

**Massachusetts Bay
Transportation Authority**

November 2022 Operating Budget Pro Forma Update

November 17, 2022

Finance & Audit Committee

Mary Ann O'Hara, CFO

Agenda

- Overview and goals of Pro Forma
- Operating budget development calendar timeline
- Key highlights and summary
- Revenue and spending assumptions
- Five-year budget projections including all available one-time revenues and initial estimates for FTA directive spending
- Recommendations and implications for FY24 budget development



Annual Pro Forma Summary

- Updating the most recent five-year Pro Forma projection from December 2021 to identify future year financial constraints and begin FY24 budget recommendations
 - Updates from last year include prior year actuals, current year budget, complete analysis of growth rate assumptions, review of fund balances, and meetings with stakeholders on ongoing projects and initiatives
 - Five-year Pro Forma projection updated annually to demonstrate the long-term spending and revenue impact of approved and upcoming budgetary and operational decisions
 - Pro Forma figures are modeled based on the most recent information available today along with current and historical trends as well as the addition of new projects and initiatives (Green Line Extension, Bus Network Redesign, South Coast Rail, Fare Transformation, etc.)
 - Modeled ridership and fare revenue projections are based on a range of possible outcomes from MassDOT Planning and OPMI (consistent with the Commonwealth's Future of Work report July 2021)
- The FY24 budget will differ from the Pro Forma projection to incorporate new information and updates over the course of the budget development process (December 2022-June 2023)

Upcoming Presentations & Calendar

- FY24 budget development process begins with the Pro Forma presentation
- Statutory deadlines: Preliminary budget proposal due by May 15 and final itemized budget due by June 15 (MGL Chapter 161A Section 20)

Present Pro Forma, identify Board priorities
• November

Information gathering and department conversations
• December & January

Preview FY24 budget for Board feedback
• February & March

Present preliminary budget information to MBTA Board & Advisory Board
**statutory deadline*
• April & May

Present final budget proposal for approval
**statutory deadline*
• June

Annual Pro Forma Summary – November 2022

- FY24 budget is projected to be resolved with one-time revenues in all fare revenue scenarios
 - Underlying structural budget gaps persist, but FY24 budget projections are reduced since last year's Pro Forma due to state sales tax revenue updates and active management of debt service spending
 - Current reserve balances and projected budget favorability for FY23, driven primarily from wages and benefits in a challenging labor market, provides sufficient one-time funding to resolve the projected budget gap in FY24
- FY25 budget gap likely resolved depending on many variables like fare revenue, budget favorability, decisions during FY24 budget development, and pace of safety related spending on FTA directives or new initiatives
 - FY25 budget gap balanced under Scenarios 1 (highest fare revenue) and 2 (middle fare revenue)
 - Under Scenario 3 (lowest fare revenue) projections, possible budget gap of \$139M
 - Safety spending includes preliminary estimates for each of the four June 2022 FTA Directives, which address, among other items, improvements to staffing, track maintenance, train movements, the Operations Control Center, and safety certifications
 - Initial estimates for the four August 2022 FTA Directives associated with workforce assessment analysis, safety management system, safety committee process, and quality assurance/control are not included in these projections as estimates continue to be finalized
 - Will be funded with recently enacted \$112M in supplemental state assistance
- For FY26-FY28, budget gaps remain as current one-time revenues will not sustainably support recurring expenses, like new positions for safety, planned new service, and initiatives

Recap of FY22 Results, Reserve Balances, and Budget Planning

- The adoption of multi-year budget planning has increased one-time reserves for additional investments and future year budget gaps despite pandemic impacts to ridership and fare revenue
- FY22 actuals nearly \$400M favorable to budget with more than 50% of that from fare and sales tax revenue alone

Maximize One-time Federal Relief
<ul style="list-style-type: none">• Claimed all one-time federal relief funds for operating needs to maintain service

Meeting Current Obligations
<ul style="list-style-type: none">• Operating Fund realized 10% of budgeted spending for adequate cash flow to meet day-to-day obligations of running service and operations

Saving for Challenges Ahead
<ul style="list-style-type: none">• Over \$500M Deficiency Fund reserve balance by committing Operating surpluses to solve future year budget gaps

One-time Investments
<ul style="list-style-type: none">• Committed additional resources to key safety and shovel-ready projects

Planned New Service & Initiatives

- Planned new service and initiatives provide rider benefits but also add significant costs and limited revenues into Pro Forma projections
- Absent any recurring revenues, the spending associated with these improvements increase budget growth and budget gaps
- Actual spending by fiscal year may vary as operational implementation timelines change

Safety & Addressing FTA Directives

Green Line Extension

South Coast Rail

Bus Network Redesign

Fare Transformation

Budget Favorability, Potential Risks & Opportunities

- Reported budget risks and opportunities in June 2022 and September 2022 continue to be factors impacting variances to budget in the current fiscal year
- Factors currently expected to combine in a net positive to budget, but quarterly budget reports to the Board will continue to monitor these items and any new items
- Depending on FY24 budget decisions, any favorability to budget next year can be saved to further mitigate future year budget gaps

Potential Budget Risks/Exposures

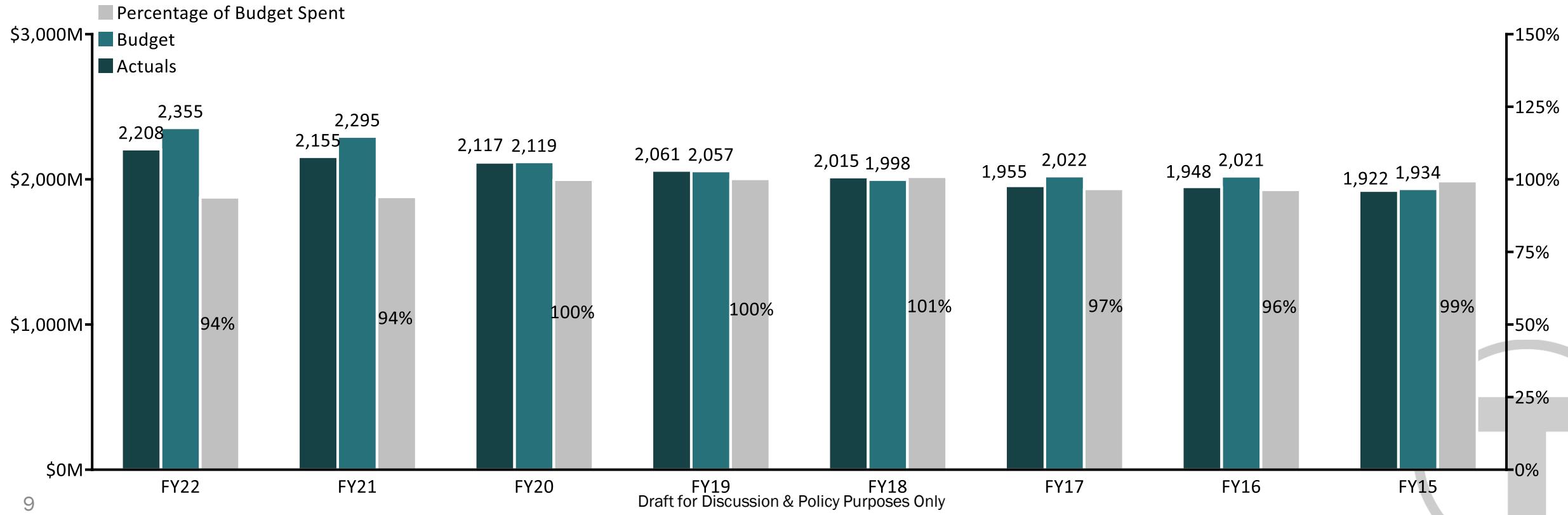
- **Fare revenue** as actual ridership and revenue lag behind FY23 budget Scenario 2 assumptions to start the fiscal year
- **Fuel pricing** following record high prices from early Summer, prices continue to be 10% above last year
- **Inflation** as the Boston-area CPI (consumer price index) rises more than 8% over last year

Potential Budget Opportunities/ Favorability

- **Sales tax revenue** as actual collections outperform state budget benchmarks
- **FEMA reimbursement** as delayed timeline for receiving funds has pushed expected revenue collections from FY22 into FY23
- **Wages & benefits** even with targeted investments for HR to hire and increase headcount as quickly as possible, the nationally challenging labor market will cause vacancies
- **Debt service** as the debt portfolio continues to be constructed on an ongoing basis to enhance stability and minimize year to year variances

Historical Spending & Variances to Budget

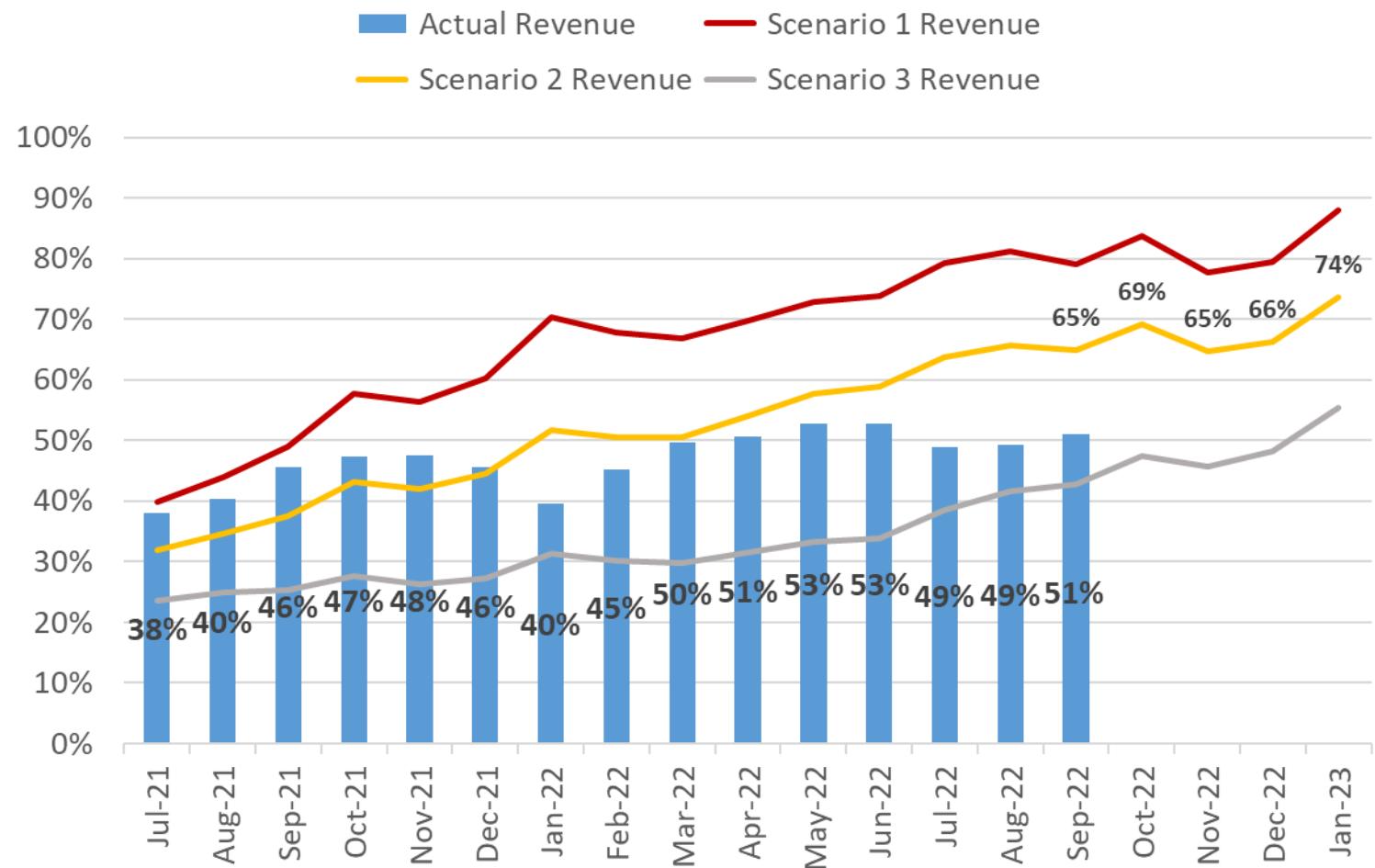
- Recent budget favorability stems from significant increases to budget for safety and service, especially in headcount
- Since the pandemic, the approved MBTA operating budget has grown to incorporate new safety positions and expanded service
 - MBTA continues to aggressively focus on hiring to full budgeted staffing as quickly as possible
- Actual spending associated with these investments continues to ramp up as hiring continues and new service becomes operational, creating a variance or favorability
- Averaging 99% of budget spent prior to the pandemic (FY15-FY20) and 94% since (FY21-FY22)



Actual Fare Revenue Collections & Scenario Analysis

- Pro Forma projections analyze financial projections for all three established fare revenue scenarios
- Actual fare revenue through September 2022 between Scenarios 2 and 3
 - August and September actuals impacted by Orange Line work
- FY23 budget based on Scenario 2 assumptions, likely resulting in a negative or unfavorable variance to budget for fare revenue
- Barring any unforeseen circumstance, Scenario 2 expected to serve as FY24 working assumption
- Scenarios to be revisited in Spring 2023 for possible updates and refinements
 - Allows for additional data collection and larger sample size on ridership trends and seasonality

Fare Revenue Actuals & Projections as % of Baseline



Revenue Assumptions: FY23-FY28

- **2.7% total average annual revenue growth** above the FY23 budget over the five-year period
- **Fare Revenue:** Reflects fare revenue growing from 71% in FY24 to 78% by FY28 while holding current fare revenue pricing levels unchanged
- **Own Source Revenue:** Includes parking, advertising, and real estate revenue growth based on historical growth, current contracts, and Scenario 2 assumptions
- **Sales Tax:** FY23 approved state budget estimate of \$1,363M grown at 2.8% annually, consistent with 3-year pre-pandemic trend
- **Local Assessment:** 2.5% increase in FY24 based on realized inflation today, with FY25-FY28 growth projected at 1.6%, consistent with pre-pandemic trend
- **State Assistance:** \$187M in state assistance assumed to remain level
- **Federal American Rescue Plan Act (ARPA) operating funds** fully collected at the end of FY22, contributing to one-time reserve funds to mitigate future year budget gaps

Revenue Source	FY23-FY28 CAGR
Fare Revenue	3.5%
Own Source Revenue	4.3%
Sales Tax	3.4%
Local Assessments	1.8%
State Assistance	0.0%
Other Income	0.3%
Total Revenue	2.7%

*Based on Scenario 2 assumptions for ridership and revenue, does not include one-time reserve revenues

Spending Assumptions: FY23-FY28

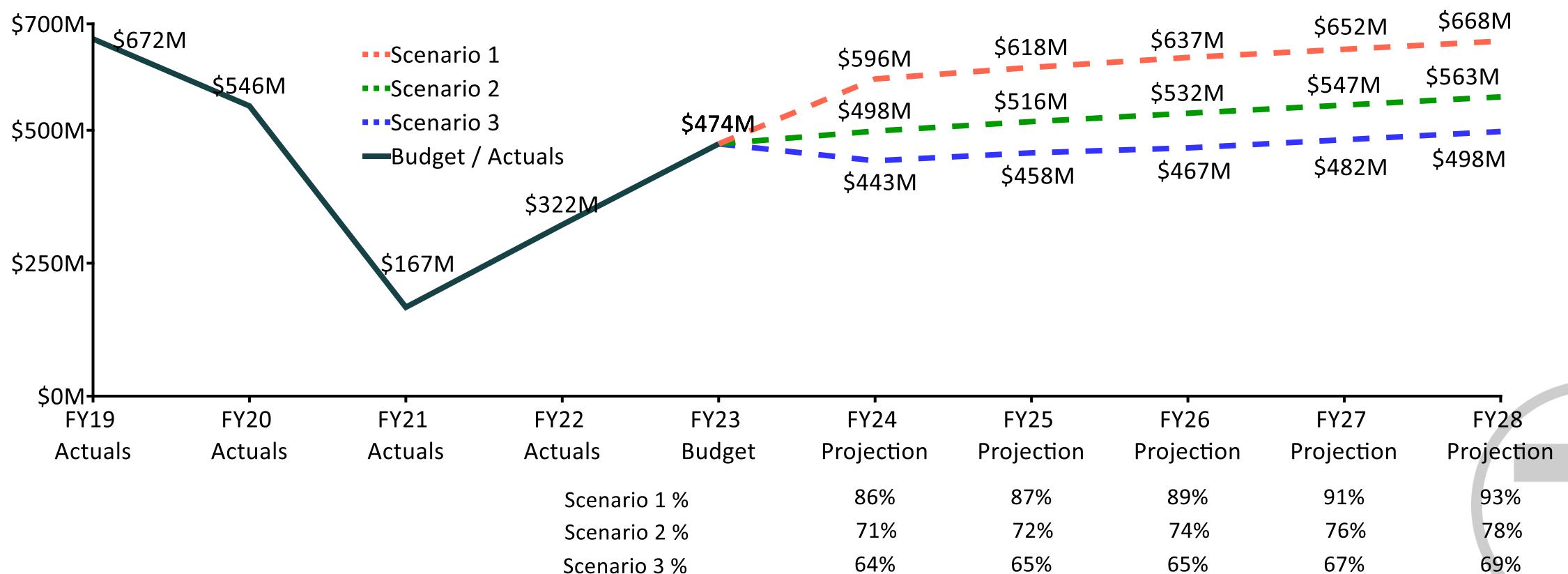
- **4.0% total average annual expense growth** from new projects and initiatives like Green Line Extension, Bus Network Redesign, Fare Transformation, and South Coast Rail
- **Wages & Overtime:** 1.4% budgeted headcount growth from FY24-FY28 stemming from new projects and initiatives plus 2.5% wage growth rate, consistent with 10-year average growth (includes vacancy/attrition rate by department based on historical data accounting for pandemic impacts)
- **Fringe benefits:** Includes pension costs, which grow at 4.6% annually based on projected wages spending and assuming a level employer contribution rate
- **Materials & Services:** Includes rising cost of fuel and utilities, new projects and initiatives, and 5-year pre-pandemic growth rate of 4.7%
- **Commuter rail:** Based on contractual fixed price increases and includes South Coast rail costs and higher fuel prices
- **The RIDE:** Assumes ridership increases from 84% of baseline in FY24 and rises to 93% by FY28
- **Ferry:** Growth consistent with 5-year pre-pandemic
- **Debt Service:** Includes payments on outstanding debt and obligations to support the latest Capital Investment Plan (CIP) and April 2022 bond issuance

Expenses	FY23-FY28 CAGR
Regular Wages	4.4%
Overtime	4.2%
Fringe Benefits	4.1%
Materials & Services	7.3%
Commuter Rail	3.0%
RIDE	3.3%
Ferry	3.8%
Local Service Subsidy	2.2%
Total Operating Expenses	4.6%
Debt Service	1.8%
Total Expenses	4.0%

*FY23 budget as baseline, growth rates exclude expenses associated with all FTA directives

Fare Revenue Scenario Planning

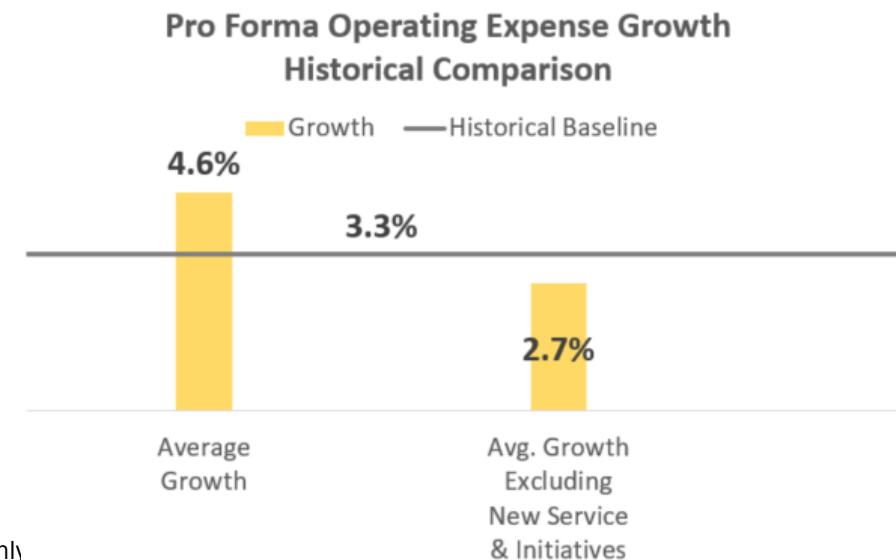
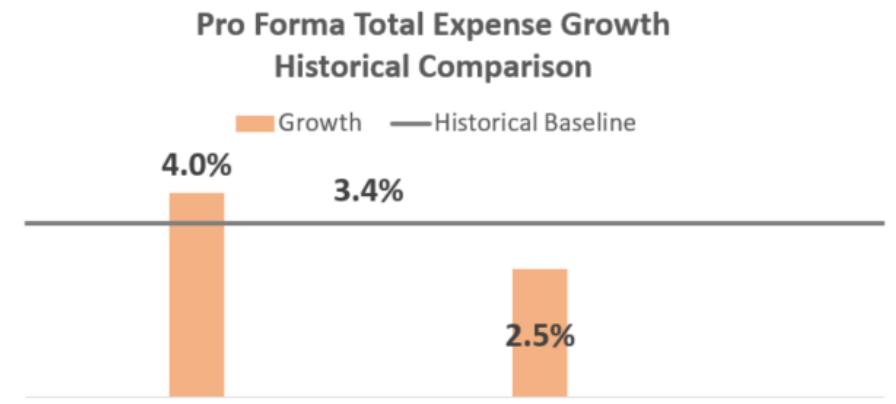
- FY24 fare revenue projections range from \$443M (64% of baseline) in Scenario 3 to \$596M (86% of baseline) in Scenario 1
- Scenario 2 fare revenue projections recover from \$498M (71% of baseline) in FY24 to \$563M (78% of baseline) by FY28
- Currently we project FY23 actual fare revenue will not meet the FY23 budget levels (Scenario 2)



New Service & Initiative Improvements Increase Spend Growth

Excluding Initial (June) FTA directive spending and one-time revenues

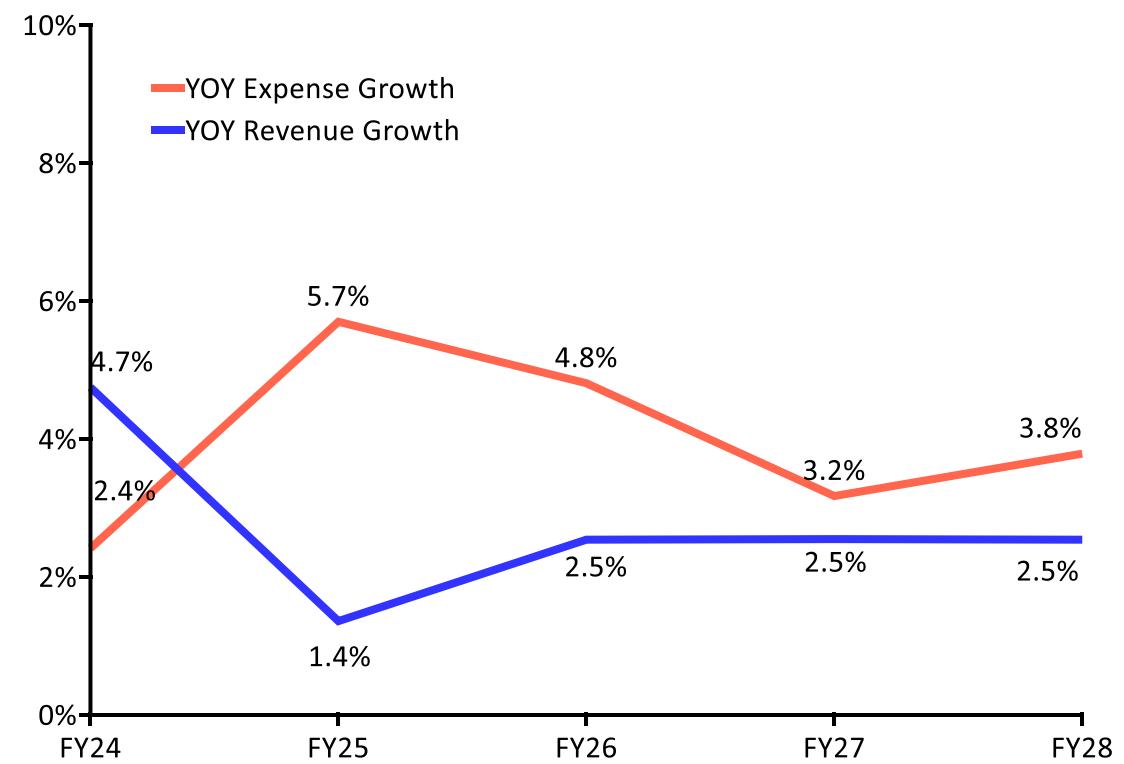
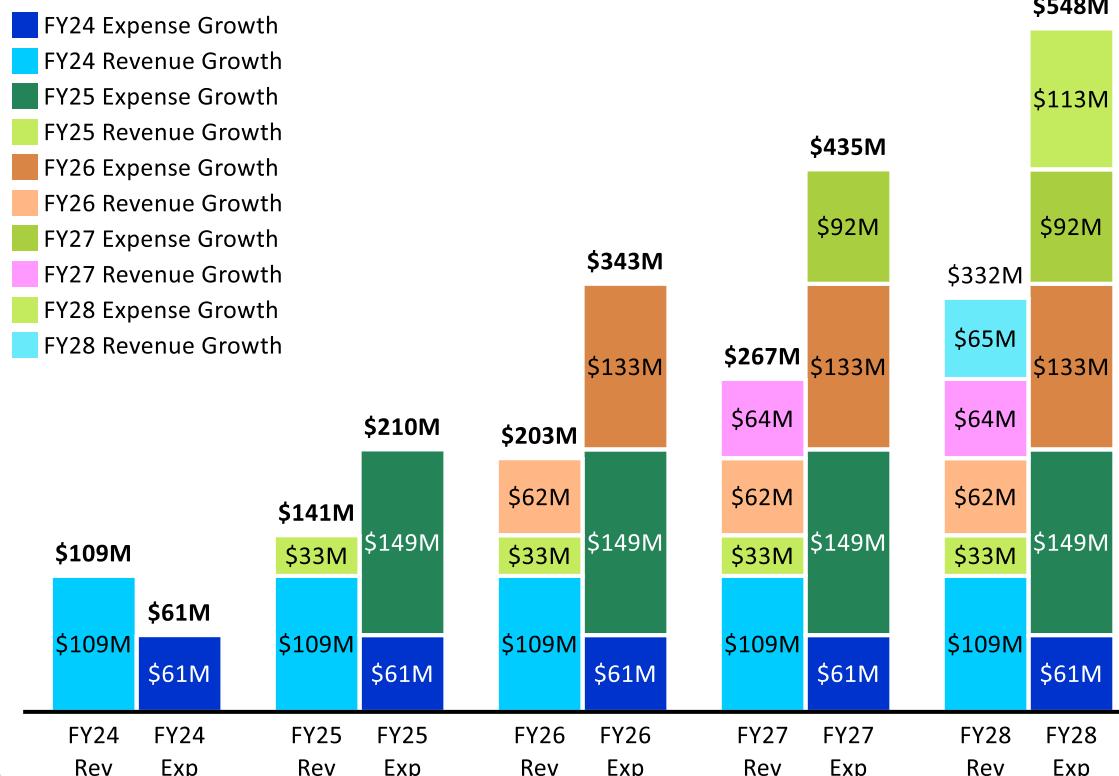
- New services and initiatives drive cost growth above historical baseline
- New service and initiatives include:
 - Green Line Extension
 - South Coast Rail
 - Bus Network Redesign, and
 - Fare Transformation
- Historical baseline is the 10-year average prior to COVID-19 impacts
- Without these, the Pro Forma projections reflect 2.5% average total expense growth and 2.7% average operating expense growth
 - Operating expense growth excludes debt service costs



Projected Revenue & Expense Growth FY24-FY28

Excluding Initial (June) FTA directive spending and one-time revenues

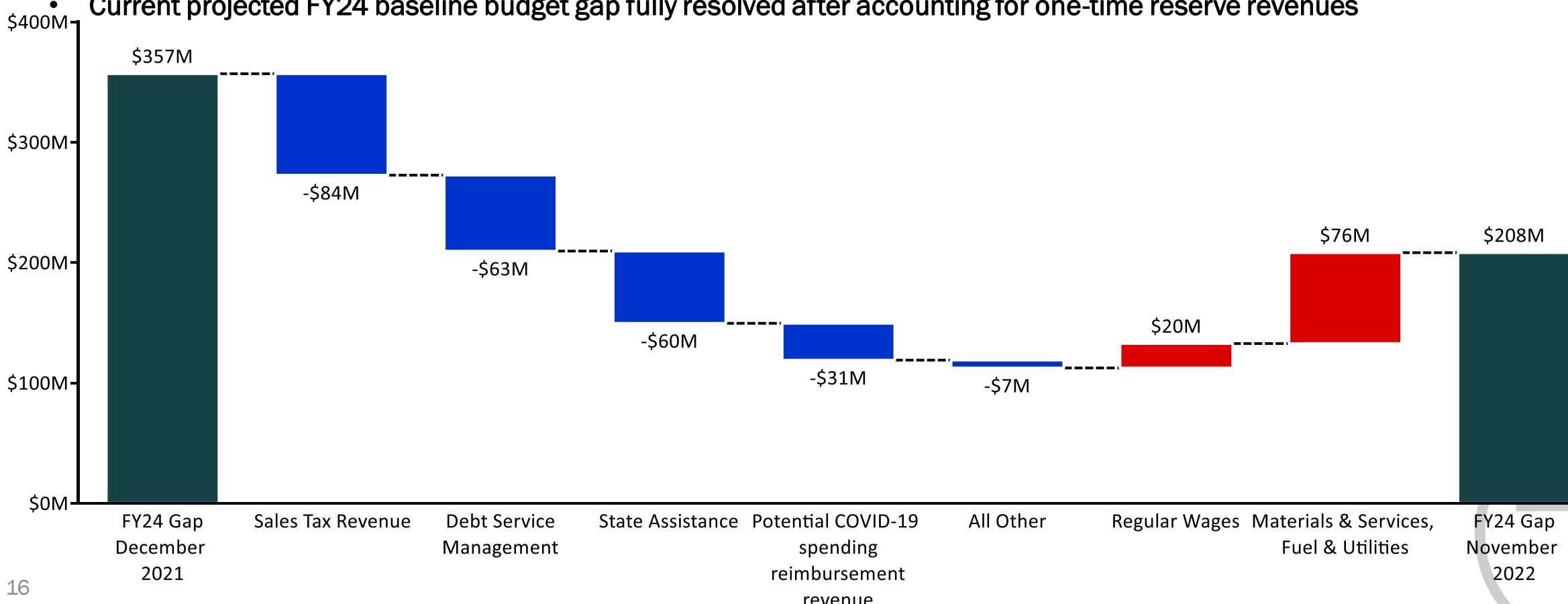
- New spending each year outpaces new revenue to compound budget sustainability issues
- Higher spending growth in FY25 and FY26 driven by new projects and initiatives while lower revenue growth reflects the expected reduction in federally reimbursable COVID-19 related spending



Updates to Pro Forma Significantly Reduce Baseline Budget Gap in FY24

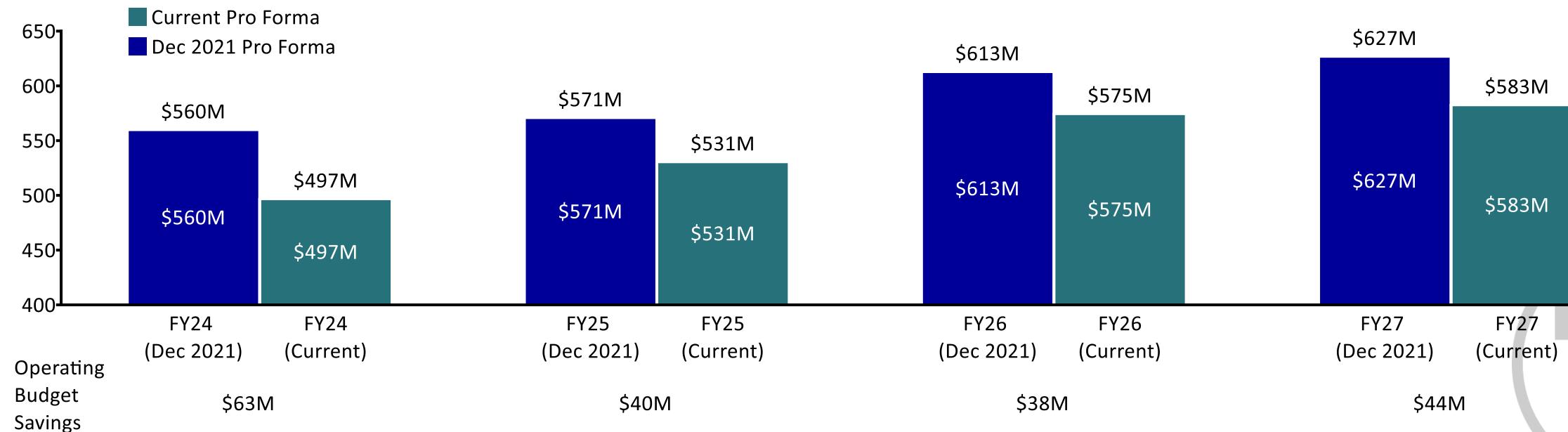
Excluding Initial (June) FTA directive spending and one-time revenues

- Significantly reduced the size of the baseline FY24 operating budget gap from the last Pro Forma presentation (December 2021) after updating for new state revenues and active debt service management
- Regular wage spending increase updated for actual growth while materials and services increase accounts for inflationary pressures, especially for fuel and utilities
- **Current projected FY24 baseline budget gap fully resolved after accounting for one-time reserve revenues**



Alleviating Debt Service Expenses

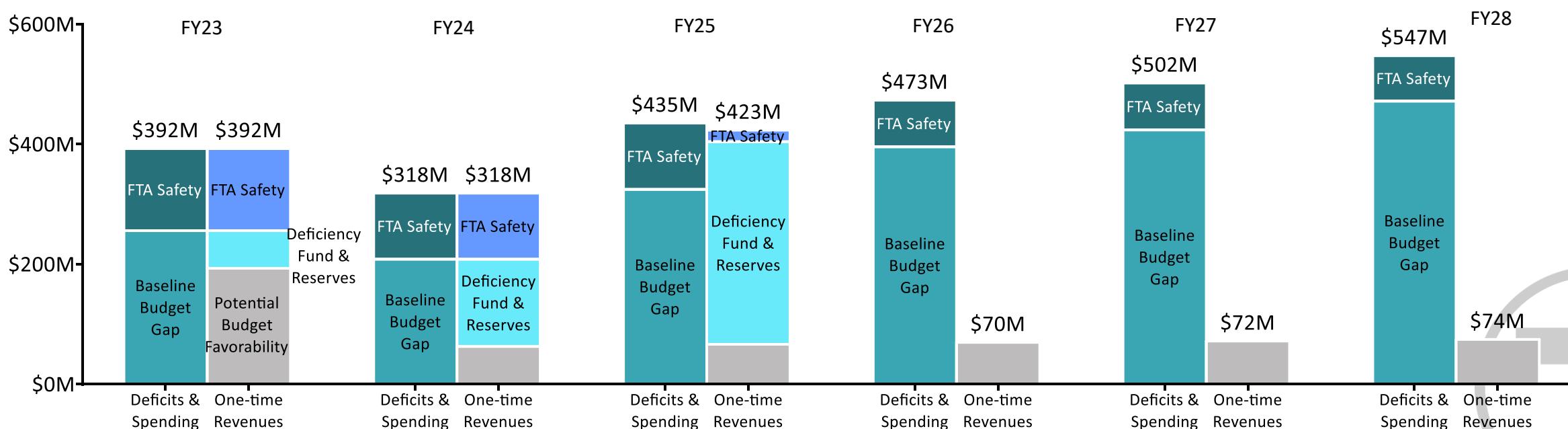
- Sculpted debt service payments to alleviate operating budget pressures in the near term and manage year-to-year variability in the long-term, averaging \$46M per year in savings from prior Pro Forma between FY24-FY27
- Reamortized variable rate and deployed a technique called cash defeasance to strategically shift these obligations to where they can be better managed
- Current debt service projections include debt payments on all outstanding debt as well as bond issuances necessary to fully fund the bond portion of the FY23-FY27 CIP
- Numbers will continue to shift as the rate environment changes and will continue to be monitored



Incorporating Initial FTA Directive Spending & One-time Revenues

Including Initial (June) FTA directive spending and one-time revenues (Scenario 2 assumptions)

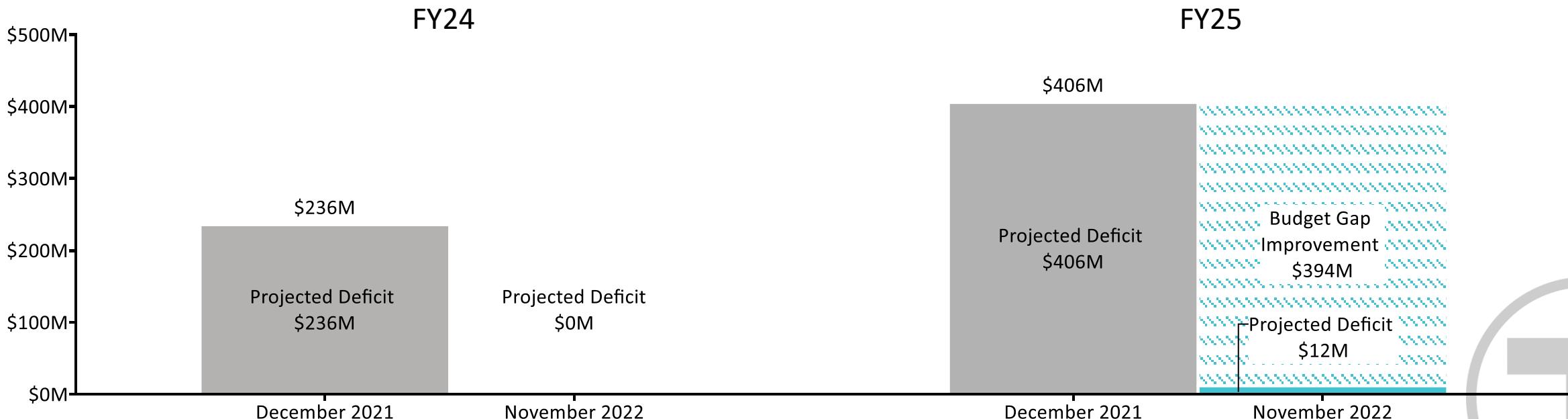
- FTA expense estimates include preliminary estimates for the June 2022 four Special Directives, while initial estimates of the four August 2022 Special Directives are currently undergoing final review and not included in the projections
 - Included FTA expenses related to track maintenance, vehicle securement of disabled trains, the Operations Control Center (OCC), and safety certifications and offset in the short term through an additional \$266M in one-time state operating funds enacted in the FY23 state budget
 - August 2022 Special Directive spending not included, assumed to be offset through \$112M in recently enacted supplemental state funds (also not yet incorporated into projections)
- One-time revenues include
 - Potential upside or budget favorability assumed in all fiscal years (subject to actual results), which will be retained in the Deficiency Fund
 - Operating cash balances fluctuate daily, these assumptions leave only 5% of FY23 budgeted total expenses (\$125M) for a targeted cash balance,



New Updates Improve FY24 & FY25 Budget Outlook

Including Initial (June) FTA directive spending and one-time revenues (Scenario 2 assumptions)

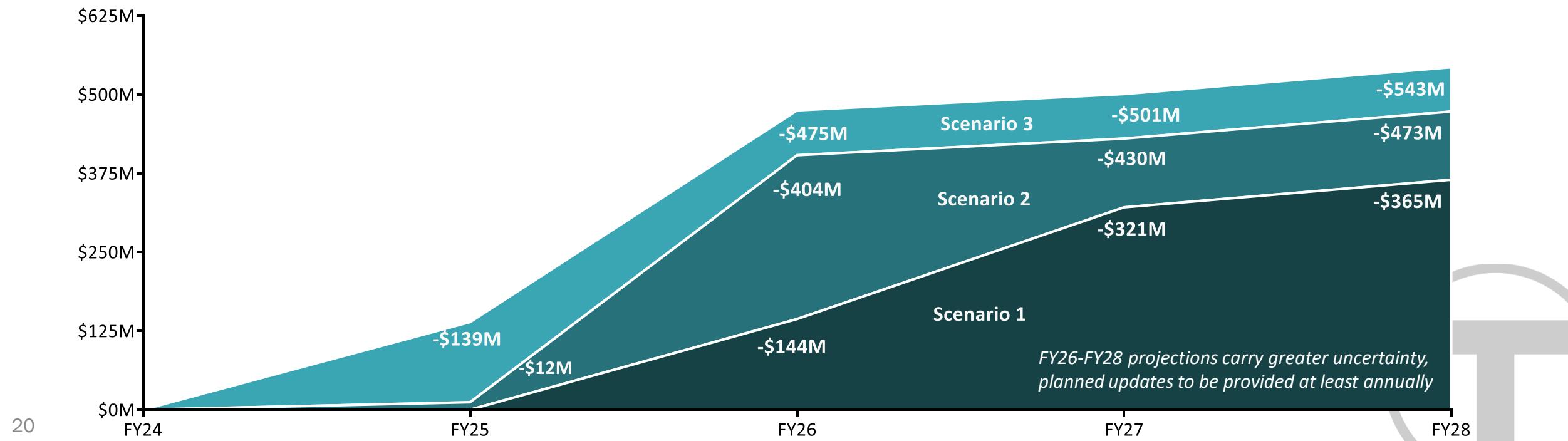
- New updates and information since the last Pro Forma presentation have significantly improved two-year budget outlook
- New state assistance funds from the Governor & Legislature, Deficiency Fund balance, and managed debt service spending contribute to improvement



FY24 – FY28 Budget Projections

Including Initial (June) FTA directive spending and one-time revenues

- One-time reserve revenues are projected to resolve the budget gap in FY24 and FY25 under Scenarios 1 and 2
- Actual budget gaps depend on fare revenue and actual spending over the next two years
- Current actual fare revenue collections are between Scenario 2 and Scenario 3
- FY25-FY28 projections will be updated at least annually in future Pro Forma presentations



Recommendations for FY24 Budget Development

- Following the recommended priorities and guidelines would maintain the current Pro Forma trajectory

Maintain current Scenario 2 fare revenue scenario assumptions for time being

Increase budgeted spending and headcount for safety, new projects, and initiatives identified

Determining priorities and guidelines for FY24 budget development

Continue to refine projections throughout the development process based on latest updates and information

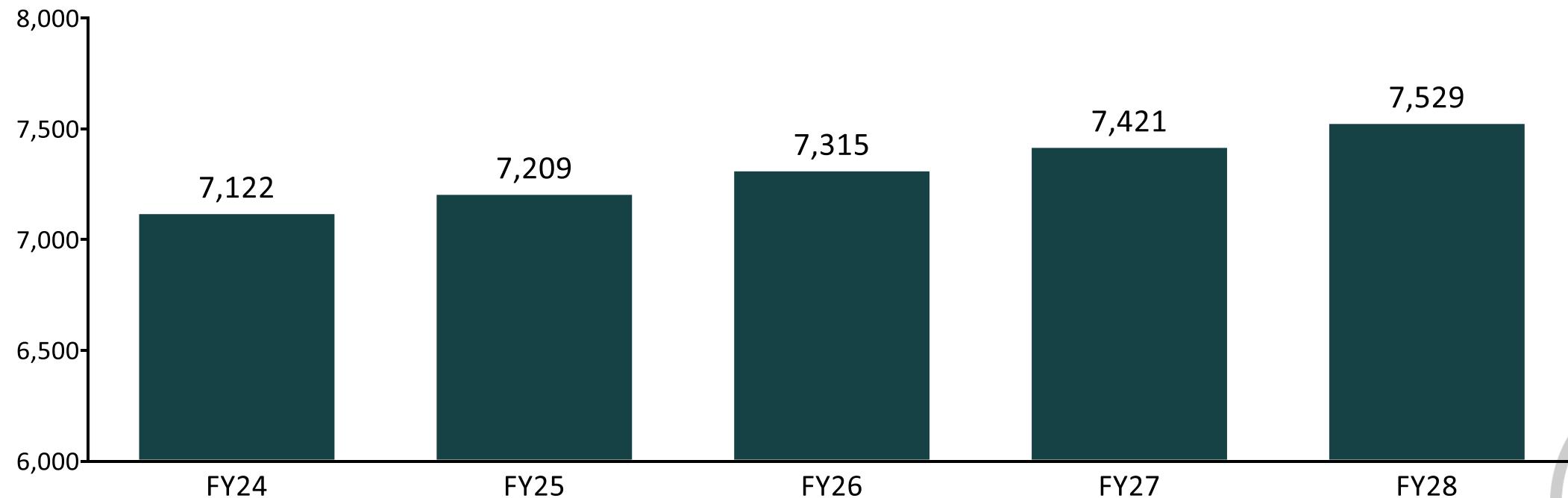
Maximize one-time revenues to potentially balance FY24

Appendix



Operating Headcount Plan

- 1.4% assumed budgeted headcount growth from FY24-FY28 stemming from safety, new projects, and initiatives including FTA directives (from June 2022), South Coast Rail, and Bus Network Redesign
- Corresponding regular wage projections assume a vacancy/attrition rate by department based on historical data accounting for pandemic impacts
- Actual active headcount growth subject to labor market challenges, active operating headcount at 5,590



New Safety Positions Budgeted since FY20

- At least 424 budgeted safety positions added since the FY20 budget (prior to FTA directives)
- 148 new budgeted positions specifically designated for safety in FY23
- 28 positions for transit facilities maintenance for mechanical and station inspections to avoid potential interruptions
- 26 positions for heavy rail to support rail yard safety, along with the additional training and testing of new Red and Orange Line vehicles
- 18 positions for rail maintenance for proactive inspections, implement additional QA/QC functions, improved cleanliness, tool calibration, and defective part replacements
- 15 positions for light rail yard safety and to prepare and support vehicles for revenue service for the Green Line Extension
- 11 positions for power systems maintenance to increase supervisory capacity, including vertical transportation contracts like escalators and elevators
- 10 positions for signals and communication maintenance including engineers to address the movement towards more advanced, specialized, technical nature of equipment
- 7 positions for engineering to manage and improve quality on all modes, including signal and tracks
- 5 positions for bus transportation for additional inspectors and supervisors
- Remaining 22 positions support efforts in and across multiple departments including Chief Operating Officer, Security Department, Safety Department, OCC & Training, and Maintenance of Way

Operations
Safety

424
positions

\$38M in
annual
wages

FY22 Additional Safety Positions Budgeted

- **125 new budgeted positions for safety**
- 78 positions for system and vehicle maintenance, including system repairers and technicians
- 32 positions for transportation safety, including rapid transit motorpersons and bus supervisors
- 10 positions for operations planning and training, including dispatchers and supervisors
- 5 positions for security, including system administrators
- These additional positions improve transportation and system safety and reliability with the added benefit of reducing overtime

Operations
Safety

125 positions

\$11M in
annual wages

FY21 Additional Safety Positions Budgeted

- **151 new budgeted positions for safety**
- New positions targeting three priorities:
 - Preventative maintenance inspections
 - Includes fire suppression systems, stand pipes, bridges, switch machines, catenary wires, and tracks
 - Overnight supervision
 - Respond to emergencies, manage overnight activities, and prepare for morning service
 - Training programs
 - Increase ride reports, employee training, performance reviews, audits, and course materials
- Full breakdown of positions by department/area:
 - 80 for system maintenance
 - 20 for transportation departments
 - 20 for safety department
 - 18 for vehicle maintenance
 - 13 among all other departments

Operations
Safety

151 positions

\$12M in
annual wages

Maintaining Hiring & Recruitment Initiatives

- Given the regional and nationally challenging current labor market conditions, \$6.6M investment above the approved FY22 budget for hiring, recruitment, and retention to fill existing vacancies and new budgeted positions

Programmed Hiring	Capacity & Outreach	Process Improvements
<ul style="list-style-type: none">Created dedicated process for programmed hiring for operations/serviceEnhanced and regular collaboration with RMVCreated bulk interview process to increase hiring throughput	<ul style="list-style-type: none">Doubled the size of HR department recruiting teamAdded Recruitment Process Outsourcing (RPO) to support HR staffDeveloped bonus program for bus operators and accelerated campaign to promote open positions	<ul style="list-style-type: none">Streamlined backfill process.Developed controls and key performance indicators (KPIs)Reconfigured training to be cross-functional to reduce risk of single-point of failure

Ridership Scenario Planning and Assumptions

- Three scenarios developed by MassDOT planning & OPMI contemplating ridership growth, the current public health pandemic, and employer operations
 - Scenarios 1 and 2 assume a “boost” in ridership in Fall 2021; while Scenario 3 sees a longer span of growth
- Modeled projections consistent with McKinsey & Company Future of Work report from July 2021 and APTA report by EBP US, Inc. from January 2021 on vehicle miles traveled (VMT)
- Initial modeling completed in October 2020 with an update in February 2021
- Actuals observed have remained within the projected scenario ranges
- Board approved FY23 budget based on Scenario 2 projections given actual ridership and fare revenue at the time of budget development (February/March 2022)

Scenario 1

Economic, demographic, and mobility patterns gradually return to mostly pre-COVID-19 conditions with slight increases in the number of teleworkers

Scenario 2

Travel patterns diverge as consumers and employees adopt to a new normal, especially in light of new and emerging remote meeting and e-commerce technologies

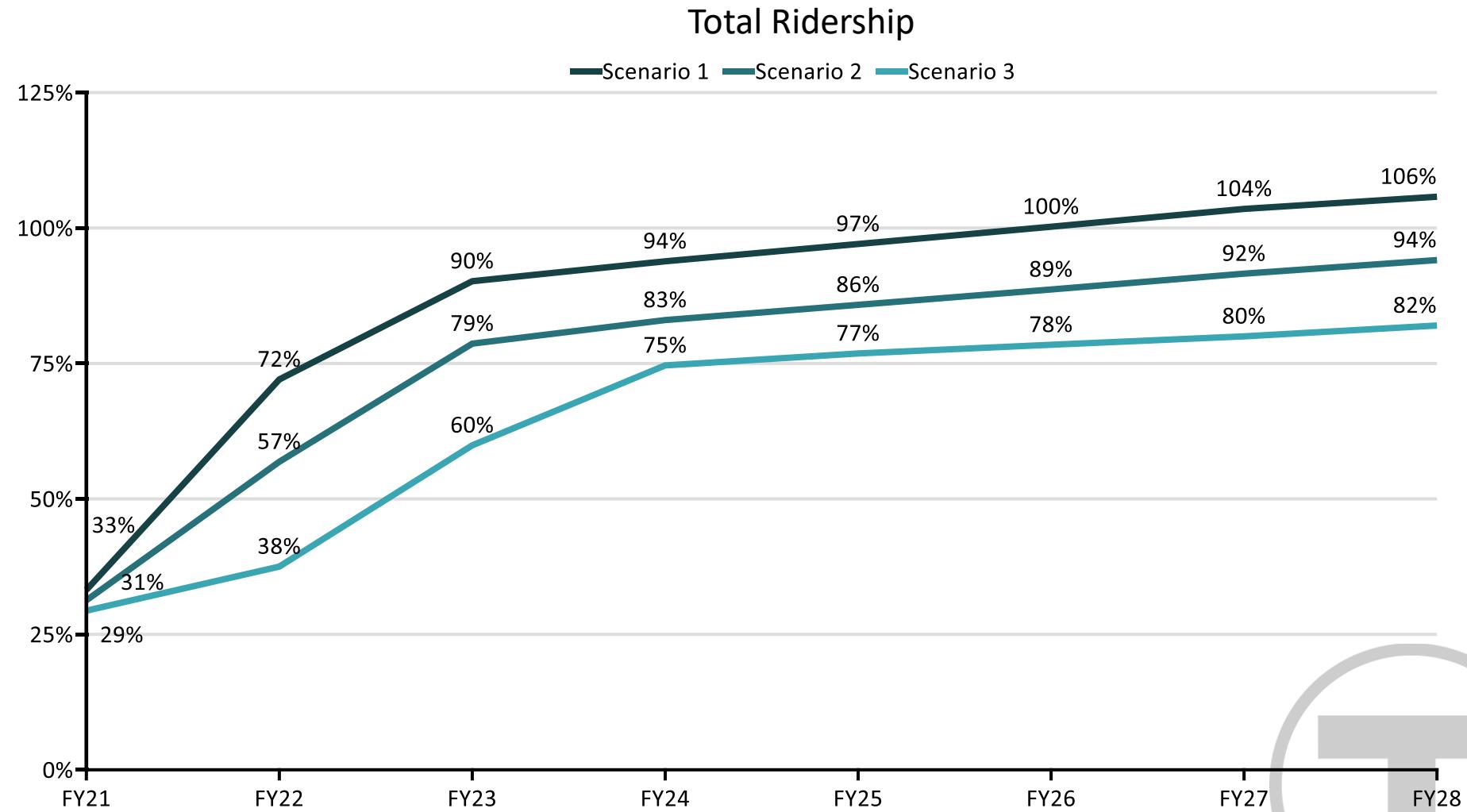
Scenario 3

The economic impacts of COVID-19 have depressed travel and mobility, especially on the MBTA, and telecommuting is standard practice

**Fare revenue scenario projections to be updated as needed if actual observed ridership consistently deviates outside the projected range*

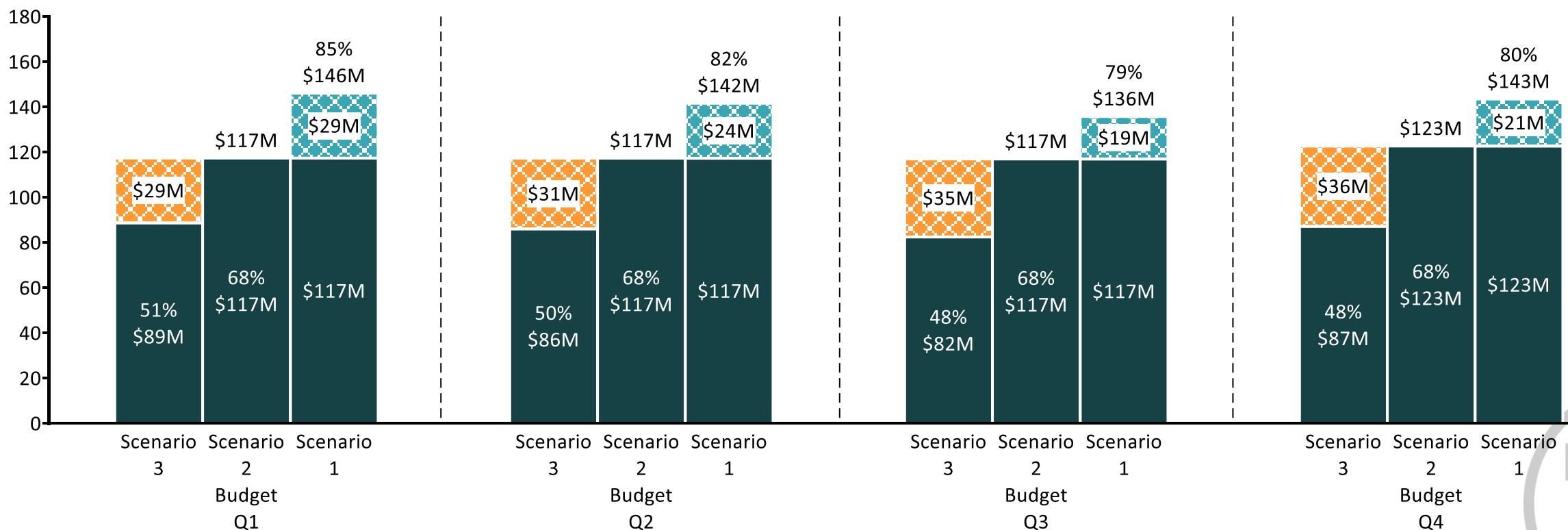
Baseline Ridership Projections

- The baseline for ridership is the most recent full fiscal year prior to COVID-19 (FY19)
- Ridership from new initiatives such as Bus Network Redesign, South Coast Rail, and Green Line Extension increase ridership by roughly 3% per year beginning in FY24
- Scenario 1 ridership exceeds 100% of baseline due to new service



FY23 Quarterly Fare Revenue Risks & Opportunities

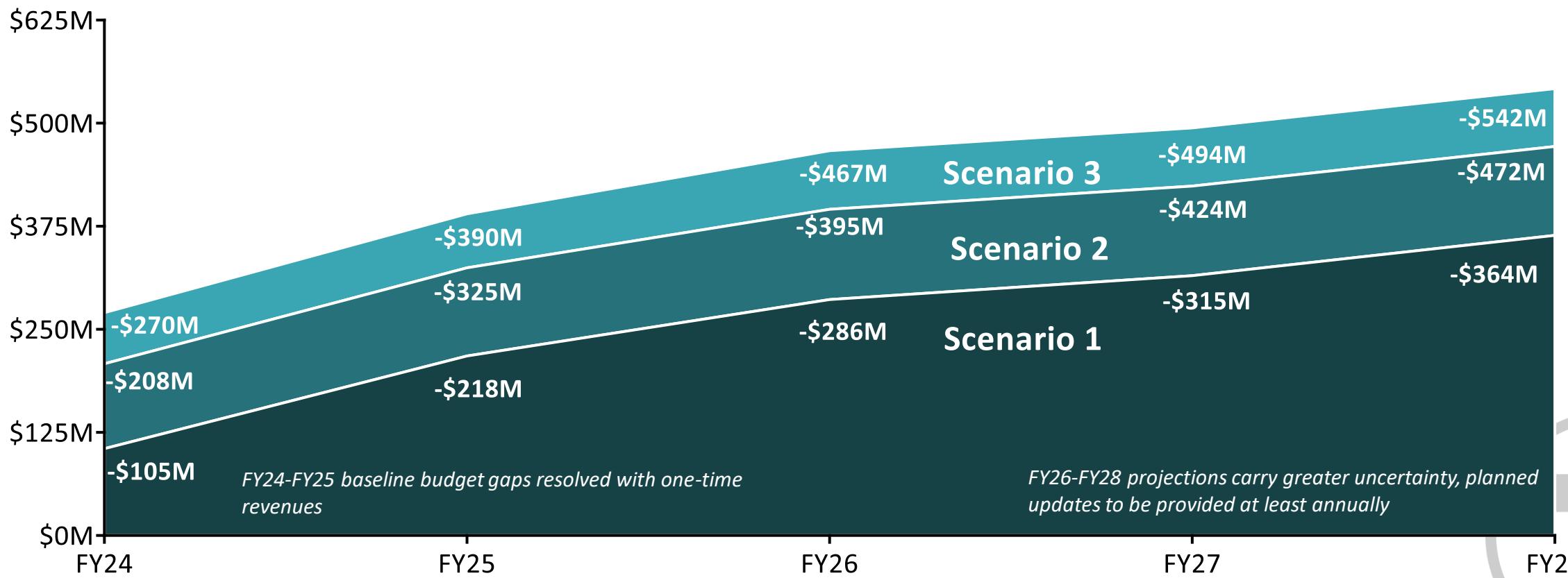
- Trending closer to Scenario 3 would result in \$29M-\$36M less fare revenue per quarter in FY23
- Trending closer to Scenario 1 would result in \$19M-\$29M more fare revenue per quarter in FY23
- Observed actual revenue in FY23 between Scenario 2 and Scenario 3 projections



Baseline Budget Gap Projections

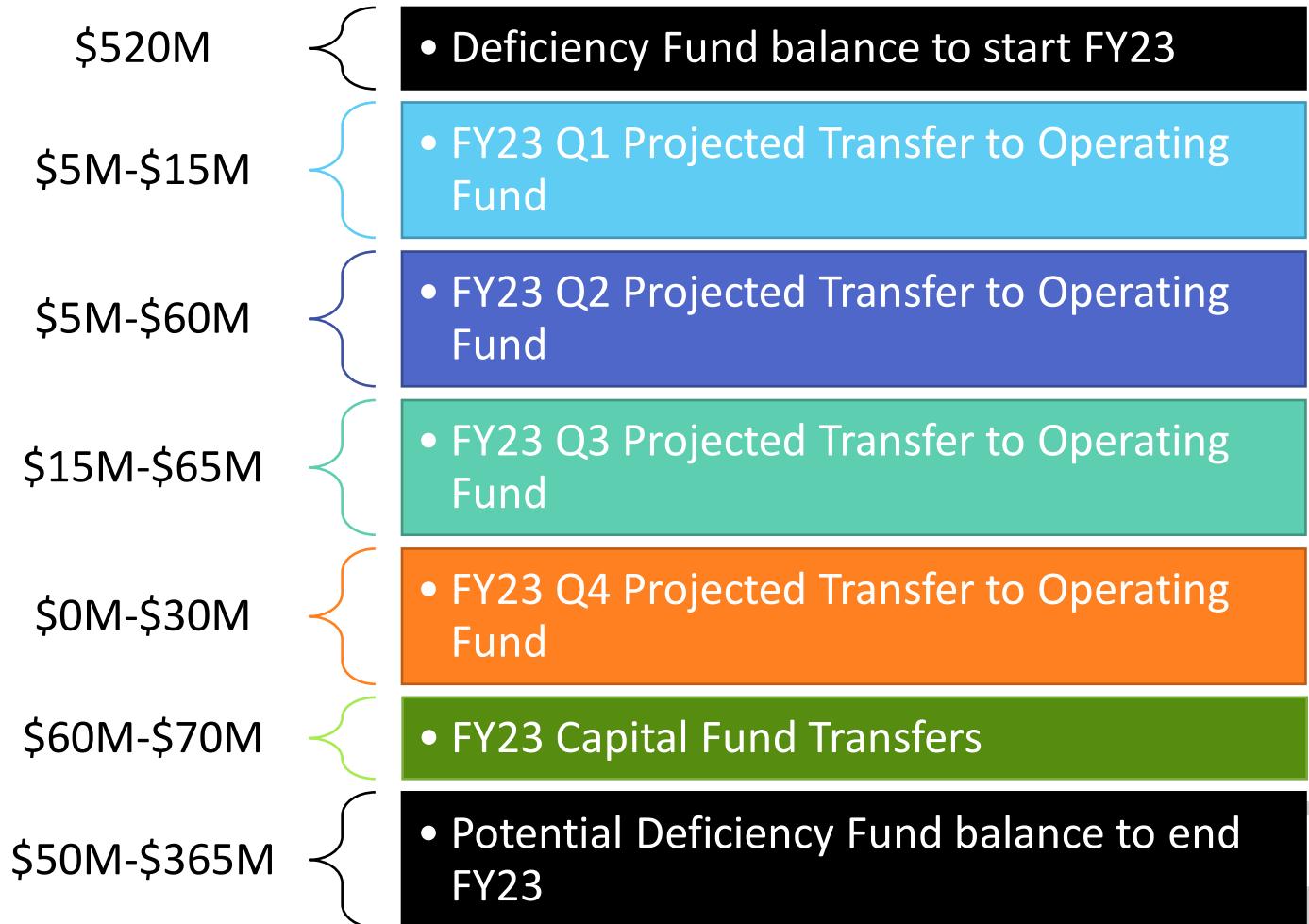
Excluding all FTA directive spending and one-time revenues

- Excluding the FTA directives and one-time revenues, annual operating expenses would exceed operating revenues in every fare revenue scenario for the next five years
- This baseline budget gap projection uses FY23 approved MBTA budget as its starting point and does not include any budget favorability (higher revenue or lower spending) that may be realized



Deficiency Fund Balance Projections

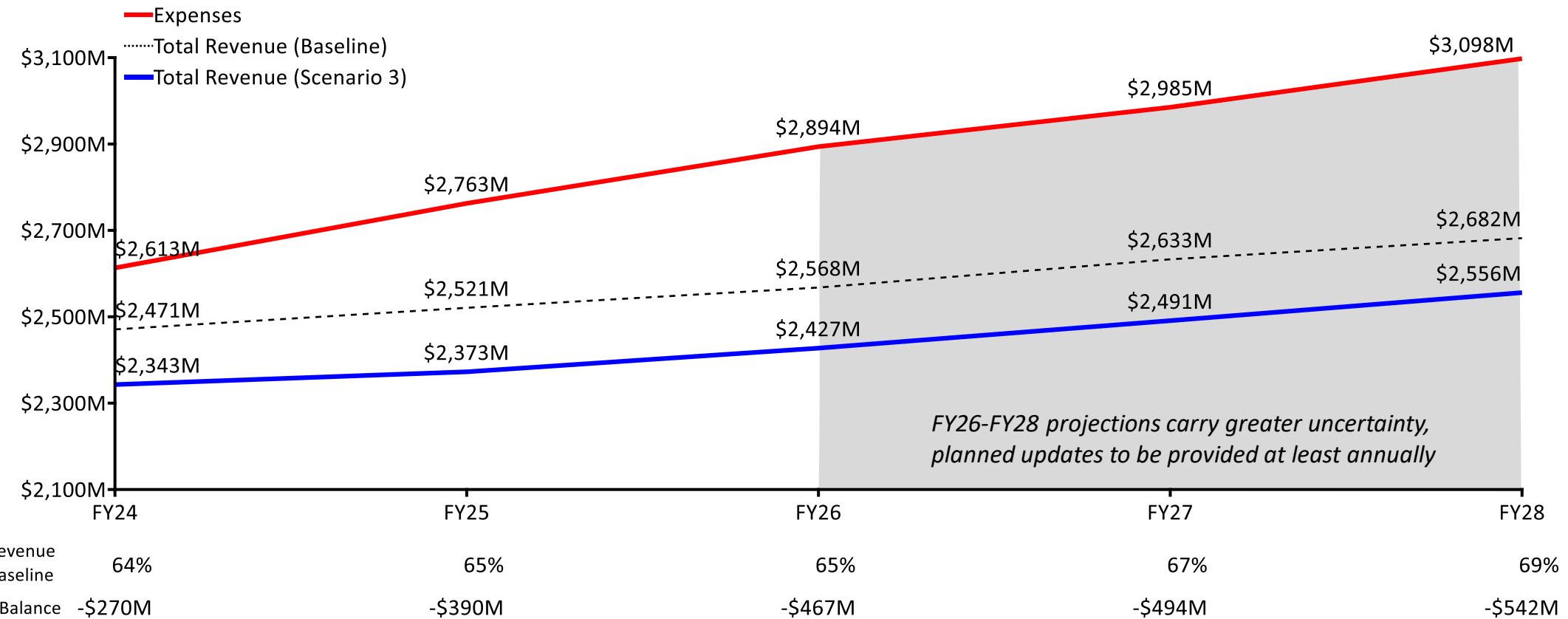
- One-time revenues from Deficiency Fund balance FY23 and FY24 budget gaps
- FY23 total transfer from Deficiency Fund to resolve operating budget gap ranges from \$25M-\$170M depending on quarterly actual results
- Lower transfers to the Operating Fund means more funding in the Deficiency Fund for future year budget gaps
- Depending on budget favorability in FY23, some one-time revenues will remain to mitigate FY25 budget gap



FY24-FY28 Budget Gap Outlook – Scenario 3

Excluding FTA directive spending and one-time revenues

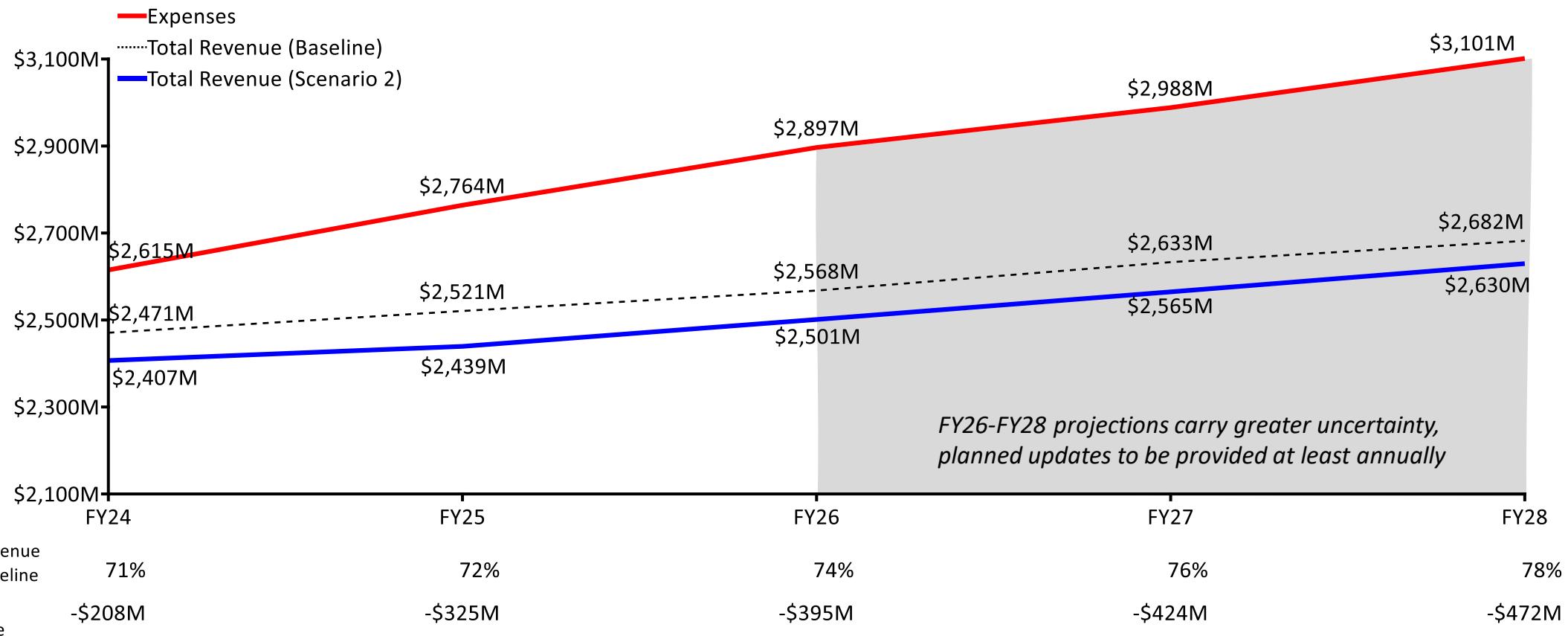
- Scenario 3 baseline budget gap grows from \$270M in FY24 to \$542M in FY28



FY24-FY28 Budget Gap Outlook – Scenario 2

Excluding FTA directive spending and one-time revenues

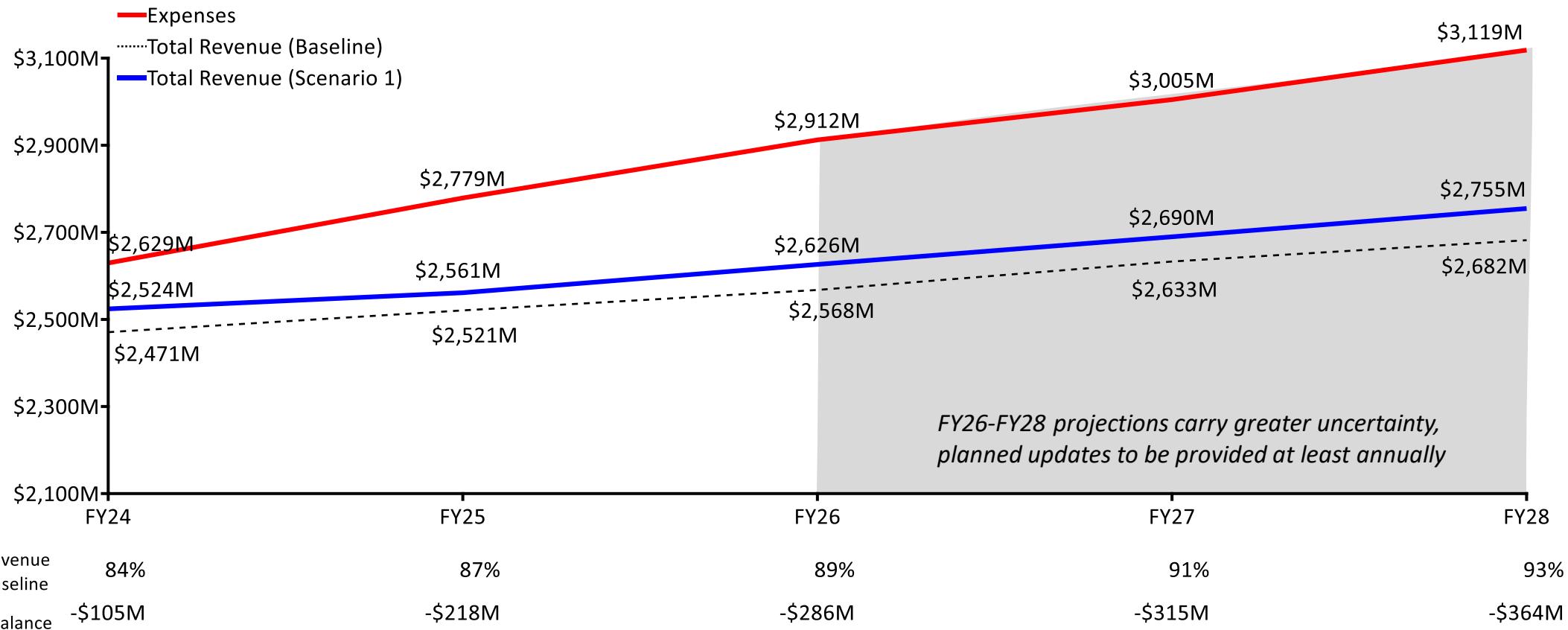
- Scenario 2 baseline budget gap grows from \$208M in FY24 to \$472M in FY28



FY24-FY28 Budget Gap Outlook – Scenario 1

Excluding FTA directive spending and one-time revenues

- Scenario 1 baseline budget gap grows from \$105M in FY24 to \$364M in FY28



Pro Forma Assumptions : Bus Network Redesign (BNRD)

BNRD	FY23B	FY24	FY25	FY26	FY27	FY28
Total Revenue (Scenario 2)	-	1,226,060	2,520,779	3,887,041	5,327,838	6,838,722
Total Expenses	20,381,389	36,639,971	61,135,884	87,570,260	114,001,156	125,695,072
Net Revenue	(20,381,389)	(35,413,912)	(58,615,105)	(83,683,219)	(108,673,319)	(118,856,350)

Revenue & Expense Assumptions

- Under Scenario 2 ridership levels, revenue estimate phases in a 25% increase in vehicle revenue hours, plus increased bus ridership of 3% for every 10% increase in bus revenue hours delivered with an assumed \$0.83 revenue per ride
- Budgets for 619 total staff over multiple years until full staffing level in FY28, subject to labor market challenges and the actual rate of hiring
 - Positions include 442 additional drivers, 104 bus maintenance staff, 45 inspectors and supervisors, 22 administrative support staff (Human Resources, Safety, Scheduling), and 6 instructors and dispatchers
 - Additional materials & services expenses for cleaning, fuel, etc. to provide additional revenue hours

Special Directive 22-4

- This Special Directive mandates that MBTA take nine required actions
- These required actions are to address deficiencies in personal protective equipment and right of way safety; to correct defective track conditions; and to address management practices that negatively impact track repair

FTA-TRA-22-001	FTA-TRA-22-002	FTA-TRA-22-003
<ul style="list-style-type: none">• Establish consistent PPE requirements for ROW personnel access	<ul style="list-style-type: none">• Implement and document consistent MOW compliance with ROW safety procedures, including PPE requirements for all personnel	<ul style="list-style-type: none">• Correct the track defects between Tufts Medical Center and Back Bay Stations on both north- and south-bound tracks
FTA-TRA-22-004	FTA-TRA-22-005	FTA-TRA-22-006
<ul style="list-style-type: none">• Document MOW maintenance needs and develop and implement a schedule to ensure adequate track access to meet maintenance requirements	<ul style="list-style-type: none">• Develop and implement work plans to address MOW maintenance needs and manage on-going MOW workload	<ul style="list-style-type: none">• Expedite and resource the transition to the new Enterprise Asset Management (EAM) system and formalize/implement procedures and protocols to ensure MOW managers and MOW inspectors share information and establish data-driven maintenance priorities
FTA-TRA-22-007	FTA-TRA-22-008	FTA-TRA-22-009
<ul style="list-style-type: none">• Develop and implement a process and reporting procedure that accurately communicates the number, severity, and significance of MOW defects to Executive Leadership	<ul style="list-style-type: none">• Develop and implement a special maintenance repair plan to reduce the percentage of system track that is under a speed restriction	<ul style="list-style-type: none">• Restore Green Line work train capabilities

Special Directive 22-5

- This Special Directive mandates that MBTA undertake three required actions
- These required actions address the pattern of safety incidents and interim safety findings concerning unintended and uncontrolled train movements by disabled trains in maintenance facilities and rail yards

FTA-VSC-22-001	FTA-VSC-22-002	FTA-VSC-22-003
<ul style="list-style-type: none">• Develop and implement specific written procedures for yard movements of rail vehicles with known or suspected defective brakes or propulsion equipment	<ul style="list-style-type: none">• Develop training and train personnel on the policies and procedures to safely move rail vehicles with known or suspected defects	<ul style="list-style-type: none">• Create and implement a compliance program to ensure personnel consistently and accurately use policies and procedures for yard movements of rail vehicles with known or suspected defects

Special Directive 22-6

- This Special Directive mandates that MBTA take seven required actions
- These required actions address the pattern of safety incidents and interim safety findings related to actions within the Operations Control Center at MBTA

	FTA-OCC-22-001 <ul style="list-style-type: none">• Ensure that staff working in the OCC, including dispatchers and supervisors, are certified	FTA-OCC-22-002 <ul style="list-style-type: none">• Ensure OCC staff have sufficient time off to recover between shifts, consistent with MBTA hours of service policy for rail transit motorpersons	FTA-OCC-22-003 <ul style="list-style-type: none">• Submit to FTA and DPU each week that for each shift, OCC supervisors and managers are not dual scheduled for both supervisory duties and dispatcher duties at any time during assigned shifts
	FTA-OCC-22-004 <ul style="list-style-type: none">• Develop and enforce policies that require OCC personnel to work in a rested state	FTA-OCC-22-005 <ul style="list-style-type: none">• Adequately staff the OCC for current operational needs and provide a plan to meet the operational needs of the system	FTA-OCC-22-006 <ul style="list-style-type: none">• Identify and address major challenges in recruiting and training new rail transit dispatchers, the quality and performance of their training, and the certification of new candidates
	FTA-OCC-22-007 <ul style="list-style-type: none">• Verify that all dispatchers working within the OCC are current in their certifications prior to starting their shift		

Special Directive 22-7

- This Special Directive mandates that MBTA undertake three required actions
- These required actions address the pattern of safety incidents and interim safety findings concerning lapsed training certifications of safety-sensitive rail personnel

FTA-LC-22-001	FTA-LC-22-002	FTA-LC-22-003
<ul style="list-style-type: none">• Ensure that staff operating revenue service trains and supervising train movements and revenue service trains are certified	<ul style="list-style-type: none">• Ensure that personnel with lapsed certifications are not placed on duty to perform or supervise train operations	<ul style="list-style-type: none">• Create, review, and/or update its training materials to include; training and certification manuals for each line, to include manuals for operators and supervisors; updated rulebooks for all train lines, enforce version control; a compilation of temporary and permanent orders

Special Directive 22-9

- This Special Directive mandates that MBTA take four required actions
- The findings and required actions outlined in this Special Directive will assist the MBTA in focusing its attention on balancing demands from operations and capital projects with workforce capacity and capability to inform resource prioritization

FTA-22-MBTA-CAT1-1	FTA-22-MBTA-CAT1-2	FTA-22-MBTA-CAT1-3	FTA-22-MBTA-CAT1-4
<ul style="list-style-type: none">• Conduct and submit to FTA a workforce analysis and associated workforce planning	<ul style="list-style-type: none">• Develop and implement a recruitment and hiring plan to address findings from its workforce analysis and associated workforce planning for at least a five-year period, including how it will expand its capabilities for recruiting and hiring personnel to fill operations, maintenance, and capital project delivery positions	<ul style="list-style-type: none">• Modify safety engineering and certification requirements for its capital projects and vehicle procurements and ensure they are addressed through additional E&M and Safety Department staffing, contractor resources, or a combination of approaches. This may be done as part of the workforce analysis in Finding 1, or as part of a separate initiative	<ul style="list-style-type: none">• Review the inspection and resident engineering resources needed to ensure compliance with MBTA safety rules related to the Right of Way to ensure the safety of personnel while in active work zones through additional staffing, contractor resources, or a combination of approaches

Special Directive 22-10 (1 of 2)

- This Special Directive mandates that MBTA take six required actions
- This Special Directive identifies action that the MBTA must take to enhance and expedite implementation of the agency's SMS, including the development of procedures, safety management training, safety risk assessment, and safety assurance activities to build the organization's capability to identify safety concerns and to prioritize action to mitigate safety risk

FTA-22-MBTA-CAT2-1.A	FTA-22-MBTA-CAT2-1.B	FTA-22-MBTA-CAT2-2	FTA-22-MBTA-CAT2-3.A	FTA-22-MBTA-CAT2-3.B	FTA-22-MBTA-CAT2-3.C	FTA-22-MBTA-CAT2-3.D	FTA-22-MBTA-CAT2-4.A	FTA-22-MBTA-CAT2-4.B	FTA-22-MBTA-CAT2-4.C
Conduct a critical and comprehensive review of its entire SMS planning, implementation, and operational processes and activities to address the gaps discussed in this finding	<ul style="list-style-type: none">• Update its SMS Implementation Plan to reflect the results of this review, including defined actions, timeframes, responsibilities, and expected outcomes	<p>Define explicit criteria for prioritizing safety risks and include it in Agency Safety Plan</p> <p>Define how safety information is presented to leadership in a prioritized and actionable manner</p> <p>Require a means for operating department leads to elevate proposed safety risk mitigations</p>	<ul style="list-style-type: none">• Map its safety data flows and supporting processes	<ul style="list-style-type: none">• Establish explicit accountabilities and responsibilities for safety data flows as a component of safety information management (collection, analysis, communication, storage, and retrieval of safety data)	<p>Provide formal training in safety information management to relevant personnel</p>	<ul style="list-style-type: none">• Demonstrate that its executive management uses and promotes the usage of safety data analysis and/or documented facts in decision-making related to safety risk	<ul style="list-style-type: none">• Update its Safety Assurance process to include monitoring of safety risk mitigations with a) compliance-based activities to provide the baseline for monitoring implementation status and b) performance-based activities to monitor the actual effectiveness of safety risk mitigations	<ul style="list-style-type: none">• Prepare a monthly look-ahead schedule for prioritized safety risk monitoring activities that include safety risk mitigations and corrective actions in place to address MBTA's highest safety priorities	<p>Develop and document guidance, and deliver training for safety investigators that ensure the consideration of precursor factors in the analysis of the chain of events leading to a safety event (accident, incident, or occurrence)</p>

Special Directive 22-10 (2 of 2)

- This Special Directive mandates that MBTA take six required actions
- This Special Directive identifies action that the MBTA must take to enhance and expedite implementation of the agency's SMS, including the development of procedures, safety management training, safety risk assessment, and safety assurance activities to build the organization's capability to identify safety concerns and to prioritize action to mitigate safety risk

FTA-22-MBTA-CAT2-5.A	FTA-22-MBTA-CAT2-5.B	FTA-22-MBTA-CAT2-5.C	FTA-22-MBTA-CAT2-5.D	FTA-22-MBTA-CAT2-6.A	FTA-22-MBTA-CAT2-6.B	FTA-22-MBTA-CAT2-6.C
<ul style="list-style-type: none">• Develop and document criteria for conducting safety risk assessments consistent with the basic principles of safety management and the tenets of SMS as conveyed in FTA's SMS guidance materials	<ul style="list-style-type: none">• Develop explicit direction for the ownership of safety risk assessments among the Safety Department and the operating departments. Documentation must include providing explicit roles, responsibilities, and thresholds of authority of each department involved	<ul style="list-style-type: none">• Ensure that operating departments including subject matter expertise, own safety risk assessments, while safety officials provide support for safety risk assessments and reports on results to Executive Leadership for safety resource allocation priorities	<ul style="list-style-type: none">• Expand its policy of establishing a predefined schedule of safety risk assessment workshops and develop criteria attuned with the nature of hazard identification	<ul style="list-style-type: none">• Evaluate (and correct) the data contained in its hazard log and safety risk mitigation log for accuracy and relevancy to SMS	<ul style="list-style-type: none">• Expedite the build out of its safety risk and safety risk mitigation monitoring information tools	<ul style="list-style-type: none">• Demonstrate use of its safety information management tools to effectively prioritize its resources to address the results of safety risk monitoring and safety performance monitoring

Special Directive 22-11

- This Special Directive mandates that MBTA take three required actions
- This Special Directive identifies action that the MBTA must take to improve MBTA's management of its safety committee process, employee safety reporting program, and safety promotion activities

FTA-22-MBTA-CAT3-1.A	FTA-22-MBTA-CAT3-1.B	FTA-22-MBTA-CAT3-2.A	FTA-22-MBTA-CAT3-2.B	FTA-22-MBTA-CAT3-3.A	FTA-22-MBTA-CAT3-3.B	FTA-22-MBTA-CAT3-3.C
<ul style="list-style-type: none">• Develop and describe, in the organization's SMS documentation, instructions regarding the conduct, recording, communication and follow up of the outcome consensus decisions	<ul style="list-style-type: none">• Develop and describe, in the organization's SMS documentation, a formal mechanism and associated guidelines to ensure that the meetings are consistent in the identification and analyses of safety concerns and hazards; prioritization of safety risks; implementation of corrective actions; and safety risk mitigation effectiveness monitoring	<ul style="list-style-type: none">• Develop explicit and formal guidelines for the expected role and contribution of frontline employees to the local safety committee meetings	<ul style="list-style-type: none">• Develop instructions for the conduct of the meetings, including explicit departmental accountabilities for meeting outcome information capture, communication and follow up	<ul style="list-style-type: none">• Expedite the development of an effective ESRP as a fundamental source of safety information for hazard identification and safety performance monitoring	<ul style="list-style-type: none">• Provide explicit direction to frontline employees on what to report and what not to report through the ESRP	<ul style="list-style-type: none">• Provide refresher training to stakeholder personnel on the role of employee safety reporting within SMS and the crucial contribution managers and supervisors play in the development of an effective safety reporting context

Special Directive 22-12 (1 of 3)

- This Special Directive mandates that MBTA take seven required actions
- This Special Directive identifies requiring action that the MBTA must take to improve MBTA's management of its operating and maintenance policies, monitoring of rail transit operations, Quality Assurance/Quality Control capabilities, and training and procedures

FTA-22-MBTA-CAT4-1.A	FTA-22-MBTA-CAT4-1.B	FTA-22-MBTA-CAT4-1.C	FTA-22-MBTA-CAT4-1.D	FTA-22-MBTA-CAT4-1.E	FTA-22-MBTA-CAT4-1.F
<ul style="list-style-type: none">• Each operating and maintenance department must establish a group to review department-wide information on levels of non-compliance with key rules and procedures critical to the safety of activities performed by the department	<ul style="list-style-type: none">• Each department must establish and act on a prioritized list of most frequently violated rules and procedures with the most significant potential safety consequences	<ul style="list-style-type: none">• Each department must develop and implement approaches, which could include audits, use of checklists and guides, Campaigns, and training, to improve compliance	<ul style="list-style-type: none">• Each department must report to the Safety Department monthly on its compliance with identified key rules and procedures critical to the safety of activities performed by the department	<ul style="list-style-type: none">• The Safety Department must review and audit these reports and compile a monthly compliance report for MBTA's executive leadership team	<ul style="list-style-type: none">• Each department must continue to review safety data to assess effectiveness of actions and to improve compliance with safety rules and procedures

Special Directive 22-12 (2 of 3)

- This Special Directive mandates that MBTA take seven required actions
- This Special Directive identifies requiring action that the MBTA must take to improve MBTA's management of its operating and maintenance policies, monitoring of rail transit operations, Quality Assurance/Quality Control capabilities, and training and procedures

FTA-22-MBTA-CAT4-2	•Develop, document, and communicate a mechanism to monitor operations, and provide training to stakeholder safety and operating personnel on this mechanism, to enable the analysis and understanding of situations of non-compliance
FTA-22-MBTA-CAT4-3.A	•Develop and administer a QA/QC program to independently oversee of ongoing QA/QC activities
FTA-22-MBTA-CAT4-3.B	•Ensure that the QA/QC functions are independent of the functions of the Safety department and report directly to the GM
FTA-22-MBTA-CAT4-3.C	•Develop a formal QA/QC procedure that details the oversight of and accountability and roles and responsibilities for QA/QC programs provided by railcar manufacturers and MBTA consultants related to quality control of its railcars and subcomponents
FTA-22-MBTA-CAT4-3.D	•Ensure that the MBTA QA/QC independent group is staffed with a sufficient SMEs in necessary disciplines to ensure a complete and thorough understanding of the responsibilities under the purview of railcar maintenance and engineering
FTA-22-MBTA-CAT4-4.A	•Conduct a training needs assessment for rail transit operations and maintenance departments, to include emergency response training. This assessment should identify training that needs to be updated, developed, and supported with additional resources
FTA-22-MBTA-CAT4-4.B	•Implement the results of the training needs assessment
FTA-22-MBTA-CAT4-4.C	•Consider opportunities and adopt technology and other resources to support training development and training management and record-keeping

Special Directive 22-12 (3 of 3)

- This Special Directive mandates that MBTA take seven required actions
- This Special Directive identifies requiring action that the MBTA must take to improve MBTA's management of its operating and maintenance policies, monitoring of rail transit operations, Quality Assurance/Quality Control capabilities, and training and procedures

FTA-22-MBTA-CAT4-5.A	FTA-22-MBTA-CAT4-5.B	FTA-22-MBTA-CAT4-6	FTA-22-MBTA-CAT4-7.A	FTA-22-MBTA-CAT4-7.B
<ul style="list-style-type: none">• Review its existing maintenance rules and procedures; identify opportunities for tools and checklists to support employees in carrying out maintenance rules and procedures; and develop, distribute, maintain, and update these materials	<ul style="list-style-type: none">• Include frontline maintenance personnel in the development evaluation of these tools and checklists	<ul style="list-style-type: none">• Evaluate expanding its existing mentoring program from Bus Transit Operations to include new part-time and full-time rail transit operators or consider establishing a mentoring program specific to rail transit operations. In its evaluation, MBTA should consider opportunities and resources to support the professional development of rail transit operations personnel	<ul style="list-style-type: none">• Confirm radio dead spots with frontline motorpersons and maintenance workers	<ul style="list-style-type: none">• Improve the performance of its radio system in these dead spots