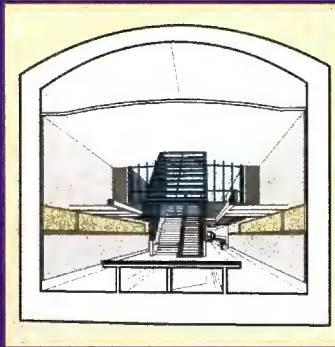


LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

WESTSIDE PURPLE LINE EXTENSION PROJECT, SECTION 2 ADVANCED PRELIMINARY ENGINEERING

Contract No. PS-4350-2000



Westside Purple Line Extension Section 2 Financial Plan

Prepared for:



Prepared by:

**PARSONS
BRINCKERHOFF**

777 South Figueroa Street, Suite 1100
Los Angeles, CA 90017

August 2015





Table of Contents

1.0 INTRODUCTION 1-1

1.1 Purpose of Financial Plan..... 1-1

1.2 Key Changes since the 2014 Financial Plan..... 1-2

1.2.1 Capital Costs 1-2

1.2.2 Capital Revenue Sources 1-3

1.2.3 Operating Costs 1-6

1.2.4 Operating Revenue Sources 1-7

1.2.5 Risks and Uncertainties 1-7

1.3 Project Descriptions 1-9

1.3.1 Westside Purple Line Extension..... 1-9

1.4 Project Sponsor: Los Angeles County Metropolitan Transportation Authority 1-14

1.4.1 Organization 1-14

1.4.2 Service Provided 1-14

1.4.3 Current Financial Condition..... 1-15

1.5 Project Partner: Federal Transit Administration 1-16

1.6 Regional Economic Conditions..... 1-16

1.7 Updated Measure R Expenditure Plan Summary..... 1-17

1.8 Financial Plan Summary..... 1-17

1.8.1 Financial Planning Process and Structure 1-17

1.8.2 Westside Purple Line Section 2 Extension Project Financial Plan Summary 1-17

1.8.3 LACMTA Systemwide Financial Plan Summary..... 1-20

1.8.4 Key Performance Indicators Summary..... 1-22

1.8.5 Risk Analysis Summary..... 1-23

2.0 WESTSIDE PURPLE LINE EXTENSION SECTION 2 PROJECT FINANCIAL PLAN 2-1

2.1 Capital Plan 2-1

2.1.1 Capital Cost by Standard Cost Category..... 2-1

2.1.2 Capital Cost Estimating Methodology..... 2-3

2.1.3 Capital Funding Sources 2-6

2.1.4 Capital Financing Strategy..... 2-9

2.1.5 Short-Term Financing..... 2-11

2.1.6 Capital Uses and Sources of Funds 2-11

2.2 Operating Plan 2-17

2.2.1 Operating Costs 2-17

2.2.2 Operating Revenue Sources 2-19

3.0 LACMTA SYSTEMWIDE FINANCIAL PLAN 3-1

3.1 Capital Plan 3-1

3.1.1 Capital Expenditure Program 3-1

3.1.2 Historic Sources of Funds 3-11

WESTSIDE PURPLE LINE EXTENSION SECTION 2



- 3.1.3 Forecast Sources of Funds..... 3-13
- 3.1.4 Measure R Expenditure Plan Financing Strategy..... 3-26
- 3.1.5 LACMTA Capital Sources and Uses of Funds Forecast 3-36
- 3.2 Operating Plan for LACMTA 3-39
 - 3.2.1 Operating and Maintenance Cost Methodology 3-39
 - 3.2.2 LACMTA Rail and Bus Operating Plan 3-43
 - 3.2.3 Highway Operating Plan..... 3-62
 - 3.2.4 Bus and Rail Sources and Uses 3-63
- 4.0 SUMMARY OF KEY PERFORMANCE INDICATORS..... 4-1**
 - 4.1 Current Capital and Operating Condition 4-1
 - 4.2 Commitment of Capital and Operating Funds 4-1
 - 4.3 Reasonableness of Capital Plan..... 4-2
 - 4.4 Reasonableness of Operating Plan..... 4-2
 - 4.5 Conformance with LACMTA Debt Policies 4-4
 - 4.6 Achieved Levels of System-Wide Farebox Recovery 4-8
- 5.0 RISK ANALYSIS..... 5-1**
 - 5.1 Major Capital Sources of Risk and Uncertainty..... 5-1
 - 5.1.1 LACMTA Policy Regarding Cost and Revenue Risk..... 5-1
 - 5.1.2 Capital Cost Risks 5-3
 - 5.1.3 Capital Revenue Risks 5-4
 - 5.1.4 Capital Plan Sensitivity Analyses..... 5-5
 - 5.2 Major Operating and Maintenance Sources of Risk and Uncertainty..... 5-13
 - 5.2.1 Operating and Maintenance Cost Risks 5-13
 - 5.2.2 Operating and Maintenance Revenue Risks 5-14
 - 5.2.3 Operating Plan Sensitivity Analysis..... 5-14
 - 5.3 Potential Strategies for Mitigating Cost and Revenue Risks..... 5-18
 - 5.4 Next Steps 5-19
- APPENDIX A SOURCES AND USES OF FUNDS TABLESA-1**

List of Tables

Table 1-1: LACMTA Combined Proposition A, Proposition, C and Measure R Sales Tax Cash Receipts	1-4
Table 1-2: LACMTA Sales Tax Revenue Growth Following Recent Economic Downturns.....	1-5
Table 1-3: Comparison of Projected Sales Tax Revenue, August 2015 and September 2014 New Starts Financial Plan (YOE \$M)	1-5
Table 1-4: Measure R Updated Expenditure Plan Project Schedule	1-8
Table 1-5: Westside Purple Line Extension Project Scope.....	1-13
Table 1-6: LACMTA Bond Ratings (as of July 2015)	1-15
Table 1-7: LACMTA Uses and Sources of Funds for the Westside Purple Line Extension Project, FY2011 to FY2036 (YOE \$M)	1-19
Table 2-1: Westside Purple Line Extension Section 2 Baseline Capital Cost Estimate Excluding Financing Costs (\$M), FY2016 to FY2026.....	2-2
Table 2-2: Allocated Contingencies for SCC Categories.....	2-4
Table 2-3: LACMTA June 30, 2014 Trial Balance: Fund 3562, State Repayment of Capital Project Loans (YOE \$M)	2-9
Table 2-4: Summary of Federal Share of Westside Purple Line Extension Section 2 Project Costs	2-10
Table 2-5: Westside Purple Line Extension Uses and Sources of Funds (YOE \$M) - Section 1, FY2011 to FY2026.....	2-12
Table 2-6: Westside Purple Line Extension Section 2 Uses and Sources of Funds (YOE \$M) - Section 2, FY2013 to FY2026.....	2-13
Table 2-7: Westside Purple Line Extension Uses and Sources of Funds Section 3, FY2025 to FY2036 (YOE \$M).....	2-14
Table 2-8: Westside Purple Line Extension Uses and Sources of Funds All Sections, FY2015 to FY2025 (YOE \$M).....	2-15
Table 2-9: Westside Purple Line Extension Uses and Sources of Funds All Sections, FY2026 to FY2036 and Total (YOE \$M)	2-16
Table 2-10: Westside Purple Line Extension Revenue Vehicle Service Hours, FY2024 to FY2035.....	2-18
Table 3-1: LACMTA Transit Asset Management Database Condition Ratings.....	3-3
Table 3-2: LACMTA Rail System Condition Ratings	3-4
Table 3-3: Rail Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)	3-5
Table 3-4: LACMTA Bus Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)	3-8
Table 3-5: LACMTA Funded Highway Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)	3-11
Table 3-6: LACMTA Sources of Funds: 10-Year History and Trends, FY2006 to FY2015 (YOE \$M)	3-12
Table 3-7: Revenue Forecast for Major LACMTA Local Sources, FY2016 to FY2035 (YOE \$M)	3-14
Table 3-8: Proposition A Revenue Allocations and Debt Policy.....	3-15

WESTSIDE PURPLE LINE EXTENSION SECTION 2

Table 3-9: Proposition A Outstanding Debt Obligations (YOE \$M)	3-16
Table 3-10: Proposition C Revenue Allocations and Debt Policy	3-17
Table 3-11: Proposition C Outstanding Debt Obligations (YOE \$M)	3-17
Table 3-12: Measure R Revenue Allocations	3-18
Table 3-13: Measure R Expenditure Plan Project Prioritization.....	3-19
Table 3-14: Measure R Outstanding Debt Obligations.....	3-19
Table 3-15: Revenue Forecast for Major LACMTA State Sources, FY2016 to FY2035 (YOE \$M)	3-21
Table 3-16: Revenue Forecast for Major LACMTA Federal Sources, FY2016 to FY2035 (YOE \$M)	3-23
Table 3-17: Measure R Expenditure Plan Funding Breakout: Federal and Measure R Funds (YOE \$M)	3-28
Table 3-18: Measure R Expenditure Plan Funding Breakout: State and Local Funds (YOE \$M)	3-29
Table 3-19: Measure R backed Financing Instrument Proceeds, FY2016 to FY2035 (YOE \$M).....	3-32
Table 3-20: Measure R backed Financing Instrument Draw-Downs (YOE \$M).....	3-33
Table 3-21: Measure R backed Financing Instrument Debt Service, FY2016 to FY2035 (YOE \$M)	3-35
Table 3-22: LACMTA Capital Plan by Funding Source, FY2016 to FY2035 (YOE \$M).....	3-37
Table 3-23: LACMTA Capital Plan by Agency, FY2016 to FY2035 (YOE \$M)	3-38
Table 3-24: Historic Rail Revenue Service Hours, FY2003 to FY2015 (Thousands)	3-39
Table 3-25: Historic Bus Revenue Service Hours, FY2003 to FY2015 (Thousands)	3-39
Table 3-26: CPI Escalation Rates, FY2016 to FY2035	3-41
Table 3-27: Historic Cost per Hour, Total Bus, FY2003 to FY2015	3-42
Table 3-28: Historic Cost per Hour, Total Rail, FY2004 to FY2015	3-42
Table 3-29: Systemwide Rail O&M Costs, FY2016 to FY2035 (YOE \$M).....	3-43
Table 3-30: LACMTA-Operated Rail O&M Costs, FY2016 to FY2035 (YOE \$M)	3-44
Table 3-31: Historic LACMTA-Operated Rail O&M Costs, FY2003 to FY2015 (YOE \$M)	3-46
Table 3-32: Systemwide Bus O&M Costs, FY2016 to FY2035 (YOE \$M).....	3-48
Table 3-33: Historic LACMTA-Operated Bus O&M Costs, FY2003 to FY2014 (YOE \$M).....	3-49
Table 3-34: Projected Systemwide Rail O&M Revenue, FY2016 to FY2035 (YOE \$M).....	3-50
Table 3-35: Projected LACMTA Funded Bus O&M Revenue, FY2016 to FY2035 (YOE \$M).....	3-52
Table 3-36: LACMTA Funded O&M Revenue Levels by Operating Category, FY2016 to FY2035 (YOE \$M)	3-53
Table 3-37: CAGR for Bus and Rail O&M Revenue Sources, FY2016 to FY2035 (YOE \$M)	3-55
Table 3-38: LACMTA Operating Plan by Funding Source, FY2016 to FY2035 (YOE \$M).....	3-64
Table 3-39: LACMTA Operating Plan by Funding Agency, FY2016 to FY2035 (YOE \$M)	3-65
Table 3-40: LACMTA Capital and Operating Financial Plan Results, FY2016 to FY2035 (YOE \$M)	3-66

WESTSIDE PURPLE LINE EXTENSION SECTION 2



Table 4-1: LACMTA Debt Affordability Targets and Minimum Debt Service Coverage Ratios (DSCR) 4-5

Table 5-1: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus for Base Case and Capital Project Cost Increase Sensitivity Analysis Scenario, FY2016 to FY2035 (YOE \$M) 5-6

Table 5-2: LACMTA Projected Debt Service Coverage Ratios Base Case and Capital Project Cost Increase Sensitivity Analysis Scenario, FY2016 to FY2035 5-8

Table 5-3: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus for Base Case and Reduced Sales Tax Revenue Sensitivity Analysis Scenario, FY2016 to FY2035 (YOE \$M) 5-10

Table 5-4: LACMTA Projected Debt Service Coverage Ratios Base Case and Reduced Sales Tax Revenue Sensitivity Analysis Scenario, FY2016 to FY2035 5-13

Table 5-5: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus for Base Case and Operating Plan Sensitivity Analysis Scenario, FY2016 to FY2035 (YOE \$M)..... 5-15

Table 5-6: LACMTA Projected Debt Service Coverage Ratios Base Case and Operating Plan Sensitivity Analysis Scenario, FY2016 to FY2035..... 5-18

List of Figures

Figure 1-1: Westside Purple Line Extension Alignment and Stations..... 1-10

Figure 2-1: Long Term Capital Cost Indices in the Los Angeles Region 2-5

Figure 2-2: Westside Purple Line Extension Section 2 Sources of Funds (YOE \$M), Section 2, FY2013 to FY2026..... 2-6

Figure 2-3: All Sections of Westside Purple Line Extension Sources of Funds (YOE \$M), All Sections, FY2011 to FY2036 2-7

Figure 2-4: Westside Purple Line Extension Annual O&M Costs, FY2024 to FY2036 (YOE \$M) 2-18

Figure 3-1: Total Rail Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M) 3-6

Figure 3-2: Annual Rail Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M) 3-7

Figure 3-3: Total Bus Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M) 3-9

Figure 3-4: Annual Bus Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M) 3-10

Figure 3-5: LACMTA Capital Revenues, FY2006 to FY2015 (YOE \$M) 3-13

Figure 3-6: Measure R backed Financing Instrument Draw-Downs (YOE \$M) 3-34

Figure 3-7: Measure R backed Financing Instrument Debt Service, FY2016 to FY2035 (YOE \$M) 3-36

Figure 3-8: Projected Bus and Rail Service Hours, FY2016 to FY2035 (Millions) 3-40

Figure 3-9: Annual LACMTA-Operated Rail O&M Costs, FY2016 to FY2035 (YOE \$M) 3-45

Figure 3-10: LACMTA Portion of Projected Metrolink Commuter Rail O&M Costs, FY2016 to FY2035 (YOE \$M)..... 3-47



Figure 3-11: Annual Systemwide Bus O&M Costs, FY2016 to FY2035 (YOE \$M) 3-48

Figure 3-12: Projected Systemwide Rail O&M Revenue, FY2016 to FY2035 (YOE \$M)..... 3-51

Figure 3-13: Projected Systemwide Bus O&M Revenue, FY2015 to FY2035 (YOE \$M)..... 3-53

Figure 3-14: Systemwide Rail Annual Local Funding Sources, FY2016 to FY2035 (YOE \$M) 3-56

Figure 3-15: Systemwide Bus Annual Local Funding Sources, FY2016 to FY2035 (YOE \$M) 3-57

Figure 3-16: Annual State Transit Assistance, FY2016 to FY2035 (YOE \$M)..... 3-60

Figure 3-17: Rail Annual Federal Funding Levels, FY2016 to FY2035 (YOE \$M) 3-61

Figure 3-18: Bus Annual Federal Funding Levels, FY2016 to FY2035 (YOE \$M)..... 3-61

Figure 3-19: LACMTA Controlled Highway Operations Related Costs, FY2016 to FY2035 (YOE \$M) 3-63

Figure 4-1: Funding Sources for Rail, Transit Corridors, and Bus Capital Programs, FY2016 to FY2035 (in YOE \$, millions) 4-2

Figure 4-2: Sources Used to Fund Annual Systemwide Bus O&M Costs, FY2016 to FY2035 (YOE \$M) 4-3

Figure 4-3: Sources Used to Fund Annual Systemwide Rail O&M Costs, FY2016 to FY2035 (YOE \$M) 4-4

Figure 4-4: Proposition A 35 percent Projected Annual DSCR, FY2016 to FY2035 4-6

Figure 4-5: Proposition C 25 percent Projected Annual DSCR, FY2016 to FY2035 4-6

Figure 4-6: Proposition C 40 percent Projected Annual DSCR, FY2016 to FY2035 4-7

Figure 4-7: Proposition C 10 percent Projected Annual DSCR, FY2016 to FY2035 4-7

Figure 4-8: Measure R 35 percent Projected Annual DSCR, FY2016 to FY2035..... 4-8

Figure 4-9: Annual O&M Costs of LACMTA Operated Bus and Rail Services in Comparison to Fare Revenues, FY2016 to FY2035 (YOE \$M) 4-9

Figure 4-10: Annual Farebox Revenues Relative to Achieving a 30 percent Farebox Recovery Ratio for LACMTA Operated Bus and Rail Services, FY2016 to FY2035 (YOE \$M) 4-10

1.0 INTRODUCTION

1.1 Purpose of Financial Plan

The purpose of this financial plan is to document the financial capacity of the Los Angeles County Metropolitan Transportation Authority (LACMTA) to construct and operate the Westside Purple Line Extension Section 2 project. This plan is an updated version of the Financial Plan submitted to FTA in September 2014 and incorporates several important changes as described below.

The plan will assist the LACMTA Board of Directors, FTA, local officials, and the general public in understanding and evaluating LACMTA's financial capacity to implement the Westside Purple Line Extension Section 2 project while continuing to operate, maintain, expand, and enhance the existing transit system (background transit system). Included in the plan is a review of LACMTA's recent financial history and current financial condition, documentation of the projected capital and operating costs and proposed revenue sources for the Westside Purple Line Extension Section 2 project and the background transit system, and review of the key assumptions underlying the cost and revenue projections.

The plan also includes an updated summary of LACMTA's Measure R Expenditure Plan, which assumes implementation of the Measure R program as anticipated in LACMTA's 2009 Long Range Transportation Plan. The Westside Purple Line Extension Section 2 financial plan does not assume a Measure R Extension and assumes that LACMTA will apply Transportation Infrastructure Finance and Innovation Act (TIFIA) direct loans of \$856.0 million and \$160 million in approved financing for the Westside Purple Line Extension Section 1 and the Regional Connector projects, respectively, in addition to the \$545.9 million for the Crenshaw /LAX transit corridor. In addition, an updated capital cost estimate is applied for the Westside Purple Line Extension project sections. These estimates were developed from advanced preliminary engineering drawings for Section 2 and specifications used for the Section 1 Design-Build contract.

The capital cost estimate was developed on the basis of advanced preliminary engineering drawings for Section 2 and specifications used for the Section 1 Design-Build contract. The Building Information Model (BIM) for Section 1 was used to estimate quantities for earthwork, shoring and concrete. Tunneling quantities were developed according to current project alignments, and tunneling equipment and plant specifications were based on utilizing earth pressure balance (EPB) tunnel boring machines (TBM). Station mechanical, electrical and plumbing design, and station finishes for Section 2 are assumed to be identical to comparable Section 1 stations. Unit costs for Section 2 were informed by work crew compositions developed for Section 1 Engineer's Estimate with appropriate modifications where required. Material prices used in Section 2 capital cost estimate are based on vendor quotes and trade publications received for Section 1 and updated prices for major items such as concrete, structural steel and rebar.

Further, in accordance with FTA guidelines, unallocated contingency of 10 percent is included in the capital cost estimate. The allocated contingencies for each of the Standard Cost Categories (SCC) are provided in Section 2.

LACMTA will implement the Westside Purple Line Extension project on a segmented basis, and intends to enter into separate FFGAs or FFGA modifications with FTA for each section of the project. The Westside Purple Line Extension Section 2 project was approved to enter into the Engineering

phase in December 2014. LACMTA is requesting that the Westside Purple Line Extension Section 2 project be recommended by the FTA for a Full Funding Grant Agreement. The updated financial plan supports this request.

The financial plan is a required component of FTA's New Starts process which provides discretionary federal funding for major fixed guideway transit projects. As a result, this financial plan has been written to meet the requirements of the FTA's June 2000 *Guidance for Transit Financial Plans*, January 9, 2013 *Final Rule on Major Capital Investment Projects* (49 CFR Part 611), August 2013 *New and Small Starts Evaluation and Rating Process Final Policy Guidance*, and *Section 8: Financial Planning for Transit of FTA's Procedures and Technical Methods for Transit Project Planning*.

Unless otherwise noted, all amounts in this financial plan are presented on the basis of the LACMTA fiscal year, from July 1 to June 30. For example, FY2016 refers to LACMTA's fiscal year starting on July 1, 2015 and ending on June 30, 2016. All dollar amounts shown, unless otherwise noted, are in year of expenditure (YOE) dollars.

1.2 Key Changes since the 2014 Financial Plan

The Financial Plan for the Westside Purple Line Extension and Regional Connector projects was submitted to FTA in September 2014. LACMTA has made several changes to its financial plan in response to FTA's comments on that plan and has also updated the financial plan with more recent information for several key assumptions. These are summarized below:

1.2.1 Capital Costs

- Capital costs for the Westside Purple Line Extension project are based on updated cost estimates documented in revised SCC spreadsheets. The capital cost estimates were revised to include project expenditures through FY2015, current in-progress estimate changes within each SCC category, and an updated projection of finance charges. These estimates were developed from advanced preliminary engineering drawings for Section 2 and specifications used for the Section 1 Design-Build contract. The project cost estimate continues to assume segmentation of the project into three construction sections and design-build project delivery for civil works, systems, and testing for all three sections.
- The capital costs reflect the results of the ongoing risk assessment process. Throughout engineering and design, LACMTA has been engaged in the risk assessment process with FTA and its Project Management Oversight Contractor (PMOC), which has resulted in revised project cost estimates, adjustments to the project cost contingency levels and identification of secondary cost mitigation measures. A detailed Risk and Contingency Management Plan (RCMP) was implemented during conceptual engineering and has been updated and maintained during each subsequent project phase. Each project risk that has been identified is either a cost or schedule risk or both.

As the project progresses into final design and construction, each identified risk has had a mitigation measure applied, that has resulted in updated cost, schedule or both. Besides risk avoidance, LACMTA could retain the risk, share or transfer the risk to the design/build contractor. Those risks that have been maintained to date have applicable mitigation measures that have been quantified in dollars or time or both.



The Schedule of Quantities and Prices within the design/build contract account for potentially known risks over the life of the project. Each risk is quantified as either a provisional sum amount that has been provided by LACMTA or by an estimated quantity for the design/build contractor to price. The design/build contractor will not be entitled to dollars or time associated with any risk, until at such time the risk is realized.

LACMTA has also identified secondary cost mitigation measures that are to be triggered when project cost overruns are encountered on FTA prescribed phase-based cost targets. The secondary cost mitigations measures are described within the RCMP.

A copy of the Unified Cost Management Process and Policy for Measure R Projects is provided as supporting documentation to explain the steps necessary to revise project schedules or costs.

1.2.2 Capital Revenue Sources

- Under this Financial Plan, Section 2 of the Westside Purple Line Extension would receive a total of \$1,187 million in New Starts funding between FY2016 and FY2026, which equals 48 percent of the capital cost estimate (including finance charges) for that section. This is just less than the \$1,200 million New Starts funding assumed a year ago.
- Other funding sources for Section 2 continue to include Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding of \$169 million (unchanged from a year ago) and a mix of local funds totaling \$1,111 million (an increase of \$17 million from a year ago). Most of the local share continues to come from the Measure R program, including a \$307 million TIFIA loan backed by Measure R.
- LACMTA is preparing to submit a TIFIA Application for the Westside Extension Section 2 project. The Application assumes that the loan will be less than 33 percent of project costs (as defined by the TIFIA program) and the Credit Rating will be of sufficient quality to enable the Secretary of Transportation to sign a waiver to the springing lien provision that was a standard requirement for TIFIA borrowers prior to adoption of the Moving Ahead for Progress in the 21st Century (MAP-21) transportation reauthorization legislation in 2012. The direct relationship made possible by the Secretary’s waiver is expected to enhance the credit quality for the benefit of both parties to the TIFIA loan. The term sheet submitted in support of the Indicative Credit Rating will be based on these assumptions. It is anticipated that the major capital projects will receive \$1,869 million in direct TIFIA loan draws through FY2021, representing an assumed front-end commitment from the USDOT to provide financing for the Westside Purple Line Extension Section 1 and Section 2, Regional Connector, and Crenshaw/LAX Transit Corridor projects. The TIFIA loans would be backed by Measure R revenues, net of the 15% “Local Return” component.
- Since 2012, USDOT has approved three TIFIA loans for Metro’s capital projects, repayable with Measure R funds: \$545.9 million for the Crenshaw/LAX Transit Corridor project (approved October 1, 2012), \$160.0 million for the Regional Connector project (approved February 20, 2014) and \$856.0 million for the Westside Purple Line Extension Section 1 Project (approved May 21, 2014.) In addition, the Plan anticipates a separate TIFIA loan of \$307 million for the Westside Purple Line Extension Section 2 project.



- The total amount of Federal assistance for the Westside Purple Line Extension Section 2 project, including FTA New Starts funds, CMAQ funds, and the TIFIA Loan proceeds, is \$1,663 million. This amount is 67 percent of the total project costs that are eligible for TIFIA assistance, which totals \$2,378 million, and is less than the maximum federal participation rate of 80 percent. The total project costs eligible for TIFIA assistance include: planning and environmental costs and project capital costs. TIFIA finance costs are not eligible for TIFIA assistance; as such these costs have been excluded from the calculation of the percentage of Federal assistance.
- Sales tax revenues, including Proposition A, Proposition C, Measure R, and TDA revenues, have been projected off of FY2014 and FY2015 estimated actuals. The actual FY2014 cash collections of \$2,132 million represented a 4.6 percent growth over the previous year. Actual cash collections for the four quarters of FY2015 show an average growth of approximately 4.4 percent over the same quarters in the prior year, as summarized in Table 1-1.

Table 1-1: LACMTA Combined Proposition A, Proposition, C and Measure R Sales Tax Cash Receipts

Quarter	FY14 Actual	FY15 Actual	\$ Change Year Ago	% Change Year Ago
FY Q1	\$ 536,272,325	\$ 553,120,023	\$ 16,847,698	3.14%
FY Q2	\$ 527,781,016	\$ 568,169,193	\$ 40,388,177	7.65%
FY Q3	\$ 548,381,185	\$ 566,187,591	\$ 17,806,406	3.25%
FY Q4	\$ 519,659,332	\$ 537,742,245	\$ 18,082,913	3.48%
FY Totals	\$ 2,132,093,858	\$ 2,225,219,052	\$ 93,125,194	4.37%

Note: Table summarizes quarterly cash receipts, which differ from Comprehensive Annual Financial Report (CAFR) totals that include accruals.

- The growth rates applied to local funding sources including Proposition A, Proposition C, Measure R, and TDA revenues, have been updated with information from the 2014 UCLA Anderson Forecast for FY2015 and onward. These forecasted growth rates for local sales tax revenues provide a reasonable set of assumptions for the capital plan. The growth rates in the near term have been slightly raised to rates that are more consistent with recent actual receipts. While the forecasted Compound Annual Growth Rate (CAGR) for FY2016 to FY2035 is 4.1 percent, the CAGR for FY2016 to FY2020 is 4.6 percent. This is lower than the actual CAGR from FY2010 to FY2016 of 5.6 percent. As described below, the total amount of local sales tax revenues forecasted from FY2016 to FY2035 has increased slightly from \$82.6 billion in the September 2014 Financial Plan to \$82.8 billion in this plan.

LACMTA acknowledges that there is a compounded risk of using the higher sales tax receipts as the basis for the life of the plan, but believe the assumptions applied in this financial plan are reasonable, partially because higher CAGR's are typically experienced after a major economic recession. The Los Angeles economy, like the rest of the country, is recovering from a severe economic downturn. Growth tends to be strong in recovery periods due to expenditures that were deferred during the downturn. There have been three previous downturns since Proposition A collections began in 1984. The CAGR for each of the three



recovery periods is given in Table 1-2, along with the forecast for this recovery. This plan projects a CAGR of 5.6 percent from FY10 to FY16. That is in line with both the length and strength of previous recoveries. Beyond that time period, growth is projected to slow. The CAGR from FY2016 to FY2035 is 4.1 percent. It is impossible to predict the business cycle that far out, so lower growth rates reflect the expectation that economic downturns will occur.

Table 1-2: LACMTA Sales Tax Revenue Growth Following Recent Economic Downturns

Time Period	Years	CAGR
FY1987-FY1991	4	6.00%
FY1994-FY2001	7	5.60%
FY2002-2007	5	5.50%
FY2010-FY2016 (Forecast)	6	5.64%

Through the end of the decade in FY2020, this New Starts financial plan forecasts slightly less sales tax revenue than the previous financial plan submitted in September 2014. The CAGR from FY2016 to FY2020 in this New Starts Financial Plan update is 4.6 percent, slightly above the 4.3 percent CAGR for the same period from the September 2014 Financial Plan. The actual receipts in FY2014, however, were \$8.8 million under the FY2014 LACMTA Budget forecast assumption for that year.

In FY2014, actual sales tax revenues have continued to experience high growth: actual receipts are approximately \$104 million higher than they were in FY2013, as summarized in Table 1-3. However, FY2015 receipts are \$22.0 million less than previously budgeted, and FY2016 and FY 2017 forecasts are revised downward. Despite some upward revision for FY2018 to FY2020, through the end of the decade in FY 2020, this New Starts Financial Forecast has \$19 million less sales tax revenue than the September 2014 Plan forecast, or a difference of 0.1 percent.

Table 1-3: Comparison of Projected Sales Tax Revenue, August 2015 and September 2014 New Starts Financial Plan (YOE \$M)

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	Total
August, 2015	\$ 2,269	\$ 2,403	\$ 2,507	\$ 2,612	\$ 2,736	\$ 2,875	\$ 3,012	\$ 3,145	\$ 3,275	\$ 24,835
September, 2014	2,269	2,403	2,516	2,634	2,762	2,878	3,000	3,125	3,266	24,854
Difference	\$ -	\$ -	\$ (8.8)	\$ (22.0)	\$ (26.0)	\$ (3.5)	\$ 12.2	\$ 19.8	\$ 8.9	\$ (19.4)
% Difference	-	-	-0.3%	-0.8%	-0.9%	-0.1%	0.4%	0.6%	0.3%	-0.1%

	Budget
	Actual

Note: Table includes TDA in totals. FY15 values are forecast per LACMTA recent financial model, which does not include actuals from Table 1-1. FY14 actuals differ in CAFR, and as noted in the financial model, may be higher due to a one-time accrual from FY09.

- Per the Measure R expenditure Plan, local agencies are expected to contribute an amount equal to three percent of total costs for transit projects.



- LACMTA maintains statutory control of CMAQ funds, as provided in the following summary of California State Law. Since the creation of the CMAQ program, California has been a leader in directing the funds to those areas where it is needed most by applying the federal weighted population formula in its suballocation of these funds to the counties and regions of the State. LACMTA is responsible for programming its weighted population share of CMAQ funds in Los Angeles County. Specifically, Section 182.7(c) of California Streets and Highways Code states the following:

"Notwithstanding subdivision (b), where county transportation commissions have been created by Division 12 (commencing with Section 130000) of the Public Utilities Code, all congestion mitigation and air quality program funds shall be further apportioned by the metropolitan planning organization to the county transportation commission on the basis of relative population within the federally designated air quality nonattainment and maintenance areas after first apportioning to the nonattainment and maintenance areas in the manner and in accordance with the formula set forth in subsection (b) (2) of Section 104 of Title 23 of the United States Code."

MAP-21 grandfathered in the weighted population formula of Federal Fiscal Year (FFY) 2009 for States. California is therefore using the previous arrangements to also sub-allocate the funds on the same weighted population basis as before in FFY 2013 and FFY 2014. The California legislature is currently considering how to formalize this sub-allocation into State law, but in the meantime, Caltrans and the State of California are continuing to sub-allocate the funds as before.

- The interest rate for TIFIA loans for Westside Purple Line Extension Section 2 project has been maintained at a conservative 3.5 percent. For the TIFIA loan for Westside Purple Line Extension Section 1 which closed on May 21, 2014, the TIFIA rate was 3.23 percent for this loan maturing in 2037.

1.2.3 Operating Costs

- The operating and maintenance (O&M) cost escalation growth rates for both bus and rail have been updated to reflect consumer price index (CPI) assumptions from the August 2014 long-term UCLA Anderson Forecast. The 3.0 percent compounded annual growth rate (CAGR) for the projected bus O&M costs (FY2015 to FY2035) is consistent with the 2.64 percent historic ten-year period (FY2004 to FY2014). The 2.75 percent rail O&M cost growth rate per hour reflects the increase in costs with the start of operations of Westside Purple Line Extension Sections 1 and 2. Likewise, it is higher than the 1.13 percent CAGR in rail O&M costs over the past ten years.
- In response to FTA's request to provide more detail on projected O&M costs, the financial plan has been updated to provide more detail on LACMTA's O&M cost projections. LACMTA now has a fully allocated O&M cost model. The O&M estimates were prepared for the Base Year 2012, Horizon Year 2035 Build, and Horizon Year 2035 No Build alternatives. Build alternatives were developed to be consistent with service statistics used in the most recent ridership projections, updated in 2015. The FY 2015 O&M Cost Model and Results Memorandum has been submitted with this Plan under separate cover to better enable FTA to run its own sensitivity tests. The memorandum details the development of costs per unit of

service provided and transit service assumptions used to develop service statistics for each alternative. The memorandum also includes a comparison of the FY 2015 O&M estimates and those developed in September, 2014.

1.2.4 Operating Revenue Sources

- In the September 2014 Financial Plan, the average farebox recovery ratio for FY2015 to FY2035 was 29.9 percent for LACMTA bus and rail. For this financial plan, the average ratio over this same period is slightly lower at 28.7 percent. This reflects a conservative approach, holding forecasted fare increases to reasonable levels when combined with the increase in O&M costs.

1.2.5 Risks and Uncertainties

- The financial plan continues to demonstrate LACMTA's strategy to fund and finance the Section 2 of the Westside Purple Line Extension under three sensitivity analysis scenarios. These scenarios include capital project cost increase, reduced sales tax revenue, and reduced operating revenues
- The LACMTA Board of Directors is the responsible party for the sequencing of projects in its Long Range Transportation Plan (LRTP) for Los Angeles County. In October of 2009 the LACMTA Board unanimously adopted the sequencing of all its LRTP projects. In April 2010, the LACMTA Board of Directors adopted a policy for the 30/10 Initiative, an effort to accelerate its Measure R projects, which included this policy statement:

"MTA shall complete projects accelerated through 30/10 in the same sequence as the adopted 2009 Long Range Transportation Plan (LRTP)"

In the Unified Cost Management Process and Policy for Measure R Projects, the LACMTA Board reaffirmed its commitment to this policy. Table 1-4 summarizes the projects in the Measure R Updated Expenditure Plan, the priority of rank of the projects, and the updated opening dates for the program.



Table 1-4: Measure R Updated Expenditure Plan Project Schedule

Priority (LRTP Sequence)	Project	Completion Schedule (FY) (Does Not Modify Priorities)
1	Orange Line Canoga Extension	2012
2	Exposition - Phase II	2016
3	Gold Line Foothill Extension (from Pasadena) Phase 2A	2016
4	East San Fernando Valley North-South Corridor	2018
	Crenshaw/LAX Transit Corridor	2020
5	Regional Connector	2021
	Westside Purple Line Extension - Section 1	2024
6	Westside Purple Line Extension - Section 2	2026
7	West Santa Ana Branch	2027
8	Airport Metro Connector	2023
9	South Bay Green Line Extension	2035
	Gold Line Eastside Extension Phase II	2035
10	Westside Purple Line Extension - Section 3	2035
11	Sepulveda Pass Transit Corridor	2039

- In the event of cost increases or revenue decreases that would prevent LACMTA from going to construction on any of the 12 projects shown above, LACMTA would begin to defer projects at the bottom of the list in favor of projects at the top of the list per its previous policy actions. The cost of projects prioritized below Westside Purple Line Extension Section 2 totals over \$4 billion. This shows that the risk that LACMTA will not be able meet its New Starts funding commitment is extremely low.
- In March 2011, the LACMTA Board of Directors (Board) adopted the Unified Cost Management Process and Policy (Policy) for Measure R Projects. The Policy described in detail in this document establishes Measure R highway and transit project funding caps and requires specific Board action at key milestones to control and minimize potential cost increases as early in the process as possible. This Policy has been applied to manage costs of both Section 1 and Section 2 of the Westside Purple Line Extension project. In practice, the LACMTA is also using this Measure R policy for non-Measure R projects. The policy contains six steps to address any funding gap:
 - Value engineering and/or scope reductions;
 - New local agency funding resources;
 - Shorter segmentation;
 - Other cost reductions within the same transit corridor or highway corridor;
 - Other cost reductions within the same sub-region; and finally,
 - Countywide transit cost reductions and/or other funds will be sought using pre-established priorities.

WESTSIDE PURPLE LINE EXTENSION SECTION 2



Cost increases which cannot be addressed at one step will be addressed by any of the other subsequent steps. The step-by-step evaluation process will require the Board to approve an evaluation of project cost estimates against funding resources at key milestone points throughout the environmental, design, and construction phases of the Measure R highway and transit projects. If increases in cost estimates occur, the Board must approve a plan of action to address the issue before taking any action necessary to permit the project to move to the next milestone. Increases in cost estimates will be measured against the 2009 LRTP as adjusted by subsequent actions on cost estimates taken by the Board.

Throughout engineering and design, Metro has been engaged in the risk assessment process with FTA and its Project Management Oversight Contractor (PMOC). This process has resulted in revised project cost estimates, adjustments to the project cost contingency levels and identification of secondary cost mitigation measures.

During the development of the Section 2 Project, staff conducted value engineering efforts to control costs. The value engineering items believed to have the potential of yielding the largest cost savings are incorporated into the project cost estimate presented in this plan. The Project Team also analyzed constructability issues and various construction sequencing scenarios to reduce risks and the overall durations for construction. More recently, an operational analysis was also performed.

In December, 2014, Section 2 of the Westside Purple Line Extension Project entered the Engineering Phase. During the Engineering phase, staff will continue to address possible project cost reductions through value engineering and/or scope reductions, while maintaining the operational requirements of the Purple Line Extension

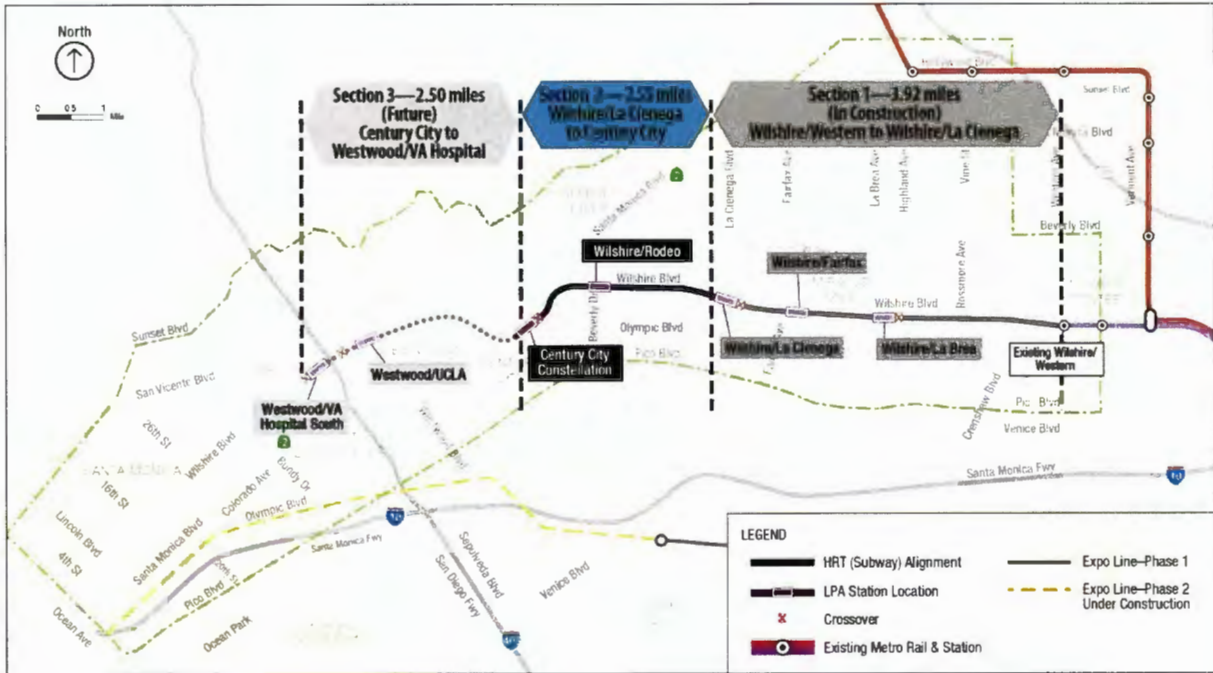
1.3 Project Descriptions

This section provides description of the project that is the subject of this financial plan, the Westside Purple Line Extension Section 2, as part of the complete Westside Purple Line Extension project.

1.3.1 Westside Purple Line Extension

The Westside Purple Line Extension is an 8.97 mile station-to-station (9 miles guideway length) subway heavy rail line that would operate as an extension of the LACMTA existing Purple Line from its current terminus at Wilshire/Western Station to a new western terminus in West Los Angeles near the Veterans Affairs (VA) Hospital in Westwood. Figure 1-1 shows the proposed Westside Purple Line Extension alignment and stations.

The Project traverses three jurisdictions, including the Cities of Los Angeles and Beverly Hills, plus portions of unincorporated Los Angeles County. Population and employment densities along the Project corridor are among the highest in the Los Angeles metropolitan region. There are numerous points of interest located throughout the corridor, including major employment centers, tourist attractions, entertainment venues, medical centers, and cultural and educational institutions. As a second central business district for the Los Angeles region, the corridor includes three key employment centers—Beverly Hills, Century City, and Westwood/UCLA.

Figure 1-1: Westside Purple Line Extension Alignment and Stations


This financial plan assumes the following construction phases for the Westside Purple Line Extension Project:

- Section 1: Wilshire/Western to Wilshire/La Cienega— November 8, 2023 (FY2024) opening, which is forecasted earlier than the FFGA opening date of October 31, 2024.
- Section 2: Wilshire/La Cienega to Century City—August 30 2025 (FY2026) opening assumed in the financial plan. Section 3: Century City to Westwood/VA Hospital—December 31, 2035 (FY2036) opening

1.3.1.1 Alignment

The twin tunnels for the Westside Purple Line Extension alignment would begin at the existing Wilshire/Western Station. From this station, the alignment would travel westerly within the existing Wilshire Boulevard right-of-way. Stations would be located at the intersections of Wilshire/La Brea, Wilshire/Fairfax, Wilshire/La Cienega and Wilshire/Rodeo. All four of these station boxes would be located within the Wilshire Boulevard right-of-way with station portals extending to off-street entrances.

From the Wilshire/Rodeo Station, the alignment would travel west under Wilshire Boulevard to just east of Linden Drive. At this juncture, the alignment would curve southwesterly to Lasky Drive. The alignment would then turn southwesterly under Constellation Boulevard to the Century City Station on Constellation Boulevard at Avenue of the Stars.

From the Century City Station at Constellation Boulevard, the alignment would turn northwesterly under the Westfield Mall and would continue northwesterly beneath Santa Monica Boulevard toward Thayer Avenue and would traverse beneath the private properties until Westholme Avenue,

WESTSIDE PURPLE LINE EXTENSION SECTION 2

where it would turn westward beneath Wilshire Boulevard to the Westwood/UCLA Station located just west of Westwood Boulevard. From the Westwood/UCLA Station, the alignment would continue westerly beneath Wilshire Boulevard and then veer slightly south of Wilshire Boulevard, crossing beneath the I-405 to the Westwood/VA Hospital Station, located on VA property south of Wilshire Boulevard. Tail tracks would continue west of the Westwood/VA Hospital Station, terminating at an emergency exit shaft just north of VA property in the Wilshire Boulevard right of way.

The Project includes seven new underground stations:

■ **Section 1**

- **Wilshire/La Brea**—The station box would be located under the center of Wilshire Boulevard in between Detroit Street and Orange Drive. A double crossover would be located east of this station. The entrance would be on the northwest corner of Wilshire Boulevard and La Brea Avenue.
- **Wilshire/Fairfax**—The station box would be under the center of Wilshire Boulevard from just west of Fairfax Avenue to just west of Ogden Drive. The entrance would be on the southeast corner of Wilshire Boulevard and Orange Grove Avenue.
- **Wilshire/La Cienega**—The station box would be under the center of Wilshire Boulevard immediately east of La Cienega Boulevard. A double crossover would be located east of this station. The entrance would be on the northeast corner of Wilshire Boulevard and La Cienega Boulevard.

■ **Section 2**

- **Wilshire/Rodeo**—The station box would be under the center of Wilshire Boulevard, beginning just east of South Canon Drive, and extending to El Camino Drive. The entrance would be on the southwest corner of Wilshire Boulevard and Reeves Drive.
- **Century City (Constellation)**—The station box would be under the center of Constellation Boulevard, straddling Avenue of the Stars and extending westward to east of MGM Drive. A double crossover would be located east of this station. The entrance would be on the northeast corner of Constellation Boulevard and Avenue of the Stars.

■ **Section 3**

- **Westwood/UCLA**—The station box would be located under Wilshire Boulevard from Westwood Boulevard to just east of Veteran Avenue. Station entrances would be located on the northwest corner of Wilshire Boulevard and Gayley Avenue, and the northwest and southwest corners of Wilshire Boulevard and Westwood Boulevard.
- **Westwood/VA Hospital**—The station box would be located on the south side of Wilshire Boulevard along the northern edge of the VA Hospital parking lot. The entrance would be located on the Bonsall level, beneath the bus drop-off area to the north of the VA Hospital parking lot. To accommodate the grade separation at this site, additional stairs, escalators, and elevators connecting the Wilshire level and the Bonsall level would be located on both the north and south sides of Wilshire Boulevard. A parking structure providing both permanent and temporary replacement parking for the VA Hospital would be located in the existing physician’s parking lot, east of the VA Hospital. Double

crossover tracks would be located east and west of the station. The double crossover tracks east of the station would be located on GSA and Caltrans property in front of the Federal Building, between the Westwood/UCLA and Westwood/VA Hospital Stations. Tail tracks would extend west of the station to an emergency exit shaft located on the south side of Wilshire Boulevard.

The precise location of these stations, as well as the alignment between them, may be refined during the final design. Those listed above represent the assumptions underlying the cost estimates presented later in this report.

Stations would consist of a station “box,” or area in which the basic components are located. With the exception of the Westwood/VA Hospital Station, all station boxes would be located within the street right-of-way and all would be constructed by the cut-and-cover method. The station box would be accessed from street-level entrances by stairs, escalators, and elevators that would bring patrons to a mezzanine level where the ticketing functions are located. Three types of mezzanines are possible—center, single-ended, or double-ended. The 450-foot platforms are one level below the mezzanine level and will allow level boarding (i.e., the train car floor is at the same level as the platform). Stations consist of a center platform.

Each station is equipped with under-platform exhaust shafts, over-track exhaust shafts, blast relief shafts, and fresh air intakes. In all stations with the exception of Westwood/UCLA, it is anticipated that only one station entrance would be constructed as part of the Project, but additional entrances could be constructed as a part of station area development (by others). Platforms would be well-lit and include seating, trash receptacles, artwork, signage, safety and security equipment (closed-circuit television, public announcement system, passenger assistance telephones), and a transit passenger information system. The fare collection area includes ticket vending machines, fare gates, and map cases. No parking for Metro passengers is planned at any of the stations.

1.3.1.2 Supporting Facilities and Other Components

To support this Project, LACMTA’s rail fleet would be increased by 78 heavy rail vehicles for a total of 182 heavy rail vehicles in the entire rail fleet. In order to accommodate this growth in rail fleet, more storage capacity would be needed. Fifty-eight of these vehicles would be acquired for the opening of Section 1, 34 under the Section 1 Project and 24 for the Red Line (purchased separately). Twenty vehicles will be obtained for the opening of Section 2.

Because the existing yard has an effective capacity of 200 cars, including those in maintenance, no major capacity expansion is required to accommodate Westside’s fleet. The primary changes planned for the existing yard would occur during the construction of Section 1. Existing buildings, facilities, and parking lots will be displaced by new turnback tracks, including maintenance of way (MOW) Buildings 61B and 61C which house MOW stores, Metro Gold Line stores, and non-revenue vehicle maintenance. A scheme for relocating these facilities at the south end of the site is proposed.

Several other components would be required for construction and operation of the Project. These components include traction power substations (TPSS) and emergency generators. TPSSs are required to provide traction power for the heavy rail technology (HRT) and would be located in a below grade structure at every station along the alignment with the exception of the Wilshire/Fairfax Station. Emergency generators would be located at the Wilshire/La Brea and Wilshire/La Cienega Stations.

Emergency exit shafts will be constructed at the western terminus of the tail track tunnels. The emergency exit shaft will be located in the Wilshire Boulevard right-of-way, to the west of Bonsall Avenue.

Table 1-5 summarizes the Project’s physical scope assumed as the basis for cost estimates at the initiation of Final Design.

Table 1-5: Westside Purple Line Extension Project Scope

Characteristic	Scope Summary
Mode	Heavy rail technology (HRT)
Alignment	Section 1: Wilshire/Western to Wilshire/La Cienega via Wilshire Boulevard. Section 2: Wilshire/La Cienega via Wilshire Boulevard to just west of the Wilshire/Rodeo Station, where the alignment turns southwest to connect to the Century City Station on Constellation Boulevard. Section 3: From the Century City Station, the alignment turns northwest to reconnect to Wilshire Boulevard and the Wilshire/UCLA Station beneath Wilshire Boulevard and then turns southwest, crossing I-405 and terminates just west of the Westwood/VA Hospital Station.
Alignment mileage	Section 1: 3.92 miles Section 2: 2.55 miles Section 3: 2.50 miles Total: 8.97 miles station to station (9 miles guideway length)
Plan and profile	Subway (with top of tunnel a minimum of 30 to 70 feet below the ground)
Number of stations	Section 1: 3 stations Section 2: 2 stations Section 3: 2 stations Total: 7 stations
Platform length	450 feet
Platform height	Level boarding
Features	Stairs, elevators, escalators, entrance canopy, ticket-vending machines, bicycle parking, landscaping, seating, lighting, CCTA/PA systems, passenger information systems, artwork, and trash receptacles.
Traction power substations (TPSS)	Located in the station box or in the crossover box. TPSSs would require a 50 feet by 100 feet of subsurface area
Emergency Generators	Located at the Wilshire/La Brea and Wilshire/La Cienega Stations. Emergency generators would require approximately 50 feet by 100 feet of property.
Maintenance and Storage Facility	Existing buildings, facilities, and parking lots will be displaced by new tumbback tracks, including maintenance of way (MOW) Buildings 61B and 61C which house MOW stores, Metro Gold Line stores, and non-revenue vehicle maintenance. Relocating these facilities to the south end of the site is under the Section 1 Project scope.
Length per vehicle	75 feet per car
Multi-vehicle trains	4-6 car trains
Train length	450 feet
Passenger capacity per car	180
Passenger capacity per train	1,080
Fleet	54 vehicles purchased for Project (34 Section 1, 20 Section 2) 182 vehicles in total fleet

1.3.1.3 Operating Plan

The Westside Purple Line Extension would operate seven days per week, including holidays. Hours of service will be similar to those operated on the existing Metro Purple, Red, Blue, Gold, and Orange Lines. Service will be provided from approximately 4:30 a.m. to 1:30 a.m., seven days a week. Weekday service would operate during peak periods of 6:00 to 9:00 a.m. and 3:00 to 7:00 p.m., and during the off-peak midday period between 9:00 a.m. and 3:00 p.m. Off peak service early morning and late night periods will occur from 5:00 to 6:00 a.m. and 7:00 p.m. to 1:00 a.m.

In the opening year headways will be 10 minutes during peak periods and 12 minutes during off-peak periods on weekdays. Weekend and holiday headways will range from 10-15 minutes. These assumptions are consistent with current operating conditions.

In the 2035 design year headways will be 4 minutes during peak periods and 10 minutes during off-peak periods on weekdays for both the No Build and Build alternatives. Weekend and holiday headways will range from 10-15 minutes.

1.4 Project Sponsor: Los Angeles County Metropolitan Transportation Authority

1.4.1 Organization

LACMTA was created by State of California Assembly Bill 152, Los Angeles County Metropolitan Transportation Authority Reform Act of 1992, which became effective on February 1, 1993. LACMTA is the state-chartered Regional Transportation Planning Agency (RTPA) and public transportation operating agency for Los Angeles County. As such, LACMTA is unique among the country's transportation agencies because it serves as the transportation planner and coordinator, designer, builder, and operator for the country's most populous county. More than 10.4 million people (about 30 percent of California's residents and 3 percent of the population of the United States) live, work, and play within LACMTA's 4,000 square mile jurisdiction.

1.4.2 Service Provided

LACMTA operates the second largest bus system in the United States, which is comprised of 170 bus routes, 15,967 bus stops, and a vehicle fleet of 2,246 buses available for maximum service as of FY2014, including two premium bus rapid transit dedicated busways. For the same FY2014 period, LACMTA's bus system provided approximately 6.5 million revenue service hours annually with an average of approximately 1.1 million weekday boardings, and average boardings of 28.8 million per month, including Orange Line rapid busway ridership. In addition, LACMTA contracts with outside service providers, with approximately 50,619 average weekday boardings for the three month period ending December 2014. Virtually all of LACMTA's bus fleet is powered by compressed natural gas (CNG), being the largest CNG-powered bus fleet in the United States. As of FY2014, the average age of LACMTA's bus fleet is 9.5 years.

Complementing the bus system is a rail network that is 87 miles long, comprising 80 stations distributed along six service lines (Red, Purple, Blue, Green, Gold, and Exposition lines). The Metro Red and Purple lines are heavy rail, while the other four lines are light rail. There are 275 total rail cars available for peak service along these lines, which are serviced at 4 maintenance yard facilities. According to the LACMTA FY2014 NTD submittal, the average age of LACMTA's heavy rail fleet is 18.0 years and the LRT fleet has an average age of 16.7 years. There are three light rail operating divisions, serving the Green, Gold, and Blue/Expo lines, and one heavy rail operating division serving the Red and Purple lines. Currently, average weekday rail ridership is approximately 0.36 million passenger boardings. About 114.1 million rail boardings were recorded in FY2014. Working through project-specific joint powers authorities, LACMTA has three light rail projects currently under construction, the Exposition Transit Corridor Phase II to Santa Monica, the Metro Gold Line Foothill Extension Phase 2A, and the Crenshaw/LAX Transit Corridor.

Over the past several years, LACMTA has completed several projects that demonstrate its technical capacity to manage, implement, and operate complex transit projects, such as the proposed

Westside Purple Line Extension Section 2 project. Noteworthy projects implemented during the last several years include assuming ownership and operation of the Los Angeles to Pasadena Gold Line from the Metro Gold Line Construction Authority; implementing a network of 28 new Metro Rapid lines that provide over 420 miles throughout the region and involve more than 500 vehicles in 35 cities and 4 transit operators; constructing the Metro Orange Line, a 14-mile, 13 station bus rapid transit (BRT) project that opened in late 2005, plus the 4-mile, 4-Station extension to Chatsworth that opened in 2012; and constructing the Metro Gold Line Eastside Extension that extended the Metro Gold Line to Pasadena by 5.9 miles to reach East Los Angeles. The FTA awarded LACMTA a Full Funding Grant Agreement for that project. The Exposition line from Downtown LA to La Cienega opened on April 28, 2012. Additionally, the Farmdale and Culver City stations along this line opened on June 20, 2012.

1.4.3 Current Financial Condition

As the designated RTPA for Los Angeles County, LACMTA has the authority to program, to itself and other agencies, regional transportation funds in Los Angeles County. LACMTA is legally authorized to administer the three voter-enacted local sales tax initiatives (Proposition A, Proposition C, and Measure R). Each of these initiatives imposes a sales and use tax of half a cent in Los Angeles County to fund transportation investments. While the Measure R sales and use tax has a sunset provision and will expire in FY2039, the other two initiatives are permanent. These local sales taxes flow directly to LACMTA for its use or to be programmed to other agencies according to the requirements of the applicable ordinances. The revenue generated by each initiative is expected to be about \$783 million per year in FY2016 and is projected to increase to \$1.67 billion per year by FY2035. These funds can be leveraged by bonding for capital projects. As shown in Table 1-6, LACMTA's strength as an issuer is evident in the high ratings assigned to its bonds by Standard & Poor's (S&P), Moody's, and Fitch.

Table 1-6: LACMTA Bond Ratings (as of July 2015)

Bonds Issue Type	Standard & Poor's	Moody's	Fitch
Proposition A Combined First Tier Senior Lien Bonds	AAA	Aa2	N/A
Proposition C Second Senior Sales Tax Revenue Bonds	AA+	Aa3	AA
Measure R Senior Sales Tax Revenue Bonds	AAA	Aa2	N/A
General Revenue Bonds	A	A1	N/A

In April 2014, Standard & Poor's (S&P) assigned a credit rating of A- to the TIFIA direct loan secured for the Westside Purple Line Extension Section 1 project, and in March 2014 S&P affirmed the AAA rating on the Measure R senior sales tax revenue bonds. S&P affirmed its AAA rating of Proposition A combined first tier senior lien bonds in July 2012. In June 2014 S&P affirmed its AA+ rating for Proposition C second senior sales tax revenue bonds. In February 2012, S&P affirmed its A rating for general revenue bonds.

In addition to its high bond ratings, LACMTA has a strong current operating ratio (current assets divided by current liabilities). Based on the FY2014 Comprehensive Annual Financial Report and Required Supplementary Information, LACMTA's current operating ratio is 4.96.

1.5 Project Partner: Federal Transit Administration

The FTA is the proposed funding partner for the Westside Purple Line Extension Section 2 project. Federal funding assistance from the FTA is assumed in the financial plan, both for capital and operating assistance. Approximately \$3,406 million (YOE dollars) in FTA Section 5309 New Starts funding is anticipated to implement all three sections of the Westside Purple Line Extension project, including \$1,187 million (YOE dollars) for Section 2. FTA Section 5337 State of Good Repair funds and non-New Starts capital funds are proposed to provide assistance for operations and ongoing capital expenditures, including state of good repair for the background transit system.

1.6 Regional Economic Conditions

The regional economy is large and is comprised of a broad base of industries that provide a relatively stable sales tax base. The following provides a summary of key local economic conditions.

- **Gross Domestic Product (GDP):** The Los Angeles County Economic Development Corporation estimates that Los Angeles County reached a GDP of \$583.9 billion in 2013, which would make it the 21st largest national economy in the world if Los Angeles County were a country.
- **Employment base:** Based on first quarter estimates for 2015 from the Bureau of Labor Statistics, Los Angeles County is ranked as the top county in the nation with a total employment of 4.7 million. According to July 2015 estimates from the California Employment Development Department (EDD) for May 2015, the leading industries in terms of number of persons employed are: i) Trade, Transportation & Utilities, 812,200; ii) Educational and Health Services, 778,000; iii) Health Care and Social Assistance, 643,900; iv) Professional and Business Services, 617,000; v) Government, 577,900; vi) State and Local Government, 530,600; vii) Goods Production, 494,900; and viii) Leisure and Hospitality, 482,500.
- **Unemployment:** The non-seasonally adjusted unemployment rate in Los Angeles County decreased to 7.1 percent in April 2015 from 8.3 percent in December 2014.
- **Per capita personal income:** Per capita personal income in Los Angeles County increased by 3.2 percent in 2012 and increased by 4.4 percent in 2013, the latest year of available data.
- **Taxable sales:** Related to the high unemployment rate, growth in LACMTA's taxable sales (or sales tax base) declined by 9.1 percent in FY2009 and 8.8 percent in FY2010 before rebounding with gains of 6.4 percent in FY2011, 7.8 percent in FY2012, 5.9 percent in FY2013, and 4.4 percent in FY2014.
- **Consumer inflation:** Prices in the greater Los Angeles area, as measured by the Consumer Price Index for All Urban (CPI-U), dropped 0.3 percent in June 2015 according to the Bureau of Labor Statistics. The June decrease was influenced by lower prices for gasoline and electricity. Over the last 12 months, the CPI-U advanced 0.79 percent. The index for all items less food and energy has risen 2.0 percent since June 2014.
- **Housing:** According to DQnews.com, total sales volume for all houses in Los Angeles County increased by 5.4 percent in 2015. The median selling price per square foot increased by 21.7 percent in 2014. The Case-Shiller Home Price Index for Los Angeles has increased every month during 2015 and is 22.6 percent higher than January 2013.

1.7 Updated Measure R Expenditure Plan Summary

In November 2008, more than two-thirds of Los Angeles County voters approved Measure R, a third half-cent sales tax lasting thirty years to fund transportation improvements throughout the county. Thirty-five percent of the \$35.0 billion in revenue projected from the Measure will help fund 12 major transit projects, including the Westside Purple Line Extension and Regional Connector. Measure R will also fund a multimodal program of highway and arterial improvements.

Table 1-4 summarizes the projects in the Measure R Updated Expenditure Plan, the priority of rank of the projects, and the opening dates for the program. Cash flow shortages relative to the Measure R Updated Expenditure Plan assumptions would be addressed by deferring projects in reverse order as depicted in Table 1-4. Additional detail regarding the Measure R Updated Expenditure Plan is provided in Section 3.1.

1.8 Financial Plan Summary

1.8.1 Financial Planning Process and Structure

The analysis of LACMTA's long range financial plan provided in this document has two major objectives:

- Describe the capital costs and schedule for implementing the Westside Purple Line Extension Section 2 project; the associated increases in operating and state of good repair costs; and the projected annual expenses associated with the existing transit system from the FY2016 base year through FY2036.
- Document LACMTA's financial capacity to implement the Westside Purple Line Extension Section 2 project while continuing to operate and expand the bus, rail (LRT, HRT, and commuter rail), and paratransit services comprising its existing transit system and improve the countywide highway and arterial system.

1.8.2 Westside Purple Line Section 2 Extension Project Financial Plan Summary

Table 1-7 summarizes the uses and sources of funds for each section and the total Westside Purple Line Extension project. Based on current assumptions, all three sections of the project will cost a total of \$7,664 million in YOE dollars. The total New Starts share is \$3,449 million or 45 percent of the total cost.

The total baseline Project cost of Section 2 is \$2,467 million in YOE dollars (not including environmental/planning costs). It is LACMTA's intent to fund 48 percent of the baseline cost of the Section with FTA Section 5309 New Starts, 7 percent with Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding, and the remaining portion with state or local revenue sources. A total of \$89 million in TIFIA loan finance charges are expected to be incurred between FY2017 and FY2026.

Approximately 50 percent of the funding for all three sections will be provided by Measure R tax revenues. Measure R is a voter approved half-cent transportation sales tax, of which 35 percent is mandated to be utilized for the delivery of the twelve Updated Measure R Expenditure Plan capital expansion projects, among which the Westside Purple Line Extension is a high priority. The Measure R tax revenues will be utilized to fund the Project through a combination of pay as you go funding and innovative financing mechanisms. It is important to note that the 35 percent of Measure R tax revenues that are dedicated to the twelve Updated Measure R Expenditure Plan capital expansion projects must be utilized to deliver those projects and nothing else. Thus the Westside Purple Line Extension Section 2 project will be delivered without adversely impacting funding for the existing LACMTA system.

Table 1-7: LACMTA Uses and Sources of Funds for the Westside Purple Line Extension Project, FY2011 to FY2036 (YOE \$M)

	Section 1 Total	Percent of Total	Section 2 Total	Percent of Total	Section 3 Total	Percent of Total	All Sections Total	Percent of Total
USES OF FUNDS								
Westside Purple Line Extension Baseline Project Cost ¹	\$2,779	91.4%	\$2,378	96.4%	\$2,157	100.0%	\$7,314	95.4%
Finance Charges (TIFIA Loan)	\$240	7.9%	\$89	3.6%		0.0%	\$329	4.3%
Finance Charges (Capital Grant Receipt Revenue Bonds)	\$21	0.7%		0.0%		0.0%	\$21	0.3%
TOTAL USES OF FUNDS	\$3,040	100.0%	\$2,467	100.0%	\$2,157	100.0%	\$7,664	100.0%
SOURCES OF FUNDS								
Federal	\$1,124	37.0%	\$1,356	55.0%	\$969	44.9%	\$3,449	45.0%
FTA Section 5309 New Starts Funds	\$1,250	41.1%	\$1,187	48.1%	\$969	44.9%	\$3,406	44.4%
FTA Section 5309 New Starts Capital Grant Receipt Revenue Bond Proceeds	\$372	12.2%		0.0%		0.0%	\$372	4.9%
FTA Section 5309 New Starts Capital Grant Receipt Revenue Bond Principal Repayment	(\$510)	-16.8%		0.0%		0.0%	(\$510)	-6.7%
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	\$12	0.4%	\$169	6.9%		0.0%	\$181	2.4%
Local	\$1,916	63.0%	\$1,111	45.0%	\$1,188	55.1%	\$4,214	55.0%
Measure R (Cash)	\$753	24.8%	\$497	20.1%	\$1,114	51.6%	\$2,363	30.8%
Measure R (TIFIA Loan Proceeds)	\$856	28.2%	\$307	12.4%		0.0%	\$1,163	15.2%
Measure R (TIFIA Finance Charges)	\$240	7.9%	\$89	3.6%		0.0%	\$329	4.3%
Local Agency Funds	\$75	2.5%	\$55	2.2%	\$64	3.0%	\$194	2.5%
Repayment of Capital Project Loans (Fund 3562)	(\$8)	-0.3%	\$163	6.6%	\$10	0.5%	\$165	2.2%
TOTAL SOURCES OF FUNDS	\$3,040	100.0%	\$2,467	100.0%	\$2,157	100.0%	\$7,664	100.0%

¹ Capital costs do not include environmental and planning costs.

1.8.3 LACMTA Systemwide Financial Plan Summary

LACMTA's Long Range Financial Forecasting Model was used to project and analyze annual expenses and revenues over the FY2016 to FY2035 period considered in this financial plan. The New Starts financial plan report primarily focuses on the capital and operating costs and revenues applicable to LACMTA-operated service. Capital and operating costs and revenues summarized in the financial plan also include LACMTA contributions to municipal (non-LACMTA) operated service, Metrolink, and other operators.

This financial analysis is presented in YOE dollars so that the differential effects of inflation on LACMTA's costs and revenues can be considered in the assessment of its financial capacity. Year-of-expenditure dollar values are computed by multiplying base year dollar values by an escalation factor that is compounded to reflect the year in which a particular cost or revenue is incurred or collected. For example, in YOE dollars, \$1.00 in FY2016 is equivalent to \$1.01 in FY2017, using an inflation rate of 1.0 percent. Based on the individual project implementation schedules, proposed capital and operating costs are assigned to specific years and/or time periods. Costs are then inflated to YOE dollars based on specified annual inflation rates for capital and operating costs which are described in more detail in later chapters.

Table A-1 through A-4 in Appendix A summarize the sources and uses of funds for the LACMTA transit system that will be implemented and/or in operation over the FY2016 to FY2035 time period. The tables present the capital costs and revenues, debt service costs, as well as total O&M costs and revenues by fund source (tables A-1 and A-3) and by operating agency (tables A-2 and A-4) in YOE dollars. With respect to the project pursuing New Starts funding at this time, the Westside Purple Line Extension Section 2 project's capital costs and revenues are described in detail in Section 2.1, with O&M costs and revenues described in Section 2.2. Systemwide capital costs and revenues for the background system are described in detail in Section 3.1, with systemwide O&M costs and revenues described in Section 0.

As shown throughout the financial plan, the LACMTA systemwide operating and capital costs over the FY2016 to FY2035 period reflect the following:

- Capital Costs
 - Of the total systemwide capital cost (\$43 billion), Rail and Transit Corridor capital costs comprise 75 percent with bus-related capital costs accounting for the remaining 25 percent.
 - Including projects in Measure R Updated Expenditure Plan, Major Rail and Transit Corridor projects comprise 35 percent of the total systemwide capital costs.
 - LACMTA's Rail State of Good Repair and Vehicles program for existing and future lines represents 14 percent of total systemwide capital costs.
 - Other LACMTA rail capital projects represent 4 percent of total systemwide capital costs.
 - LACMTA's capital contribution to Metrolink commuter rail is approximately 3 percent of total bus and rail capital costs.
 - LACMTA bus capital and state of good repair projects represent 14 percent of total systemwide capital costs.

WESTSIDE PURPLE LINE EXTENSION SECTION 2



- LACMTA’s capital contribution to paratransit services and municipal bus operators accounts for approximately 10 percent of total bus and rail capital costs.
- Debt Service costs for rail and bus account for 21 percent of total systemwide capital costs. Of the total systemwide debt service, 98 percent is for Rail and Transit Corridor-related debt service and 2 percent is for bus-related debt service.
- **O&M Costs**
 - Of the total systemwide bus and rail O&M costs (\$61 billion), bus-related costs account for 74 percent with rail costs accounting for the remaining 26 percent.
 - LACMTA operated bus service accounts for approximately 47 percent of total bus and rail O&M costs, and LACMTA’s subsidy to paratransit services, municipal bus operators, and the incentive program accounts for 27 percent of total bus and rail O&M costs.
 - Including security costs, existing and planned LACMTA operated rail service comprises 23 percent of total bus and rail operating costs combined.
 - LACMTA’s share of Metrolink commuter rail costs is approximately 3 percent of total bus and rail O&M costs.

1.8.3.1 Sources of Funds—Systemwide

As shown throughout the financial plan, operating and capital revenues over the FY2016 to FY2035 period reflect the following:

- **Capital Revenues**
 - Of the total systemwide capital revenues (\$43 billion), local sources provide the largest share of funding (75 percent). Of the local sources, sales tax comprises 96 percent, of which Measure R provides 42 percent, Proposition A 24 percent, Proposition C 21 percent, and Transportation Development Act (TDA) 14 percent.
 - State sources provide 3 percent of systemwide capital funding.
 - Federal sources, which include FTA Section 5309 New Starts funds, provide 22 percent of systemwide capital funding.
 - Debt proceeds provide 20 percent of total systemwide capital funding.
- **O&M Revenues**
 - Of the total systemwide O&M revenues (\$62 billion), bus and rail fare revenues comprise 14 percent and 6 percent, respectively.
 - Local sales tax revenues constitute 66 percent of total systemwide O&M revenues, of which 63 percent is for LACMTA operated bus and rail service and 37 percent is for municipal operators and paratransit.
 - Other local sources provide approximately 1 percent of total systemwide O&M revenues.
 - State Transit Assistance provides approximately 4 percent of total systemwide O&M revenues, of which approximately 86 percent is applied to LACMTA operated bus and rail service and 14 percent is for municipal operators and paratransit.



- Federal sources contribute approximately 9 percent of total systemwide O&M funding, with approximately 4 percent of funding provided from FTA Section 5307 Urbanized Area Formula funds for bus-related preventive maintenance.

1.8.4 Key Performance Indicators Summary

To document LACMTA’s financial capacity to implement the Westside Purple Line Extension Section 2 project, the financial analysis focuses on systemwide financial capacity criteria of concern to local decision-makers and required by the FTA in evaluating candidate New Starts fixed guideway projects.

Three key measures were used to reflect LACMTA’s financial capacity to implement these projects while continuing to operate, maintain, expand, and enhance the existing transit system over the FY2016 to FY2035 period.

As described in more detail in Section 4.0, the results of the performance measures evaluation reflects the following:

- **Current Capital and Operating Condition**— The current capital and operating condition of Metro is Medium High, according to the following criteria:
 - **Average Fleet Age**— Metro’s average bus fleet age is 9.5 years, which is under the threshold of 12 years to earn a Medium-Low rating.
 - **Current Ratio**— Metro’s FY2014 current operating condition and operating ratio of 4.96 exceeds the High rating threshold of 2.0.
 - **Bond Ratings**—Bond ratings for Metro’s senior tier sales tax liens backed by Proposition A, Proposition C, and Measure R exceed AA (Fitch and S&P) and Aa3 (Moody’s), above the threshold for a Medium-High rating.
 - **Cash Flows**—Historically, Metro has had positive cash flows, with no cash flow shortfalls, which meets the threshold for a High rating.
 - **Service Adjustments**—Metro has had only minor service adjustments in recent years, exceeding the threshold for a Medium rating.
- **Commitment of Capital and Operating Funds**— The commitment of capital and operating fund is High, according to the following criteria:
 - **Commitment of Capital Funding**—Local funding commitments for Westside Purple Line Extension Section 2 total 96 percent of the non-New Starts share of costs (including finance charges). Based on FTA criteria, this level of participation qualifies the project for a High rating.
 - **Commitment of Operating Funding**—From FY2016 to FY2035, 90 percent of the funds needed for system-wide O&M are existing and committed. Of these funds, 66 percent are derived primarily from LACMTA’s four existing transit sales taxes, two of which continue in perpetuity. Additionally, projected fare revenue accounts for approximately 21 percent of operating revenue. Greater than 75 percent of the funds needed to operate and maintain the proposed transit system in the opening year of the project are committed or budgeted, which is sufficient to earn the project a High rating.



- **Reasonableness of the Capital and Operating Plan**— The reasonableness of the capital and operating plans is Medium-High, according to the following criteria:

- **Reasonableness of Capital Plan**— As described in detail in Section 3 of this document, LACMTA has the financial capacity to fully fund the annual costs of the Rail, Transit Corridors, and Bus capital programs, including debt service over the FY2016 to FY2035 period. The capital plan contains conservative planning assumptions and cost estimates when compared with recent historical experience, which is sufficient to earn a Medium-High rating.

The Westside Purple Line Extension Section 2 project capital cost estimate is based on LACMTA experience and includes a 23.7 percent allocated and unallocated contingency. Moreover, as Section 5 of this report demonstrates, LACMTA has access to funds via additional debt capacity, cash reserves, or other committed funds to cover project cost increases or funding shortfalls equal to at least 10% of the estimated project cost, which contributes to a Medium-Low Reasonableness of Capital and Operating Plan rating.

- **Reasonableness of Operating Plan**— As summarized in Section 3 of this document, LACMTA maintains a balanced program to adequately fund the annual O&M costs of LACMTA bus and rail services, including paratransit, security, and preventive maintenance. The operating plan contains conservative planning assumptions and cost estimates when compared with recent historical experience, which is sufficient to earn a Medium-High rating.

As of June 30, 2015, LACMTA has approximately \$1.3 billion of cash on hand, including \$363 million in liquid reserves in discretionary accounts. The liquid reserves can be used for operating or capital costs. These unrestricted cash reserves demonstrate that LACMTA has access to funds via additional cash reserves to cover 17% (approximately 2 months) of annual system wide operating expenses, which is sufficient to earn the project a Medium rating

- **Conformance with LACMTA Debt Policies**—The debt financing plan is consistent with LACMTA’s policies regarding debt service coverage and debt capacity. Assuming continued sales tax revenue growth and ability to secure both existing and newly proposed forms of financing, LACMTA would have the financial capacity demonstrated in the financial plan.
- **Achieved Levels of System Farebox Recovery**—LACMTA’s performance relative to this measure assumes that the agency continues to monitor and adjust its fare revenues every two years to achieve and maintain its 30 to 33 percent farebox recovery target. The LACMTA Board has taken action toward achieving this target, with recent approval of fare increases effective July 2008, July 2010, and September 2014. This most recent increase included new one-way Metro bus and rail fares of \$1.75 (up from \$1.50); monthly passes of \$100 (up from \$75); and daily passes of \$7 (up from \$5). In addition, Metro will now allow two hours of free transfers for TAP card holders.

1.8.5 Risk Analysis Summary

The Financial Plan identifies the primary risks and uncertainties surrounding key assumptions; summarizes the results of three uncertainty analyses; and presents strategies for mitigating these risks

through several risk scenarios. As with any large infrastructure project in its planning stages, the Westside Purple Line Extension Section 2 project includes several sources of risks and uncertainties that could potentially affect the capital and operating financial plans.

From a capital cost perspective, major risks include potential inflation, the project construction schedule, project scope, and the cost and schedule of the other Measure R Expenditure Plan projects. On the revenue side, major risks include Measure R revenue shortfalls, the inability to obtain necessary financing terms, and the availability and timing of FTA New Starts funds.

The Operating Plan risks can also be broken down into O&M cost and O&M revenue categories. Key areas of risk from an O&M cost perspective are related to cost escalation for labor or fuel, and increases in unit O&M costs for the project or system upon completion. From a revenue perspective, areas of uncertainty include ridership and fare revenue forecasts and economic impacts on sales tax revenues.

The financial plan documents two capital plan sensitivity analyses that respectively assume (1) a 10 percent increase in the capital cost of the Westside Purple Line Extension Section 2 project and (2) a decrease in projected sales tax revenues. An operating plan sensitivity analysis tests the impact of a reduction in operating revenues.

1.8.5.1 Capital Project Cost increase Sensitivity Analysis

A sensitivity analysis prepared by LACMTA assumes a 10 percent increase in the capital cost of the Section 2 of the Westside Purple Line Extension project. The sensitivity analysis confirms that LACMTA has the financial capacity to deliver the project within the timeframe proposed in the financial plan if the capital cost of the project is 10 percent higher than estimated, including contingencies.

This scenario assumes that the 10 percent capital cost increase would be incurred on costs in FY2026. This analysis assumes that the costs would be above and beyond any cost reductions that would be enacted in accordance with LACMTA's cost control policies.

If all other plan assumptions remained unchanged, LACMTA could mitigate the impacts of this increase by redirecting Measure R funding from the Gold Line Eastside Extension Phase II project, delaying completion of that project from 2036 to 2038. This funding plan would not adversely impact any other capital and operating expenses. In the interest of being conservative, this scenario does not assume any added increases in sales tax revenues that might be associated with the same economic forces that might drive a 10 percent cost increase.

1.8.5.2 Reduced Sales Tax Sensitivity Analysis

A sensitivity analysis prepared by LACMTA assumes a reduction in sales tax revenues, including Measure R, Proposition A, Proposition C, and TDA. This scenario assumes a reduction in sales tax growth compared to the base case financial plan of 0.7 percentage points annually in FY2017 and FY2018, resulting in growth rates of 4.36 percent in FY2017 and 4.08 percent in FY2018. This assumption reflects a potential reduction in sales tax revenues resulting from a near-term downturn in the economy. On a cumulative basis, this assumption resulted in reduction of the three sales tax Measure Revenues of about \$300 million each from FY16 to FY35 and TDA about \$150 million over the same time frame, a reduction of 1.3 percent compared to the base case.

This scenario addresses the loss of sales tax revenues by deferring five transit projects, including the Sepulveda Pass Transit Corridor, Eastside Extension Phase II, South Bay Green Line, Westside Purple Line Extension Section 3, and West Santa Ana Branch Transit Corridor. Bond proceeds are reduced and other offsets occur as described below.

The sensitivity analysis confirms that LACMTA has the financial capacity to deliver the Westside Purple Line Extension Section 2 project within the timeframe proposed in the financial plan if sales taxes are reduced due to a near-term downturn in the economy.

1.8.5.3 Operating Plan Sensitivity Analysis

This sensitivity analysis tests the impacts of a reduction in operating revenues. The scenario assumes that the Metro Board would raise fares during each planned fare increase by 0.5 percentage points less to reach a 27.9 percent average recovery level, as opposed to the 29.9 percent average recovery level assumed in the Financial Plan. The change removed approximately \$902 million in LACMTA bus and rail fare revenues, which is approximately 7 percent of the expected fare revenues, from the systemwide operating plan.

This scenario addresses the loss of fare revenues by deferring the South Bay Green Line project and rescheduling State of Good Repair Projects, and by issuing more Proposition C 40 percent and Proposition A 35 percent bonds. The scenario demonstrates that Metro would be able to operate and maintain the system without reductions in bus or rail service or significant reductions in capital expenditures beyond the projects noted above.

1.8.5.4 Mitigating Cost and Revenue Risk

In the event that any of the cost or schedule risks described above were to materialize, LACMTA has several risk mitigation strategies available. This section focuses on the ability of the financial plan to absorb cost increases or revenue decreases. Three scenarios have been identified that illustrate the financial capacity of the plan and its associated funding sources to absorb these potential challenges.

- **Reduction in Measure R Revenues**—LACMTA has forecasted that sales taxes will increase at an average annual rate of 3.9 percent between FY2016 and FY2035. All local sales tax revenue sources are projected to escalate at growth rates based on the 2014 UCLA Anderson Forecast of taxable sales.

If Measure R revenues increase at a lower rate than forecasted, LACMTA may not be able to support as many project expenditures with Measure R-backed debt as projected in this financial plan. Several options are available to complete the projects identified in the capital plan. LACMTA's forecast for debt policy conformance indicates that there is sufficient debt capacity to cover additional needs in the long-term capital plan—however, this could reduce financing for lower-priority projects. Alternatively, LACMTA could shift some lower-priority capital projects in the long-range plan to future years in order to free up additional state or local funding for the Westside Purple Line Extension project.

- **Increase in Capital Costs of the Westside Purple Line Extension Section 2 project**—Section 2 of the Westside Purple Line Extension project is subject to an intensive risk assessment process with FTA. A comprehensive Risk Register was developed and throughout the engineering and design phase the register was monitored and controlled through a process of continuous updates.



Each risk was assigned a risk owner and a risk mitigation strategy and the assigned risks were reviewed on a monthly basis with the Risk owners and appropriately updated. The updated Risk Register was then presented to and discussed with the FTA and PMOC at a monthly Risk review meeting and a subsequent monthly Risk report was issued to all project stakeholders.

This risk informed design process has resulted in revised project cost estimates, adjustments to the project cost contingency levels and identification of secondary cost mitigation measures.

In accordance with FTA requirements the management of the established cost and schedule contingencies and primary and secondary mitigation measures were outlined in a Risk and Contingency Management Plan (RCMP). Secondary mitigation measures will be triggered when project cost overruns are encountered on FTA prescribed phase-based cost targets. As the project progresses through subsequent project phases the RCMP will be updated and maintained.

As LACMTA intends to procure the project under Design-Build contracts, risks were assessed for a risk management strategy of retained, transferred or shared. Explicit language will be included in the scope of work for the RFP. Within the RFP, a Schedule of Quantities and Values have been drafted to include selected items to cover potential risks. Each risk is quantified as either a provisional sum amount that has been provided by LACMTA or by an estimated quantity for the design/builder to price. The design/build contractor will not be entitled to dollars or time associated with any risk, until at such time the risk is realized.

LACMTA also has the option of reallocating other sources of State and local funding, and Proposition A or Proposition C-backed debt to fund projects in the long range capital plan in accordance with the LACMTA Unified Cost Management Process and Policy.

- **Increase in O&M Unit Costs per Revenue Hour**—As described above, O&M unit costs may be susceptible to underlying economic conditions, particularly for fuel and commodity prices. In the event that O&M costs grow at a higher rate than forecasted, LACMTA will seek opportunities to reduce costs and eliminate unproductive services. If additional revenues are needed, LACMTA may be able to reallocate Proposition A or Proposition C revenues or federal funding (such as Section 5307) for preventive maintenance activities.

As the Westside Purple Line Extension Section 2 projects proceed, LACMTA will continue to review and revise the financial plan to take into account cost and schedule changes, federal funding opportunities, and financial market conditions. LACMTA will continue to engage in the risk assessment process with FTA and its Project Management Oversight Contractor, which will result in revised contingency levels and a detailed risk management plan to be implemented during final design and construction.



2.0 WESTSIDE PURPLE LINE EXTENSION SECTION 2 PROJECT FINANCIAL PLAN

2.1 Capital Plan

The capital plan for the Westside Purple Line Extension Section 2 project reflects the estimated cost and schedule for the Project. It describes anticipated funding sources, amounts anticipated from each source, and the level of commitment of non-federal sources. Contingencies and mitigation measures for cost increases and revenue shortfalls are discussed in Section 5. All revenue and cost assumptions presented are as delineated in the LACMTA Countywide Financial Forecasting Model for FY2016 to FY2035 prepared for this Financial Plan. The forecast is a derivative of the 2009 Long Range Transportation Plan (LRTP) and reflects changes to be implemented through this Financial Plan.

2.1.1 Capital Cost by Standard Cost Category

Capital costs for the Westside Purple Line Extension project are based on the latest Engineering cost estimate, and reflect changes in project schedule, prior-year expenditures, and near-term budgeted expenditures. The total Westside Purple Line Extension Section 2 capital cost is estimated to be \$2,467 million (YOE dollars), which includes \$2,378 million (YOE dollars) in baseline capital costs and \$89 million (YOE dollars) in finance charges. The cost estimate includes over 20 percent in contingencies (measured as a percentage of 2015 base year dollar costs without contingency). This level of contingency is consistent with the FTA’s risk assessment process.

Table 2-1 provides the baseline cost estimate excluding finance charges broken out into FTA standard cost categories in both 2015 base year dollars and YOE dollars for the Westside Purple Line Extension Section 2 project. The methodology used for preparing the capital cost estimate is in general conformance with FTA guidelines for estimating capital costs.



Table 2-1: Westside Purple Line Extension Section 2 Baseline Capital Cost Estimate Excluding Financing Costs (\$M), FY2016 to FY2026

FTA Standard Cost Category	Prior Years	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
10 - Guideways and Track Elements	\$0	\$ -	\$ 23	\$ 49	\$ 90	\$ 90	\$ 58	\$ 15	\$ 5	\$ -	\$ -	\$ -	\$329
20 - Stations, Stops, Terminals, Intermodal	-	-	-	-	47	96	96	106	70	6	-	-	\$421
30 - Support Facilities: Yards, Shops, Admin. Buildings.	-	-	-	-	-	-	-	-	-	-	-	-	\$0
40 - Sitework and Special Conditions	1	8	40	57	35	33	33	38	38	40	12	-	\$336
50 - Systems	-	-	-	-	8	-	4	26	23	14	1	-	\$75
60 - ROW, Land, Existing Improvements	40	74	152	-	-	-	-	-	-	-	-	-	\$265
70 - Vehicles	-	-	7	7	14	14	14	14	-	-	-	-	\$72
80 - Professional Services	25	30	51	47	28	24	22	21	19	13	11	34	\$325
90 - Unallocated Contingency	-	-	30	30	31	20	20	10	10	10	10	10	\$182
100 Finance Charges	-	-	2	6	8	10	9	8	8	7	7	6	\$70
Total (2015 \$)	\$66	\$111	\$305	\$196	\$261	\$286	\$256	\$239	\$173	\$91	\$41	\$50	\$2,076
Escalation Rates	N/A	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	
		1.035	1.071	1.109	1.148	1.188	1.229	1.272	1.317	1.363	1.411	1.460	
Total (YOE \$)	\$66	\$115	\$327	\$217	\$300	\$342	\$315	\$304	\$227	\$124	\$57	\$73	\$2,467

Note: Totals may not add due to rounding.



2.1.2 Capital Cost Estimating Methodology

The capital cost estimate was developed on the basis of advanced preliminary engineering drawings for Section 2 and specifications used for the Section 1 design-build contract. The Building Information Model (BIM) for Section 1 was used to estimate quantities for earthwork, shoring and concrete. Specifically, the Wilshire/Rodeo Station quantities were based on BIM quantities for the Wilshire/Rodeo Station February 21, 2014 submittal, adjusted for the deletion of the crossover module east of the station and its replacement with an ancillary module. For the Century City / Constellation Station, quantities were calculated directly from the BIM model.

Tunneling quantities were based on current project alignments, and tunneling equipment and plant are based on using earth pressure balance tunnel boring machines. The advance rate for tunneling was modified based on the specific ground conditions and structures above ground. The production rates and crew composition for other items were assumed to be generally the same as Section 1, however the maximum advance rate was increased from 36 feet per day to 45 feet per day for Section 2. Station mechanical, electrical and plumbing design, and station finishes were assumed to be identical to comparable Section 1 stations. Additionally, costs and quantities from La Brea Station Entrance were assumed for both Section 2 Stations. Quantities and specifications for appendages, elevators, and escalators were also assumed to be the same as Section 1, however they have been adjusted to account for the depths of each station.

Demolition quantities were developed for each of the section 2 laydown and staging sites, and street removal reflects the size of the cut and cover areas. Utilities quantities were taken off from the BIM model for Century City / Constellation station. Quantities for Wilshire / Rodeo station reflect the size of the station footprint and identified utilities. The contaminated material arising from both tunneling and stations was calculated based on the geotechnical and environmental exploration program for the adjacent tunnel and station. Street restoration, landscaping and traffic signal modification of Section 1 were adjusted per Section 2 cut and cover lengths. Systems cost estimates were adjusted to reflect the number of stations and lengths of tunnels.

The unit costs for this estimate were based on work crew compositions developed for Section 1 Engineer's Estimate with appropriate modifications where required. Labor costs were based on general prevailing wage determinations published by the State of California, Director of Industrial Relations for 2014. Wage rates utilized to develop the estimate are valid for FY2015. For work weeks exceeding 40 hours, and for weekend work, overtime has been added through use of calendars in the heavy construction systems specialist (HCSS) software. Workman's compensation rates (on the base rate) are included in the labor rates.

Material prices utilized in developing this estimate are based on vendor quotes and trade publications received for Section 1. Vendor quotes and prices for major items such as concrete, structural steel and rebar were updated to reflect current (FY 2015) prices. For other materials that were previously obtained for the Section 1, estimates were escalated to FY 2015 dollars by applying an annual inflation of 3.5 percent. Additionally, a percent sales tax is included in the price of materials.

The prime contractor's general requirements including field offices, site management and supervision, field office overhead and home office overhead were estimated based on staffing schedules and on the Section 1 General Requirements. The current estimate does not distinguish

between work performed by the prime contractor and that performed by subcontractors. Work that could be performed by subcontractors is priced with the same markups used for the prime contractor. It is considered that the lower cost of subcontractor’s general conditions will be offset by the prime contractor’s markup on the subcontractor’s total cost. The prime contractor’s home office overhead was assumed to be 0.5 percent of total direct cost.

Contractor furnished insurance, performance and payment bonds and profit were calculated as follows:

- Contractor’s Performance Bond (0.75 percent of direct cost + overhead)
- Contractor’s All Risk Insurance (4.00 percent of direct cost + overhead)
- Contractor’s Profit (12.00 percent of direct cost plus overhead except for disposal of contaminated materials, purchase of the TBMs and tunnel support equipment , detailed engineering and spare parts where profit was reduced from 12 percent to 5 percent)

Mobilization and de-mobilization costs were estimated using a bottom-up buildup of mobilization activities. Mobilization cost for tunnels was included in the tunnel section of the estimate.

In accordance with FTA guidelines, unallocated contingency of 10 percent is included in the estimate. The allocated contingencies for each of the Standard Cost Categories are provided in Table 2-2. Overall, the allocated contingency for SCC categories 10 through 80 is 12.5 percent. The total contingency (allocated plus unallocated) for the SCC categories is 23.7 percent.

Table 2-2: Allocated Contingencies for SCC Categories

Standard Cost Categories	Allocated Contingency
10 Guideway and Track Elements	18.8%
20 Station, Stops, Terminals, Intermodal	10.0%
30 Support Facilities – Yards, Shops, Administration Buildings	N/A
40 Site work and Special Conditions	12.5%
50 Systems	5.0%
60 Right-of-Way, Land, Existing Improvement	25.0%
70 Vehicles	5.0%
80 Professional Services (project development excluded)	4.6%

The Section 2 schedule anticipates a duration of 10.5 years from entry into the Engineering Phase to Substantial Completion, including 8.3 years for the design-build contract.

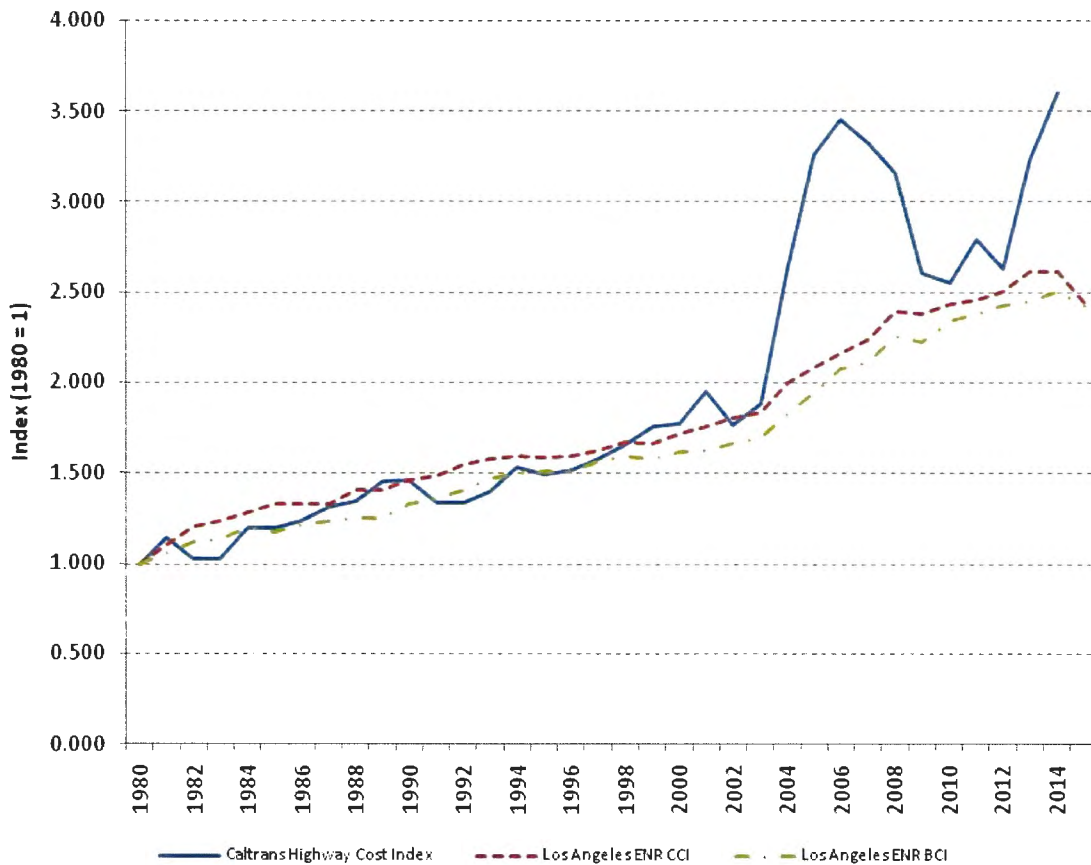
The Westside Purple Line Extension Section 2 capital costs, including contingencies, were estimated in 2015 dollars and inflated to YOY dollars at the annual capital cost escalation rates delineated in Table 2-1. Construction is expected to take place from FY2017 through FY2025 for the entire project.

The UCLA Anderson Forecast predicts CPI growth in the Los Angeles-Long Beach-Santa Ana region to average 2.6 percent from FY2016 through the completion of Section 2 construction in FY2026,

whereas the Project cost includes a more conservative 3.5 percent average capital growth rate for that period. Figure 2-1 provides a summary of escalation indices from 1980 through 2015 from the Caltrans Highway Cost Index and the ENR indices.

As shown in Figure 2-1, prior to the international run-up in commodity, surety, and energy prices and the subsequent international crisis, the Caltrans Highway Cost Index moved mostly in tandem with the ENR's Los Angeles Construction Cost Index (CCI) and Building Cost Index (BCI). The CAGR for the Caltrans Highway Cost Index from 1980 to 2014 is 3.84% and those for CCI, and BCI from 1980 to 2015 are 2.59 percent, and 2.56 percent, respectively. However, when analyzing the data prior to the housing bubble, from 1980 to 2003, the CAGRs are 2.78 percent, 2.68 percent, and 2.32 percent, for the Caltrans Highway Cost Index, CCI, and BCI, respectively. The most recent data shows the Caltrans Highway Cost Index continues to grow at a faster pace than Los Angeles CCI and BCI.

Figure 2-1: Long Term Capital Cost Indices in the Los Angeles Region



LACMTA has also adopted a policy referred to as the “Unified Cost Management Process and Policy” for Measure R projects, which was approved by the LACMTA Board in January 2011. The policy is discussed in greater detail in Section 5.0

2.1.3 Capital Funding Sources

The proposed capital sources of funds for the Westside Purple Line Extension Section 2 project including finance charges are summarized in the following figures. Figure 2-2 summarizes sources of funds for Section 2, and Figure 2-3 summarizes the sources for the entire Westside Purple Line Extension project. The Section 2 project funding plan relies on the following sources of funds: Measure R, local agency, Repayment of Capital Project Loans, CMAQ Program, and FTA Section 5309 New Starts funds.

Figure 2-2: Westside Purple Line Extension Section 2 Sources of Funds (YOE \$M), Section 2, FY2013 to FY2026

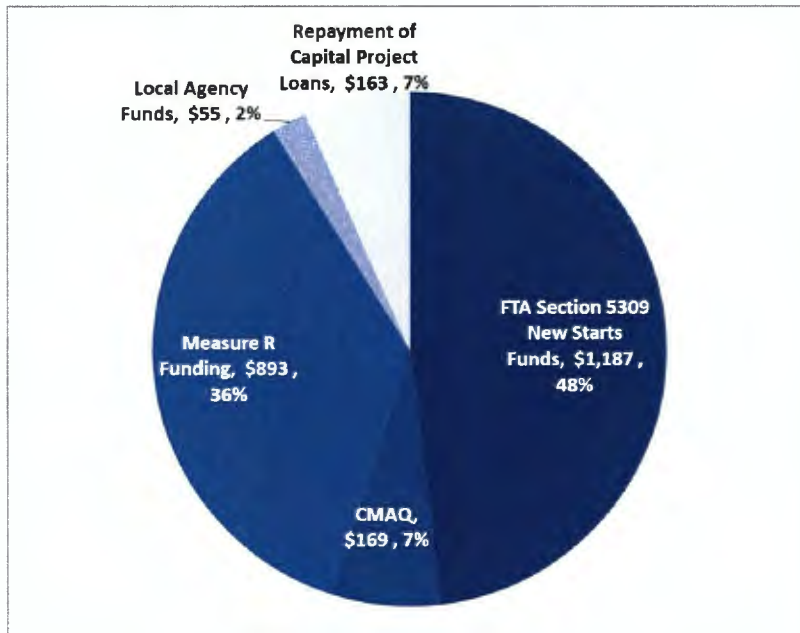
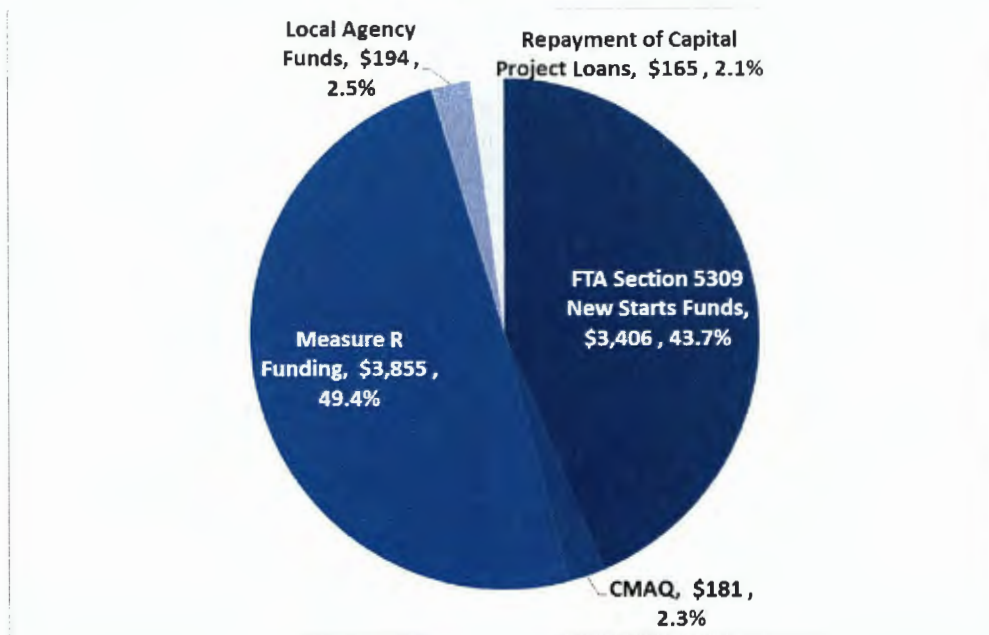




Figure 2-3: All Sections of Westside Purple Line Extension Sources of Funds (YOE \$M), All Sections, FY2011 to FY2036



Approximately 45 percent of the total Westside Purple Line Extension Section 2 capital cost will be funded with non-federal funding. Of this amount, the majority (80 percent) will come from Measure R funding. These funds should be considered fully committed. Two percent of total project funding will come from local funding sources, which are planned as local agency funds.

Approximately 6.6 percent of total project funding will come from Repayment of Capital Loans (Fund 3562) and 7 percent will come from federal CMAQ funds. Both of these funding sources should be considered fully committed.

Federal Section 5309 New Starts funds that will be requested for Westside Purple Line Extension Section 2 project total \$1,187 million, an amount equal to 48 percent of the total capital cost including finance charges.

The remaining \$1,280 million cost of Section 2 will be funded through the following sources:

- Measure R revenue: \$893 million**—Measure R is a half-cent transportation sales tax approved in November 2008 by Los Angeles County voters to meet the transportation needs of the County. Collection of the tax dedicated to public transit and highway improvements began on July 1, 2009, and continues over a period of 30 years through June 30, 2039. LACMTA is responsible for administering Measure R revenues. These funds are considered Committed. Additional detail on Measure R is provided in Section 1.7.

The \$893 million in Measure R funding that is planned for the Project represents 36 percent of the total Project capital cost estimate including finance charges. Of this amount, \$89 million will cover project-related finance charges through the full receipt of New Starts grant funding for Section 2 in FY2026. Approximately \$497 million of the Measure R revenues



will be utilized as cash. The remaining \$307 million will be leveraged to finance completion of Section 2 through TIFIA loan proceeds.

- **Local Agency funds: \$55 million**— The Measure R Expenditure Plan, as delineated in Ordinance #08-01, assumes that local jurisdictions will provide 3 percent of proposed total project costs. Local agency funds for Section 2 are anticipated from the City of Beverly Hills. These funds are not yet committed or budgeted and should be considered planned. Negotiations with the City will commence in the second quarter of Metro’s Fiscal Year 2016 (October through December 2015) and LACMTA will explore options that include assisting the City in financing its contribution
- **Repayment of Capital Project Loans: \$163 million**—These capital reimbursements (Fund 3562) are for advances made by LACMTA to the state in lieu of capital project funding from the Traffic Congestion Relief Program (TCRP) that could not be provided by the state on the originally programmed schedule. LACMTA assumes that these funds must be used for capital purposes only. As they are reimbursements for prior capital expenses, the funds are flexible for many transportation capital purposes, including subway uses now prohibited by Proposition A and Proposition C. These funds are already in LACMTA’s accounts and available for use; therefore, they are considered committed.

Table 2-3 represents LACMTA’s June 30, 2015 Trial Balance and fund breakdown for this source. The figure reflects the following:

- July 1, 2014 beginning balance was \$169 million.
- Net investment earnings were \$11 million.
- Expenditures between July 1, 2014 and June 30, 2015 were negative \$12 million.
- June 30, 2015 ending balance was \$192 million.



Table 2-3: LACMTA June 30, 2014 Trial Balance: Fund 3562, State Repayment of Capital Project Loans (YOE \$M)

Fund 3562 Trial Balance	
Fund 3562 Fund Balance (July 1, 2014)	\$168.6
Plus: Net Investment Earnings	\$11.1
Minus: Expenditures Between July 1, 2014 and June 30, 2015	(\$12.0)
Fund 3562 Fund Balance (June 30, 2015)	\$191.8
Fund 3562 Asset Breakdown	
Cash and Cash Equivalents	\$186.0
Investments	\$0.0
Interest Receivable	\$0.0
Leases and Other	\$5.8
Notes Receivable	\$0.0
Fund 3562 Fund Balance (June 30, 2015)	\$191.8

The fund’s June 30, 2015 balance is allocated between cash and cash equivalents and investments.

LACMTA is taking advantage of the flexibility of this source by assuming the use of the funds, in part, for matching federal New Starts funds for planned subway construction projects, including the Westside Purple Line Extension Section 2.

Approximately \$55 million from this revenue source was applied to cover prior-year professional services and Right-of-Way (ROW) related expenditures. The remainder of funding from this source includes \$33 million anticipated in FY2016, \$7 million in FY2018, \$28 million in FY2019 and \$41 million anticipated in FY2021.

- **Congestion Mitigation and Air Quality Improvement (CMAQ) Program: \$169 million**—This federal program provides funding to regions that are in non-attainment or maintenance of National Ambient Air Quality Standards (NAAQS) established by the Federal Clean Air Act of 1990. Presently, Los Angeles County is in non-attainment for three NAAQS pollutants. Program funds may be applied to transportation projects that mitigate traffic congestion or improve air quality. As noted in Section 1.2.2, LACMTA maintains statutory control of CMAQ funds and is responsible for programming its weighted population share of CMAQ funds in Los Angeles County. Therefore, these funds are considered committed.

2.1.4 Capital Financing Strategy

As originally planned, Measure R was expected to generate the revenues necessary to fund the non-federal contribution for the Westside Purple Line Extension Section 2 on a pay-as-you-go basis. However, to meet the anticipated schedules of all twelve projects in the Measure R Expenditure Plan, LACMTA intends to leverage Measure R funds through debt financing. This financial plan assumes that LACMTA will leverage revenues for the Westside Purple Line Extension Section 2 project using the following finance instruments.

- **Measure R backed Transportation Infrastructure Finance and Innovation Act (TIFIA) loan: \$307 million**—The Measure R Updated Expenditure Plan is based on the expansion of the



TIFIA program outlined in MAP-21. The Plan anticipates a TIFIA loan of \$307 million for the Westside Purple Line Extension Section 2 project.

The total amount of Federal assistance for the Westside Purple Line Extension Section 2 project, including FTA New Starts funds, CMAQ funds, and the TIFIA Loan proceeds, is \$1,663 million. This amount is 70 percent of the total project costs that are eligible for TIFIA assistance, which totals \$2,378 million. The total project costs eligible for TIFIA assistance include: planning and environmental costs, project capital costs, and the financing costs for the Capital Revenue Grant Receipt Revenue Bonds. TIFIA finance costs are not eligible for TIFIA assistance; as such these costs have been excluded from the calculation of the percentage of Federal assistance.

LACMTA intends to apply these loan proceeds to cover project expenses from FY2016 to FY2018. The interest rate of TIFIA proceeds is assumed to be equal to 3.5 percent, which is higher than the current TIFIA rate. The TIFIA loan for the project is projected to be paid back by June 1, 2037. The loan will be backed by future Measure R revenues (net of 15 percent local return component); all debt service payments on the loan will be paid with Measure R revenues.

Table 2-4 summarizes the share of federal funding of the Westside Purple Line Extension Section 2 as a percentage of project costs. The share of federal grant funding, including the FTA New Starts grant and CMAQ funds, taken as a percentage of the total project costs including eligible TIFIA finance charges and excluding planning and environmental costs, is 55.0 percent. The TIFIA proceeds, taken as a percentage of the total project excluding TIFIA finance charges, are 12.9 percent. The total federal share including TIFIA proceeds and federal grants, as calculated by the TIFIA program, is 69.9 percent. These percentages are within TIFIA program guidelines.

Table 2-4: Summary of Federal Share of Westside Purple Line Extension Section 2 Project Costs

	FTA	Share of \$2.47B Cost	TIFIA	Share of \$2.38B Cost
Capital Costs				
Total Capital Costs (without financing)	\$2,377,900,878		\$2,377,900,878	
Finance Charges (TIFIA)	\$88,694,657		N.A.	
Project Cost	\$2,466,595,535		\$2,377,900,878	
Planning and Environmental Costs	N.A.		\$0	
Total Project Cost	\$2,466,595,535		\$2,377,900,878	
Total TIFIA Loan Proceeds	\$307,000,000		\$307,000,000	
Federal Grants				
FTA New Starts Grant	\$1,187,000,000	48.12%	\$1,187,000,000	
CMAQ Funds	\$169,000,000	6.85%	\$169,000,000	
Subtotal - Federal grant funds	\$1,356,000,000	54.97%	\$1,356,000,000	
TIFIA Loan	N.A.		\$307,000,000	12.91%
Total Federal Funds	\$1,356,000,000	54.97%	\$1,663,000,000	69.94%

A total of \$451 million in debt service payments will be made with Measure R revenues to repay Section 2 TIFIA loan between FY2020 and FY2037. This includes \$307 million in principal, \$89 million in interest through full receipt of the project's FFGA in FY2026, \$55 million in interest beyond FY2026.

Given this debt service schedule, a minimum annual debt service coverage ratio on senior Measure R bonds and TIFIA loans payable from the 35 percent of Measure R dedicated to transit projects of 1.42 is anticipated in FY2023. Over the FY2016 to FY2035 time period, the average annual debt service coverage ratio is 2.18.

For a more detailed discussion on the overall capital financing strategy for the Measure R Updated Expenditure Plan, please see Section 4.1.4.

2.1.5 Short-Term Financing

In the event of short-term cash flow needs, LACMTA has access to a commercial paper program. Commercial Paper Notes are issued by LACMTA to fund capital projects on a short-term basis prior to being repaid with cash or permanently financed with long-term bonds or receiving grant funding. LACMTA issues both taxable and tax-exempt commercial paper notes, with original maturity dates ranging from one to 270 days, at various interest rates. Under the terms of the notes, LACMTA can roll-over the principal amounts due for additional periods.

LACMTA utilizes a Proposition A Commercial Paper Program which is authorized up to \$350 million and a Proposition C Commercial Paper Program that is authorized up to \$150 million. LACMTA's total outstanding commercial paper as of July 2015 includes \$65.0 million in Proposition A taxable commercial paper; \$18.6 million in **Proposition C taxable commercial paper**. LACMTA also has a \$45 million revolving credit facility backed by Proposition C.

2.1.6 Capital Uses and Sources of Funds

The proposed uses and sources of funds, by year, for all sections of the Westside Purple Line Extension project are summarized in the following tables: Table 2-5 summarizes Section 1; Table 2-6, Section 2; Table 2-7, Section 3; Table 2-8, all sections for FY2011 to FY2024; and Table 2-9, all sections for FY2025 to FY2036 and total.

Table 2-5: Westside Purple Line Extension Uses and Sources of Funds (YOE \$M) - Section 1, FY2011 to FY2026

	Prior Years	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Section 1 Total	Percent of Total
USES OF FUNDS														
Westside Subway Extension Baseline Project Cost ¹	\$485	\$280	\$441	\$316	\$335	\$271	\$315	\$236	\$89	\$10	\$5	\$0	\$2,779	91.4%
Finance Charges (TIFIA Loan)	\$0	2	10	19	25	30	28	27	26	25	24	23	240	7.9%
Finance Charges (Capital Grant Receipt Revenue Bonds)	\$0	-	-	-	-	8	5	5	3	-	-	-	21	0.7%
TOTAL USES OF FUNDS	\$485	\$282	\$451	\$335	\$360	\$308	\$349	\$269	\$119	\$35	\$4	\$23	\$3,040	100.0%
SOURCES OF FUNDS														
Federal	\$165	\$117	\$120	\$121	\$115	\$221	\$30	\$93	\$46	\$2	\$10	\$85	\$1,124	37.0%
FTA Section 5309 New Starts Funds	165	115	112	118	115	100	100	100	100	55	85	85	1,250	41.1%
FTA Section 5309 New Starts Capital Grant Receipt Revenue Bond Proceeds	-	-	-	-	-	214	25	88	43	2	-	-	372	12.2%
FTA Section 5309 New Starts Capital Grant Receipt Revenue Bond Principal Repayment	-	-	-	-	-	(92)	(95)	(95)	(97)	(5)	(75)	-	(510)	-16.8%
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	-	2	8	3	-	-	-	-	-	-	-	-	12	0.4%
Local	\$320	\$166	\$332	\$214	\$245	\$86	\$319	\$176	\$72	\$33	\$14	(\$62)	\$1,916	63.0%
Measure R (Cash)	304	-	-	-	35	57	266	171	16	(1)	(10)	(85)	753	24.8%
Measure R (TIFIA Loan Proceeds)	-	157	322	195	182	-	-	-	-	-	-	-	856	28.2%
Measure R (TIFIA Finance Charges)	-	2	10	19	25	30	28	27	26	25	24	23	240	7.9%
Local Agency Funds	-	-	-	-	1	-	-	5	25	22	22	-	75	2.5%
Repayment for Capital Project Loans (Fund 3562)	16	6	-	-	1	0	25	(27)	5	(13)	(22)	-	(8)	-0.3%
TOTAL SOURCES OF FUNDS	\$485	\$282	\$451	\$335	\$360	\$308	\$349	\$269	\$119	\$35	\$24	\$23	\$3,040	100.0%

Note: Totals may not add due to rounding.

Capital costs do not include environmental and planning costs



Table 2-6: Westside Purple Line Extension Section 2 Uses and Sources of Funds (YOE \$M) - Section 2, FY2013 to FY2026

	Prior Years	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Section 2 Total	Percent of Total
USES OF FUNDS														
Westside Subway Extension Baseline Project Cost¹	\$66	\$115	\$324	\$211	\$290	\$331	\$304	\$293	\$217	\$114	\$48	\$64	\$2,378	96.4%
Finance Charges (TIFIA Loan)	-	-	2	6	9	11	11	11	10	10	9	9	89	3.6%
TOTAL USES OF FUNDS	\$66	\$115	\$327	\$217	\$300	\$342	\$315	\$304	\$227	\$124	\$57	\$73	\$2,467	100.0%
SOURCES OF FUNDS														
<i>Federal</i>	<i>\$0</i>	<i>\$66</i>	<i>\$145</i>	<i>\$102</i>	<i>\$130</i>	<i>\$156</i>	<i>\$191</i>	<i>\$147</i>	<i>\$173</i>	<i>\$115</i>	<i>\$36</i>	<i>\$95</i>	<i>\$1,356</i>	<i>55.0%</i>
FTA Section 5309 New Starts Funds	-	66	134	100	100	100	147	147	147	115	36	95	1,187	48.1%
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	-	-	11	2	30	56	44	-	26	-	-	-	169	6.9%
<i>Local</i>	<i>\$66</i>	<i>\$49</i>	<i>\$182</i>	<i>\$115</i>	<i>\$170</i>	<i>\$186</i>	<i>\$124</i>	<i>\$157</i>	<i>\$54</i>	<i>\$9</i>	<i>\$21</i>	<i>-\$22</i>	<i>\$1,111</i>	<i>45.0%</i>
Measure R (Cash)	11	16	33	41	33	175	72	146	44	(1)	12	(86)	497	20.1%
Measure R (TIFIA Loans)	-	-	146	61	100	-	-	-	-	-	-	-	307	12.4%
Measure R (TIFIA Finance Charges)	-	-	2	6	9	11	11	11	10	10	9	9	89	3.6%
Local Agency Funds	-	-	-	-	-	-	-	-	-	-	-	55	55	2.2%
Repayment for Capital Project Loans (Fund 3562)	55	33	-	7	28	-	41	-	-	-	-	-	163	6.6%
TOTAL SOURCES OF FUNDS	\$66	\$115	\$327	\$217	\$300	\$342	\$315	\$304	\$227	\$124	\$57	\$73	\$2,467	100.0%

Note: Totals may not add due to rounding.



Table 2-7: Westside Purple Line Extension Uses and Sources of Funds Section 3, FY2025 to FY2036 (YOE \$M)

	Prior Years	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	Section 3 Total	Percent of Total
USES OF FUNDS															
Westside Subway Extension Baseline Project Cost ¹	\$10	\$15	\$72	\$192	\$259	\$282	\$264	\$244	\$210	\$244	\$248	\$106	\$11	\$2,157	100.0%
TOTAL USES OF FUNDS	\$10	\$15	\$72	\$192	\$259	\$282	\$264	\$244	\$210	\$244	\$248	\$106	\$11	\$2,157	100.0%
SOURCES OF FUNDS															
<i>Federal</i>	0	\$0	\$60	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$9	\$969	44.9%
FTA Section 5309 New Starts Funds	-	-	60	100	100	100	100	100	100	100	100	100	9	969	44.9%
<i>Local</i>	\$10	\$15	\$12	\$92	\$159	\$182	\$164	\$144	\$110	\$144	\$148	\$6	\$2	\$1,188	55.1%
Measure R (Cash)	-	15	12	92	159	182	164	144	110	80	148	6	2	1,114	51.6%
Local Agency Funds	-	-	-	-	-	-	-	-	-	64	-	-	-	64	3.0%
Repayment for Capital Project Loans (Fund 3562)	10	-	-	-	-	-	-	-	-	-	-	-	-	10	0.5%
TOTAL SOURCES OF FUNDS	\$10	\$15	\$72	\$192	\$259	\$282	\$264	\$244	\$210	\$244	\$248	\$106	\$11	\$2,157	100.0%

Note: Totals may not add due to rounding.



Table 2-8: Westside Purple Line Extension Uses and Sources of Funds All Sections, FY2015 to FY2025 (YOE \$M)

	Prior Years	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
USES OF FUNDS											
Westside Subway Extension Baseline Project Cost ¹	\$561	\$395	\$766	\$527	\$625	\$601	\$619	\$530	\$306	\$124	\$63
Finance Charges (TIFIA Loan)	\$0	\$2	\$12	\$25	\$35	\$41	\$39	\$38	\$37	\$35	\$33
Finance Charges (Capital Grant Receipt Revenue)	\$0	\$0	\$0	\$0	\$0	\$8	\$5	\$5	\$3	\$0	\$0
TOTAL USES OF FUNDS	\$561	\$397	\$778	\$552	\$660	\$650	\$664	\$573	\$346	\$159	\$97
SOURCES OF FUNDS											
<i>Federal</i>	\$165	\$183	\$265	\$223	\$245	\$377	\$221	\$240	\$219	\$117	\$46
FTA Section 5309 New Starts Funds	165	181	246	218	215	200	247	247	247	170	121
FTA Section 5309 New Starts Capital Grant Receipt Revenue Bond Proceeds	-	-	-	-	-	214	25	88	43	2	-
FTA Section 5309 New Starts Capital Grant Receipt Revenue Bond Principal Repayment	-	-	-	-	-	(92)	(95)	(95)	(97)	(55)	(75)
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	-	2	19	5	30	56	44	-	26	-	-
<i>Local</i>	\$396	\$215	\$513	\$329	\$415	\$272	\$443	\$333	\$127	\$42	\$51
Measure R (Cash)	315	16	33	41	68	231	338	317	60	(2)	18
Measure R (TIFIA Loan Proceeds)	-	157	468	256	282	-	-	-	-	-	-
Measure R (TIFIA Finance Charges)	-	2	12	25	35	41	39	38	37	35	33
Local Agency Funds	-	-	-	-	1	-	-	5	25	22	22
Repayment for Capital Project Loans (Fund 3562)	81	39	-	7	29	0	66	(27)	5	(13)	(22)
TOTAL SOURCES OF FUNDS	\$561	\$397	\$778	\$552	\$660	\$650	\$664	\$573	\$346	\$159	\$97

Note: Totals may not add due to rounding.



Table 2-9: Westside Purple Line Extension Uses and Sources of Funds All Sections, FY2026 to FY2036 and Total (YOE \$M)

	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	All Sections Total	Percent of Total
USES OF FUNDS													
Westside Subway Extension Baseline Project Cost ¹	\$136	\$192	\$259	\$282	\$264	\$244	\$210	\$244	\$248	\$106	\$11	\$7,314	95.4%
Finance Charges (TIFIA Loan)	\$32	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	329	4.3%
Finance Charges (Capital Grant Receipt Revenue)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	21	0.3%
TOTAL USES OF FUNDS	\$168	\$192	\$259	\$282	\$264	\$244	\$210	\$244	\$248	\$106	\$11	\$7,664	100.0%
SOURCES OF FUNDS													
<i>Federal</i>	\$240	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$9	\$3,449	45.0%
FTA Section 5309 New Starts Funds	240	100	100	100	100	100	100	100	100	100	9	3,406	44.4%
FTA Section 5309 New Starts Capital Grant Receipt Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-	372	4.9%
FTA Section 5309 New Starts Capital Grant Receipt Revenue Bond Principal Repayment	-	-	-	-	-	-	-	-	-	-	-	(510)	-6.7%
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	-	-	-	-	-	-	-	-	-	-	-	181	2.4%
<i>Local</i>	(\$72)	\$92	\$159	\$182	\$164	\$144	\$110	\$144	\$148	\$6	\$2	\$4,214	55.0%
Measure R (Cash)	(159)	92	159	182	164	144	110	80	148	6	2	2,363	30.8%
Measure R (TIFIA Loan Proceeds)	-	-	-	-	-	-	-	-	-	-	-	1,163	15.2%
Measure R (TIFIA Finance Charges)	32	-	-	-	-	-	-	-	-	-	-	329	4.3%
Local Agency Funds	55	-	-	-	-	-	-	64	-	-	-	194	2.5%
Repayment for Capital Project Loans (Fund 3562)	-	-	-	-	-	-	-	-	-	-	-	165	2.2%
TOTAL SOURCES OF FUNDS	\$168	\$192	\$259	\$282	\$264	\$244	\$210	\$244	\$248	\$106	\$11	\$7,664	100.0%

Note: Totals may not add due to rounding.

WESTSIDE PURPLE LINE EXTENSION SECTION 2



2.2 Operating Plan

This section describes the operating and maintenance (O&M) costs and revenues associated with the continued operation of all sections of the Westside Purple Line Extension from the initiation of Section 1's service in FY2024 through FY2035.

2.2.1 Operating Costs

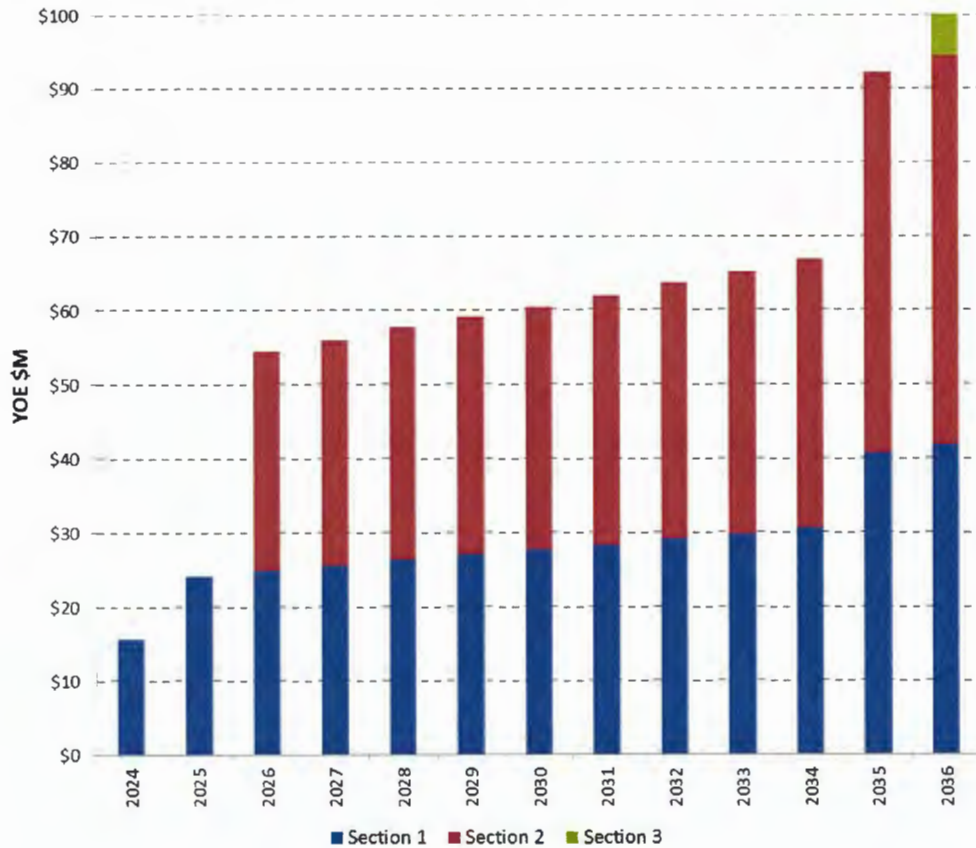
- The O&M cost escalation growth rates for both bus and rail have been updated to reflect consumer price index (CPI) assumptions from the August 2014 long-term UCLA Anderson Forecast. The 3.0 percent compounded annual growth rate (CAGR) for the projected bus O&M costs (FY2016 to FY2035) is consistent with the 2.64 percent historic ten-year period (FY2004 to FY2014). The 2.75 percent rail O&M cost growth rate per hour reflects the increase in costs with the start of operations of Westside Purple Line Extension Sections 1 and 2. Likewise, it is higher than the 1.13 percent CAGR in rail O&M costs over the past ten years.
- In response to FTA's request to provide more detail on projected O&M costs, LACMTA developed a fully allocated cost model. The O&M estimates were prepared for the Base Year 2012, Horizon Year 2035 Build, and Horizon Year 2035 No Build alternatives. Build alternatives were developed to be consistent with service statistics used in the most recent ridership projections, updated in 2015. The electronic version of the O&M Cost model for FY2015 has been submitted to FTA to better enable FTA to run its own sensitivity tests.

Once implemented, the Westside Purple Line Extension will operate as an extension of LACMTA's existing Purple Line. Annual O&M costs for the Westside Purple Line Extension reflect projected incremental increases in revenue vehicle service hours for the existing Purple Line.

Table 2-10 summarizes the Westside Purple Line Extension's annual revenue vehicle service hours and Figure 2-4 summarizes annual O&M costs estimated from FY2024 to FY2036. Incremental additional service is reflected upon opening of Section 2 in FY2026 and Section 3 in FY2036.

**Table 2-10: Westside Purple Line Extension Revenue
 Vehicle Service Hours, FY2024 to FY2035**

FY	Section 1	Section 2	Section 3	All Sections
2024	33,947	-	-	33,947
2025	50,780	-	-	50,780
2026	50,780	60,470	-	111,250
2027	50,780	60,470	-	111,250
2028	50,920	60,640	-	111,560
2029	50,780	60,470	-	111,250
2030	50,780	60,470	-	111,250
2031	50,780	60,470	-	111,250
2032	50,920	60,640	-	111,560
2033	50,780	60,470	-	111,250
2034	50,780	60,470	-	111,250
2035	65,780	83,300	-	149,080
2036	65,780	83,300	31,450	180,530

Figure 2-4: Westside Purple Line Extension Annual O&M Costs, FY2024 to FY2036 (YOE \$M)




An August 4, 2025 (FY2026) opening date is assumed for Section 2 in the financial plan. In the event the project opens a month or two early, cash reserves are sufficient to fund the additional months of operating and maintenance costs.

2.2.2 Operating Revenue Sources

The annual O&M costs associated with the Westside Purple Line Extension are projected to be funded as part of the operation of LACMTA's overall rail system. On this basis, LACMTA's financial forecast does not allocate revenue sources to individual lines. As discussed in detail in Section 4.2, the rail operations plan forecasts revenue levels to meet systemwide O&M costs. O&M revenue sources discussed in Section 4.2.2.3 include the following:

- Fare revenue
- Proposition A sales tax
- Proposition C sales tax
- Measure R sales tax
- Other non-operating revenue (advertising, lease revenue)
- State Transit Assistance
- FTA Section 5307 Urbanized Area Formula
- FTA Section 5337 State of Good Repair Funds
- FTA Section 5340 Growing States and High Density
- Congestion Mitigation and Air Quality Improvement Program



3.0 LACMTA SYSTEMWIDE FINANCIAL PLAN

3.1 Capital Plan

This section discusses LACMTA’s historic and forecasted capital sources and forecasted uses of funds. First, a brief overview of LACMTA’s capital program is provided prior to discussing LACMTA’s current state of good repair assessment and outlining the agency’s capital expenditure forecast. The section then presents LACMTA’s historic sources of funds, followed by a discussion of the various projected sources of funds. LACMTA’s Measure R Expenditure Plan is then detailed and analyzed. Finally, LACMTA’s systemwide projected sources and uses of funds through FY2035 are provided.

All revenue and cost assumptions presented are as delineated in the LACMTA Countywide Financial Forecasting Model for FY2016 to FY2035. The forecast is a derivative of the 2009 Long Range Transportation Plan (LRTP) and reflects changes to be implemented through this Financial Plan.

The LRTP is the guiding policy behind funding decisions on transportation projects and programs in Los Angeles County. Major capital projects and programs that are identified in the 2009 LRTP have priority for future programming of funds. While these projects and programs require further Board approval at various stages of their development, they are priorities for further planning, design, construction, and the pursuit of additional funding.

The LRTP is a balanced plan that strategically expands and enhances the current infrastructure and makes the most of LACMTA’s previous transportation resources. It honors past LACMTA commitments for the present and the future, and builds new priorities. The 2009 LRTP lays out a 30-year strategy for keeping Los Angeles County moving and is based on a financial forecast of continued economic growth and moderate inflation. LACMTA’s commitment to maintain and improve Los Angeles County’s transportation system will depend on future funding availability and strategies for securing new or increased funding.

The Measure R Ordinance restricts the potential for funding dedicated to the transit projects in the Measure R program, including the Westside Purple Line Extension Section 2, to be diverted to highway purposes in the LRTP. Accordingly, this financial plan focuses on the capital funding sources used for the long-term bus and rail capital needs. Additional information on the sources of funding utilized by LACMTA for transit capital needs is provided in the following sections.

3.1.1 Capital Expenditure Program

LACMTA defines a capital expenditure as any acquisition or construction project that has a value of \$2,500 or greater and a useful life of more than one year. LACMTA’s Capital Program (CP) is a financial plan of proposed capital projects, their costs, and schedules. The CP is designed to meet LACMTA’s infrastructure needs in a responsive and efficient manner. It incorporates the current and future needs of LACMTA and is updated annually during LACMTA’s annual budgeting process. Appropriations for the capital plan are approved on a life-of project basis and thus do not lapse at the end of the fiscal year. This helps to provide flexible funding over the life of a project and authorizes staff to re-appropriate unexpended revenues and expenses from prior years.

The CP provides for the acquisition, construction, reconstruction, purchase of initial fixtures and equipment, renovation, rehabilitation, and replacement of facilities with a life expectancy of at least

one year and any related costs for land acquisitions, land improvements, design, feasibility studies, and engineering studies. It includes projects which are, or will become, the property of LACMTA.

LACMTA's capital projects are generally grouped into two major elements: major construction projects and infrastructure improvement and acquisition projects (which are further grouped into twelve elements). Each element is managed by a subject matter expert known as an Element Sponsor. The Element Sponsors are responsible for validating project need, approving the scope, ranking the projects, and monitoring the project managers to ensure project completion on schedule and within budget. The project elements are as follows:

- **Major Construction Projects**—Projects that add new infrastructure to the region.
- **Bus Acquisitions**—Annual procurement of buses for the LACMTA bus fleet.
- **Bus Facilities Improvements**—Construction work at bus divisions to replace and refurbish equipment and facilities and to expand buildings and facilities.
- **Bus Maintenance**—Annual maintenance costs for the LACMTA bus fleet.
- **Rail Facilities Improvements**—Facility expansion, safety improvements, security projects, and support equipment for rail facilities.
- **Wayside Systems**—Upgrades of stations and operating facilities, safety improvements, and maintenance and refurbishment of traction power, signals, facilities, and track.
- **Rail Vehicle Maintenance**—Annual maintenance costs for the LACMTA rail vehicle fleet.
- **Rail Rehabilitation**—The scheduled lifecycle rehabilitation of rail system assets.
- **IT/Communications**—The development of communications and information systems and replacement of obsolete computer equipment.
- **Non-Revenue Vehicles**—The purchase of replacement and expansion vehicles to support bus and rail operations and general LACMTA functions.
- **Warehouse Projects**—Upgrades of materials handling systems and construction of storage facilities at bus and rail divisions.
- **Security Projects**—Installation and upgrades for systemwide security assets.
- **Other Capital Projects**—All other projects not captured in the aforementioned elements.

The annual updates to LACMTA's CP allow the agency to ensure that its capital preservation needs are adequately financed on an annual basis and that it maintains a state of good repair. One metric that helps as a measure of LACMTA's current capital condition is average bus fleet age. In 1998, the LACMTA Board adopted a policy with a goal of reducing the average bus fleet age to 6.0 years. As is delineated in LACMTA's FY2014 National Transit Database submission, LACMTA's average bus fleet age is currently 9.5 years, slightly above 9.4 years in FY2013. However according to the agency's bus fleet management plan dated October 2012, LACMTA's average bus age for its active fleet is projected to drop to 5.3 years by FY2017.

3.1.1.1 LACMTA Transit Asset Management (TAM) Program

LACMTA’s continuing large investment in its asset base is critical to the economic vitality and quality of life in the Los Angeles Metropolitan Region. LACMTA is committed to maintaining assets in a State of Good Repair through financial stewardship by promoting a culture that supports good asset management using accurate and relevant information as the basis for good reinvestment decision making. In August 2009, LACMTA introduced an SGR initiative to begin the task of assessing the condition of the agency’s assets. LACMTA Rail Operations took the lead in developing the program and began work on identifying assets. In September 2009, FTA requested asset data for the 2010 National SGR study. LACMTA staff collected the data from many internal sources; the resultant data submittal became the genesis of LACMTA’s TAM Database.

Development of LACMTA’s TAM Plan began in March 2014 and was completed and approved by the CEO in July 2015. LACMTA’s Enterprise Transit Asset Management Department was formed in July 2014 to create and implement LACMTA’s Asset Management Program. In July 2015 the department was combined with Safety and Risk Management. LACMTA is taking action to comply with requirements of MAP-21 and will amend its TAM program as further regulations are promulgated. LACMTA’s TAM Database was used to inform LACMTA’s commitment of \$4.8 billion for asset renewal the next 10 years and can be used to prioritize asset renewals in a financially constrained environment.

LACMTA’s TAM Database uses deterioration schedules from an early version of FTA’s TERM Lite software to estimate condition of assets based on their age. LACMTA is using a modified version of the TERM 5-point rating system as defined in Table 3-1. The threshold for considering an asset to be in a state of good repair is when the condition rating is 2.5 (the mid-point between “adequate” and “marginal”) or higher.

Table 3-1: LACMTA Transit Asset Management Database Condition Ratings

Condition Rating	Description
4.8—5.0	Excellent, new or like new asset; no visible defects
4.0—4.7	Good asset showing minimal signs of wear; some (slightly) defective or deteriorated component(s)
3.0—3.9	Adequate asset has reached its mid-life (condition 3.5); some moderately defective or deteriorated component(s)
2.5—2.9	Marginal asset reaching its useful life (condition 2.5); increasing number of deteriorated components
2.0—2.4	Substandard asset just past its useful life (condition 2.5); increasing number of deteriorated components
1.0—1.9	Poor asset past its useful life; in need of replacement; may have critically damaged component(s)

LACMTA asset conditions vary between substandard and excellent. The TERM deterioration schedules were used to obtain decay conditions for the assets in the capital asset inventory. The results are summarized in Table 3-2.



Table 3-2: LACMTA Rail System Condition Ratings

Term	Condition Rating	Age	Cost-Weighted Average
Heavy Rail	1.09 - 5.00	0 - 24	3.99 (Adequate)
Light Rail	1.30 - 5.00	0 - 26	4.21 (Good)
Heavy/Light Rail Common Assets	1.00 - 5.00	0 - 37	2.50 (Marginal)

Since the FTA deterioration schedules are based on nationwide empirical data without accounting for varying geographical or weather conditions, it is likely that LACMTA assets are in a better condition than the deterioration schedules suggest, as the Los Angeles region is not subject to the extreme winter conditions experienced by other metropolitan regions. In some cases, LACMTA’s expected useful life is longer than suggested in the deterioration schedules, while in other cases constant vandalism and abuse results in shorter lifespans on some assets. As part of the long-term actions identified in LACMTA’s new TAM Plan, LACMTA plans to develop asset deterioration schedules from its own condition assessment data to better estimate current and future asset conditions. LACMTA is beginning to systematically conduct and collect asset condition inspections and assessments for use within the TAM Database.

State of Good Repair costs for future rail lines in the capital expenditure forecast are based on a methodology developed for a past LACMTA asset inventory study. The methodology is based on actual rehabilitation and replacement costs experienced by the Washington Metropolitan Area Transit Authority (WMATA) compared to original installation capital costs. The LACMTA rail SGR costs were calculated in the same manner based on the original installation capital costs of the LACMTA Blue, Red, Gold, and Green Lines. The SGR costs are estimated to begin 6 years after a rail line begins revenue operations. SGR costs for future rail lines were assumed to escalate at the CPI growth rates specified in the UCLA Anderson Forecast.

3.1.1.2 Other Capital Expenditures

Capital expansion costs other than SGR are included in the capital expenditure forecast at the project level and can include major construction projects (capital expansion), vehicle procurements, facilities and vehicle maintenance, among other project types. Vehicle procurement costs and other facility, infrastructure, and vehicle procurements/maintenance are assumed to escalate at the CPI rate determined in the UCLA Anderson Forecast. The Westside Purple Line Extension Section 2 is assumed to escalate at 3.5 percent annually. Other major construction capital expansion projects, such as the Measure R capital expansion projects, are assumed to escalate 3 percent annually starting in FY2015.

The rail capital expenditure forecast through FY2035 is delineated in Table 3-3. The two largest components of the rail capital expenditure forecast through FY2035 are major projects and debt service. It should be noted that a portion of projected rail capital expenditures are allocated to SGR improvements. Notable components of the Other Miscellaneous Improvements category include certain light rail yard projects and contingencies. The contingencies represent annual balances of Measure R (2%) and Measure R (35%) without regard for prior year carryovers. The annual amount is negative in the forecast when some of the prior cumulative balance is used.



Table 3-3: Rail Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)

Fiscal Year	Major Projects	State of Good Repair	Vehicles	System Improvements	General Improvements	Miscellaneous Improvements	Metrolink	Debt Service	Total
2016	1,673	15	141	6	31	240	7	269	\$ 2,383
2017	1,552	61	132	-	37	219	15	378	\$ 2,394
2018	1,150	41	86	-	58	187	37	440	\$ 1,999
2019	1,046	51	116	22	63	72	44	341	\$ 1,756
2020	838	111	94	21	-	(37)	54	539	\$ 1,620
2021	755	107	18	12	46	0	55	505	\$ 1,497
2022	587	65	3	-	63	(0)	52	505	\$ 1,275
2023	336	101	-	84	56	49	55	575	\$ 1,256
2024	124	179	-	112	60	167	58	402	\$ 1,103
2025	322	122	64	108	65	5	60	441	\$ 1,187
2026	309	180	50	172	65	247	63	386	\$ 1,473
2027	264	150	47	108	65	86	65	410	\$ 1,194
2028	330	149	109	37	66	10	68	427	\$ 1,195
2029	530	122	65	-	51	(132)	71	437	\$ 1,143
2030	623	83	65	-	36	(176)	76	410	\$ 1,117
2031	728	218	88	7	91	(161)	77	425	\$ 1,474
2032	953	315	70	46	66	(94)	80	467	\$ 1,904
2033	1,056	476	16	92	68	(0)	83	521	\$ 2,312
2034	917	410	42	28	52	0	86	548	\$ 2,082
2035	748	782	43	-	64	1	99	662	\$ 2,400
Total	\$ 14,843	\$ 3,739	\$ 1,250	\$ 855	\$ 1,101	\$ 682	\$ 1,206	\$ 9,088	\$ 32,764

Figure 3-1 delineates the total capital expenditure allocations among expenditure types in the capital expenditure forecast between FY2016 and FY2035. Figure 3-2 shows the annual capital expenditures broken out by category. As is consistent with the Measure R Expenditure Plan, the majority of capital spending on major projects occurs within the next 8 years, whereas debt service payments increase steadily as major project capital expenditures conclude.

Figure 3-1: Total Rail Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)

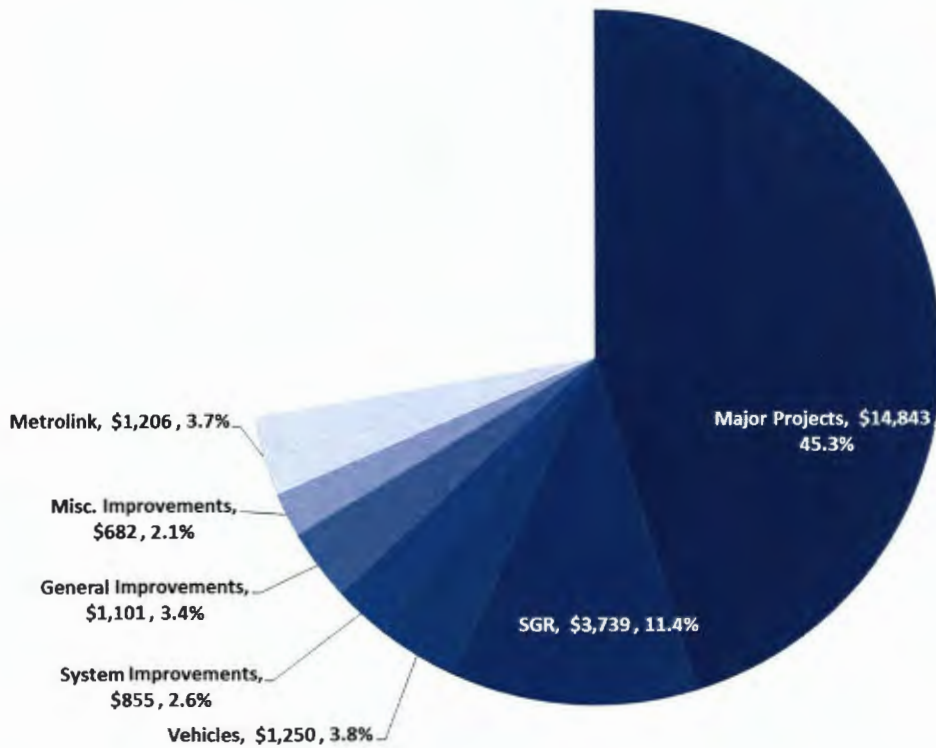
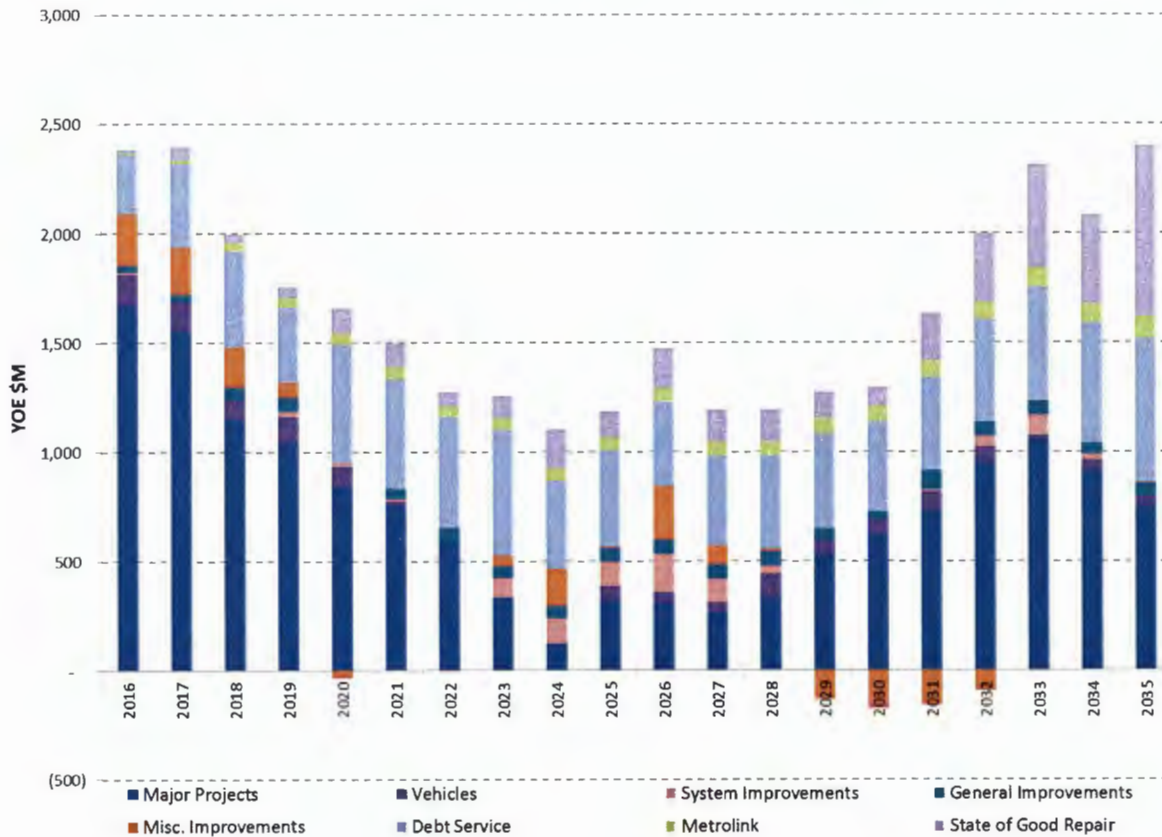




Figure 3-2: Annual Rail Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)



Note: Notable components of the Miscellaneous Improvements category include certain light rail yard projects and contingencies. The contingencies represent annual balances of Measure R (2%) and Measure R (35%) without regard for prior year carryovers. The annual amount is negative in the forecast when some of the prior cumulative balance is used.

The LACMTA bus capital expenditure forecast through FY2035 is delineated in Table 3-4. The LACMTA Bus category includes all new bus procurements by LACMTA and the projected purchase of expansion buses. Capital expenditures for ADA Access Services, municipal and non-LACMTA operators, and bus-related debt service are also represented. Figure 3-4 summarizes LACMTA bus capital expenditures by year.



Table 3-4: LACMTA Bus Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)

Fiscal Year	LACMTA Bus	ADA Access Services	Municipal and non-LACMTA	Debt Service	Total
2016	333	3	188	4	\$ 527
2017	162	3	179	4	\$ 348
2018	136	3	183	4	\$ 326
2019	268	3	185	4	\$ 460
2020	246	3	192	7	\$ 448
2021	249	3	194	9	\$ 455
2022	252	3	201	10	\$ 466
2023	255	3	203	11	\$ 472
2024	288	3	211	11	\$ 512
2025	364	3	213	11	\$ 590
2026	287	3	220	12	\$ 522
2027	375	3	223	12	\$ 613
2028	384	3	231	15	\$ 633
2029	344	3	234	15	\$ 596
2030	444	3	242	16	\$ 704
2031	273	3	246	16	\$ 537
2032	335	3	256	12	\$ 606
2033	294	3	260	11	\$ 568
2034	382	3	268	10	\$ 663
2035	410	3	272	9	\$ 693
Total	\$ 6,081	\$ 56	\$ 4,402	\$ 202	\$ 10,741



Figure 3-3: Total Bus Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)

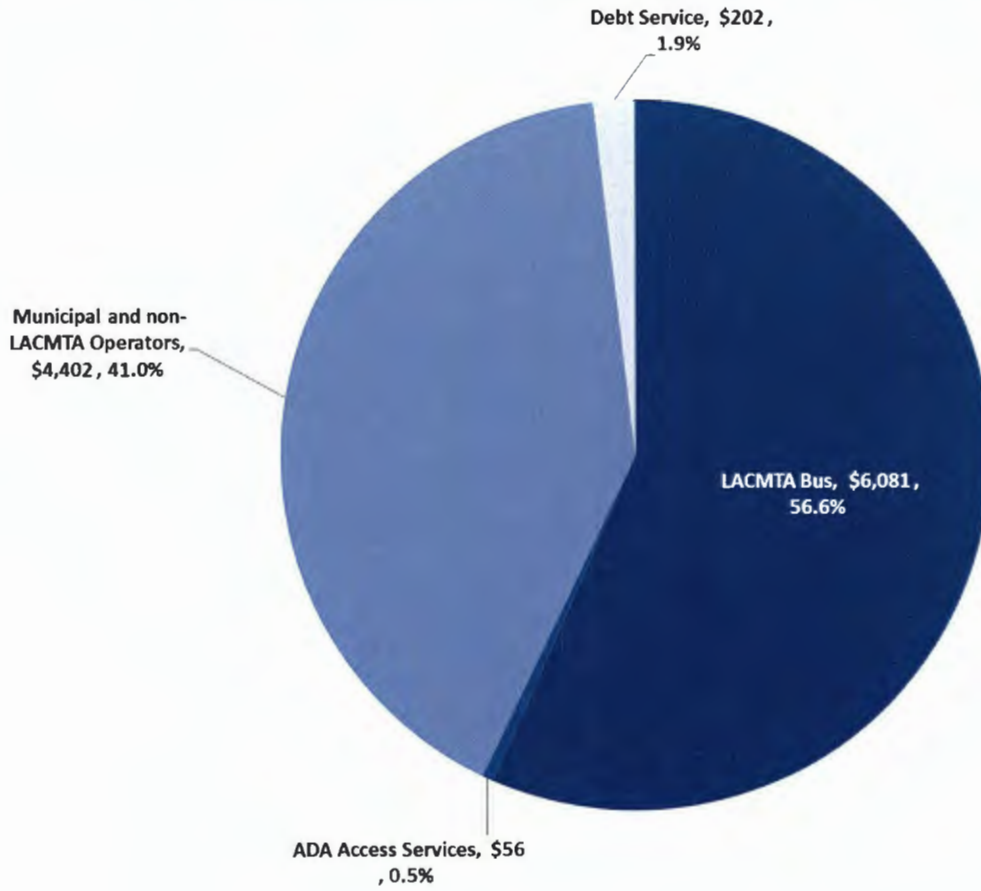
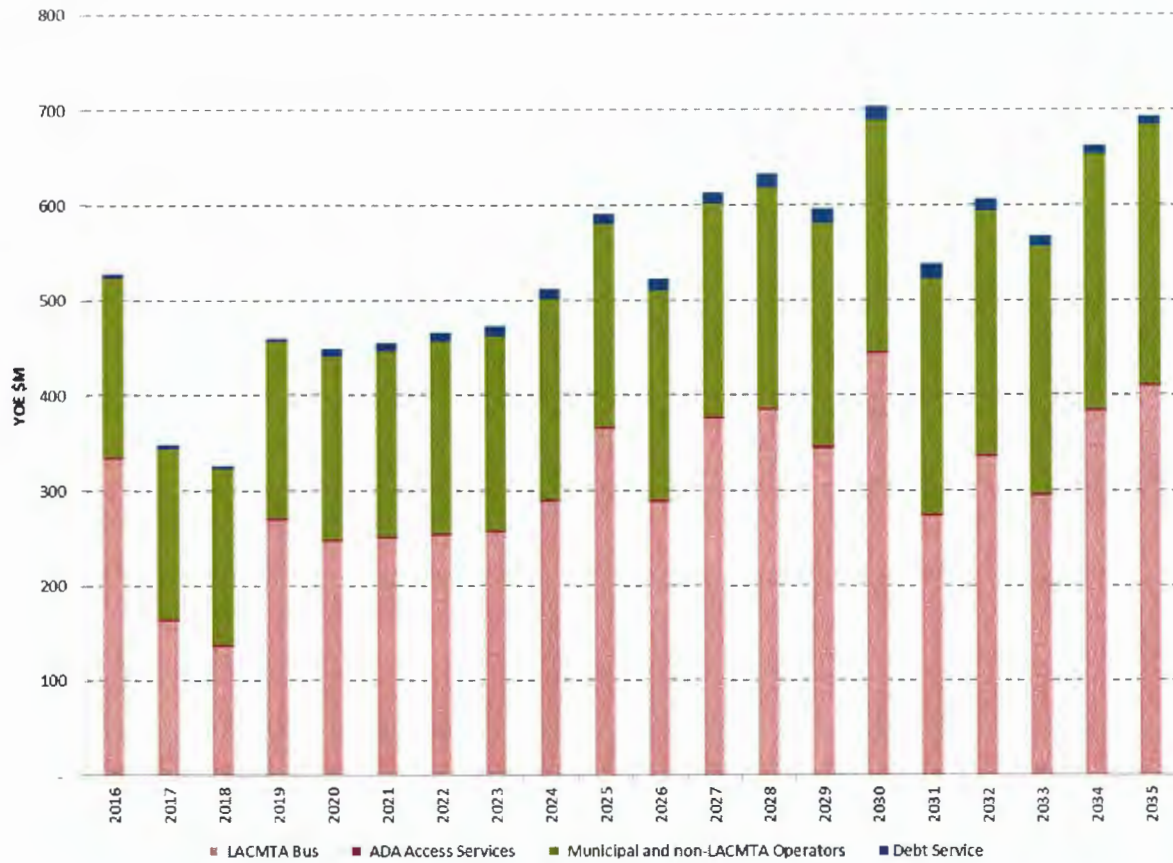




Figure 3-4: Annual Bus Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)



Finally, LACMTA also contributes towards certain highway capital costs such as regional surface transportation improvements, signal synchronization, bikeways and pedestrian improvements, transportation demand management, and regionally significant projects. The LACMTA highway capital expenditure forecast is shown in Table 3-5.

Table 3-5: LACMTA Funded Highway Capital Expenditure Forecast, FY2016 to FY2035 (YOE \$M)

Fiscal Year	Capital Costs	Debt Service	Total
2016	1,230	58	\$ 1,288
2017	1,227	84	\$ 1,311
2018	973	119	\$ 1,092
2019	824	161	\$ 985
2020	804	184	\$ 988
2021	827	207	\$ 1,035
2022	861	224	\$ 1,085
2023	734	241	\$ 976
2024	896	240	\$ 1,136
2025	1,081	259	\$ 1,340
2026	1,076	282	\$ 1,358
2027	1,046	306	\$ 1,352
2028	966	324	\$ 1,290
2029	1,021	341	\$ 1,362
2030	1,100	361	\$ 1,461
2031	1,003	379	\$ 1,383
2032	992	389	\$ 1,381
2033	1,057	401	\$ 1,458
2034	1,056	418	\$ 1,474
2035	1,148	422	\$ 1,569
Total	\$ 19,922	\$ 5,401	\$ 25,323
% of Total	78.7%	21.3%	100.0%

3.1.2 Historic Sources of Funds

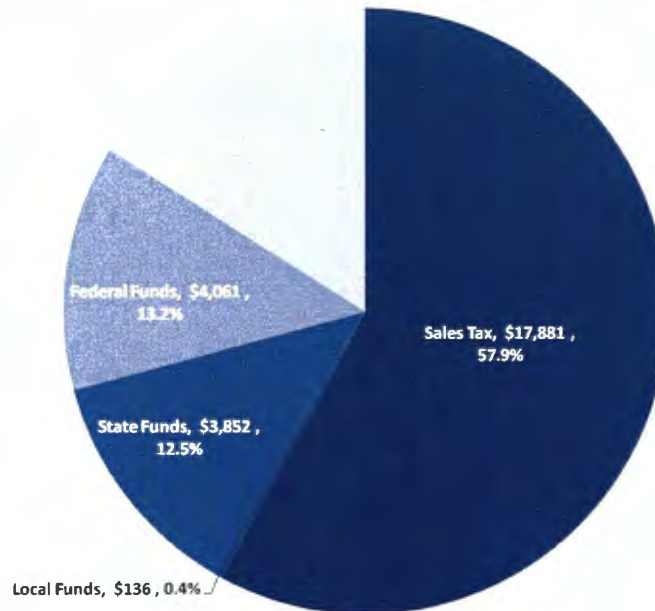
LACMTA's gross agency-wide historical capital sources of funds from FY2006 to FY2014 are delineated in Table 3-6. Figure 3-5 shows the overall breakdown of funding between FY2004 and FY2014. Historically, sales tax revenues (Proposition A, Proposition C, Transportation Development Act funds, and beginning FY2010, Measure R) have provided a majority of funding, representing 58 percent of total funding between FY2006 and FY2015. This is followed by other miscellaneous revenue sources, included financing revenues, which provided 16 percent of revenues. This is followed by Federal and State revenues which have provided 13 percent and 12 percent of revenues from FY2006 to FY2015, respectively. Finally, other local funds provided less than 1 percent of total revenues during the FY2006 to FY2015 timeframe. Details on each of the various revenue sources are provided in Section 3.1.3.



Table 3-6: LACMTA Sources of Funds: 10-Year History, FY2006 to FY2015 (YOE \$M)

Revenue Source	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
SALES TAX										
Prop A	\$669	\$686	\$683	\$621	\$566	\$602	\$649	\$687	\$710	\$740
Prop C	669	686	684	621	566	602	649	687	710	740
Measure R	-	-	-	-	552	599	645	685	707	741
TDA	339	345	341	310	285	301	327	344	355	371
TOTAL SALES TAX	\$1,677	\$1,717	\$1,707	\$1,552	\$1,969	\$2,104	\$2,270	\$2,403	\$2,482	\$2,592
LOCAL FUNDS										
Access Service Inc - ASI	\$0	\$0	\$0	\$0	\$0	\$0				
City of LA	5	2	-	(1)	0	-			1	7
AQMD	-	1	-	-	-	-				
BAD	-	21	-	-	-	-				
EZ Pass	-	7	-	9	9	-				
Local Other	1	-	7	13	7	24	20	4	6	21
TOTAL LOCAL FUNDS	\$7	\$30	\$7	\$21	\$16	\$24	\$20	\$4	\$7	\$28
STATE FUNDS										
STA	\$62	\$191	\$62	\$77	\$117	\$0	\$117	\$117	\$107	\$105
PROP 1B - SLPP								\$40	\$89	\$28
STIP/TCRP	176	44	51	244	216	37	14		37	
SHA	-	-	-	-	-	-				
TCRP	15	357	56	-	-	1	10	10		10
AQMD	-	-	-	-	-	-				
STIP - PPM	-	5	12	8	6	7	5	9	4	2
FSP	7	9	-	8	27	8				
Prop 1B Infrastr. Bonds	-	-	161	113	-	37	213	211	170	221
State Homeland Security	0	-	-	-	-	-				
State Other	4	-	11	38	(42)	5	72	287	211	253
TOTAL STATE FUNDS	\$264	\$605	\$353	\$488	\$324	\$95	\$431	\$674	\$618	\$619
FEDERAL FUNDS										
5309 New Starts	\$121	\$160	\$37	\$67	\$27	\$0	\$87	\$77	\$152	\$111
5309/5337 Fixed Guideways/SGR	31	40	43	188	127	57				29
5309/5339 Bus Facilities	7	5	3	1	3	-				57
5307 Capital	220	137	234	34	199	306	278	209	167	179
CMAQ	104	53	50	72	87	17	25	53	34	101
Federal Tea	1	-	-	-	-	-				
RSTP	-	2	-	-	-	-				
Grow. State Rail PM 5340	-	8	-	7	8	7	8	7	8	
Federal STP	-	-	-	-	-	-				
Federal Homeland Security	2	2	-	1	4	2	178		25	19
Federal Other	-	-	11	6	139	104		3	18	
TOTAL FEDERAL FUNDS	\$486	\$408	\$377	\$376	\$593	\$493	\$576	\$349	\$404	\$496
OTHER REVENUES										
Investment Income	\$50	\$77	\$84	\$63	\$44	\$38	\$33	\$23	\$28	\$25
Lease and Rental	13	-	-	10	16	13	13	24	6	26
License and Fines	8	8	8	8	8	8	8	11	18	26
Other	32	47	48	51	35	50	22	42	30	44
Operating Revenues	298	305	350	358	342	375	375	379	391	405
Non-Operating Revenues	6	7	7	-	-	-				
Prop A Rail bonds/CP	10	20	-	-	-	-	8			2
Prop A Disc. Bonds/CP	-	9	-	-	-	-				5
Prop C St & Hwy Bonds/CP	-	56	-	-	-	-		10		44
Prop C Discret. Bonds/CP	6	7	-	-	-	-	4			
General Revenue Bond	0	1	-	-	-	-				
TIFIA Loan	-	-	-	-	-	-				37
Measure R Bonds	-	-	-	-	-	-	284	270	96	5
TOTAL OTHER REVENUES	\$423	\$537	\$497	\$490	\$445	\$484	\$747	\$759	\$569	\$619
TOTAL FUNDS	\$2,856	\$3,297	\$2,941	\$2,927	\$3,346	\$3,200	\$4,044	\$4,189	\$4,080	\$4,354

WESTSIDE PURPLE LINE EXTENSION SECTION 2

Figure 3-5: LACMTA Capital Revenues, FY2006 to FY2015 (YOE \$M)


3.1.3 Forecast Sources of Funds

LACMTA’s capital expenditures are funded primarily with federal and state grants and local funds. Additionally, LACMTA finances a portion of its capital projects with debt and short-term financing.

3.1.3.1 Local Funds

The majority of funding is locally generated through three half-cent voter initiatives, Propositions A and C and Measure R. In November 2008, more than two-thirds of Los Angeles County voters approved Measure R, providing approximately \$35 billion in new funding between FY2010 and FY2039 to build many new highway and transit projects, including the Measure R capital expansion projects.

Table 3-7 summarizes the gross projected local funding amounts from FY2016 to FY2035 for Proposition A, Proposition C, Measure R, and TDA revenues. It should be noted that all local sales tax revenue sources are projected to escalate at growth rates based on the 2014 UCLA Anderson Forecast of taxable sales. Growth rates are highest in the first few years of the plan. However, the Los Angeles economy, like the rest of the country, continues to recover from a severe economic downturn. Growth tends to be strong in recovery periods due to expenditures that were deferred during the downturn. There have been three previous downturns since Proposition A collections began in 1984. The CAGR for each of the three recovery periods is given in the following table, along with the forecast for this recovery. This plan projects a CAGR of 5.6 percent from FY10 to FY16. That is in line with both the length and strength of previous recoveries. Beyond that time period, growth is

projected to slow. The CAGR from FY2016 to FY2035 is 4.1 percent. It is impossible to predict the business cycle that far out, so lower growth rates reflect the expectation that economic downturns will occur.

Capital-specific funding from these sources is summarized in Table 3-22.

Table 3-7: Revenue Forecast for Major LACMTA Local Sources, FY2016 to FY2035 (YOE \$M)

FY	Proposition A (Gross)	Proposition C (Gross)	Measure R (Gross)	TDA (Gross)
2016	783	783	779	391
2017	822	822	819	411
2018	862	862	858	431
2019	900	900	896	450
2020	937	937	933	468
2021	974	974	970	487
2022	1,012	1,012	1,007	506
2023	1,048	1,048	1,044	524
2024	1,091	1,091	1,086	545
2025	1,128	1,128	1,123	564
2026	1,168	1,168	1,163	584
2027	1,220	1,220	1,214	610
2028	1,269	1,269	1,264	634
2029	1,318	1,318	1,313	659
2030	1,365	1,365	1,359	682
2031	1,433	1,434	1,427	716
2032	1,507	1,507	1,501	753
2033	1,561	1,561	1,554	780
2034	1,616	1,616	1,609	808
2035	1,670	1,671	1,663	835
Total	\$ 23,683	\$ 23,686	\$ 23,583	\$ 11,838
CAGR	4.1%	4.1%	4.1%	4.1%

Proposition A is a half-cent sales tax in Los Angeles County enacted by voters in 1980. LACMTA is responsible for administering its revenues. Funds flow to LACMTA which allocates them to itself and other agencies according to the LACMTA Formula Allocation Procedure and LACMTA Board actions. These funds can be leveraged by bonding for capital projects other than the Westside Purple Line Extension Section 2 project. The LACMTA Reform and Accountability Act of 1998 prevents the use of Proposition A and Proposition C funds for operating or capital costs of new underground subways.

Table 3-8 identifies the revenue allocations and debt requirements mandated by the Proposition A ordinance.



Table 3-8: Proposition A Revenue Allocations and Debt Policy

Program	% of Sales Tax (Net of Admin)	Allowable Uses and Status	Debt Policy Maximum
Local Return	25%	Any transit purpose. Distributed to localities based on population.	N/A
Prop A Rail Development Program	35%	Rail Operations and Capital. Is currently committed to debt service in an amount close to the Policy Maximum.	87% of Prop A 35% Rail Revenues
Discretionary	40%	Any transit purpose. Current state practice directs funds to bus subsidies and incentives.	No further issuance currently planned.
Total	100%		
Administration	5%		

Obligations of LACMTA payable from the Proposition A sales tax consist of sales tax revenue bonds, commercial paper notes, and certain amounts owed under interest rate swap agreements. Commercial Paper Notes are issued by LACMTA to fund capital projects on a short-term basis prior to being permanently financed with long-term bonds or receiving grant funding. LACMTA issues both taxable and tax-exempt commercial paper notes, with original maturity dates ranging from one to 270 days, at various interest rates. Under the terms of the notes, LACMTA can roll-over the principal amounts due for additional periods.

On January 24, 1991, LACMTA received authorization to issue \$350 million aggregate principal amount of its Proposition A tax exempt commercial paper notes (the "Proposition A Commercial Paper Notes"). As of January 1, 2015, Proposition A Commercial Paper Notes totaling \$65 million were outstanding. The Proposition A Commercial Paper Notes are Third Tier Subordinate Lien Obligations and are payable from Proposition A sales tax revenues on a subordinate basis to the Proposition A First Tier Senior Sales Tax Bonds and the Proposition A Second Tier Obligations. Although LACMTA has authorization to issue up to \$350 million aggregate principal amount, the current Liquidity Facility provides only \$137 million of liquidity and LACMTA will not issue Proposition A Commercial Paper Notes in excess of that amount.

At this time, LACMTA has three priority levels of obligations: 1) First Tier Senior Lien bonds, 2) Second Tier Obligations and 3) Third tier Obligations. Table 3-9 depicts the outstanding principal amounts associated with each level of debt obligation as of January 2015.



Table 3-9: Proposition A Outstanding Debt Obligations (YOE \$M)

Level of Priority	Outstanding as of January, 2015
First Tier Senior Lien Bonds	\$1,143.4
Second Tier Obligations	\$19.4
Third Tier Obligations (commercial paper)	\$65.0
Total	\$1,227.8

On a countywide basis, LACMTA forecasts \$22,499 million (this amount is net of administration costs of \$1,184 million) in Proposition A revenues from FY2016 through FY2035. This reflects the use of growth rates based on UCLA Anderson Forecast of taxable sales. Including carry-over from prior years, a total of \$22,763 million in Proposition A funding is available FY2016 through FY2035. Of this, \$9,263 million (41 percent) is dedicated to Bus Operations and the Bus Incentive Program. The Rail Development Account is estimated to receive \$7,875 million (35 percent) and \$5,625 million (25 percent) is committed to the Local Return Account.

Proposition C is a voter-enacted half-cent sales tax for public transit purposes approved by voters in 1990. LACMTA is responsible for administering its funds. Funds flow to LACMTA which allocates them to itself and other agencies according to the LACMTA Formula Allocation Procedure, the LACMTA Call for Projects, and LACMTA Board actions. These funds can be leveraged by bonding for capital projects other than the Westside Purple Line Extension Section 2 project. The LACMTA Reform and Accountability Act of 1998 prevents the use of Proposition A and Proposition C funds on operating or capital costs of new underground subways.

Table 3-10 identifies the legally binding apportionments and debt requirements associated with the Proposition C ordinance.

Long-term obligations of LACMTA payable from the Proposition C sales tax consist of sales tax revenue bonds, commercial paper notes, and certain amounts owed under various interest rate swap agreements, one standby bond purchase agreement, and two reimbursement agreements. On June 9, 1993, LACMTA received authorization to issue \$150 million of tax-exempt and taxable commercial paper notes (the "Proposition C Commercial Paper Notes") payable from and secured by Proposition C sales tax revenues. As of May 2014, \$22 million in Proposition C Commercial Paper Notes were outstanding. The Proposition C Commercial Paper Notes are Subordinate Lien Obligations and are payable from Proposition C sales tax revenue on a basis subordinate to the lien on Proposition C sales tax revenues granted to the Senior Bonds and any Senior Parity Debt.

Table 3-10: Proposition C Revenue Allocations and Debt Policy

Program	% of Sales Tax (Net of Admin)	Allowable Uses and Status	Debt Policy Maximum
Security	5%	Transit Security. Operations or capital.	No Debt Issuance
Commuter Rail/ Transit Centers	10%	Commuter Rail and Park and Ride. Operations or capital.	40% of Prop C 10% Commuter Rail Revenue
Local Return	20%	Any transit purpose and certain roadways heavily used by transit. Distributed to localities based on population.	NA
Transit Related Improvements to Freeways and Highways	25%	Streets, Highways, and Fixed Guideway Projects on Railroad Right-of-Way.	60% of Prop C 25% Transit Related Improvement Revenues
Discretionary	40%	Bus and Rail, Capital and Operating.	40% of Prop C 40% Discretionary Revenues
Total	100%		
Administration	1.5%		

LACMTA has two priority levels of obligations secured by the Proposition C sales tax: (1) Senior Bonds and Senior Parity Debt, and (2) its Subordinate Obligations, including a revolving credit facility. Table 3-11 depicts the outstanding principal amounts associated with the two levels of obligations as of January 2015.

Table 3-11: Proposition C Outstanding Debt Obligations (YOE \$M)

Level of Priority	Outstanding as of January, 2015
Sales Tax Revenue Bonds	\$1,235.5
Subordinate Obligations (commercial paper)	\$18.6
Revolving Credit Facility	\$45.0
Total	\$1,299.1

On a countywide basis, LACMTA forecasts \$23,331 million (this amount is net of administration costs of \$355 million) in Proposition C revenues to be available from FY2016 through FY2035. This reflects the use growth rates based on the UCLA Anderson Forecast of taxable sales. Including carry-over from prior years, a total of \$23,686 million in Proposition C funding is available between FY2016 and FY2035. Of this, \$4,666 million (20 percent) is dedicated to the Local Return. The Security Account will receive \$1,165 million (5 percent), Metrolink Commuter Rail/Transit Centers will receive \$1,885 million (8 percent), and Transit-Related Highway projects will receive \$5,833 million (25 percent). The remainder of the program is discretionary.

Measure R is a half-cent transportation sales tax approved in November 2008 by Los Angeles County voters to meet the transportation needs of the County. Collection of the tax dedicated to public transit and highway improvements began on July 1, 2009 and will continue for a period of 30 years. LACMTA is responsible for administering Measure R revenues. Measure R revenues flow to LACMTA

which then allocates the revenues in accordance with legally binding allocation rules delineated by Los Angeles County Ordinance #08-01 (the Ordinance approving Measure R), LACMTA Formula Allocation Procedure, and LACMTA Board actions. Table 3-12 is derived from the Ordinance #08-01 and represents the revenue allocations mandated by Measure R. As shown in the Table, 65 percent of Measure R revenues are to be allocated to transit.

Overall, Measure R is expected to generate approximately \$23,230 million in revenues from FY2016 to FY2035. Of the gross forecasted revenues, approximately \$8,130 million (or 35 percent) is mandated to be allocated to the twelve Measure R capital expansion projects by Ordinance #08-01 (with specific amounts to be allocated to each project). Revenues from Measure R can be leveraged to build capital projects, as is planned in the Measure R Expenditure Plan.

Table 3-12: Measure R Revenue Allocations

Subfund	% of Sales Tax (Net of Admin)	Program
Transit Capital	35%	New Rail and/or Bus Rapid Transit Capital projects
Transit Capital	3%	Metrolink Capital Improvement Projects
Transit Capital	2%	Metro Rail Capital—System Improvements, Rail Yards, and Rail Cars
Highway Capital	20%	Carpool Lanes, Highways, Goods Movement, Grade Separations, and Sound walls
Operations	5%	Rail Operations
Operations	20%	Bus Operations
Local Return	15%	Major Street resurfacing, rehabilitation and reconstruction, pothole repair, signals, bikeways, streetscapes, and transit.
Total	100%	
Administration	1.5%	

Table 3-13 shows the original and the most current anticipated project completion dates for the twelve capital expansion projects, as well as the funding allocations required by Ordinance #08-01 for each project. It should be noted that the projects in Table 3-13 are ordered in their mandated order of priority; as directed by the LACMTA Board, they must be sequenced in the order delineated on the Table.

LACMTA forecasts \$23,230 million (this amount is net of administration costs of \$354 million) in Measure R revenues to be available from FY2016 to FY2035. Measure R will sunset in FY2039. The forecast reflects the use of a growth rates based on the UCLA Anderson Forecast of taxable sales. Of the total Measure R revenues, \$3,485 million (15 percent) is dedicated to the Local Return. Metrolink will receive \$681 million (3 percent). Rail Capital and Operations will receive \$1,626 million (7 percent). Twenty percent (\$4,646 million) has been committed to Bus Operations. Transit Capital will receive \$8,130 million (35 percent) and \$4,646 million (20 percent) is dedicated to Highway Projects.

Long-term obligations of LACMTA payable from the Measure R sales tax consist of sales tax revenue bonds and commercial paper notes. Table 3-14 depicts the outstanding principal amounts associated with the sales tax revenue bonds as of January 2015.

Table 3-13: Measure R Expenditure Plan Project Prioritization

Priority (LRTP Sequence)	Project	Original Completion Schedule (FY)	Revised Completion Schedule (FY)	Total Measure R Funding
1	Orange Line Canoga Extension	2013	2012	\$-
2	Exposition - Phase II	2015	2016	1,185
3	Gold Line Foothill Extension (from Pasadena) Phase 2A	2017	2016	880
4	East San Fernando Valley North-South Corridor	2018	2018	69
	Crenshaw/LAX Transit Corridor	2018	2020	1,254
5	Regional Connector	2019	2021	160
	Westside Purple Line Extension - Section 1	2019	2024	1,610
6	Westside Purple Line Extension - Section 2	2026	2026	804
7	West Santa Ana Branch	2027	2027	240
8	Airport Metro Connector	2028	2023	200
9	South Bay Green Line Extension	2035	2035	272
	Gold Line Eastside Extension Phase II	2035	2035	1,271
10	Westside Purple Line Extension - Section 3	2036	2035	1,114
11	Sepulveda Pass Transit Corridor	2039	2039	1,000

Table 3-14: Measure R Outstanding Debt Obligations

Level of Priority	Outstanding as of January, 2015
Sales Tax Revenue Bonds	\$686.1

The **Transportation Development Act (TDA)** created a Local Transportation Fund (LTF) for each county derived from one-quarter cent of the 7.25 cent statewide retail sales tax base. The funds are apportioned to each county by the State Board of Equalization according to the amount of tax collected in the county. The funds are held by the County of Los Angeles which deducts for its administrative costs and distributes the balance as directed by the LACMTA Accounting Department. Most of the TDA funds are allocated under Title 4 of the Act which can be used to fund public transportation systems, bus capital or operations. These funds are often used as local match to FTA Section 5339 State of Good Repair Program and Section 5307 funds.

WESTSIDE PURPLE LINE EXTENSION SECTION 2

LACMTA forecasts \$11,668 million in Article 4 revenues to be available for Bus Operations (\$7,937 million), Bus Capital (\$3,075 million), Rail Capital (\$4 million), and agency-wide capital (\$32 million) from FY2016 through FY2035. This reflects the use growth rates based on the UCLA Anderson Forecast of taxable sales.

3.1.3.2 State Funds

LACMTA receives several sources of state funding for transportation projects. The following sections summarize the most significant sources of state funding used by LACMTA for bus and rail transit capital projects.

Table 3-15 includes the forecast of future state funding sources from FY2016 to FY2035. Capital-specific funding from these sources is summarized in Table 3-22.

State Transportation Improvement Program (STIP) is a five-year state-regional program, adopted every two even years, of capital improvements on and off the State Highway System that increase the capacity of the transportation system. The STIP is funded from the State Highway Account (SHA), the primary funds of which are the \$0.18 cents per gallon state gasoline tax and federal (primarily Surface Transportation Program) funds.

LACMTA is responsible for programming approximately 16 percent of any funds that are distributed statewide through the STIP. The LRTP assumes that the LACMTA will use these funds to fulfill commitments made in prior STIP processes through FY2019. In FY2020 and beyond, new funds are assumed to be available for capital projects in the LRTP, including the Call for Projects.

- **Interregional Improvement Program (IIP)**—25 percent of STIP funds are used for capacity enhancing highway improvements proposed and administered by Caltrans, and for intercity rail capital improvements
- **Regional Improvement Program (RIP)**—75 percent of STIP funds are distributed, 60 percent by formula to the 13 southern counties and 40 percent to the northern counties. LACMTA, as RTPA, proposes regional projects for itself, Caltrans, and local agencies. Since LACMTA receives no federal metropolitan planning funds, LACMTA may propose to use up to 5 percent of its RIP share for project Planning and Programming and Monitoring (PPM) which may be used for project planning including studies and alternatives analyses.



Table 3-15: Revenue Forecast for Major LACMTA State Sources, FY2016 to FY2035 (YOE \$M)

Fiscal Year	RIP Funds	Proposition 1B Bonds*	Other	Total
2016	61	236	84	381
2017	58	107	62	226
2018	55	-	68	123
2019	57	-	102	159
2020	-	-	104	104
2021	-	-	31	31
2022	100	-	21	121
2023	100	-	21	121
2024	100	-	23	123
2025	100	-	21	121
2026	100	-	21	121
2027	100	-	23	123
2028	100	-	22	122
2029	100	-	22	122
2030	100	-	24	124
2031	100	-	22	122
2032	100	-	22	122
2033	100	-	24	124
2034	100	-	22	122
2035	100	-	22	122
Total	\$1,630	\$343	\$761	\$2,734
% of Total	59.6%	12.5%	27.8%	100.0%
CAGR	2.7%	-100.0%	-6.7%	-5.8%

* Revenue source includes Highway funds.

Proposition 1B, approved by the voters in the November 2006 general elections, enacted the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 to authorize \$19.925 billion of state general obligation bonds for specified purposes, including high-priority transportation corridor improvements, transit and passenger rail improvements, state-local partnership transportation projects, and transit security projects. The specific funding anticipated to be used for LACMTA’s Capital Program is summarized below.

- **Transit System Safety, Security & Disaster Response Account**—This program provides \$1 billion in funding statewide. Funds shall be available for capital projects that provide increased protection against a security and safety threat, and for capital expenditures to increase the capacity of transit operators and to develop disaster response transportation systems that can move people, goods, emergency personnel, and equipment in the aftermath of a disaster impairing the mobility of goods, people, and equipment. Funds in this account will be allocated by the California Office of Emergency Services (OES) for capital projects that



provide increased protection against a security and safety threat, and to develop a disaster response transportation system that can move people, goods, emergency personnel, and equipment in the aftermath of a disaster, as follows:

- 60 percent for capital expenditures to agencies and transit operators
- 25 percent for capital expenditures to regional public waterborne transit agencies
- 15 percent for capital expenditures to the intercity passenger rail system

LACMTA anticipates \$118 million to be available for FY2016 and FY2017.

Other Sources include the following:

- In 2000, the Legislature enacted the **Traffic Congestion Relief Act (Act)**, a six-year funding plan to address state and local transportation needs. The Act created two funds both of which receive funding from a combination of state General Fund revenues (one-time) and gasoline sales taxes (ongoing) that previously did not go to transportation. LACMTA uses funds from the Traffic Congestion Relief Fund (TCRF) to support the projects specified in the Act to reduce congestion. Due to the state’s fiscal condition in the early 2000s, much of the funding was loaned to the state General Fund. As a result, later statutes extended the annual transfer of revenues to the TCRF through FY2008 and specified repayment of prior-year loans which will likely continue into the next decade. In June 2009, the California Transportation Commission adopted an updated statewide allocation plan for the remainder of the funds.
- The Reliable High-Speed Passenger Train Bond Act for the 21st Century (also known as **Proposition 1A High Speed Rail Bonds**), approved in November 2008, authorized the issuance of \$9.95 billion of general obligation bonds. Nine billion of the bond proceeds will partially fund the 800-mile high-speed train that will run between San Francisco and Los Angeles. The remaining \$950 million of the bond proceeds will be available for capital projects on other passenger rail lines to provide connectivity to the high-speed train system and to allow for capacity enhancements and safety improvements to those lines. The bill under which this proposition was approved, Assembly Bill 3034 (2008), provides for \$760 million allocated to eligible recipients based on a defined formula.

3.1.3.3 Federal Funds

The provisions and funding programs specified in MAP-21, which includes all federal highway, transit, and transportation programs, are assumed in the financial forecast. This financial plan assumes that current federal funding programs that are included in MAP-21 will continue in the future. Funding levels for individual federal grant programs are assumed to grow 1.0 percent annually for Section 5337, 5339, and 5307 funds and “other” funding sources in the long-term. The forecasted major sources of federal funds received by LACMTA for FY2016 to FY2035 are shown in Table 3-16. Capital-specific funding from these sources is summarized in Table 3-22.



Table 3-16: Revenue Forecast for Major LACMTA Federal Sources, FY2016 to FY2035 (YOE \$M)

Fiscal Year	FTA Section 5309 New Starts	FTA Section 5337 State of Good Repair	FTA Section 5339 Bus & Bus Facilities	FTA Section 5307 Capital	CMAQ	Other*	Total
2016	296	83	17	234	139	113	881
2017	346	84	17	236	139	92	913
2018	327	85	17	238	139	92	898
2019	325	86	17	241	100	93	862
2020	336	87	17	243	80	94	858
2021	281	88	17	246	80	95	807
2022	247	88	18	248	80	97	778
2023	247	89	18	250	80	98	783
2024	170	90	18	253	80	99	711
2025	121	91	18	256	80	101	666
2026	267	92	18	258	60	102	798
2027	142	93	19	261	60	103	677
2028	157	94	19	263	60	104	697
2029	200	95	19	266	60	106	746
2030	200	96	19	269	60	107	751
2031	200	97	19	271	60	109	756
2032	200	98	20	274	60	110	761
2033	200	99	20	277	60	111	767
2034	200	100	20	279	60	113	772
2035	300	101	20	282	60	114	877
Total	\$4,763	\$1,835	\$367	\$5,144	\$1,596	\$2,053	\$15,758
% of Total	30.2%	11.6%	2.3%	32.6%	10.1%	13.0%	100.0%

* Other includes all other project LACMTA Federal Revenues.

Section 5309 New Starts— As described in Section 2.1.3, this financial plan is based on the assumption that Westside Purple Line Extension Section 2 will receive a \$1,187 million grant equal to 48 percent of its total Project cost through FY2026. In addition, the forecast assumes that LACMTA will receive funding of \$969 million towards 45 percent of the cost of Westside Purple Line Extension Section 3 from FY2026 to FY2036, \$890 million towards 36 percent of the cost of the Gold Line Eastside Extension Phase II project from FY2026 to FY2036, and \$500 million towards 20 percent of the cost of the Sepulveda Pass Transit Corridor project from FY2035 to FY2039. The plan also reflects \$1,085 in remaining funds for Westside Purple Line Extension Section 1 and \$605 million for Regional Connector. Between FY2016 and FY2035 \$4,763 million in New Starts funding is anticipated.

Section 5337 State of Good Repair Program funding is used for rehabilitation and replacement of major fixed guideway capital investment projects. Eligible activities are capital projects to modernize or improve existing fixed guideway systems, including purchase and rehabilitation of rolling stock, track, line equipment, structures, signals and communications, power equipment and substations, passenger stations and terminals, security equipment and systems, maintenance facilities and equipment, operational support equipment including computer hardware and software, system extensions, and preventive maintenance. These funds are apportioned by FTA based on statutory formula to urbanized areas with rail systems that have been in operation for at least seven years. LACMTA intends to use these funds for preventive maintenance, rail car acquisitions, and rehabilitation and replacement for state of good repair purposes. This program was established in MAP-21 and supersedes the Section 5309 Fixed Guideway Modernization Program.

Projections of future funding from this program are consistent with Section 5309 Fixed Guideway Modernization program funding projections applied in previous financial plans.

Additional miles will be included annually as Metrolink and LACMTA rail service miles become eligible and are applied to the federal formula. This added revenue is assumed based on current formulas. Additional funding is expected seven years after new rail lines become operational.

Section 5339 Bus and Bus Facilities funds can be used for the purchase of buses, bus maintenance and administrative facilities, transfer facilities, intermodal terminals, park-and-ride stations, and passenger shelters.

Section 5307 Capital Funds are apportioned to urban areas based on a formula. For areas with populations of 200,000 and more, the formula is based on a combination of bus revenue vehicle miles, bus passenger miles, fixed guideway revenue vehicle miles, and fixed guideway route miles as well as population and population density.

Section 5307 funds can be used for preventive maintenance costs as well as capital costs. Eligible activities include planning, engineering design, and evaluation of transit projects and other technical transportation-related studies; capital investments in bus and bus-related activities such as replacement of buses, overhaul of buses, rebuilding of buses, crime prevention and security equipment, and construction of maintenance and passenger facilities; and capital investments in new and existing fixed guideway systems including rolling stock, overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware and software.

The amount of Section 5307 funds assumed in the financial plan is based on Southern California Association of Governments formulas.

The forecast also assumes that these funds will be allocated to all eligible bus operators by formula for identified capital requirements, pursuant to the current LACMTA Capital Allocation Procedure (85 percent by formula and 15 percent discretionary). For financial modeling purposes only and to determine potential funds for the agencies, future discretionary funds are assumed split between the Municipal operators and LACMTA based on the average of the last five years. The actual allocation of the 15 percent discretionary funds will occur annually and may vary from this modeling assumption.

Congestion Mitigation and Air Quality (CMAQ) Program future funding has been adjusted to reflect air quality improvements in Los Angeles County. LACMTA is part of the South Coast Air Quality Basin in Southern California and the deadline for compliance with the latest updated air quality standards is 2020. Accordingly, the annual revenue forecast is reduced beginning in FY2019, again in FY2020, and again in FY2026.

- Since the creation of the CMAQ program, California has been a leader in directing the funds to those areas where it is needed most by mimicking the federal weighted population formula in its distribution of these funds to the counties and regions of the State. LACMTA is responsible for programming its weighted population CMAQ funds in Los Angeles County. Specifically, Section 182.7(c) of California Streets and Highways Code states the following:

Notwithstanding subdivision (b), where county transportation commissions have been created by Division 12 (commencing with Section 130000) of the Public Utilities Code, all congestion mitigation and air quality program funds shall be further apportioned by the metropolitan planning organization to the county transportation commission on the basis of relative population within the federally designated air quality nonattainment and maintenance areas after first apportioning to the nonattainment and maintenance areas in the manner and in accordance with the formula set forth in subsection (b) (2) of Section 104 of Title 23 of the United States Code.

- Further, California Public Utilities Code commencing with Section 130000 states the following:

Section 130050: There is hereby created a commission in Los Angeles County, in Orange County, in Riverside County, and in San Bernardino County;

Section 130050.2. There is hereby created the Los Angeles County Metropolitan Transportation Authority. The authority shall be the single successor agency to the Southern California Rapid Transit District and the Los Angeles County Transportation Commission as provided by the act that enacted this section.

Section 130051.11. (a) The Los Angeles County Metropolitan Transportation Authority may determine its organizational structure, which may include, but is not limited to, the establishment of departments, divisions, subsidiary units, or similar entities. Any department, division, subsidiary unit, or similar entity established by the authority shall be referred to in this chapter as an "organizational unit." The authority shall, at a minimum, establish the following organizational units:

Section 130051.11. (a)(3) A transportation planning and programming organizational unit with all planning responsibilities previously performed by the former Southern California Rapid Transit District and the former Los Angeles County Transportation Commission.



- MAP-21 grandfathered in the weighted population formula of FFY 2009 for States. California is therefore using the previous arrangements to also sub-allocate the funds on the same weighted population basis as in FFY 2013 and FFY 2014. The California legislature is currently considering how to formalize this sub-allocation into State law, but in the meantime, Caltrans and the State of California are continuing to sub-allocate the funds as before. Caltrans suballocated CMAQ funds consistent with the 2009 weighted population factors, but with the most recent population figures from the 2010 US Census. Current discussions regarding the subsequent fiscal year indicate the approach will be used again.

The CMAQ program is designed to fund projects that contribute to attainment of NAAQS. CMAQ funds cannot be used to construct facilities that would provide additional capacity for single-occupancy vehicles. It is assumed that all new rail lines and various LACMTA Rapid bus projects will receive CMAQ funding for their actual operating costs for the first three years of operation.

Other Sources include the following:

- **Surface Transportation Program (STP)**—Funds that are appropriated by Congress for highway improvements but are flexible and eligible for transit capital projects and Transportation Demand Management as well. The funding is apportioned to states based 25 percent on total lane miles of federal-aid highways, 40 percent on vehicle-miles traveled on federal-aid highways, and 35 percent on highway users’ tax payments into the Highway Account of the Highway Trust Fund. Half of the STP allocation to the state is assumed to go to the California State Highway Account with the other half allocated to the regions by formula in accordance with Section 182.6 of the California Streets and Highways Code. Funds may be flexed or transferred to the FTA in order to be used for transit projects.

Most of LACMTA’s Regional Surface Transportation Improvement Program (RSTP) share of STP funding is assumed converted to funds eligible for paratransit uses by Access Services. This is possible because Access Services, as a contracted service, is considered a capital expense. Some RSTP funds have also been assumed for carpool lanes and freeway gap closures/arterial widening in Los Angeles County.

- **Section 5340 Growing State Program**—based on the amount of population growth anticipated. This revenue source is assumed to be used for rail purposes. The actual award of funds is done through the Section 5307 requirements and FTA grant management procedures.

3.1.4 Measure R Expenditure Plan Financing Strategy

To meet the schedules of all twelve projects in the Measure R Expenditure Plan, LACMTA intends to leverage funds through debt financing. This financial plan assumes that from inception of Measure R through program sunset LACMTA will receive \$3,869 million in Measure R-backed debt proceeds for seven projects using the financial instruments detailed below, plus an additional \$6,020 million in pay as you go Measure R funding for all projects. The financial plan also assumes that LACMTA will leverage other federal, state and local funding through debt financing. The overall funding breakout for the program of projects in the Measure R Expenditure Plan is delineated in the following tables. Table 3-17 summarizes federal and Measure R funds and Table 3-18 summarizes state and other local funds.



- **Transportation Infrastructure Finance and Innovation Act (TIFIA) loans**— It is anticipated that the major capital projects will receive \$1,869 million in direct TIFIA loan draws from FY2015 through FY2021 representing an assumed front-end commitment from the USDOT to provide financing for the Westside Purple Line Extension Section 1 and Section 2, Regional Connector, and Crenshaw/LAX Transit Corridor projects. The TIFIA loans would be backed by Measure R revenues, net of the 15 percent “Local Return” component.



Table 3-17: Measure R Expenditure Plan Funding Breakout: Federal and Measure R Funds (YOE \$M)

Project	Total Project Cost	Federal Funds			Measure R Funds				
		New Starts	CMAQ	Other Federal Funds	TIFIA Debt	BABs	Tax Exempt	Proj. Spec. Comm Paper	Cash / CP / TE Bonds
Orange Line Canoga Extension	\$154								
Exposition - Phase II	\$1,309					275	133	193	319
Gold Line Foothill Extension (from Pasadena)	\$787			15		270	72		329
East San Fernando Valley North-South Corridor	\$170			1					69
Crenshaw/LAX Transit Corridor	\$2,058		144	55	546	-	-		661
Regional Connector*	\$1,417	670	64		160				21
Westside Subway Extension - Section 1**	\$3,019	1,250	12		856				834
Westside Subway Extension - Section 2***	\$2,467	1,187	169		307				586
Westside Subway Extension - Section 3	\$2,157	969							1,114
West Santa Ana Branch	\$649								402
Airport Metro Connector	\$253		12						200
Gold Line Eastside Extension Phase II	\$2,494	890					-		1,271
South Bay Green Line Extension	\$555		80	1					272
Sepulveda Pass Transit Corridor	\$2,468	500	155						1,000
TOTAL	\$19,956	\$5,466	\$636	\$72	\$1,869	\$545	\$205	\$193	\$7,077

* Regional Connector cost includes New Starts related finance charges through project opening in FY2021.
 ** Westside Purple Line Extension - Section 1 cost includes New Starts related finance charges through the full receipt of New Starts grants in FY2026.
 *** Westside Purple Line Extension - Section 2 cost includes New Starts related finance charges through the full receipt of New Starts grants in FY2031.

Table 3-18: Measure R Expenditure Plan Funding Breakout: State and Local Funds (YOE \$M)

Project	Total Project Cost	State Funds			Local Funds				
		State Prop 1B	State Prop 1A HSR	TCRP/ RIP	Repay Cap Loan	Prop A Cash / Bonds	Prop C	Local Agency Funds	Other Local
Orange Line Canoga Extension	\$154	\$102		\$9			\$43		
Ex position - Phase II	\$1,309	30		48		23	242	45	
Gold Line Foothill Extension (from Pasadena)	\$787					26	50	26	
East San Fernando Valley North-South Corridor	\$170			63			32	5	
Crenshaw/LAX Transit Corridor	\$2,058	172		75		5	213	108	80
Regional Connector*	\$1,417	135	115	14	131			42	64
Westside Subway Extension - Section 1**	\$3,019				(8)			75	-
Westside Subway Extension - Section 2***	\$2,467				163			55	
Westside Subway Extension - Section 3	\$2,157				10			64	
West Santa Ana Branch	\$649			-		226	2	20	
Airport Metro Connector	\$253					11	29	-	
Gold Line Eastside Extension Phase II	\$2,494			1	14	3	240	75	
South Bay Green Line Extension	\$555				3	177	5	17	
Sepulveda Pass Transit Corridor	\$2,468			1		0	738	74	
TOTAL	\$19,956	\$439	\$115	\$211	\$313	\$471	\$1,595	\$604	\$144

* Regional Connector cost includes New Starts related finance charges through project opening in FY2021.

** Westside Purple Line Extension - Section 1 cost includes New Starts related finance charges through the full receipt of New Starts grants in FY2026.

*** Westside Purple Line Extension - Section 2 cost includes New Starts related finance charges through the full receipt of New Starts grants in FY2031.



LACMTA and USDOT have closed on three TIFIA loans. On October 1, 2012, USDOT approved a \$546 million loan for the Crenshaw/LAX Transit Corridor project. On February 20, 2014, USDOT approved a \$160 million loan for the Regional Connector. On May 21, 2014, USDOT approved an \$856 million TIFIA loan for Westside Purple Line Extension Section 1.

LACMTA is currently preparing to submit a TIFIA application to USDOT requesting a \$307 million direct loan for Westside Purple Line Extension Section 2.

The interest rate on TIFIA proceeds is assumed to be equal to 3.5 percent. TIFIA loans are expected to be paid back between FY2015 and FY2039.

- **Build America Bonds (BABs)**—The financial plan includes \$545 million financing from BABs, which are taxable bonds issued by state and local governments that gives them access to the conventional corporate debt markets. BABs were issued in FY2011. The BABs are fixed-rate serial bonds with the first debt service payment made in FY2011 and the final maturity in FY2039. Interest rates range from 4.28 percent for the first maturity on June 1, 2021 to a high of 5.735 percent for the last maturity on June 1, 2039. Because of the initial 35 percent federal subsidy, the net interest cost for the entire bond issue is approximately 3.52 percent.
- **Measure R backed Tax Exempt Bonds**—This includes both outstanding and anticipated bond proceeds. In conjunction with the BABs, \$205 million in proceeds from tax exempt bonds provide funding for the Exposition—Phase II and Gold Line Foothill Extension projects. The tax-exempt bonds are fixed-rate serial bonds with the first debt service payments made in FY2011 and the final maturity in FY2020. Interest rates range from 3.0 percent to 5.0 percent depending on the maturity date.

LACMTA also anticipates \$838 million in tax-exempt debt proceeds from FY2016 to FY2022 to support the Measure R program. These bonds will support various projects. The tax-exempt bonds are fixed-rate serial bonds with the first debt service payments made in FY2016 and the final maturity in FY2039. A 4.5 percent interest rate is assumed.

- **Measure R backed Commercial Paper**—The assumed financing plan includes \$193 million Measure R backed commercial paper issued in FY2015 to support the Exposition—Phase II project. The financial plan also includes an additional \$219 million in commercial paper proceeds between FY2021 and FY2033 to provide liquidity to deliver various rail capital projects. The assumed interest rate for this debt is 1.45 percent FY2016 onward. All rates include the cost of the credit facility. Both the underlying interest rate and cost of credit facility are reflective of current market pricing and comparable to the cost of the LACMTA’s existing commercial paper programs.
- **Section 5309 Capital Grant Receipts Revenue Bonds**—LACMTA anticipates receipt of \$1,085 million in FTA Section 5309 New Starts funding for the Westside Purple Line Extension Section 1 project from FY2016 to FY2026, with average annual appropriations of \$98.6 million. This payment schedule extends beyond the Project’s cash flow requirements during the construction period. As such, LACMTA will issue a total of \$372 million in FTA Section 5309 Capital Grant Receipt Revenue Bonds from FY2020 through FY2024. Financing charges for the bonds will total \$159 million assuming a 3.5 percent interest rate.



- **State Issued Debt**—Seven of the 12 Measure R capital expansion projects are assumed to receive some combination of state Proposition 1A High Speed Rail bonds and state Proposition 1B bonds. These funding sources represent Los Angeles County’s share of state issued debt financing. These revenues are therefore treated as straight revenue sources and not financing, as the state is obtaining the financing and passing the revenues onto LACMTA.
- **Proposition A backed Bonds**—The financing plan assumes that four of the 12 Measure R capital expansion projects receive a total of \$423 million in Proposition A senior lien bonds. The Proposition A bonds are assumed to be fixed-rate serial bonds with a 30-year amortization and level annual debt service. The interest rate is assumed to be 4.5 percent from FY2016 to FY2035. Issuance costs are assumed to be 1.4 percent. In addition to financing, Proposition A cash will provide \$48 million in funding for five rail capital projects.

The following sections outline the annual Measure R backed debt financing assumptions. First the timing of the debt proceeds is outlined. Next, debt instrument draw-downs for each project are summarized. Finally, the annual debt service payments by LACMTA are detailed.

From inception of Measure R through program sunset, LACMTA plans to apply \$3,869 million from Measure R backed debt instruments to fund Measure R capital expansion projects. A total of \$4,266 million in debt service payments will be paid with Measure R revenues between FY2016 and FY2035. Given this debt service schedule, a minimum annual debt service coverage ratio for the 35 percent of Measure R dedicated to transit projects 1.43 is anticipated in FY2018 and FY2023. Over the FY2016 to FY2035 time period, the average annual debt service coverage ratio is 2.10.

3.1.4.1 Financing Proceeds

Table 3-19 demonstrates the annual financing proceeds for the three Measure R backed debt instruments between FY2016 and FY2035. Prior-year Measure R debt proceeds are excluded from this table.

3.1.4.2 Financing Draw-downs

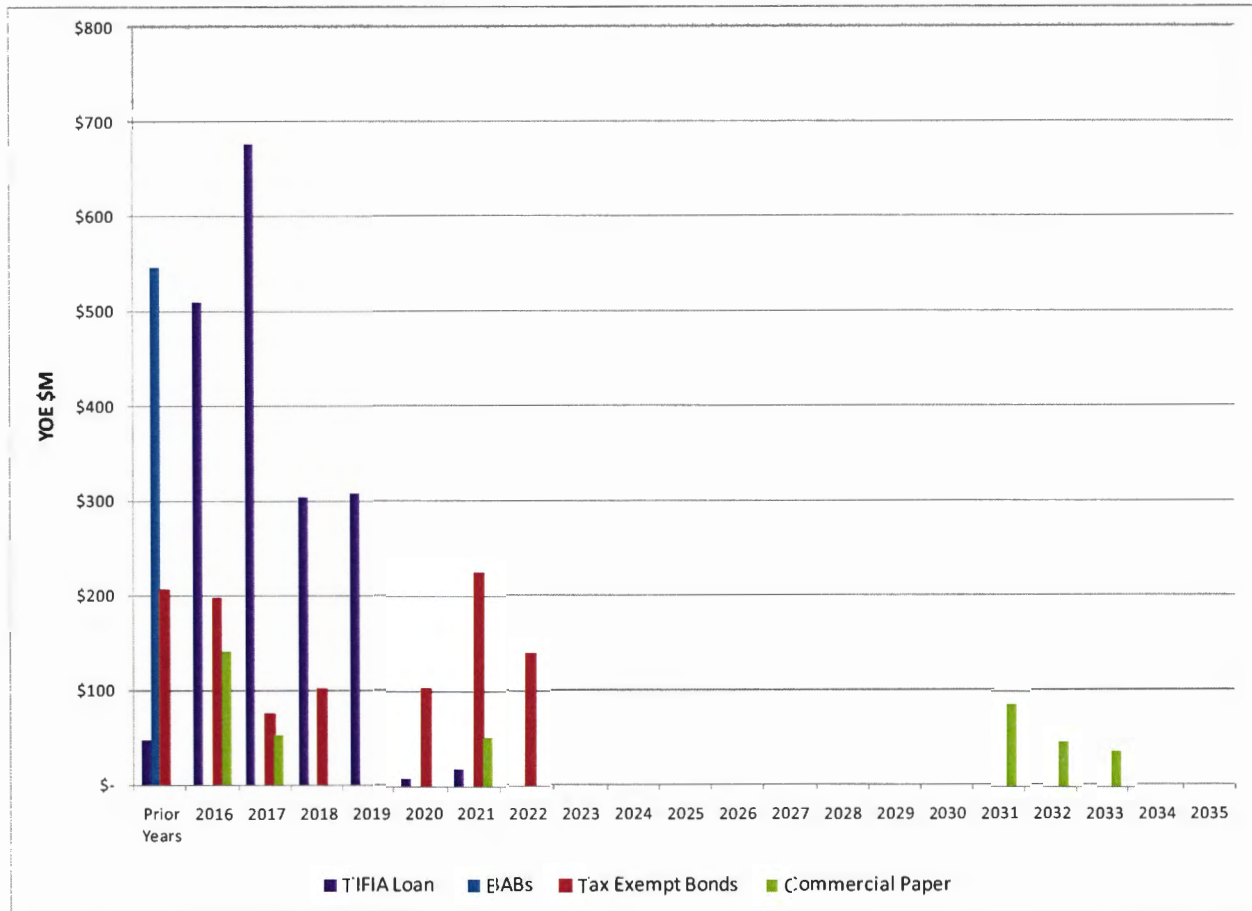
Table 3-20 demonstrates the annual financing instrument draw-downs for the four Measure R backed debt instruments for each of the twelve Measure R capital expansion projects. The annual draw-down of each financing instrument is shown in Figure 3-6.

**Table 3-19: Measure R backed Financing Instrument Proceeds,
 FY2016 to FY2035 (YOE \$M)**

FY	TIFIA Loan	Tax Exempt Bonds	Commercial Paper	Total
2016	510	197	141	848
2017	676	75	52	803
2018	303	101	-	404
2019	308	-	-	308
2020	7	102	-	109
2021	18	225	-	243
2022	-	139	51	190
2023	-	-	-	-
2024	-	-	-	-
2025	-	-	-	-
2026	-	-	-	-
2027	-	-	-	-
2028	-	-	-	-
2029	-	-	-	-
2030	-	-	-	-
2031	-	-	-	-
2032	-	-	86	86
2033	-	-	46	46
2034	-	-	37	37
2035	-	-	-	-
TOTAL	\$1,822	\$838	\$412	\$3,073
% of Total	59.3%	27.3%	13.4%	100.0%

Table 3-20: Measure R backed Financing Instrument Draw-Downs (YOE \$M)

Project	Prior Years	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	Total
Orange Line Canoga Extension																						-
Exposition - Phase II	409	141	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	602
BABs	275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275
Tax Exempt Bonds	133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133
Commercial Paper	-	141	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	193
Gold Line Foothill Extension (from Pasadena)	341	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	341
BABs	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270
Tax Exempt Bonds	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72
East San Fernando Valley North-South Corridor																						-
Crenshaw/LAX Transit Corridor	37	300	209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	546
TIFIA Loan	37	300	209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	546
BABs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tax Exempt Bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regional Connector	9	53	-	47	26	7	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160
TIFIA Loan	9	53	-	47	26	7	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160
Westside Subway Extension - Section 1	-	157	322	195	182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	856
TIFIA Loan	-	157	322	195	182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	856
Westside Subway Extension - Section 2	-	-	146	61	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	307
TIFIA Loan	-	-	146	61	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	307
Westside Subway Extension - Section 3																						-
West Santa Ana Branch																						-
AMC - Green Line Extension to LAX																						-
Gold Line Eastside Extension Phase II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tax Exempt Bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South Bay Green Line Extension																						-
San Fernando Valley I-405 Transit Corridor																						-
Tax Exempt Bonds for Rail Capital Projects	-	197	75	101	-	102	225	139	-	-	-	-	-	-	-	-	-	-	-	-	-	838
Commercial Paper for Rail Capital Projects	-	-	-	-	-	-	51	-	-	-	-	-	-	-	-	-	86	46	37	-	-	219
TOTAL	797	848	803	404	308	109	293	139	-	-	-	-	-	-	-	-	86	46	37	-	-	3,869

Figure 3-6: Measure R backed Financing Instrument Draw-Downs (YOE \$M)


3.1.4.3 Debt Service

Table 3-21 demonstrates the annual financing instrument debt service for the four Measure R backed debt instruments between FY2016 and FY2035. The annual breakdown of financing instrument debt service is also depicted in Figure 3-7.

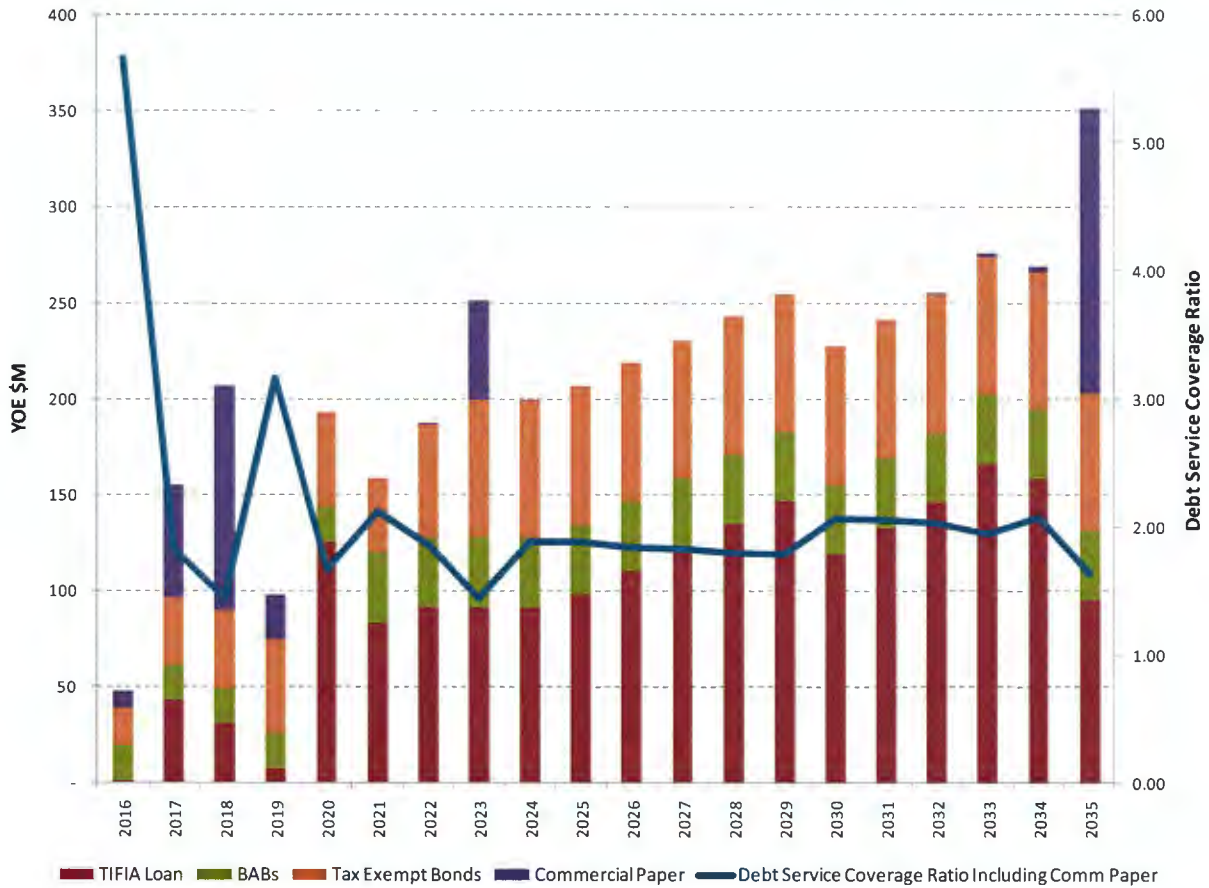


Table 3-21: Measure R backed Financing Instrument Debt Service, FY2016 to FY2035 (YOE \$M)

FY	TIFIA Loan	BABs	Tax Exempt Bonds	Commercial Paper	Total	Measure R 35% Revenue*	Debt Service Coverage Ratio Excluding Comm Paper	Debt Service Coverage Ratio Including Comm Paper
2016	1	18	20	8	47	269	6.88	5.66
2017	43	18	35	59	155	282	2.94	1.82
2018	31	18	41	117	206	296	3.29	1.43
2019	7	18	49	23	98	309	4.13	3.16
2020	126	18	49	-	193	322	1.67	1.67
2021	84	36	38	-	158	334	2.11	2.11
2022	91	36	59	1	187	347	1.86	1.86
2023	91	36	72	51	251	360	1.80	1.43
2024	91	36	72	-	199	375	1.88	1.88
2025	98	36	72	-	206	387	1.88	1.88
2026	110	36	72	-	218	401	1.84	1.84
2027	122	36	72	-	230	419	1.82	1.82
2028	135	36	72	-	243	436	1.79	1.79
2029	147	36	72	-	255	453	1.78	1.78
2030	119	36	72	-	227	469	2.06	2.06
2031	133	36	72	-	241	492	2.04	2.04
2032	146	36	72	1	255	517	2.04	2.03
2033	166	36	72	2	276	536	1.96	1.94
2034	158	36	72	2	268	555	2.09	2.07
2035	95	36	72	148	351	573	2.83	1.63
Total	1,994	\$632	\$1,228	\$413	\$4,266	\$8,130		
% of Total	46.7%	14.8%	28.8%	9.7%	100.0%			



Figure 3-7: Measure R backed Financing Instrument Debt Service, FY2016 to FY2035 (YOE \$M)



3.1.5 LACMTA Capital Sources and Uses of Funds Forecast

Table 3-22 and Table 3-23 delineate LACMTA’s capital plan by funding source and by agency, respectively, between FY2016 and FY2035. It should be noted that given that the Measure R projects will be funded primarily from dedicated Measure R funding that may only be used to fund the twelve projects, LACMTA’s remaining capital needs would be met regardless of whether or not these twelve capital expansion projects are built. The funding for the projects is dedicated and available and will be used for the projects without adversely impacting the existing LACMTA system.



3.2 Operating Plan for LACMTA

This section describes the systemwide O&M cost and revenue assumptions for LACMTA bus and rail operations.

3.2.1 Operating and Maintenance Cost Methodology

Future O&M cost estimates are driven by two factors: revenue service hours and annual cost per hour growth rates. The following provides an overview of these two factors.

3.2.1.1 Bus and Rail Service Levels

Table 3-24 and Table 3-25 provide a summary of LACMTA operated rail and bus service over the FY2003 to FY2014 period. As shown in Table 3-24, LACMTA’s rail revenue service hours have increased significantly over the last decade, with most of the growth attributed to the expansion of the LRT system. LRT revenue service hours in FY2003 increased to nearly 2.5 times its original value by FY2015 while heavy rail service hours increased approximately 23 percent.

Table 3-24: Historic Rail Revenue Service Hours, FY2003 to FY2015 (Thousands)

Fiscal Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LRT	286.2	336.7	350.3	345.3	370.2	375.4	384.9	429.0	457.8	518.7	654.2	685.3	702.8
HRT	263.9	238.4	258.7	256.8	263.1	265.1	268.6	256.6	258.6	268.8	301.9	320.0	325.5
Total Rail	550.1	575.1	609.0	602.1	633.3	640.5	653.5	685.5	716.3	787.5	956.1	1005.3	1028.3

Historic rail and bus revenue service hours in part reflect the October 1996 Consent Decree. This action required the agency to add bus service to meet court-mandated overcrowding targets and limit fare increases for ten years. In that year (FY1997), the agency operated 6.6 million revenue service hours of bus, light rail, and heavy rail service combined. Total system boardings in FY1997 were 377 million. By FY2010, revenue service hour levels had risen to 8.1 million, an increase of more than 23 percent over FY1997 levels. Over that same period, total system boardings rose 21 percent to 457 million. The costs of the added service caused an increase in other funding sources used to cover operating expenses. In recent years, efforts to mitigate this structural imbalance have been implemented with an emphasis on quality of service provided, rather than quantity of service.

Between FY2010 and FY2015 total service hour levels for rail and bus modes decreased slightly from 8.12 million to 8.09 million, while maintenance costs were held relatively constant to improve the overall performance and appearance of the fleet. As shown in Table 3-25, historic revenue service hours for LACMTA operated and contracted bus service reflects the gradual reduction in service quantity. Despite the reduced level of service, the impact on ridership has been minimized by improvements in operations performance as measured by schedule adherence, fleet cleanliness, and enhanced bus/rail service integration.

Table 3-25: Historic Bus Revenue Service Hours, FY2003 to FY2015 (Thousands)

Fiscal Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total Bus	7,325	6,622	7,483	7,604	7,620	7,599	7,514	7,432	7,084	6,804	6,809	6,476	7,062

Future year annual O&M costs reflect projections based on LACMTA’s Countywide Financial Forecasting Model. The financial model uses a cost per revenue service hour for bus lines and revenue

vehicle service hours for rail lines. Starting with budgeted amounts for the base year (FY2016), service levels on existing lines are extrapolated out based on a number of factors. In the short term, annual hours reflect service plans developed by operations staff based on direction of the LACMTA Board and senior management. Figure 3-8 summarizes the projected bus revenue service hours and rail revenue vehicle service hours assumed in the Long Range Plan.

Figure 3-8: Projected Bus and Rail Service Hours, FY2016 to FY2035 (Millions)

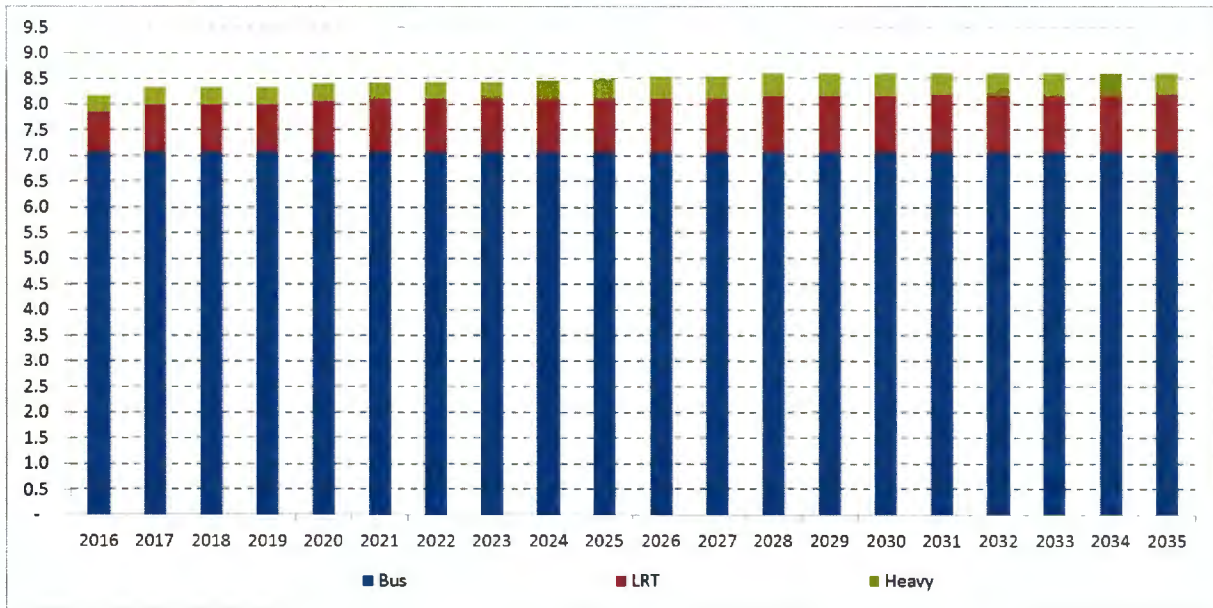


Figure 3-8 shows the projections for bus and rail revenue service hours through 2035. The largest service level increase in the financial forecast occurs in LRT service. This reflects the Measure R Expenditure Plan schedule for light rail capital expansion projects. Operating costs for the new lines and extensions to existing lines are based on operating plans for each project, to the extent that such plans currently exist. Heavy rail revenue service vehicle hours are projected to remain relatively constant through FY2035 except for added service associated with Sections 1 and 2 of the Westside Purple Line Extension.

3.2.1.2 Annual Cost Per Hour Methodology

LACMTA’s Activity Based O&M Cost Model page from the FY2016 Proposed Budget is provided as supporting documentation to this financial plan. FY2016 O&M costs by mode reflect the combination of labor and non-labor cost elements. A cost per revenue service hour is generated for each element based on the adopted budget for each category and the budgeted service hours for each mode. Future year O&M costs are projected based on increasing the cost per hour for labor categories by the future CPI estimates from the UCLA Anderson Forecast plus 1 percent. Non-labor cost per hour estimates are projected to increase annually at CPI.

Table 3-26 summarizes the annual and cumulative escalation rates based on the UCLA Anderson Forecast.

Table 3-26: CPI Escalation Rates, FY2016 to FY2035

Fiscal Year	CPI (UCLA Anderson Forecast)	Compound Inflation Index
2016	2.45%	1.024
2017	2.64%	1.051
2018	2.73%	1.080
2019	2.77%	1.110
2020	2.61%	1.139
2021	2.57%	1.168
2022	2.58%	1.199
2023	2.48%	1.228
2024	2.49%	1.259
2025	2.45%	1.290
2026	2.37%	1.320
2027	2.37%	1.351
2028	2.34%	1.383
2029	2.29%	1.415
2030	1.95%	1.442
2031	1.93%	1.470
2032	2.23%	1.503
2033	2.22%	1.536
2034	2.20%	1.570
2035	2.19%	1.605

3.2.1.3 Bus Cost Per Hour Comparison

Within the financial forecast, the FY2016 bus operating costs per hour reflect the following: contract service, fixed route, and Rapid Bus service.

By FY2035, the cost-per-hour rates are projected to be \$151.28 for contract service, \$261.50 for fixed route, and \$444.55 for Rapid Bus service. The average total cost per hour for buses is projected to be \$261.87. Over the FY2016 to FY2035 period, the CAGR for the combined cost per hour is 3.1 percent. As shown in Table 3-27, these growth rates are slightly lower than LACMTA’s historic experience for total bus which was 3.24 percent over the FY2003 to FY2015 period.

Table 3-27: Historic Cost per Hour, Total Bus, FY2003 to FY2015

Fiscal Year	Cost per Hour
2003	\$98.47
2004	\$106.82
2005	\$103.29
2006	\$110.63
2007	\$117.10
2008	\$121.01
2009	\$124.99
2010	\$127.28
2011	\$135.06
2012	\$135.88
2013	\$140.44
2014	\$138.56
2015	\$144.31
CAGR	3.24%

3.2.1.4 Rail O&M Cost Comparison

Within the financial forecast, the FY2016 rail operating costs per hour reflect the following: LRT (\$355.74), heavy rail (\$369.77), and combined total rail (\$360.18). Over the FY2016 to FY2035 period, the cost per hour rates are projected to increase at an annualized rate of 2.76 percent. By FY2035, the cost per hour rates are projected to be \$622.68 for LRT, \$616.67 for heavy rail, and \$621.19 for combined total rail. As shown in Table 3-28, this growth rate is slightly higher than LACMTA’s historic experience for combined total rail which grew at annualized rate of 1.41 percent over the FY2004 to FY2015 period. Annual increases in prior years reflect a combination of factors including reallocation of security contract costs, renegotiation of labor contracts, and spikes in energy prices.

For projects still in the preliminary phase of project development that do not have an operating plan, service levels are prorated based on line length and existing service hours for similar rail services.

Table 3-28: Historic Cost per Hour, Total Rail, FY2004 to FY2015

Cost per Hour of Service	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LRT	331.61	360.04	383.41	390.20	408.28	389.99	391.43	381.64	388.27	359.02	347.31	355.74
HRT	276.11	295.20	301.98	332.07	361.79	330.62	352.05	377.61	392.93	387.56	352.73	369.77
Total Rail	308.60	332.50	348.68	366.05	389.04	365.59	376.69	380.18	389.86	368.03	342.67	360.18

Annual Change	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average FY03-15	CAGR FY04-15
LRT	10.08%	8.57%	6.49%	1.77%	4.63%	-4.48%	0.37%	-2.50%	1.74%	-7.54%	-3.26%	2.43%	1.53%	0.04%
HRT	8.60%	6.91%	2.30%	9.96%	8.95%	-8.62%	6.48%	7.26%	4.06%	-1.37%	-14.15%	11.13%	3.46%	2.78%
Total Rail	10.73%	7.74%	4.87%	4.98%	6.28%	-6.03%	3.04%	0.93%	2.55%	-5.60%	-6.89%	5.11%	2.31%	1.41%

Note: Total Rail represents a weighted average rate per hour on the basis of LRT and HRT revenue vehicle hours operated.

WESTSIDE PURPLE LINE EXTENSION SECTION 2



3.2.2 LACMTA Rail and Bus Operating Plan

3.2.2.1 LACMTA Controlled Rail O&M Costs

Systemwide rail O&M costs are categorized into two groups: those costs related to services operated by LACMTA (LRT and heavy rail) and LACMTA’s share of Metrolink commuter rail costs. Table 3-29 shows the total rail operating costs over the FY2016 to FY2035 period.

Table 3-29: Systemwide Rail O&M Costs, FY2016 to FY2035 (YOE \$M)

Category	Total	Percent Share
LACMTA (Heavy Rail and LRT)	\$14,256	90%
Metrolink Commuter Rail (LACMTA Share)	\$1,583	10%
TOTAL	\$15,838	100%

LACMTA-Operated Rail Services

Using the methodology described above, the LACMTA’s financial forecast model projects annual O&M costs for the existing and proposed heavy and LRT lines. In addition to the O&M costs, the model also includes security costs for each of the lines. Security costs are based on budget numbers as a percentage of the total cost of service. Specific rail information allows each line to have its own cost factor. These percentages are assumed to remain constant throughout the life of the plan, so security costs are escalated at the same rate as the service to which they are connected. Table 3-30 summarizes the projected total O&M costs over the FY2016 to FY2035 period.

Figure 3-9 and Table 3-30: LACMTA-Operated Rail O&M Costs, FY2016 to FY2035 (YOE \$M) summarize the annual O&M costs by rail line and total security costs. Sections 1 and 2 of the Westside Purple Line Extension project comprise approximately 4.7 percent of the total LACMTA-operated rail O&M costs, excluding security costs.



**Table 3-30: LACMTA-Operated Rail
O&M Costs, FY2016 to FY2035 (YOE \$M)**

Category	Total
Operations	
Heavy Rail Operations	\$3,074
Red/Purple Line	2,527
Westside Purple Line Extension (not including security)	547
LRT Operations	\$8,499
Blue Line	1,986
Green Line	1,331
Gold Line—Pasadena (including Foothill)	1,766
Gold Line—Eastside Extension	742
Blue Line—Exposition Phase I	1,016
Blue Line—Exposition Phase II	968
Crenshaw Line	324
West Santa Ana Line	205
Regional Connector (not including security)	163
Total Operations	\$11,572
Security Costs	
Heavy Rail Security	\$758
Red/Purple Line (including Westside Purple Line Extension)	758
LRT Security	\$1,882
Blue Line (including Expo/Regional Connector)	769
Green Line	177
Gold Line including Eastside	711
Crenshaw Line	167
West Santa Ana Line	58
Total Security	\$2,640
Rail Line Start-up Costs	\$44
LACMTA-Operated Subtotal	\$14,256

Note: totals may not add due to rounding



Figure 3-9: Annual LACMTA-Operated Rail O&M Costs, FY2016 to FY2035 (YOE \$M)

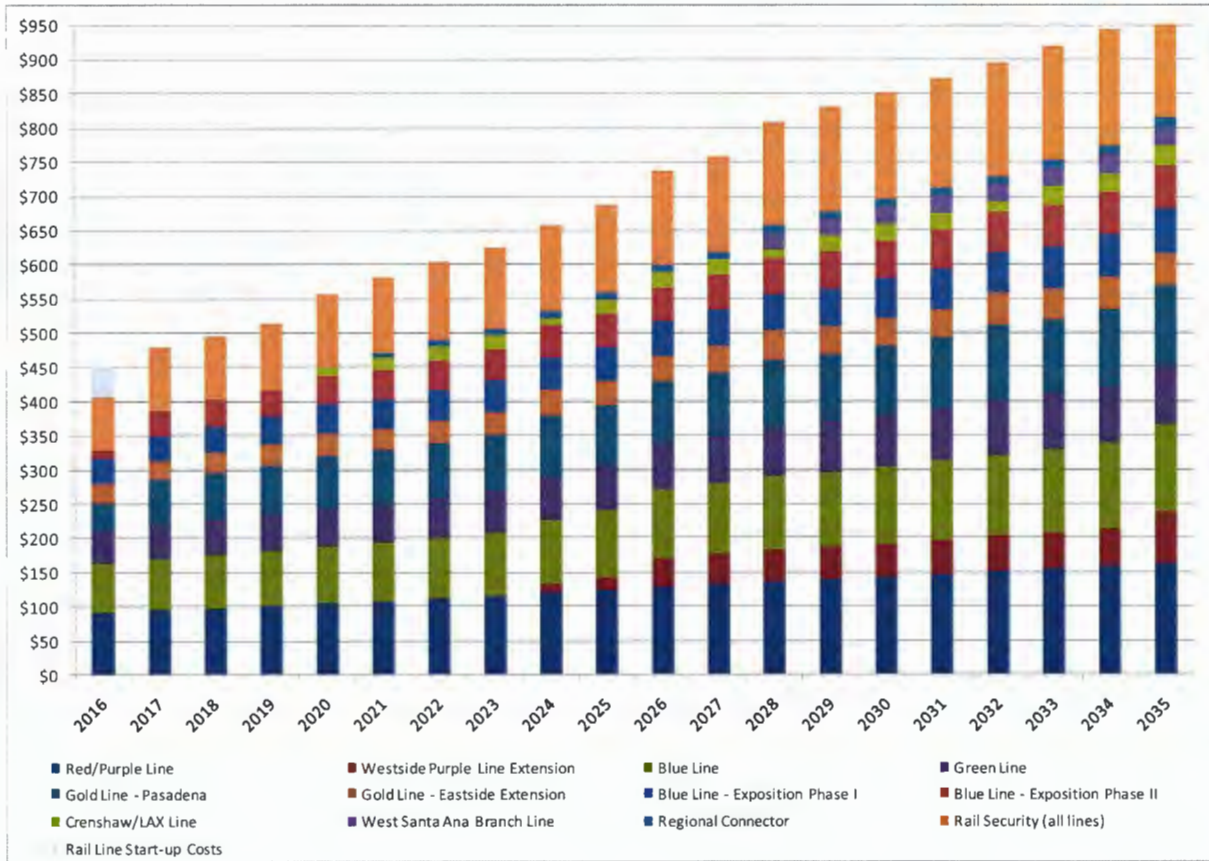


Table 3-31 summarizes historical heavy rail and LRT O&M costs for FY2003 to FY2015. As shown in Table 3-31, the CAGR for heavy rail over this period was 5.0 percent, while the CAGR for LRT was 9.3 percent. Two new LRT lines and an extension opened during this time period, accounting for much of the higher annual growth of LRT over HRT. As lines mature and ridership grows, economies of scale reduce the growth rate of operational costs. The growth in costs projected in the financial plan reflect the combined effect of the large projected increases in rail service combined with LACMTA’s commitment to control future O&M costs.



Table 3-31: Historic LACMTA-Operated Rail O&M Costs, FY2003 to FY2015 (YOE \$M)

Metro Rail	LRT	Heavy Rail
2003	\$86.20	\$671.0
2004	\$111.65	\$65.83
2005	\$126.12	\$76.37
2006	\$132.40	\$77.54
2007	\$144.47	\$87.37
2008	\$153.27	\$95.93
2009	\$150.11	\$88.79
2010	\$168.59	\$89.50
2011	\$166.10	\$93.10
2012	\$186.60	\$93.50
2013	\$226.68	\$101.25
2014	\$242.54	\$108.09
2015	\$249.83	\$120.36
CAGR	9.3%	5.0%

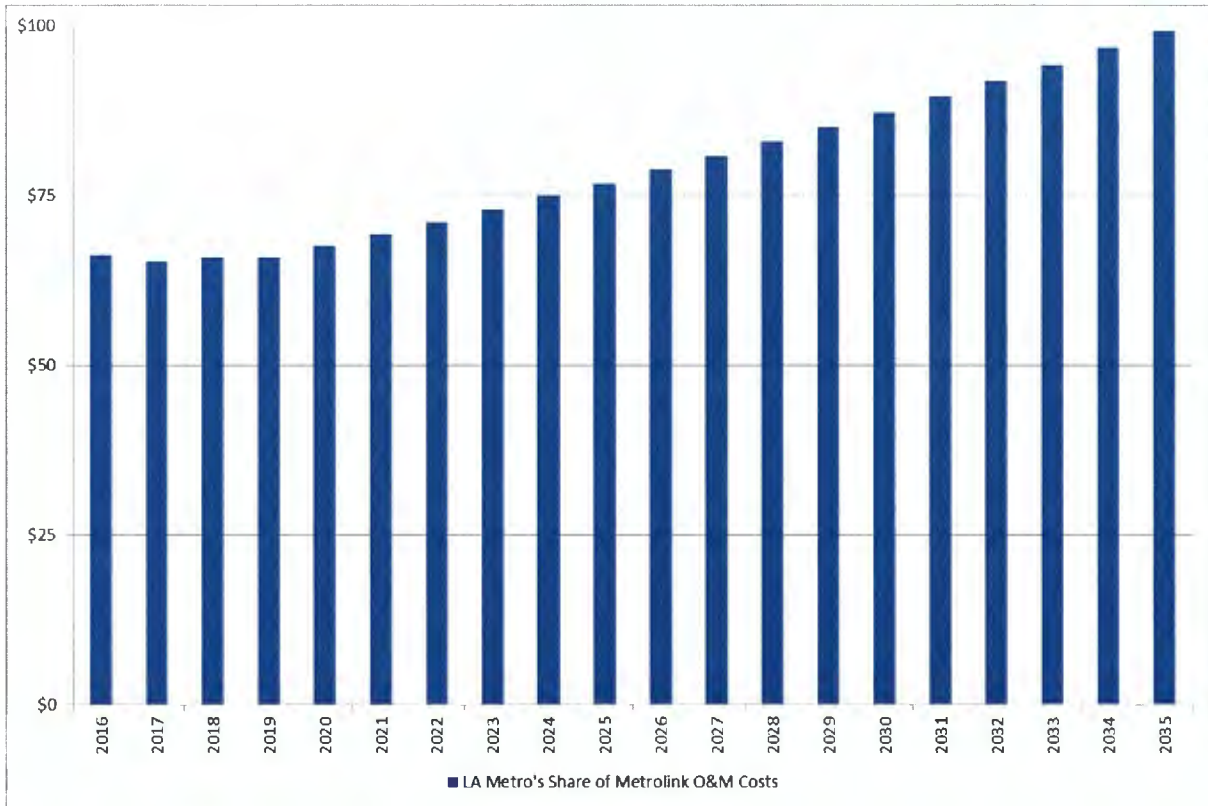
Metrolink Commuter Rail

Metrolink commuter rail service is operated by the Southern California Regional Rail Authority (SCRRA). SCRRA was established in 1991 as a Joint Powers Authority (JPA) with the purpose of planning, designing, building, and operating a new passenger rail service (Metrolink) among the Southern California counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura. SCRRA’s five member agencies include LACMTA, Orange County Transportation Authority (OCTA), Riverside County Transportation Commission (RCTC), San Bernardino Associated Governments (SANBAG), and Ventura County Transportation Commission (VCTC). Since Metrolink service was established, the annual operating subsidy has been distributed among the five member agencies based on a cost allocation methodology and annual service levels. Metrolink commuter rail O&M costs in the financial plan reflect LACMTA’s share of future O&M costs based on SCRRA’s long range operating plan and the current cost allocation methodology.

Figure 3-10 summarizes LACMTA’s annual share of Metrolink’s O&M costs that, as described in Section 3.2.2.3, will be funded through the Proposition C (10%) program.



Figure 3-10: LACMTA Portion of Projected Metrolink Commuter Rail O&M Costs, FY2016 to FY2035 (YOE \$M)



3.2.2.2 Bus O&M Costs

Bus O&M costs are separated into three categories: 1) LACMTA operated bus service (O&M and security costs); 2) paratransit services (Access Services); and 3) LACMTA’s subsidy to municipal operators and senior and disabled incentive program (Incentive Program). Table 3-32 shows the bus operating costs projected over the FY2016 to FY2035 period. Figure 3-11 summarizes the annual bus O&M costs by category.

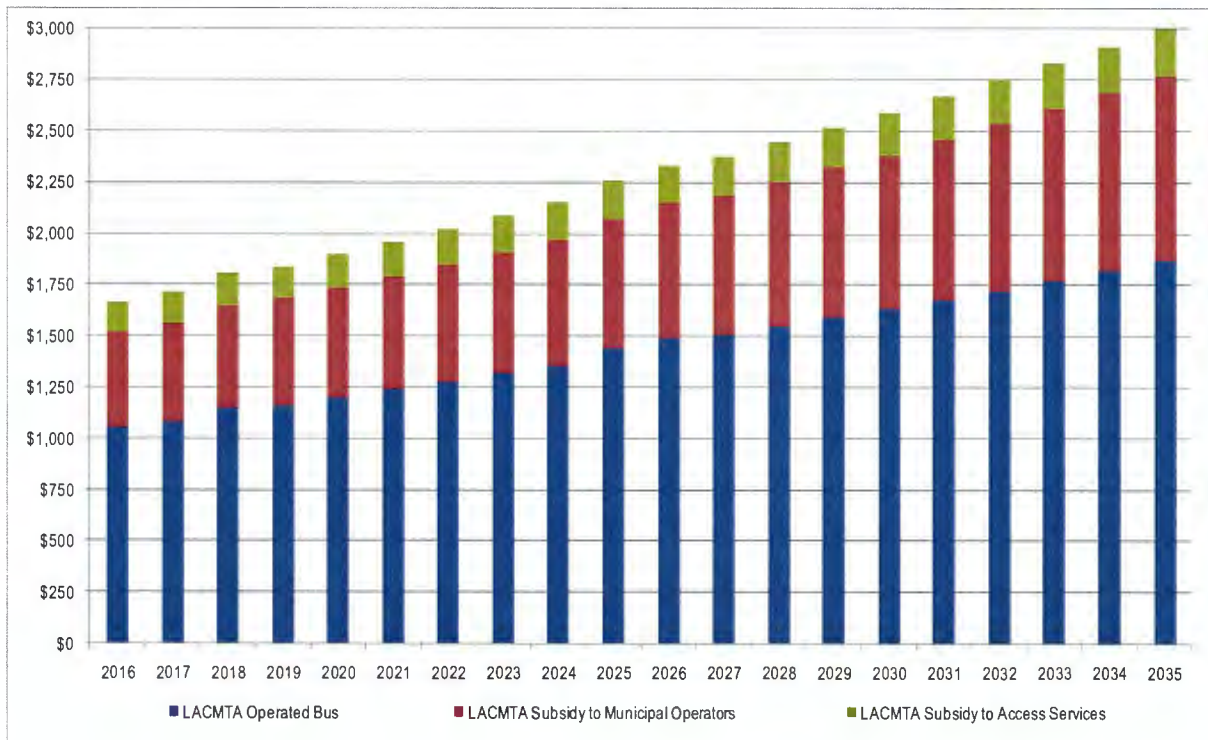


Table 3-32: Systemwide Bus O&M Costs, FY2016 to FY2035 (YOE \$M)

Category	Total	Percent Share
LACMTA-Operated Bus Service	\$28,908	63.1%
Bus Operations	\$27,763	
BSIP	\$300	
Bus Security	\$845	
LACMTA Subsidy to Access Services	\$3,695	8.1%
LACMTA Subsidy to Municipal and Other Bus Operators	\$13,208	28.8%
TOTAL	\$45,811	100.0%

Note: totals may not add due to rounding

Figure 3-11: Annual Systemwide Bus O&M Costs, FY2016 to FY2035 (YOE \$M)



LACMTA-Operated Bus Service

LACMTA-Operated Bus Service reflects three categories of service:

- **Bus Operations**—Defined as the operations and maintenance of LACMTA’s existing fixed route and BRT service.



- **Bus Service Improvement Program (BSIP)**—Designed to provide additional service to routes with consistent overcrowding issues.
- **Bus Security**—Uses a similar costing methodology as described for rail. The only difference is that for bus security, costs are combined for all routes. For rail, security costs are estimated for individual lines.

Table 3-33 summarizes LACMTA-operated O&M costs for FY2004 to FY2015. The actual CAGR for LACMTA-operated bus service over this period was 3.4 percent, slightly higher than the level projected in the financial plan. The growth rates projected in the financial plan reflect a continuation of LACMTA’s successful commitment to control O&M costs.

Table 3-33: Historic LACMTA-Operated Bus O&M Costs, FY2003 to FY2014 (YOE \$M)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Bus	\$707	\$773	\$841	\$892	\$920	\$939	\$946	\$957	\$925	\$956	\$977	\$1,019

LACMTA Subsidy to Access Services

LACMTA provides an annual subsidy to Access Services for the provision of paratransit services. Costs in this category reflect expenses eligible to receive funding from Proposition C (40%—Discretionary) and the Regional Surface Transportation Program (RSTP).

LACMTA Subsidy to Other Municipal Operators

LACMTA provides a subsidy to other municipal operators in Los Angeles County to support regional transit services. Costs in this category reflect expenses eligible to receive funding from various local, state and federal sources administered by LACMTA including existing operations, bus service improvement programs, security, and expansion projects.

3.2.2.3 O&M Revenues

As described below, LACMTA rail and bus O&M revenues are provided from fare revenue and a variety of local, State, and federal funding sources. Table 3-34 and Figure 3-12 summarize total LACMTA controlled rail O&M revenue sources assumed in the financial plan over the FY2016 to FY2035 period. Total rail O&M funding reflects the following: local revenues plus passenger fares (LACMTA-operated HRT and LRT lines); federal funds; and, state funds.



Table 3-34: Projected Systemwide Rail O&M Revenue, FY2016 to FY2035 (YOE \$M)

Revenue Sources	Total	Share of Total
Fares		
Fares - Red/Purple Lines	\$1,398	8.8%
Fares - Blue Line (incl Expo & Reg'l Conn.)	\$1,317	8.3%
Fares - Green Line	\$357	2.3%
Fares - Gold Line (incl Eastside & Foothill)	\$564	3.6%
Fares - Crenshaw Line	\$90	0.6%
Fares - West Santa Ana Line	\$57	0.4%
Subtotal Fares	\$3,783	23.9%
Local		
Proposition A 35%	\$3,630	22.9%
Proposition C 5 % (Security)	\$117	0.7%
Proposition C 40 % (Discretionary)	\$2,340	14.8%
Proposition C 10% (Metrolink)	\$1,575	9.9%
Other (Advertising, General, Misc)	\$59	0.4%
Measure R Sales Tax	\$1,239	7.8%
Subtotal Local	\$8,960	56.6%
State		
STA - Population Share	\$1,033	6.5%
Low Carbon Transit Operations Program	\$141	0.9%
Subtotal State	\$1,175	7.4%
Federal		
Section 5337 State of Good Repair Program	\$1,435	9.1%
Section 5340 Growing States and High Density	\$177	1.1%
CMAQ (Gold/Expo/Crenshaw/New Lines Ops)	\$309	2.0%
Subtotal Federal	\$1,921	12.1%
Total Revenue Sources	\$15,838	100.0%

Figure 3-12: Projected Systemwide Rail O&M Revenue, FY2016 to FY2035 (YOE \$M)

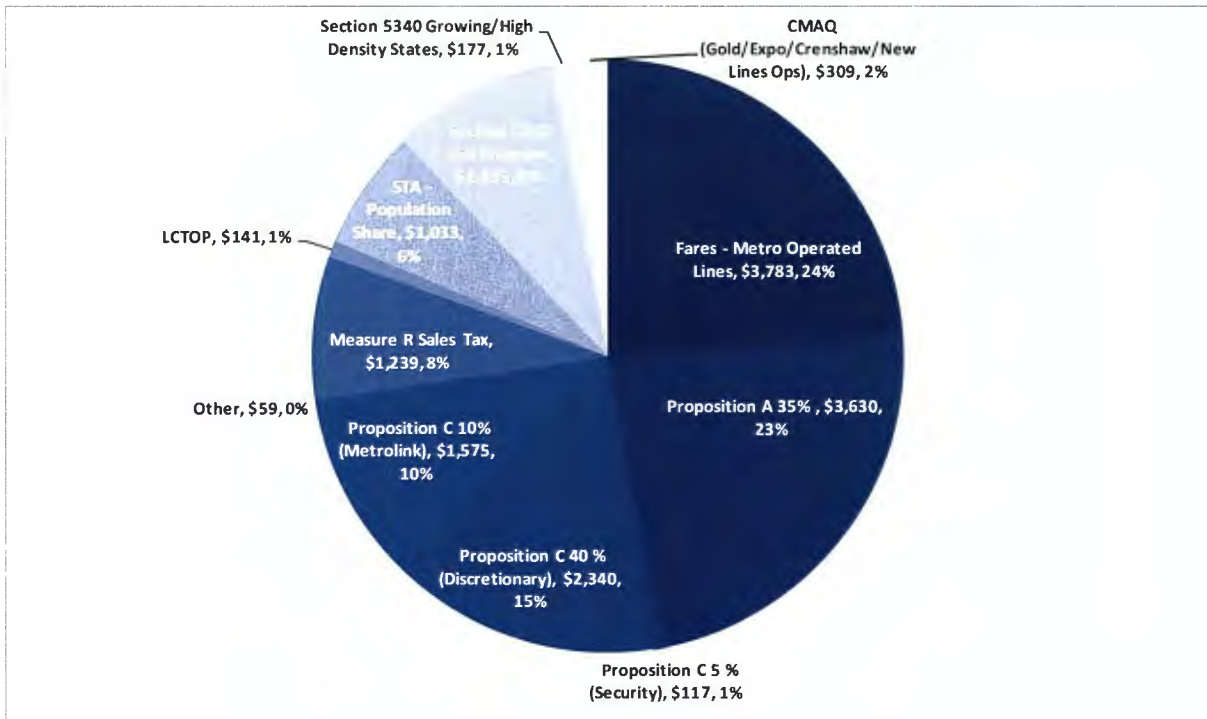


Table 3-35 and Figure 3-13 summarize total systemwide bus O&M revenue sources assumed in the financial plan over the FY2015 to FY2035 period. A description of the rail and bus O&M revenue sources is provided following the table and figure.

Table 3-36 summarizes systemwide bus O&M revenue levels by operating category.



Table 3-35: Projected LACMTA Funded Bus O&M Revenue, FY2016 to FY2035 (YOE \$M)

Revenue Sources	Total	Share of Total
Local		
Fare Revenues	\$8,922	19.5%
Proposition A - Discretionary (40%)	\$7,517	16.4%
Proposition A - Local Return (25%)	\$3,586	7.8%
Proposition C - Discretionary (40%)	\$5,444	11.9%
Proposition C - Local Return (20%)	\$459	1.0%
Proposition C 5% Security	\$1,049	2.3%
TDA Article 4	\$7,937	17.3%
TDA Article 8 (Paratransit)	\$739	1.6%
ExpressLanes Tolls	\$229	0.5%
Other (General, Advertising, Misc.)	\$563	1.2%
Measure R Sales Tax	\$4,646	10.1%
Subtotal Local	\$41,092	89.7%
State		
STA - Operator Revenue Share	\$1,116	2.4%
Low Carbon Transit Operations Program	\$39	0.1%
Subtotal State	\$1,156	2.5%
Federal		
Section 5307 (Preventive Maintenance)	\$1,980	4.3%
RSTP	\$1,584	3.5%
Subtotal Federal	\$3,564	7.8%
Total Revenue Sources	\$45,811	100.0%



Figure 3-13: Projected Systemwide Bus O&M Revenue, FY2015 to FY2035 (YOE \$M)

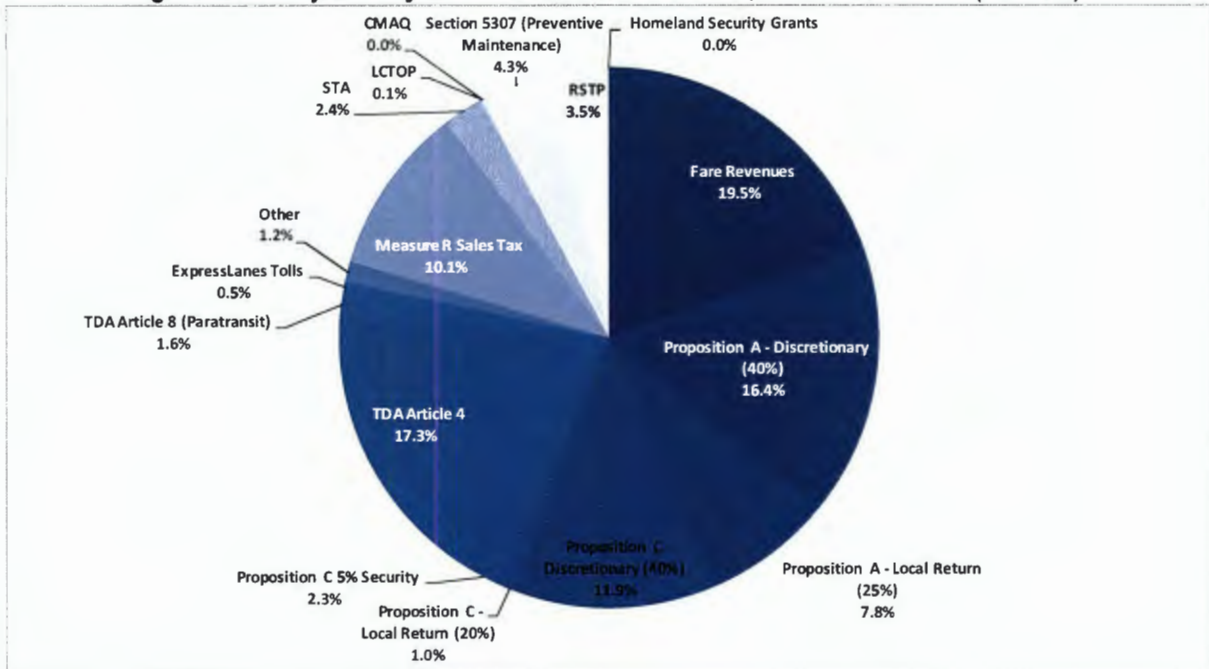


Table 3-36: LACMTA Funded O&M Revenue Levels by Operating Category, FY2016 to FY2035 (YOE \$M)

Bus Operating Category	Total	Share of Total
LACMTA-Operated Bus		
Local		
Fare Revenues	\$8,922	19.5%
Proposition A - Discretionary (40%)	4,525	9.9%
Proposition C 5% Security	843	1.8%
Prop C 40%/BSIP/Foothill Mitigation/Exp	2,039	4.5%
TDA Article 4	5,686	12.4%
ExpressLanes Tolls	92	0.2%
Other (Advertising and General, & Lease Rev.)	563	1.2%
Measure R	3,431	7.5%
Subtotal Local	\$26,102	57.0%
State		
STA - Operator Revenue Share	826	1.8%
Subtotal State	\$826	1.8%
Federal		
Section 5307 (Preventive Maintenance)	1,980	4.3%
Subtotal Federal	1,980	4.3%
Total LACMTA-Operated Bus	\$28,908	63.1%



Subsidy to Access Services		
Local		
Proposition C - Discretionary (40%)	2,111	4.6%
Subtotal Local	\$2,111	4.6%
Federal		
RSTP	1,584	3.5%
Subtotal Federal	\$1,584	3.5%
Total Subsidy to Access Services	\$3,695	8.1%
Subsidy to Municipal and Other Bus Operators		
Local		
Proposition A - Discretionary (40%)	2,992	6.5%
Proposition A - Local Return (25%)	3,586	7.8%
Proposition C - Discretionary (40%)	1,294	2.8%
Proposition C - Local Return (20%)	459	1.0%
Proposition C 5% Security	207	0.5%
TDA Article 4	2,251	4.9%
TDA Article 8 (Paratransit)	739	1.6%
ExpressLanes Tolls	137	0.3%
Measure R Sales Tax	1,215	2.7%
Subtotal Local	\$12,879	28.1%
State		
STA - Operators Revenue Share	290	0.6%
Low Carbon Transit Operations Program (LCTOP)	39	
Subtotal State	329	0.7%
Total Subsidy to Municipal and Other Bus Operators	\$13,208	28.8%
Total Revenue Sources	\$45,811	100.0%

Finally, Table 3-37 summarizes the compound annual growth rates for each of the revenue sources used to support bus and rail O&M.

Table 3-37: CAGR for Bus and Rail O&M Revenue Sources, FY2016 to FY2035 (YOY \$M)

Revenue Sources	FY 2016 to FY 2035 CAGR
Local	
Fare Revenues - Bus	4.30%
Fare Revenues – Rail	6.08%
Proposition A (Gross)	3.86%
Proposition C (Gross)	3.86%
Measure R (Gross)	3.86%
TDA (Gross)	3.86%
ExpressLanes Tolls	0.83%
Other (General, Advertising, Misc.)	1.15%
State	
STA—Operator Revenue Share	2.53%
STA - Population Share	0.20%
Federal	
CMAQ	-4.10%
Section 5307 (Preventive Maintenance)	0.95%
Section 5337 State of Good Repair	0.95%
Section 5340 Growing States and High Density States	0.95%
RSTP	1.15%

Fare Revenue

As shown in Figure 3-12 and Figure 3-13 above, LACMTA controlled fare revenue is projected to provide approximately 21 percent of total funding for operations. For LACMTA specifically, fare revenue projections for both rail and bus operations reflect the agency’s goal to grow from the approximately 24 percent fare recovery rate in FY2014 and achieve a 30 percent fare recovery ratio over the FY2016 to FY2035 period. The LACMTA Board has taken action toward achieving this target, with approval of fare increases effective July 2008, July 2010, and September 2014. Additional fare increases are included in FY2018 and FY2020 of the forecast. Beyond FY2020, as costs and service levels change, periodic fare structure adjustments (every two years) are assumed to maintain the fare recovery ratio above 30 percent. This goal reflects the assumption that transit riders will be paying close to one-third of the O&M cost to provide transit services on LACMTA’s system.

Achieving the 30 percent fare recovery ratio is projected to occur in combination with the proposed fare increase in FY2029. As described in more detail below, LACMTA’s sales tax and other revenues will be used to subsidize the remaining two-thirds of the transit O&M costs. Maintaining the fare recovery ratio above 30 percent will require a combination of strategies such as reducing unproductive service, achieving operating efficiencies, reducing costs, and increasing operating revenues.

Non-Operating Revenue

In addition to fare revenue, the following summarizes the local, state, and federal revenue sources that are projected to provide operating support for the LACMTA rail and bus services.

Local Funds

As shown in Figure 3-14 and Figure 3-15, the majority of local funds for systemwide rail and bus operations are provided by components of the local sales taxes (Proposition A, Proposition C, Measure R, and TDA) with smaller levels provided by other LACMTA funds. Descriptions of the local funding sources follow the figures.

Figure 3-14: Systemwide Rail Annual Local Funding Sources, FY2016 to FY2035 (YOE \$M)

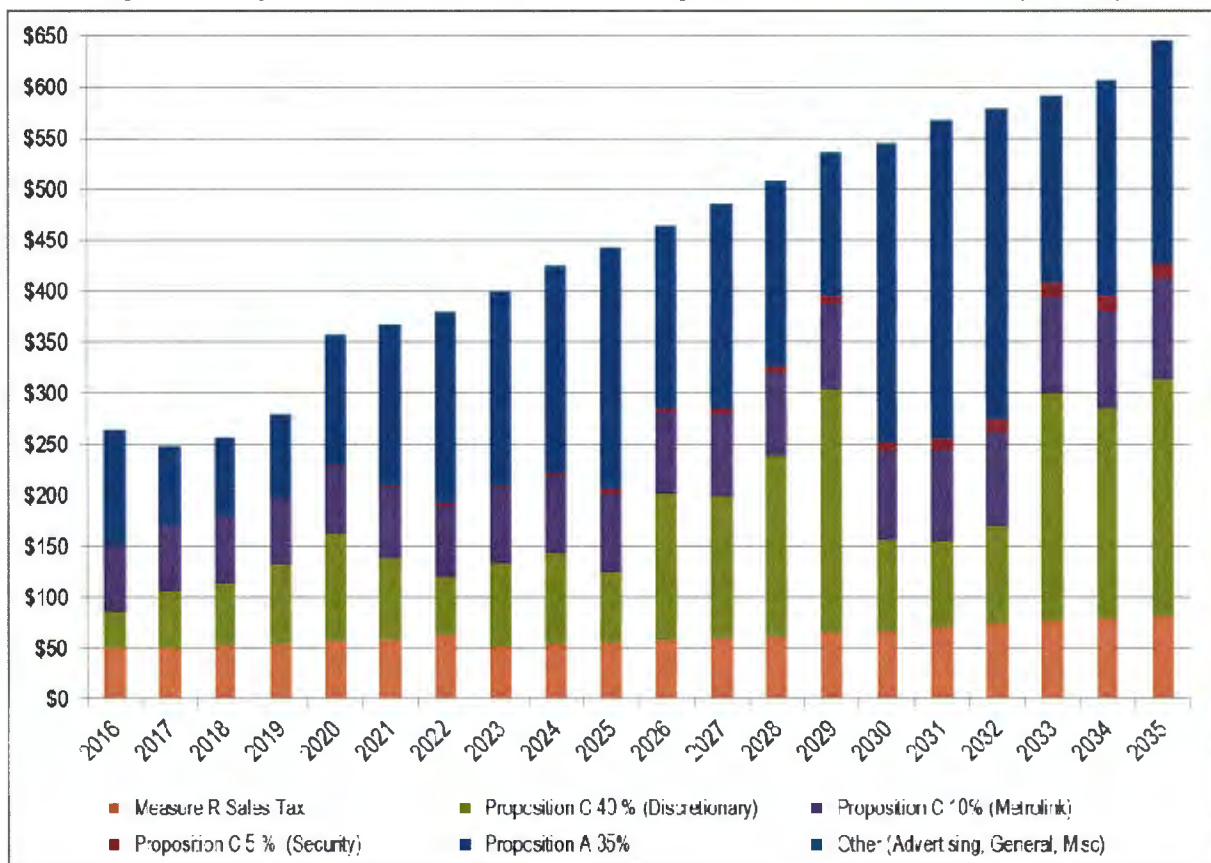
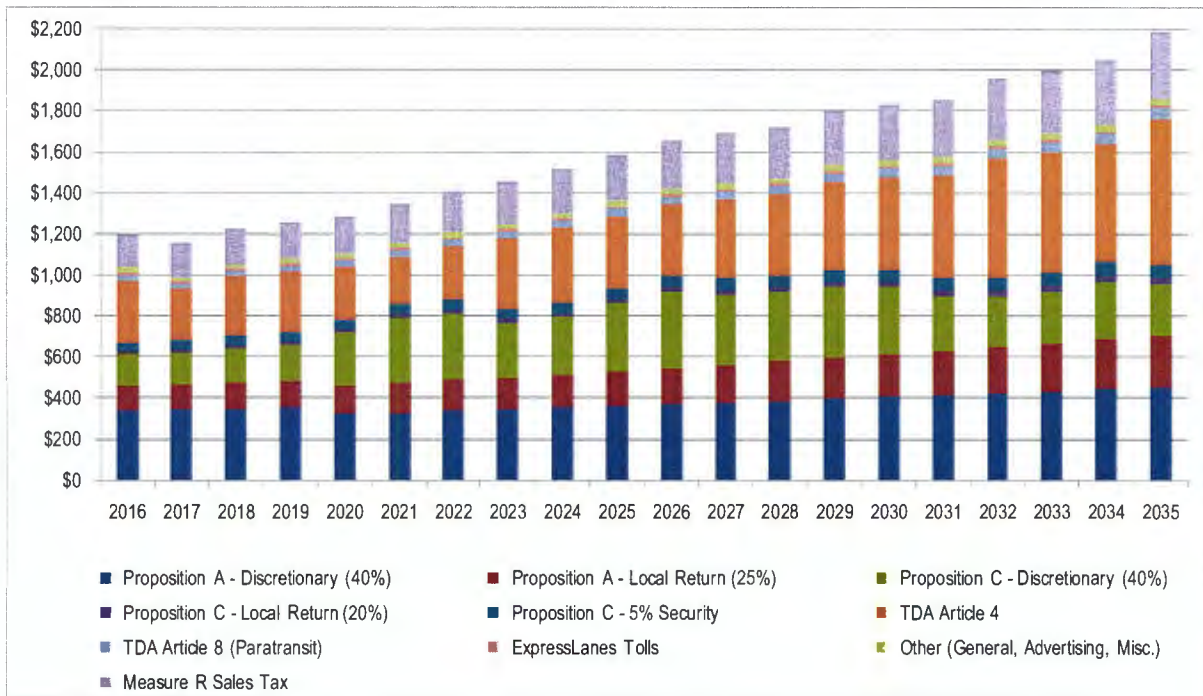




Figure 3-15: Systemwide Bus Annual Local Funding Sources, FY2016 to FY2035 (YOE \$M)



- **Proposition A Funds**—Proposition A funds are projected over the FY2016 to FY2035 period (after administrative charges), will be allocated among three funding programs: Local Return Program (25 percent), Rail Development Program (35 percent), and the Discretionary Program (40 percent). Of the 40 percent of Proposition A funds allocated to the Discretionary Program, 95 percent is allocated by formula for bus operations and the remaining 5 percent is allocated to the Bus Incentive Program. Rail operations will be funded from a portion of the Proposition A 35 percent Rail development Program.
 - **Proposition A 35 percent Rail Development Program**—These funds can be used for a variety of construction and operation purposes. For previous major construction projects, such as the Blue, Green and Red Lines, LACMTA has leveraged these funds by bonding in accordance with the agency’s adopted debt policy. Bond debt service has the first claim of funds from this program. Other eligible uses include the acquisition, renovation, rehabilitation, and replacement of rail vehicles, rail facilities, and wayside systems; operation of rail systems, and acquisition and maintenance of rights of way.
 - **Proposition A 40 percent Discretionary Program**—These funds are allocated based on Board policy which stated that 95 percent of these funds will be allocated to county bus operators by formula based on projected receipts plus CPI, adjusted once during the mid-year reallocation. Growth above CPI, if any, is transferred to Proposition C 40 percent Discretionary per the Discretionary Grant Program and Incentive Program Guidelines. SB 1755 (Calderon, 1991) mandates adherence to the Transit Operator Formula Funds (Formula Allocation Procedure) unless changed by ¾ vote of LACMTA Board.



- **Proposition C Funds**—Proposition C funds (after administrative charges) projected over the FY2016 to FY2035 period will be allocated among five funding programs: Rail and Bus Security (5 percent), Metrolink Commuter Rail/Transit Centers (10 percent), Local Return (20 percent), Transit-related Improvements to Freeways and State Highways and Public Mass Transit Improvements to Railroad Rights-of-Way (25 percent) and Discretionary program (40 percent). The following Proposition C programs provide funding for systemwide rail operations:
 - **Proposition C 5 percent Security Program**—These funds improve and expand rail and bus security services such as new rail line security, transit service and facilities security, security incentives, security improvements, and demonstration projects. The financial plan projects \$1,167 million for this program which will be distributed as follows:
 - **Municipal Operators**—\$207 million (18 percent)
 - **LACMTA Bus Security**—\$843 million (72 percent)
 - **LACMTA Rail Security**—\$117 million (10 percent)
 - **Proposition C 40 percent Discretionary Program**—These funds are currently allocated at the discretion of LACMTA Board to LACMTA and non-LACMTA operators and agencies after all other funding opportunities are exhausted.
 - **Proposition C 10 percent Commuter Rail/Transit Centers Program**—These funds may be used for planning, construction and operation of commuter rail such as Metrolink including vehicles and equipment, and right-of-way improvements to tracks, bridges and signal systems. In years when funds are available, this program can be used for other capital projects such as transit centers, freeway bus stops, park-n-ride lots.
 - **Proposition C 20 percent Local Return**—These funds are distributed to cities on a per capita basis exclusively for public transit purposes. The financial plan assumes \$459 million out of a total of the \$4,666 million total will be used to support municipal bus operations.
- **Measure R Rail and Bus Operations Program**—The Measure R funds (after administrative charges) forecast to be received over the FY2016 to FY2035 period will be allocated among nine funding programs: Transit Capital Specific Projects (35 percent); Highway Projects (20 percent); Local Return (15 percent); Rail Operations (5 percent); Bus Operations (20 percent); Metrolink (3 percent); Rail Capital General Improvements (2 percent); and Administration (1.5 percent). The Measure R 5 percent Rail Operations Program will be used to support operating costs of new rail projects, including the Westside Purple Line Extension.
- **TDA Article 4 and Article 8 Funds**—In addition to the TDA Article 4 funds described previously in Section 3.1.3.1, sales tax revenue from the LTF also supports TDA Article 8 Paratransit funding. Article 8 funding is for areas within Los Angeles County not served by LACMTA. Article 8 funds are allocated by LACMTA to the eligible local jurisdictions based on population levels.
- **Other LACMTA Funds**—This category reflects fees collected by LACMTA for advertising, chartering, leasing, and other miscellaneous services including projected revenue from high occupancy toll lanes.

State Funds

The financial plan includes two State funding programs for rail operations the State Transit Assistance (STA)—Population Share program and the Low Carbon Transit Operations Program (LCTOP)

Applicants for STA funds must meet one of the following eligibility tests:

1. Latest audited operating cost per revenue vehicle hour does not exceed the sum of the preceding year's operating cost per revenue vehicle hour and an amount equal to the product of the percentage change in CPI for the same period multiplied by the preceding year's operating cost per revenue vehicle hour.
2. Latest audited 3-year average operating cost per revenue vehicle hour does not exceed the sum of the average of the operating cost per revenue vehicle hour in the 3 years preceding the latest audited year and an amount equal to the product of the average percentage change in CPI for the same period multiplied by the average operating cost per revenue vehicle hour in the same 3 years.

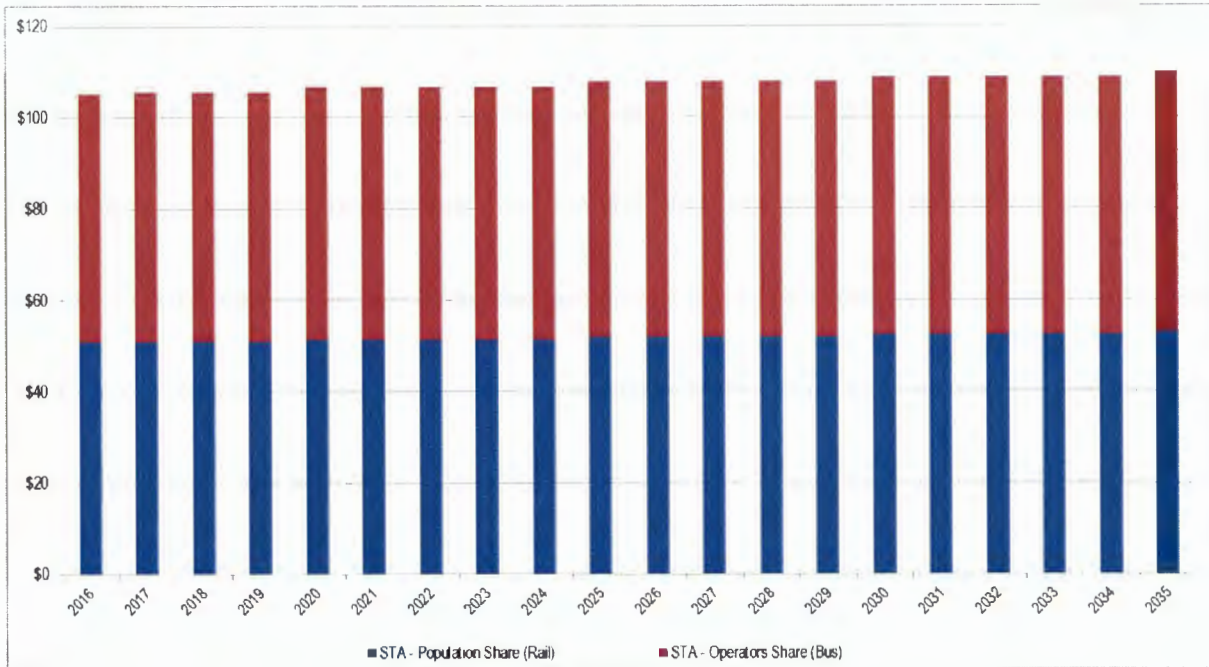
LACMTA's policy has been to allocate the population share of STA funds for rail operations. This is reflected in the financial plan with 100.0 percent of annual funds used for rail operations.

Recent State legislation provides that 75 percent of the revenue from the State sales tax on diesel be directed to the STA program beginning in FY2011-FY2012. The estimate is \$350 million per year statewide of which Los Angeles County, through the LACMTA, is allocated a share of each half of the STA program by formula. LACMTA allocates the Population Share for rail operations to itself and suballocates the Operator Revenue Share for bus operations to itself and to the Municipal Operators in LA County according to the LACMTA Formula Allocation Procedure (FAP).

As shown in Figure 3-16, beginning in FY2016, the financial plan assumes these funds will not increase each year.



Figure 3-16: Annual State Transit Assistance, FY2016 to FY2035 (YOE \$M)



The LCTOP was created in 2014 to provide operating and capital assistance for transit agencies to reduce greenhouse gas emission and improve mobility, with a priority on serving disadvantaged communities. Approved projects in LCTOP will support new or expanded bus or rail services, expand intermodal transit facilities, and may include equipment acquisition, fueling, maintenance and other costs to operate those services or facilities, with each project reducing greenhouse gas emissions. The program provides a small share of funding for LACMTA rail operations.

Federal Funds

The rail operating plan includes three federal funding sources: FTA Section 5337 State of Good Repair Program; FTA Section 5340 Growing States and High Density Program; and FHWA CMAQ Program. Figure 3-17 summarizes the projected annual funding levels for each of these programs.

The bus operating plan also includes three federal funding sources: FTA Section 5307 Preventive Maintenance funds; FHWA CMAQ funds, and FHWA Regional Surface Transportation Program (RSTP) funds. Table 3-18 summarizes the projected annual funding levels for each of these programs.



Figure 3-17: Rail Annual Federal Funding Levels, FY2016 to FY2035 (YOE \$M)

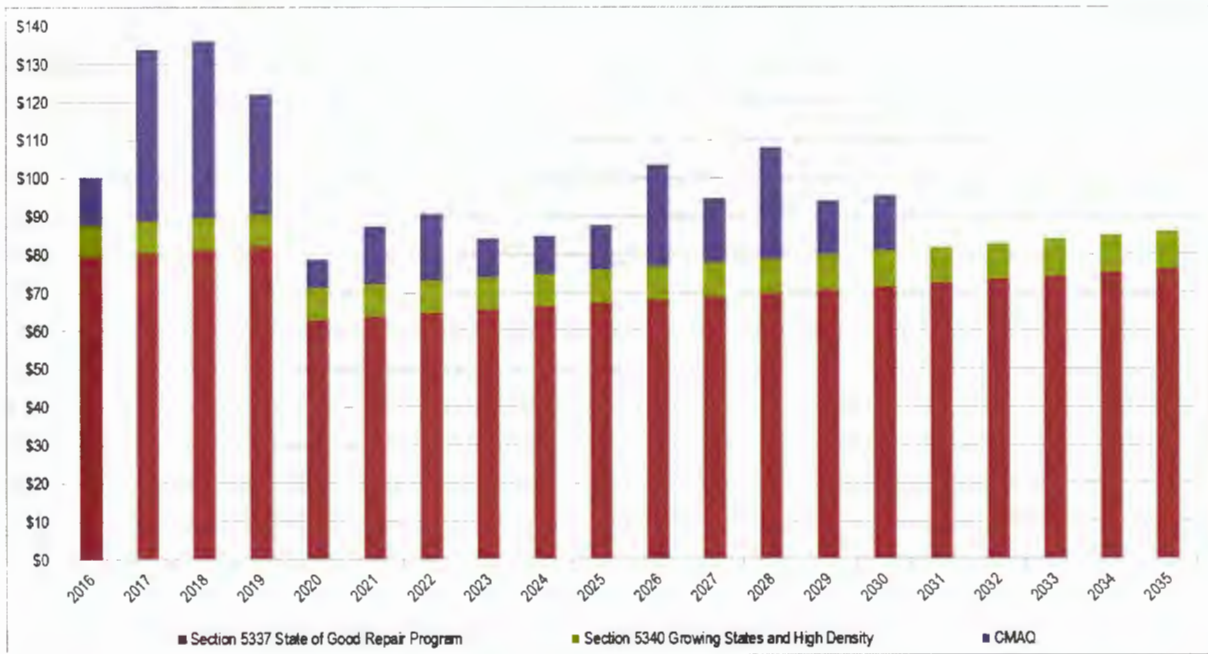
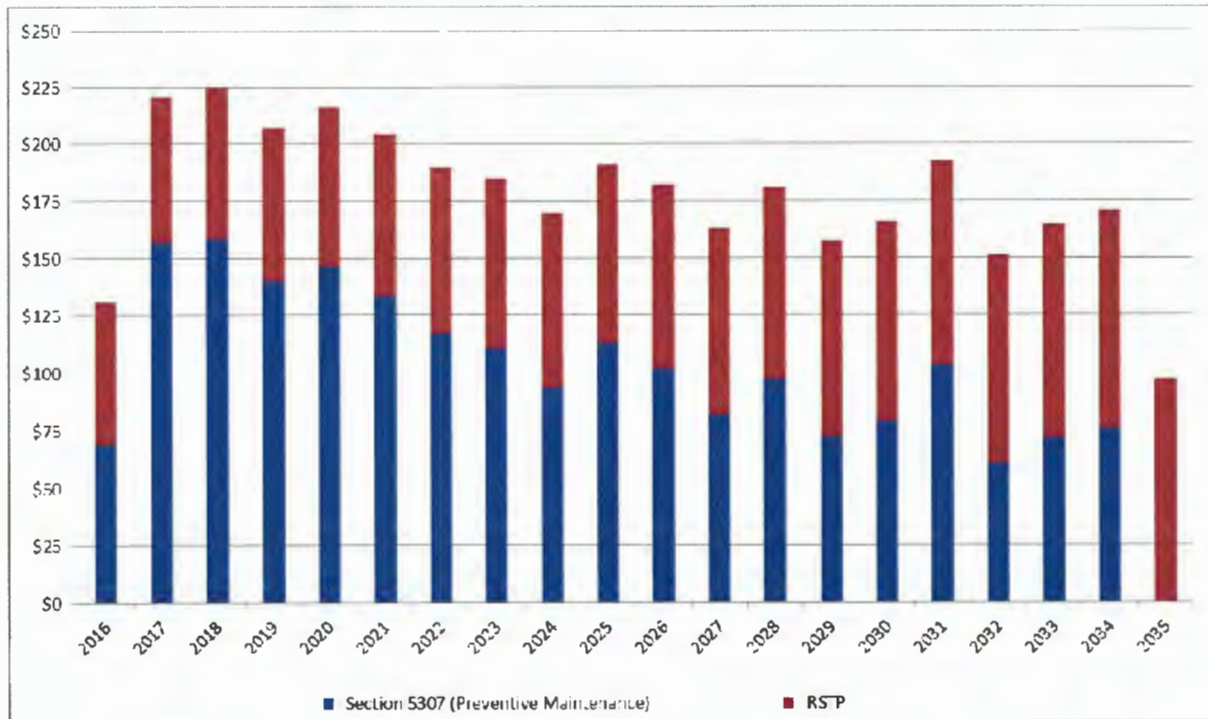


Figure 3-18: Bus Annual Federal Funding Levels, FY2016 to FY2035 (YOE \$M)



- **Section 5337 State of Good Repair Funds**—A federal formula program that is allocated to urbanized areas with populations greater than 200,000 with fixed guideway systems that

WESTSIDE PURPLE LINE EXTENSION SECTION 2



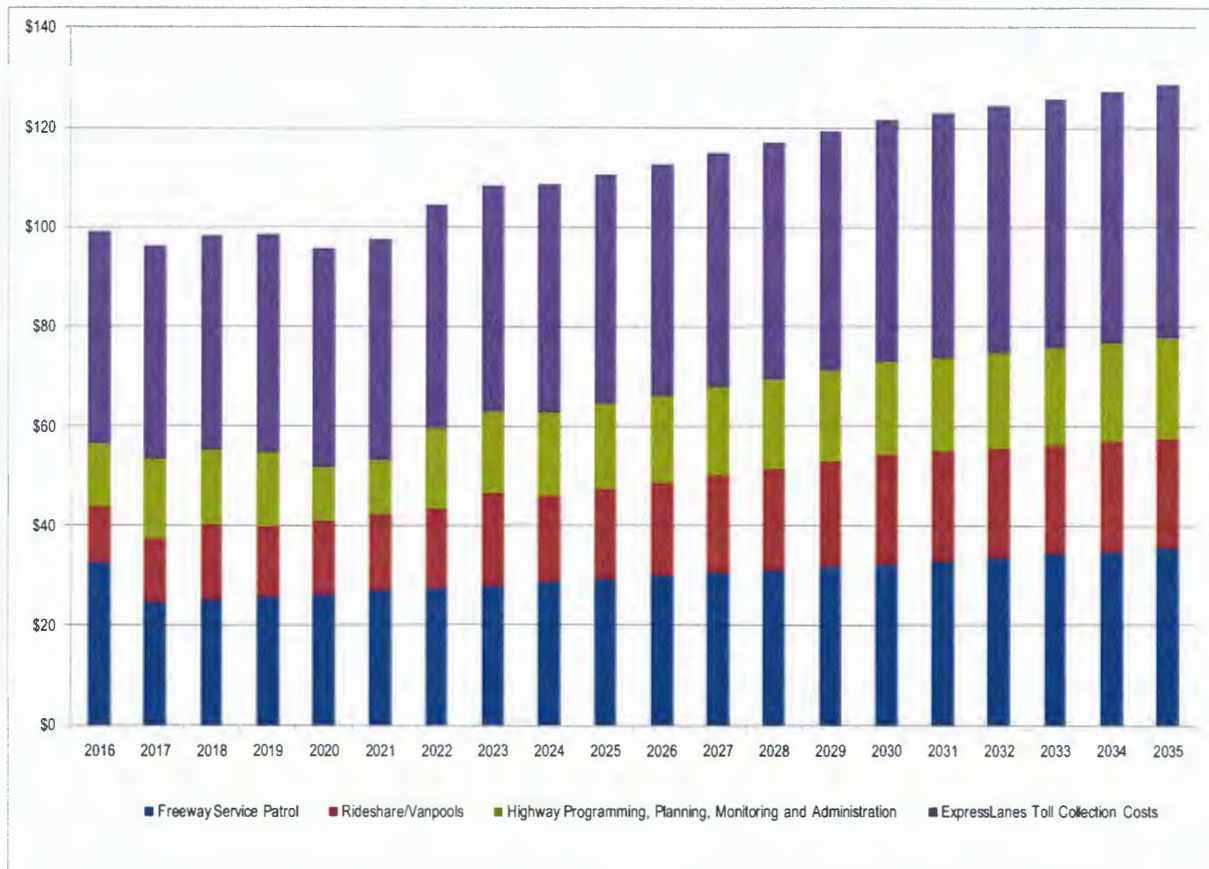
have been in operation for at least seven years. As stated in Section 3.1.3.3, these funds can be used for capital projects as well as for preventive maintenance activities incorporated into the operating plan. These activities can include preservation of fixed guideway infrastructure such as maintenance of vehicles, buildings, equipment, electric power facilities, vehicle movement control systems, fare collection and counting equipment, structures, tunnels, subways, and roadways.

- **Section 5340 Growing States and High Density States Program**—Funds from this program are allocated based on two categories. First, 50 percent of funds are made available under the Growing States factors and are apportioned based on State population forecasts for 15 years beyond the most recent census. Amounts apportioned for each State are then allocated to urbanized and rural areas based on the State’s urban/rural population ratio. Second, the remaining 50 percent is allocated based on the High Density States factor which distributes funds to States with population densities greater than 370 people per square mile and are apportioned only to urbanized areas within those States. The State of California does not qualify for High Density funds since its population density is 217 people per square mile.
- **Section 5307 Urbanized Area Formula Funds**—As described in Section 3.1.3.3, FTA Section 5307 Urbanized Area Formula Funds may be used for Preventive Maintenance as well as for transit capital.
- **CMAQ**—In addition to the capital use of CMAQ funds as described in Section 3.1.3.3, CMAQ funds can also be used for the first three years of operating costs of new lines. The financial plan reflects use of CMAQ funds to support the operation of new rail lines and bus services during the first three years of operations.
- **RSTP**—A total of \$1,584 million in RSTP funding is used to support bus operations (Access Service operations) O&M, with no RSTP funding used for rail operations.

3.2.3 Highway Operating Plan

3.2.3.1 LACMTA Highway O&M Costs

As shown in Figure 3-19, the financial plan includes LACMTA controlled highway operations related to freeway service patrol, ExpressLanes toll collection costs, rideshare, and highway project development support. The cost of these activities is projected to increase annually, as shown in the figure.

Figure 3-19: LACMTA Controlled Highway Operations Related Costs, FY2016 to FY2035 (YOE \$M)


3.2.3.2 Highway Operations Revenues

Except for Proposition C 25 percent funds, funding sources of funding for Highway Operations are firewalled for use on highways and local roads. Thus, these sources are isolated from the rail, transit corridor, and bus components of the LRTP. The sources for LACMTA controlled highway operating costs include:

- Proposition C 25 percent funds
- Service Authority for Freeway Emergencies (SAFE)
- High Occupancy Vehicle (HOV) Violation Fines
- Freeway Service Patrol—State Highway Account

3.2.4 Bus and Rail Sources and Uses

Table 3-38 and Table 3-39 summarize LACMTA’s operating plan by funding source and by agency, respectively, between FY2016 and FY2035.

Table 3-40 summarizes LACMTA operating and capital financial plan results, including annual cash balances, between FY2016 and FY2035.

Table 3-39: LACMTA Operating Plan by Funding Agency, FY2016 to FY2035 (YOE \$M)

Operating Sources	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total
LACMTA																					
Passenger Fares	372	386	412	441	465	490	514	539	568	598	632	663	701	735	771	809	848	890	920	951	12,705
Proposition A	335	300	300	305	316	350	385	392	409	448	394	422	408	372	529	554	551	435	468	481	8,155
Proposition C	94	107	124	142	251	286	265	230	247	279	392	356	385	453	287	220	207	332	344	336	5,338
Measure R	156	171	178	185	192	199	210	204	212	219	227	237	246	256	265	278	293	303	314	324	4,670
Other Local	274	209	239	242	206	173	199	280	300	282	279	308	311	343	358	400	475	476	460	588	6,400
State	102	98	98	98	99	99	99	99	99	100	100	100	100	100	101	101	101	101	101	101	2,001
Federal	170	291	295	262	225	221	208	195	178	201	205	176	205	166	174	185	143	156	161	86	3,901
LACMTA Operating Sources	1,502	1,563	1,646	1,675	1,755	1,819	1,880	1,939	2,013	2,127	2,230	2,263	2,357	2,425	2,486	2,548	2,618	2,692	2,767	2,867	43,171
Municipal and non-LACMTA Operators																					
Proposition A	218	227	236	244	253	261	270	278	288	296	305	316	327	337	347	360	374	386	397	409	6,128
Proposition C	69	75	77	80	82	85	87	90	93	95	98	101	104	107	110	114	118	121	125	128	1,959
Measure R	46	42	44	46	48	50	5	53	56	58	60	62	65	67	70	73	77	80	82	85	1,215
Other Local	80	81	85	89	93	97	101	104	109	113	117	123	128	133	138	146	154	160	166	172	2,387
State	17	16	16	16	16	16	16	16	16	16	16	16	16	16	17	17	17	17	17	17	329
Municipal and non-LACMTA Operating Sources	431	441	458	475	492	509	526	542	561	578	596	618	640	661	682	709	739	763	786	810	12,019
Metroink																					
Proposition C	66	65	65	65	67	69	71	73	74	76	78	80	83	85	87	89	92	94	96	99	1,575
Metroink Operating Sources	66	65	65	65	67	69	71	73	74	76	78	80	83	85	87	89	92	94	96	99	1,575
ADA Access Services																					
Proposition C	83	85	87	90	92	94	97	99	102	104	107	109	112	114	117	119	121	124	127	130	2,111
Federal	62	64	65	67	69	71	73	74	76	78	80	82	84	86	87	89	91	93	95	97	1,584
ADA Access Services Operating Sources	145	149	153	157	161	165	169	174	178	182	187	191	196	200	204	208	213	217	222	227	3,695
Paratransit																					
Other Local	24	26	27	28	29	30	32	33	34	35	36	38	40	41	43	45	47	49	51	52	739
Paratransit Operating Sources	24	26	27	28	29	30	32	33	34	35	36	38	40	41	43	45	47	49	51	52	739
Incentive Program																					
Proposition A	15	16	16	17	18	19	19	20	21	21	22	23	24	25	26	27	29	30	31	32	450
Incentive Program Operating Sources	15	16	16	17	18	19	19	20	21	21	22	23	24	25	26	27	29	30	31	32	450
Total Operating Sources	2,182	2,258	2,365	2,418	2,522	2,610	2,697	2,780	2,882	3,020	3,150	3,214	3,339	3,437	3,527	3,626	3,738	3,845	3,953	4,087	61,650
Operating Expenses																					
LACMTA																					
Bus O&M Expenses	1,050	1,084	1,150	1,162	1,199	1,237	1,276	1,315	1,356	1,439	1,493	1,504	1,549	1,593	1,634	1,676	1,724	1,772	1,822	1,874	28,908
Rail O&M Expenses	451	478	495	513	556	576	595	614	635	658	682	702	751	772	791	810	831	854	877	904	13,546
Regional Connector O&M Expenses	-	-	-	-	-	6	9	9	10	10	10	11	11	11	12	12	13	13	13	13	163
Westside Subway Extension O&M Expenses	-	-	-	-	-	-	-	-	13	19	44	45	46	48	49	50	52	53	54	54	547
Total LACMTA O&M Expenses	1,501	1,562	1,645	1,675	1,754	1,818	1,880	1,939	2,013	2,126	2,229	2,262	2,357	2,425	2,486	2,548	2,618	2,692	2,766	2,867	43,164
Municipal and non-LACMTA Operators																					
Metroink O&M Expenses	66	65	66	66	68	69	71	73	75	77	79	81	83	85	87	90	92	94	97	99	1,583
ADA Access Services	145	149	153	157	161	165	169	174	178	182	187	191	196	200	204	208	213	217	222	227	3,695
Paratransit	24	26	27	28	29	30	32	33	34	35	36	38	40	41	43	45	47	49	51	52	739
Incentive Program	15	16	16	17	18	19	19	20	21	21	22	23	24	25	26	27	29	30	31	32	450
Total Operating Expenses	2,182	2,258	2,365	2,418	2,522	2,610	2,697	2,780	2,882	3,020	3,150	3,214	3,339	3,437	3,527	3,626	3,738	3,845	3,953	4,087	61,650

WESTSIDE PURPLE LINE EXTENSION SECTION 2

Table 3-40: LACMTA Capital and Operating Financial Plan Results, FY2016 to FY2035 (YOE \$M)

Operating Results (Sources-Expenses)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total
LACMTA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Municipal and non-LACMTA Operators	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metrolink O&M Expenses	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(7)
ADA Access Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paratransit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Incentive Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Results	(0)	0	(0)	(0)	(0)	0	(0)	(0)	(0)	0	(0)	0	0	0	(0)	0	0	0	0	0	0
Capital Results (Sources-Costs)																					
LACMTA	(24)	(33)	-	-	-	0	-	-	(0)	(0)	0	0	(0)	0	(0)	(0)	0	(0)	-	-	(57)
Municipal and non-LACMTA Operators	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metrolink	16	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
ADA Access Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Results	(8)	(24)	-	-	-	0	-	-	(0)	(0)	0	0	(0)	0	(0)	(0)	0	(0)	-	-	(32)
Combined Results																					
Beginning Balance	95	87	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
LACMTA	(23)	(33)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Municipal and non-LACMTA Operators	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metrolink	15	9	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
ADA Access Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paratransit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Incentive Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Change to Cash Balance	(8)	(24)	(0)	(0)	(0)	0	(0)	(0)	(0)	(0)	0	0	(0)	0	(0)	(0)	0	(0)	0	0	0
Ending Balance	87	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63



4.0 SUMMARY OF KEY PERFORMANCE INDICATORS

Four key measures were used to reflect LACMTA’s financial capacity to implement the Westside Purple Line Extension Section 2 project while continuing to operate, maintain, expand, and enhance the existing transit system over the 2016 to FY2035 period. These measures include consideration of current FTA New Starts Financial criteria appropriate for Section 2 of the Westside Purple Line Extension at this stage of project development:

- The current financial condition, both capital and operating, of the project sponsor;
- The proposed share of total project capital costs from sources other than the Section 5309 capital investment grant program;
- The commitment of funds for both the capital cost of the proposed project and the ongoing transit system operation and maintenance;
- The reasonableness of the financial plan, including planning assumptions, cost estimates, and the capacity to withstand funding shortfalls or cost overruns.

4.1 Current Capital and Operating Condition

The current capital and operating condition of Metro is Medium, according to the following criteria:

- **Average Fleet Age**— Metro’s average bus fleet age is 9.5 years, which is under the threshold of 12 years to earn a Medium-Low rating.
- **Current Ratio**— Metro’s FY2014 current operating condition and operating ratio of 4.96 exceeds the High rating threshold of 2.0.
- **Bond Ratings**—Bond ratings for Metro’s senior tier sales tax liens backed by Proposition A, Proposition C, and Measure R exceed AA (Fitch and S&P) and Aa3 (Moody’s), above the threshold for a Medium-High rating.
- **Cash Flows**—Historically, Metro has had historical positive cash flows, with no cash flow shortfalls, which meets the threshold for a High rating.
- **Service Adjustments**—Metro has had only minor service adjustments in recent years, exceeding the threshold for a Medium rating.

4.2 Commitment of Capital and Operating Funds

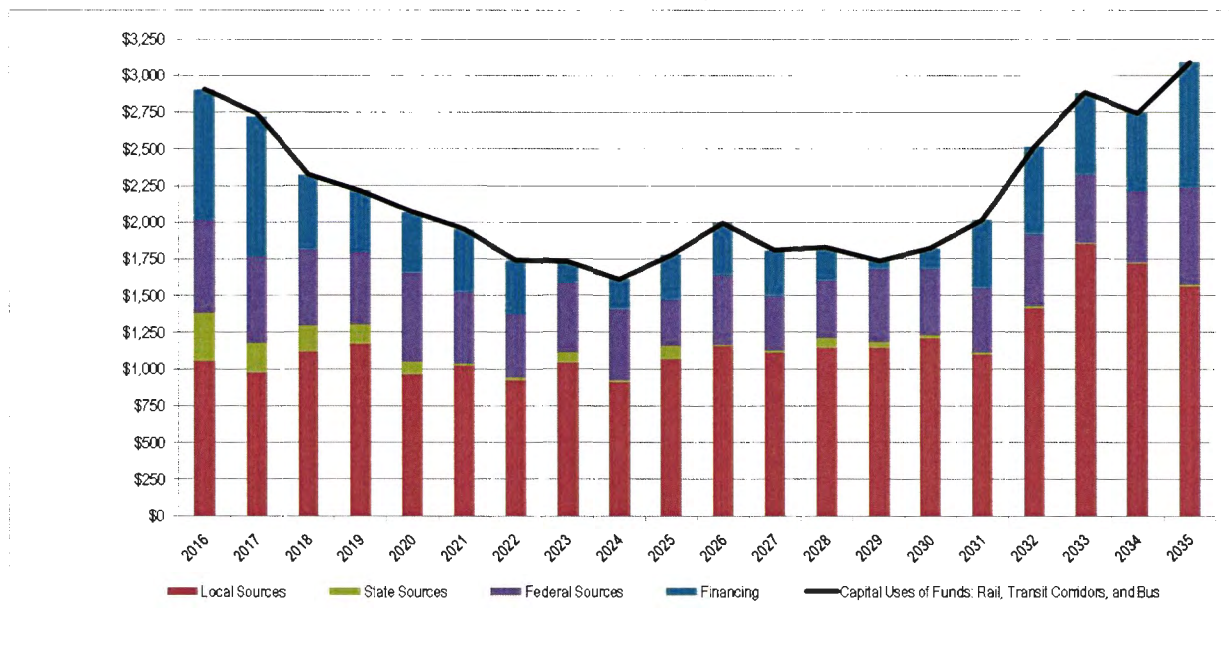
- **Commitment of Capital Funding**—Local funding commitments for Westside Purple Line Extension Section 2 total 96 percent of the non-New Starts share of costs (including finance charges). Based on FTA criteria, this level of participation qualifies the project for a High rating.
- **Commitment of Operating Funding**—From FY2016 to FY2035, 90 percent of the funds needed for system-wide O&M are existing and committed. Of these funds, 66 percent are derived primarily from LACMTA’s four existing transit sales taxes, two of which continue in perpetuity. Additionally, projected fare revenue accounts for approximately 21 percent of operating revenue. Greater than 75 percent of the funds needed to operate and maintain the proposed transit system in the opening year of the project are committed or budgeted, which is sufficient to earn the project a High rating.

4.3 Reasonableness of Capital Plan

As described in Section 3 of this document, LACMTA has the financial capacity to fully fund the annual costs of the Rail, Transit Corridors, and Bus capital programs, including debt service over the FY2016 to FY2035 period. The capital plan contains conservative planning assumptions and cost estimates when compared with recent historical experience, which is sufficient to earn a Medium-High rating.

Figure 4-1 summarizes the combination of local, state, and federal sources proposed to fund annual system-wide capital costs in combination with bond proceeds to be repaid with local sales tax revenues. As shown in the figure, local funds are the primary source of capital funding, providing 54 percent of revenues on a cash basis and 20 percent in the form of locally-repaid financing proceeds. Federal sources provide 22 percent, with State sources contributing the remaining 3 percent of capital funding.

Figure 4-1: Funding Sources for Rail, Transit Corridors, and Bus Capital Programs, FY2016 to FY2035 (in YOY \$, millions)



System-wide capital cost estimates are realistic and include funding for system preservation and state of good repair.

The Westside Purple Line Extension Section 2 project capital cost estimate is based on LACMTA experience and includes a 24 percent allocated and unallocated contingency. Moreover, as Section 5 of this report demonstrates, LACMTA has access to funds via additional debt capacity, cash reserves, or other committed funds to cover project cost increases or funding shortfalls equal to at least 10% of the estimated project cost, which contributes to a Medium-Low Reasonableness of Capital and Operating Plan rating.

4.4 Reasonableness of Operating Plan

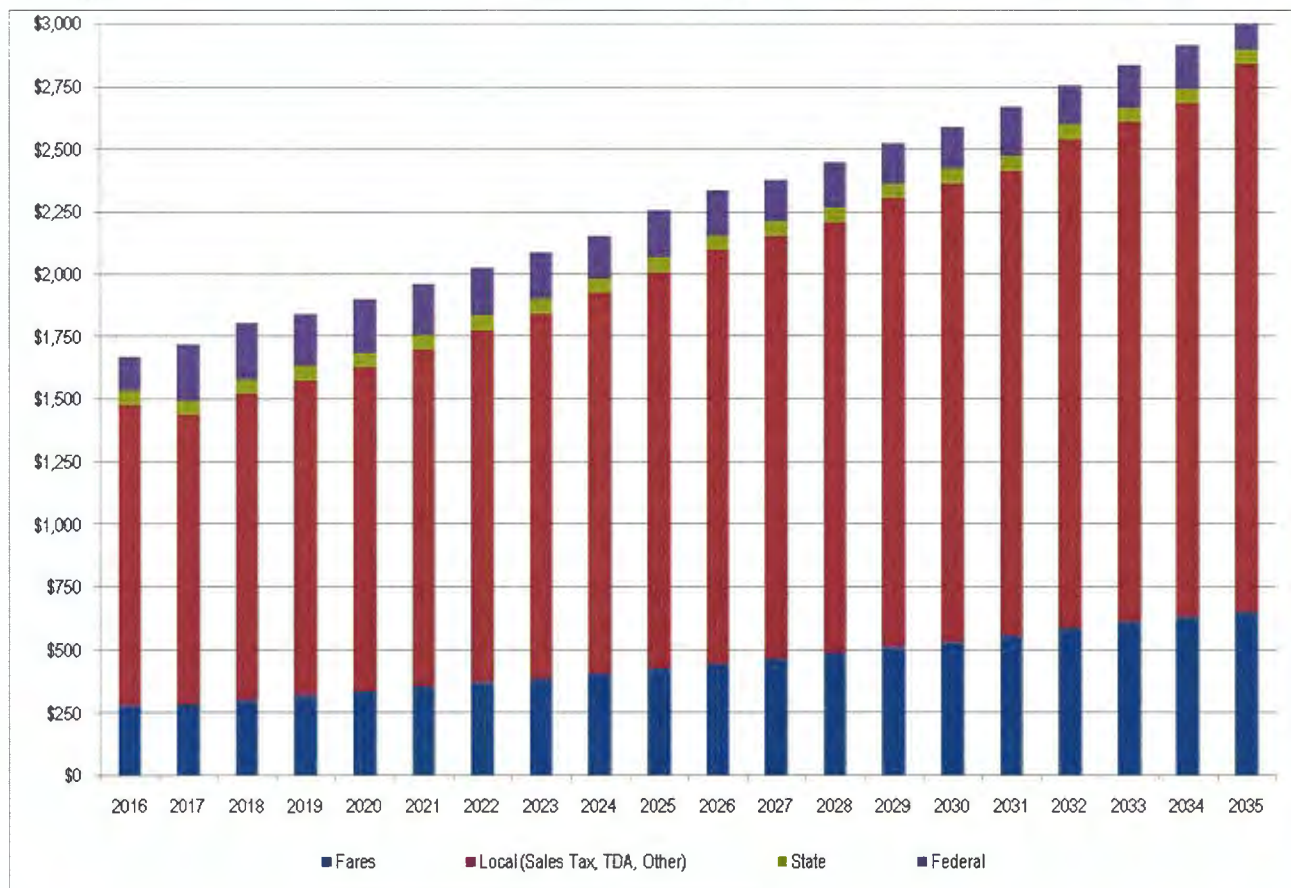
As summarized in Section 3 of this document, LACMTA maintains a balanced program to adequately fund the annual O&M costs of LACMTA bus and rail services, including paratransit, security, and

preventive maintenance. The operating plan contains conservative planning assumptions and cost estimates when compared with recent historical experience, which is sufficient to earn a Medium-High rating.

With respect to bus services, LACMTA is responsible for assuring annual funding for the operation and maintenance of much of the systemwide bus and paratransit program, including both LACMTA-operated service and LACMTA-funded services provided by other operators within the county. As shown in Figure 4-2 below, LACMTA systemwide bus O&M costs are fully funded on an annual basis through a combination of fares; local sources, including Proposition A, Proposition C, and Measure R sales taxes, TDA, and other non-system revenues (advertising, lease revenue); state sources, consisting of STA; and federal sources, consisting of CMAQ, FTA Section 5307 for preventive maintenance, and RSTP funding.

Figure 4-2 depicts the annual composition of the LACMTA revenues used to fund systemwide bus operations and maintenance. As shown in the figure, local funding sources comprise the largest share of annual revenues (70 percent), followed by fares (19 percent), federal funding (8 percent), and state sources (3 percent).

Figure 4-2: Sources Used to Fund Annual Systemwide Bus O&M Costs, FY2016 to FY2035 (YOE \$M)



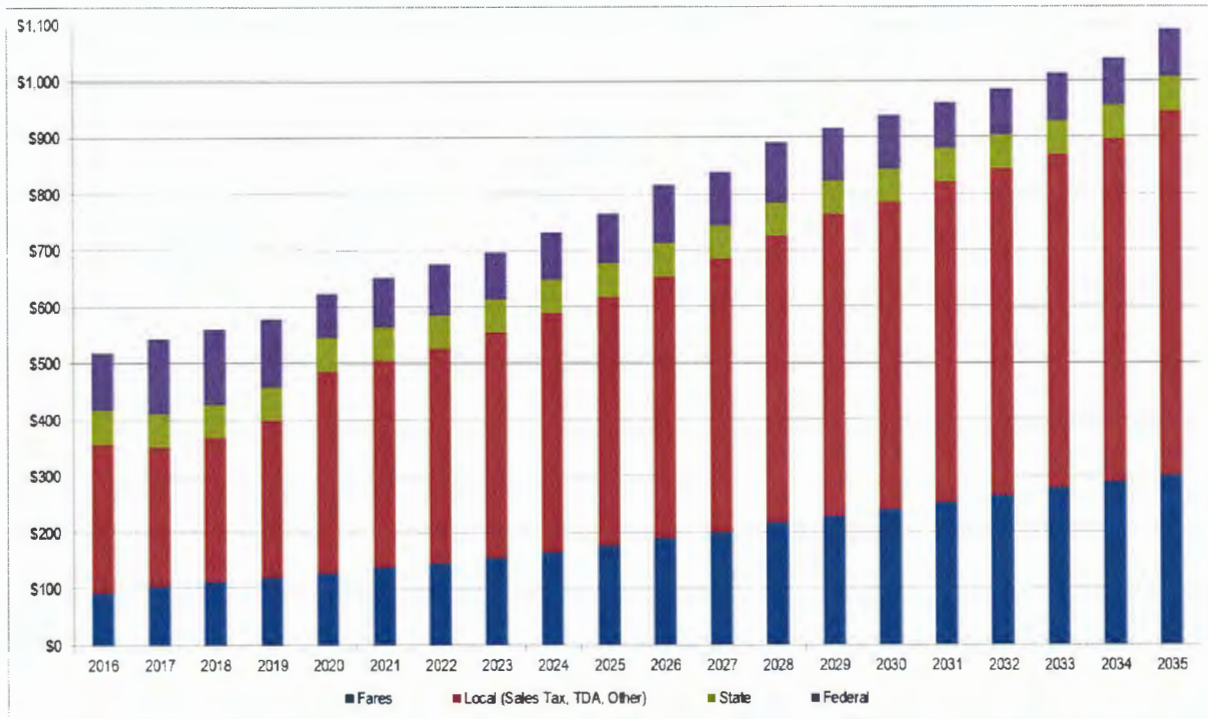
With respect to rail services, LACMTA is responsible for assuring annual funding for the operation and maintenance of the LACMTA light and heavy rail lines and for providing an annual operating subsidy for Metrolink commuter rail service. As shown in Figure 4-3 below, systemwide rail O&M costs are fully funded on an annual basis through a combination of fares; local sources, including Proposition A,

Proposition C, and Measure R sales taxes, and other non-system revenues (advertising, lease revenue); state sources, consisting of STA; and federal sources, consisting of CMAQ, FTA Section 5337 for preventive maintenance, and FTA Section 5340 Growing States funding.

Figure 4-3 depicts the annual composition of the revenues used to fully fund rail service, including the Westside Purple Line Extension Section 2 project and the other new lines to be constructed as part of the Measure R Expenditure Plan.

As shown in the figure, local funding sources comprise the largest share of annual revenues (57 percent), followed by fares (24 percent), federal funding (12 percent), and state sources (7 percent).

Figure 4-3: Sources Used to Fund Annual Systemwide Rail O&M Costs, FY2016 to FY2035 (YOE \$M)



O&M cost growth rates for system-wide bus service are conservatively estimated based on a cost per hour growth factor close to that experienced over the past ten years; rail O&M cost growth rate per hour is consistent with the past ten years.

As of June 30, 2015, LACMTA has approximately \$1.3 billion of cash on hand, including \$363 million in liquid reserves in discretionary accounts. The liquid reserves can be used for operating or capital costs. Additional information about LACMTA’s reserves is included in the supporting documentation.

These unrestricted cash reserves demonstrate that LACMTA has access to funds via additional cash reserves to cover 17% (approximately 2 months) of annual system wide operating expenses, which is sufficient to earn the project a Medium rating.

4.5 Conformance with LACMTA Debt Policies

As shown in Table 4-1, LACMTA has four categories of local sales tax revenues under Proposition A and Proposition C against which it may currently issue debt under its Board-adopted debt policy, in addition



to Measure R. For each of these categories, the LACMTA Board has adopted debt affordability targets governing the percentage of annual revenues that may be used for payment of debt service, which are equivalent to minimum annual debt service coverage ratios (DSCRs) governing the level to which annual sales tax revenues must exceed annual debt service payments.

Table 4-1: LACMTA Debt Affordability Targets and Minimum Debt Service Coverage Ratios (DSCR)

Category	Affordability Target (% of Annual Revenues)	Minimum DSCR
Proposition A		
Rail 35%	87%	1.15
Proposition C		
25%	60%	1.176
40%	40%	2.5
10%	40%	2.0

As shown in Figure 4-4 through Figure 4-7, LACMTA is projected to exceed the Board-adopted minimum annual debt service coverage ratio established for one category of sales tax revenue.

The Proposition C 25 percent (Transit and Highways) debt policy cap that the Board established previously may require a later action to raise it from 60 percent to 80 percent. While similar assumptions have been made in the past, they were ultimately not necessary due to project delays unrelated to funding.

As described in Section 3 of this document and illustrated in Figure 4-8, with respect to the 35 percent of Measure R dedicated to transit projects, LACMTA is projected to maintain an average annual debt service coverage ratio excluding commercial paper of 2.10 over the FY2016 to FY2035 period. Coverage is projected to bottom out at 1.43 in FY2018.



Figure 4-4: Proposition A 35 percent Projected Annual DSCR, FY2016 to FY2035

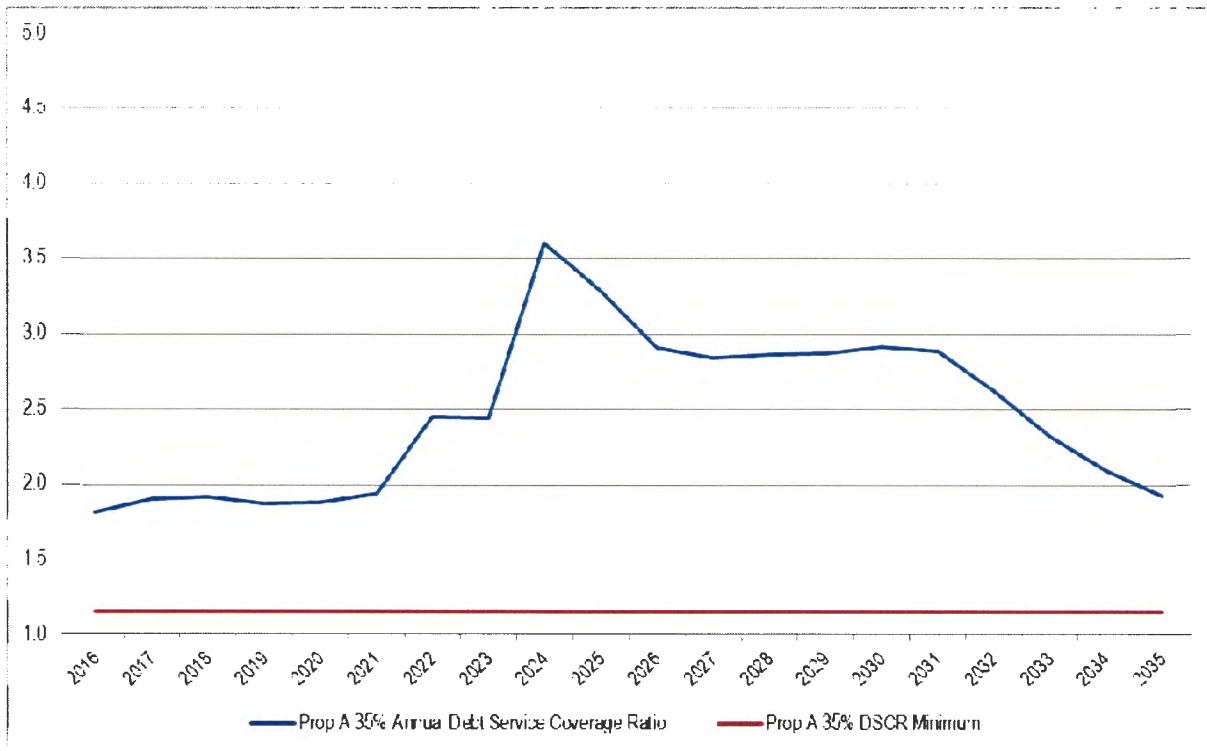


Figure 4-5: Proposition C 25 percent Projected Annual DSCR, FY2016 to FY2035

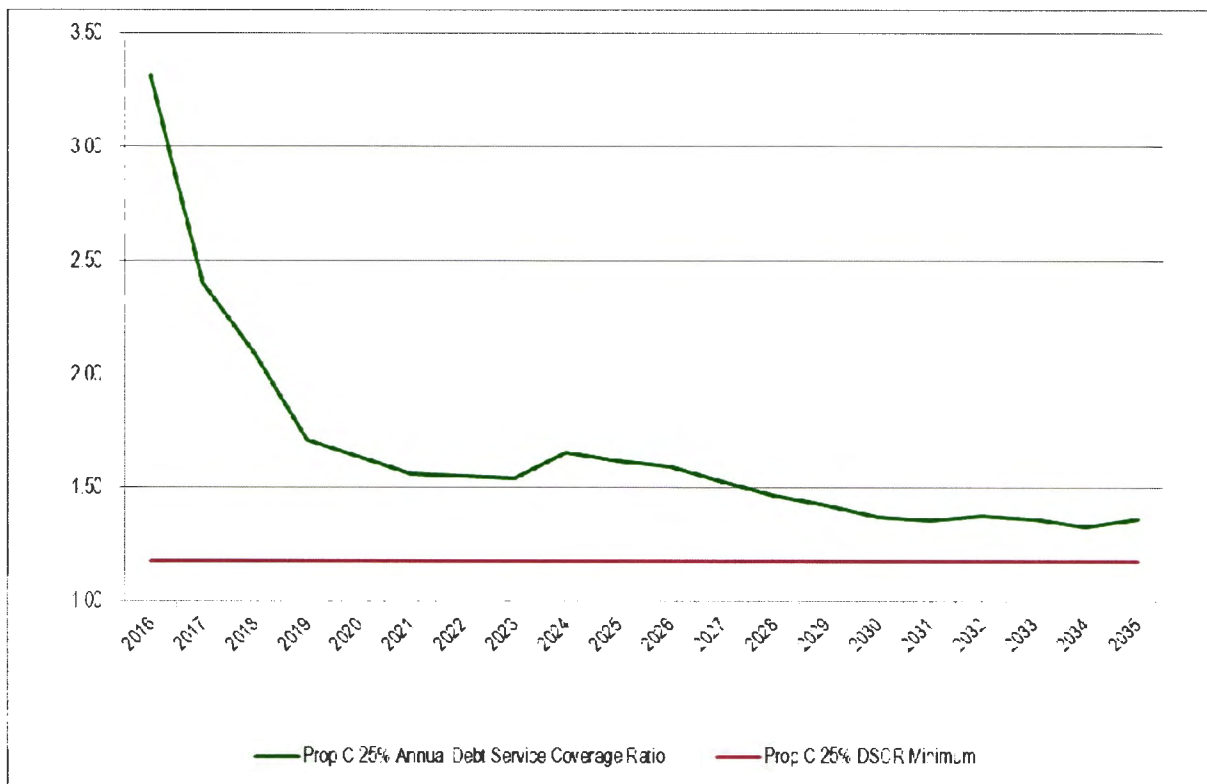




Figure 4-6: Proposition C 40 percent Projected Annual DSCR, FY2016 to FY2035

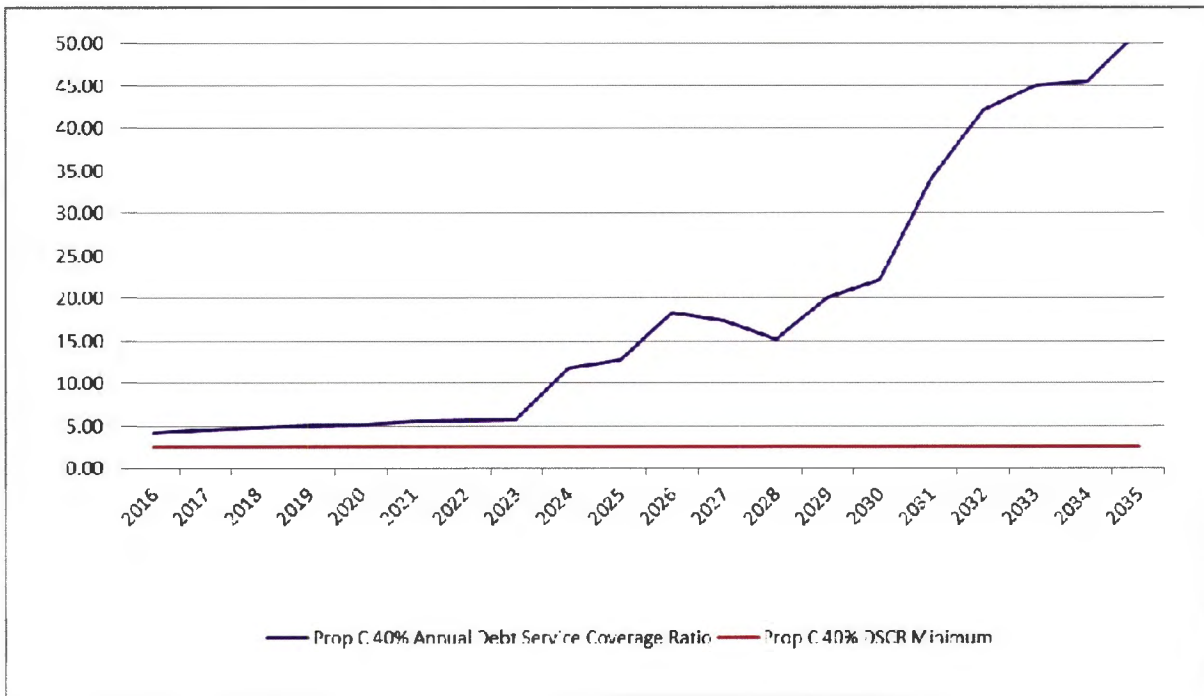


Figure 4-7: Proposition C 10 percent Projected Annual DSCR, FY2016 to FY2035

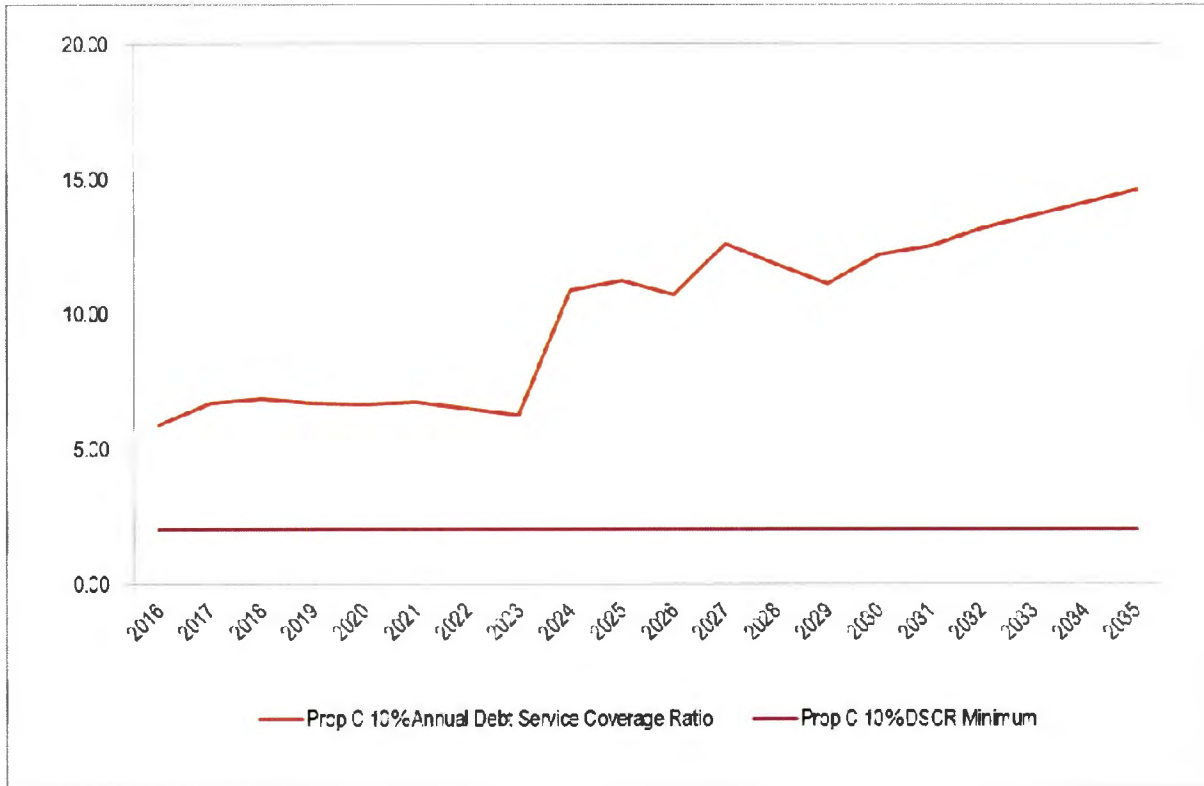
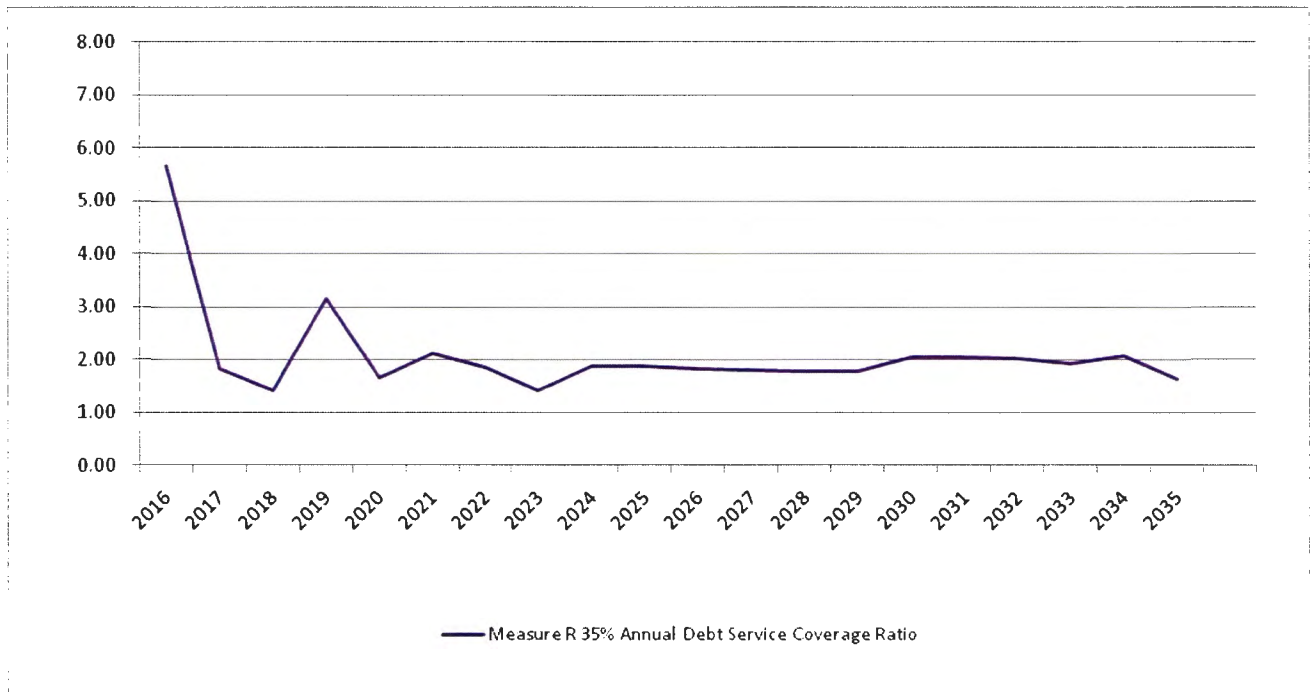


Figure 4-8: Measure R 35 percent Projected Annual DSCR, FY2016 to FY2035


4.6 Achieved Levels of System-Wide Farebox Recovery

With respect to the bus and rail services operated by LACMTA, the goal of the agency is to achieve and maintain a system-wide farebox recovery of 30 to 33 percent, up from its current farebox recovery rate of 24 percent. The LACMTA Board has taken action toward achieving this target, with approval of fare increases effective July 2008, July 2010, and September 2014. This most recent increase included new one-way Metro bus and rail fares of \$1.75 (up from \$1.50); monthly passes of \$100 (up from \$75); and daily passes of \$7 (up from \$5). In addition, Metro now allows two hours of free transfers for TAP card holders.

Figure 4-9 and Figure 4-10 reflect the projected O&M costs for the LACMTA-operated bus and rail services over the FY2016 to FY2035 period, and the share of O&M costs projected to be funded with fare revenues. Through cost management and continued periodic fare increases, LACMTA is expected to achieve its 30 percent farebox recovery target in FY2029 and will maintain and exceed 30.0 percent thereafter. While Figure 4-10 shows that LACMTA does not meet the goal of achieving a 30 percent farebox recovery rate until FY2029, it is important to note that the projected recovery rates from FY2024 through FY 2028 are greater than 28 percent.



Figure 4-9: Annual O&M Costs of LACMTA Operated Bus and Rail Services in Comparison to Fare Revenues, FY2016 to FY2035 (YOE \$M)

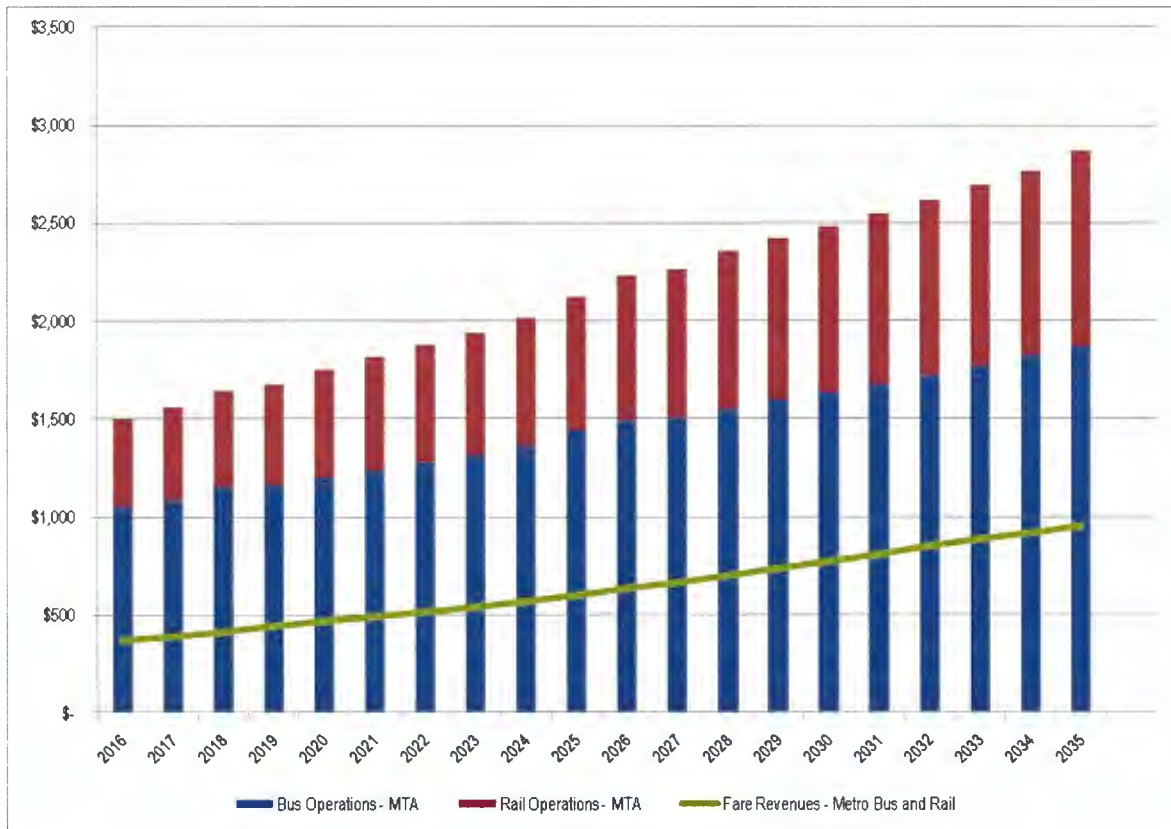
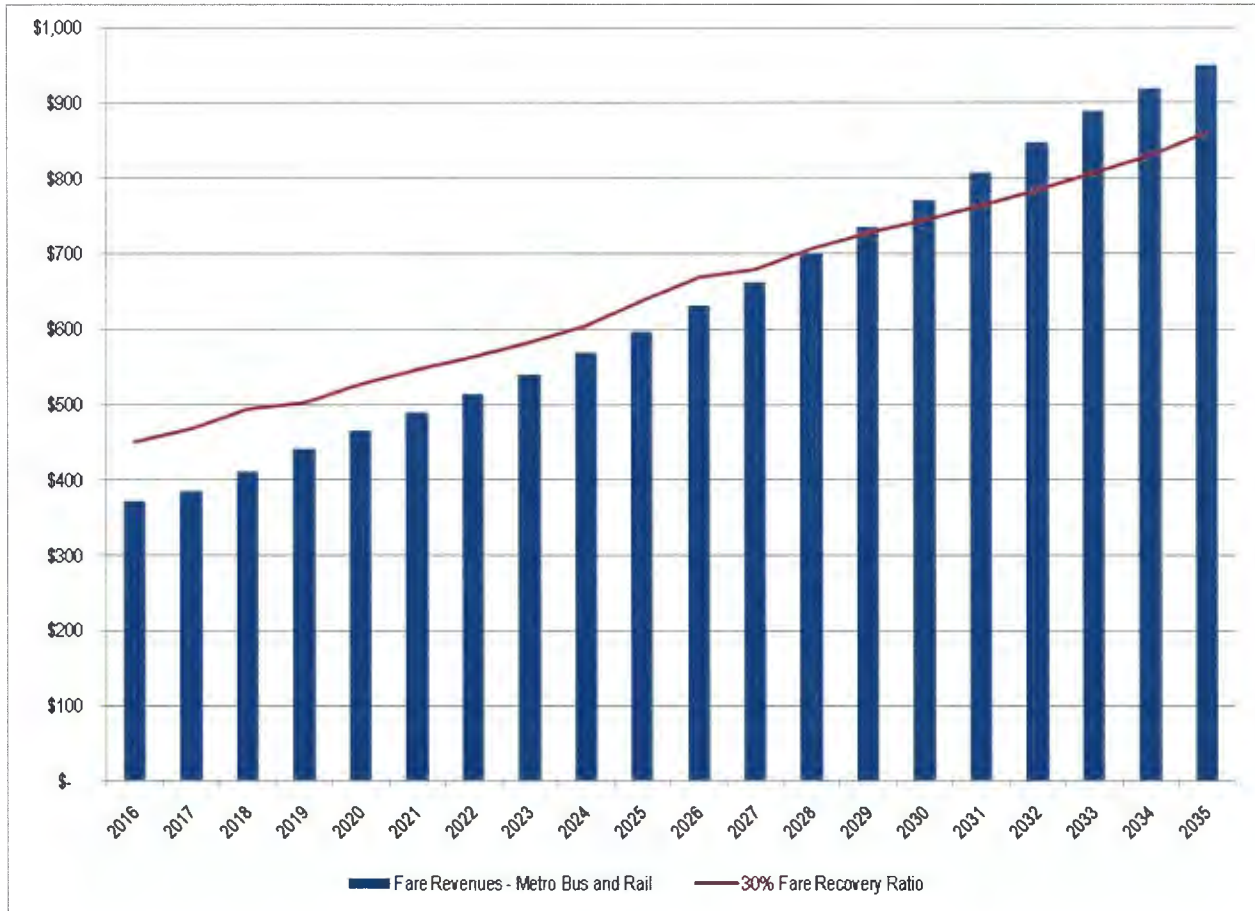


Figure 4-10: Annual Farebox Revenues Relative to Achieving a 30 percent Farebox Recovery Ratio for LACMTA Operated Bus and Rail Services, FY2016 to FY2035 (YOE \$M)





5.0 RISK ANALYSIS

The analysis presented in this Financial Plan provides LACMTA’s working assumptions for revenues and costs. This section identifies the primary risks and uncertainties surrounding the key assumptions and presents strategies for mitigating these risks for several risk scenarios. This risk analysis is intended to address the financial risk to a level appropriate for projects entering final design.

5.1 Major Capital Sources of Risk and Uncertainty

5.1.1 LACMTA Policy Regarding Cost and Revenue Risk

After Engineering is completed, project risks from cost increases and revenue decreases cannot be eliminated completely, especially considering the innovative project delivery and funding approaches anticipated under the Measure R Expenditure Plan. LACMTA understands that many of these innovative ideas must take clearer shape in the form of legislation, regional approvals, and local actions.

LACMTA enacted several financial policies in preparation for the Eastside Extension of the Gold Line which opened in 2009. In fact, the high bond ratings this agency still enjoys is due in large measure to the adherence to the policy efforts put in place at that time.

Some of these policies are already in place, like the agency’s Financial Stability Policy. LACMTA also has adopted a policy referred to as the “Unified Cost Management Process and Policy” for Measure R projects, which was approved by the LACMTA Board in January 2011. This policy describes the actions that LACMTA will take, and the order in which they will be taken, in the event of cost increases or revenue decreases for any of the Measure R projects, including Section 2 of the Westside Purple Line Extension. The “Unified Cost Increase Policy...” recommended to the LACMTA Board reads, in part, as follows:

“If increases in cost estimates occur at any of the milestones..., the MTA will address the issue prior to taking any action necessary to permit the project to move to the next milestone. Increases in cost estimates will be measured against the 2009 Long Range Transportation Plan as adjusted by subsequent actions on cost estimates taken by the MTA Board. Shortfalls will first be addressed at the project level prior to evaluation for any additional resources using these methods in this order:

- a. Value engineering and/or scope reductions;*
- b. New local agency funding resources;*
- c. Shorter segmentation;*
- d. Other cost reductions within the same transit corridor (see Attachment B);*
- e. Other cost reductions within the same sub-region (see Attachment B); and,*
- f. Countywide transit cost reductions and/or other funds will be sought using pre-established priorities, as follows:*
 - a. Where applicable, Measure R Transit Capital Subfund Contingency-Escalation Allowance funds (Measure R Expenditure Plan, Page 2 of 4, Line 18); and,*
 - b. Where Line 18 is not applicable, the L RTP Near-Term Strategies and Priority Setting Criteria will be followed (Item 9, as Adopted by the Board of Directors in March of 2010).”*

Cost increases that cannot be addressed at one step will be addressed by any of the other subsequent steps. The step-by-step evaluation process will require the LACMTA Board to approve an evaluation of project cost estimates against funding resources at key milestone points throughout the environmental, design, and construction phases of the Measure R projects. If increases in cost estimates occur, the Board must approve a plan of action to address the issue before taking any action necessary to permit the project to move to the next milestone. Increases in cost estimates will be measured against the 2009 LRTP as adjusted by subsequent actions on cost estimates taken by the Board.

Throughout engineering and design, Metro has been engaged in the risk assessment process with FTA and its PMOC. This process has resulted in revised project cost estimates, adjustments to the project cost contingency levels and identification of secondary cost mitigation measures. To address the need impacts of the risk assessment on the baseline project costs, excluding financing, LACMTA followed the Policy described above, and the results as reflected in this Financial Plan. In June 2013, the Metro Board of Directors added a \$105 million increment of non-New Starts funding necessary to meet these risk assessment process results for the Westside Purple Line Extension Section 1 and Regional Connector. In April 2014 \$60 million was added for Regional Connector, and in July 2014 \$288 million was added for Westside Purple Line Extension Section 1.

In May 2011, LACMTA enacted the “Fiscal Responsibility Policy for Measure R Transit and Highway Project Contingencies.” This policy outlines specific procedures and processes for the use of Measure R contingency funds for debt service, particularly if debt is greater than forecasted in the LRTP. The policy also specifies that financing approaches must not adversely affect second and third decade Measure R projects. There is an exemption in the policy for viable project acceleration plans consistent with the Board’s effort to deliver 12 transit corridor projects in ten years instead of 30 years. This is known as Metro’s “30/10” Plan.

As with any large infrastructure project in its planning stages, the Westside Purple Line Extension Section 2 project includes several sources of risks and uncertainties that could potentially affect the capital and operating financial plans.

From a capital cost perspective, they include inflationary risks, the construction schedule, scope, and the cost and schedule of the other Measure R projects. On the revenue side, major risks include Measure R revenue shortfalls, the inability to obtain necessary financing terms, and the availability and timing of FTA New Starts funds.

As previously noted, during the development of this Financial Plan, LACMTA staff conducted value engineering efforts to control project costs. The value engineering items believed to have the potential of yielding the largest cost savings were incorporated into the project estimates. These items included the reduction of underground station footprint sizes and station depths. Station room layouts and other architectural elements were standardized to reduce design, construction, operations and maintenance costs. The Project Team also analyzed constructability issues and various construction sequencing scenarios to reduce risks and the overall durations for tunneling and cut-and-cover underground construction. More recently, an operational analysis was performed and it was determined that the train cross-over at the Wilshire/Rodeo station could be eliminated and still maintain operational requirements for the Purple Line Extension. This elimination results in significant shortening of the underground station length, thus reducing construction costs and impacts to traffic and disruption to the streets and businesses. Metro staff is continuing to re-evaluate the project’s costs in the context of the Measure R Unified Cost Management Policy and Process and will inform the FTA of feasible cost



reductions and related funding changes. The Rail Fleet Management Plan is being reviewed and the outcome also may have the potential to reduce capital and operating costs.

The Operating Plan risks can also be broken down into O&M cost and O&M revenue categories. Key areas of risk from an O&M cost perspective are related to cost escalation for labor or fuel and real increases in unit O&M costs for the project or system upon completion. From a revenue perspective, areas of uncertainty include ridership and fare revenue forecasts and economic impacts on sales tax revenues.

5.1.2 Capital Cost Risks

Typical areas of capital cost risk for projects in construction include scope risk; higher than expected inflation, which can increase year of expenditure costs; and schedule changes that impact the project's capital costs.

5.1.2.1 Scope Risk

Cost increases could occur as a result of unexpected soil conditions and geotechnical issues, the need for unexpected utility relocations, or the presence of tar sands, unanticipated groundwater and other environmental impacts and mitigation measures, particularly associated with the underground alignment. Issues relating to tunneling technologies, for example, can change the estimated costs. The current cost estimate includes contingencies to cover these and other potential changes.

The identification of risks will continue as the project develops through the various stages of project delivery. During engineering and design, a risk management plan will be developed for the project to ensure risks are reviewed and managed, and procedures are developed to reduce or eliminate their impacts to the project. Risks which remain will be allocated in part or whole through the contractual arrangements and bidding process, conscious always that risks should be assigned and owned by the party best able to manage that risk.

5.1.2.2 Inflation

Inflation is a key risk for mega-projects, as it typically represents a large share of the capital cost when project development is stretched over several years. A large part of cost inflation is driven by demand and supply at global and regional levels, factors that are beyond the control of project sponsors.

As described in Section 2.0, the capital cost estimate assumes that the rate of inflation growth will increase by 3.5 percent annually. This assumes a gradual increase in economic growth in the Los Angeles region. The risk assessment will evaluate the forecasted cost escalation rates in more details and evaluate different escalation rates for different commodity types.

In general, commodity prices tend to be particularly sensitive to global economic pressures. A notable example is steel, whose price peaked in the third quarter of 2008 (after a steep run up), significantly dropped for three straight quarters, and then increased 5.7 percent between the second and third quarters of 2009. Because steel is an easily transportable, high-value commodity that is essential for a wide range of manufacturing and construction uses, its price is influenced by changes in production as well as speculation of future economic demand. Crude oil, which after processing is used in one form or another for many elements of a construction project, is similar. Other commodity components (e.g., concrete) are less transportable so they tend to be influenced more by regional economic factors; however, they also represent a notable share of rail transit construction costs and their price variations will impact the project costs.

Right-of-way costs are highly correlated with property values, which have recently declined after many years of growth at rates that were higher than historical averages. It is currently unknown when the real estate market will fully recover. This, along with site-specific factors that can influence the cost of acquisitions, creates considerable uncertainty regarding right-of-way costs.

Although it is not anticipated to be an issue, the availability of qualified labor is another potential source of risk. If there is insufficient qualified labor, capital cost escalation can occur through unit cost increases (due to insufficient competition or the need to bring qualified labor into the region) and/or schedule delays. LACMTA anticipates reviewing market conditions and the availability of qualified labor as part of its project risk assessments. Anecdotal evidence from interviews with trade union representatives suggests there is so much excess labor in the local construction trade union halls that new union that apprenticeships will likely not be needed for five years at current employment levels.

5.1.2.3 Project Schedule

Scheduling delays can lead to cost increases that may impact the financial plan for a project, both in additional cost escalation and increased professional services costs. Schedule changes might result from scope changes, local permitting and approval processes, agreement negotiations, right-of-way acquisition, the availability of qualified labor, procurement delays, vehicle manufacturing delays, and construction delays.

An August 4, 2025 (FY2026) opening date is assumed for Section 2 in the financial plan. In the event the project opens a month or two early, cash reserves are sufficient to fund the additional months of operating and maintenance costs. The project master schedule will be evaluated in detail during the risk assessment process.

5.1.2.4 Cost and Schedule of other Measure R Expenditure Plan Projects

As shown in the LRTP, LACMTA intends to construct the Westside Purple Line Extension Section 2 project concurrently with several other transit and highway construction projects using Measure R funding. Both the capital costs and schedules of the other Measure R Expenditure Plan projects are subject to the same uncertainties outlined above for the Westside Purple Line Extension Section 2 project. As all projects are expected to be constructed around the same time period, cost increases or schedule modifications for other projects could impact the availability of capital funds for the Westside Purple Line Extension Section 2 project.

5.1.3 Capital Revenue Risks

5.1.3.1 Measure R Revenue

Measure R revenues are generated by a sales tax. Sales taxes tend to move in tandem with the overall economy. As such, Measure R revenues are solely dependent on the ebbs and flows of local economic conditions. This could potentially lead to future Measure R shortfalls during times of economic recession or depression. Any reduction in Measure R funding could impact LACMTA's ability to complete the entire Westside Purple Line Extension, or could impact the delivery of other capital projects. However, the reverse is also true, as Measure R revenues will potentially exceed projections in times of robust economic activity.

As described in Section 3.1.4, the anticipated Measure R TIFIA loan will be subject to federal approval. Should the Westside Purple Line Extension Section 2 project not succeed in receiving TIFIA financing, LACMTA will need to consider other means of raising the financing necessary to complete the project.

However, this project could be funded with Measure R cash or alternative financing strategies could be considered.

5.1.3.2 FTA Funds

This financial plan assumes certain levels of Federal funds through the Section 5307, Section 5309 New Starts, Section 5337 State of Good Repair, and Section 5339 Bus and Bus Facilities grant programs. A new two-year federal surface transportation authorization package, Moving Ahead for Progress in the 21st Century (MAP-21), was approved in 2012. Funding to LACMTA from these grant programs is expected to be consistent with projections contained in this financial plan. However, the latest extension of MAP-21 expires on October 29, 2015, and while these programs have been in place for many years (the Section 5309 program has existed since the 1960s), through authorization bills there is a possibility that Congress could increase or decrease the amount of funds available, impose new rules on project eligibility, or revise the criteria that FTA is directed to use for evaluating potential projects.

New Starts funding is also subject to appropriation uncertainties. The amount of the FTA Section 5309 contribution would be identified in a FFGA for each project between FTA and the LACMTA. The FFGA would also identify the amount to be made available each year, subject to annual appropriations legislation. Although history has shown that Congress ultimately honors and appropriates the full amount spelled out in an FFGA, Congress could delay funding for the project by reducing or stretching out the annual appropriations. Any delay could necessitate additional borrowing or schedule delays.

The FFGA would also identify the amount of New Starts funds to be made available each year, subject to annual appropriations legislation. FTA may reconsider increasing the annual funding amounts before the FFGA is signed if increases in the New Starts program are anticipated.

5.1.4 Capital Plan Sensitivity Analyses

This section summarizes two capital plan sensitivity analyses that respectively assume 1) a 10 percent increase in the capital cost of the Westside Purple Line Extension Section 2 project and 2) a decrease in projected sales tax revenues.

5.1.4.1 Capital Project Cost Increase Sensitivity Analysis

Table 5-1 summarizes a sensitivity analysis prepared by LACMTA that assumes a 10 percent increase in the capital cost of Section 2 of the Westside Purple Line Extension project. The sensitivity analysis confirms that LACMTA has the financial capacity to deliver the project within the timeframe proposed in the financial plan if the capital cost of the project is 10 percent higher than estimated, including contingencies.



Table 5-1: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus for Base Case and Capital Project Cost Increase Sensitivity Analysis Scenario, FY2016 to FY2035 (YOE \$M)

	Base Case: Measure R Updated Expenditure Plan	Cost Increase Scenario: Measure R Updated Expenditure Plan	Difference from Base Case
Sources of Funds: Rail, Transit Corridors, and Bus			
Rail Capital Sources of Funds			
Proposition A	\$4,245	\$4,268	\$23
Proposition C	\$2,212	\$2,212	\$-
Measure R	\$8,648	\$8,648	\$-
Lease Revenues	\$72	\$72	\$-
Local Agency Contributions	\$549	\$549	\$-
Repayment of Capital Project Loans (Fund 3562)	\$133	\$133	\$-
Other Local Funds	\$183	\$183	\$-
State Funds	\$1,106	\$1,106	\$-
FTA Section 5309 New Starts	\$4,763	\$4,763	\$-
Congestion Mitigation & Air Quality Program	\$589	\$589	\$-
Other Federal Funds	\$385	\$385	\$-
Proposition A 35% Add'l Sr. Bonds (net of Issuance & DSRF)	\$4,951	\$4,942	\$(8)
Measure R 35% Tax Exempt Bonds (net of Issuance & DSRF)	\$838	\$838	\$-
Other Financing Proceeds	\$2,826	\$2,826	\$-
Metrolink Capital Funding & Financing Proceeds	\$1,231	\$1,231	\$-
Total Rail Capital Sources of Funds	\$32,732	\$32,747	\$15
Bus Capital Sources of Funds			
Proposition C	\$1,263	\$1,263	\$-
Lease / Leaseback and General Fund	\$-	\$-	\$-
Other Local Funds	\$2,671	\$2,671	\$-
State Funds	\$230	\$230	\$-
Federal Funds	\$1,999	\$1,999	\$-
Financing Proceeds	\$119	\$119	\$-
ADA (Access Services), Municipal & Non-Metro Operator Funding	\$4,458	\$4,458	\$-
Total Bus Capital Sources of Funds	\$10,741	\$10,741	\$-
Rail O&M Sources of Funds			
Proposition A	\$3,630	\$3,606	\$(23)
Proposition C	\$2,457	\$2,457	\$-
Fares	\$3,783	\$3,783	\$-
Other Local Funds	\$1,297	\$1,297	\$-
State Funds	\$1,175	\$1,175	\$-
Federal Funds	\$1,921	\$1,921	\$-
Proposition C (Metrolink)	\$1,575	\$1,575	\$-
Total Rail O&M Sources of Funds	\$15,838	\$15,815	\$(23)
Bus O&M Sources of Funds			
Fares	\$8,922	\$8,922	\$-
Proposition C	\$2,881	\$2,881	\$-
Other Local Funds	\$14,298	\$14,298	\$-
State Funds	\$826	\$826	\$-
Federal Funds	\$1,980	\$1,980	\$-
ADA (Access Services), Paratransit, Municipal & Non-Metro Operator Funding, Incentive Program	\$16,903	\$16,903	\$-
Total Bus O&M Sources of Funds	\$45,811	\$45,811	\$-
TOTAL SOURCES OF FUNDS	\$105,122	\$105,114	\$(8)



	Cost Increase Scenario: Measure R Updated Expenditure Plan	Cost Increase Scenario: Measure R Updated Expenditure Plan	Difference from Base Case
Uses of Funds: Rail, Transit Corridors, and Bus			
Rail Capital Uses of Funds			
Westside Subway Extension (excluding finance charges)	\$6,742	\$6,980	\$238
Measure R 35% Contingency Not Allocated	\$(4)	\$(4)	\$(0)
Subregional repay for TBD from Westside Subway Ext	\$-	\$-	\$-
State of Good Repair (R&R) - Future Lines	\$930	\$933	\$3
Other Capital Costs	\$14,803	\$14,564	\$(239)
Proposition A Add'l Sr. Bonds Debt Service	\$1,857	\$1,868	\$11
Measure R 35% Tax Exempt Bonds Debt Service	\$1,228	\$1,228	\$-
Other Financing Costs	\$6,003	\$6,003	\$-
Metrolink Capital Costs	\$1,206	\$1,206	\$-
Total Rail Capital Uses of Funds	\$32,764	\$32,776	\$13
Bus Capital Uses of Funds			
Bus Acquisition Cost (13-year cycle)	\$3,299	\$3,299	\$-
Other Bus Capital Expenses	\$2,782	\$2,782	\$-
Financing Costs	\$202	\$202	\$-
ADA (Access Services), Municipal & Non-Metro Operator Costs	\$4,458	\$4,458	\$-
Total Bus Capital Uses of Funds	\$10,741	\$10,741	\$-
Rail O&M Uses of Funds			
Rail Operations	\$11,616	\$11,597	\$(19)
Rail Security	\$2,640	\$2,635	\$(4)
Metrolink O&M Costs	\$1,583	\$1,583	\$-
Total Rail O&M Uses of Funds	\$15,838	\$15,815	\$(23)
Bus O&M Uses of Funds			
Bus Operations (including Maintenance & BRTs)	\$42,963	\$42,963	\$-
Other Bus O&M Costs (BSIP, Bus Security)	\$(14,055)	\$(14,055)	\$-
ADA (Access Services), Paratransit, Municipal & Non-Metro Operator Funding, Incentive Program	\$16,903	\$16,903	\$-
Total Bus O&M Uses of Funds	\$45,811	\$45,811	\$-
TOTAL USES OF FUNDS	\$105,154	\$105,143	\$(11)

This scenario assumes that the 10 percent capital cost increase would be incurred on costs in FY2026. This analysis assumes that the costs would be above and beyond any cost reductions that would be enacted in accordance with LACMTA’s cost control policies.

If all other plan assumptions remained unchanged, LACMTA could mitigate the impacts of this increase by redirecting Measure R funding from the Gold Line Eastside Extension Phase II project, delaying completion of that project from 2036 to 2038. This funding plan would not adversely impact any other capital and operating expenses. In the interest of being conservative, this scenario does not assume any added increases in sales tax revenues that might be associated with the same economic forces that might drive a 10 percent cost increase.

The specific outcomes of this sensitivity analysis scenario are as follows:

Rail Capital Sources

- \$23 million increase in Proposition A funding.
- \$8 million reduction in Proposition A 35% Additional Senior Bonds.

Bus Capital Sources

No changes in funding.

Rail and Bus O&M Sources

- \$23 million reduction in Proposition A funding.

Rail Capital Uses

- \$238 million increase in the capital cost of Westside Subway Extension.
- \$3 million increase in State of Good repair (R&R) – Future Lines.
- \$239 million reduction in Other Capital Costs due to Gold Line Eastside Extension Phase II project costs deferred beyond FY2035.
- \$11 million increase in Proposition A Additional Senior Bonds Debt Service.

Bus Capital Uses

No changes in transit service or operating expenses.

Rail and Bus O&M Uses

- \$19 million reduction in Rail Operations costs and \$4 million reduction in Rail Security costs.

A summary of the sources and uses of rail and bus capital and operating funds is provided as Table A-2 in Appendix A.

Table 5-2 compares the resulting debt service coverage ratio from the capital project cost increase sensitivity analysis scenario to the base case. Coverage for Proposition A 35% debt is modestly lower, but all debt service coverage ratios remain above target minimums.

**Table 5-2: LACMTA Projected Debt Service Coverage Ratios
Base Case and Capital Project Cost Increase Sensitivity Analysis Scenario, FY2016 to FY2035**

Credit	Minimum Annual Debt Service Coverage Ratio	Base Case: Measure R Updated Expenditure Plan		Cost Increase Scenario: Measure R Updated Expenditure Plan	
		Average	Minimum (Fiscal Year)	Average	Minimum (Fiscal Year)
Proposition C 40%	2.50	18.84	4.21 (2016)	18.84	4.21 (2016)
Proposition C 25%	1.176	1.66	1.33 (2034)	1.66	1.33 (2034)
Proposition C 10%	2.00	10.06	5.93 (2016)	10.06	5.93 (2016)
Proposition A 35%	1.15	2.47	1.82 (2016)	2.46	1.82 (2016)
Measure R 35% Transit	N/A	2.10	1.43 (2018)	2.10	1.43 (2018)
Measure R 20% Highway	N/A	3.24	2.19 (2027)	3.24	2.19 (2027)
Measure R (85% of all revenues)	2.50	4.20	2.84 (2027)	4.20	2.84 (2027)

Credits with coverage ratios under the sensitivity scenario that differ from the base case plan are shown in ***bold italics***.

5.1.4.2 Reduced Sales Tax Revenue Sensitivity Analysis

Table 5-3 summarizes a sensitivity analysis prepared by LACMTA reflecting a reduction in sales tax revenues, including Measure R, Proposition A, Proposition C, and TDA.

This scenario assumes a reduction in sales tax growth compared to the base case financial plan of 0.7 percentage points annually in FY2017 and FY2018, resulting in growth rates of 4.36 percent in FY2017 and 4.08 percent in FY2018. This assumption reflects a potential reduction in sales tax revenues resulting from a near-term downturn in the economy. On a cumulative basis, this assumption resulted in reduction of the three sales tax Measure Revenues of about \$300 million each from FY16 to FY35 and



TDA about \$150 million over the same time frame, a reduction of 1.3 percent compared to the base case.

Table 5-3: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus for Base Case and Reduced Sales Tax Revenue Sensitivity Analysis Scenario, FY2016 to FY2035 (YOE \$M)

	Base Case: Measure R Updated Expenditure Plan	Sales Tax Reduction Scenario: Measure R Updated Expenditure Plan	Difference from Base Case
Sources of Funds: Rail, Transit Corridors, and Bus			
Rail Capital Sources of Funds			
Proposition A	\$4,245	\$4,271	\$26
Proposition C	\$2,212	\$1,338	\$(874)
Measure R	\$8,648	\$8,414	\$(233)
Lease Revenues	\$72	\$72	\$-
Local Agency Contributions	\$549	\$300	\$(249)
Repayment of Capital Project Loans (Fund 3562)	\$133	\$136	\$4
Other Local Funds	\$183	\$128	\$(54)
State Funds	\$1,106	\$1,106	\$-
FTA Section 5309 New Starts	\$4,763	\$2,877	\$(1,886)
Congestion Mitigation & Air Quality Program	\$589	\$632	\$43
Other Federal Funds	\$385	\$384	\$(1)
Proposition A 35% Add'l Sr. Bonds (net of Issuance & DSRF)	\$4,951	\$4,272	\$(679)
Measure R 35% Tax Exempt Bonds (net of Issuance & DSRF)	\$838	\$866	\$28
Other Financing Proceeds	\$2,826	\$2,661	\$(165)
Metrolink Capital Funding & Financing Proceeds	\$1,231	\$1,214	\$(17)
Total Rail Capital Sources of Funds	\$32,732	\$28,671	\$(4,060)
Bus Capital Sources of Funds			
Proposition C	\$1,263	\$1,219	\$(45)
Lease / Leaseback and General Fund	\$-	\$-	\$-
Other Local Funds	\$2,671	\$2,671	\$-
State Funds	\$230	\$230	\$-
Federal Funds	\$1,999	\$1,999	\$-
Financing Proceeds	\$119	\$291	\$172
ADA (Access Services), Municipal & Non-Metro Operator Funding	\$4,458	\$4,435	\$(23)
Total Bus Capital Sources of Funds	\$10,741	\$10,845	\$104
Rail O&M Sources of Funds			
Proposition A	\$3,630	\$3,504	\$(125)
Proposition C	\$2,457	\$2,450	\$(7)
Fares	\$3,783	\$3,710	\$(73)
Other Local Funds	\$1,297	\$1,283	\$(15)
State Funds	\$1,175	\$1,175	\$-
Federal Funds	\$1,921	\$1,878	\$(43)
Proposition C (Metrolink)	\$1,575	\$1,575	\$-
Total Rail O&M Sources of Funds	\$15,838	\$15,575	\$(263)
Bus O&M Sources of Funds			
Fares	\$8,922	\$8,922	\$-
Proposition C	\$2,881	\$3,020	\$139
Other Local Funds	\$14,298	\$14,153	\$(145)
State Funds	\$826	\$826	\$-
Federal Funds	\$1,980	\$1,980	\$-
ADA (Access Services), Paratransit, Municipal & Non-Metro Operator Funding, Incentive Program	\$16,903	\$16,784	\$(120)
Total Bus O&M Sources of Funds	\$45,811	\$45,686	\$(126)
TOTAL SOURCES OF FUNDS	\$105,122	\$100,777	\$(4,345)

	Cost Increase Scenario: Measure R Updated Expenditure Plan	Sales Tax Reduction Scenario: Measure R Updated Expenditure Plan	Difference from Base Case
Uses of Funds: Rail, Transit Corridors, and Bus			
Rail Capital Uses of Funds			
Westside Subway Extension (excluding finance charges)	\$6,742	\$4,605	\$(2,136)
Measure R 35% Contingency Not Allocated	\$(4)	\$2,874	\$2,878
Subregional repay for TBD from Westside Subway Ext	\$-	\$-	\$-
State of Good Repair (R&R) - Future Lines	\$930	\$925	\$(5)
Other Capital Costs	\$14,803	\$10,271	\$(4,532)
Proposition A Add'l Sr. Bonds Debt Service	\$1,857	\$1,722	\$(135)
Measure R 35% Tax Exempt Bonds Debt Service	\$1,228	\$1,264	\$36
Other Financing Costs	\$6,003	\$5,853	\$(150)
Metrolink Capital Costs	\$1,206	\$1,189	\$(17)
Total Rail Capital Uses of Funds	\$32,764	\$28,703	\$(4,060)
Bus Capital Uses of Funds			
Bus Acquisition Cost (13-year cycle)	\$3,299	\$3,299	\$-
Other Bus Capital Expenses	\$2,782	\$2,782	\$0
Financing Costs	\$202	\$329	\$127
ADA (Access Services), Municipal & Non-Metro Operator Costs	\$4,458	\$4,435	\$(23)
Total Bus Capital Uses of Funds	\$10,741	\$10,845	\$104
Rail O&M Uses of Funds			
Rail Operations	\$11,616	\$11,353	\$(263)
Rail Security	\$2,640	\$2,640	\$-
Metrolink O&M Costs	\$1,583	\$1,583	\$-
Total Rail O&M Uses of Funds	\$15,838	\$15,575	\$(263)
Bus O&M Uses of Funds			
Bus Operations (including Maintenance & BRTs)	\$42,963	\$42,871	\$(92)
Other Bus O&M Costs (BSIP, Bus Security)	\$(14,055)	\$(13,969)	\$86
ADA (Access Services), Paratransit, Municipal & Non-Metro Operator Funding, Incentive Program	\$16,903	\$16,784	\$(120)
Total Bus O&M Uses of Funds	\$45,811	\$45,686	\$(126)
TOTAL USES OF FUNDS	\$105,154	\$100,809	\$(4,345)

This scenario addresses the loss of sales tax revenues by deferring five transit projects, including the Sepulveda Pass Transit Corridor, Eastside Extension Phase II, South Bay Green Line, Westside Purple Line Extension Section 3, and West Santa Ana Branch Transit Corridor. Bond proceeds are reduced and other offsets occur as described below.

The sensitivity analysis confirms that LACMTA has the financial capacity to deliver the Westside Purple Line Extension Section 2 project within the timeframe proposed in the financial plan if sales taxes are reduced due to a near-term downturn in the economy.

The specific outcomes of this sensitivity analysis scenario are as follows:

Rail Capital Sources

- \$26 million increase in Proposition A funds.
- \$874 million reduction in Proposition C funds.
- \$233 million reduction in Measure R funds.
- \$249 million reduction in Local Agency Contribution funds



- \$4 million increase in Repayment of Capital Project Loans.
- \$54 million reduction in Other Local Funds.
- \$1,886 million reduction in FTA Section 5309 New Starts funds.
- \$43 million increase in Congestion Mitigation and Air Quality Improvement Program funds.
- \$1 million reduction in Other Federal Funds.
- \$679 million reduction in Proposition A 35% Additional Senior Bonds.
- \$28 million increase in Measure R 35% Tax Exempt Bonds.
- \$165 million reduction in Other Financing Proceeds.
- \$17 million reduction in Metrolink Capital Funding and Financing Proceeds.

Bus Capital Sources

- \$45 million reduction in Proposition C funding.
- \$172 million increase in Financing Proceeds.
- \$23 million reduction in ADA (Access Services), Municipal and Non-Metro Operator Funding.

Rail O&M Sources

- \$125 million reduction in Proposition A funding.
- \$7 million reduction in Proposition C funding.
- \$73 million reduction in Fare Revenue.
- \$15 million reduction in Other Local Funds.
- \$43 million reduction in Federal Funds.

Bus O&M Sources

- \$139 million increase in Proposition C funding.
- \$145 million reduction in Other Local Funds.
- \$120 million reduction in ADA (Access Services), Paratransit, Municipal and Non-Metro Operator Funding, Incentive Program.

Rail Capital Uses

- \$2,136 million reduction in cost of Westside Purple Line Extension Section 3.
- \$2,878 million increase in Measure R 35% Contingency Not Allocated.
- \$5 million reduction in State of Good Repair (R&R) Future Lines.
- \$4,532 million reduction in Other Capital Costs, comprising the cost savings from deferred projects.
- \$135 million reduction in Proposition A Additional Senior Bonds Debt Service.
- \$36 million increase in Measure R 35% Tax Exempt Bonds Debt Service.
- \$150 million reduction in Other Financing Costs.

- \$17 million reduction in Metrolink Capital Costs.

Bus Capital Uses

- \$127 million increase in Financing Costs.
- \$23 million reduction in ADA (Access Services), Municipal & Non-Metro Operator Costs.

Rail O&M Uses

- \$263 million reduction in Rail Operations and security Metrolink O&M Costs.

Bus O&M Uses

- \$92 million reduction in Bus Operations (including maintenance and BRT).
- \$86 million increase in Other Bus O&M Costs (BSIP and Bus Security).
- \$120 million reduction in ADA (Access Services), Paratransit, Municipal & Non-Metro Operator Funding, Incentive Program.

A summary of the sources and uses of rail and bus capital and operating funds is provided as Table A-3 in Appendix A.

Table 5-4 compares the resulting debt service coverage ratio from the reduced sales tax revenue sensitivity analysis scenario to the base case. While coverage for each credit is lower, all remain above target minimums.

**Table 5-4: LACMTA Projected Debt Service Coverage Ratios
Base Case and Reduced Sales Tax Revenue Sensitivity Analysis Scenario, FY2016 to FY2035**

Credit	Minimum Annual Debt Service Coverage Ratio	Base Case: Measure R Updated Expenditure Plan		Base Case: Measure R Updated Expenditure Plan	
		Average	Minimum (Fiscal Year)	Average	Minimum (Fiscal Year)
Proposition C 40%	2.50	18.84	4.21 (2016)	11.76	4.21 (2016)
Proposition C 25%	1.176	1.66	1.33 (2034)	1.64	1.32 (2031)
Proposition C 10%	2.00	10.06	5.93 (2016)	9.93	5.93 (2016)
Proposition A 35%	1.15	2.47	1.82 (2016)	2.53	1.82 (2016)
Measure R 35% Transit	N/A	2.10	1.43 (2018)	2.12	1.4 (2023)
Measure R 20% Highway	N/A	3.24	2.19 (2027)	3.13	2.09 (2027)
Measure R (85% of all revenues)	2.50	4.20	2.84 (2027)	4.12	2.75 (2029)

Credits with coverage ratios under the sensitivity scenario that differ from the base case plan are shown in **bold italics**.

5.2 Major Operating and Maintenance Sources of Risk and Uncertainty

5.2.1 Operating and Maintenance Cost Risks

5.2.1.1 O&M Cost Increase

In general O&M unit costs are subject to many macroeconomic factors, including fuel prices, commodity prices, labor contracts, and security costs. These factors are all subject to the macroeconomic environment and are largely out of the hands of LACMTA and thus are all potential risks that may have impacts on operating costs, either negative or positive. LACMTA has estimated O&M costs as a function of vehicle-revenue hours, and any increase in unit costs could lead to an increase in overall O&M costs.



5.2.2 Operating and Maintenance Revenue Risks

5.2.2.1 O&M Revenue Shortfall

Fare revenues make up a notable share of the LACMTA's transit corridor revenue. Ridership and a continuation of current fare levels in real terms could change due to economic conditions, the local job market, population growth or levels of traffic congestion on roads and major highways.

5.2.3 Operating Plan Sensitivity Analysis

Table 5-5 summarizes the results of a sensitivity analysis that was developed to test the impacts of a reduction in operating revenues.

In order to test the impacts of lower operating revenues, the scenario assumes that the Metro Board would raise fares during each planned fare increase by 0.5 percentage points less to reach a 27.9 percent average recovery level, as opposed to the 29.9 percent average recovery level assumed in the Financial Plan. The change removed approximately \$902 million in LACMTA bus and rail fare revenues, which is approximately 7 percent of the expected fare revenues, from the systemwide operating plan.

This scenario addresses the loss of fare revenues by deferring the South Bay Green Line project and rescheduling State of Good Repair Projects, and by issuing more Proposition C 40 percent and Proposition A 35 percent bonds. The scenario demonstrates that Metro would be able to operate and maintain the system without reductions in bus or rail service or significant reductions in capital expenditures beyond the projects noted above.



Table 5-5. LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus for Base Case and Operating Plan Sensitivity Analysis Scenario, FY2016 to FY2035 (YOE \$M)

	Base Case: Measure R Updated Expenditure Plan	Fare Reduction Scenario: Measure R Updated Expenditure Plan	Difference from Base Case
Sources of Funds: Rail, Transit Corridors, and Bus			
Rail Capital Sources of Funds			
Proposition A	\$4,245	\$4,103	\$(142)
Proposition C	\$2,212	\$2,212	\$-
Measure R	\$8,648	\$8,648	\$-
Lease Revenues	\$72	\$72	\$-
Local Agency Contributions	\$549	\$533	\$(17)
Repayment of Capital Project Loans (Fund 3562)	\$133	\$136	\$4
Other Local Funds	\$183	\$164	\$(19)
State Funds	\$1,106	\$1,106	\$-
FTA Section 5309 New Starts	\$4,763	\$4,763	\$-
Congestion Mitigation & Air Quality Program	\$589	\$524	\$(65)
Other Federal Funds	\$385	\$384	\$(1)
Proposition A 35% Add'l Sr. Bonds (net of Issuance & DSRF)	\$4,951	\$4,634	\$(317)
Measure R 35% Tax Exempt Bonds (net of Issuance & DSRF)	\$838	\$838	\$-
Other Financing Proceeds	\$2,826	\$2,826	\$-
Metrolink Capital Funding & Financing Proceeds	\$1,231	\$1,231	\$-
Total Rail Capital Sources of Funds	\$32,732	\$32,174	\$(558)
Bus Capital Sources of Funds			
Proposition C	\$1,263	\$1,211	\$(52)
Lease / Leaseback and General Fund	\$-	\$-	\$-
Other Local Funds	\$2,671	\$2,671	\$-
State Funds	\$230	\$230	\$-
Federal Funds	\$1,999	\$1,999	\$-
Financing Proceeds	\$119	\$312	\$193
ADA (Access Services), Municipal & Non-Metro Operator Funding	\$4,458	\$4,458	\$-
Total Bus Capital Sources of Funds	\$10,741	\$10,881	\$140
Rail O&M Sources of Funds			
Proposition A	\$3,630	\$3,772	\$142
Proposition C	\$2,457	\$2,459	\$2
Fares	\$3,783	\$3,638	\$(144)
Other Local Funds	\$1,297	\$1,297	\$-
State Funds	\$1,175	\$1,175	\$-
Federal Funds	\$1,921	\$1,921	\$-
Proposition C (Metrolink)	\$1,575	\$1,575	\$-
Total Rail O&M Sources of Funds	\$15,838	\$15,838	\$-
Bus O&M Sources of Funds			
Fares	\$8,922	\$8,566	\$(356)
Proposition C	\$2,881	\$3,238	\$356
Other Local Funds	\$14,298	\$14,298	\$-
State Funds	\$826	\$826	\$-
Federal Funds	\$1,980	\$1,980	\$-
ADA (Access Services), Paratransit, Municipal & Non-Metro Operator Funding, Incentive Program	\$16,903	\$16,903	\$-
Total Bus O&M Sources of Funds	\$45,811	\$45,811	\$0
TOTAL SOURCES OF FUNDS	\$105,122	\$104,705	\$(417)

	Cost Increase Scenario: Measure R Updated Expenditure Plan	Fare Reduction Scenario: Measure R Updated Expenditure Plan	Difference from Base Case
Uses of Funds: Rail, Transit Corridors, and Bus			
Rail Capital Uses of Funds			
Westside Subway Extension (excluding finance charges)	\$6,742	\$6,742	\$-
Measure R 35% Contingency Not Allocated	\$(4)	\$268	\$272
Subregional repay for TBD from Westside Subway Ext	\$-	\$-	\$-
State of Good Repair (R&R) - Future Lines	\$930	\$877	\$(53)
Other Capital Costs	\$14,803	\$14,104	\$(699)
Proposition A Add'l Sr. Bonds Debt Service	\$1,857	\$1,779	\$(78)
Measure R 35% Tax Exempt Bonds Debt Service	\$1,228	\$1,228	\$-
Other Financing Costs	\$6,003	\$6,003	\$-
Metroink Capital Costs	\$1,206	\$1,206	\$-
Total Rail Capital Uses of Funds	\$32,764	\$32,206	\$(558)
Bus Capital Uses of Funds			
Bus Acquisition Cost (13-year cycle)	\$3,299	\$3,299	\$-
Other Bus Capital Expenses	\$2,782	\$2,782	\$-
Financing Costs	\$202	\$342	\$140
ADA (Access Services), Municipal & Non-Metro Operator Costs	\$4,458	\$4,458	\$-
Total Bus Capital Uses of Funds	\$10,741	\$10,881	\$140
Rail O&M Uses of Funds			
Rail Operations	\$11,616	\$11,616	\$-
Rail Security	\$2,640	\$2,640	\$-
Metroink O&M Costs	\$1,583	\$1,583	\$-
Total Rail O&M Uses of Funds	\$15,838	\$15,838	\$-
Bus O&M Uses of Funds			
Bus Operations (including Maintenance & BRTs)	\$42,963	\$42,963	\$-
Other Bus O&M Costs (BSIP, Bus Security)	\$(14,055)	\$(14,055)	\$0
ADA (Access Services), Paratransit, Municipal & Non-Metro Operator Funding, Incentive Program	\$16,903	\$16,903	\$-
Total Bus O&M Uses of Funds	\$45,811	\$45,811	\$0
TOTAL USES OF FUNDS	\$105,154	\$104,737	\$(418)

Under this scenario Metro would mitigate the impact of lower fare revenues by applying a greater share of Proposition A and Proposition C funding to operations instead of capital, and by issuing a greater share of Proposition A 35% Senior Bonds to finance rail capital expenditures. No changes in bus or rail operations or capital expenditures are anticipated, with the exception of increases in debt service costs.

The specific outcomes of this sensitivity analysis scenario are as follows:

Rail Capital Sources

- \$142 million reduction in Proposition A funding.
- \$17 million reduction in Local Agency Contributions.
- \$4 million increase in State Repayment of Capital Project Loans.
- \$19 million reduction in Other Local Funds.
- \$65 million reduction in Congestion Mitigation and Air Quality Program.
- \$1 million reduction in Other Federal Funds.
- \$317 million reduction in Proposition A 35% Additional Senior Bonds.

WESTSIDE PURPLE LINE EXTENSION SECTION 2



Bus Capital Sources

- \$52 million reduction in Proposition C Funding.
- \$193 million increase in Financing Proceeds.

Rail O&M Sources

Total Rail O&M sources of funds is unchanged.

- \$142 million increase in Proposition A funding.
- \$2 million increase Proposition C funding.
- \$142 million reduction in fare revenue resulting from the sensitivity analysis.

Bus O&M Sources

Total Bus O&M sources of funds is unchanged.

- \$356 million reduction in fare revenue resulting from the sensitivity analysis.
- \$356 million increase Proposition C funding.

Rail Capital Uses of Funds

- \$272 million increase in Measure R 35% Contingency Not Allocated.
- \$53 million reduction in State of Good Repair (R&R) Future Lines.
- \$699 million reduction in Other Capital Costs from the deferred project.
- \$78 million reduction in Proposition A Additional Senior Bonds Debt Service.

Bus Capital Uses

- \$140 million increase Financing Costs.

Bus and Rail O&M Uses

No changes in transit service or operating expenses.

A summary of the sources and uses of rail and bus capital and operating funds is provided as Table A-4 in Appendix A.

Table 5-6 compares the resulting debt service coverage ratio from the operating plan sensitivity analysis scenario to the base case. In each case, while coverage for some debt is lower, all remain above target minimums.

**Table 5-6. LACMTA Projected Debt Service Coverage Ratios
Base Case and Operating Plan Sensitivity Analysis Scenario, FY2016 to FY2035**

Credit	Minimum Annual Debt Service Coverage Ratio	Base Case: Measure R Updated Expenditure Plan		Fare Reduction Scenario: Measure R Updated Expenditure Plan	
		Average	Minimum (Fiscal Year)	Average	Minimum (Fiscal Year)
Proposition C 40%	2.60	18.84	4.21 (2016)	11.51	4.21 (2016)
Proposition C 25%	1.176	1.66	1.33 (2034)	1.66	1.33 (2034)
Proposition C 10%	2.00	10.06	5.93 (2016)	10.06	5.93 (2016)
Proposition A 35%	1.15	2.47	1.82 (2016)	2.52	1.82 (2016)
Measure R 35% Transit	N/A	2.10	1.43 (2018)	2.10	1.43 (2018)
Measure R 20% Highway	N/A	3.24	2.19 (2027)	3.24	2.19 (2027)
Measure R (85% of all revenues)	2.50	4.20	2.84 (2027)	4.20	2.84 (2027)

Credits with coverage ratios under the sensitivity scenario that differ from the base case plan are shown in ***bold italics***.

5.3 Potential Strategies for Mitigating Cost and Revenue Risks

In the event that any of the cost or schedule risks described above were to materialize, LACMTA has several risk mitigation strategies available. This section focuses on the ability of the financial plan to absorb cost increases or revenue decreases. Three scenarios have been identified that illustrate the financial capacity of the plan and its associated funding sources to absorb these potential challenges:

- Increase in Capital Costs of the Westside Purple Line Extension Section 2 Project**— Section 2 of the Westside Purple Line Extension project is subject to an intensive risk assessment process with FTA. A comprehensive Risk Register was developed and throughout the engineering and design phase the register was monitored and controlled through a process of continuous updates.

Each risk was assigned a risk owner and a risk mitigation strategy and the assigned Risks were reviewed and updated on a monthly basis. The updated Risk Register was then presented to and discussed with FTA and PMOC at a monthly risk review meeting and a subsequent monthly risk report was issued to all project stakeholders.

This risk-informed design process has resulted in revised a project cost estimate, adjustments to the project cost contingency level and identification of secondary cost mitigation measures.

In accordance with FTA requirements the management of the established cost and schedule contingencies and primary and secondary mitigation measures have been outlined in a Risk and Contingency Management Plan (RCMP). Secondary mitigation measures will be triggered when project cost overruns are encountered on FTA prescribed phase-based cost targets. As the project progresses through subsequent project phases the RCMP will be updated and maintained.

As LACMTA intends to procure the project under Design-Build contracts, risks were assessed for a risk management strategy of retained, transferred or shared. Explicit language will be included in the scope of work for the RFP. Within the RFP, a Schedule of Quantities and Values have been



drafted to include selected items to cover potential risks. Each risk is quantified as either a provisional sum amount that has been provided by LACMTA or by an estimated quantity for the design/builder to price. The design/build contractor will not be entitled to dollars or time associated with any risk, until at such time the risk is realized.

LACMTA also has the option of reallocating other sources of State and local funding, and Proposition A or Proposition C-backed debt to fund projects in the long range capital plan in accordance with the LACMTA Unified Cost Management Process and Policy.

- **Reduction in Measure R Revenues**—LACMTA has forecasted that sales taxes will increase at a compound average annual growth rate of 3.9 percent between FY2016 and FY2035. All local sales tax revenue sources are projected to escalate at growth rates based on the July 2014 UCLA Anderson Forecast of taxable sales.

If Measure R revenues increase at a lower rate than forecasted, LACMTA may not be able to issue as much Measure R-backed debt as projected in this financial plan. Several options are available to complete the projects identified in the capital plan. LACMTA's forecast for debt policy conformance indicates that there is sufficient capacity to cover additional needs in the long-term capital plan. Alternatively, LACMTA could shift some lower-priority capital projects in the long-range plan to future years in order to free up additional state or local funding for Section 2 of the Westside Purple Line Extension.

- **Increase in O&M Unit Costs per Revenue Hour**—As described above, O&M unit costs may be susceptible to underlying economic conditions, particularly for fuel and commodity prices. In the event that O&M costs grow at a higher rate than forecasted, LACMTA will seek opportunities to reduce costs and eliminate unproductive services. If additional revenues are needed, LACMTA may be able to reallocate Proposition A or Proposition C revenues or federal funding (such as Section 5307) for preventive maintenance activities.

5.4 Next Steps

As Section 2 of the Westside Purple Line Extension project proceeds, LACMTA will continue to review and revise the financial plan to take into account cost and schedule changes, federal funding opportunities, and financial market conditions. During design, LACMTA will continue to engage in the risk assessment process with FTA and its Project Management Oversight Contractor, which will result in revised contingency levels and a detailed risk management plan to be implemented during final design and construction.

APPENDIX A SOURCES AND USES OF FUNDS TABLES

APPENDIX A SOURCES AND USES OF FUNDS TABLES

Table A-1 summarizes the LACMTA systemwide sources and uses of funds for rail, transit corridors and bus for the base case financial plan, the Measure R Updated Expenditure Plan, from FY2016 to FY2035.

Table A-2 summarizes the LACMTA systemwide sources and uses of funds for rail, transit corridors and bus for the capital sensitivity analysis scenario applying a 10 percent increase in New Starts project capital costs from FY2016 to FY2035.

Table A-3 summarizes the LACMTA systemwide sources and uses of funds for rail, transit corridors and bus for the capital sensitivity analysis scenario applying a decrease to projected sales tax revenues from FY2016 to FY2035.

Table A-4 summarizes the LACMTA systemwide sources and uses of funds for rail, transit corridors and bus for the operating sensitivity analysis scenario, which assumed a reduction in fare revenues from FY2016 to FY2035.

Each table is broken into two parts. Part (i) summarizes sources of funds for FY2016 to FY2035 and part (ii) summarizes uses of funds for FY2016 to FY2035.

**Table A-1: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus,
 Base Case Financial Plan, FY2016 to FY2035 (YOE \$M)
 Part (ii) Uses of Funds**

	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	Total
Uses of Funds: Rail, Transit Corridors, and Bus																					
Rail Capital Uses of Funds																					
Westside Subway Extension (excluding finance charges)	\$365	\$766	\$527	\$625	\$601	\$619	\$530	\$306	\$124	\$63	\$136	\$192	\$259	\$282	\$264	\$244	\$210	\$244	\$248	\$106	\$6,742
MetroLink Capital Costs	7	15	37	44	54	55	52	55	58	60	63	65	68	71	76	77	80	83	86	99	\$1,206
Other Capital Costs	1,711	1,235	994	746	426	319	188	320	519	623	888	527	442	354	367	728	1,148	1,464	1,201	1,532	\$15,728
Financing Costs	269	378	440	341	539	505	505	575	402	441	386	410	427	437	410	425	467	521	548	662	\$9,088
Total Rail Capital Uses of Funds	\$2,363	\$2,394	\$1,999	\$1,756	\$1,620	\$1,497	\$1,275	\$1,256	\$1,103	\$1,187	\$1,473	\$1,194	\$1,195	\$1,143	\$1,117	\$1,474	\$1,904	\$2,312	\$2,082	\$2,400	\$32,764
Annual Growth Rate (w/out Financing)		-4.6%	-22.7%	-8.2%	-23.6%	-8.2%	-22.5%	-11.5%	2.9%	6.4%	45.7%	-27.8%	-2.0%	-8.1%	0.1%	48.4%	37.1%	24.6%	-14.3%	13.2%	
Bus Capital Uses of Funds																					
LACMTA Bus Capital Costs	\$333	\$162	\$136	\$268	\$246	\$249	\$252	\$255	\$288	\$364	\$287	\$375	\$384	\$344	\$444	\$273	\$335	\$294	\$382	\$410	\$6,081
ADA Access Services	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8
Municipal and non-MTA Operators	\$188	\$179	\$183	\$185	\$192	\$194	\$201	\$203	\$211	\$213	\$220	\$223	\$231	\$234	\$242	\$246	\$256	\$260	\$268	\$272	\$4,402
Financing Costs	4	4	4	4	7	9	10	11	11	11	12	12	15	15	16	16	12	11	10	9	\$202
Total Bus Capital Uses of Funds	\$527	\$348	\$326	\$460	\$448	\$455	\$466	\$472	\$512	\$590	\$522	\$613	\$633	\$596	\$704	\$537	\$606	\$568	\$663	\$693	\$10,741
Annual Growth Rate (w/out Financing)		-34.2%	-6.5%	41.7%	-3.3%	1.1%	2.3%	1.1%	8.6%	15.7%	-12.0%	17.8%	2.8%	-6.0%	18.5%	-24.2%	13.8%	-6.2%	17.3%	4.8%	
Rail O&M Uses of Funds																					
Westside Subway Extension (excluding security costs)	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$13	\$19	\$44	\$45	\$46	\$48	\$49	\$50	\$52	\$53	\$54	\$75	\$547
Other O&M Costs	451	478	495	513	556	582	604	624	645	668	693	713	762	784	802	822	843	866	890	918	\$13,709
MetroLink O&M Costs	66	65	66	66	68	69	71	73	75	77	79	81	83	85	87	90	92	94	97	99	\$1,363
Total Rail O&M Uses of Funds	\$518	\$544	\$561	\$579	\$623	\$651	\$675	\$697	\$732	\$764	\$815	\$839	\$891	\$916	\$939	\$961	\$986	\$1,014	\$1,041	\$1,092	\$15,838
Annual Growth Rate		5.0%	3.2%	3.2%	7.6%	4.5%	3.7%	3.1%	5.2%	4.3%	6.7%	2.9%	6.3%	2.8%	2.4%	2.6%	2.8%	2.7%	4.9%		
Bus O&M Uses of Funds																					
LACMTA Bus O&M Costs	\$1,050	\$1,064	\$1,150	\$1,162	\$1,199	\$1,237	\$1,276	\$1,315	\$1,356	\$1,439	\$1,493	\$1,504	\$1,549	\$1,593	\$1,634	\$1,676	\$1,724	\$1,772	\$1,822	\$1,874	\$28,908
ADA Access Services	145	149	153	157	161	165	169	174	178	182	187	191	196	200	204	208	213	217	222	227	\$3,695
Municipal and non-MTA Operators	431	441	458	475	492	509	526	542	561	578	596	618	640	661	682	709	739	763	786	810	\$12,019
Paratransit	24	26	27	26	29	30	32	33	34	35	36	38	40	41	43	45	47	49	51	52	\$739
Incentive Program	15	16	16	17	18	19	19	20	21	21	22	23	24	25	26	27	29	30	31	32	\$450
Total Bus O&M Uses of Funds	\$1,664	\$1,715	\$1,804	\$1,839	\$1,899	\$1,959	\$2,022	\$2,083	\$2,149	\$2,256	\$2,335	\$2,375	\$2,448	\$2,521	\$2,588	\$2,665	\$2,751	\$2,831	\$2,912	\$2,996	\$45,811
Annual Growth Rate		3.0%	5.2%	1.9%	3.3%	3.2%	3.2%	3.1%	3.2%	5.0%	3.5%	1.7%	3.1%	3.0%	2.7%	3.0%	3.2%	2.9%	2.9%	2.9%	
Total Uses of Funds	\$5,092	\$5,000	\$4,689	\$4,634	\$4,500	\$4,562	\$4,438	\$4,508	\$4,496	\$4,798	\$5,145	\$5,021	\$5,167	\$5,176	\$5,348	\$5,638	\$6,248	\$6,725	\$6,698	\$7,180	\$105,154
Annual Growth Rate (w/out Financing)		-4.2%	-8.1%	1.0%	-5.7%	0.1%	-3.1%	0.0%	4.1%	6.4%	9.2%	-3.1%	2.7%	0.0%	4.2%	5.6%	11.0%	7.3%	-0.8%	6.0%	

Note: Totals may not add due to rounding.



**Table A-2: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus,
Capital Project Cost Increase Sensitivity Analysis, FY2016 to FY2035 (YOE \$M)
Part (ii) Uses of Funds**

	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	Total
Uses of Funds: Rail, Transit Corridors, and Bus																					
Rail Capital Uses of Funds																					
Westside Subway Extension (excluding finance charges)	\$35	\$766	\$527	\$625	\$601	\$619	\$530	\$306	\$124	\$63	\$374	\$192	\$259	\$282	\$264	\$244	\$210	\$244	\$248	\$106	\$6,980
Metrolink Capital Costs	7	15	37	44	54	55	52	55	58	60	63	65	68	71	76	77	80	83	86	99	\$1,206
Other Capital Costs	1,711	1,235	994	746	426	319	188	320	519	623	650	527	442	353	367	728	1,148	1,464	1,202	1,533	\$15,493
Financing Costs	269	378	440	341	539	505	506	575	402	441	387	410	427	438	411	426	468	422	549	663	\$9,098
Total Rail Capital Uses of Funds	\$2,383	\$2,394	\$1,999	\$1,757	\$1,620	\$1,498	\$1,275	\$1,256	\$1,103	\$1,188	\$1,473	\$1,195	\$1,196	\$1,143	\$1,118	\$1,475	\$1,906	\$2,314	\$2,084	\$2,402	\$32,776
Annual Growth Rate (w/out Financing)		-4.6%	-22.7%	-9.2%	-23.6%	8.2%	-22.5%	-11.5%	2.9%	6.4%	45.7%	-27.8%	-2.0%	8.2%	0.1%	48.4%	37.1%	24.6%	-14.3%	13.2%	
Bus Capital Uses of Funds																					
LACMTA Bus Capital Costs	\$333	\$162	\$136	\$268	\$246	\$249	\$252	\$255	\$288	\$364	\$287	\$375	\$384	\$344	\$444	\$273	\$335	\$294	\$382	\$410	\$6,081
ADA Access Services	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8
Municipal and non-MTA Operators	\$188	\$179	\$183	\$185	\$192	\$194	\$201	\$203	\$211	\$213	\$220	\$223	\$231	\$234	\$242	\$246	\$256	\$260	\$268	\$272	\$4,402
Financing Costs	4	4	4	4	7	9	10	11	11	12	12	15	15	16	16	12	11	10	9	10	\$202
Total Bus Capital Uses of Funds	\$527	\$348	\$326	\$460	\$448	\$455	\$466	\$472	\$512	\$590	\$522	\$613	\$633	\$596	\$704	\$537	\$606	\$568	\$663	\$693	\$10,741
Annual Growth Rate (w/out Financing)		-34.2%	-6.5%	41.7%	-3.3%	1.1%	2.3%	1.1%	8.6%	15.7%	-12.0%	17.8%	2.8%	-6.0%	18.5%	-24.2%	13.8%	6.2%	17.3%	4.8%	
Rail O&M Uses of Funds																					
Westside Subway Extension (excluding security costs)	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$13	\$19	\$44	\$45	\$46	\$48	\$49	\$50	\$52	\$53	\$54	\$56	\$528
Other O&M Costs	451	478	495	513	556	582	604	624	645	668	693	713	762	784	802	822	843	866	890	913	\$13,704
Metrolink O&M Costs	66	65	66	66	68	69	71	73	75	77	79	81	83	85	87	90	92	94	97	99	\$1,583
Total Rail O&M Uses of Funds	\$518	\$544	\$561	\$579	\$623	\$651	\$675	\$697	\$732	\$764	\$815	\$819	\$891	\$916	\$939	\$961	\$986	\$1,014	\$1,041	\$1,068	\$15,815
Annual Growth Rate		5.0%	3.2%	3.2%	7.6%	4.5%	3.7%	3.1%	5.2%	4.3%	6.7%	2.9%	6.3%	2.8%	2.4%	2.6%	2.8%	2.7%	2.7%	2.7%	
Bus O&M Uses of Funds																					
LACMTA Bus O&M Costs	\$1,050	\$1,064	\$1,150	\$1,167	\$1,199	\$1,237	\$1,276	\$1,315	\$1,356	\$1,439	\$1,493	\$1,504	\$1,549	\$1,593	\$1,634	\$1,676	\$1,724	\$1,772	\$1,822	\$1,874	\$28,908
ADA Access Services	145	149	153	157	161	165	169	174	178	182	187	191	196	200	204	208	213	217	222	227	\$3,695
Municipal and non-MTA Operators	431	441	458	475	492	508	526	542	561	578	596	618	640	661	682	709	739	763	786	810	\$12,019
Paratransit	24	26	27	28	29	30	32	33	34	35	36	38	40	41	43	45	47	49	51	52	\$739
Incentive Program	15	16	16	17	18	19	19	20	21	21	22	23	24	25	26	27	29	30	31	32	\$450
Total Bus O&M Uses of Funds	\$1,664	\$1,715	\$1,804	\$1,839	\$1,899	\$1,959	\$2,022	\$2,083	\$2,149	\$2,256	\$2,335	\$2,375	\$2,448	\$2,521	\$2,588	\$2,665	\$2,751	\$2,831	\$2,912	\$2,996	\$45,811
Annual Growth Rate		3.0%	5.2%	1.9%	3.3%	3.2%	3.2%	3.1%	3.2%	5.0%	3.5%	1.7%	3.1%	3.0%	2.7%	3.0%	2.9%	2.9%	2.9%	2.9%	
Total Uses of Funds	\$5,092	\$5,000	\$4,690	\$4,634	\$4,590	\$4,563	\$4,439	\$4,509	\$4,497	\$4,798	\$5,146	\$5,021	\$5,168	\$5,176	\$5,349	\$5,639	\$6,249	\$6,726	\$6,700	\$7,158	\$105,143
Annual Growth Rate (w/out Financing)		-4.2%	-8.1%	1.0%	-5.7%	0.1%	-3.1%	0.0%	4.1%	6.4%	9.2%	-3.1%	2.7%	0.0%	4.2%	5.6%	11.0%	7.4%	-0.6%	5.6%	

Note: Totals may not add due to rounding.



Table A-3: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus,
Reduced Sales Tax Revenue Sensitivity Analysis, FY2016 to FY2035 (YOE \$M)
Part (i) Sources of Funds

Table with columns for fiscal years (FY16-FY35) and Total, and rows for various funding sources including Rail Capital Sources, Bus Capital Sources, and Rail O&M Sources. The table details annual dollar amounts and growth rates for each category.

Note: Totals may not add due to rounding.

WESTSIDE PURPLE LINE EXTENSION SECTION 2

**Table A-3: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus,
 Reduced Sales Tax Revenue Sensitivity Analysis, FY2016 to FY2035 (YOE \$M)
 Part (ii) Uses of Funds**

	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	Total	
Uses of Funds: Rail, Transit Corridors, and Bus																						
Rail Capital Uses of Funds																						
Westside Subway Extension (excluding finance charges)	\$395	\$766	\$527	\$625	\$601	\$619	\$530	\$306	\$124	\$48	\$64	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$4,605	
MetroLink Capital Costs	7	15	35	43	52	53	52	55	58	60	62	65	67	70	75	76	80	83	86	97	\$1,189	
Other Capital Costs	1,711	1,211	951	701	431	269	344	314	511	530	803	550	535	427	406	647	742	910	811	1,266	\$14,070	
Financing Costs	269	378	440	341	538	503	494	574	401	441	387	411	428	437	410	425	457	501	522	480	\$8,839	
Total Rail Capital Uses of Funds	\$2,383	\$2,370	\$1,954	\$1,711	\$1,622	\$1,443	\$1,420	\$1,249	\$1,094	\$1,079	\$1,316	\$1,025	\$1,031	\$934	\$892	\$1,148	\$1,279	\$1,493	\$1,418	\$1,843	\$28,703	
Annual Growth Rate (w/out Financing)		-5.7%	-24.0%	-9.5%	-20.8%	-13.2%	-1.6%	-27.1%	2.7%	-7.9%	45.7%	-33.9%	-1.9%	-17.5%	-3.2%	50.2%	13.7%	20.7%	-9.7%	52.0%		
Bus Capital Uses of Funds																						
LACMTA Bus Capital Costs	\$333	\$162	\$136	\$268	\$246	\$249	\$252	\$258	\$288	\$364	\$287	\$375	\$384	\$344	\$444	\$273	\$335	\$294	\$382	\$410	\$6,081	
ADA Access Services	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$56
Municipal and non-MTA Operators	\$188	\$179	\$182	\$184	\$191	\$193	\$200	\$202	\$209	\$211	\$219	\$222	\$230	\$233	\$240	\$245	\$255	\$258	\$267	\$270	\$4,378	
Financing Costs	4	4	4	4	7	9	10	11	11	12	16	27	31	32	32	28	27	26	25	27	\$329	
Total Bus Capital Uses of Funds	\$527	\$348	\$325	\$459	\$448	\$454	\$465	\$471	\$511	\$589	\$521	\$616	\$644	\$611	\$719	\$552	\$620	\$562	\$677	\$707	\$10,845	
Annual Growth Rate (w/out Financing)		-34.3%	-6.7%	41.8%	-3.3%	1.1%	2.3%	1.1%	8.7%	15.7%	-12.0%	17.8%	2.8%	-6.0%	18.5%	-24.3%	13.8%	6.2%	17.3%	4.8%		
Rail O&M Uses of Funds																						
Westside Subway Extension (excluding security costs)	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$13	\$19	\$44	\$45	\$46	\$48	\$49	\$50	\$52	\$53	\$54	\$75	\$547	
Other O&M Costs	451	478	495	513	556	582	604	624	645	668	693	713	732	753	771	789	810	832	856	882	\$13,446	
MetroLink O&M Costs	66	65	66	66	68	69	71	73	75	77	79	81	83	85	87	90	92	94	97	99	\$1,583	
Total Rail O&M Uses of Funds	\$518	\$544	\$561	\$579	\$623	\$651	\$675	\$697	\$732	\$764	\$815	\$839	\$861	\$886	\$907	\$929	\$953	\$980	\$1,006	\$1,056	\$15,575	
Annual Growth Rate		5.0%	3.2%	3.2%	7.6%	4.5%	3.7%	3.1%	5.2%	4.3%	6.7%	2.9%	2.7%	2.8%	2.4%	2.6%	2.8%	2.7%	2.7%	5.0%		
Bus O&M Uses of Funds																						
LACMTA Bus O&M Costs	\$1,050	\$1,084	\$1,144	\$1,182	\$1,199	\$1,237	\$1,276	\$1,315	\$1,356	\$1,439	\$1,493	\$1,504	\$1,549	\$1,593	\$1,634	\$1,676	\$1,724	\$1,772	\$1,822	\$1,874	\$28,902	
ADA Access Services	145	149	153	157	161	165	169	174	178	182	187	191	196	200	204	208	213	217	222	227	\$3,695	
Municipal and non-MTA Operators	431	439	454	471	488	504	521	537	556	573	591	613	634	655	675	703	732	755	779	803	\$11,914	
Paratransit	24	25	26	26	29	30	31	32	34	35	36	38	39	41	42	44	47	48	50	52	\$730	
Incentive Program	15	16	16	17	18	18	19	20	20	21	22	23	24	25	26	27	28	29	30	31	\$444	
Total Bus O&M Uses of Funds	\$1,664	\$1,712	\$1,793	\$1,834	\$1,894	\$1,954	\$2,016	\$2,078	\$2,144	\$2,250	\$2,328	\$2,369	\$2,441	\$2,514	\$2,581	\$2,657	\$2,743	\$2,823	\$2,904	\$2,986	\$45,686	
Annual Growth Rate		2.9%	4.7%	2.3%	3.3%	3.2%	3.2%	3.1%	3.2%	5.0%	3.5%	1.7%	3.1%	3.0%	2.7%	3.0%	3.2%	2.9%	2.9%	2.8%		
Total Uses of Funds	\$5,092	\$4,974	\$4,633	\$4,583	\$4,596	\$4,502	\$4,577	\$4,495	\$4,481	\$4,683	\$4,981	\$4,848	\$4,976	\$4,944	\$5,098	\$5,286	\$5,595	\$5,878	\$6,005	\$6,592	\$100,809	
Annual Growth Rate (w/out Financing)		-4.7%	-8.8%	1.1%	-4.6%	-1.2%	2.1%	-4.0%	4.1%	4.0%	8.3%	-3.5%	2.3%	-1.0%	4.0%	3.7%	5.8%	4.7%	2.0%	11.5%		

Note: Totals may not add due to rounding.



Table A-4: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus,
Operating Plan Sensitivity Analysis, FY2016 to FY2035 (YOE \$M)
Part (i) Sources of Funds

Table with columns for fiscal years (FY16 to FY35) and Total. Rows are categorized into Rail Capital Sources of Funds, Bus Capital Sources of Funds, Rail O&M Sources of Funds, and Bus O&M Sources of Funds. Each row includes numerical values for each year and a total value, along with an Annual Growth Rate (w/out Financing) percentage.

Note: Totals may not add due to rounding.

WESTSIDE PURPLE LINE EXTENSION SECTION 2



**Table A-4: LACMTA Systemwide Sources and Uses of Funds for Rail, Transit Corridors and Bus,
Operating Plan Sensitivity Analysis, FY2016 to FY2035 (YOE \$M)
Part (ii) Uses of Funds**

	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	Total
Uses of Funds: Rail, Transit Corridors, and Bus																					
Rail Capital Uses of Funds																					
Westside Subway Extension (excluding finance charges)	\$395	\$761	\$527	\$625	\$901	\$619	\$530	\$306	\$124	\$63	\$136	\$192	\$259	\$262	\$264	\$244	\$210	\$244	\$248	\$106	\$6,742
MetroLink Capital Costs	7	15	37	44	54	55	52	55	58	60	63	65	68	71	76	77	80	83	86	99	\$1,206
Other Capital Costs	1,711	1,235	994	745	424	318	184	315	514	616	881	515	339	349	260	711	1,132	1,455	1,103	1,447	\$15,249
Financing Costs	269	378	440	341	539	505	505	575	402	441	388	410	427	431	404	413	455	509	536	645	\$9,010
Total Rail Capital Uses of Funds	\$2,383	\$2,394	\$1,998	\$1,755	\$1,618	\$1,497	\$1,272	\$1,252	\$1,097	\$1,181	\$1,465	\$1,183	\$1,092	\$1,132	\$1,004	\$1,445	\$1,878	\$2,291	\$1,973	\$2,298	\$32,206
Annual Growth Rate (w/out Financing)		-4.6%	-22.7%	9.2%	-23.7%	-8.1%	-22.7%	-11.7%	2.8%	6.3%	45.9%	-28.4%	-13.9%	5.3%	-14.4%	72.0%	37.7%	25.4%	-19.4%	15.0%	
Bus Capital Uses of Funds																					
LACMTA Bus Capital Costs	\$333	\$162	\$136	\$298	\$246	\$249	\$252	\$256	\$288	\$364	\$287	\$375	\$384	\$344	\$444	\$273	\$335	\$294	\$382	\$410	\$6,081
ADA Access Services	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$2.8	\$56
Municipal and non-MTA Operators	\$188	\$179	\$183	\$185	\$192	\$194	\$201	\$203	\$211	\$213	\$220	\$223	\$231	\$234	\$242	\$246	\$256	\$260	\$268	\$272	\$4,402
Financing Costs	4	4	4	4	7	9	10	11	11	12	16	27	31	32	34	31	29	28	27	27	\$342
Total Bus Capital Uses of Funds	\$527	\$348	\$326	\$480	\$448	\$455	\$466	\$472	\$512	\$590	\$522	\$617	\$645	\$612	\$720	\$556	\$625	\$586	\$681	\$711	\$10,861
Annual Growth Rate (w/out Financing)		-34.2%	-6.5%	41.7%	-3.3%	1.1%	2.3%	1.1%	8.6%	15.7%	-12.0%	17.8%	2.8%	-6.0%	18.5%	-24.2%	13.8%	-6.2%	17.3%	4.8%	
Rail O&M Uses of Funds																					
Westside Subway Extension (excluding security costs)	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$13	\$19	\$44	\$45	\$46	\$48	\$49	\$50	\$52	\$53	\$54	\$75	\$547
Other O&M Costs	451	478	495	513	556	582	604	624	645	688	693	713	762	784	802	822	843	866	890	918	\$13,709
MetroLink O&M Costs	66	65	66	66	68	69	71	73	75	77	79	81	83	85	87	90	92	94	97	99	\$1,563
Total Rail O&M Uses of Funds	\$518	\$544	\$561	\$579	\$623	\$651	\$675	\$697	\$732	\$764	\$815	\$839	\$891	\$916	\$939	\$961	\$986	\$1,014	\$1,041	\$1,092	\$15,838
Annual Growth Rate		5.0%	3.2%	3.2%	7.6%	4.5%	3.7%	3.1%	5.2%	4.3%	6.7%	2.9%	6.3%	2.8%	2.4%	2.6%	2.8%	2.7%	4.9%		
Bus O&M Uses of Funds																					
LACMTA Bus O&M Costs	\$1,050	\$1,064	\$1,150	\$1,162	\$1,199	\$1,237	\$1,276	\$1,315	\$1,356	\$1,439	\$1,493	\$1,504	\$1,549	\$1,593	\$1,634	\$1,676	\$1,724	\$1,772	\$1,822	\$1,874	\$28,908
ADA Access Services	145	149	153	157	161	165	169	174	178	182	187	191	196	200	204	208	213	217	222	227	\$3,685
Municipal and non-MTA Operators	431	441	458	475	492	509	526	542	561	578	596	618	640	661	682	709	739	763	786	810	\$12,019
Paratransit	24	26	27	28	29	30	32	33	34	35	36	38	40	41	43	45	47	49	51	52	\$739
Incentive Program	15	16	16	17	18	19	19	20	21	21	22	23	24	25	26	27	29	30	31	32	\$450
Total Bus O&M Uses of Funds	\$1,664	\$1,715	\$1,804	\$1,839	\$1,899	\$1,959	\$2,022	\$2,083	\$2,149	\$2,256	\$2,335	\$2,375	\$2,448	\$2,521	\$2,588	\$2,665	\$2,751	\$2,831	\$2,912	\$2,996	\$45,811
Annual Growth Rate		3.0%	5.2%	1.9%	3.3%	3.2%	3.2%	3.1%	3.2%	5.0%	3.5%	1.7%	3.1%	3.0%	2.7%	3.0%	3.2%	2.9%	2.9%		
Total Uses of Funds	\$5,092	\$5,000	\$4,689	\$4,633	\$4,588	\$4,562	\$4,435	\$4,504	\$4,491	\$4,792	\$5,138	\$5,013	\$5,076	\$5,181	\$5,251	\$5,628	\$6,239	\$6,722	\$6,607	\$7,096	\$104,737
Annual Growth Rate (w/out Financing)		-4.2%	-8.1%	1.0%	-5.7%	0.2%	-3.2%	0.0%	4.1%	6.4%	9.2%	-3.2%	0.8%	2.1%	2.0%	7.6%	11.1%	7.5%	-2.3%	6.3%	

Note: Totals may not add due to rounding.