Massachusetts Bay Transportation Authority

Commuter Rail: Best Practices and Revenue Growth Proposal

March 6, 2017

Agenda

1. Review Alignment of MBTA/KCS Commuter Rail Operating Agreement with Global Best Practices

2. Commuter Rail Revenue Growth Proposal

Recap: Commuter Rail Operating Agreement Basics

Term: July 1, 2014 to June 30, 2022

Payment: Fixed payment each year ($314,743,193 in FY16), with allowances for additional work.

Penalties: KCS fixed payment reduced for infractions (e.g. OTP, train staffing, door system).

Incentives: No positive incentives for improved performance.

MBTA-KCS Operating Agreement is a Living Document

Previous Changes to Agreement

- **Coach Counts**: Took measures to increase number of coaches in the fleet by 12

- **Locomotive Counts**: Took measures to increase number of locomotives by 9; enhanced maintenance budget for new locomotives.

    - Tied increase to a higher locomotive pullout requirement and established new penalty structure based on this increase

Ernst & Young Infrastructure Advisors Providing Feedback on Best Practices

Ernst & Young reviewing Commuter Rail Operating Agreement and identifying areas of strength / weakness

- Review includes short and long-term opportunities in the operating, commercial and financial areas of the Operating Agreement:
  - Benchmarking against international precedents
  - Identifying gaps in MBTA's current practice
  - Developing contracting alternatives and evaluating relative merits of each
  - Creating financial model and analyzing impact of various contracting methods
- Review generated short-term actions the MBTA could take to improve current Operating Agreement, including:
  - Weekend Commuter Rail Service
    - » Select weekend shutdown of service for Positive Train Control implementation
    - » Focus on select weekend lines to increase ridership and revenue
  - Create incentives to increase revenue
    - » Through agreement, MBTA can earn revenue that currently goes uncollected, and KCS can earn revenue share above a baseline
    - » Improves capital infrastructure of the MBTA for future use
    - » Better aligns MBTA and Keolis incentives to reduce fare evasion and increase ridership
   - » Consistent with goals of AFC 2.0 project

Ernst & Young Review of International Peers:
Variety of Different Business Models Possible

Rail System	Branding	Revenue Risk	Performance Regime	Dispatch	Rolling Stock Owner	Rolling Stock Maint.	Infra-structure	Track Use	Term (Years)
MBTA Boston, MA	Public	Public	✓	Operator / 3rd Parties	Public	Operator	Public / 3rd Parties	Freight & Passenger	8+4
Greater Manchester Metrolink Manchester, UK	Public	Public	✓	Operator	Public	Operator	Public	Passenger Only	7+3
London Overground London, UK	Public	Public	✓	Operator	3rd Party	Manufacturer	Public / 3rd Parties	Freight & Passenger	7.5+2
Scotrail Aberdeen, UK	Public	Operator	-	Operator	3rd Party	Manufacturer	3rd Party	Freight & Passenger	10
Thameslink, Southern & Great Northern Various, UK	Operator	Public	✓	Operator	3rd Party	Manufacturer	3rd Party	Freight & Passenger	7
Chiltern Railways Aylesbury, UK	Operator	Operator	-	Operator	3rd Party	Operator	Operator / 3rd Parties	Freight & Passenger	20
Doha Metro Doha, QA	Public	Public	✓	Operator	Public	Operator	Public	Passenger Only	20
Rhein-Münsterland-Express North Rhine-Westphalia, DE	Operator	Shared	✓	Operator	Public	3rd Party	3rd Party	Freight & Passenger	15

Ernst & Young Review of International Peers:
Current incentives not aligned to drive ridership and revenue growth

- In a high fixed cost system, empty trains on the weekends mean high subsidies per trip; additional passengers cost almost nothing

- Current Operating Agreement has no incentive or compensation for KCS to invest resources to grow ridership or improve revenue collection on trains

- Of note: MBCR contract had a revenue share mechanism for this reason
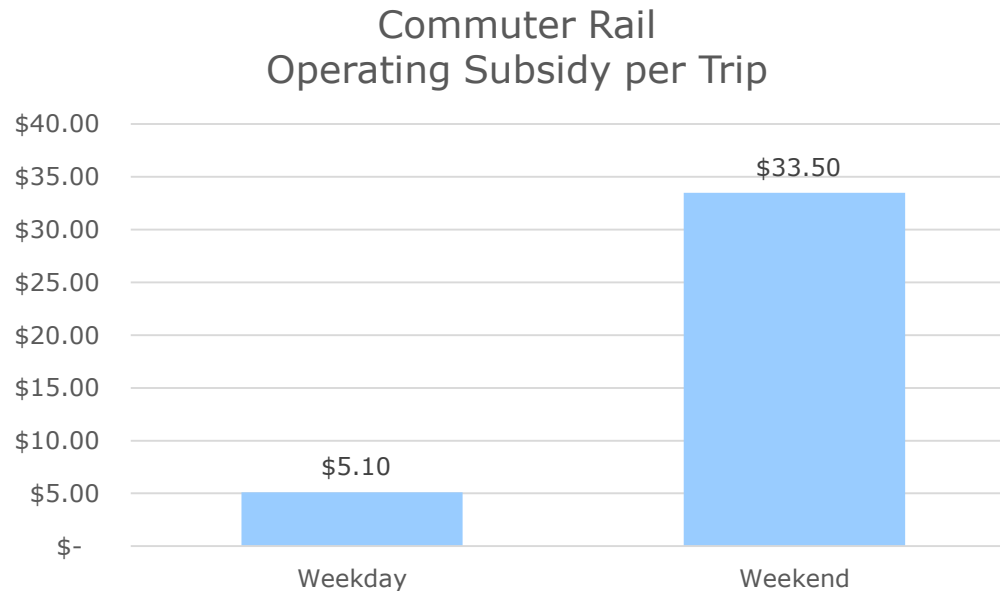
Commuter Rail
Operating Subsidy per Trip

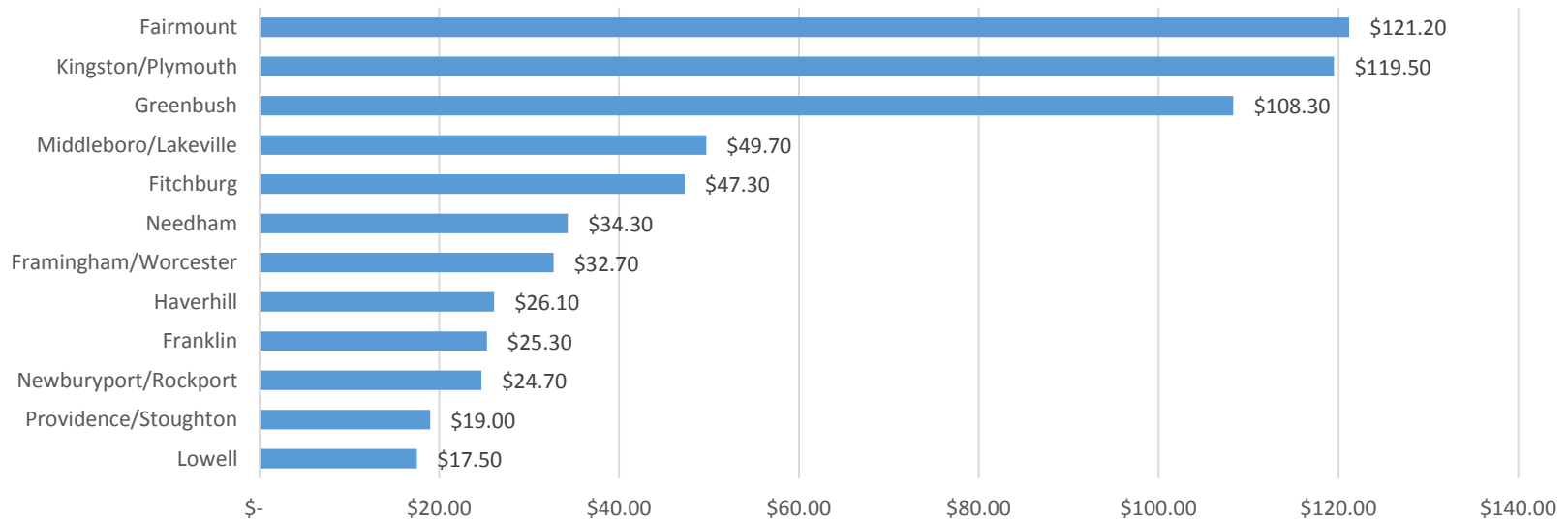Source: Ernst & Young Infrastructure Advisors analysis of MBTA data.
Note: Data does not include annualized capital investment required to maintain system in a state of good repair.

Ernst & Young Review of MBTA Service:
Weekend commuter rail has high costs and low ridership

- Extensive systemwide or line-specific weekend shutdowns are planned for FY18 and FY19 to accelerate PTC/GLX and other capital projects

- Opportunity to reinvent weekend service in partnership with Keolis

- Pilot new marketing and product initiatives on some (or all) CR lines, to see if we can develop a product that is cost-effective for the MBTA and riders

Weekend Operating Subsidy per Trip

Line	Subsidy
Fairmount	$121.20
Kingston/Plymouth	$119.50
Greenbush	$108.30
Middleboro/Lakeville	$49.70
Fitchburg	$47.30
Needham	$34.30
Framingham/Worcester	$32.70
Haverhill	$26.10
Franklin	$25.30
Newburyport/Rockport	$24.70
Providence/Stoughton	$19.00
Lowell	$17.50

Source: Ernst & Young Infrastructure Advisors analysis of MBTA data.
Note: Data does not include annualized capital investment required to maintain system in a state of good repair.

Recap: Keolis April 25, 2016 Presentation on Fare Evasion

Significant Uncaptured Fare Revenue

- 15-20% of riders not paying correct fare, per KCS surveys

    - This aligns with typical rates for ungated commuter rail systems worldwide

- Annual loss in revenue estimated to be up to $30 million

- While evasion can't be eliminated, it can be mitigated

Real Opportunity to Grow Revenues

- Estimated annual revenue could be increased by up to $24 million with construction of fare gates, creating fare enforcement team, and enhancing retail channels

- Additional $6 million opportunity exists through targeted marketing efforts

Bring MBTA Fare Collection In Line With International Best Practices

- Revenue share models are standard features of international commuter rail contracts

- Gate arrays are deployed successfully in many international stations

- Aligns incentive structure for MBTA and Keolis to increase ridership and revenue

Best Practice:
Enhanced Fare Enforcement Via Conductors and Gate Arrays

Components of Program

- Construction and staffing of fare gates at North Station, South Station, and Back Bay Station

- Enhancing ticket sales opportunities across system

- Provide conductors with Portable Ticket Devices

- Hire Revenue Analysis team of 3 to manage enforcement and sales initiatives

- Incentivize customers to buy fares before boarding

Goal: bring MBTA fare enforcement in line with worldwide best practices

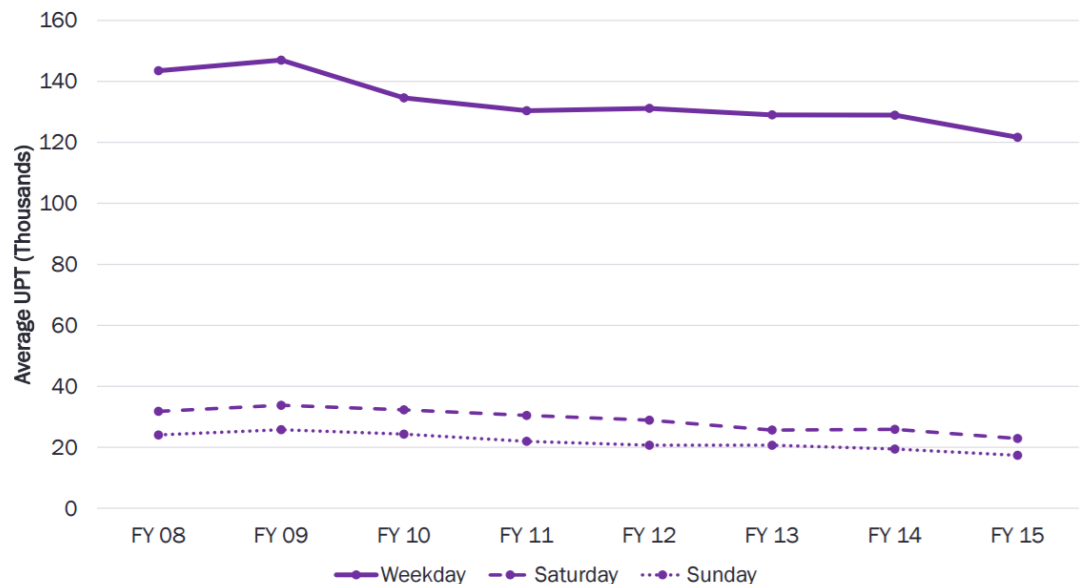*Gate Array at Charing Cross, London*

Best Practice:
Grow Ridership and Revenues Through Marketing

- Market research suggests that ridership can be grown through targeted marketing outreach

  - In peer markets, return on marketing investment has been 3:1 or greater

- KCS invests $2 million per year in marketing campaigns

- KCS hires 2 marketing staffers to administer campaigns

Goal: Marketing efforts drive ridership and revenue gains

Commuter Rail Average UPT by Day Type

Benefits to MBTA and Keolis – Short Term / Long term

	MBTA	KCS
Short Term	• Fare revenue not now fully captured • KCS incentivized to care about revenue growth • More equitable fare enforcement • Increased ridership • Better ability to measure ridership • Aligns MBTA with global best practice	• Revenue share potential • Leverage international best practices • Demonstrates willingness to invest in systems they operate
Long Term	• Fare gate arrays last beyond end of Operating Agreement • Additional revenue gets MBTA closer to "full potential revenue," knowing the value of which will prove valuable for next commuter rail contract • Enhances AFC 2.0 project	

How the Revenue Share Would Work

1. Fare revenue under current conditions is forecast jointly by MBTA and Keolis consultants. This becomes the **Revenue Baseline.** All revenues up to this point belong 100% to the MBTA.

2. Keolis invests $10 million in capital (one-time) and $7 million in operating expenses (annually)

3. First money ($9 million annually) above the **Revenue Baseline** goes to Keolis to repay capital and operating expenses.

4. Next money ($1 million annually) above the **Revenue Baseline** goes 100% to the MBTA.

5. Next money above the **Revenue Baseline** is split between MBTA and Keolis based on a series of mutually-agreed revenue splits.

## Revenue Baseline Model – How it Works

Baseline ➡ | Baseline ⬅

From	To	Share	Purpose
$0	~$250MM	100% MBTA	Baseline Revenue – Current Commuter Rail Revenue Stream
$0MM above baseline	$7MM	100% KCS	OPEX Repayment
$7MM	$9MM	100% KCS	CAPEX Repayment
$9MM	$10MM	100% MBTA	MBTA $1MM Return
$10MM	$16MM	50/50 MBTA/KCS	First Rev Share Tier
$16MM	$20MM	40/60 MBTA/KCS	Second Rev Share Tier
$20MM	$30MM	25/75 MBTA/KCS	Third Rev Share Tier
$30MM and above		50/50 MBTA/KCS	Fourth Rev Share Tier

Revenue baseline updated every year to factor in actual economic indicators

Illustrative Revenue Share Scenario:
Baseline of $217M in CR Fares and $24M Revenue Share
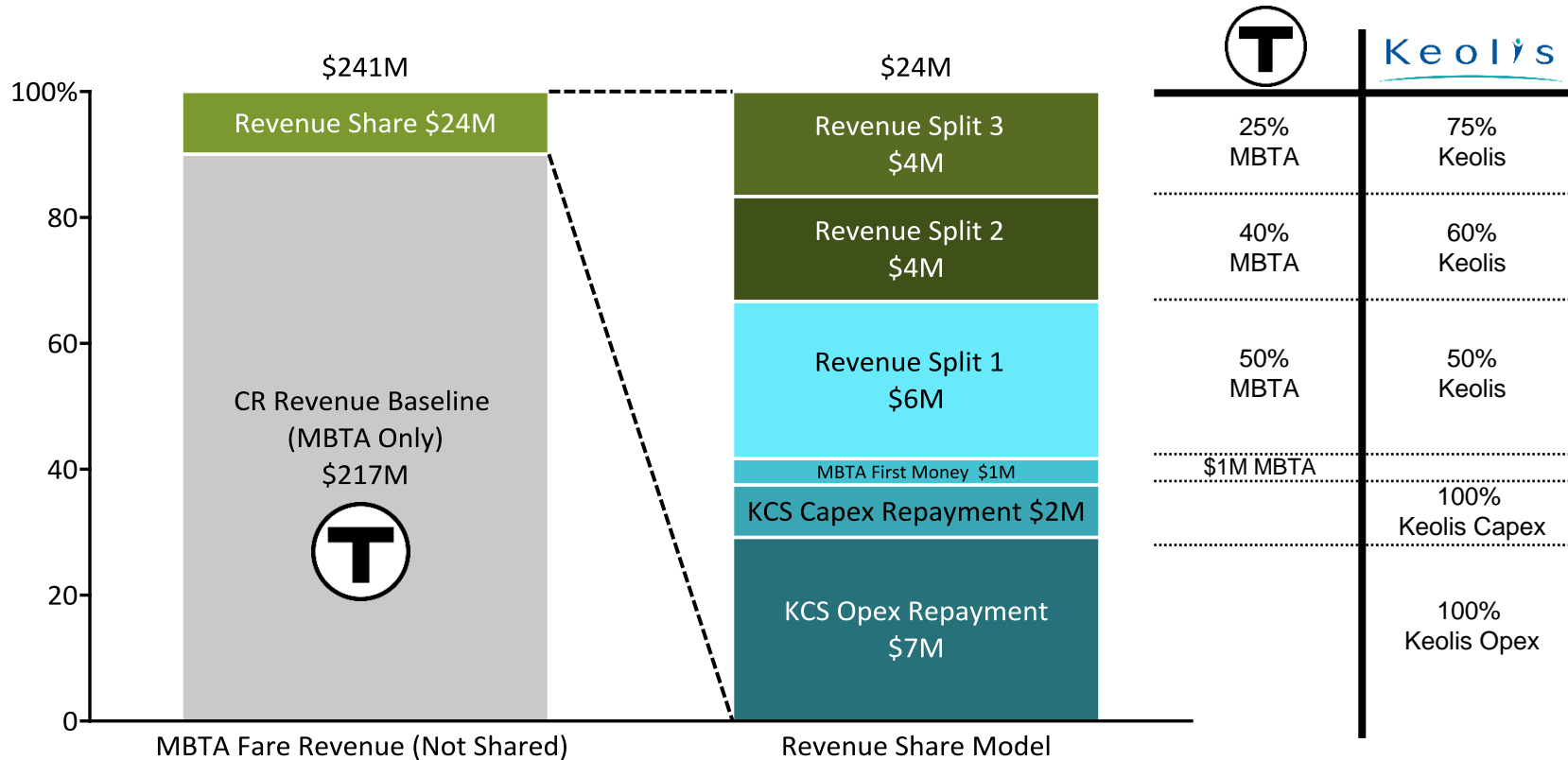
Scenario Overview

- MBTA would receive $217M baseline revenue plus $6.6M in revenue share funds

- Keolis would receive $9M in investment repayment and $8.4M in revenue share funds

Protections to MBTA

- If revenues remain below baseline, MBTA is not obligated to repay KCS operational expenses

- All costs (capital and operating) to be reviewed and approved by MBTA prior to encumbrance; MBTA has open-book audit rights to review

- MBTA can cancel agreement without penalty if KCS is unable to install fare gates

- MBTA has right to model changes into future year baselines (e.g. launch of AFC 2.0, economic changes, fuel price changes)

Next Steps

March 2017: Finalize and execute agreement

April 2017: Schedules finalized; permitting and approvals begin

July 2017: Revenue share agreement begins

Summer 2017: Marketing and retail initiatives launch

Winter 2017: Installation of fare gates

Appendix

How the Revenue Baseline is Calculated

- Revenue Baseline is calculated off of a multivariate model, including:
    - Previous years' fare revenue
    - Economic factors (fuel prices, employment rate)
    - Population changes
    - CR variables (train capacity, on-time performance)
- At the beginning of each fiscal year, an initial estimate is made based on forecasted data to form the initial Revenue Baseline. This initial Baseline is indicative only.
- At the end of the fiscal year, the model is updated to include the actual data from the year. This is used to calculate the final Revenue Baseline and resultant revenue share.
- Future variables will be modeled (e.g. AFC 2.0, revised fare structures) as material changes occur