



RTP Process and Schedule

MAG RTP Workgroup

January 22, 2020



A People Plan...

- Outreach focused
- Performance outcomes v data reporting
- Multi-modal
- Define a regional vision for the future
- Flexible to adjust as conditions change



January 2020



What we know...

- Proposition 400 expires in 2025
 - ✓ List of projects
 - ✓ No maintenance funds
 - ✓ Some projects were deferred
- The future is uncertain
 - ✓ Revenue
 - ✓ Costs
 - ✓ Technology
 - ✓ Mobility needs
- Performance-driven, outcome-based approach
 - ✓ Good planning practice
 - ✓ Federal requirement

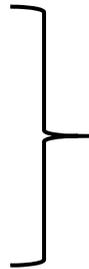


January 2020



What we don't know...

- Revenue
- Costs
- Priorities
- Values, goals, vision
- Needs to achieve values, goals, vision



Ask

January 2020



Performance-driven, outcome-based RTP looks like...

- San Diego Forward: The Regional Plan
 - ✓ 2017 American Planning Association Transportation Planning Excellence Award – Best of the Best winner
- Transportation vision in “5 Big Moves”
 - ✓ Complete Corridors
 - Safety, capacity and efficiency
 - Serve all users
 - Provide for high capacity transit
 - ✓ Transit Leap
 - High-capacity
 - High-speed
 - High-frequency
 - ✓ Mobility Hubs – union of multiple transport options
 - ✓ Flexible Fleets
 - On-demand, shared, zero emission vehicles
 - Micro-mobility
 - Autonomous vehicles with V2V and V2I communications
 - ✓ Next OS – digital platform managing transport data



January 2020



San Diego Forward...

- Key Strategies
 - ✓ Transportation system management
 - ✓ Transportation demand management
- Connections to fuel economy
 - ✓ Moves goods and services
 - ✓ Provides access, connects people and neighborhoods
 - ✓ Promotes health
 - ✓ Creates jobs
- Vision
 - ✓ Healthy environments and communities
 - ✓ Vibrant economy
 - ✓ Innovative mobility & planning
- 36 near- and long-term performance-based actions



January 2020



And we're also looking at...

- Puget Sound Regional Council (Seattle)
- Denver Regional COG
- Metropolitan Transportation Commission (SF Bay Area)
- Chicago Metropolitan Agency for Planning
- Atlanta Regional Commission
- Wasatch Front Regional Council (SLC)
- Oregon Metro (Portland)
- Houston-Galveston MPO
- North Central Texas COG (Dallas-Ft Worth)
- Delaware Valley Regional Planning Commission (Philadelphia)
- San Diego Association of Governments
- Southern California Association of Governments
- Metropolitan Council (Minneapolis-St Paul)

January 2020



Federal Requirement...

- **Established in US Code:**
“...metropolitan planning organizations..., in cooperation with the State and public transportation operators, shall develop long-range transportation plans and TIPS through a performance-driven, outcome-based approach to planning...”
- **In the same code, national policy requires:**
 - ✓ The MPO...“carry out a continuing, cooperative, and comprehensive performance-based multimodal transportation planning process...that:”
 - ✓ Encourages safe and efficient development, management, and operation of surface transportation systems to serve the mobility needs of people and freight (including accessible pedestrian walkways, bicycle transportation facilities, and intermodal facilities and commuter vanpool)
 - ✓ Fosters economic growth and development
 - ✓ Considers resiliency needs, minimizes transportation-related fuel consumption and air pollution

January 2020



Federal requirement (con't)...

- Planning process shall provide for project, strategies and services that will address the following factors:
 - ✓ Supports economic vitality
 - ✓ Increases safety
 - ✓ Increases accessibility and mobility
 - ✓ Protects environment, promote energy conservation, improve quality of life
 - ✓ Enhances integration and connectivity
 - ✓ Promotes efficient system management and operation
 - ✓ Emphasizes preservation
 - ✓ Improves resiliency and reliability, reduce/mitigate stormwater impacts
 - ✓ Enhances travel and tourism

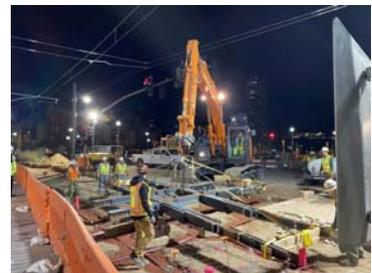


January 2020



Performance-based planning...

- Uses data to support long-range and short-range investment decision-making.
- Starts with a vision and goals for the transportation system to achieve:
 - ✓ Selection of performance measures
 - ✓ Use of data and analysis tools to inform development of investment priorities
 - ✓ Priorities carried forward into shorter-term investment planning and programming.
- Involves many activities undertaken, working with other agencies, stakeholders, and the public, as part of a 3C process.



January 2020

Advantages of performance-based approach...



- Improved decision making
 - ✓ Informs public in development and understanding of desired outcomes
 - ✓ Improves decision making with focus on performance outcomes
- Improved Return on Investments and Resource Allocation
- Improved System Performance
- Increased Accountability and Transparency
- Demonstrates Link between Funding and Performance



January 2020

Terminology...



- Goal is a broad statement that describes a desired end state
- Objective is a specific, measurable statement that supports achievement of a goal
- Performance measure is a metric used to assess progress toward meeting an objective
- Target is a specific level of performance that is desired to be achieved within a certain timeframe.



January 2020



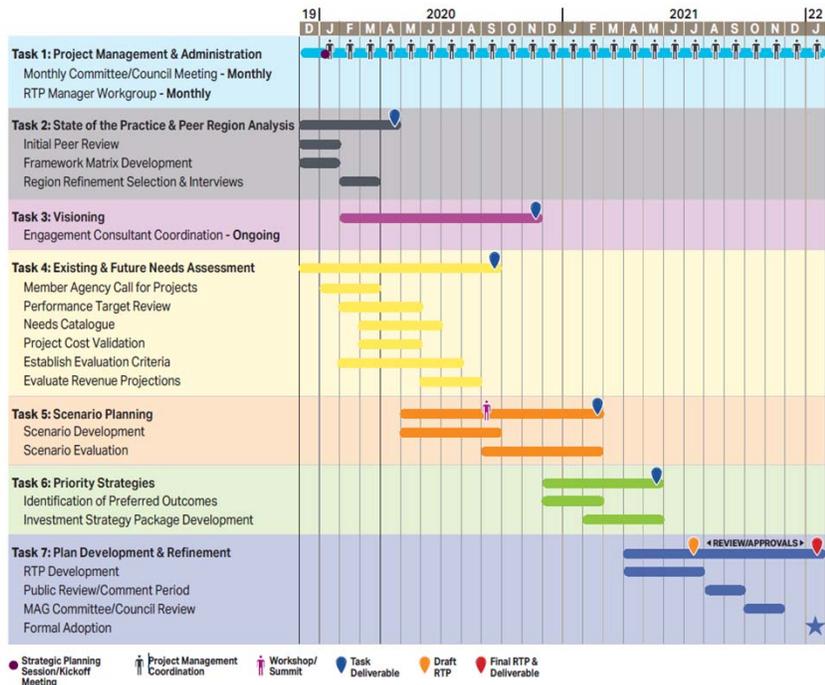
How do we get there...

- Outreach and data driven approach
- Management Consultant work plan:
 - ✓ Peer Review
 - ✓ Visioning
 - Strategic Planning Workshop
 - Stakeholder Visioning Workshop
 - ✓ Needs Assessment & Call for Projects
 - ✓ Scenario Planning
 - Scenario Planning Workshop
 - ✓ Priority Strategies
 - ✓ Plan Development & Refinement



January 2020

When do we get there...



January 2020



Role of Call for Projects...

- Helps establish baseline of future needs
- Informs future vision
- Illustrates stakeholder priorities
- Helps inform regional priorities



January 2020



Resources...

MAG

- Update on Proposition 400 Extension Tasks (Sep 2019)
https://www.azmag.gov/Portals/0/Documents/MagContent/TPC_2019-09-18_Item-5_P400E_Presentation.pdf?ver=2019-09-18-104119-200
- Proposition 400 Extension: Policy Framework (Aug 2019)
https://www.azmag.gov/Portals/0/Documents/MagContent/TPC_2019-08-14_Item-5_P400E_Policy_v2.pdf?ver=2019-08-14-100032-410
- Transportation Values and Priorities in the Maricopa Region (June 2019)
https://www.azmag.gov/Portals/0/Documents/MagContent/TPC_2019-06-19_Item-5_Values_Mapping.pdf?ver=2019-06-19-084621-010

FHWA

- FHWA Planning
<https://www.fhwa.dot.gov/planning/index.cfm>
- Model Long-Range Transportation Plans: A Guide for Incorporating Performance-Based Planning (Aug 2014)
https://www.fhwa.dot.gov/planning/performance_based_planning/mlrtp_guidebook/fhwahep14046.pdf
- Performance-Based Planning and Programming Guidebook (Sep 2013)
https://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/pbppguidebook.pdf

January 2020

Presentation Background

- Provide history of Proposition 400 funding
- Review preliminary, high-level estimates ("sketch")
 - Information intended to provide order-of-magnitude context
 - Robust needs assessment and fiscal projections will occur as part of the RTP development process
 - Information presented over a 25 year period (2026-2050)
 - All revenue projections and cost estimates are in 2019 dollars

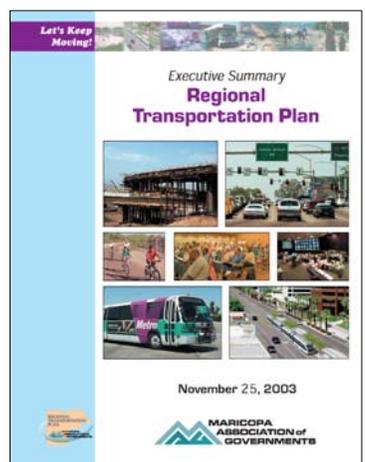


Extension of Proposition 400

© 2020. All Rights Reserved.



Proposition 400: Development & Passage

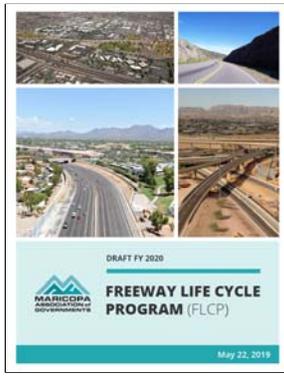


Extension of Proposition 400

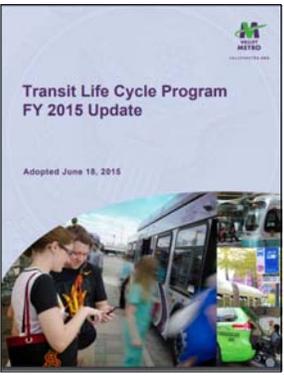
© 2020. All Rights Reserved.



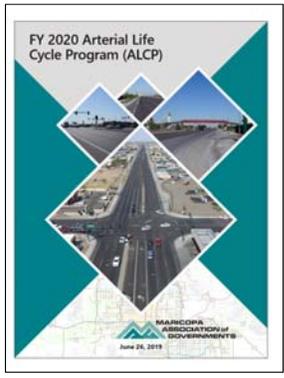
Proposition 400: Major Modal Programs



Freeway Program
\$9.043 billion



Transit Program
\$5.002 billion



Arterial Program
\$1.464 billion

All dollar amounts expressed in 2002 dollars



Extension of Proposition 400

Proposition 400: Major Modal Programs



- Programs are defined by 20-year lists of projects
- Managed through a "Life Cycle Program" concept
- Guided by statutory requirements



Extension of Proposition 400

Proposition 400: Other Programs



Paving of Unpaved Roads



Active Transportation



Transportation Studies



Street Sweepers



Intelligent Transportation Systems (ITS)

Other
\$0.276 billion



Extension of Proposition 400

All dollar amounts expressed in 2002 dollars

© 2020, All Rights Reserved.



Proposition 400: Other Programs



- Projects selected through a periodic call-for-projects process
- Agencies submit applications every one-to-three years
- Competitive selection based on evaluative criteria

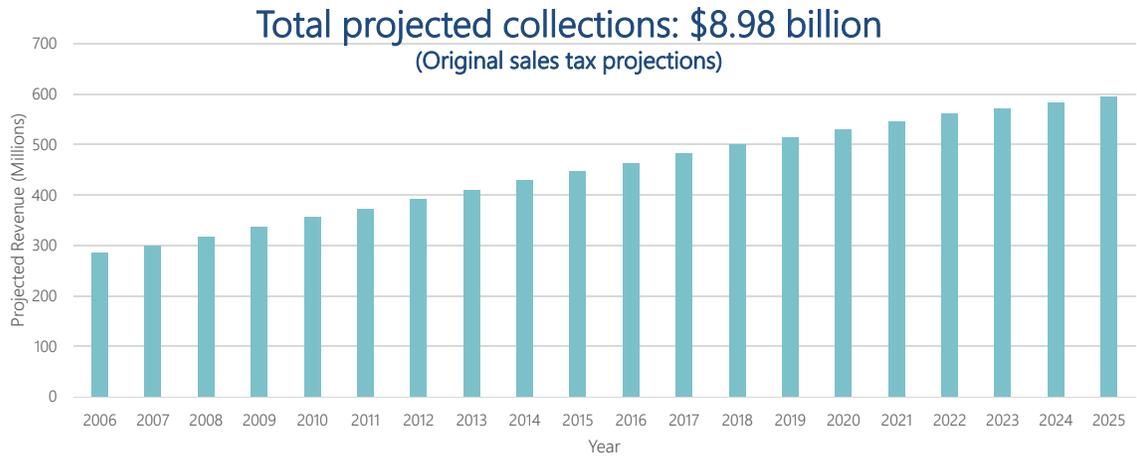


Extension of Proposition 400

© 2020, All Rights Reserved.



Proposition 400: Half-Cent Sales Tax Projected Revenues



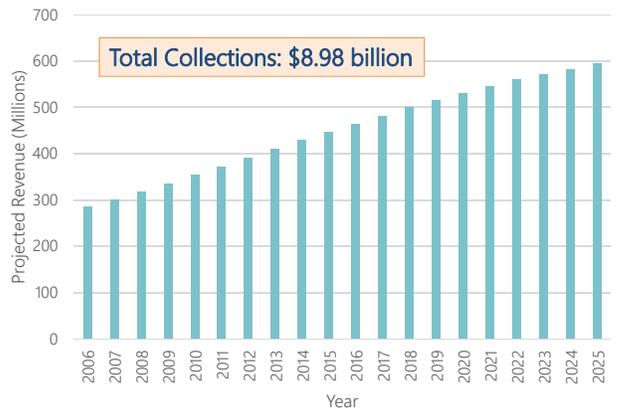
Extension of Proposition 400

All dollar amounts expressed in 2002 dollars

© 2020, All Rights Reserved.



Proposition 400: Program Recap



Proposition 400 Programs

- Freeway Program: \$9.043 billion
- Transit Program: \$5.002 billion
- Arterial Program: \$1.464 billion
- Other: \$0.276 billion

Total: \$15.785 billion



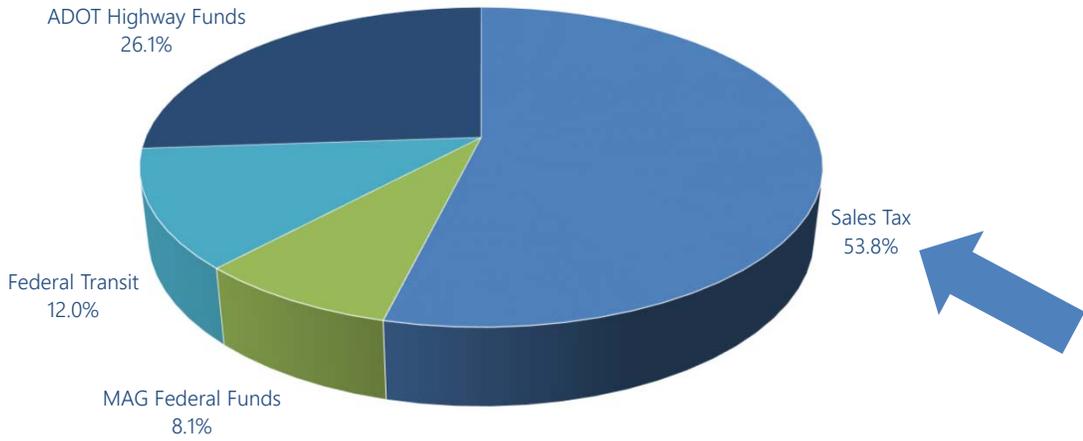
Extension of Proposition 400

All dollar amounts expressed in 2002 dollars

© 2020, All Rights Reserved.



Proposition 400: Funding Sources



Extension of Proposition 400

© 2020, All Rights Reserved.

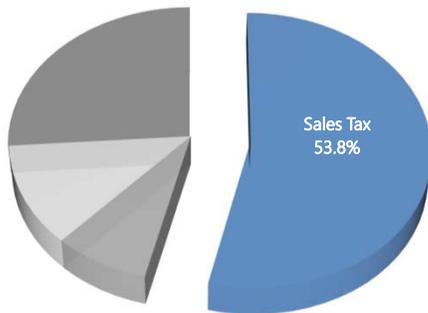
9



Funding Source: Half-Cent Sales Tax

Transportation tax revenues collected as part of the voter-approved Proposition 400 ballot initiative.

Half-Cent Sales Tax



- Projected revenues: \$8.499 billion*
- Split between the three modal programs
 - Highways: 56.2%
 - Transit: 33.3%
 - Arterials: 10.5%
- Allocation first determined by 2003 RTP
- Codified in State Statute as part of enabling legislation

*excludes \$500 million for interest expense. All dollar amounts expressed in 2002 dollars



Extension of Proposition 400

© 2020, All Rights Reserved.

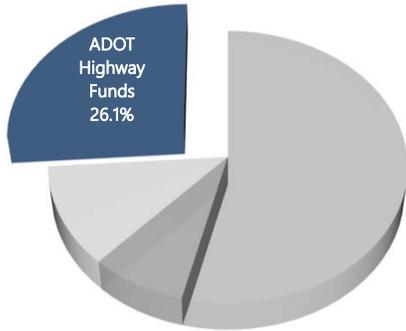
10



Funding Source: ADOT Highway Funds

Transportation revenues available at a statewide level allocated to the MAG region.

ADOT Highway Funds



- Projected revenues: \$4.121 billion
- Comprised of two sources:
 - ADOT federal funds
 - Gas tax funds (HURF)
- Allocated to the MAG region based on State Statutes and the ADOT five-year construction program



All dollar amounts expressed in 2002 dollars

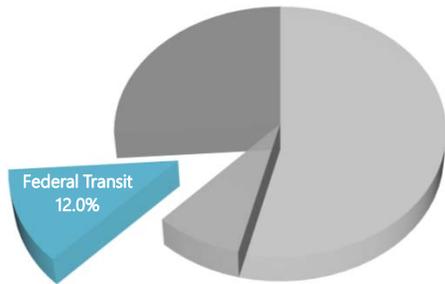
© 2020. All Rights Reserved.



Funding Source: Federal Transit Funds

Federal funding allocated to the region based on formula or to a project based on competitive processes.

Federal Transit Funds



- Projected revenues: \$1.890 billion
- Comprised of two sources:
 - Formula funds to MAG
 - Federal discretionary awarded to projects
- Allocation of formula funds to MAG set by federal transportation legislation and other factors
- Formula funds allocated to MAG



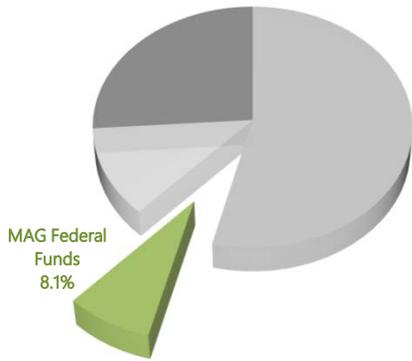
All dollar amounts expressed in 2002 dollars

© 2020. All Rights Reserved.



Funding Source: MAG Federal Funds

Federal funding allocated to MAG (the regional transportation planning agency) based on legislative formulas.



MAG Federal Funds

- Projected revenues: \$1.275 billion
- Federal transportation funding allocated to MAG based on federal transportation legislation
- Includes:
 - Congestion Mitigation and Air Quality (CMAQ)
 - Surface Transportation Block Grant Program (STBGP or STP)
- Formula funds allocated to MAG

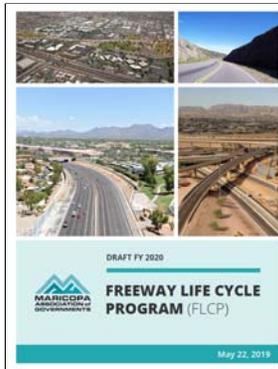


All dollar amounts expressed in 2002 dollars

© 2020. All Rights Reserved.

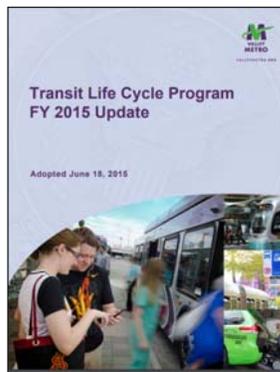


Proposition 400: Major Modal Programs



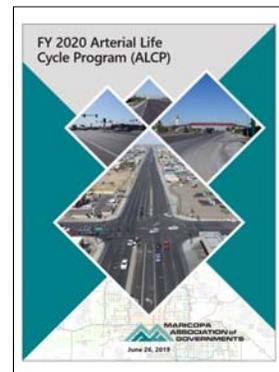
Freeway Program
\$9.043 billion

53% sales tax
47% state/federal



Transit Program
\$5.002 billion

56% sales tax
44% federal



Arterial Program
\$1.464 billion

59% sales tax
41% federal



All dollar amounts expressed in 2002 dollars

© 2020. All Rights Reserved.



Proposition 400: Other Programs



Paving of Unpaved Roads



Active Transportation



Transportation Studies



Street Sweepers



Intelligent Transportation Systems (ITS)

Other
\$0.276 billion
11% sales tax
89% federal

All dollar amounts expressed in 2002 dollars



Extension of Proposition 400

© 2020, All Rights Reserved.



Sketch Revenue Estimates



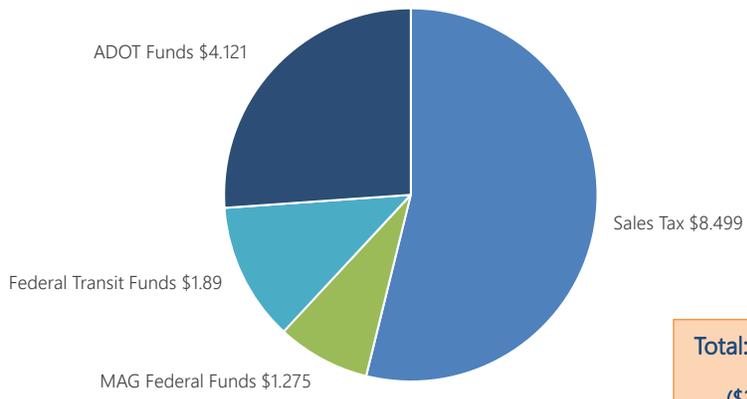
Extension of Proposition 400

© 2020, All Rights Reserved.



Projected Revenue Estimates – Prop 400

2003 Regional Transportation Plan – Revenue Sources
Billions, 2002\$



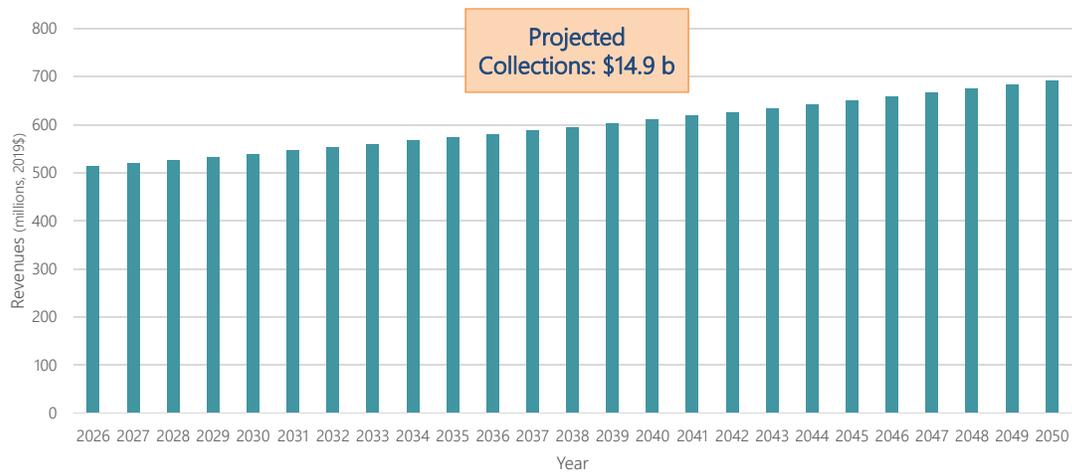
Total: \$15.785 billion
 (\$23.18 billion if inflated to 2019\$)



Extension of Proposition 400

© 2020, All Rights Reserved.

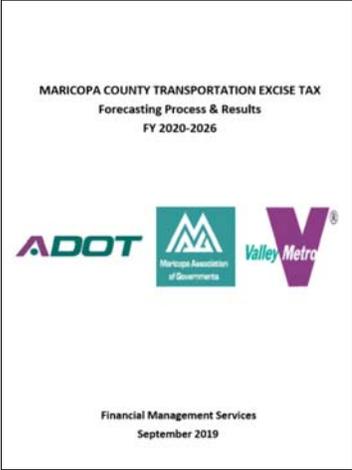
Sketch Revenue Estimates – Half-Cent Sales Tax



Extension of Proposition 400

© 2020, All Rights Reserved.

Sales Tax Forecasting Methodology



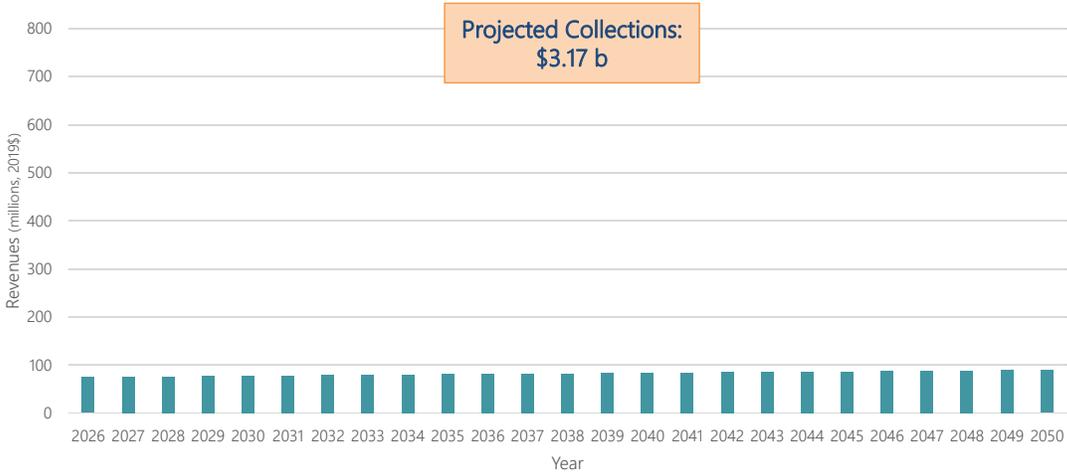
- Updated forecasts generated annually
- Regression-based econometric model
- Independent evaluation of the model's variables by an expert panel of economics



© 2020, All Rights Reserved.



Sketch Revenue Estimates – MAG Federal Highway Funds

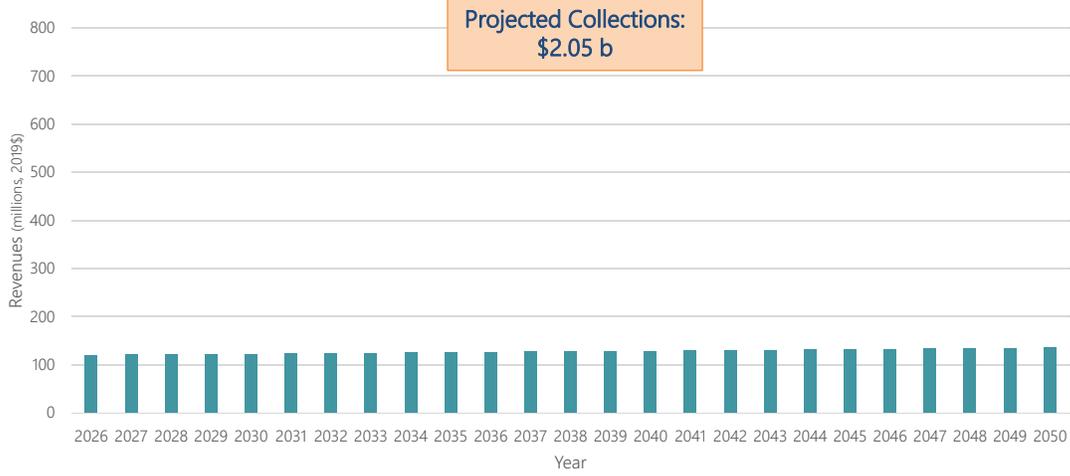


© 2020, All Rights Reserved.

20



Sketch Revenue Estimates – Federal Transit Funds



Extension of Proposition 400

© 2020, All Rights Reserved.

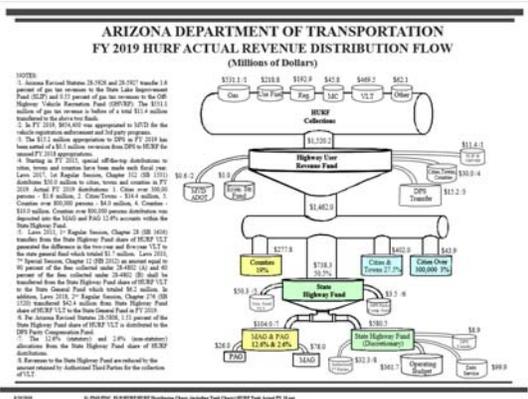
Sketch Revenue Estimates – ADOT Funds



Extension of Proposition 400

© 2020, All Rights Reserved.

Highway User Revenue Fund (HURF)

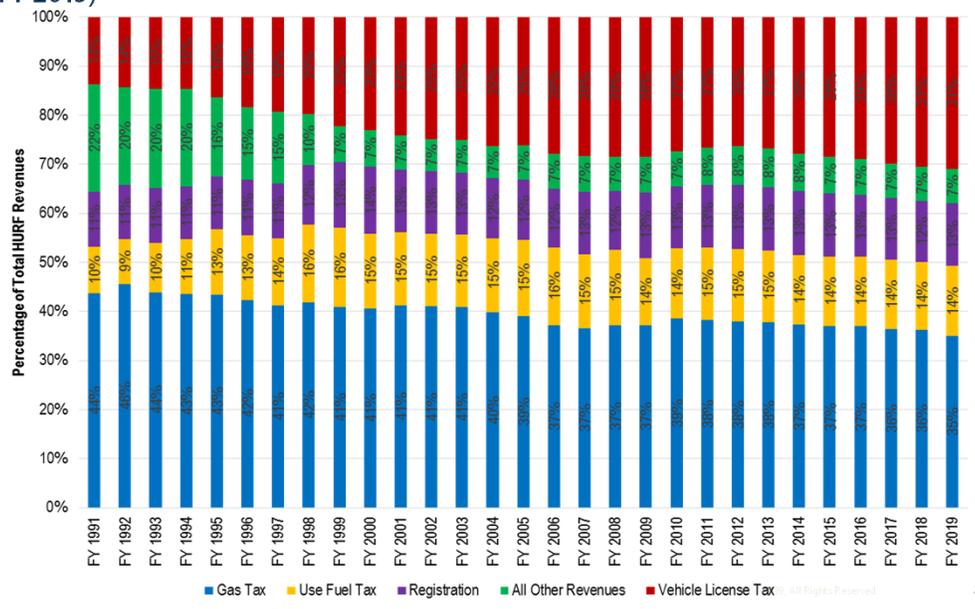


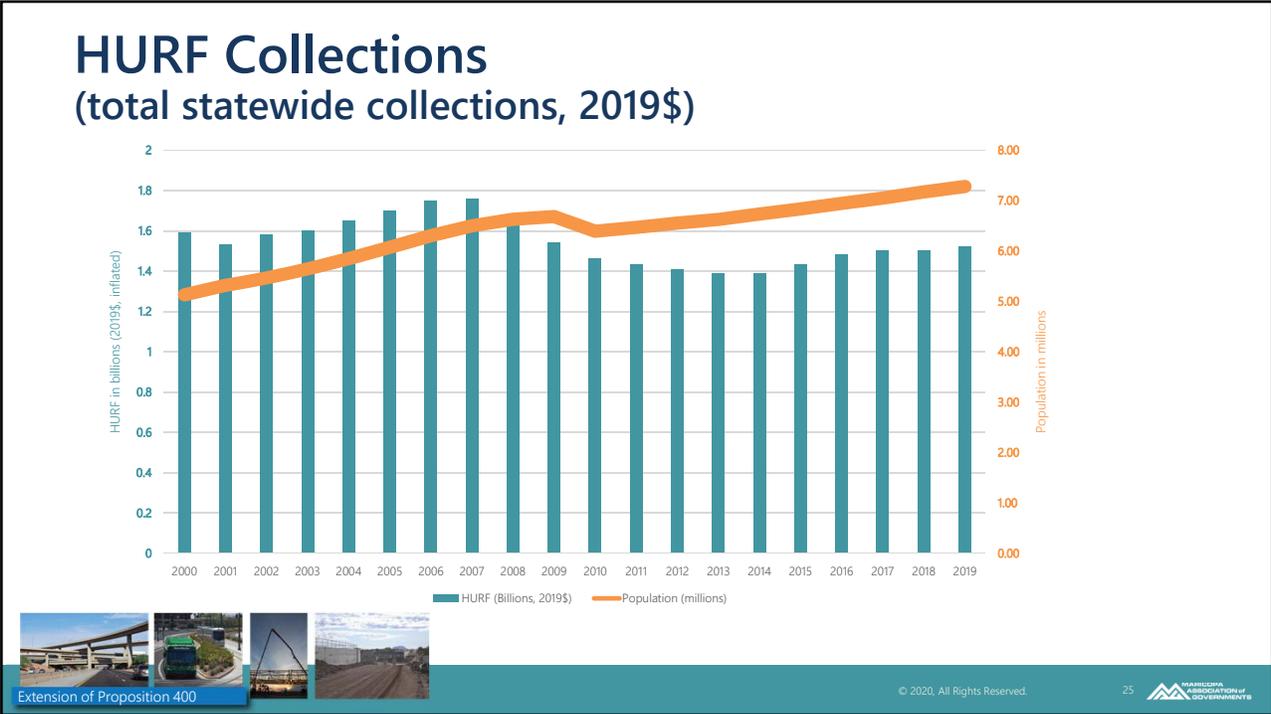
- Highway User Revenue Fund (HURF) distributed based on a formula
 - 50.5% to ADOT
 - 30.5% to cities and towns
 - 19.0% to counties
- Historically, HURF has been the primary revenue source for highway and local roadway maintenance
- State gas tax hasn't increased since 1991



Revenue Categories as a Percentage of HURF

(FY 1991 – FY 2019)





Sketch Revenue Estimates

<u>Source</u>	
Sales tax (half-cent)	\$14.94 b
ADOT funds	\$8.89 b
MAG federal funds	\$3.17 b
Transit funds*	\$2.06 b
Total	\$29.06 b
*Federal transit discretionary funds	\$1.82 b – 4.28 b
Total with discretionary	\$30.88 b – 33.34 b






© 2020, All Rights Reserved. 26



Operations and Maintenance Cost Review

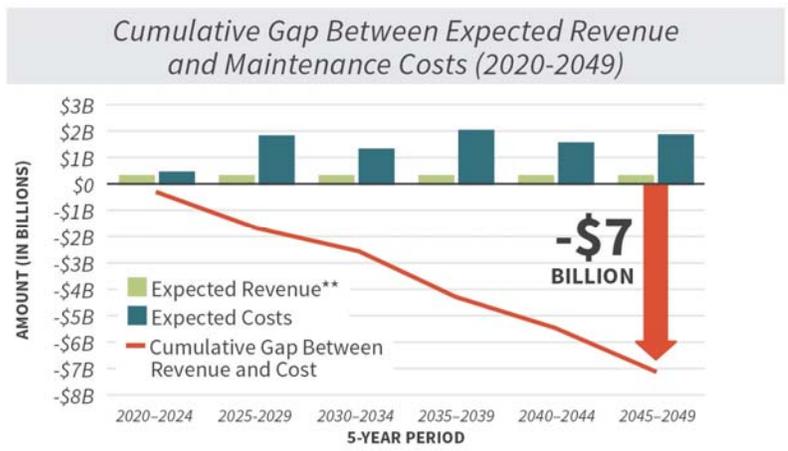


Extension of Proposition 400

© 2020, All Rights Reserved.

27

Operations & Maintenance – Highways/Freeways



⚠️ If the level of maintenance spending does not increase from 2015-2019 levels, it is expected there will be a cumulative revenue shortfall of more than \$7 billion by 2049 to address expected maintenance needs in Maricopa County.

**Based on 2015-2019 costs



Extension of Proposition 400

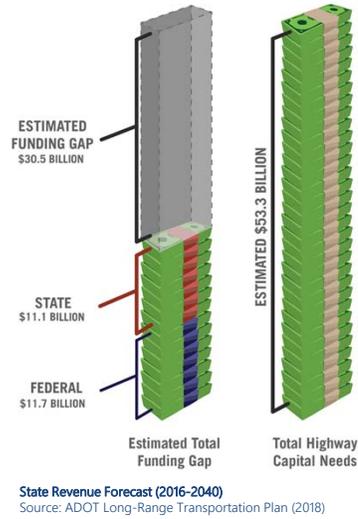
© 2020, All Rights Reserved.

28

Operations & Maintenance – Highways/Freeways

Policy questions

- What is the region’s role in funding maintenance?
- Should we continue to expand the metropolitan system if the state cannot maintain the infrastructure?
- What value-added elements does the region want to invest (e.g., rubberized asphalt, litter pick-up)?



Extension of Proposition 400

© 2020. All Rights Reserved.

Operations & Maintenance – Transit



Source: Valley Metro

Regional Considerations

- Fare recovery
- Regional revenue collections
- Local contributions



Extension of Proposition 400

© 2020. All Rights Reserved.

Operations & Maintenance – Transit

- Fare recovery makes a significant impact on transit costs
 - Important consideration as investment decisions are made
- Example: \$100 million/year transit service
 - 15 percent fare recovery:
 - \$85 m a year
 - \$2.13 b over 25 years**
 - 20 percent fare recovery
 - \$80 m a year
 - \$2.00 b over 25 years**
 - 25 percent fare recovery
 - \$75 m a year
 - \$1.88 b over 25 years**



Source: Valley Metro



Extension of Proposition 400

Operations & Maintenance – Transit

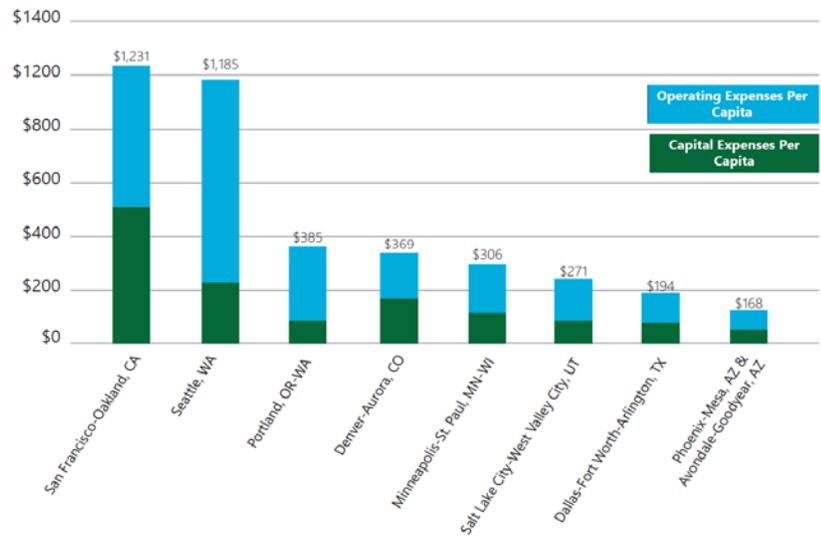
- The region will be unable to fund a comprehensive transit system relying only on the regional tax
- Phoenix, AZ (MAG Region)
 - County excise tax for transit: **0.17 cent** (Prop 400)
 - Valley Metro annual bus & rail ridership: 66.8M/YR



Extension of Proposition 400

Operations & Maintenance – Transit

National Transit Database Peer Comparison
Transit Spending Per Capita



National Transit Database 2018
U.S. Census 2010 33

Operations & Maintenance – Transit

- In FY 2019, local funding comprised 58 percent of bus transit costs
 - City of Phoenix contributes 70 percent of the local bus transit funding
- The scenarios do not reflect any local funding contributions



Source: Valley Metro



Extension of Proposition 400

Operations & Maintenance – Transit

Three scenarios were developed to provide order-of-magnitude context of future costs:

Base Scenario

- Transit service and capital currently reflected in our Regional Transportation Plan as well as Phoenix’s T2050 plan.

Service Quality Enhancement Scenario

- Base scenario *plus* increased investments on corridors with demand (more frequent service).
- Assumes no geographic expansion beyond the base scenario.

System Expansion Scenario

- Base scenario *plus* expansion of the system into areas it does not reach (wider footprint of service).
- Assumes no service quality enhancement beyond the base scenario.



Extension of Proposition 400

© 2020, All Rights Reserved.

Operations & Maintenance – Transit Local Bus

	Base Scenario (RTP, T2050)	Service Quality Enhancement Scenario	System Expansion Scenario

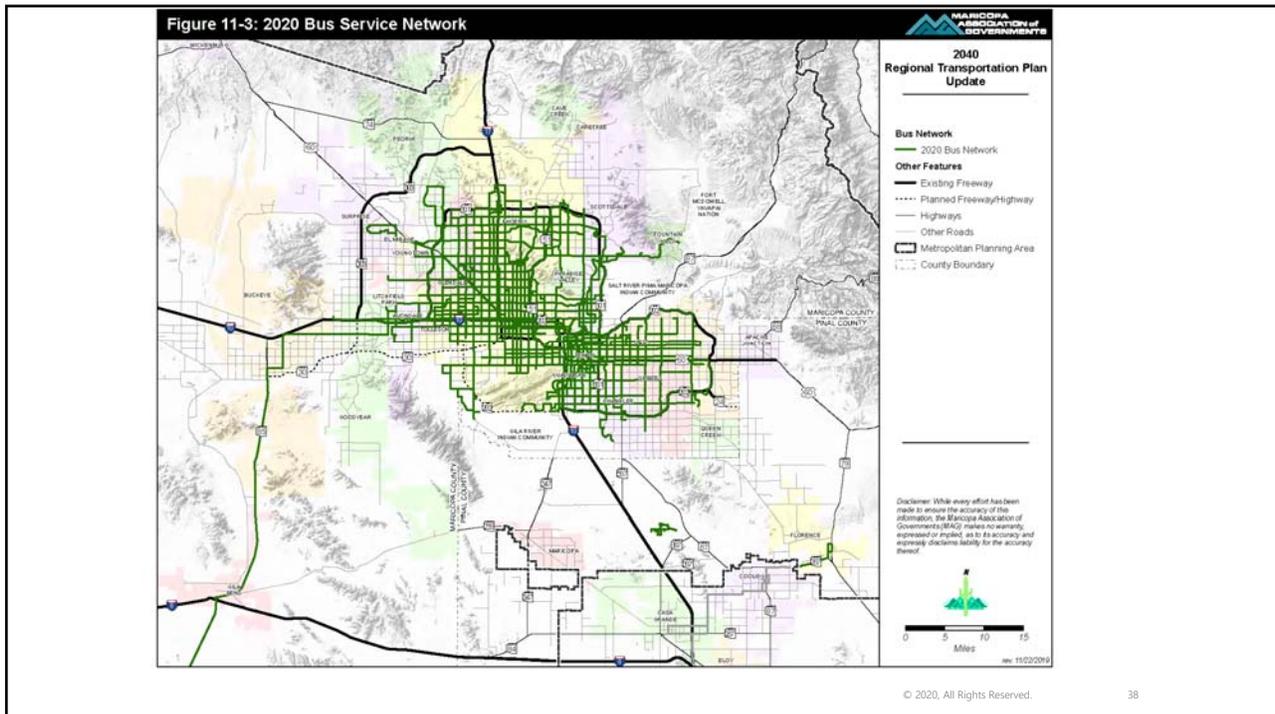


Extension of Proposition 400

© 2020, All Rights Reserved.

Transit – Cost Exercise

- 15 hours of service daily @ 15 minute headway = 60 trips each direction or 120 trips total each day.
- 120 daily trips * \$9.61 per mile = \$1,153 per day per route mile
- 7 days per week x 52 weeks x \$1,153 per day = \$ 419,765 per revenue mile per year
- 20 mile route x \$419,765 per year = \$8,395,296
- Less 20% fare recovery (1,679,059) = \$6,716,237
- 25 years x \$6,716,237 = \$167,905,920



Operations, Maintenance, Capital – High Capacity Transit

Base Scenario (RTP, T2050)	Service Quality Enhancement Scenario	System Expansion Scenario



Extension of Proposition 400

Sketch Capital Costs

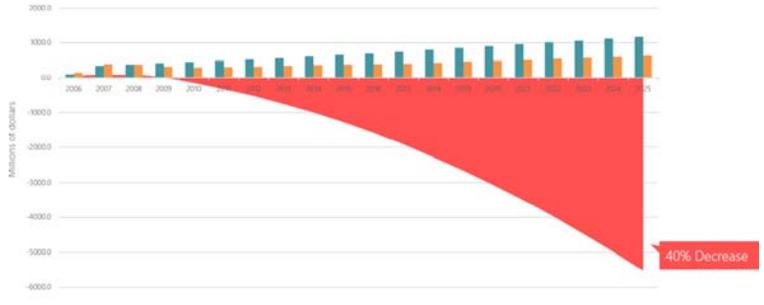


Extension of Proposition 400

Sketch Capital Costs – Freeways/Highways

- Over the life of Prop 400, half-cent sales tax collections are expected to be 40 percent less than original projected
- Projects and service have been deferred to maintain fiscal balance
- Increased traffic and changes in travel patterns have created additional needs

Prop 400 Revenues Projections Cumulative Difference (Original vs. Current)

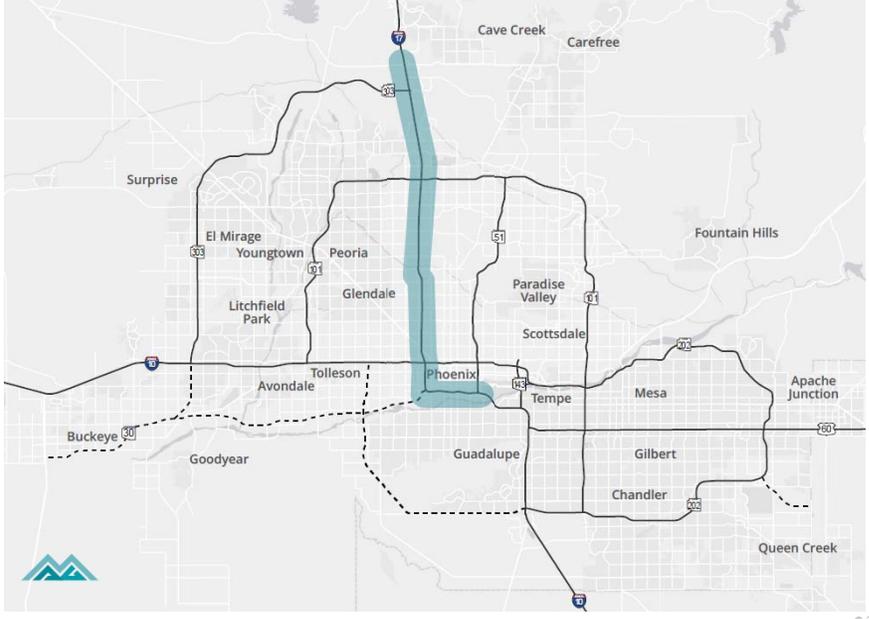


Extension of Proposition 400

© 2020, All Rights Reserved.

41 MARICOPA ASSOCIATION OF GOVERNMENTS

Sketch Capital Costs – Freeways/Highways



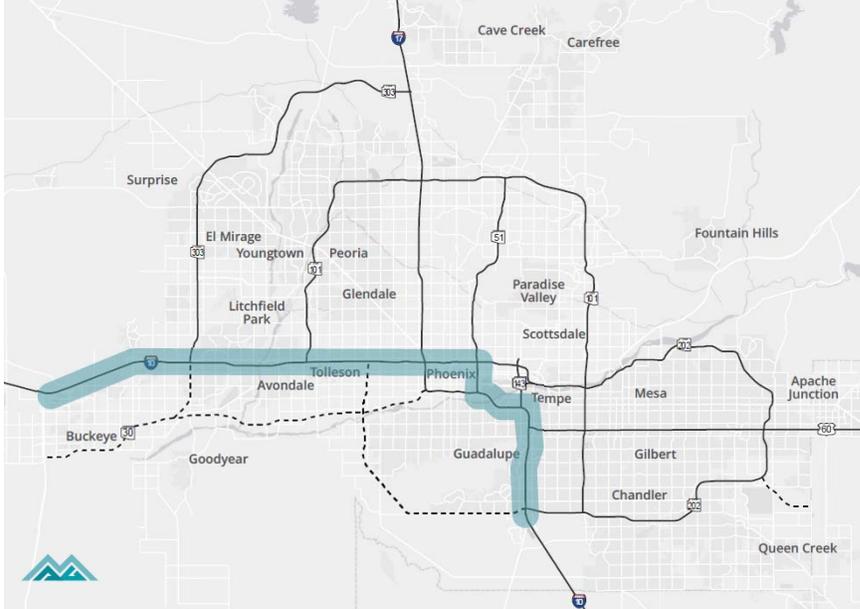
I-17

Deferred interchanges
Spine study
Reconstruction
Widening

Total: \$3.50 b

© 2020, All Rights Reserved.

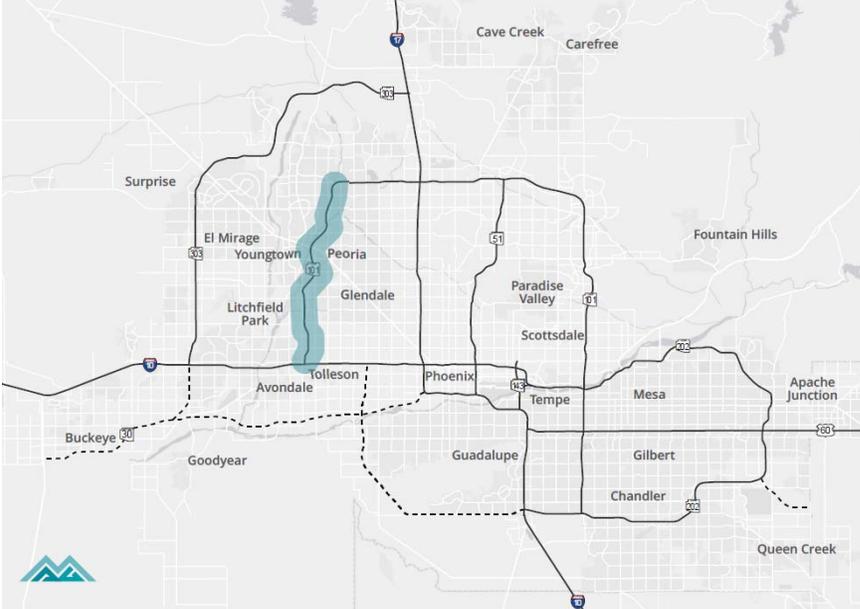
Sketch Capital Costs – Freeways/Highways



I-10
Spine Study
Baseline interchange
Collector-Distributor Roads
Tunnel to the Split
Total: \$2.25 b

© 2020, All Rights Reserved.

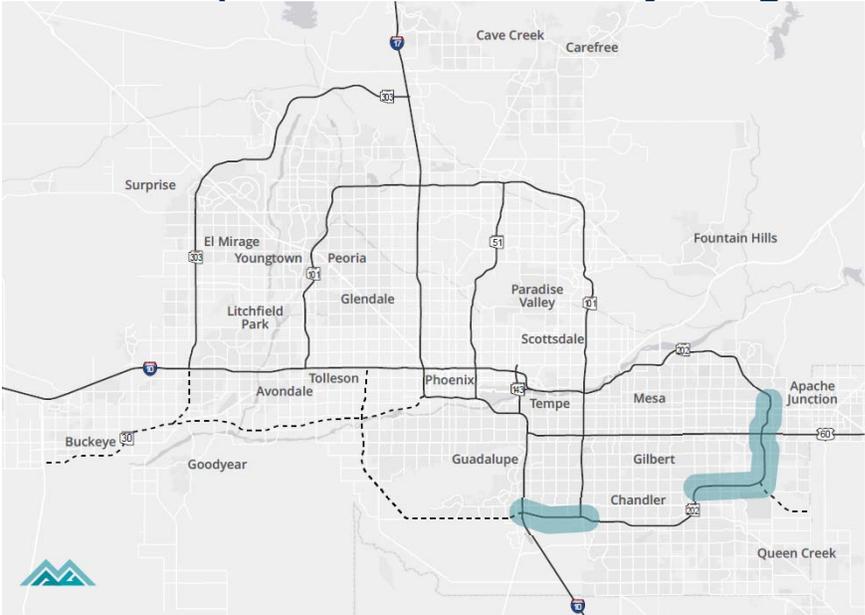
Sketch Capital Costs – Freeways/Highways



SR-101L
Deferred widening
Total: \$0.30 b

© 2020, All Rights Reserved.

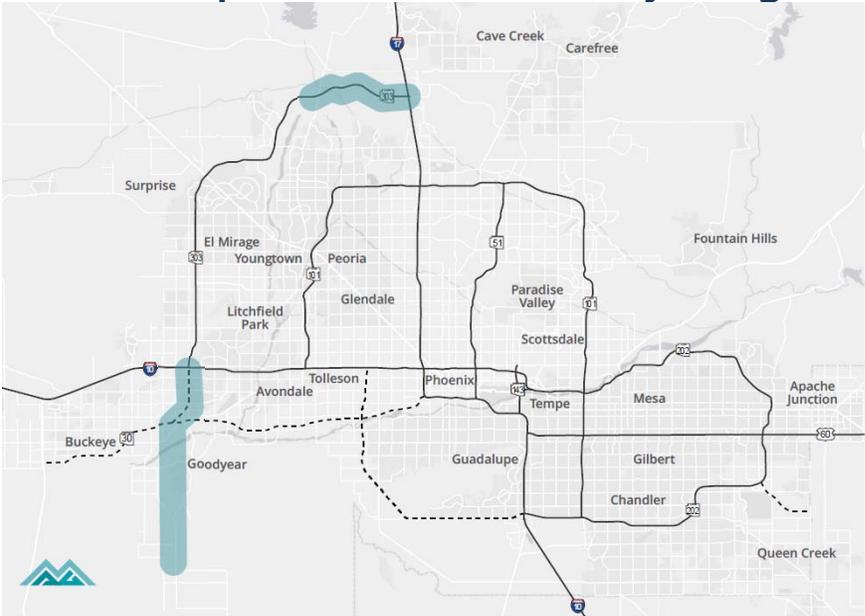
Sketch Capital Costs – Freeways/Highways



SR-202L
 Deferred HOV
 Deferred widening
Total: \$0.20 b

© 2020, All Rights Reserved.

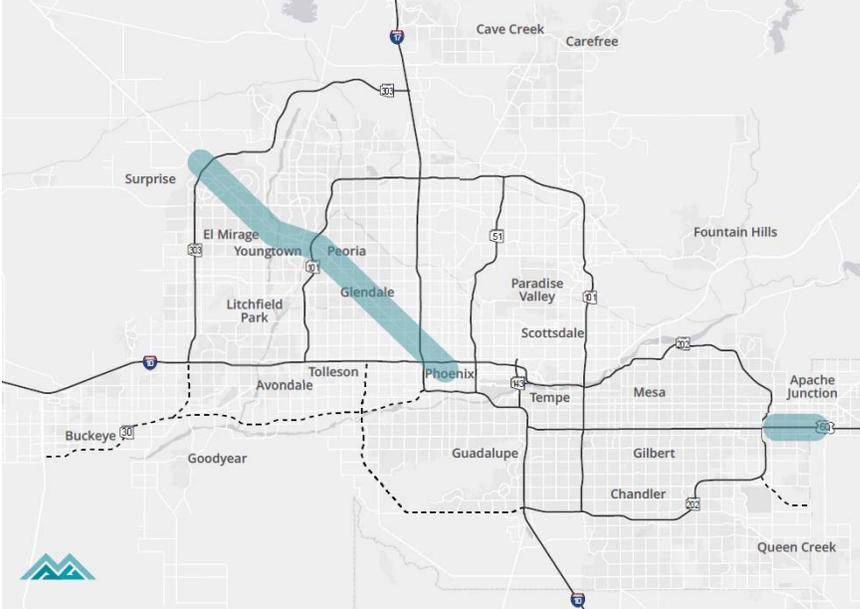
Sketch Capital Costs – Freeways/Highways



SR-303L
 Deferred interchange
 Deferred construction
 Right of way
Total: \$1.50 b

© 2020, All Rights Reserved.

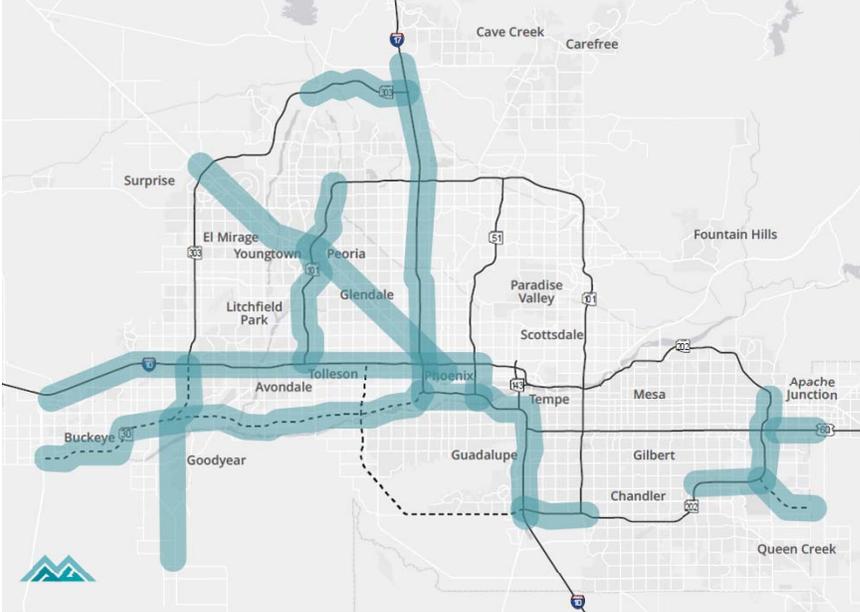
Sketch Capital Costs – Freeways/Highways



US-60
 Deferred improvements
 COMPASS study
Total: \$1.20 b

© 2020, All Rights Reserved.

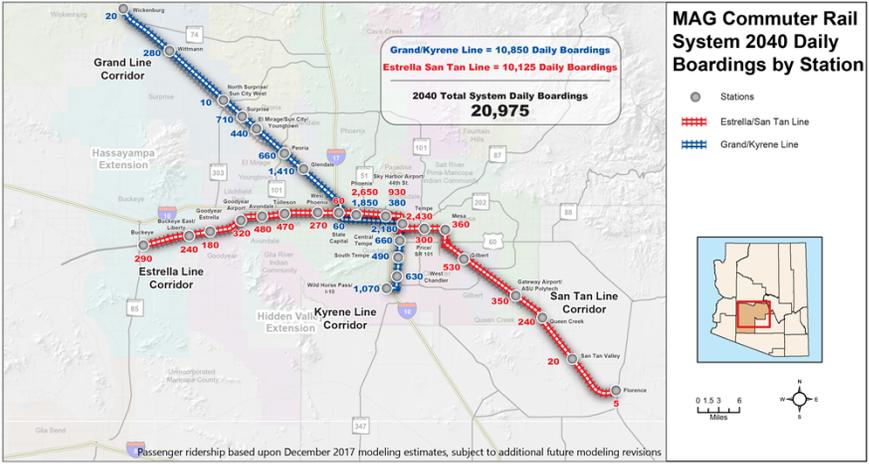
Sketch Capital Costs – Freeways/Highways



**Total Studied
 Freeway Needs**
\$14.40 b

© 2020, All Rights Reserved.

Sketch Capital Costs – Commuter Rail



Capital Costs: \$2.65 b
 Operating costs: \$0.7 b
Total: \$3.34 b



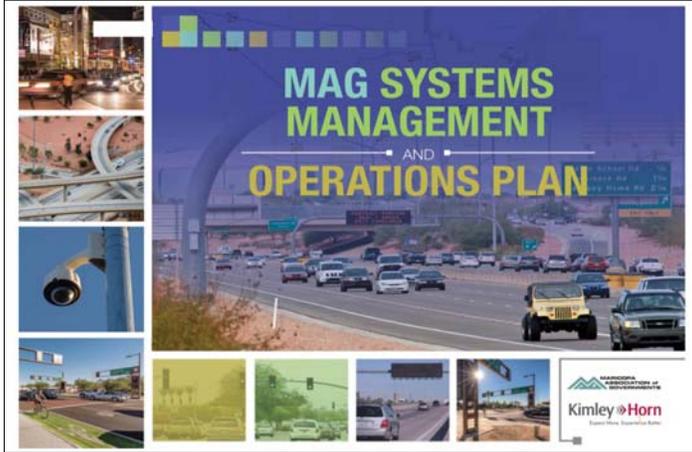
Sketch Capital Costs – Active Transportation



Projected costs: \$0.50 b



Sketch Capital Costs – SM&O (ITS)



Projected costs: \$0.63 b



Extension of Proposition 400

© 2020, All Rights Reserved.

Sketch Capital Costs – Light Rail and BRT

Light Rail Transit

- 26 miles = \$3.25 b

Bus Rapid Transit

- 50 miles = \$0.50 b



Source: Valley Metro



Extension of Proposition 400

© 2020, All Rights Reserved.

High Capacity Transit – Federal Capital Funds

- Federal discretionary grants traditionally fund a percent of high capacity transit projects (e.g., light rail, streetcar, bus rapid transit)
- Funding is awarded through a nationally-competitive program
 - Better-rated corridors are more likely to receive a higher contribution
 - Recent trends: 40 percent federal contribution
 - Approximately \$2.3 b appropriated nationwide each year



Source: Valley Metro



Extension of Proposition 400

© 2020. All Rights Reserved.



Summary: Sketch System Costs, Revenues

Sketch Costs

Studied Freeway Capital	\$14.40 b
Commuter Rail	\$3.34 b
Active Transportation	\$0.50 b
System Mgmt & Operations	\$0.63 b
Arterial O&M	\$2.84 b
Freeway O&M	\$7.00 b
Bus Transit	\$13.45 b - \$17.86 b
High Capacity Transit	\$7.07 b - \$11.66 b

Total **\$49.21 b - \$58.21 b**

Sketch Revenue Estimates (2025-2050)

Sales tax (half-cent)	\$14.94 b
ADOT funds	\$8.89 b
MAG federal funds	\$3.17 b
Transit funds*	\$2.06 b

Total **\$29.06 b**

*Transit federal discretionary funds \$1.82 b – \$4.28 b
 Total with discretionary \$30.88 b – \$33.34 b



Extension of Proposition 400

© 2020. All Rights Reserved.



Sketch Capital Costs



Technology \$?



Arterials Capital Improvements \$?



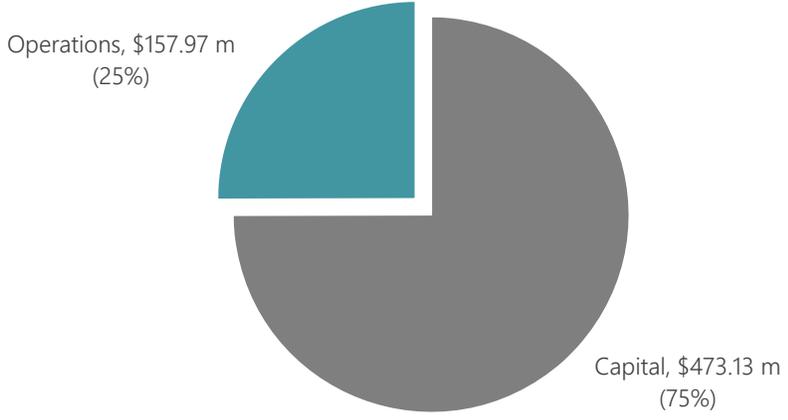
Safety \$?



Extension of Proposition 400

© 2020, All Rights Reserved.

Projected FY 2025 Half-Cent Collections: \$631.1 m



Extension of Proposition 400

© 2020, All Rights Reserved.