LIFE CYCLE CERTIFICATION

Regional Transportation Plan Freeway Program | January 2016

ADOT

Arizona Department of Transportation

Certification of Revenue and Costs

Regional Transportation Plan
Freeway Program
January 2016

John S. Halikowski, Director
Arizona Department of Transportation

March 21, 2016
Date

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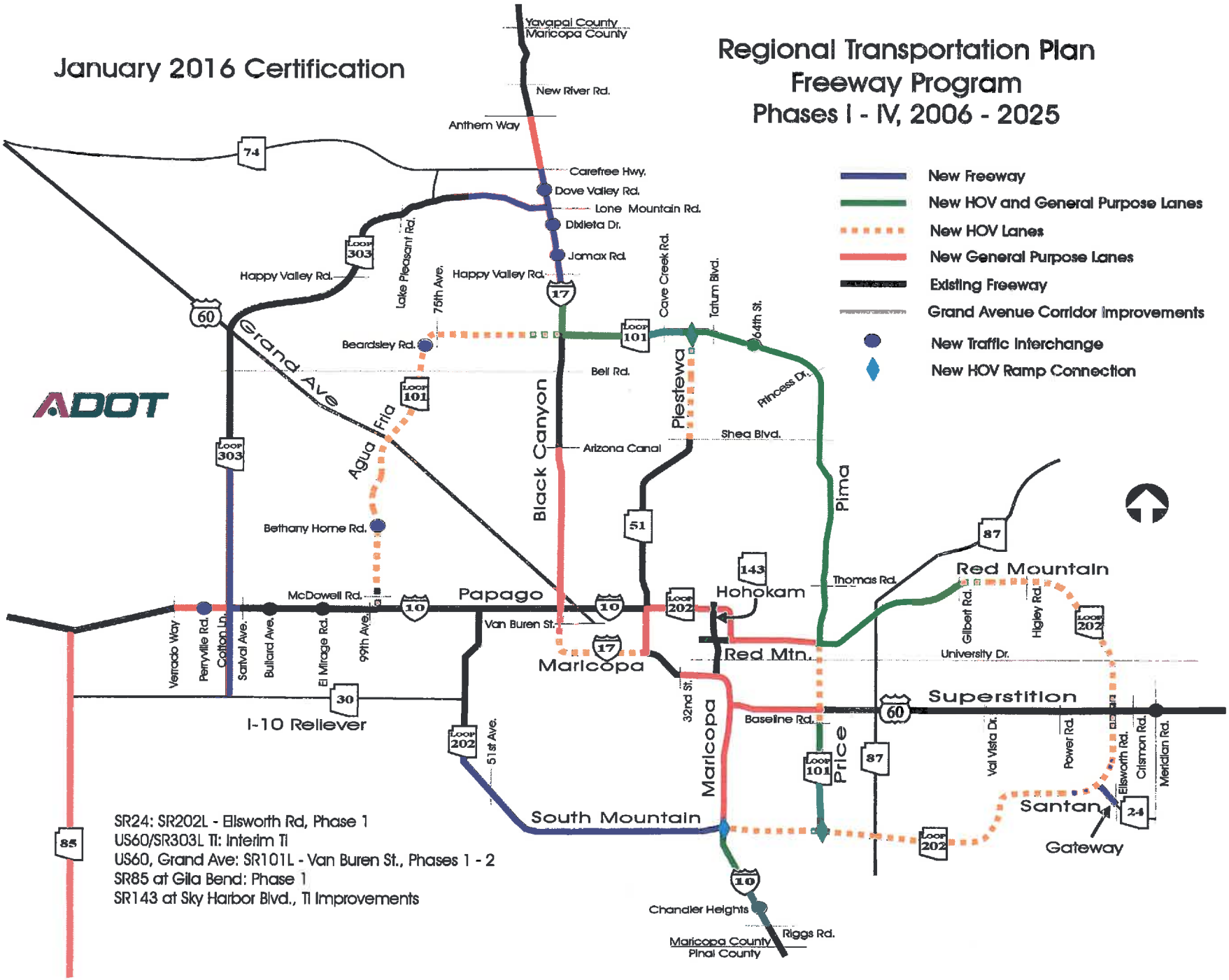
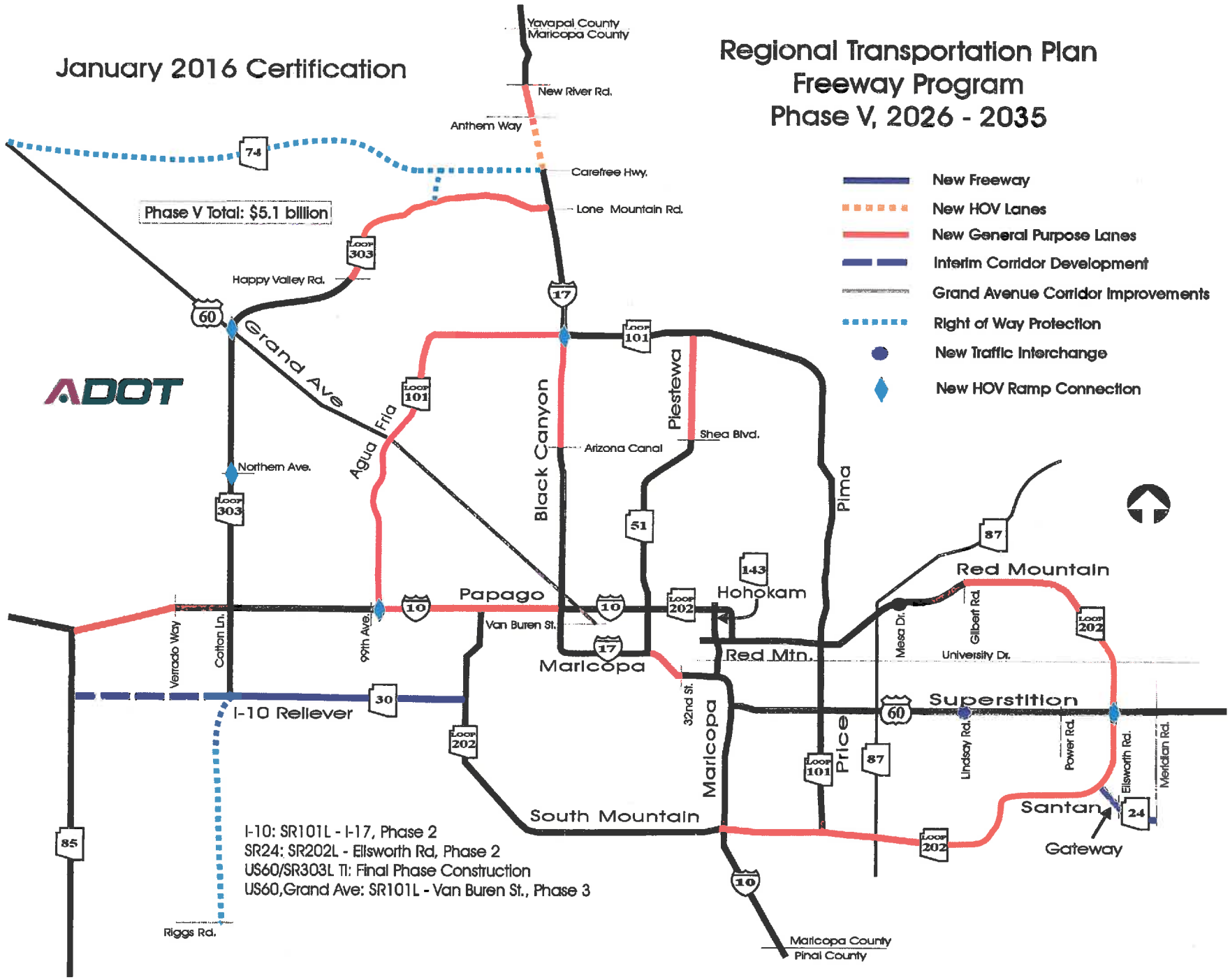

January 2016 Certification
Regional Transportation Plan
Freeway Program
Phases I - IV, 2006 - 2025
New Freeway
New HOV and General Purpose Lanes
New HOV Lanes
New General Purpose Lanes
Existing Freeway
Grand Avenue Corridor Improvements
New Traffic Interchange
New HOV Ramp Connection
ADOT
Yavapai County
Maricopa County
New River Rd.
Anthem Way
Carefree Hwy.
Dove Valley Rd.
Lone Mountain Rd.
Dixileta Dr.
Jomax Rd.
Happy Valley Rd.
Lake Pleasant Rd.
75th Ave.
Cave Creek Rd.
Tatum Blvd.
64th St.
Beardsley Rd.
Bell Rd.
Grand Ave
Agua Fria
Black Canyon
Piestewa
Princess Dr.
Shea Blvd.
Arizona Canal
Pima
Bethany Horne Rd.
McDowell Rd.
Papago
Van Buren St.
Maricopa
Hohokam
Thomas Rd.
Red Mountain
Red Mtn.
University Dr.
Superstition
Baseline Rd.
Gilbert Rd.
Higley Rd.
Val Vista Dr.
Power Rd.
Ellsworth Rd.
Crismon Rd.
Meridian Rd.
Santan
Gateway
Verrado Way
Perryville Rd.
Cotton Ln.
Sarival Ave.
Bullard Ave.
El Mirage Rd.
99th Ave.
I-10 Reliever
51st Ave.
32nd St.
Price
South Mountain
Chandler Heights
Riggs Rd.
Maricopa County
Pinal County
SR24: SR202L - Ellsworth Rd, Phase 1
US60/SR303L TI: Interim TI
US60, Grand Ave: SR101L - Van Buren St., Phases 1 - 2
SR85 at Gila Bend: Phase 1
SR143 at Sky Harbor Blvd., TI Improvements


January 2016 Certification
Regional Transportation Plan
Freeway Program
Phase V, 2026 - 2035
Phase V Total: $5.1 billion
ADOT
New Freeway
New HOV Lanes
New General Purpose Lanes
Interim Corridor Development
Grand Avenue Corridor Improvements
Right of Way Protection
New Traffic Interchange
New HOV Ramp Connection
Yavapai County
Maricopa County
New River Rd.
Anthem Way
Carefree Hwy.
Lone Mountain Rd.
Happy Valley Rd.
Grand Ave
Agua Fria
Black Canyon
Piestewa
Shea Blvd.
Arizona Canal
Pima
Northern Ave.
Papago
Van Buren St.
Hohokam
Red Mountain
Red Mtn.
Maricopa
University Dr.
Superstition
I-10 Reliever
South Mountain
Price
Santan
Gateway
Verrado Way
Cotton Ln.
99th Ave.
32nd St.
Mesa Dr.
Gilbert Rd.
Lindsay Rd.
Power Rd.
Ellsworth Rd.
Meridian Rd.
Riggs Rd.
Maricopa County
Pinal County
I-10: SR101L - I-17, Phase 2
SR24: SR202L - Ellsworth Rd, Phase 2
US60/SR303L TI: Final Phase Construction
US60,Grand Ave: SR101L - Van Buren St., Phase 3

Introduction

INTRODUCTION

This report presents the Arizona Department of Transportation January 2016 Certification of the Maricopa Association of Governments Regional Transportation Plan Freeway / Highway Life Cycle Program, also known as the RTPFP Life Cycle Program. It reports costs, revenue and progress through December 31, 2015, along with an estimate of future costs and revenue for the remainder of the Program. This certification and review process helps ensure that projected revenues and costs stay in balance as required by Arizona Revised Statutes (A.R.S.) § 28-6352.A.

A Life Cycle Program is a programming approach that forecasts and allocates funds through the full life of a major funding source, in this instance the Maricopa County half-cent sales tax. The tax was approved under Proposition 400 by voters in Maricopa County on November 2, 2004. The tax and the RTPFP Life Cycle Program run from January 2006 through December 2025. This Certification provides an important tool to help ensure that the Arizona Department of Transportation (ADOT) and the Maricopa Association of Governments (MAG) maintain realistic planning and construction schedules based upon anticipated funding and costs, and provides a periodic report to the public and other governmental agencies on the status of the RTPFP.

ADOT utilizes outside experts to assist with economic forecasting and will continue to monitor cost and revenue trends. These experts cannot say with certainty what the future will bring; therefore, ADOT reviews and certifies costs and revenues every six months. This certification process enhances the flow of information to MAG, the public, and other interested parties on a regular basis, and allows ADOT and MAG to cooperatively make program adjustments as needed.

The Proposition 400 half-cent sales tax helps fund three major programs: the RTPFP, Arterial Streets, and Transit. The proceeds of the tax are divided between the Regional Area Road Fund (RARF) which funds the RTPFP and Arterial Streets Life Cycle Programs, and the Public Transportation Fund (PTF) which funds the Transit Life Cycle Program. References in this report to RARF should generally be considered applicable only to the RTPFP unless otherwise indicated. In accordance with A.R.S. § 42-6105.E, 56.2 percent of the half-cent sales tax collection is allocated to the RTPFP, which includes new freeway corridors to serve growth in the region and improvements to the existing freeway/highway system to reduce congestion and improve safety. It also addresses operational and quality of life issues such as noise mitigation, maintenance, litter control and landscaping. The half-cent sales tax, federal highway funds, and ADOT funds are the three major funding sources for the RTPFP.

Program Summary

PROGRAM SUMMARY

Program Changes

Arizona Revised Statues (ARS) 28-6352 (A) requires a budget process that ensures the estimated cost of the freeways and highways in the Regional Transportation Plan (RTP) does not exceed the total amount of revenues estimated to be available.

ADOT and MAG have worked cooperatively throughout this period of economic uncertainty to evaluate the short and long term impacts on the cost, scheduling and delivery of projects and corridors within the RTPFP.

The following programming changes have been incorporated into the FY 2017 – FY 2021 RTP Freeway Program:

- Updated project costs based on latest estimates and cost data.
- Added fiscal year 2021 projects based on latest project information.

ADOT and MAG have cooperatively developed a Tentative RTPFP Five Year Construction Program incorporating the latest revenue and cost projections.

ADOT and MAG, with the help of outside economic expertise, will continue to monitor this situation closely to assess impacts to the RTPFP and make future program adjustments as needed.

Note that the current RTPFP Life Cycle Program covers the period from January 2006 through December 2025. However, the current MAG RTP Freeway Program covers the period through FY 2035. Projects that have been deferred out of the Life Cycle Program to those future years will be brought back if and when the revenue situation allows. It is also possible that voters could approve a future extension of the half-cent sales tax. Even without a tax extension, the MAG area will still have ADOT funds and federal highway funds in future years, enabling the Program to continue, although in a somewhat reduced scale.

Estimated Revenues and Program Costs

The Freeway Life Cycle Program runs from 2006 thru 2025 and is divided into "Phases I thru IV" of five years each. Deferral of some projects to future years due to revenue shortfall has resulted in a new "Phase V" in years 2026 - 2035 with an estimated cost of $5.1 billion. Phase V is not part of the current Prop 400 Life Cycle Program.

Total revenue available for the 20 Year Life Cycle Program is estimated to be $9.58 billion. Details are shown in the "Revenue Projections" section. Obligations for the RTP Freeway Program to date total $4.91 billion. The remaining cost to complete the RTP Freeway Program through year 2025 is estimated to be $3.80 billion. Total cost for the 20 Year Life Cycle Program is presently estimated to be $8.71 billion. Details are shown in the "Construction Costs" section.

Overall program totals and forecasts do show positive ending balances for the FY 2017 to FY 2026. MAG and ADOT will continuously work together to monitor and update estimated costs and revenue to keep costs and revenue in balance.

Project Milestones

Projects Advertised / Awarded since last Certification

ROUTE	SEGMENT	PROJECT TYPE	ADVERTISE	AWARD	COMMENT
I-10, Papago	Litchfield Rd. – 83rd Ave.	FMS	June-15	August-15	Roadway Electric, LLC
SR303L	I-10/303L TI, Phase II	System TI	Sept-15	Dec-15	Pulice Construction, Inc
SR202L, Santan	Ray Rd. – Dobson Rd.	FMS	Dec-15	Pending	

GPL = General Purpose Lane; HOV = High Occupancy Vehicle; TI = Traffic Interchange;
FMS = Freeway Management System, CMAR = Construction Manager At Risk

Projects Completed / Opened to Traffic since last Certification				
ROUTE	**SEGMENT**	**PROJECT TYPE**	**OPEN TO TRAFFIC**	**COMMENT**
SR303L	Happy Valley Rd. – US60, Grand Ave.	GPL	July-15	Partial opening, one lane is open
I-10 Maricopa	Wild Horse Pass Blvd. – Queen Creek Rd.	FMS & Pave. Preservation	August-15	
SR303L	Camelback Rd. – Glendale Ave.	Landscape	Sept-15	
US60, Superstition	Meridian Rd.	Ramps	Oct-15	WB on-ramp & EB off-ramp
SR202L, Santan	Dobson Rd. to I-10	FMS	Oct-15	
SR202L, Red Mountain	SR101L to Broadway Rd.	HOV/GPL	Dec-15	GPL: SR101L – Gilbert Rd; HOV: Gilbert Rd. – Broadway Rd.
SR303L	Glendale Ave. – Peoria Ave.	Landscape	Dec-15	
GPL = General Purpose Lane; HOV = High Occupancy Vehicle Lane; FMS = Freeway Management System; TI = Traffic Interchange;				

Design Concept Reports and Environmental Studies						
ROUTE	**SEGMENT**	**PROJECT TYPE**	**STUDY TYPE**	**STUDY STATUS**	**ENVR. TYPE**	**ENVR. STATUS**
I-10 Papago	SR101L Agua Fria - I-17 Black Canyon	GPL	DCR	On-hold	EA	On-hold
I-10 Maricopa	SR143 – SR202L	Freeway Widening	DCR	Underway	CE	Underway
I-10 Maricopa	SR202L Santan - I-8	Freeway Widening	DCR	On-hold	EA	On-hold
I-17 Black Canyon	Pinnacle Peak Rd.	Reconstruct TI	PA	Completed	CE	Underway
I-17 Black Canyon	Happy Valley Rd.	Reconstruct TI	PA	Completed	CE	Underway
I-17 Black Canyon	I-10/I-17 Split – 19th Ave.	Auxiliary Lanes	PA	Underway	CE	Underway
SR24	Ellsworth Rd. – Ironwood Dr.	New Freeway	Alternatives Study	Underway	CE	Underway
SR30 (SR801) I-10 Reliever	SR85 – SR303L	New Freeway	DCR	On-hold	EA	On-hold
SR30 (SR801) I-10 Reliever	SR303L – SR202L South Mountain	New Freeway	DCR	Underway	EA	Underway
US60 Superstition	Crismon Rd. – Ironwood	Freeway Widening	DCR	Underway	CE	Underway
SR101L Pima	I-17 - Princess Dr.	GPL	DCR	Underway	CE	Completed
SR101L Price	Baseline Rd. – SR202L Santan	GPL	DCR	Underway	CE	Underway
SR303L	Hassayampa Fwy – SR30	New Freeway	AFR	Underway	EO	Underway
SR303L	SR30 - I-10 Papago	New Freeway	DCR	Underway	EA	Underway
SR303L	Olive Ave.	New ½ TI	Schematic Plan	Underway	CE	Underway

DCR = Design Concept Report; EA = Environmental Assessment; CE = Categorical Exclusion
EIS = Environmental Impact Statement; EO = Environmental Overview; PA = Project Assessment;
NA = Not Applicable; HOV = High Occupancy Vehicle; GPL = General Purpose Lane; TI = traffic Interchange; ASR = Alternative Selection Report; AFR = Alternative Feasibility Report

Revenue Projections

ADOT
Financial Management Services

Douglas A. Ducey, Governor
John S. Halikowski, Director
Kristine Ward, Assistant Director

LETTER OF CERTIFICATION

The Financial Management Services Office of the Arizona Department of Transportation (ADOT) has developed the following information describing the estimated funds available for construction of the Regional Transportation Plan Freeway Program (RTPFP) from Fiscal Year 2006 through Fiscal Year 2026. The time period covered in this certification is as of December 31, 2015.

The results contained herein primarily represent the September 2015 official forecast of Maricopa County transportation excise tax revenues plus the MAG share of ADOT's State Highway Fund and other available monies for the period described above and are so certified.

This information is intended primarily for internal planning purposes and requires reliance upon a variety of data and information sources. The revenue forecasts rely upon assumptions regarding future economic conditions and on forecasts of certain independent economic variables. These assumptions may or may not prove to be accurate. If the assumptions do not prove accurate, differences between forecast and actual results may occur.

Kristine Ward
Assistant Director for Finance and Accounting

3/10/16
Date

FINANCIAL ASSUMPTIONS

Following are the assumptions made in estimating revenues available for the Regional Transportation Plan Freeway Program (RTPFP).

Bond Proceeds and Debt Service: The issuance of bonds secured by RARF, HURF and federal aid revenues are assumed. Interest on the bond issues is assumed to be 5.0 percent maximum. Bond maturities are assumed at between 3 and 26 years. RARF debt service will be fully paid by the completion of the Proposition 400 RARF half cent sales tax on December 31, 2025. HURF debt service extends beyond FY 2026 and is paid with MAG's portion of State Highway Fund 15.2 percent monies.

Regional Area Road Fund (RARF) Transportation Excise Tax: The September 2015 official revenue forecast for the Proposition 400 RARF half cent sales tax was developed from the August 2015 Risk Analysis Process panel session and reflects the economic conditions at that time. It may or may not prove accurate over the longer term and actual revenues will differ from forecast revenues.

State Highway Fund 15.2 Percent Funds: The MAG area receives annual funding from the State Highway Fund's share of the Highway User Revenue Fund (HURF) distribution. HURF consists of fuel taxes, vehicle license taxes, registration fees and other sources. ADOT sets aside 12.6 percent of the State Highway Fund share of the HURF distribution by state law, plus another 2.6 percent by State Transportation Board policy, for controlled access highways and freeways in the MAG and PAG (Pima Association of Governments) areas of which 75 percent is allocated to the MAG area and 25 percent is allocated to the PAG area. This distribution is often referred to as the ADOT 15.2 percent funds.

ADOT 37 Percent Funds: A portion of MAG's allocation of ADOT's State Highway Fund and federal highway funds applied to major highway projects.

Federal Aid: Federal aid includes urban Surface Transportation Program (STP) funding, Congestion Mitigation and Air Quality funds (CMAQ) and other federal highway funds that are either statutorily or discretionarily sub-allocated to the MAG area. The forecast assumes $12.6 million of MAG sub-allocated STP funds will be dedicated to the RTPFP in FY 2016 in the form of debt service for Grant Anticipation Notes (GAN). As part of the MAG 2003 Regional Transportation Plan, 19.1 percent of MAG's CMAQ funds are dedicated to the MAG Regional Transportation Plan Freeway Program.

Statewide Transportation Acceleration Needs (STAN): A one-time appropriation from the legislature to accelerate statewide transportation projects. Per statute, 60 percent of STAN funds were distributed to projects in the Maricopa County region.

American Recovery and Reinvestment Act (ARRA): A $787 billion economic stimulus package was signed into law by President Obama on February 17, 2009. The ADOT highway portion was $349.7 million of which $112.3 million was spent on the RTPFP.

Interest Income: Assumes 0.61 percent in FY 2016, 0.75 percent in FY 2017, 1.5 percent in FY 2018, 2.5 percent in FY 2019 and 3.0 percent thereafter, with 99 percent invested. Interest income is dependent on prior month's average cash balance.

Third Party Billing: Represents local, developer and other funds for programmed projects.

Other Income: Includes building rent, sales of excess property and other miscellaneous income.

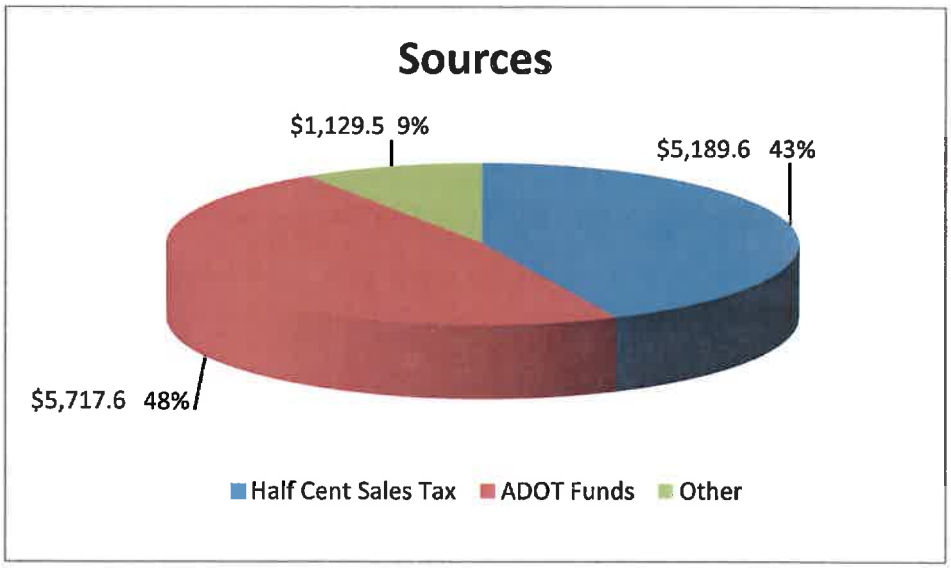
Discount Factor: The base year for the discount factor is FY 2016. An annual discount factor is applied to the total revenues less non-project related expenditures in order to be consistent with the constant dollar (non-inflated) estimated construction and right of way cash expenditures.

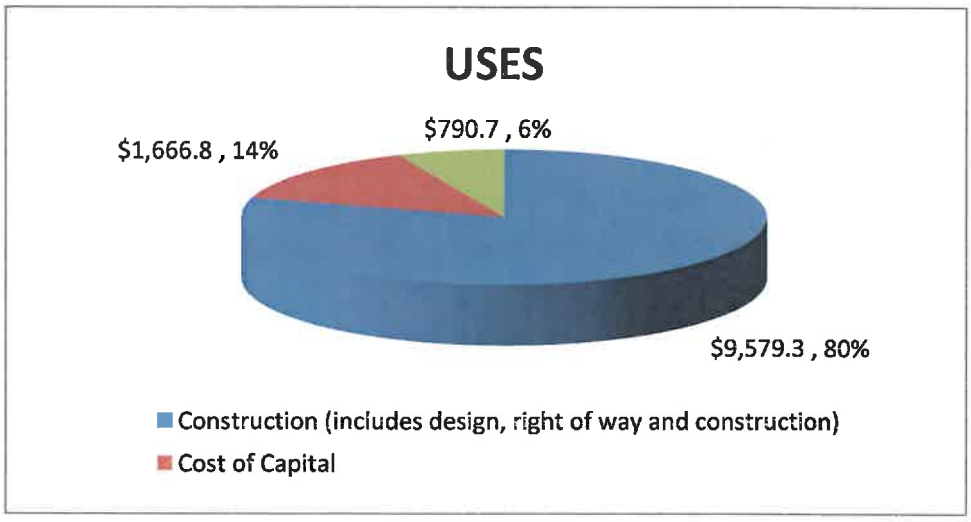
Revenue Sources and Uses

The following pie chart depicts the sources and uses of Regional Transportation Plan Freeway Program revenues. The sources consist of the transportation excise tax (half cent sales tax), ADOT Funds and various other revenues. The transportation excise tax makes up 43 percent of the total revenues, with ADOT Funds reflecting 48 percent and the remaining 9 percent consisting of various other funding sources, primarily MAG share of federal aid.

Of the available funding, 80 percent is used for design, right of way and construction. Of the remainder, 14 percent is used for cost of capital and 6 percent is used for the discount factor and MAG/Regional Public Transit Authority (RPTA) transfers.

Certified Financial Plan
Fiscal Years 2006 – 2026
(Dollars in Millions)
Total Sources/Uses: $12,036.8





Net Revenues

The following chart reflects a breakdown of the individual revenues and costs for the Regional Transportation Plan Freeway Program for the most recent and current Certifications, as well as changes occurring in the interim.

FUNDING CHANGES

(millions)

REVENUES	Jul-15	Jan-16	CHANGE
Beginning Cash Balance /1	$153.2	$153.2	$0.0
1/2 Cent Sales Tax /2	$5,046.2	$5,189.6	$143.5
Highway User Revenues /2	$1,546.5	$1,564.4	$17.9
Federal Aid /3	$610.0	$631.7	$21.8
MAG Major Projects /4	$3,659.2	$4,027.1	$367.9
3rd Party /5	$70.9	$70.9	($0.0)
STAN /6	$126.2	$126.2	$0.0
Interest Income /7	$140.4	$170.5	$30.2
Other Income /8	$105.0	$103.1	($1.9)
Subtotal: Revenues	$11,457.5	$12,036.8	$579.3

EXPENDITURES	Jul-15	Jan-16	CHANGE
Cost of Capital /9	($1,463.4)	($1,666.8)	($203.3)
Discount Factor /10	($444.3)	($509.6)	($65.3)
MAG/Valley Metro Transfer	($198.4)	($203.7)	($5.3)
Other Costs /11	($63.3)	($77.4)	($14.1)
Subtotal: Costs	($2,169.5)	($2,457.5)	($288.0)
Net Funds Available	**$9,288.1**	**$9,579.3**	**$291.3**

Notes

Figures may not add due to rounding.

/1 Beginning cash balance on July 1, 2006 and actuals through December 31, 2015.

/2 September 2015 Official Forecast.

/3 Includes MAG STP, CMAQ funds and ARRA, increase is due to change in CMAQ estimate for FY 2016 to FY 2026. CMAQ estimate has increased due to FAST Act estimates which anticipate an increase in Federal funds.

/4 Includes ADOT 37% Funds programmed for freeways and highways in the MAG region, which funds the MAG Major Projects, while the remaining subprogram amounts are included in the statewide program.

/5 Third Party revenue includes local, developer and other funds for programmed projects. Third Party revenue is net of Loan Repayment costs.

/6 Includes $10 million from the STAN Restoration account for interest payments on the Mesa HPAN (construction phase) and $9.9 million from the STAN MAG 60% account for the Maryland TI project in FY 2014.

/7 Interest income is on a cash basis and assumes 0.61% in FY 2016, 0.75% in FY 2017, 1.5% in FY 2018, 2.5% in FY 2019 and 3.0% in FY 2019 and beyond with 99% invested. Interest income is dependent on fund balances.

/8 Includes rental receipts, sale of excess property and miscellaneous income.

/9 Cost of Capital includes RARF bonds, HURF bonds, HELP and GAN loans, RARF, HURF and GAN debt service, HELP Loan Repayment and Debt Service Reserve Interest.

/10 The revenue figures include an inflation factor. The cost estimates are in today's dollars, not inflated. A discount factor deflates the revenues to align the cost estimates.

/11 Includes personal services, rental cars, travel and fuel. Increased by Bond issuance costs assumed at .5%.

Construction Costs

Douglas A. Ducey, Governor
John S. Halikowski, Director
Dallas Hammit, State Engineer
Steve Boschen, Division Director

LETTER OF CERTIFICATION

The Infrastructure Delivery and Operations Division of the Arizona Department of Transportation (ADOT) has completed a six month review and update of costs associated with construction of the Regional Transportation Plan (RTP) Freeway Program. Construction and design costs have been updated by our Project Management Group; AECOM, HDR and PB, our three management consultants; and the consultants currently preparing final construction plans. Right-of-way costs have been updated by the ADOT Right-of-Way Group reflecting current appraisals and changes in right-of-way requirements. This information updates and replaces certain information contained in the July 2015 Certification.

The construction and right-of-way cost data in this document provide an accurate accounting of costs incurred and include a realistic estimate of future costs based upon current construction costs and real estate values. Estimated future costs are subject to changes in the economy and are affected by variables in international, national, state and localized market values and trends.

The results of our review provide an accurate basis upon which to schedule and fund the balance of the Freeway Construction Program for Fiscal Years 2017-2021. However, the Department will continue to monitor all trends and make periodic adjustments as required.

Dallas Hammit, PE
Deputy Director for Transportation

3/4/2016
Date

Freeway Construction Costs and Revenues

The design and construction cost estimates for the Regional Transportation Plan Freeway Program (RTPFP) projects are reviewed and updated by the three management consultants, AECOM, HDR and PB. They also provide preliminary engineering services by developing scoping, Stage I (15%) and Stage II (30%) project documents for the RTPFP. This effort helps define design and right of way requirements, allowing ADOT to establish better cost estimates for design, right of way, utility relocations and construction, at the project and corridor level. The management consultants also monitor cost estimates through the remaining design phases, including the final estimates. They also evaluate contractor bids for RTPFP construction projects to monitor construction unit price cost trends, such as the cost of concrete, asphalt, structures, drainage and other items used to establish project cost estimates. These recent bid prices are then used to update cost estimates for projects in the scoping and design phases.

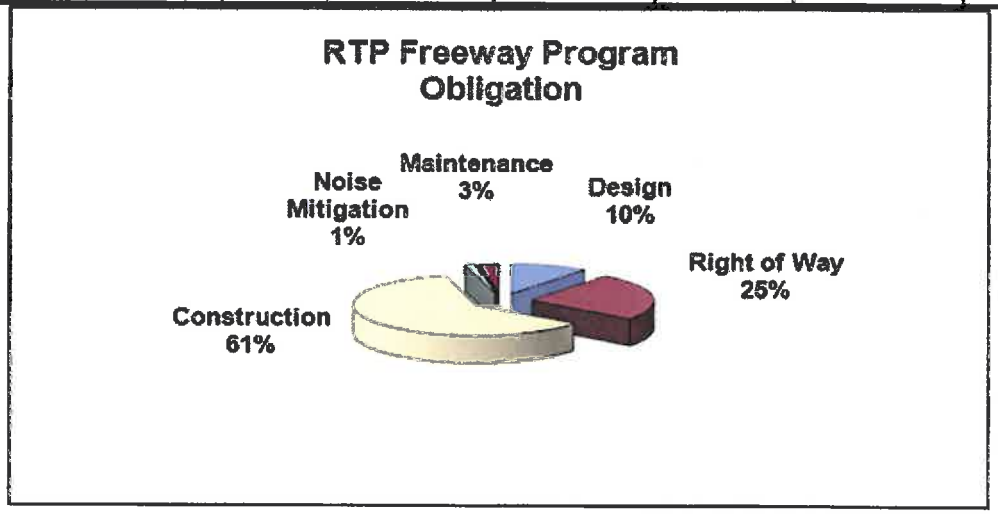
A revenue forecast was developed during the August 2015 Risk Analysis Process. Panel members from various segments of the transportation and economic community were invited to discuss future risks and trends in costs and revenues. The risk analysis process consultant utilized the panel input to update construction cost forecast models and to calculate discount factors. The consultant, MAG, and ADOT Financial Management Services reviewed the discount factors and made further adjustments to fit current cost trends. The projections of future cost and revenue trends developed in the Risk Analysis Process Economic Forecasts are used to help ensure that there are sufficient resources to complete the RTPFP Life Cycle Program.

Obligations

Obligations by phase and corridor are listed in the table below. These figures are through December 31, 2015. Regional Transportation Plan Freeway Program (RTPFP) obligations since the last certification increased $115 million, from $4,795 million to $4,910 million.

Regional Transportation Plan Freeway Program Obligations
Through December 31, 2015
(dollars in millions)

Corridor	Design	Right of Way	Construction	Noise Mitigation	Maintenance	Total
I-10, Papago & Maricopa	$24.0	$204.6	$219.8	$0.0	$0.0	$448.4
I-10 Reliever (SR30)	$0.0	$20.3	$0.0	$0.0	$0.0	$20.3
I-17, Black Canyon	$14.6	$94.5	$317.2	$0.0	$0.0	$426.4
SR51, Piestewa	$3.7	$0.1	$49.9	$0.0	$0.0	$53.7
US60, Grand Ave	$6.7	$23.2	$60.7	$0.0	$0.0	$90.6
US60, Superstition	$3.2	$2.3	$128.9	$0.0	$0.0	$134.5
SR74	$0.0	$2.9	$5.8	$0.0	$0.0	$8.7
SR85	$18.5	$25.5	$98.4	$0.0	$0.0	$142.4
SR87, Duthie-Martin	$2.5	$0.8	$35.8	$0.0	$0.0	$39.1
SR88, Apache Trail	$0.2	$0.0	$0.0	$0.0	$0.0	$0.2
US93	$0.0	$10.3	$31.6	$0.0	$0.0	$41.9
SR101L, Agua Fria	$2.4	$1.2	$185.0	$0.0	$0.0	$188.6
SR101L, Pima	$15.0	$4.0	$202.1	$0.0	$0.0	$221.1
SR101L, Price	$5.0	$0.0	$43.9	$0.0	$0.0	$48.9
SR143, Hohokam	$3.6	$0.3	$20.7	$0.0	$0.0	$24.6
SR153, Sky Harbor	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
SR202L, Red Mountain	$4.3	$5.0	$394.2	$0.0	$0.0	$403.5
SR202L, Santan	$1.8	$0.0	$114.0	$0.0	$0.0	$115.8
SR202L, South Mountain	$24.2	$384.4	$0.0	$0.0	$0.0	$408.6
SR303L	$104.7	$384.8	$967.9	$0.0	$0.0	$1,457.4
SR24, Gateway Freeway	$12.0	$43.0	$82.2	$0.0	$0.0	$137.2
Systemwide	$255.0	$24.0	$23.3	$70.5	$124.8	$497.6
TOTAL	$501.4	$1,231.4	$2,981.4	$70.5	$124.8	$4,909.5



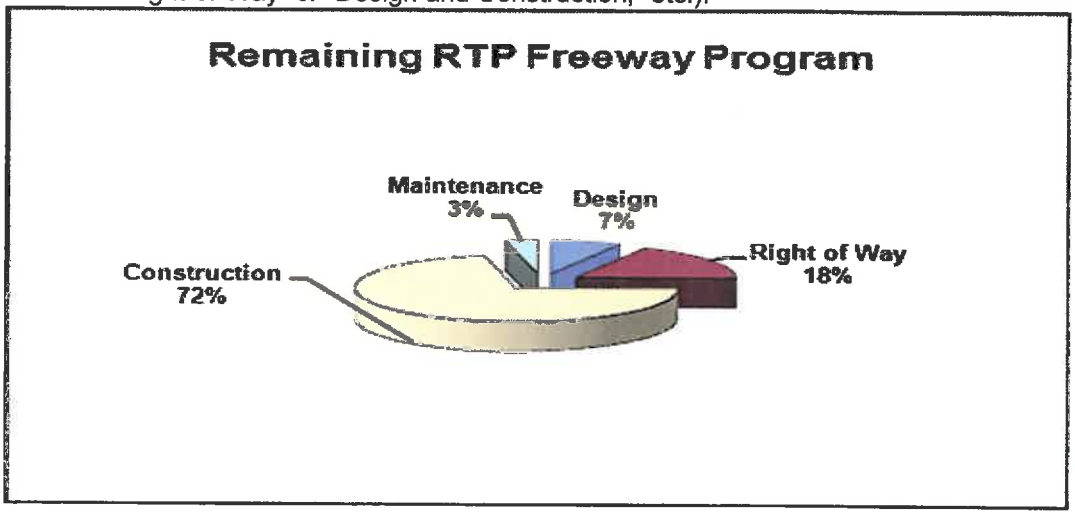
Remaining System Costs

There remain $3.80 billion of costs associated with the Regional Transportation Plan Freeway Program (RTPFP).

Regional Transportation Plan Freeway Program
(dollars in millions)

Corridor	Design	Right of Way	Construction	Multi Phase*	Noise Mitigation	Maintenance	Total
I-10, Papago & Maricopa	$27.1	$75.0	$551.8	$0.0	$0.0	$0.0	$654.0
I-10 Reliever (SR30)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
I-17, Black Canyon	$62.4	$240.0	$512.9	$0.0	$0.0	$0.0	$815.3
SR51	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
US60, Grand Ave	$0.0	$0.0	$56.2	$0.0	$0.0	$0.0	$56.2
US60, Superstition	$2.4	$0.0	$30.0	$0.0	$0.0	$0.0	$32.4
SR74	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
SR85	$0.0	$0.0	$5.3	$0.0	$0.0	$0.0	$5.3
SR87, Duthie-Martin	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
SR88, Apache Trail	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
US93	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
SR101L, Agua Fria	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
SR101L, Pima	$13.9	$0.0	$186.1	$0.0	$0.0	$0.0	$200.0
SR101L, Price	$3.5	$0.0	$49.9	$0.0	$0.0	$0.0	$53.4
SR143, Hohokam	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
SR153, Sky Harbor	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
SR202L, Red Mountain	$0.4	$0.0	$5.3	$0.0	$0.0	$0.0	$5.7
SR202L, Santan	$3.4	$0.0	$57.5	$0.0	$0.0	$0.0	$60.9
SR202L, South Mountain	$48.0	$317.6	$1,130.2	$0.0	$0.0	$0.0	$1,495.7
SR303L	$21.3	$21.7	$88.3	$0.0	$0.0	$0.0	$131.3
SR 24, Gateway Freeway	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Systemwide	$85.9	$25.3	$51.7	$0.0	$0.0	$122.3	$285.2
TOTAL	$268.3	$679.6	$2,725.2	$0.0	$0.0	$122.3	$3,795.3

* Multi Phase: Includes more than one phase (For example, "Design and Right-of-Way" or "Design and Construction," etc.).



Roadway Design

ADOT currently has 7 major RTP Freeway Program projects under design. Major design work continues on the following projects:

Corridor	Project Location	Project Type	Design Status
I-10 Papago	Fairway Dr. (El Mirage Rd.)	TI	Stage I
US60, Grand Ave.	Greenway Rd. – Thunderbird Rd.	Frontage Road	Stage I
US60, Grand Ave.	Thunderbird Rd.	TI	Final
US60, Grand Ave.	Bell Rd.	TI	Design Build
SR85	Warner St.	Bridge	On-hold
SR202L, South Mountain	I-10 Maricopa to I-10 Papago	New Freeway	P3
SR303L	US60/SR303L TI	Landscape	Final

Stage I = 15% Plans; Stage II = 30% Plans; Stage III = 60% Plans;
Stage IV = 95% Plans; Final = 100% Plans; P3 = Public Private Partnership;
DB = Design Build process; CMAR = Construction Manager at Risk process;
TI = Traffic Interchange;

Right of Way

During the January 2016 Certification period from July 1, 2015 through December 31, 2015, the Right-of-Way Group acquired 298 acres of land for the RTP Freeway Program. When added to the previously acquired acreage, as of December 31, 2015, the Right-of-Way Group has acquired a total of 4,521 acres for the RTP Freeway Program.

RTP Freeway Program Right-of-Way
(acres)

Corridor	Previously Acquired	Acquired during this Certification Period	Total
I-10, Papago & Maricopa	103.1	0.0	103.1
I-10 Reliever (SR30)	75.6	0.0	75.6
I-17, Black Canyon	245.0	0.0	245.0
SR51, Piestewa	0.0	0.0	0.0
US60, Grand Ave.	10.7	1.0	11.7
US60, Superstition	0.0	0.0	0.0
SR74	13.0	0.0	13.0
SR85	1,109.7	0.0	1,109.7
SR87, Duthie-Martin	25.4	0.0	25.4
SR88, Apache Trail	0.0	0.0	0.0
US93	94.0	0.0	94.0
SR101L, Agua Fria	2.4	0.0	2.4
SR101L, Pima	3.8	0.0	3.8
SR101L, Price	0.0	0.0	0.0
SR153, Sky Harbor	0.0	0.0	0.0
SR202L, Red Mountain	2.3	0.0	2.3
SR202L, Santan	0.0	0.0	0.0
SR202L, South Mountain	342.8	290.8	633.6
SR303L	2,047.0	5.9	2,052.9
SR24, Gateway Freeway	148.8	0.0	148.8
Systemwide	0.0	0.0	0.0
Total	**4,223.6**	**297.7**	**4,521.3**

Historical Overview

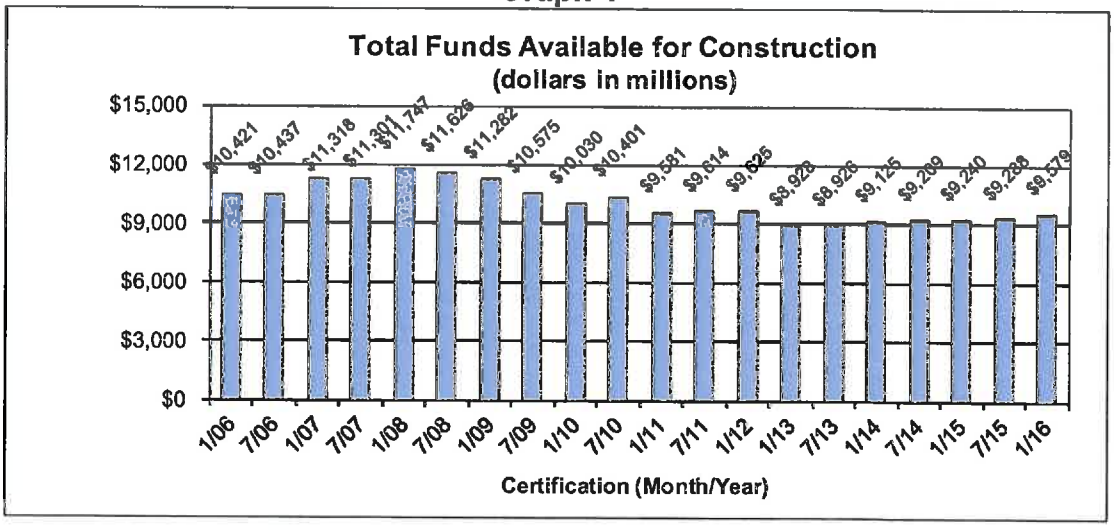
Historical Overview of Funding

ADOT has been certifying estimated revenues available for construction of the Regional Transportation Plan (RTP) Freeway Program since January 2006. Table 1 shows the revenue estimates and associated costs beginning with the January 2006 Certification. Graph 1 shows the level of funding available for construction of the RTP Freeway Program.

Table 1
Historical RTP Freeway Program Funds Available for Construction
(dollars in millions)

Certification Date	Revenues				Costs				Available for Construction
	1/2 Cent Tax	ADOT Funds	Other	Total	Capital	Discount Factor	Other	Total	
1/06	$8,178	$7,990	$665	$16,834	-$2,279	-$3,908	-$225	-$6,412	$10,421
7/06	$8,200	$8,112	$677	$16,989	-$2,403	-$3,906	-$242	-$6,551	$10,437
1/07	$8,652	$8,372	$725	$17,749	-$2,483	-$3,703	-$244	-$6,430	$11,318
7/07	$8,652	$8,372	$732	$17,756	-$2,577	-$3,635	-$244	-$6,456	$11,301
1/08	$8,646	$8,417	$821	$17,883	-$2,564	-$3,326	-$245	-$6,136	$11,747
7/08	$8,421	$8,411	$908	$17,741	-$2,379	-$3,486	-$250	-$6,115	$11,626
1/09	$7,764	$7,444	$955	$16,163	-$2,391	-$2,237	-$254	-$4,881	$11,282
7/09	$6,708	$7,359	$1,109	$15,177	-$2,367	-$1,980	-$255	-$4,602	$10,575
1/10	$6,472	$6,506	$1,156	$14,134	-$2,367	-$1,518	-$218	-$4,104	$10,030
7/10	$6,456	$6,460	$1,171	$14,087	-$1,914	-$1,554	-$219	-$3,686	$10,401
1/11	$5,240	$6,423	$1,241	$12,904	-$1,741	-$1,361	-$221	-$3,323	$9,581
7/11	$5,243	$6,253	$1,302	$12,797	-$1,736	-$1,228	-$219	-$3,183	$9,614
1/12	$5,122	$6,192	$1,318	$12,632	-$1,517	-$1,256	-$234	-$3,007	$9,625
1/13	$5,096	$5,070	$1,371	$11,538	-$1,475	-$874	-$261	-$2,609	$8,928
7/13	$5,096	$5,404	$1,026	$11,526	-$1,455	-$884	-$260	-$2,599	$8,926
1/14	$5,110	$5,218	$1,031	$11,359	-$1,435	-$546	-$253	-$2,234	$9,125
7/14	$5,112	$5,233	$1,057	$11,402	-$1,435	-$502	-$256	-$2,193	$9,209
1/15	$5,044	$5,352	$1,076	$11,472	-$1,450	-$522	-$260	-$2,232	$9,240
7/15	$5,046	$5,332	$1,079	$11,458	-$1,463	-$444	-$262	-$2,169	$9,288
1/16	$5,190	$5,718	$1,130	$12,037	-$1,667	-$510	-$281	-$2,458	$9,579

Graph 1



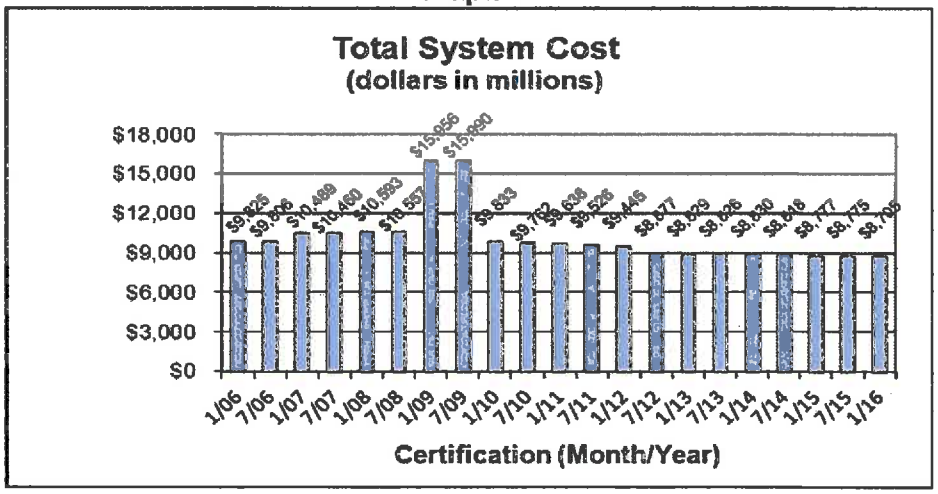
Historical Overview of Costs

ADOT has been certifying estimated costs to complete the Proposition 400 Regional Transportation Plan (RTP) Freeway Life Cycle Program (FLCP) since January 2006. Table 2 shows the cost estimates for the system beginning with the January 2006 Certification. Graph 2 represents the estimated total cost of the RTP Freeway Program.

Table 2
Historical RTP Freeway Program Cost Estimates
(dollars in millions)

Certification Date	Obligations	Cost to Complete	Total System Cost
1/06	$178.0	$9,647.1	$9,825.1
7/06	$234.3	$9,571.3	$9,805.6
1/07	$435.2	$10,053.4	$10,488.6
7/07	$779.0	$9,681.0	$10,460.0
1/08	$1,171.3	$9,421.2	$10,592.5
7/08	$1,506.8	$9,050.0	$10,556.8
1/09	$2,053.1	$13,902.4	$15,955.5
7/09	$2,120.9	$13,868.8	$15,989.7
1/10	$2,372.6	$7,460.0	$9,832.6
7/10	$2,636.9	$7,125.5	$9,762.4
1/11	$2,972.0	$6,665.6	$9,637.6
7/11	$3,146.8	$6,379.1	$9,525.9
1/12	$3,510.8	$5,933.8	$9,444.6
7/12	$3,825.3	$5,051.4	$8,876.7
1/13	$3,893.9	$4,934.8	$8,828.7
7/13	$3,955.8	$4,869.7	$8,825.5
1/14	$4,040.7	$4,789.2	$8,829.9
7/14	$4,189.0	$4,629.3	$8,818.3
1/15	$4,509.8	$4,266.9	$8,776.7
7/15	$4,795.2	$3,980.1	$8,775.3
1/16	$4,909.5	$3,795.3	$8,704.8

Graph 2



Economic Forecasts

Economic Forecasts

Estimating future revenue and costs for construction and right-of-way is an essential part of the RTPFP Life Cycle Program to help ensure that future costs and revenue stay in balance. The forecasts rely on information about past and current economic conditions and assumptions about future conditions and the interrelationships between multiple variables. Those assumptions and the economic models may or may not prove accurate and differences between forecast and actual results most likely will occur. ADOT and MAG work cooperatively to monitor cost and revenue trends and adjust the Life Cycle Program accordingly.

In order to deal with the variability between estimated and actual values, ADOT introduced the Risk Analysis Process (RAP) in 1992. It is generally done each year in August or September for ADOT by HDR Decision Economics, a firm that specializes in economic forecasting. Data is collected from a variety of sources, including regional, state, national and international factors which influence costs and revenues, plus input from a panel of local experts along with historic data. A complex statistical risk-based analysis is then performed to forecast future cost and revenue. The process results in a series of forecasts, with specified probabilities of occurrence, rather than a single "best guess" estimate. It represents a snapshot of conditions and opinions at the time and may be adjusted upward or downward by ADOT for the subsequent January and July Certification reports as conditions change.

Because the Certification is based on remaining costs in current dollars, future estimates of revenue are discounted to current dollars based on the RARF official forecast.

Revenue Forecast:

This year's panel inputs produced a mean forecast of $5,833.9 million for the period FY 2016-2026 with a compound growth rate (CGR) of 5.7 percent. The Department's Official Forecast for FY 2016-2026 totals $5,525.8 million with a compound growth rate of 5.0 percent. This year's official forecast is $257.8 million higher than last year's official forecast.

The Official Forecast result incorporates the 50 percent confidence interval growth rate amount for each year of the forecast except for FY 2016. The FY 2016 forecast of $401.0 million was developed by ADOT staff independently of the econometric model using time series techniques and historical and projected growth rates from the model.

RAP Results – RARF Revenue Forecast

Fiscal Year	Mean Forecast	Official Forecast	Confidence Level
2016	$405.5	$401.0	50%
2017	$437.8	$426.6	50%
2018	$469.2	$451.6	50%
2019	$499.6	$476.8	50%
2020	$529.0	$501.5	50%
2021	$557.9	$526.7	50%
2022	$586.7	$551.6	50%
2023	$615.5	$576.0	50%
2024	$645.1	$602.3	50%
2025	$675.4	$629.0	50%
2026 /1	$412.2	$382.7	50%
Total	$5,833.9	$5,525.8	
Average CGR	5.7%	5.0%	

Note: /1 Reflects the end of the one-half cent transportation excise tax extension on December 31, 2025.

Average CGR = Average annual compound growth rate

Construction Costs:

HDR Decision Economics performed a statistical analysis of highway construction costs for the ADOT. The purpose was to develop construction cost escalation factors, in a risk analysis framework, to be used by ADOT for planning purposes. The study relies on historical trend analysis and expert consensus-based risk assessment for cost of key construction items.

The study included construction costs in eight broad categories that were selected based on their contribution to the overall dollar value of highway construction contracts in Arizona. It also considered a range of potential explanatory variables (at the state, national and international levels) that may impact local construction prices and assessed historical trends and correlations for those variables. Those factors include such items as regional and national construction spending, construction wages, regional gross state product, prices for major construction commodities and equipment, the consumer price index, the producer price index for highway and street construction, crude oil prices and international exchange rates. A panel of local experts on construction costs also provided estimates of future costs.

Discount factors representing the rate of construction cost growth are calculated using software developed by HDR Decision Economics. Data from the August 2015 Risk Analysis Process for construction was utilized to compute factors for design and construction. These factors represent potential cost growth which includes general inflation.

RAP Results – Construction Discount Factors

Fiscal Year	Official Value
2017	2.18%
2018	2.20%
2019	2.36%
2020	2.32%
2021	2.32%
2022	2.32%
2023	2.32%
2024	2.32%
2025	2.53%
2026	2.53%

The construction industry in Arizona and many other states is still recovering from the Great Recession. One reason for the slow recovery in the transportation construction industry, in particular, is the uncertainty in federal funding. Now, On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or "FAST Act" – the first Federal law in over ten years to provide long-term funding certainty for surface transportation. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for the Department's highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail and research, technology and statistics programs. With its enactment, State and local governments may now move forward with critical transportation projects, like new highways and transit lines, with the confidence that they will have a Federal partner over the long term.

For 2016, most industry experts expect construction material costs to increase at the same pace as inflation (+1 percent to +3 percent) and labor costs to grow a little faster (+2.5 percent to +5 percent), as workforce shortages may occur locally (due to retirements and competition from other sectors, among other things).

RAP panel members' projections for highway construction costs in Arizona are in line with those expectations. They are similar to last year's projections through FY 2019 and slightly higher thereafter. However, they remain below historical standards. The South Mountain Freeway will be the single most important surface transportation project in Arizona in the near future; it could affect construction material prices locally.