that these two routes face, along with several others. However it is possible to operate 60' articulated buses on these routes to increase capacity. Currently, the MBTA has 44 such buses in its fleet; 17 used exclusively for the Silver Line Washington Street, 16 used on Route 39 during the rush hour and five that supplement Route 32 service during rush hours. This leaves six "spares" at Southampton Garage. With only one 60' bus on Route 22 and one bus on Route 28, there would be a noticeable impact on the crowding issue. Note that if an articulated bus were to operate on Route 28, outbound trips would have to bypass Roxbury Street, Dudley Street, and Eliot Square as the roads are too narrow (similar restrictions are in place on Route 32/39 pullout and pullback trips that travel via Route 16. These trips must bypass the South Bay Mall).

Recommendation #5:

Have Route 25 service operate during the PM Peak to supplement Route 28 service.

Many of the riders I spoke with said that they either never heard of Route 25 or have only seen it rarely and ridden it once or twice. Several ratings ago, the span of service was slightly reduced from service every 10 minutes to service every 15 minutes. If Route 25 is to operate most effectively and fully supplement Route 28 service the MBTA must raise route awareness and initiate PM Peak service. Doing this would increase the impact it would have on taking pressure off of Route 28 and allowing it to not go underutilized.

Recommendation #6:

Operate the same number of vehicles and have the same headways during the PM Peak as are in place during the AM Peak.

On Routes 01, 15, 22, 23, and 28 there are fewer vehicles assigned during the PM Peak than in the AM Peak. True, there is higher ridership in the morning with the students, but in during the PM rush people are getting off work, students are returning home from afterschool programs, etc. and thus

service is just as busy then as it is in the morning. With the same headways and vehicle assignments in place, service levels would be more balanced and riders in the afternoon would not have less service available to them.

Recommendation #7:

Have all Route 32 service operate with articulated buses during the AM Peak, Midday Base, PM Peak, and Evening periods.

Due to the high volume of passenger traffic, particularly school students in the morning and afternoon (in both directions), 40' buses are barely able to handle the strain. If the route were to use all 60' articulated buses, short turn service between Forest Hills and Cleary Square would have to be discontinued (there is not enough room for them to turn around). All service would operate as *Route 32.1 Forest Hills Station – Wolcott Square*, with new frequencies put into place to offset the lighter ridership between Cleary Square and Wolcott Square. Please see the “Data Charts” section for a proposed new schedule of departures from Forest Hills Station. In effect the MBTA could provide “more with less”, as with a 25 minute runtime and 5 minute layover; only eight buses (rather than the current ten) would be needed for rush hour service and there would be increased overall capacity.

Recommendation #8:

Increase Transit Police presence along Washington Street to prevent and discourage illegal parking in the HOV lane used by the Silver Line.

The Transit Police are rarely seen patrolling Washington Street, as double parked cars are commonplace. When a vehicle is blocking the lane, Silver Line buses must move out into mixed traffic which impacts on time performance. If the dedicated right of way is to be utilized fully, the problem of illegal parking must be dealt with.

Recommendation #9:

Modify the midday schedule for Route 16.

During the midday on weekdays, service on Route 16 operates every 35 minutes. This frequency seems appropriate for the late morning. During the early afternoon (about the time when students are being released from school), however, is when the headway doesn't seem sufficient. My observations saw that the 1:40PM, 2:20PM, 2:55PM, 3:18PM, and 3:41PM trips from Forest Hills were often quite crowded, with as many as 25-30 people board at Forest Hills Station alone. Large numbers of students from

Hyde Park High, West Roxbury High, and JP/English High School descend upon Forest Hills each afternoon. Currently there are only two school trips on Route 16 at this time from Forest Hills: the 2:05PM and 2:35PM trips which travel to Dudley Station (*Route 16.6*). These trips are often crowded as well; therefore I propose that some of the Route 32 and Route 36 school trips that leave from Hyde Park and Rivermoor respectively be through routed with Route 16 to Andrew Station, taking a large amount of pressure off of the Route 16. Also, between 9:15AM and the start of the PM Peak, I recommend that the headway on Route 16 be reduced from every 35 minutes to every 30 minutes. The 2:05 trip from Franklin Park to Andrew Station should also be changed to operate from Forest Hills. The proposed new schedule would be:

Route 16 Weekday Departures From Forest Hills Station:

<b>9:15AM</b>	<b>11:45AM</b>	<b>2:00PM*</b>
<b>9:45AM</b>	<b>12:15PM</b>	<b>2:10PM**</b>
<b>10:15AM</b>	<b>12:45PM</b>	<b>2:15PM</b>
<b>10:45AM</b>	<b>1:15PM</b>	<b>2:30PM***</b>
<b>11:15AM</b>	<b>1:45PM</b>	<b>2:45PM</b>

**\*Formerly the 2:05PM trip from Franklin Park to Andrew Station.**

**\*\*Formerly the 2:05PM trip from Forest Hills Station to Dudley Station (*Route 16.6*).**

**\*\*\*Formerly the 2:35PM trip from Forest Hills Station to Dudley Station (*Route 16.6*).**

Improved headways would also tackle crowding on outbound trips from Andrew Station during this time period.

Recommendation #10:

Improve Sunday headways from every 45 minutes to every 30 minutes on Routes 44 and 45.

Many riders have told me that the headways on Sunday make it inconvenient for them to get to church. While this type of recommendation may seem a bit out of place here, the church commute question routinely came up in my interviews and seemed to be something that the commuters wanted to see and so I included it here.

Thus concludes my list of recommendations.

After this is released to the MBTA and the public, I will conduct a series of follow up observations and interviews to see if service has in fact improved, stayed the same, or even gotten worse in about three months time. I would also like to meet with MBTA bus operations and service planning staff to discuss these recommendations further and provide more data. I hope that

these basic recommendations will inspire the MBTA to take some initiatives of its own to improve service as well. Already, the MBTA has improved service on Route 111 with many additional trips added to the schedule. Plus service on Route 15 was recently changed to operate to Fields Corner Station all day weekends and earlier on weeknights, in response to rider demand. These are steps in the right direction, and hopefully there will be more such improvements to come in the future.



# Data Charts

Tables 1 – 5

## Sample Dwell Times at Dudley Station

For Routes 23 and 28

<b>Route 23 Ruggles Station – Ashmont Station</b>				
<b>Sample A</b>				
<b>Bus #</b>	<b>Direction Of Travel</b>	<b>Arrival Time</b>	<b>Departure Time</b>	<b>Dwell Time</b>
0607	Outbound	12:06PM	12:07PM	1 Minute
2166	Outbound	12:20PM	12:24PM	4 Minutes
2185	Outbound	12:23PM	12:25PM	2 Minutes
0602	Outbound	12:32PM	12:35PM	3 Minutes
2168	Outbound	12:46PM	12:48PM	2 Minutes
2188	Outbound	12:55PM	12:57PM	2 Minutes
2173	Outbound	1:20PM	1:22PM	2 Minutes
2166	Outbound	1:42PM	1:46PM	4 Minutes
2145	Outbound	1:44PM	1:46PM	2 Minutes
2295	Outbound	1:46PM	1:46PM	0 Minutes
0602	Outbound	2:00PM	2:02PM	2 Minutes
2168	Outbound	2:07PM	2:10PM	3 Minutes
2188	Outbound	2:25PM	2:27PM	2 Minutes
0604	Outbound	2:28PM	2:28PM	0 Minutes
2248	Outbound	2:55PM	2:58PM	3 Minutes
2202	Outbound	2:56PM	3:00PM	4 Minutes
2145	Outbound	3:09PM	3:12PM	3 Minutes
2295	Outbound	3:12PM	3:14PM	2 Minutes
0602	Outbound	3:31PM	3:33PM	2 Minutes
2270	Outbound	3:34PM	3:36PM	2 Minutes
2258	Outbound	3:46PM	3:48PM	2 Minutes
0604	Outbound	3:55PM	3:59PM	4 Minutes
2148	Outbound	4:03PM	4:05PM	2 Minutes
2172	Outbound	4:25PM	4:27PM	2 Minutes
2191	Outbound	4:40PM	4:43PM	3 Minutes
0609	Outbound	4:40PM	4:44PM	4 Minutes
0607	Outbound	4:54PM	4:56PM	2 Minutes
<b>Observations Conducted August 6, 2007</b>				

<b>Route 23 Ruggles Station – Ashmont Station Sample B</b>				
<b>Bus #</b>	<b>Direction Of Travel</b>	<b>Arrival Time</b>	<b>Departure Time</b>	<b>Dwell Time</b>
0608	Outbound	12:14PM	12:16PM	2 Minutes
2260	Outbound	12:15PM	12:15PM	0 Minutes
2225	Outbound	12:30PM	12:33PM	3 Minutes
2251	Outbound	12:38PM	12:39PM	1 Minute
2250	Outbound	12:45PM	12:47PM	2 Minutes
0609	Outbound	12:53PM	12:54PM	1 Minute
2207	Outbound	1:20PM	1:21PM	1 Minute
2232	Outbound	1:40PM	1:43PM	3 Minutes
2192	Outbound	1:45PM	1:45PM	1 Minute
2199	Outbound	1:53PM	1:56PM	3 Minutes
<b>Observations Conducted August 8, 2007</b>				

<b>Route 23 Ruggles Station – Ashmont Station Sample C</b>				
<b>Bus #</b>	<b>Direction Of Travel</b>	<b>Arrival Time</b>	<b>Departure Time</b>	<b>Dwell Time</b>
2192	Outbound	12:07PM	12:10PM	2 Minutes
2176	Outbound	12:16PM	12:18PM	2 Minutes
2184	Outbound	12:20PM	12:20PM	0 Minutes
2251	Outbound	12:30PM	12:33PM	3 Minutes
0603	Outbound	1:00PM	1:04PM	4 Minutes
0606	Outbound	1:14PM	1:17PM	3 Minutes
2184	Outbound	1:37PM	1:42PM	5 Minutes
2227	Outbound	1:48PM	1:51PM	3 Minutes
2187	Outbound	1:50PM	1:51PM	1 Minute
2251	Outbound	1:57PM	2:00PM	3 Minutes
<b>Observations Conducted August 9, 2007</b>				

<b>Route 28 Ruggles Station – Mattapan Station Sample A</b>				
<b>Bus #</b>	<b>Direction Of Travel</b>	<b>Arrival Time</b>	<b>Departure Time</b>	<b>Dwell Time</b>
2123	Outbound	12:02PM	12:04PM	2 Minutes
2286	Outbound	12:26PM	12:30PM	4 Minutes
2298	Outbound	12:30PM	12:31PM	1 Minute
2242	Outbound	12:44PM	12:47PM	3 Minutes
2203	Outbound	12:54PM	12:56PM	2 Minutes
0609	Outbound	1:02PM	1:06PM	4 Minutes
0602	Outbound	1:16PM	1:21PM	5 Minutes
2191	Outbound	1:35PM	1:39PM	4 Minutes
2265	Outbound	1:39PM	1:42PM	3 Minutes
2123	Outbound	1:54PM	1:58PM	4 Minutes
<b>Observations Conducted August 9, 2007</b>				

Route 28 Ruggles Station – Mattapan Station Sample B				
Bus #	Direction Of Travel	Arrival Time	Departure Time	Dwell Time
2150	Outbound	2:12PM	2:15PM	3 Minutes
2131	Outbound	2:20PM	2:24PM	4 Minutes
2199	Outbound	2:54PM	2:55PM	1 Minute
2252	Outbound	3:07PM	3:10PM	3 Minutes
2138	Outbound	3:14PM	3:15PM	1 Minute
0607	Outbound	3:15PM	3:15PM	0 Minutes
2250	Outbound	3:21PM	3:23PM	2 Minutes
0606	Outbound	3:40PM	3:43PM	3 Minutes
2168	Outbound	3:43PM	3:46PM	3 Minutes
2150	Outbound	3:50PM	3:53PM	3 Minutes
Observations Conducted August 6, 2007				

Table 6

Proposed New Weekday Schedule

For Route 32

Departure Times From Forest Hills Station						
4:45AM	7:24AM	9:45AM	12:36PM	3:27PM	6:06PM	9:24PM
5:00AM	7:31AM	9:45AM	12:45PM	3:36PM	6:13PM	9:36PM
5:10AM	7:38AM	10:03AM	12:54PM	3:45PM	6:20PM	9:48PM
5:20AM	7:45AM	10:12AM	1:03PM	3:54PM	6:27PM	10:00PM
5:30AM	7:52AM	10:21AM	1:12PM	4:03PM	6:34PM	10:15PM
5:40AM	7:59AM	10:30AM	1:21PM	4:12PM	6:41PM	10:30PM
5:50AM	8:06AM	10:39AM	1:30PM	4:21PM	6:48PM	10:45PM
6:00AM	8:13AM	10:48AM	1:39PM	4:35PM	7:00PM	11:00PM
6:07AM	8:20AM	10:57AM	1:48PM	4:42PM	7:12PM	11:15PM
6:14AM	8:27AM	11:06AM	1:57PM	4:56PM	7:24PM	11:30PM
6:21AM	8:34AM	11:15AM	2:06PM	5:03PM	7:36PM	11:45PM
6:28AM	8:41AM	11:24AM	2:15PM	5:10PM	7:48PM	12:00PM
6:35AM	8:48AM	11:33AM	2:24PM	5:17PM	8:00PM	12:20AM
6:42AM	8:55AM	11:42AM	2:33PM	5:24PM	8:12PM	12:40AM
6:49AM	9:02AM	11:51AM	2:42PM	5:31PM	8:24PM	1:05AM* Waits For Last Train
6:56AM	9:09AM	12:00N	2:51PM	5:38PM	8:36PM	
7:03AM	9:18AM	12:09PM	3:00PM	5:45PM	8:48PM	
7:10AM	9:27AM	12:18PM	3:09PM	5:52PM	9:00PM	
7:17AM	9:36AM	12:27PM	3:18PM	5:59PM	9:12PM	

Headways:

Early AM – Every 10 Minutes

Evening – Every 12 Minutes

Rush Hours – Every 7 Minutes

Late Evening – Every 15 Minutes

Midday Base – Every 9 Minutes

Night – Every 20 Minutes

Table 7

Average Weekday Ridership

Route 01	12,758 Passengers
Route 15	6,936 Passengers
Route 16	4,350 Passengers
Route 22	8,349 Passengers
Route 23	12,910 Passengers
Route 28	12,041 Passengers
Route 32	8,218 Passengers
Route 39	14,405 Passengers
Route 44	3,791 Passengers
Route 45	3,600 Passengers
Route 66	11,088 Passengers
Route 749 (SILVER LINE)	14,709 Passengers



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Service Frequency Data.....MBTA Scheduling Department Records  
Load Standard Data.....MBTA Title VI Report, 2005

Special Thanks To:

Alternatives For Community and Environment (ACE)

The Bus Inspectors of Dudley Station

The Bus Inspectors of Forest Hills Station

The Bus Operators of Arborway Garage

The Bus Operators of Cabot Garage

The Bus Operators of Southampton Garage

T Riders Union (TRU)

And of course:

The bus riders who took time out of their busy commutes to offer their stories, opinions, and suggestions which help me create list of recommendations.

Thank You All!