Massachusetts Bay
Transportation Authority

Pro Forma Operating Budget: FY19-FY24

Fiscal and Management Control Board
August 12, 2019

Introduction

This Pro Forma

- A 5 year financial model projecting FY20-FY24 operating budget.

What is the goal of the Pro Forma?

- It is a tool to inform priorities, help shape policy decisions and guide short and long term budget decisions.
    - Financial impact of initiatives and policy decisions are analyzed and incorporated into the Pro-Forma.

How is the Pro Forma Calculated?

- Using the FY20 Budget as a starting point, impact growth rates are applied to each revenue & expense category based upon current assumptions.
- Assumptions are made using the best available data, including:
    - The current $9.4B Capital Investment Plan (CIP)
    - Current capital project timelines
    - Collective bargaining increases
    - Contracted services renegotiation dates
    - Legislative and administrative decisions (federal safety standards, fare policy decisions, PMFL impacts, etc.)
    - Historical revenue & expense growth
    - Consumer Price Index (CPI) data
- Data to inform assumptions was collected through an extensive series of meetings with both capital and operating departments.

Introduction

This Pro Forma

- The format is the MBTA Statement of Revenue and Expenses (SORE) format.

- The Presentation of Assumptions
  1) **Historical / Current Condition**
     - Identifies and isolates the current major cost drivers based on FY15-FY19 Actuals
     - Establishes a baseline operating budget assuming the drivers will continue to grow at the identified rates
  2) **Future Condition - Assumptions**
     - A financial model describing the trajectory of the MBTA, incorporating our committed projects
     - The 5 projects that have been modeled are AFC 2.0 (AFC 1.0), GLX, South Coast Rail, PTC/ATC, and new Red & Orange Line Cars
     - Each of the 5 projects has a material impact on each of the highlighted budget drivers

- Next Steps
  - Receive additional analysis and policy direction from FMCB
  - Current assumptions related to all major capital projects to be updated and validated.
  - Update and present Pro Forma semi-annually

Current Operating Budget Drivers

Current Condition Operating Budget Drivers

Historical Major Budget Drivers
FY15-FY19

- Expenses
    - Headcount
        - Wages
        - Overtime
        - Pension
        - Other Fringes (Healthcare, FICA, Workers Comp, etc.)

    - Purchased Services
        - Commuter Rail
        - RIDE, Ferry, LSS

    - Debt Service
        - Interest & Principal

- Revenues
    - Sales Tax & Local Assessments
    - Fares
    - Own Source Revenue
        - Parking
        - Advertising
        - Real Estate

Headcount Related Cost Drivers

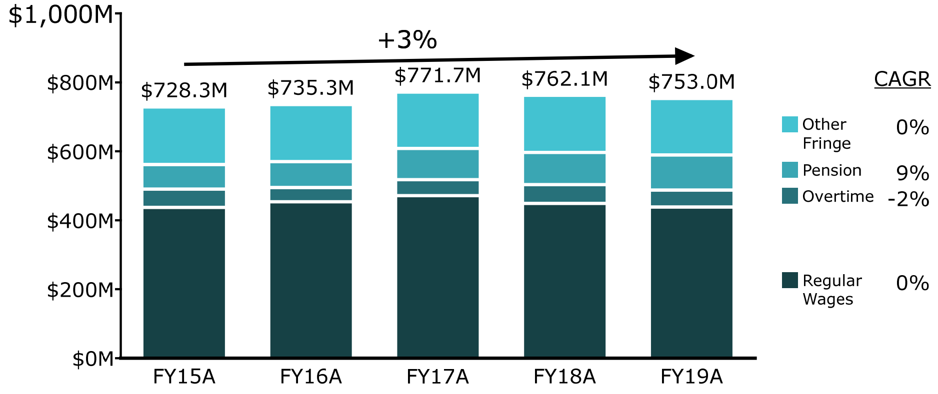
Historical

- Total Headcount related cost drivers increased at a rate of .7% per year
- Pension growth substantially outpaces other headcount cost drivers
- Regular Wages, the largest cost driver in dollars, increased by .1% per year
- Overtime costs are the most volatile

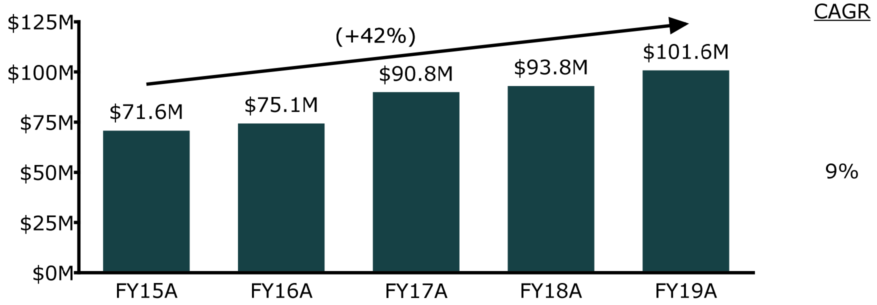
Underlying Model Assumptions

- **Regular Wages**
  - 5.6% CAGR (5 years)
    - Current projection assumes 2.5% underlying annual wage growth
    - Growth rate spikes in FY20 due to new hires
  - Collective Bargaining Increases
  - Hiring to full capacity drives up wages, pension, and fringe, reduces overtime
- **Overtime**
  - -6.8% annual growth (5 years)
  - Hiring to full capacity reduces OT
- **Pension**
  - 10.1% annual growth (5 years)

Headcount Related Cost Drivers



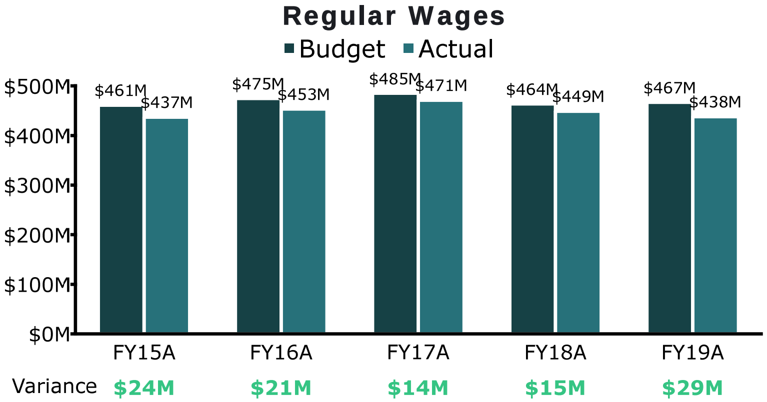
Pension

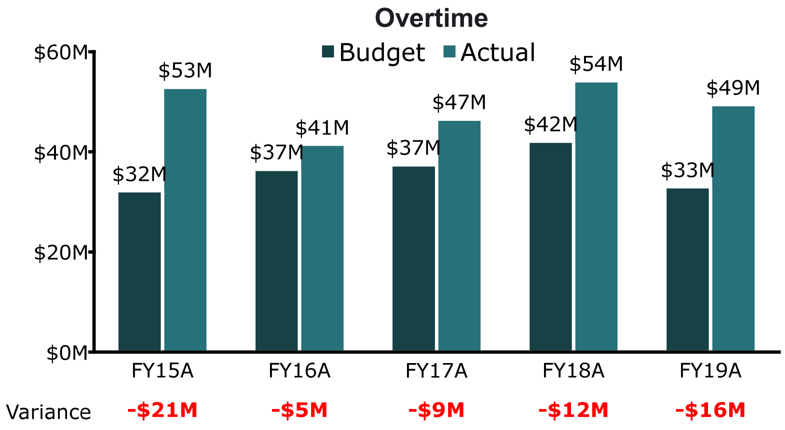


Historical Wages vs. Budget

Historical

- Vacancies drive underspending in regular wages and impact Overtime
- Actual overtime spending has dropped since FY15 but consistently gone over budget
- Hiring is offset by attrition
- Headcount over the past 5 years has been:
  - FY15 – 5,774
  - FY16 – 6,142
  - FY17 – 5,834
  - FY18 – 5,744
  - FY19 – 5,837
- Notable Headcount Events
  - FY16 - E&M headcount transferred from capital to operating
  - FY16- VRIP/VSIP





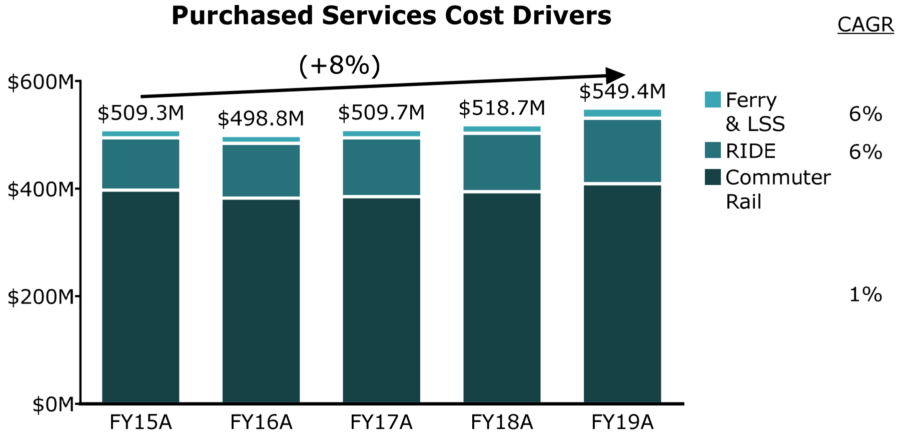
Purchased Services Cost Drivers

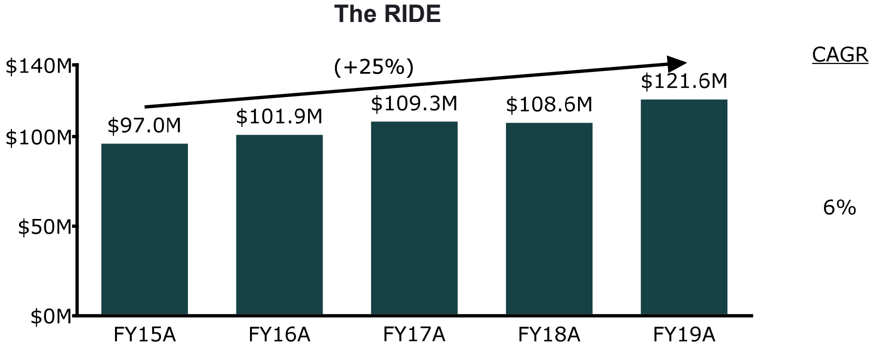
Historical

- Total Purchased Services related cost drivers increased at a rate of 1.9% per year
- Purchased Services Spending Breakdown:
  - 75% Commuter Rail
  - 22% The RIDE
  - 3% Ferry & LSS
- RIDE, Ferry and LSS grew at 6% per year from FY15 – FY19, driven by contract renewal

Underlying Model Assumptions

- **Commuter Rail**
  - 2.9% annual growth (5 years)
  - Contract Renewal in FY23
  - Extra Work & Services inflate at approx. 2% per year
  - Fixed Price Payment escalates at 2.5% per year
- **RIDE**
  - -1.6% annual growth (5 years)
  - Vendor Transition in FY21
- **Ferry & LSS**
  - 3.9% annual growth (5 years)
  - Ferry vendor transition in FY22





Own Source Revenue Drivers

Historical

Parking

- New vendor, Republic Parking, took over in 2017
- New technology has allowed dynamic pricing options

Advertising

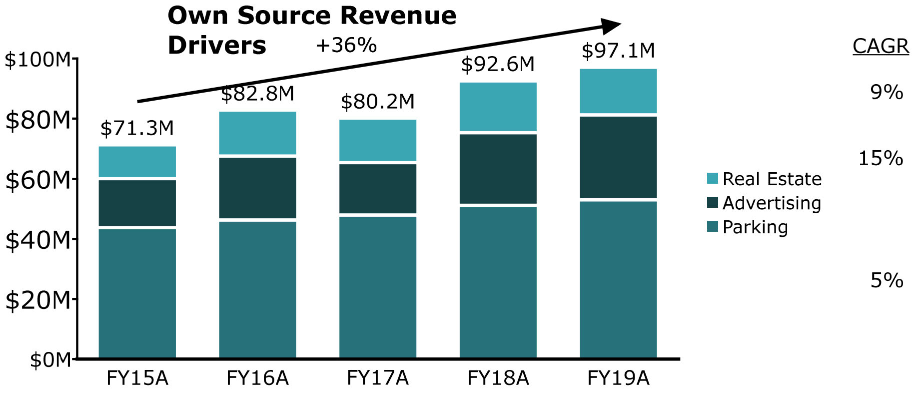
- New advertising contract implemented in 2016 with Outfront Media
- More than 225 digital panels (in-station and urban) installed to date at no cost to MBTA

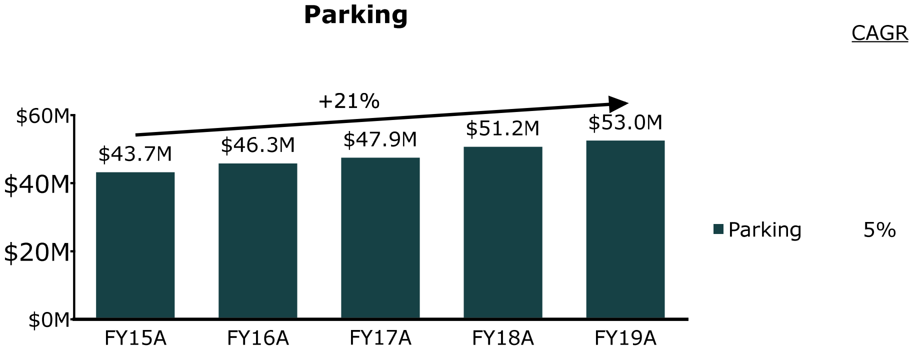
Real Estate

- South Station lease amended & restated
- Increased short term licensing revenue and existing tenants rents to market rate

Underlying Model Assumptions

- **Parking** – 4.6% CAGR (10 years)
- **Advertising** – 4.4% CAGR (10 years)
- **Real Estate** - 4.6% CAGR (10 years)



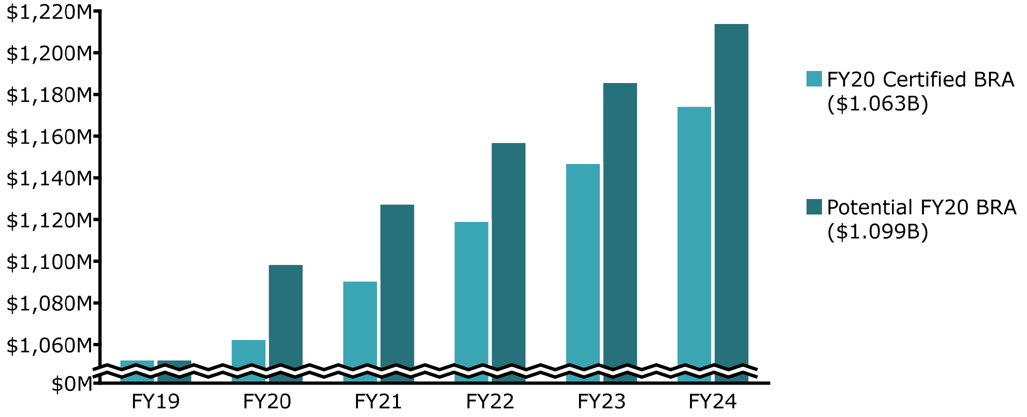


Sales Tax - Base Revenue Amount (BRA) Revenue Driver

- Underlying Model Assumptions
  - FY20 BRA at certified amount: **$1.063B**
  - 2.3% CAGR (FY20-FY24)

- Legislative authorization allows for potential statutory transfer of up to **$1.099B** ($36M above certified amount)
  - 2.3% CAGR from baseline results in cumulative additional revenue of $189M between FY20-FY24
  - Additional revenue would be prioritized for Flex Force and Capital Acceleration spending

BRA Sensitivity Analysis



Current Operating Expense Growth Assumptions

	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR FY20-24
OPERATING EXPENSES						
Wages and Fringe	6.4%	4.9%	4.4%	7.1%	2.8%	4.8%
Wages	8.1%	4.0%	4.1%	6.3%	2.7%	4.3%
Overtime	-30.5%	4.7%	2.6%	1.2%	2.6%	2.8%
Fringe	10.4%	6.5%	5.2%	9.0%	3.0%	5.9%
Materials, Supplies and Services	**2.8%**	**2.1%**	**11.2%**	**9.6%**	**2.3%**	**6.2%**
Purchased Services	0.8%	0.9%	3.2%	5.8%	2.2%	3.0%
Commuter Rail	2.4%	3.2%	3.3%	6.4%	2.1%	3.7%
The RIDE	-5.3%	-7.6%	3.1%	3.7%	2.5%	0.3%
Ferry and LSS	6.8%	3.0%	3.0%	3.0%	3.0%	2.5%
DEBT SERVICE	0.8%	6.2%	-6.2%	3.8%	-3.8%	-0.1%
Interest	-2.9%	2.9%	-2.1%	0.4%	0.6%	0.4%
Principal Payments	3.9%	8.8%	-9.3%	6.5%	-7.1%	-0.6%
TOTAL EXPENSES	**3.1%**	**3.8%**	**2.5%**	**6.4%**	**1.2%**	**3.5%**

Current Revenue Growth Assumptions

	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR FY20-24
OPERATING REVENUES						
Revenue from Transportation	**4.1%**	**0.2%**	**0.1%**	**4.3%**	**3.9%**	**2.1%**
	Next Fare Increase Not Expected Until FY23					
Other Operating Revenues	**23.6%**	**-5.9%**	**6.0%**	**4.4%**	**3.1%**	**1.8%**
Advertising	28.6%	-8.7%	6.0%	6.6%	4.1%	1.8%
Parking	18.1%	3.6%	3.5%	3.4%	3.3%	3.5%
Real Estate	36.5%	-23.3%	16.9%	2.6%	1.8%	-1.6%
Other Operating	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%
NON-OPERATING REVENUES						
Dedicated Sales Tax Revenue	**0.9%**	**2.6%**	**2.6%**	**2.5%**	**2.4%**	**2.5%**
Dedicated Local Assessments	**2.5%**	**2.6%**	**2.6%**	**2.5%**	**2.4%**	**2.5%**
Other Income	**-34.7%**	**-13.7%**	**-46.3%**	**0.0%**	**0.0%**	**-17.5%**
TOTAL REVENUES	**2.1%**	**1.1%**	**1.2%**	**3.2%**	**2.9%**	**1.7%**

*FY22 Real Estate increase reflects North Station Parking Garage lease to add $2.2M/year

Operating Budget Assumptions

Key Risks/Opportunities

- Impact of PFML – need for additional transportation staff (108 estimate assumed in model)
- Short and long term maintenance
  - E.g. Red Line Derailment, Orient Heights Flood
  - Future Proactive Right of Way Maintenance Programs [Capital Acceleration]
- Impact of capital acceleration on revenue, debt financing and operating expenses [hiring/staffing/inspections] - $50M Flex Force
- Underfunded pension liability expense escalates and/or plan asset return is lower than fund projection
- Safety Study Improvements
- Better Bus Project and other vehicle improvement projects (e.g., Commuter Rail)
- Contract Renewals:
  - The RIDE vendor transition ----- FY21
  - Key bus route expansion -------- FY21
  - Ferry Service Contract ----------- FY22
  - Commuter Rail Contract --------- FY23
- Execution of major capital projects over the next 5 years:
  - FY20 - RL/OL Cars
  - FY21 - PTC/ATC
  - FY22 - AFC 2.0
  - FY23 - South Coast Rail, GLX / GLT
- Schedule changes, acceleration and/or delays will alter model
- Fare revenue growth dropping below 2.4%
  - E.g., Impact of low-income fare feasibility study
- Own Source Revenue (OSR) increases below forecast
- Sales Tax – estimated collections above BRA

New Orange Line Cars Model

Project Goals

- Increases fleet by 32 cars, from 120 to 152
- Reduces headways during peak from 6 mins to 4.5 mins
- Increases peak ridership **capacity** by 40% (30,000 daily; 7M annually)
- Improves safety and reliability
- Projected project timeline
    - Car delivery: 2022
    - Signals upgrade: 2022

Key Assumptions*

Service Planning
- Assumes all new cars and completed signals upgrade necessary to achieve headway goal

Headcount
- 15 new hires
    - +5 in Transportation
    - +10 in Engineering & Maintenance

Vehicle Maintenance
- Steady headcount
- Additional overtime costs during transition period, with old and new cars in fleet
- More costly materials

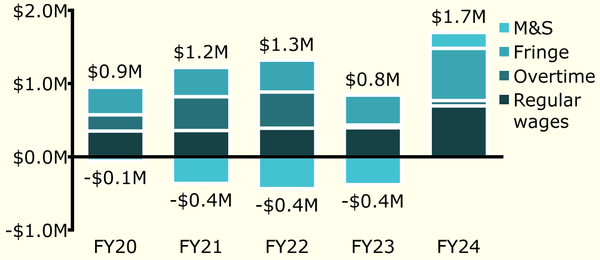
Utilities
- Electricity usage savings with more efficient new cars

Services
- Increased contract cleaning costs
- Security camera maintenance

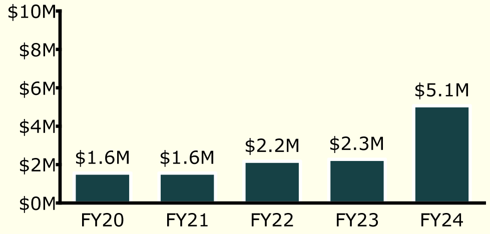
Ridership
- ~6% growth in unlinked passenger trips by FY24

Operating Budget Impact

Incremental Expenses



Incremental Fare Revenue



Incremental Budget Impact

FY20	FY21	FY22	FY23	FY24
$0.8M	$0.8M	$1.3M	$1.9M	$3.4M

*Model currently assumes change during peak service only.
Assumptions provided by senior Operations staff.

New Red Line Cars Model

Project Goals

- Increases fleet by 34 cars, from 218 to 252
- Reduces headways during peak from 4.5 mins to 3 mins
- Increases peak ridership **capacity** by 50% (65,000 daily; 17M annually)
- Improves safety and reliability
- Projected project timeline
    - Car delivery: 2023
    - Signals upgrade: 2022

Key Assumptions*

Service Planning

- Assumes all new cars and completed signals upgrade necessary to achieve headway goal

Headcount

- 22 new hires
    - +10 in Transportation
    - +12 in Engineering & Maintenance

Vehicle Maintenance

- Steady headcount
- Additional overtime costs during transition period, with old and new cars in fleet
- More costly materials

Utilities

- Electricity usage savings with more efficient new cars

Services

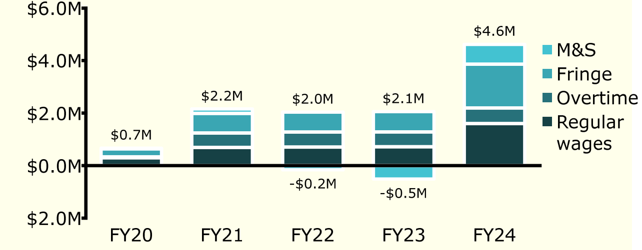
- Increased contract cleaning costs
- Security camera maintenance

Ridership

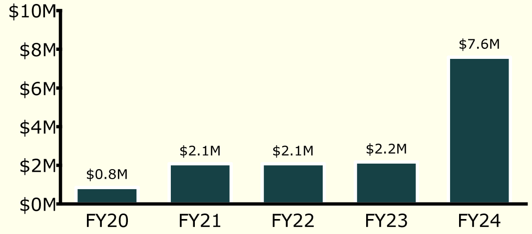
- ~8% growth in unlinked passenger trips by FY24

Operating Budget Impact

Incremental Expenses



Incremental Fare Revenue



Incremental Budget Impact

FY20	FY21	FY22	FY23	FY24
$0.1M	$0.1M	$0.3M	$0.6M	$3.0M

*Model currently assumes change during peak service only.
Assumptions provided by senior Operations staff.

Green Line Extension (GLX) Model

Project Goals

- Expands service to Somerville and Medford
  - Adds 6 new stations, serving communities with total population of 160,000
  - Adds 8 miles of track
- New vehicles improve accessibility and reduce crowding
  - 24 Type 9 vehicles entering into service (Dec. 2018 to Dec. 2019)
  - Type 10 Supercars in development
- Increases ridership by up to 50,000 passenger trips per day (25% increase)
- Projected project timeline
  - 2021

Key Assumptions

Service Planning
- Assumes 19 additional vehicles in service at peak

Headcount
- +49 in Transportation
- Additional hires for Vehicle Maintenance, E&M, and other departments TBD

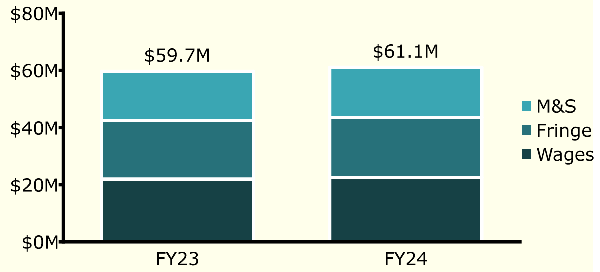
Vehicle Maintenance
- 1 new maintenance facility
- Additional materials costs

System & Transit Facilities Maintenance
- More stations, with additional elevators and escalators
- Additional snow removal costs
- Additional HVAC maintenance

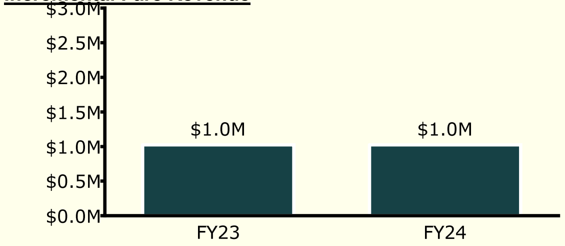
Materials & Services
- Additional utilities
- Increased cleaning contract costs

Operating Budget Impact

Incremental Expenses



Incremental Fare Revenue



Incremental Budget Impact

FY23	FY24
($58.7M)	($60.1M)

AFC 2.0/AFC 1.0 Model

Project Goals

- Improves fare collection efficiency
- Facilitates fare payment for customers with a standardized payment system
- Expedites boarding times across system by up to 10%
    - e.g. allows all door boarding on Green Line and Buses
- Projected project timeline
    - 2023

Key Assumptions

Headcount

- 80 new fare inspectors
    - Requires revised legislation

Third-party management fees

- Increased service and equipment maintenance contracts

Transition costs

- ~$20M while continuing to maintain AFC 1.0

Call Center

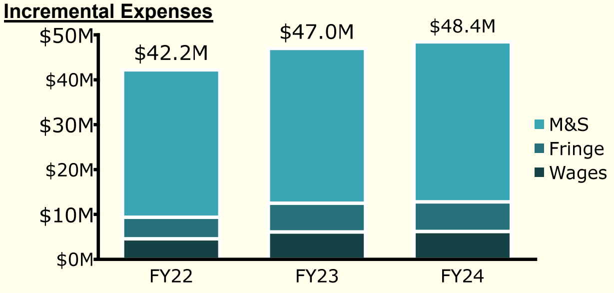
- Expected increase in call volume (scope of potential need for more hires under review)

Fare revenue*

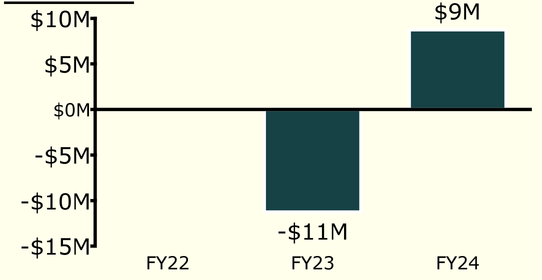
- Adjustment for new revenue collection model in first full year of operation

Operating Budget Impact

Incremental Expenses



Fare Revenue



Incremental Budget Impact

FY22	FY23	FY24
($34.6M)	($57.4M)	($38.9M)

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*Ring of Steel Revenue included in calculations.
Revenue adjustment due to fare policy changes.

South Coast Rail (SCR) Model

Project Goals

- Extends commuter rail service (Middleborough/Lakeville line) to Taunton, Fall River, and New Bedford
- Adds service to 9 existing stations and 6 new stations
- Projected project timeline
    - 2023

Key Assumptions

Service Planning
- 26 trains daily in each direction for weekday service

Third-party management fees
- Escalated to account for 78 new hires
- Operations at 6 new stations, including 2 layover and maintenance facilities

System & Transit Facilities Maintenance
- Additional inspection costs
- More stations, with additional elevators and escalators
- Additional snow removal costs
- Additional HVAC maintenance

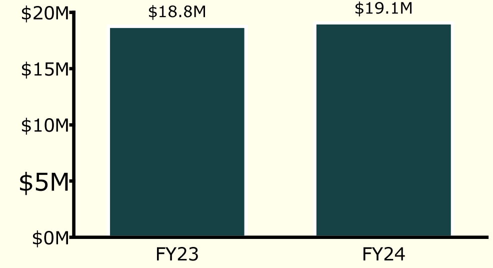
Services
- Increased contract cleaning costs

Ridership
- Based on ridership projection in Environmental Impact Report

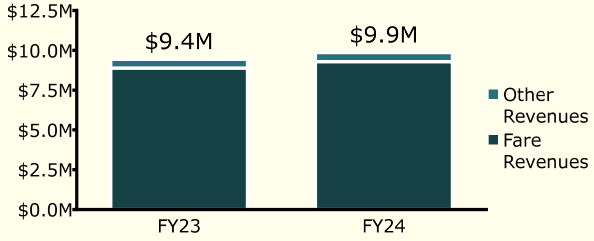
Parking
- Calculated as percentage of ridership (45% assumed in model for most stations)

Operating Budget Impact

Incremental Expenses



Incremental Revenues



Incremental Budget Impact

FY23	FY24
($9.3M)	($9.8M)

PTC/ ATC Model

Project Goals

- Eliminates train-to-train collisions and derailments caused by high speeds
- Reduces human error on Commuter Rail
- Adheres to federal train safety standards
    - Complete deployment mandated by December 31, 2020

Key Assumptions

Headcount

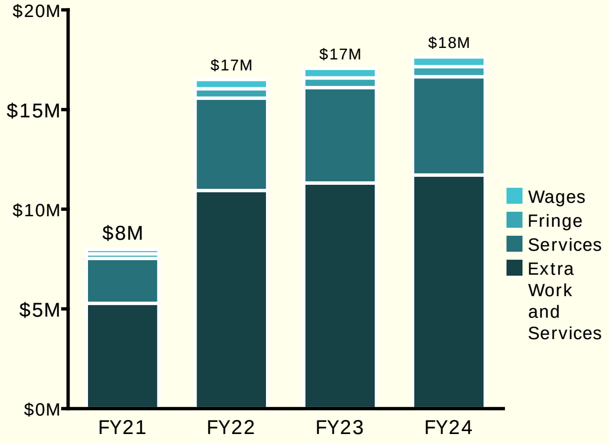
- 3 MBTA management staff

Third-party management fees

- Additional headcount for system maintenance activities
    - Rolling stock inspection
        - Daily departure for 179 cars
    - Communication systems
        - 320 miles of fiber/cables
        - 174 communication towers and radio installations
    - Wayside systems
        - 2,400 transponders

Operating Budget Impact

Incremental Expenses



Incremental Budget Impact

FY21	FY22	FY23	FY24
($8.0M)	($16.5M)	($17.0M)	($17.6M)

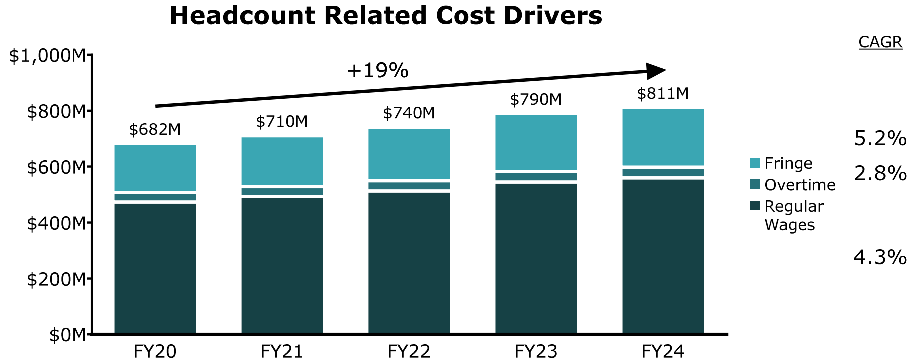
Project Implementation Impact– Wages, OT & Fringe

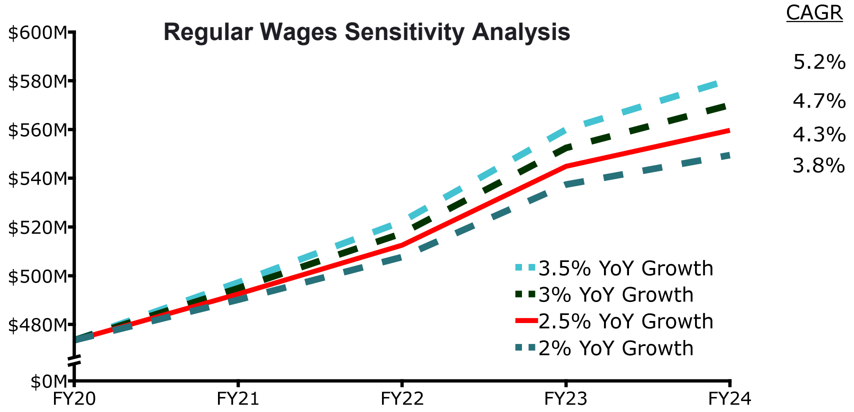
Committed Future Model Assumptions

- **Regular Wages**
  - 4.3% annual growth (5 years)
    - 1.3% over current state
  - Additional hires as capital projects come online
- **Overtime**
  - 2.8% annual growth (5 years)
    - 0.3% more than current state
  - Hiring to full capacity reduces OT
- **Fringe (excluding Pension)**
  - 5.2% annual growth (5 years)
  - 2.3% higher than current state
    - PMFL

Sensitivity Analysis

- Current projection assumes 2.5% YoY growth
- +2% YoY Growth
  - Cumulative Difference in expenses vs. current projection (FY20-FY24): $25M
- +3.0% YoY growth
  - Cumulative difference in expenses vs. current projection (FY20-FY24): **($25M)**
- +3.5% YoY growth
  - Cumulative difference in expenses vs. current projection (FY20-FY24): **($50M)**





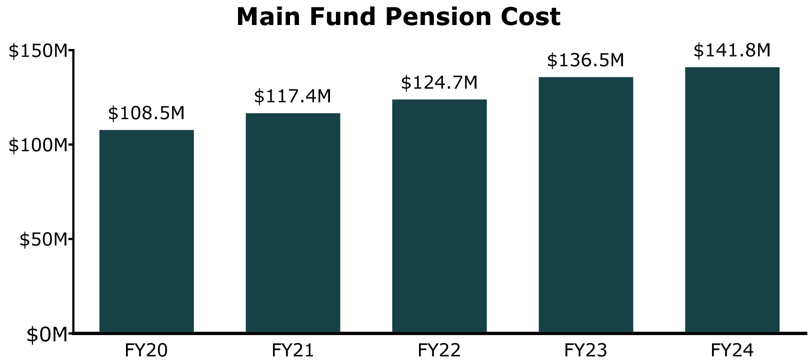
Project Implementation Impact – Pension

Committed Future Model Assumptions

- **Pension**
  - 6.9% CAGR (5 years)

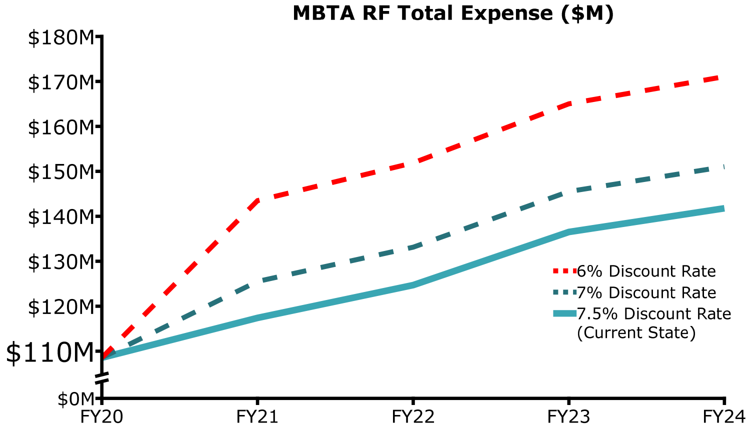
Sensitivity Analysis

- 6% Discount Rate
  - Cumulative difference in expenses (FY20-FY24): **($111M)**
- 7.0% Discount Rate
  - Cumulative difference in expenses (FY20-FY24): **($35M)**



CAGR

6.9%



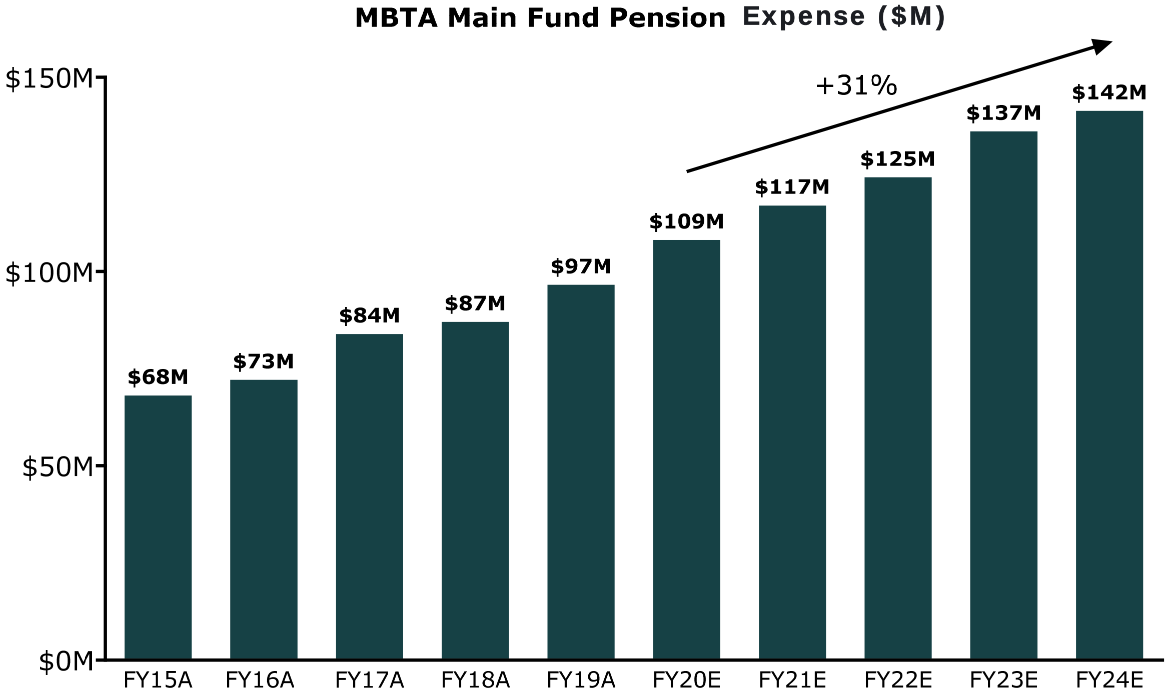
Pension CAGR

12.0%

8.6%

6.9%

MBTA Main Fund pension expense projected to rise significantly



CAGR
(FY15-FY24)

8.4%

Projected Headcount Growth

FY20

- Red & Orange Line Cars

FY21

- Red & Orange Line Cars
- PMFL Operations Backfill
- PTC/ATC

FY22

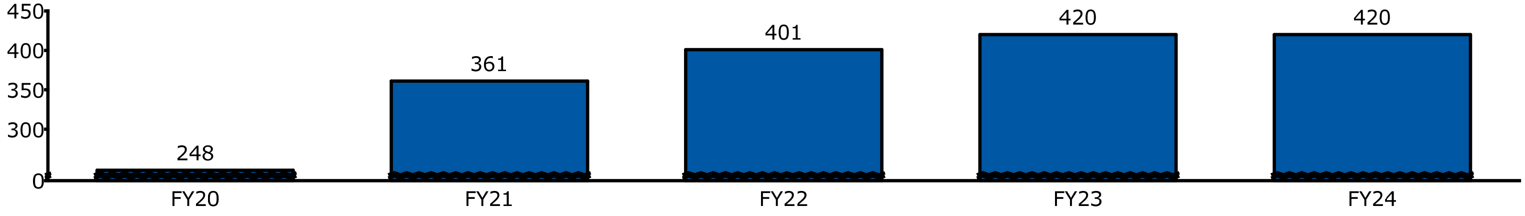
- Red & Orange Line Cars
- PMFL Operations Backfill
- PTC/ATC
- AFC 2.0
- Additional E&M Support

FY23

- Red & Orange Line Cars
- PMFL Operations Backfill
- PTC/ATC
- AFC 2.0
- Additional E&M Support
- GLX
- South Coast Rail

FY24

- Red & Orange Line Cars
- PMFL Operations Backfill
- PTC/ATC
- AFC 2.0
- Additional E&M Support
- GLX
- South Coast Rail



Headcount Required to Support Initiatives

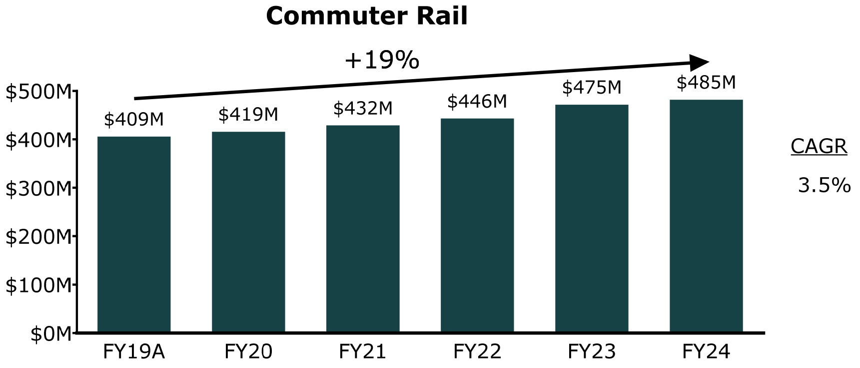
Project Implementation Impact – Commuter Rail

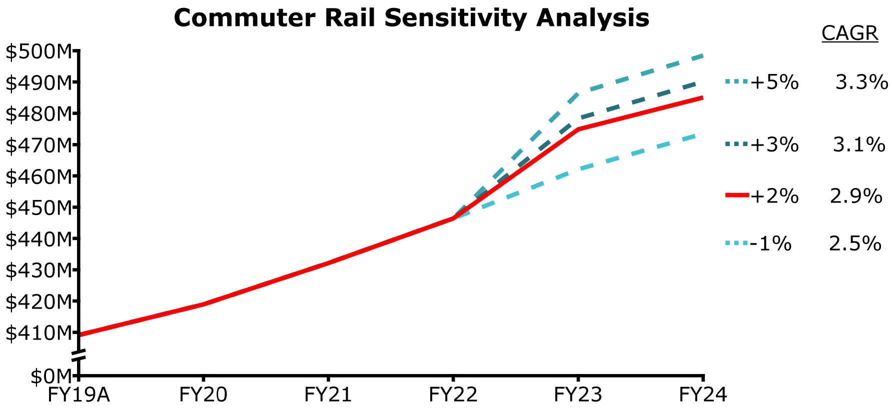
Committed Future Model Assumptions

- Pension = 3.0% annual growth (5 years)
- PTC/ATC will impact Extra Work & Services costs
- South Coast Rail will be managed by third party contractors

Sensitivity Analysis

- The Commuter Rail payment has 4 components
  - Fixed Payment
  - Fuel
  - Extra Work & Services
  - PRIA
- One Variable was examined for this analysis
  - -1% Fixed Rate Growth
  - +2% Fixed Rate Growth (Current Trajectory)
  - +3% Fixed Rate Growth
  - +5% Fixed Rate Growth





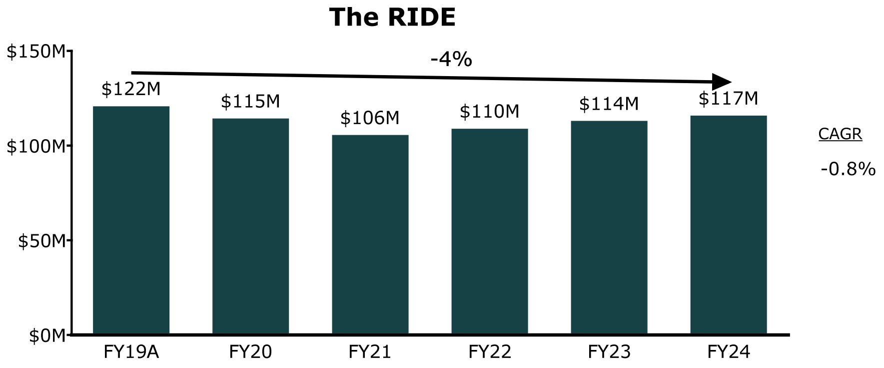
Project Implementation Impact – The RIDE

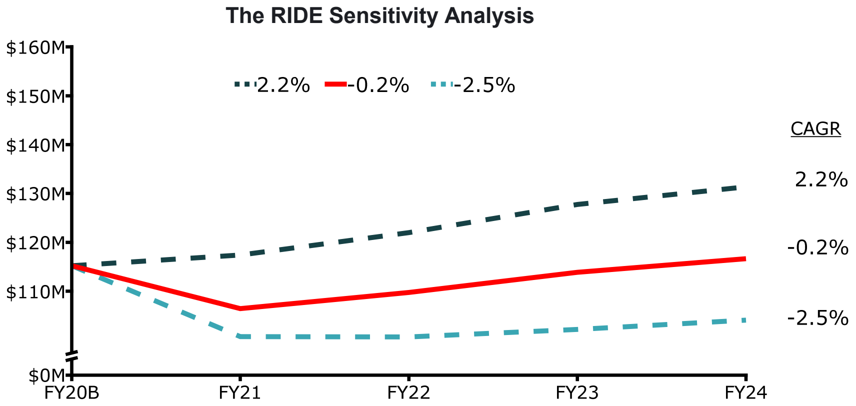
Committed Future Model Assumptions

- Capital projects not expected to have a significant impact on the RIDE
- Demand, policy changes, and vendor management are the main drivers

Sensitivity Analysis

- **-2.5% CAGR**
  - Demand/Population Growth: 0% per year
  - Strong productivity improvements due to new scheduling software
  - Changes to co-pay for on-demand pilot: in line with proposal
  - Modest increase in Dedicated Service Providers (DSP) fixed/variable rates above FY19 rates
  - DSP New Contract Date: Jan 1, 2020
- **-0.2% CAGR (current trajectory)**
  - Demand/Population Growth: 2% per year
  - Modest productivity improvements due to new scheduling software
  - Changes to co-pay for on-demand pilot: in line with proposal
  - Modest increase in Dedicated Service Providers (DSP) fixed/variable rates above FY19 rates
  - DSP New Contract Date: Jan 1, 2020
- **2.2% CAGR**
  - Demand/Population Growth: 2% per year
  - No productivity improvements due to new scheduling software
  - No changes to co-pay for on-demand pilot
  - 5% increase in DSP fixed/variable rates
  - DSP New Contract Date: Feb 1, 2020

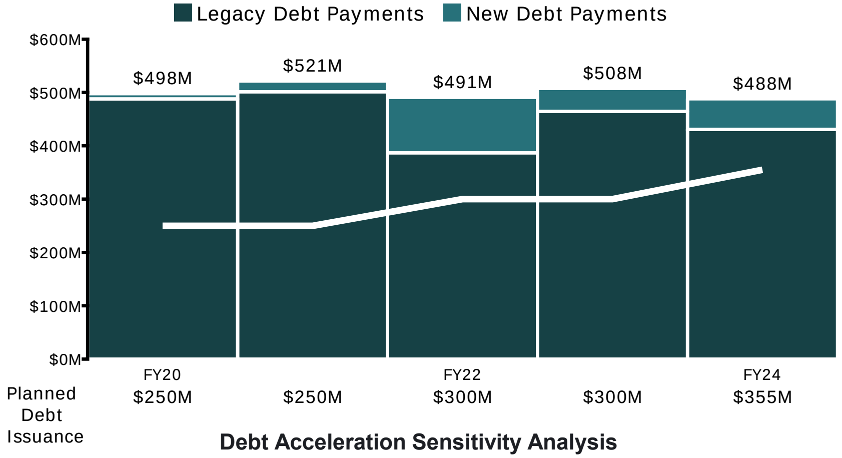




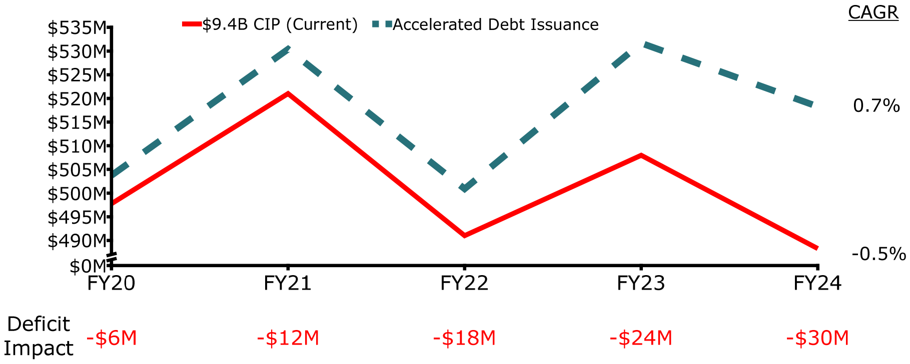
Project Implementation Impact – Accelerating Debt Issuance

Committed Future Model Assumptions

- Accelerating Debt Issuance by $100M/year will add ~$6M/year to debt service payment
- No Debt was issued in FY19



Debt Acceleration Sensitivity Analysis



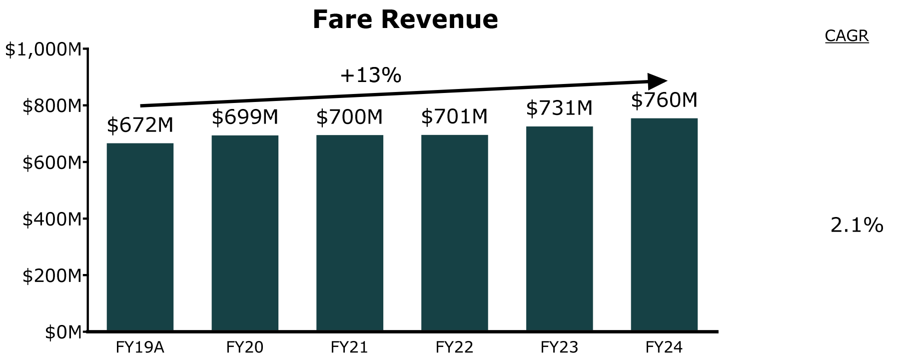
Project Implementation Impact – Fare Revenue

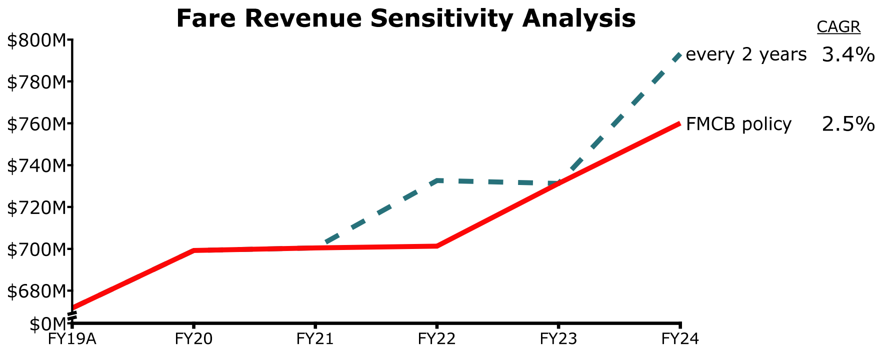
Committed Future Model Assumptions

- +4.5% fare increases assumed in FY23, in line with current FMCB policy
- Assumes capital projects completed according to current projected schedules
- Fare policy decisions are key driver

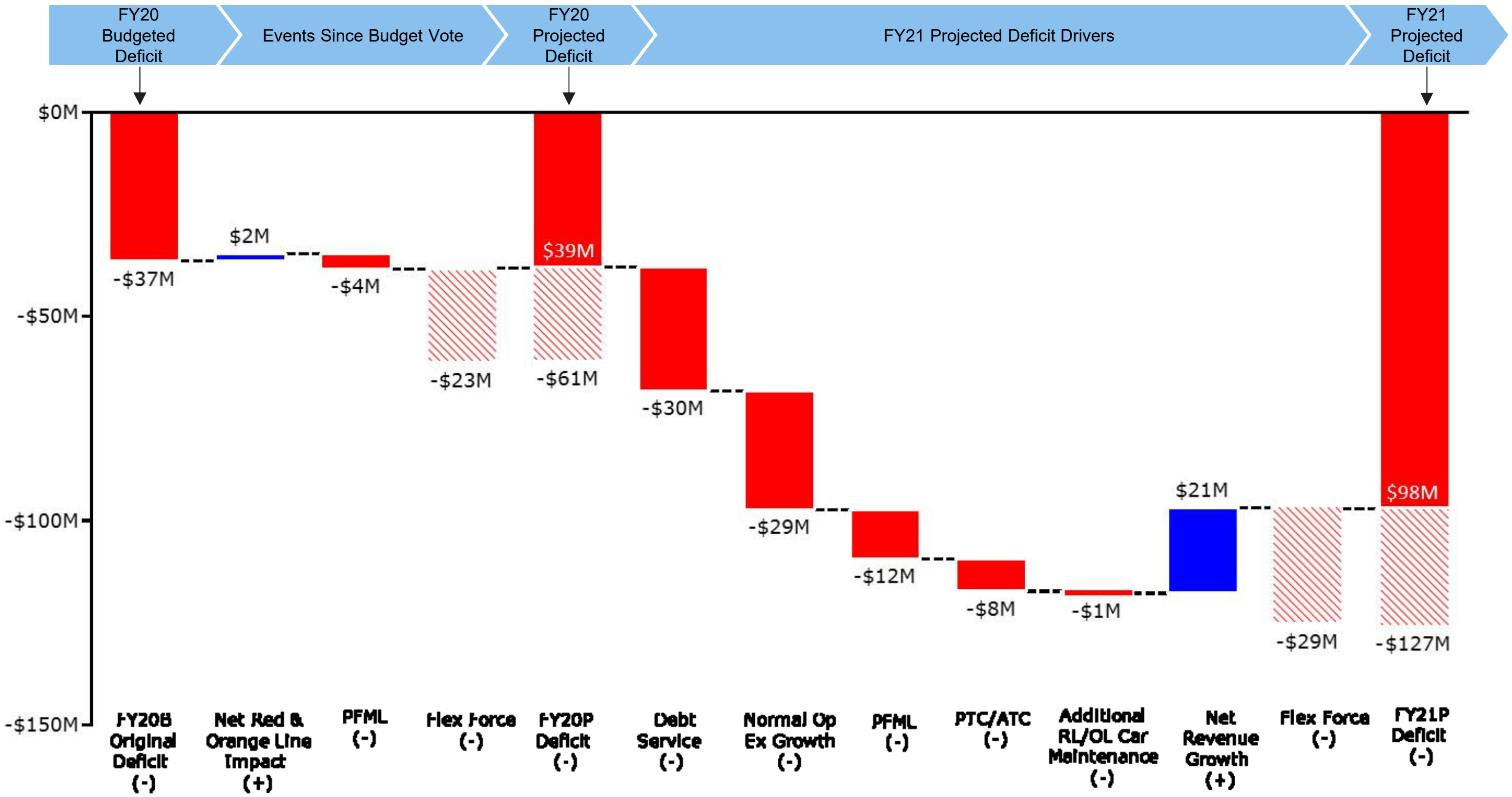
Sensitivity Analysis

- Both scenarios assume fare increases of 4.5%, but at different frequencies
- Fare increases every 2 years (FY22, FY24)
  - Cumulative additional revenues vs. current projection (FY21-FY24): **$64.6M**





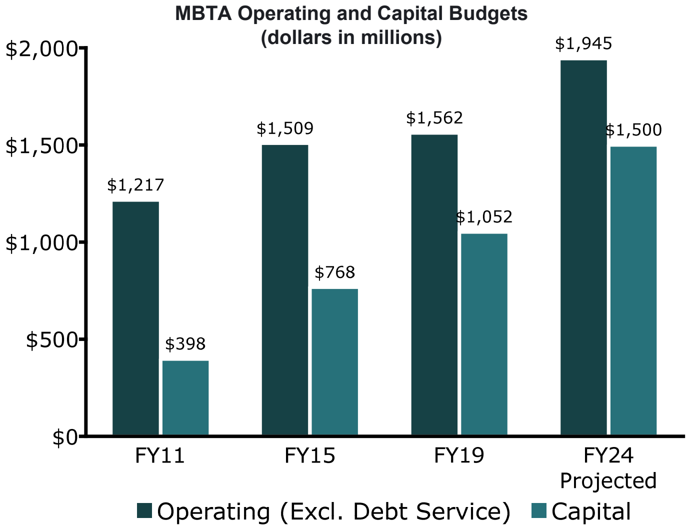
Cost Drivers: FY20-21



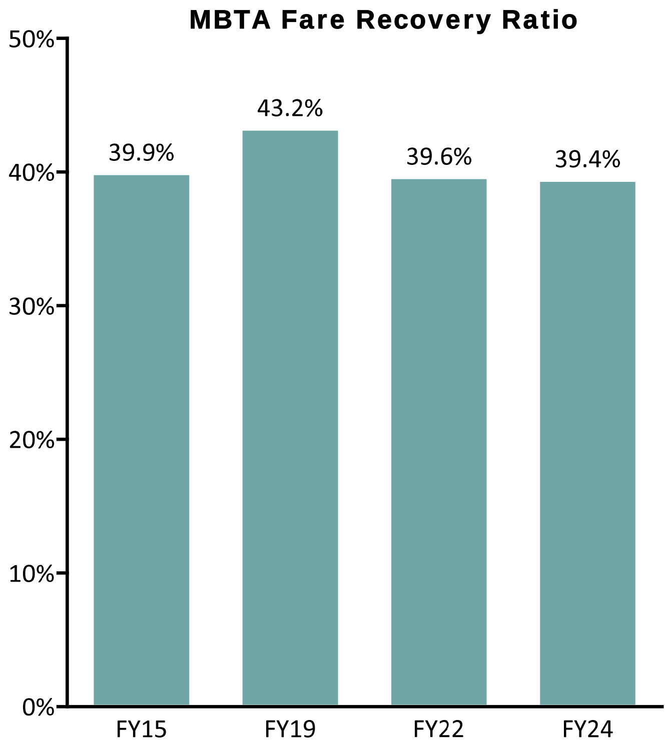
*Due to rounding, numbers presented throughout this slide may not add up precisely to the totals provided

Budget Impact of Capital Project Implementation

- Executing the capital plan requires the involvement of operating resources, including Track Laborers, Bus Operators, etc.
- Over time, available resources in the operating budget have stayed relatively flat while capital expenditures have increased substantially
- The availability of operating-funded support staff is critical to the delivery of the capital program, and acceleration efforts necessitate an incremental reliance on operating resources



Fare Recovery Ratio Currently Projected to Return to Pre-FY15 Levels



FY15	39.9%
FY19	43.2%
FY22	39.6%
FY24	39.4%

- "Fare recovery ratio" (FRR) measures transit system operating efficiency
- Calculation: total fare revenue / non-debt operating expense
- FRR shows what total % of system operating expense (not including debt) are covered by riders
- Systems with higher FRR require less taxpayer subsidy
- Legislative goal to reach a FRR of 50%

> *"In accordance with Section 6A of the 2013 Session Law Chapter 46, the MBTA has a goal to increase the Farebox Recovery Ratio (FRR) by at least 10 percent of the existing ratio for each rolling 5 year period. This policy sets a target of reaching a FRR of 50 percent."*

Stronger fare recovery ratio = improved operating efficiency

Recommendations

Recommendations

- Management Priorities:
  - Active Budget Management
  - Maintain Fiscal Discipline
  - Effective Workforce Planning
  - Proactive Management of Pension Plans
  - Regular Financial Presentations

- Short Term Focus:
  - Procurement Industry Best Practices
    - Planning for Major Contracts e.g. FY22 Commuter Rail Contract
  - Pursue Flex Force Funding to support Capital Acceleration
  - Review Lock Box Policy to address Legislative restriction on capital salaries
  - Accountable management of capital acceleration and the CIP
    - Workforce Planning
    - Business process review and redesigns: Eliminate Bottlenecks
    - Enterprise application upgrades and systems integration
    - Ensure adequate financing, proper cost accounting and manage the debt cycle
  - Pursue and Achieve Own Source Revenue Targets

- Plan for Tomorrow Today (Long Term Focus):
  - Plan and manage for integration of capital projects into service
  - Development and implementation of business plans for expansion of service
  - Continuous improvement of the pro forma forecast