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Net Subsidy by Mode: Part II

Analysis of MBTA highest subsidy / lowest ridership services

WORKING DRAFT

November 18, 2015

RECAP: Methodology and assumptions

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- The goal of this analysis is to show the true economics – costs, revenue, and number of rides – of each mode of transit
- The following charts show all MBTA operating expenses[1] (excluding debt service) and revenues (both fare and own-source) allocated across modes of transit
- **Operating expenses** (excluding debt service) of $1.5B are allocated using internal MBTA methodologies for Federal reporting
  - Costs for operational departments that support multiple modes are allocated based on an appropriate metric (e.g., Maintenance of Way costs allocate based on miles of track)
  - Headquarters and corporate costs allocated in proportion to each mode's direct operating costs
- **Fare revenues** are allocated based on the latest CTPS[2] figures. Total fare revenue corresponds to the MBTA's published financial statements
- **Own-source revenues** (advertising, parking, real estate, etc.) are allocated based on the mode in which they are generated, where possible, and in proportion to fare revenues elsewhere

1 Operating expenses only. Analysis does not include capital expense
2 Central Transportation Planning Staff, staff to the Boston Metropolitan Planning Organization

RECAP: MBTA Expenses and Revenue by mode

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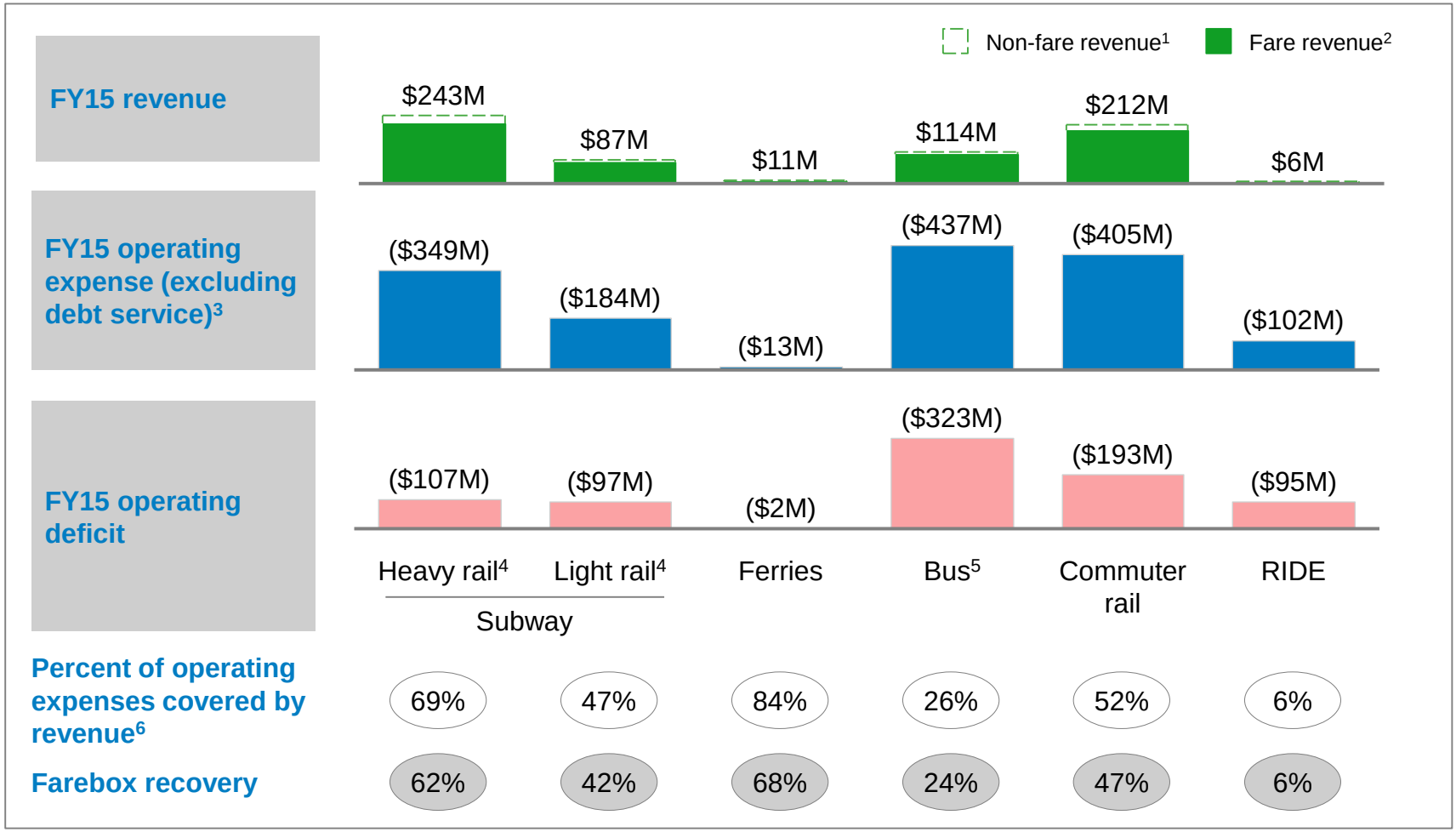

1 $69M of advertising, real estate, parking, and other income allocated across transit modes
2 Fare revenue allocated across modes according to CTPS figures as of 10/05/2015
3 Total operating expense is $18M less than the MBTA financial statements due to federal reporting requirements
4 Heavy Rail is the Orange, Red, and Blue Lines. Light Rail is the Green Line and Mattapan Trolley
5 Along with main bus operations, includes trolley buses, Silver Line, and outsourced suburban bus service
6 Includes fare and own-source revenue, and so is different from farebox recovery (which is calculated based only on fare revenue and operating expense)

RECAP: Subway and bus account for ~90% of MBTA trips

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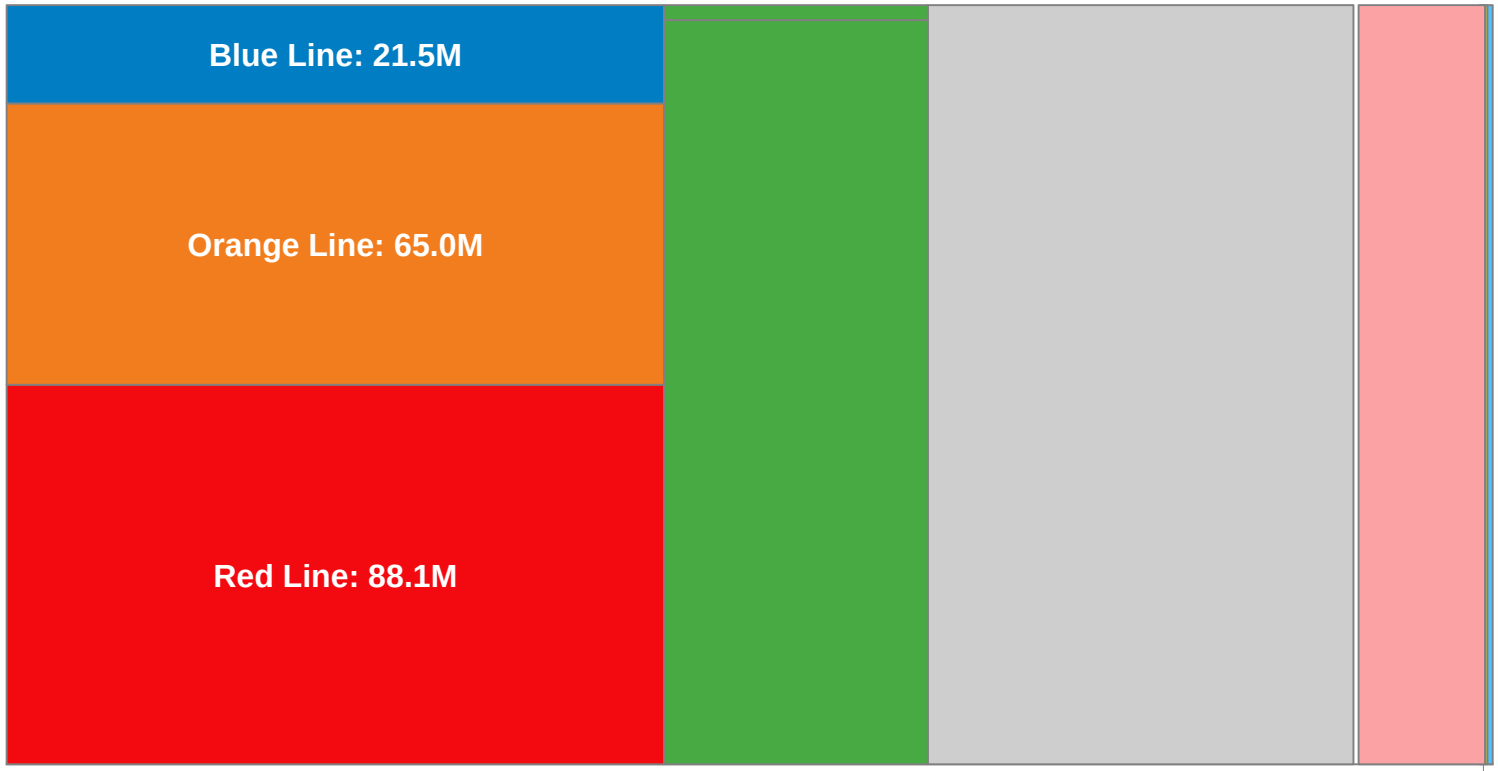
FY15 rides by mode

of unlinked passenger trips



1 Heavy rail is Orange Line, Red Line, and Blue line. Light Rail is Green Line (dominant share) and Mattapan Trolley

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RECAP: The operating deficit (subsidy) per passenger trip varies across transit modes

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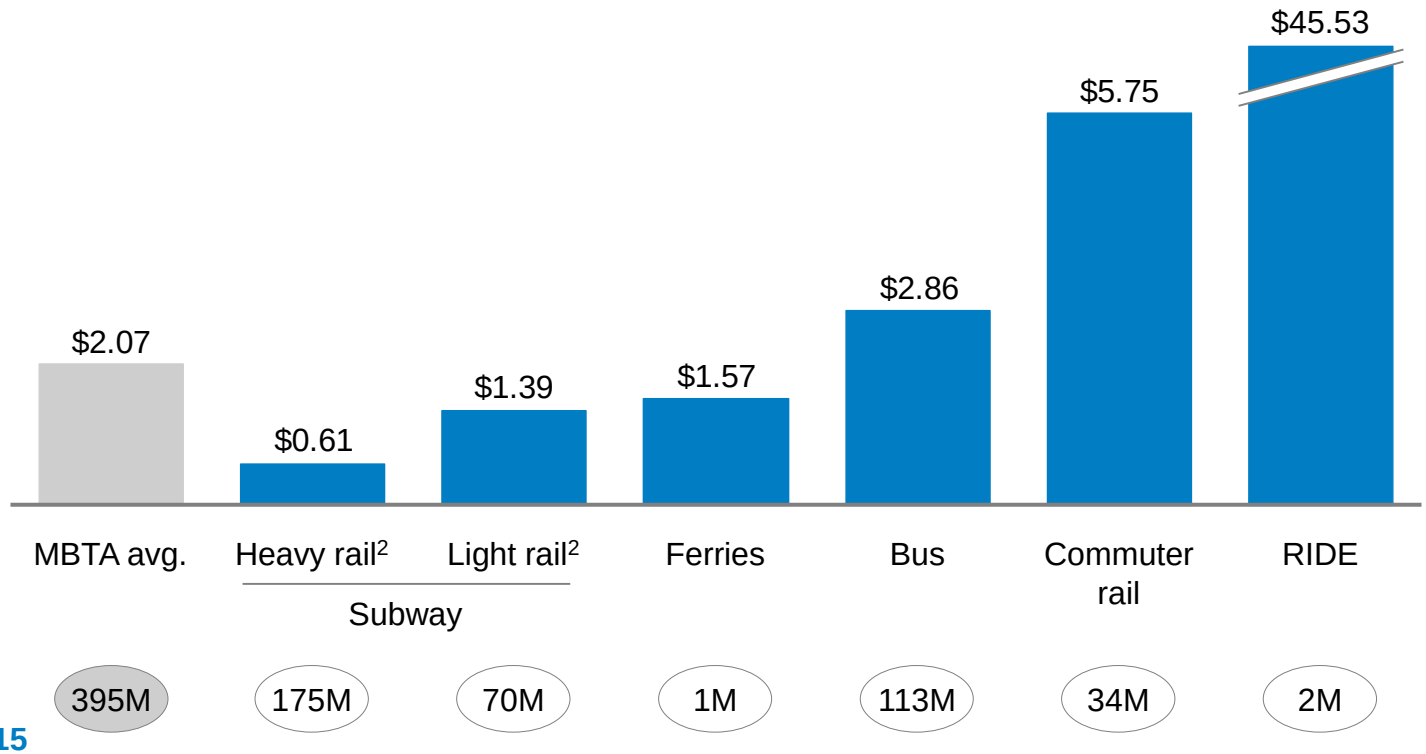
FY15 operating deficit (subsidy) per passenger trip[1]
$ per unlinked passenger trip



1 Fully-allocated operating expenses less fare and non-fare revenue, divided by annual ridership measured in number of unlinked trips
2 Heavy Rail is the Orange, Red, and Blue Lines. Light Rail is the Green Line and Mattapan Trolley

Other transit agencies have developed strategies to reduce expense on high-cost, low ridership segments

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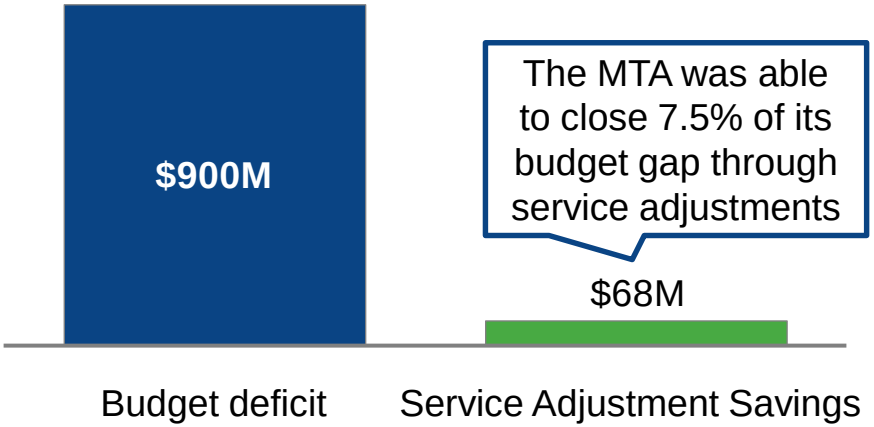
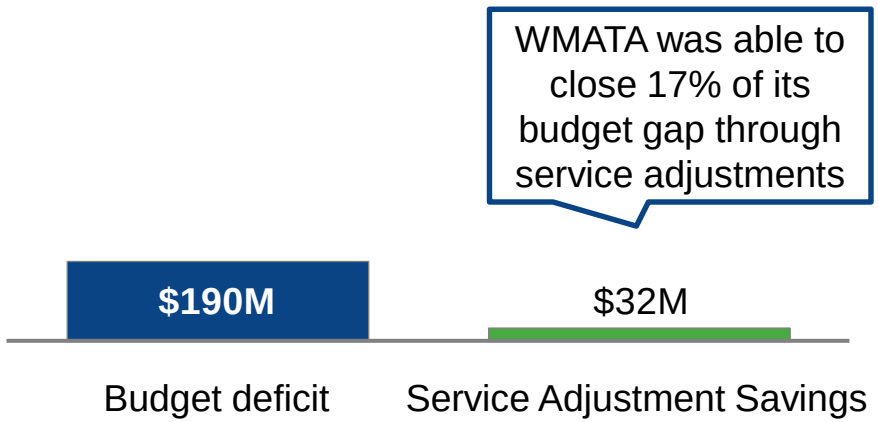
MTA (New York City), 2010



- In 2010, the MTA's budget gap was **$900 million**, and as part of the effort to close the gap, made service adjustments to save **$68 million**
- The MTA discontinued two subway and 32 bus routes, restructured four subway routes, and stopped weekend service on 14 bus routes
- This caused a 1% decline in bus ridership in New York, as well as making bus and subway service less convenient for 15% of riders

WMATA (Washington, D.C.), 2011



- In 2011, WMATA faced a budget deficit of **$190 million**
- **$32 million a year** in savings was created through service adjustments, including:
  - Seasonal and holiday service adjustments
  - Widening headways from 6 to 8 minutes in the period between 6 am and 6:30 am
  - Closing 10 entrances early on weekends and 5 entrances at 8 pm on weekdays
  - Closing 3 stations altogether on weekends

Source: New York City Transit: Evaluation of 2010 Service Reductions, press releases

Summary of highest-subsidy segments of current MBTA service by mode (excluding The Ride, covered on 11/9)

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Immediate Focus Opportunities
Less than 1% of Total MBTA Rides

- **Weekend Commuter Rail: FY15 net marginal cost[2] $18M (estimated)**
  - Weekday commuter rail subsidy is $4.52; weekend subsidy is $23.52
  - Potential options: eliminate (may require legislative approval)[1]; replace with lower cost delivery option like buses; price at cost (based on the innovative Patriots Train / Cape Flyer / Express Bus pricing models)
- **Late Night Subway / Bus: FY15 net marginal cost[2] $14M**
  - Regular service subsidy is $1.43; late night subway and bus subsidy is $13.38
  - Potential options: eliminate; replace with lower cost options like ride-sharing (Uber/Bridj/Lyft) or other private transit operators; price at cost

Initial Focus Areas for Service Planning Process
1.2% of Total MBTA Rides

- **28 Highest-deficit Bus Routes: FY15 net marginal cost[2] $19M**
  - Regular bus subsidy is $2.86; highest-cost 28 routes subsidy is $5.45
  - Potential options: TBD – These are the initial priority routes for analysis in Service Planning

1 Any actual savings to the MBTA from commuter rail service adjustments would require reducing scope of Keolis contract
2 Incremental cost of providing this service net of fare revenues only

The commuter rail ridership is lower on weekends, resulting in a higher operating deficit

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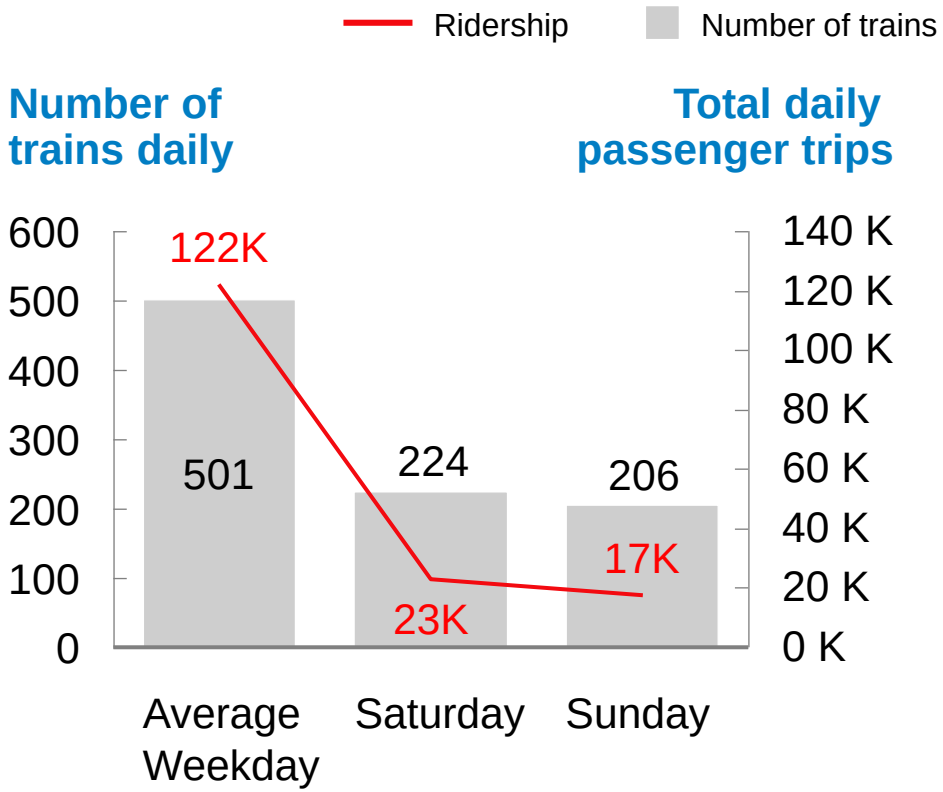
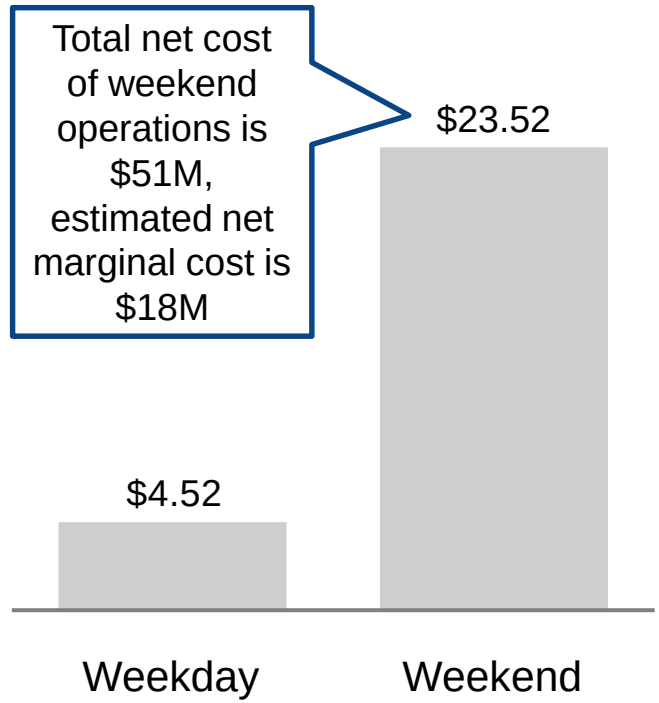
Average commuter rail daily ridership (FY15)



FY15 commuter rail total operating deficit per trip[1, 2]



1/6 as many people travel on an average weekend day, and trains are half as full on weekends as on weekdays

1 Operating deficit includes allocated own-source revenues (parking, advertising, etc.) and allocated overhead costs (e.g., HR, IT, Finance)
2 Average cost, including an allocation of fixed costs which may not vary if service is reduced

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There are substantially fewer trips during late night service (offered Fridays and Saturdays) than at other times

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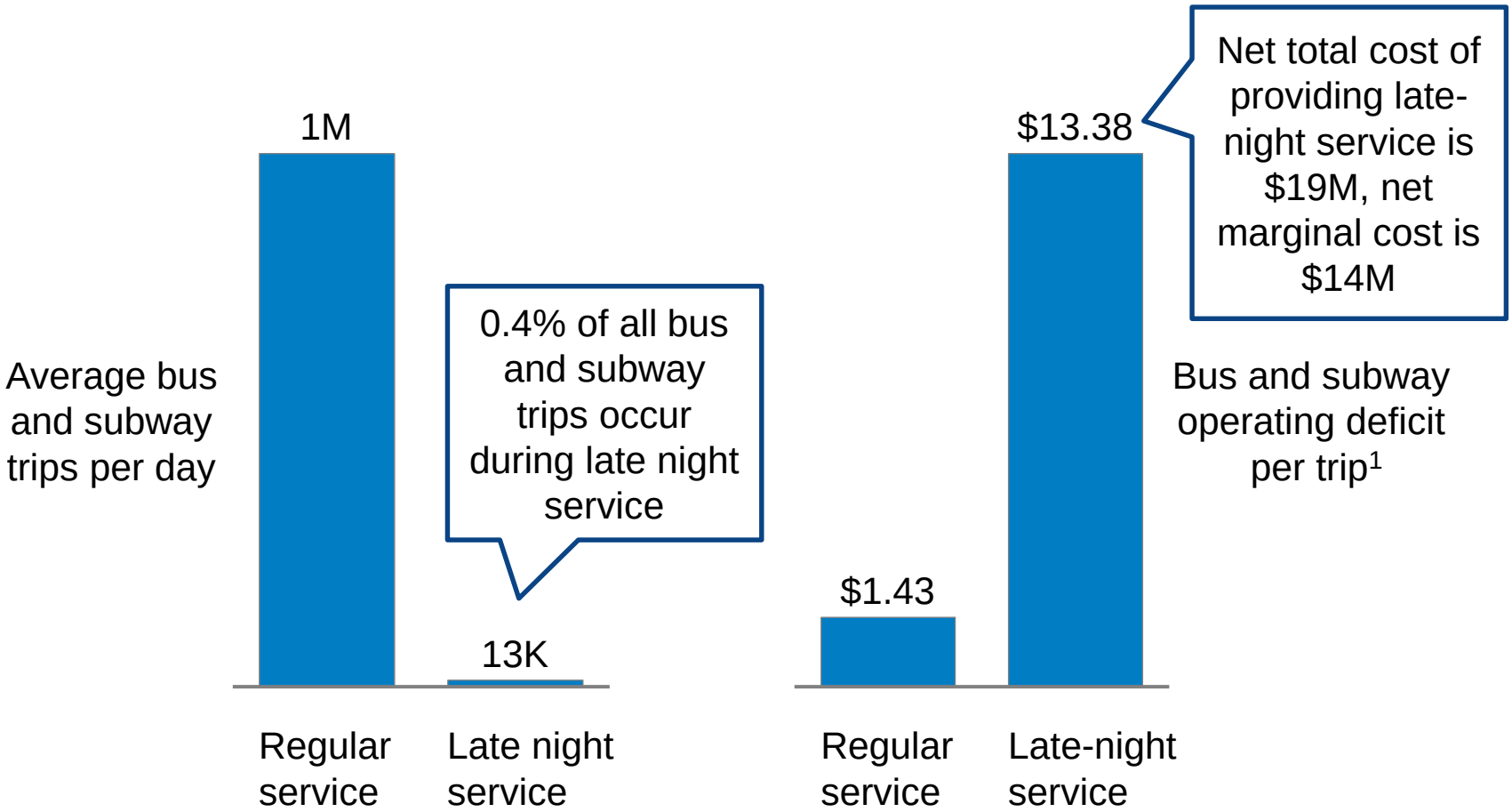

1 Operating deficit includes allocated own-source revenues (parking, advertising, etc.) and allocated overhead costs (e.g., HR, IT, Finance. It is calculated on an average cost basis

Source: MBTA operations planning department, MBTA financials, FY15

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The difference in per-ride subsidy and ridership between high-subsidy routes and the bus network average is stark

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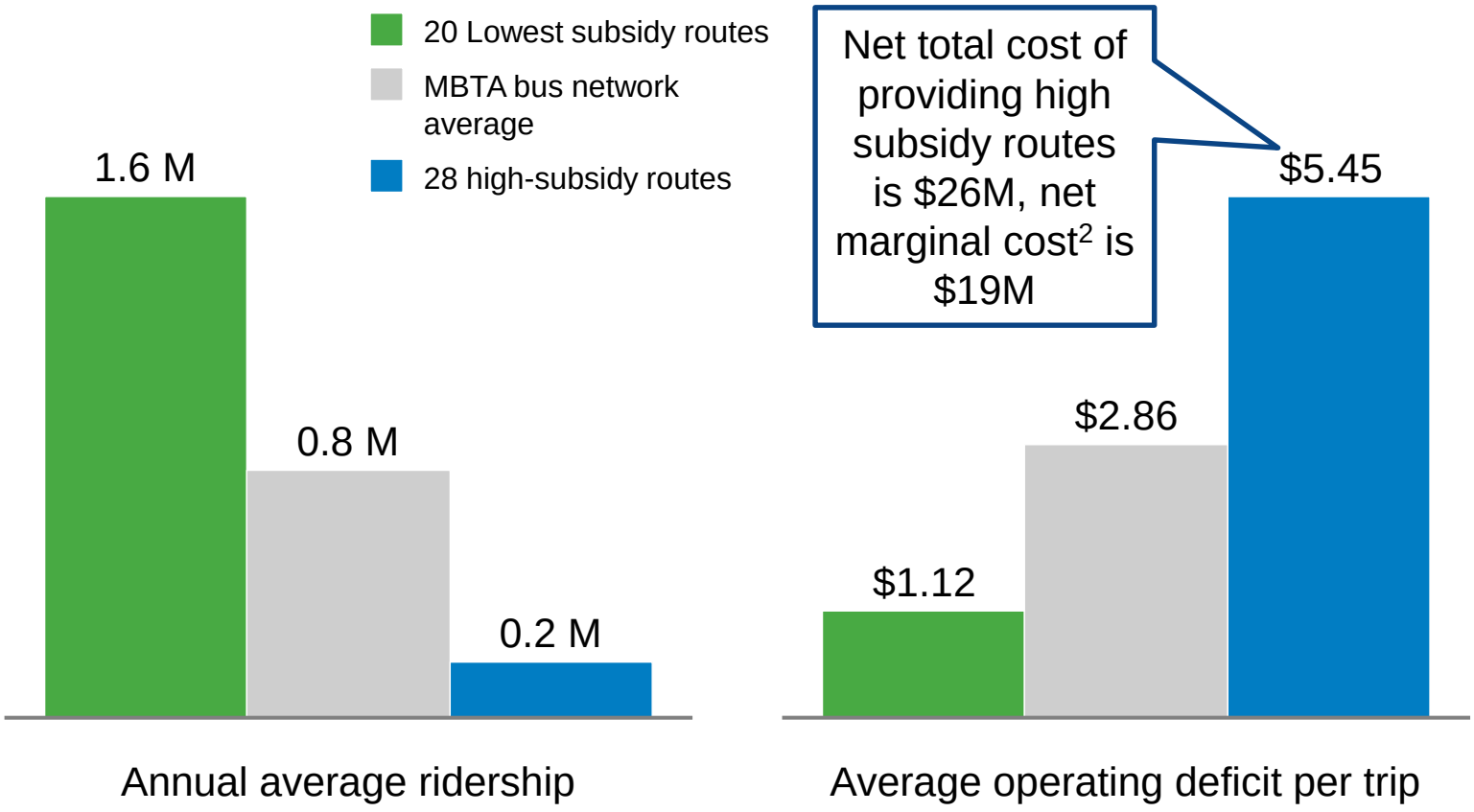
Comparison of high-deficit routes[1] and MBTA system average



1 28 routes shown on previous page
2 Marginal cost of providing this share of bus service, net of any fare revenue collected on those routes

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High-subsidy routes have a lower percentage of riders boarding the bus in minority and low-income areas[1, 2]

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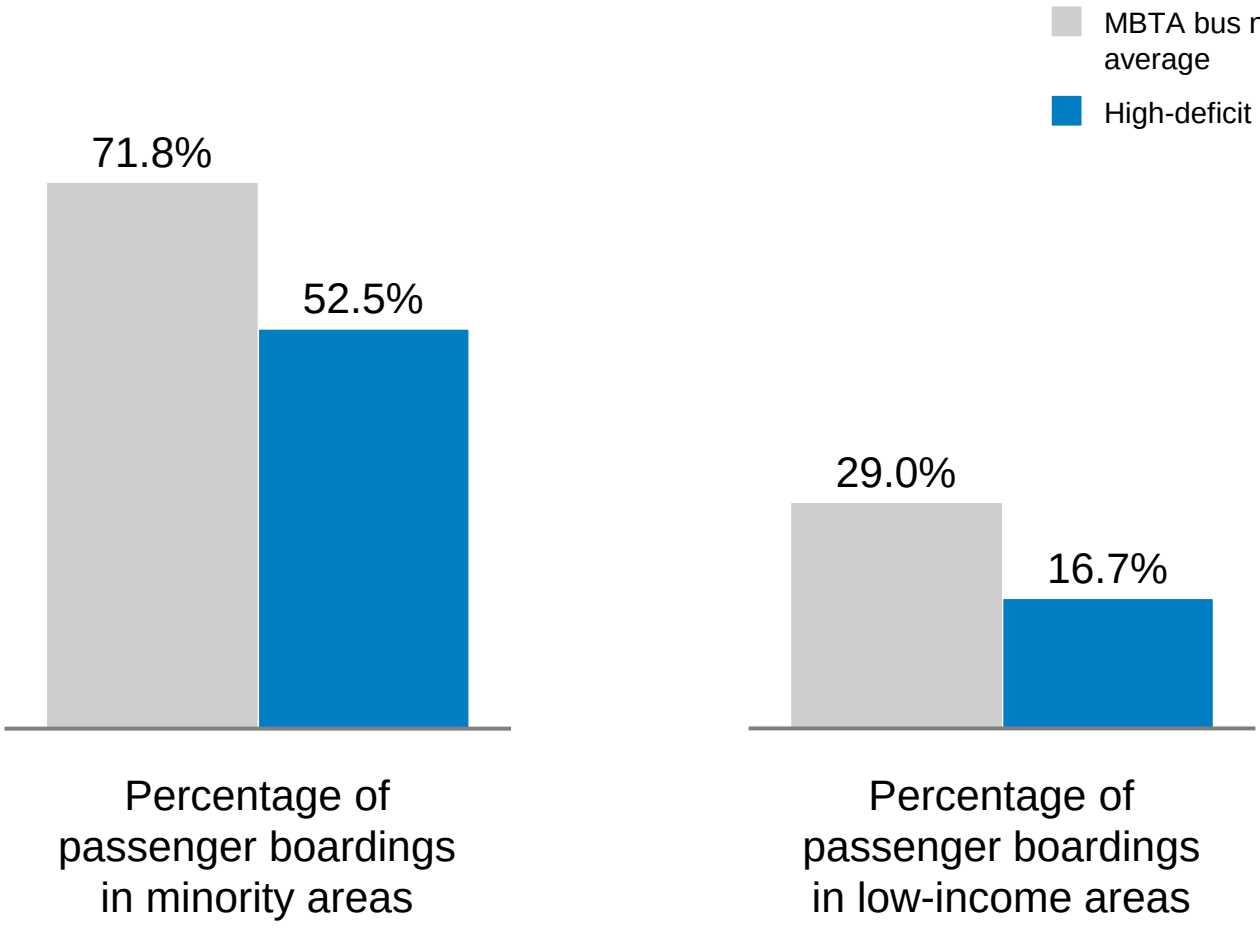

1 These measures track the number of people getting on the bus in minority or low-income areas, rather than directly tracking the number of minority and low-income riders. A minority census tract is one in which non-white residents make up more than 26.19% of the population. A low-income census tract is one in which the median income is less than $41,636

2 A full equity impact and service analysis will need to be done before any bus routes are changed

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~4% of ridership on high-deficit routes drives $25.6M (8%) of MBTA bus operating deficits

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Route number	Operating deficit per trip ($ lost/trip)	Total ridership # (CY14)	Total annual operating deficit (CY14)	Route type	Route/Neighborhood description
191	$44.93	2 K	$106 K	Early morning fare collectors	Mattapan - Haymarket via Ashmont, Fields Corner and Dudley Station
451	$15.10	39 K	$581 K	Lynn/North Shore	North Beverly - Salem Depot via Cabot Street or Tozer Road
170	$11.27	24 K	$268 K	Special low service route	Central Square, Waltham - Dudley Square
428	$9.98	35 K	$347 K	Lynn/North Shore	Oaklandvale - Haymarket Station via Granada Highlands
434	$9.71	14 K	$138 K	Lynn/North Shore	Peabody - Haymarket EXPRESS via Goodwins Circle
465	$9.66	110 K	$1,067 K	Lynn/North Shore	Salem Depot - Liberty Tree Mall via Peabody & Danvers
439	$8.49	22 K	$187 K	Lynn/North Shore	Bass Point, Nahant - Wonderland via Central Square, Lynn
5	$8.30	34 K	$280 K	**Normal**	City Point - McCormack Housing via Andrew Station
553	$8.14	251 K	$2,039 K	Newton	Roberts - Downtown Boston via Newton Corner & Central Square, Waltham
449	$7.61	56 K	$426 K	Lynn/North Shore	Marblehead - Downtown Crossing via Humphrey Street, Lynnway, & Airport
448	$7.13	51 K	$367 K	Lynn/North Shore	Marblehead - Downtown Crossing via Paradise Road, Lynnway, & Airport
436	$6.94	244 K	$1,694 K	Lynn/North Shore	Liberty Tree Mall - Central Square, Lynn via Goodwins Circle
351	$6.91	53 K	$367 K	Burlington	Oak Park/Bedford Woods - Alewife Station via Middlesex Turnpike
52	$6.42	184 K	$1,183 K	**Normal**	Dedham Mall or Charles River Loop -Watertown Yard via Oak Hill & Newton Center
459	$6.17	286 K	$1,764 K	Lynn/North Shore	Salem Depot - Downtown Crossing via Logan Airport & Central Square, Lynn
18	$5.78	143 K	$828 K	**Normal**	Ashmont Station – Andrew Station via Fields Corner Station
424	$5.69	61 K	$347 K	Lynn/North Shore	Eastern Avenue & Essex Street - Haymarket
78	$5.10	405 K	$2,068 K	**Normal**	Arlmont Village – Harvard Station via Park Circle
431	$5.03	19 K	$94 K	Lynn/North Shore	Neptune Towers – Central Square, Lynn via Summer Street
211	$4.90	230 K	$1,130 K	Quincy	Quincy Center Station – Squantum via Montclair & North Quincy Station
202	$4.69	185 K	$869 K	20 belt route	Fields Corner or North Quincy – Fields Corner via Adams Street to Neponset Ave
55	$4.60	274 K	$1,262 K	**Normal**	Jersey & Queensberry – Copley Square or Park & Tremont Street via Ipswich Street
92	$4.60	338 K	$1,553 K	**Normal**	Assembly Square Mall – Downtown via Sullivan Square, Main Street & Haymarket
210	$4.36	228 K	$994 K	Quincy	Quincy Center – North Quincy or Fields Corner via Hancock & Neponset Ave
43	$4.21	476 K	$2,007 K	**Normal**	Ruggles Station – Park & Tremont Streets via Tremont Street
504	$4.15	413 K	$1,713 K	Newton	Watertown/Newton Corner – Downtown via Massachusetts Turnpike
201	$4.03	230 K	$926 K	20 belt route	Fields Corner or North Quincy – Fields Corner via Neponset Ave to Adams Street
100	$3.43	287 K	$984 K	**Normal**	Elm Street – Wellington Station via Fellsway
Totals	$5.45 average deficit per trip	4.7 M (~4%% of total ridership)	$25.6M (8% of total bus operating deficit)		

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Source: MBTA public bus routes, MBTA operations department, MBTA finance department. Operating deficit calculation includes all administrative and maintenance overhead as well as own source revenues, allocated according to service hours

Summary: MBTA spends $52M per year on low ridership modes of service which serve a very small percentage of total MBTA riders

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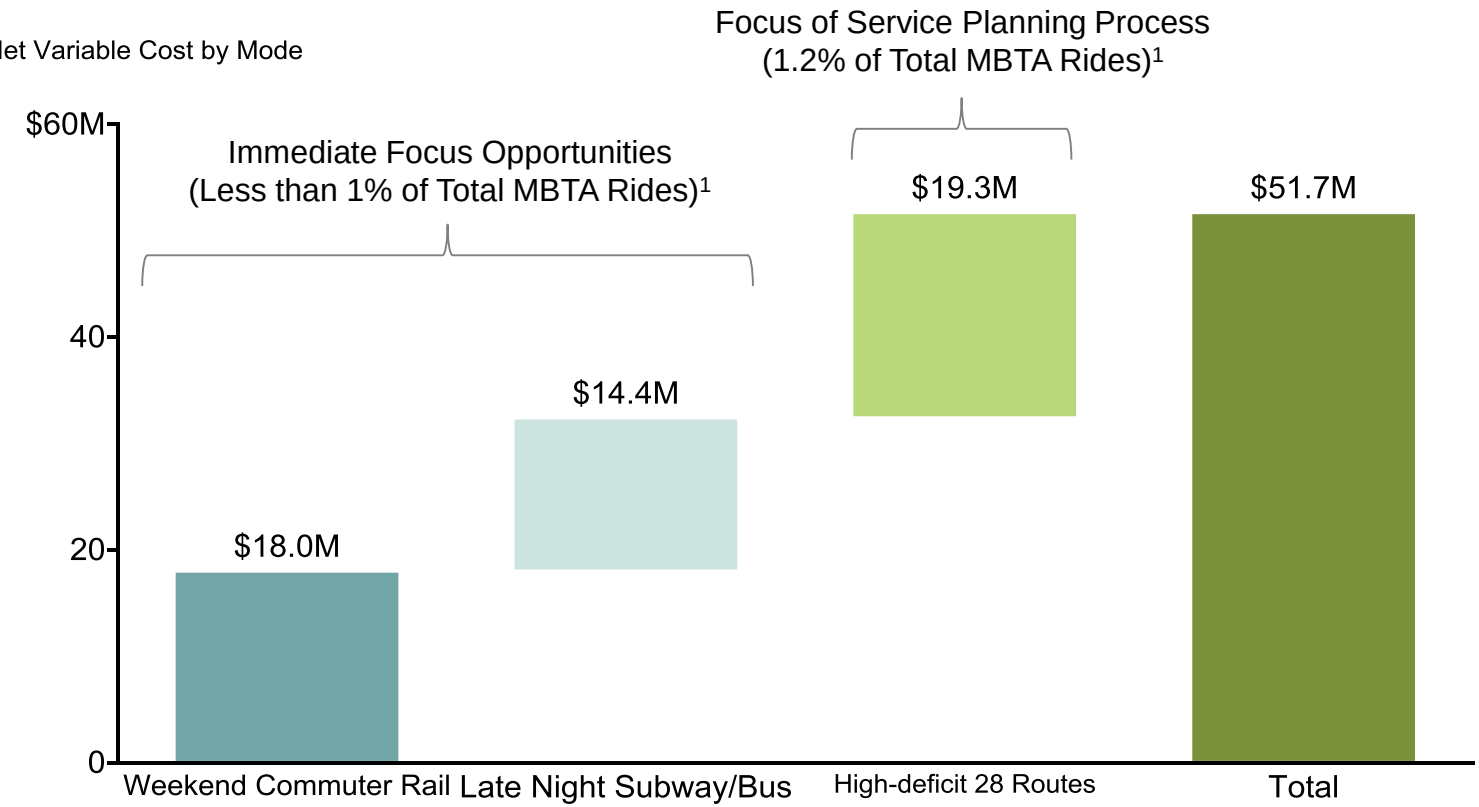
FY15 Total Net Variable Cost by Mode



1 Based off total of 395M rides across the MBTA over the last twelve months.
Note: $52M is the total net marginal cost of operating these services (including fare revenue from these services) – if alternative delivery models were adopted, the costs of these alternative delivery models would reduce total savings