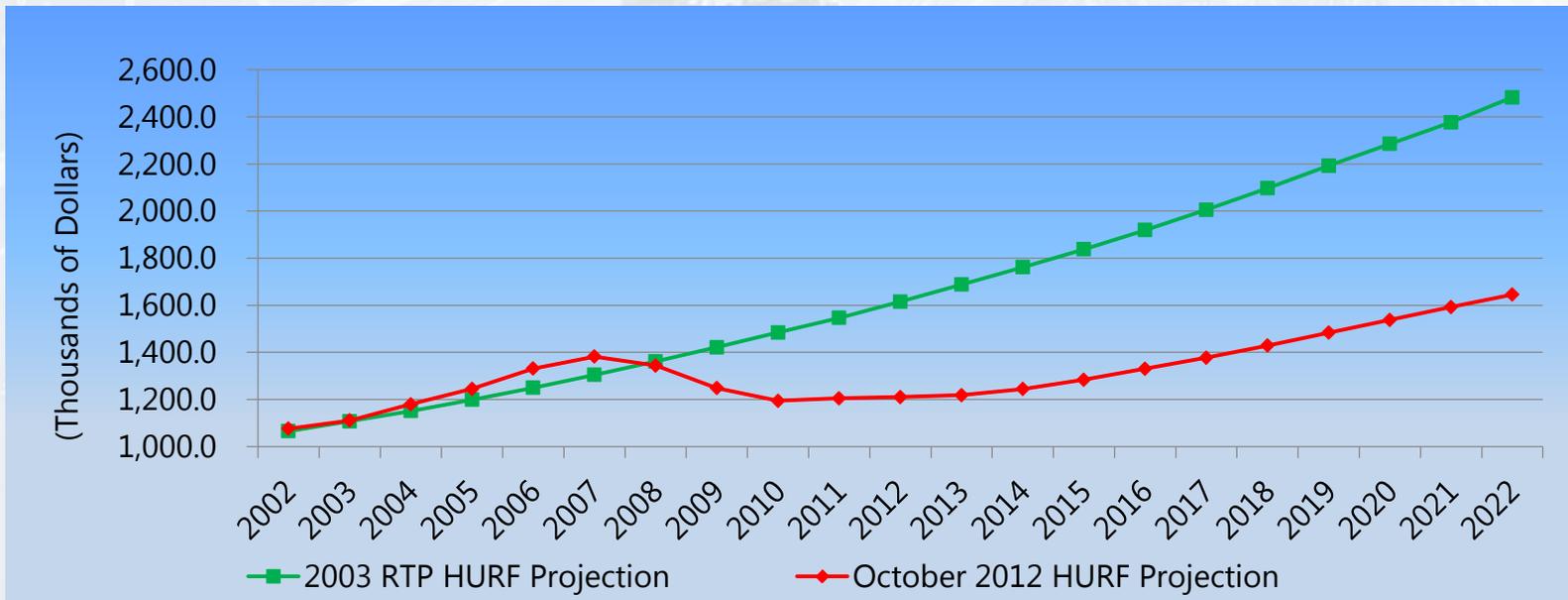
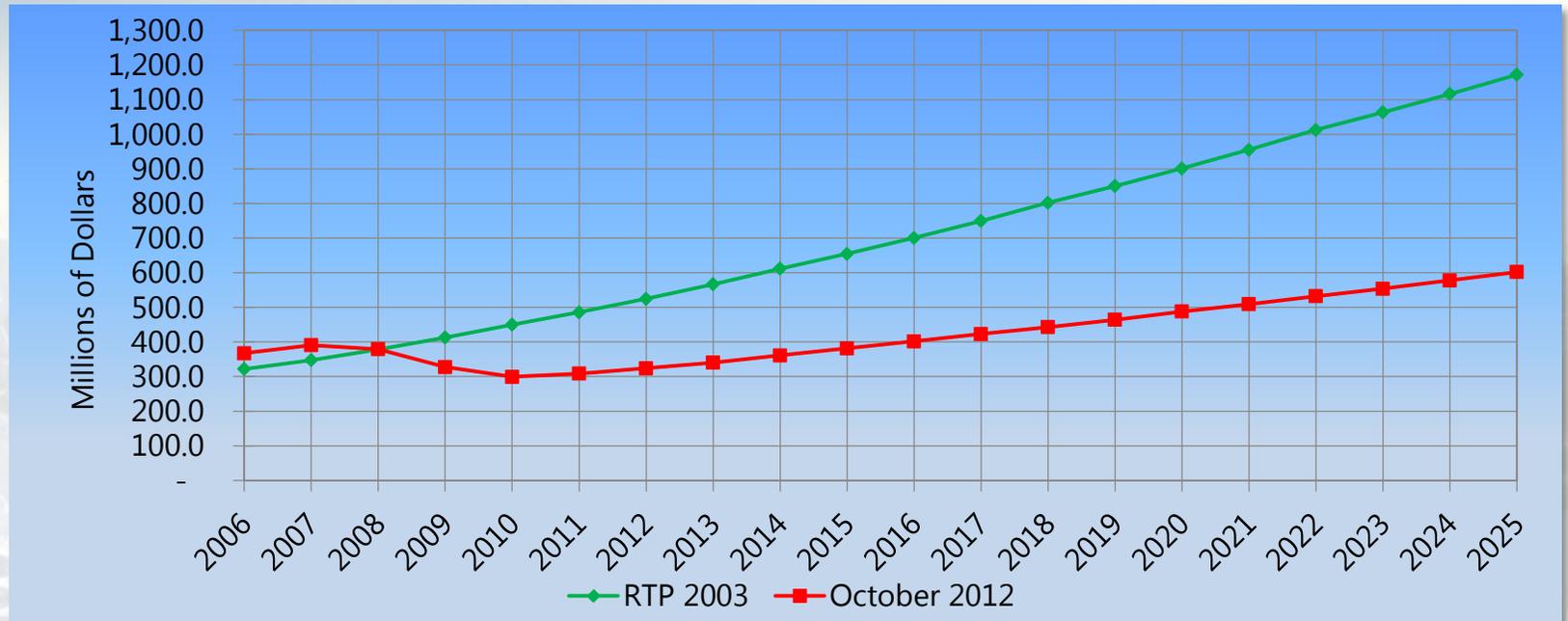


Overview of Regional Transportation Needs

Transportation Policy Committee
September 18, 2013



Sales tax revenues \$6.0 billion below 2003 forecast



Statewide HURF revenues \$7.5 billion below 2003 forecast

Current Bus Operations Plan

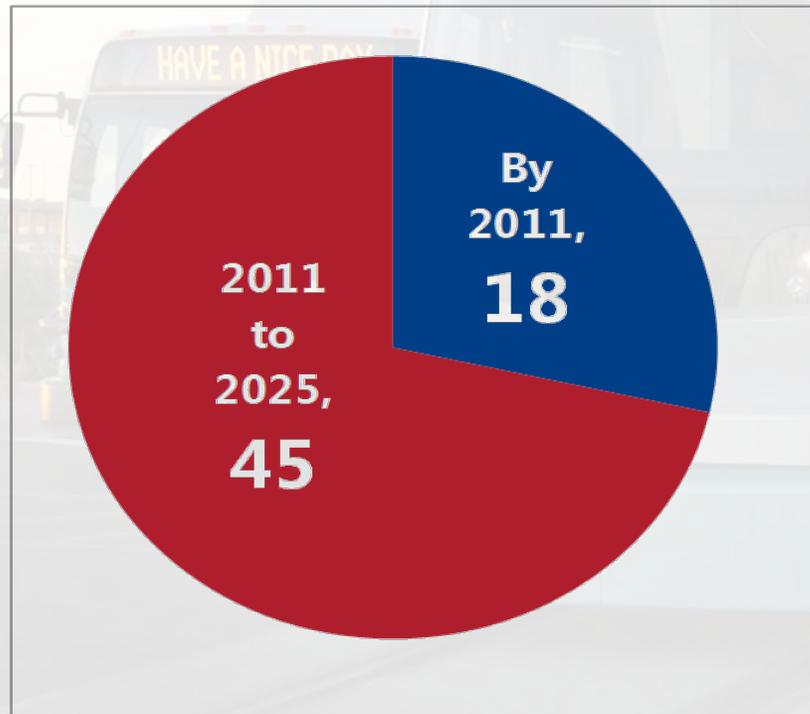
- **24 Supergrid routes (10 fewer than planned):**
 - Generally 15/30-minute headways on weekdays.
 - Many routes with reduced peak or limited extensions.
 - 30-minute headways on weekends.
- **14 Express routes (12 fewer than planned):**
 - Generally 4-8 round trips each on weekdays only.
 - Reverse commute trips eliminated.
 - Low productivity routes eliminated in 2010.
- **3 Arterial Bus Rapid Transit routes (2 fewer than planned):**
 - Faster service overlaid on Supergrid.
 - Generally 20-24 round trips on weekdays only.



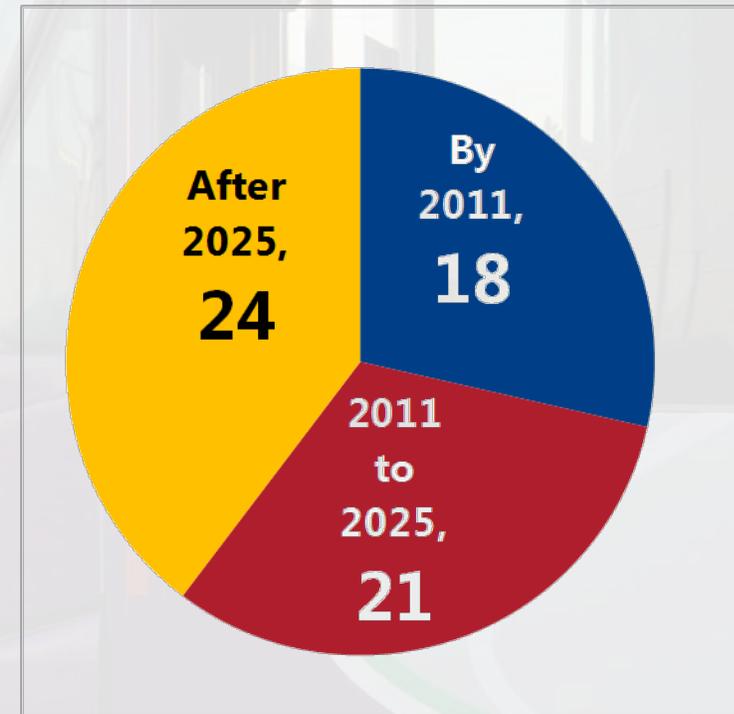
Impact of Funding Loss on BRT/Express and Grid Routes

8515

2003 Regional Transportation Plan



Current Transit Life Cycle Program



MAG Framework Studies



**Interstate 10/
Hassayampa
Valley
Roadway
Framework
Study**

**Interstates 8
and 10/
Hidden Valley
Transportation
Framework
Study**

**Regional
Transit
Framework
Study**

**Central
Phoenix
Transportation
Framework
Study**

**Hassayampa
Framework
Study for the
Wickenburg
Area**

**Freight
Transportation
Framework
Study**

**Sustainable
Transportation
and Land Use
Integration
Study**

Inform the Planning Process > MAG REGIONAL TRANSPORTATION PLAN

Background Planning and Issues

- More than **16 significant planning projects** with outcomes **consistent with current regional** thinking.
- Funding uncertainties.
- New **economic direction** with focus on freight and goods movement.
- Transit successes.
- Pending **operations and maintenance** needs.

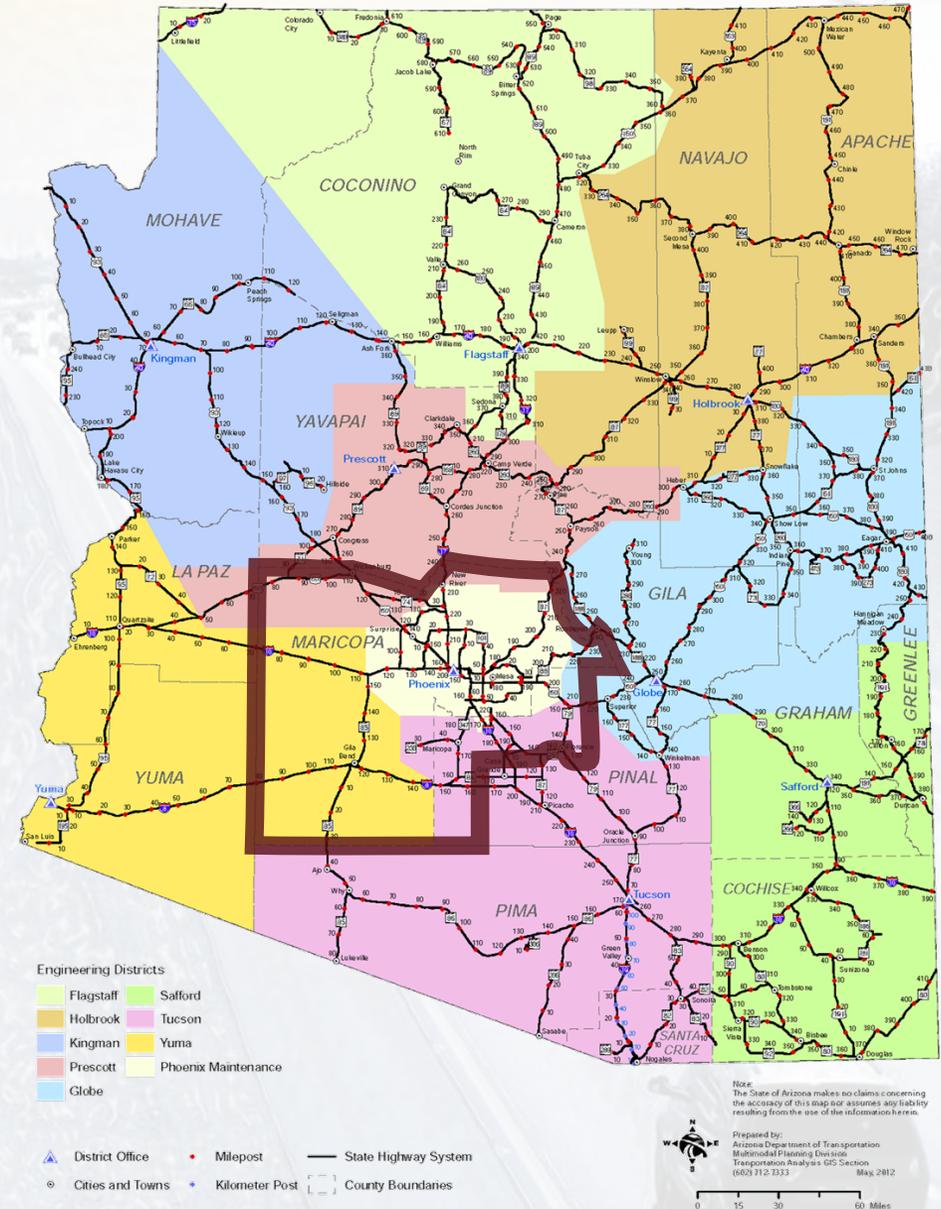


MAG Region ADOT Districts

District	Lane-Miles	Percent
Globe	70	1%
Phoenix*	4,900	70%
Prescott	375	5%
Tucson	635	9%
Yuma	1,020	15%
Total	7,000	100%

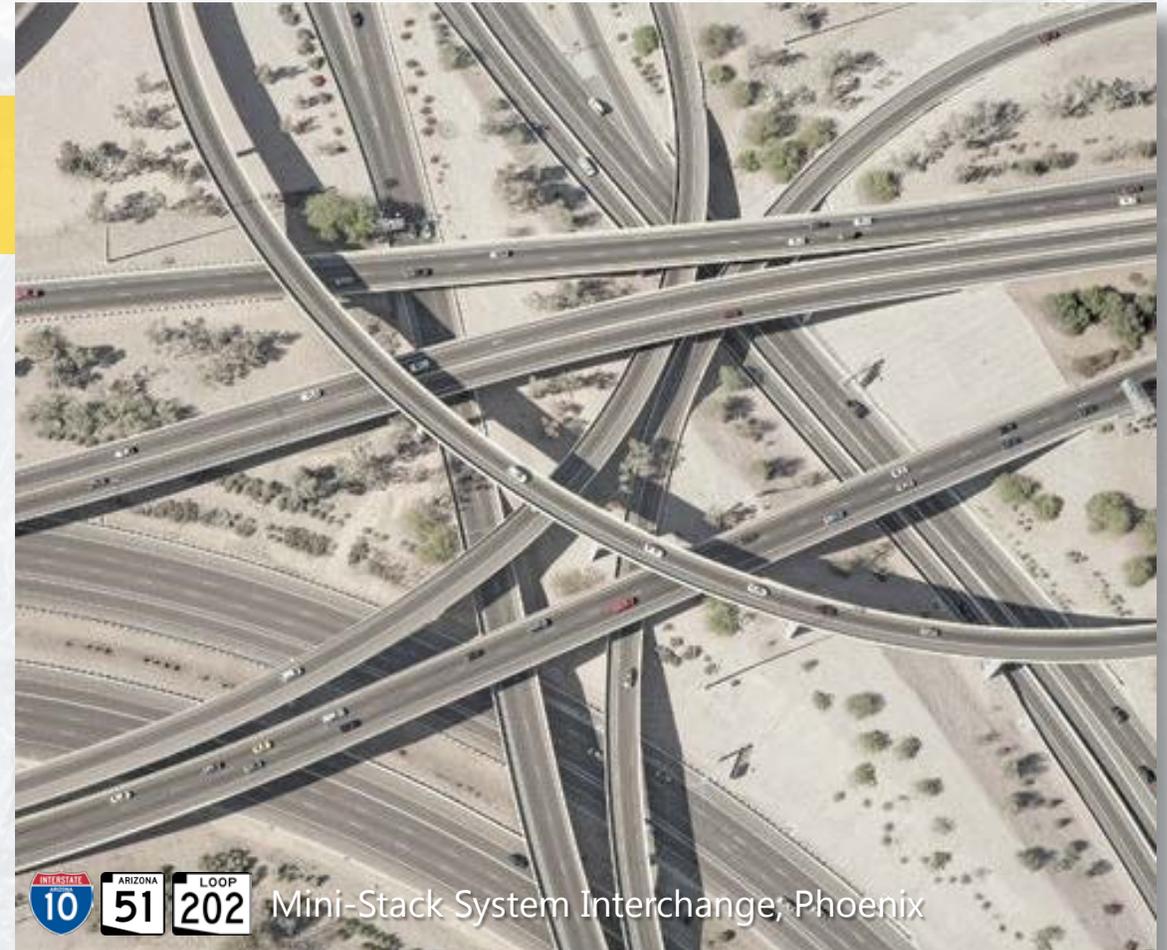
*ADOT Phoenix is divided into Engineering and Maintenance Districts.

ADOT Engineering and Maintenance Districts with State Milepost System



Operations and Maintenance “Bubble”

- ADOT Phoenix Maintenance District facts:
 - **4,900 lane-miles of roadway**
 - **877 bridges**
 - 109 miles of drainage channels
 - 150 miles of sound walls
 - 70 pump stations/245 pumps
 - 174 miles of freeway management
 - 108 dynamic message signs
 - 193 cameras
 - 220 miles of freeway landscaping maintenance
 - 167 traffic signals/215 ramp meters
 - 13,231 luminaries for street lights



ADOT Roadways within MAG Region

890

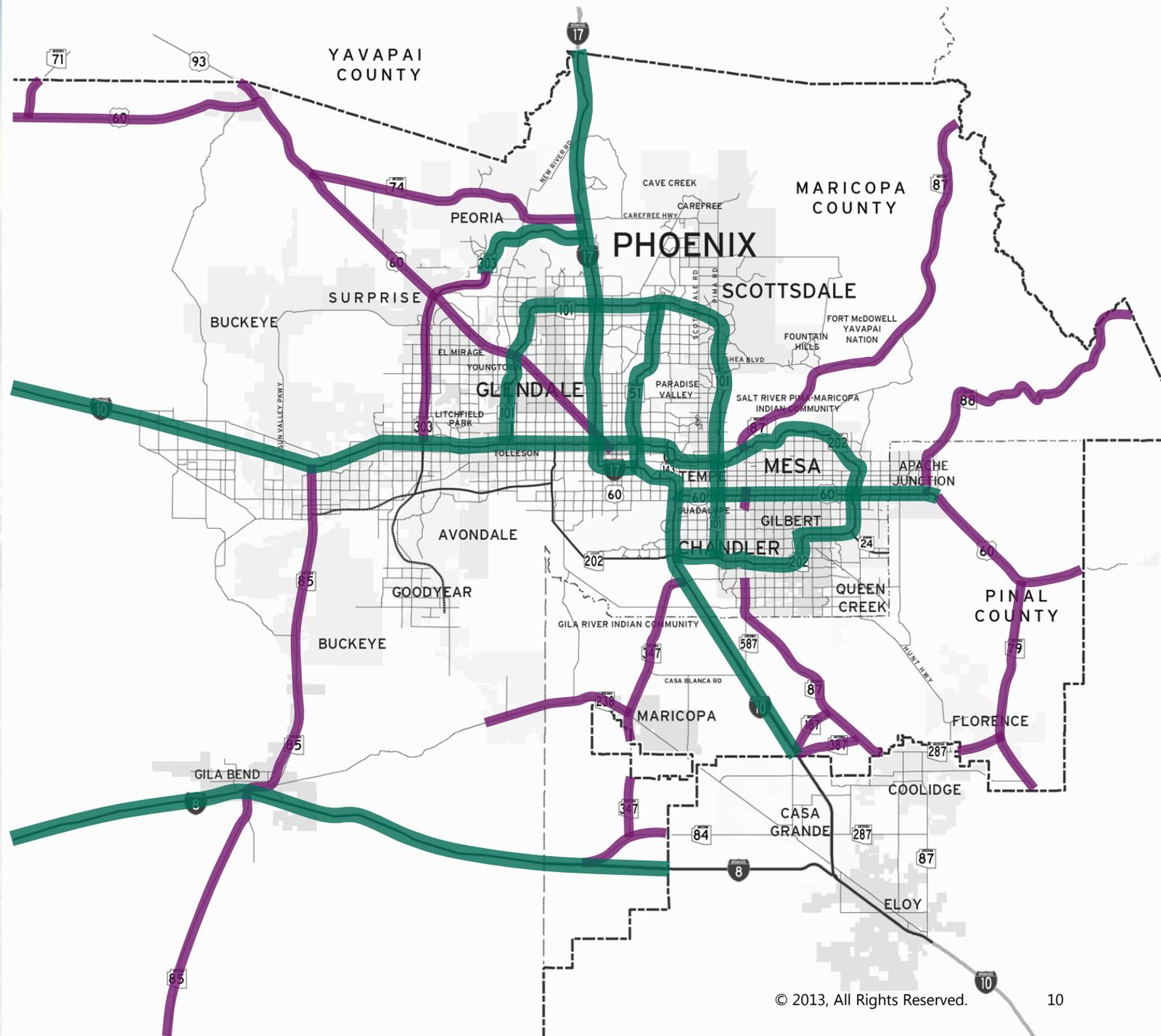
Center-Line Miles

445

Freeway Miles

445

Highway Miles

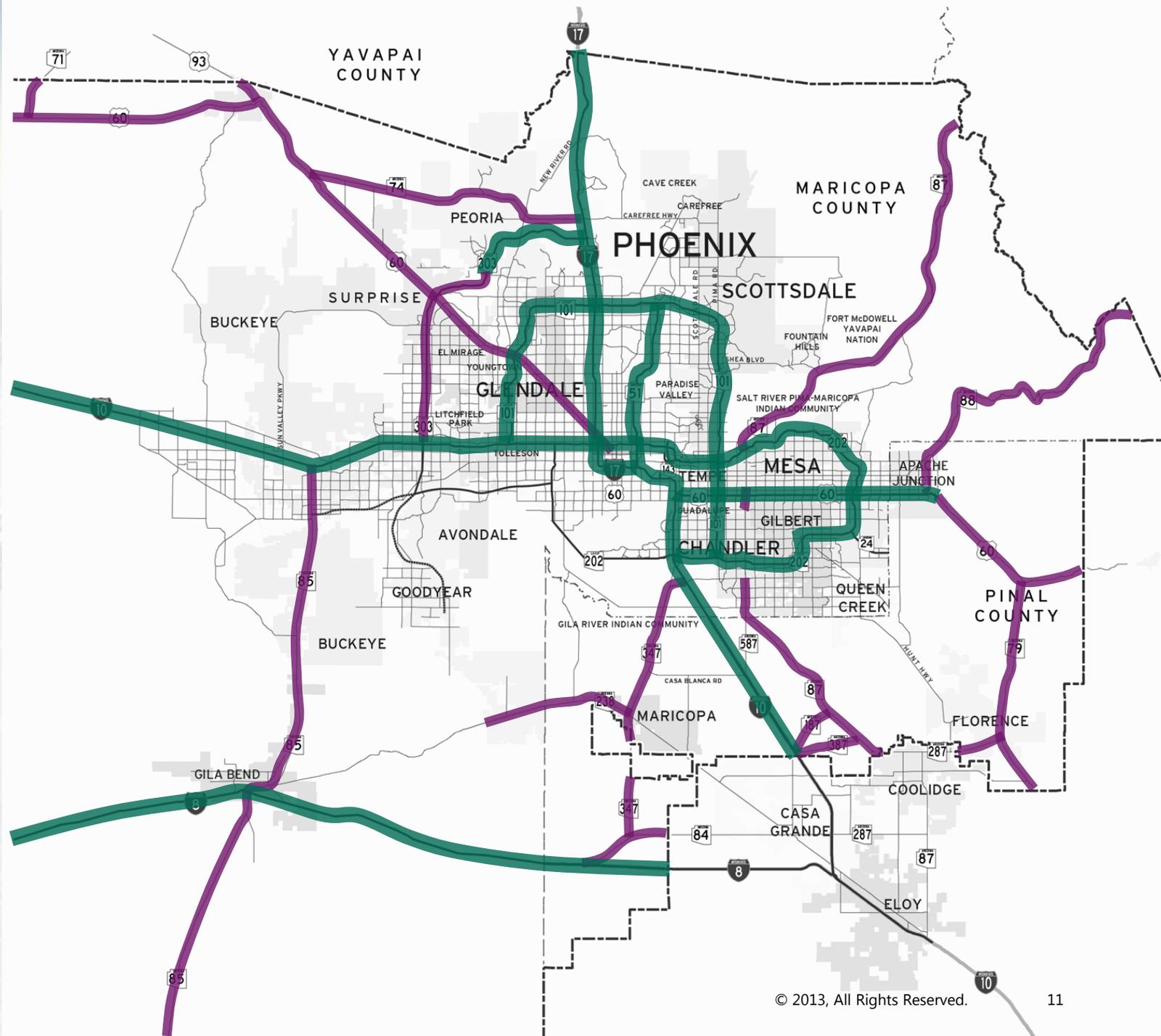


ADOT Roadways within MAG Region

7,000
Lane-Miles

5,300
Freeway Lane-Miles

2,700
Highway Lane-Miles



ADOT Roadways within MAG Region

\$80.8 million

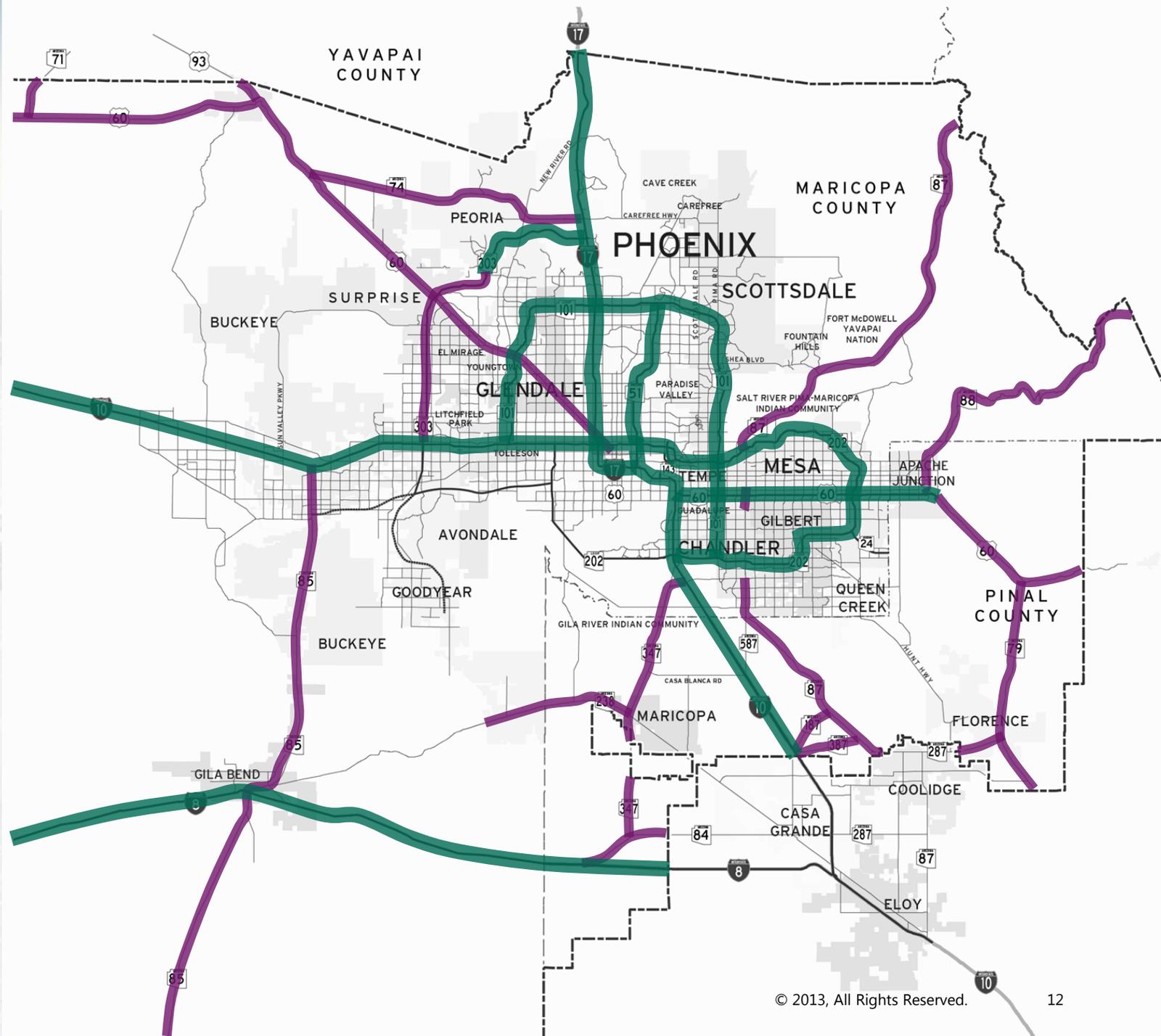
Annual Operations and Maintenance Costs

\$67.4 million

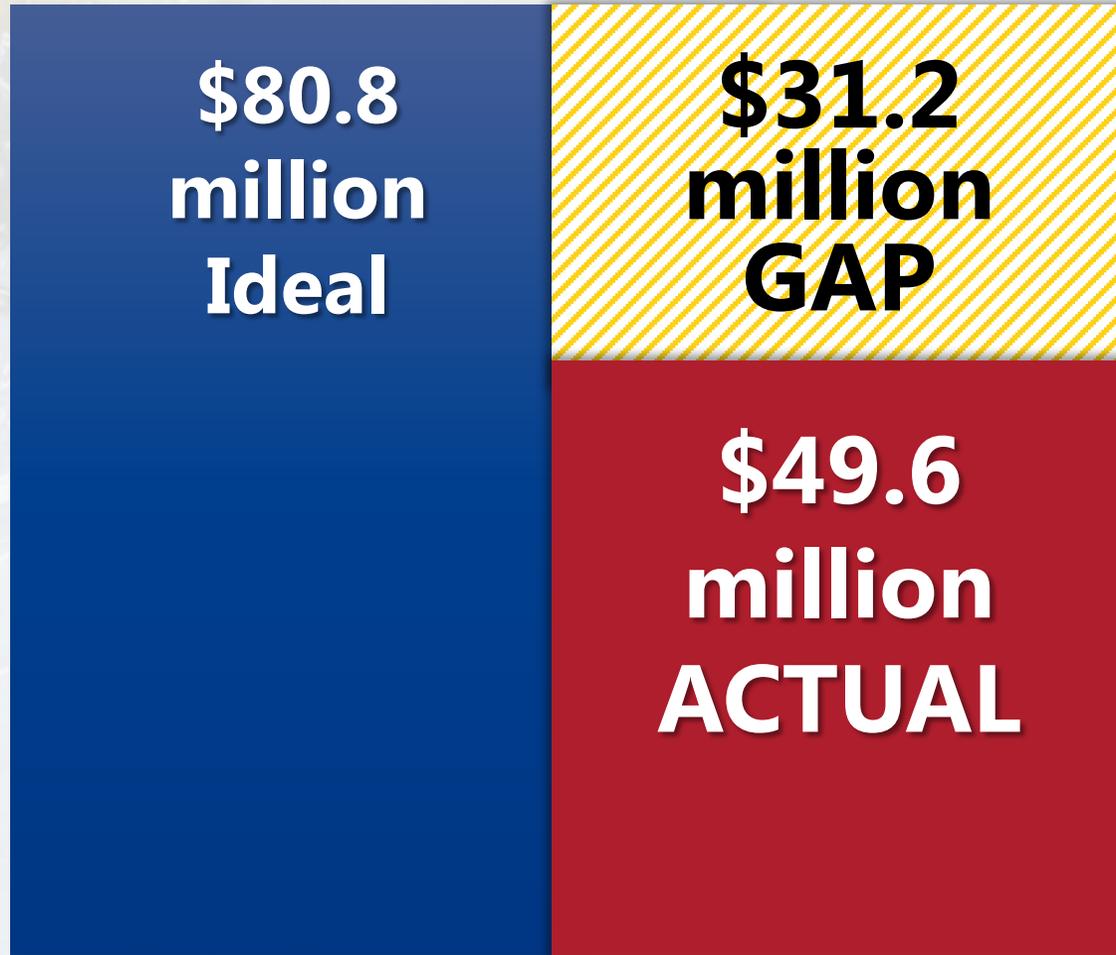
Fwy Operations and Maintenance Costs

\$13.4 million

Hwy Operations and Maintenance Costs

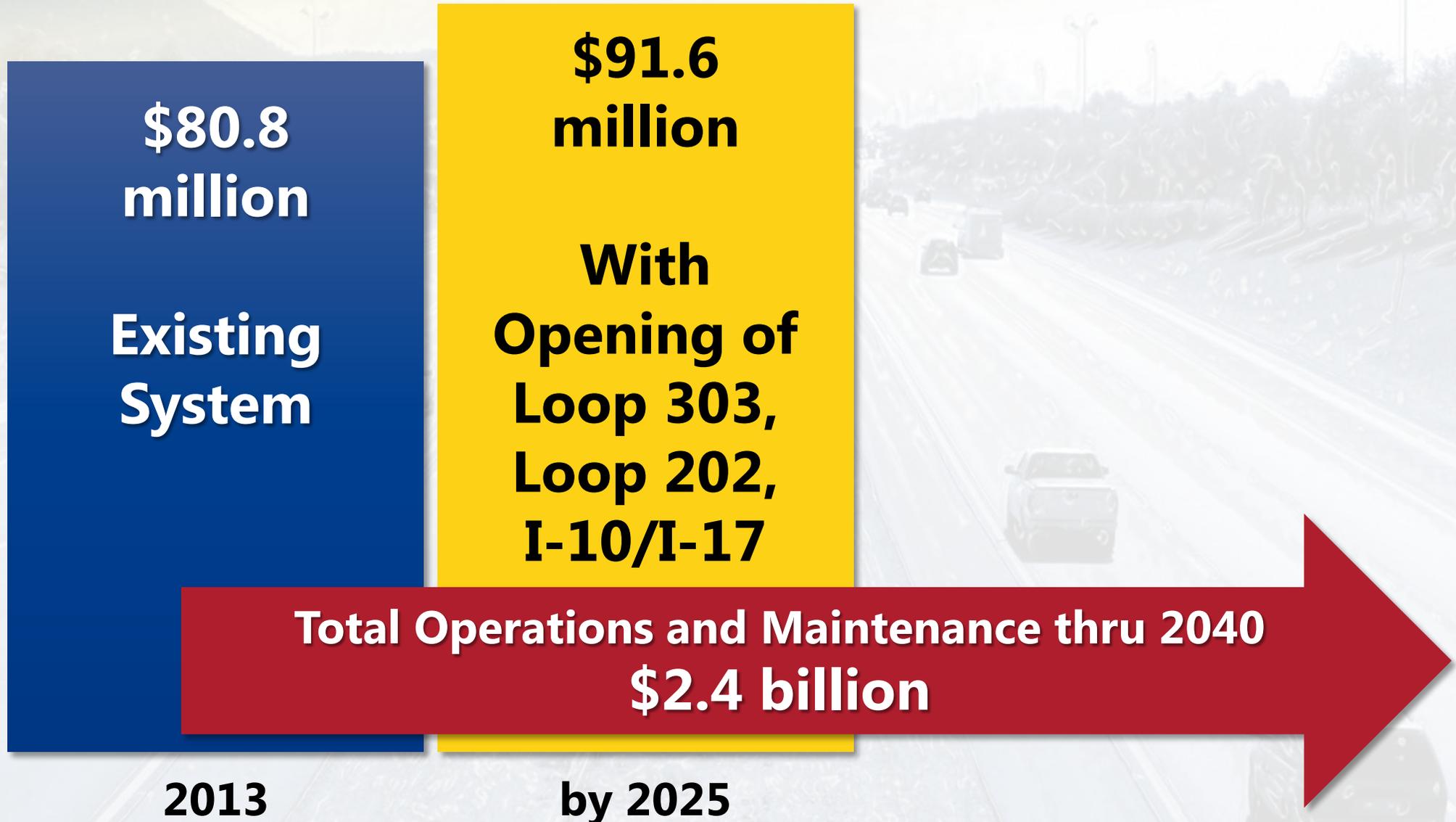


2013 Operations and Maintenance Costs



- Pavement Preservation (not Quiet Pave).
- Bridge Scour and Deck Maintenance.
- Drainage/Pumps.
- Deck Park Tunnel.
- Lighting.
- Traffic Operations.
- Litter/Graffiti.
- Signs, Signals, and Striping.

Operations and Maintenance Costs with New Corridors



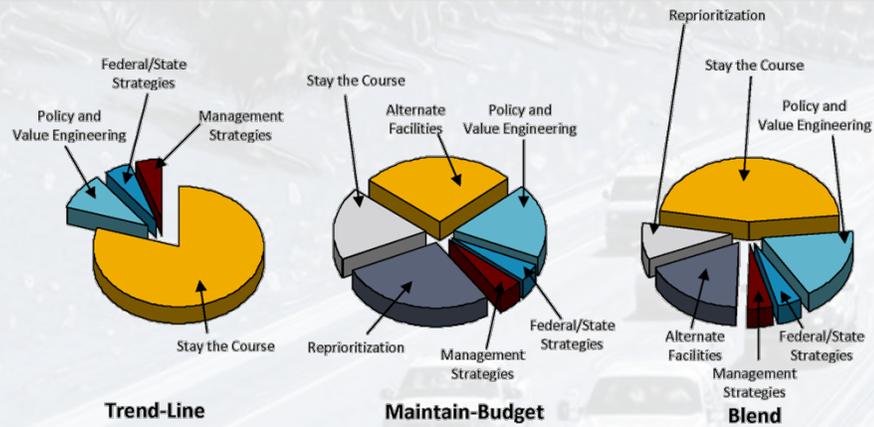
“Big Budget” Maintenance Items

By 2040:

- Quiet Pavement Replacement – up to **three applications**.
- Interstate 10/Interstate 17 traffic interchange - “The Stack” - structure rehabilitation and deck replacement.
- Deck Park Tunnel Maintenance.
- Pump Replacement and Rehabilitation.



Rough Estimate - \$1.0 billion



Projects deferred to Phase V 2026-2031

Regional Freeway and Highway Program

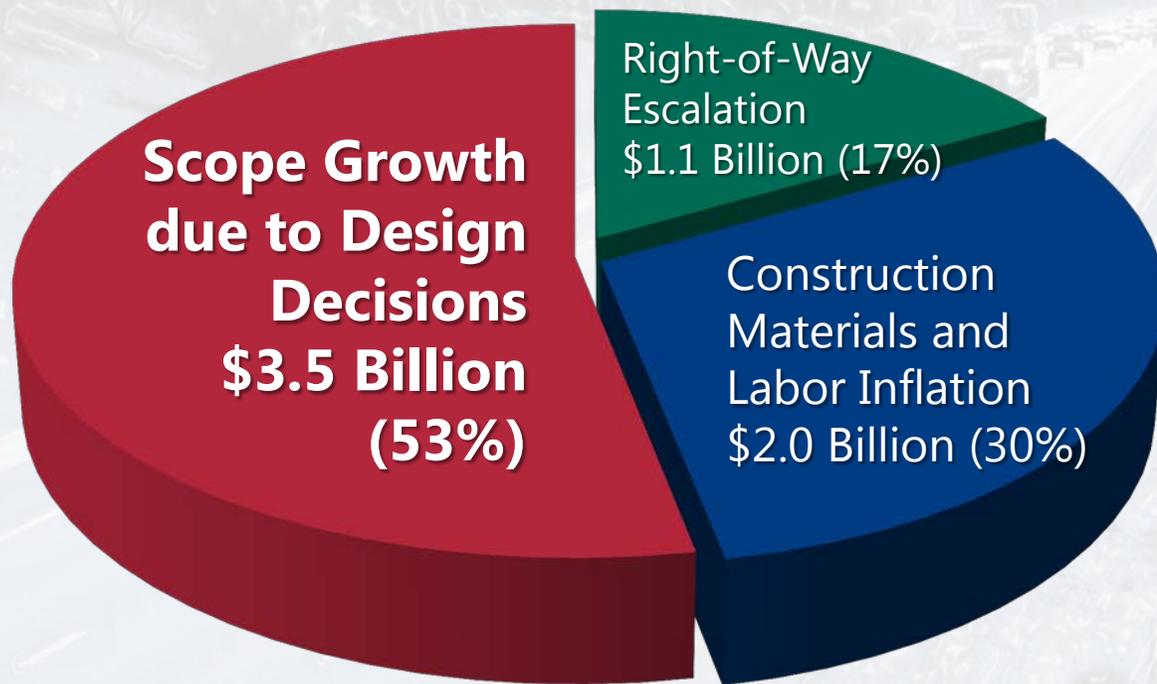
Phase V Projects

REGIONAL FREEWAY AND HIGHWAY PROGRAM

Improvements	Cost Opinion
New Freeway Corridors SR-24 and SR-30	\$1,400 million
Add GP Lanes I-10, I-17, SR-51, Loop 101, Loop 202 and Loop 303	\$1,100 million
Add HOV Lanes I-17	\$25 million
New DHOV and Service Interchanges	\$200 million
ROW Protection SR-74 and Loop 303	\$80 million
Operations and Maintenance for Phase V Projects	\$650 million
	\$3.5 billion

Deferral Differences

BETWEEN 2009 AND 2012 APPROXIMATELY \$7 BILLION WAS DEFERRED

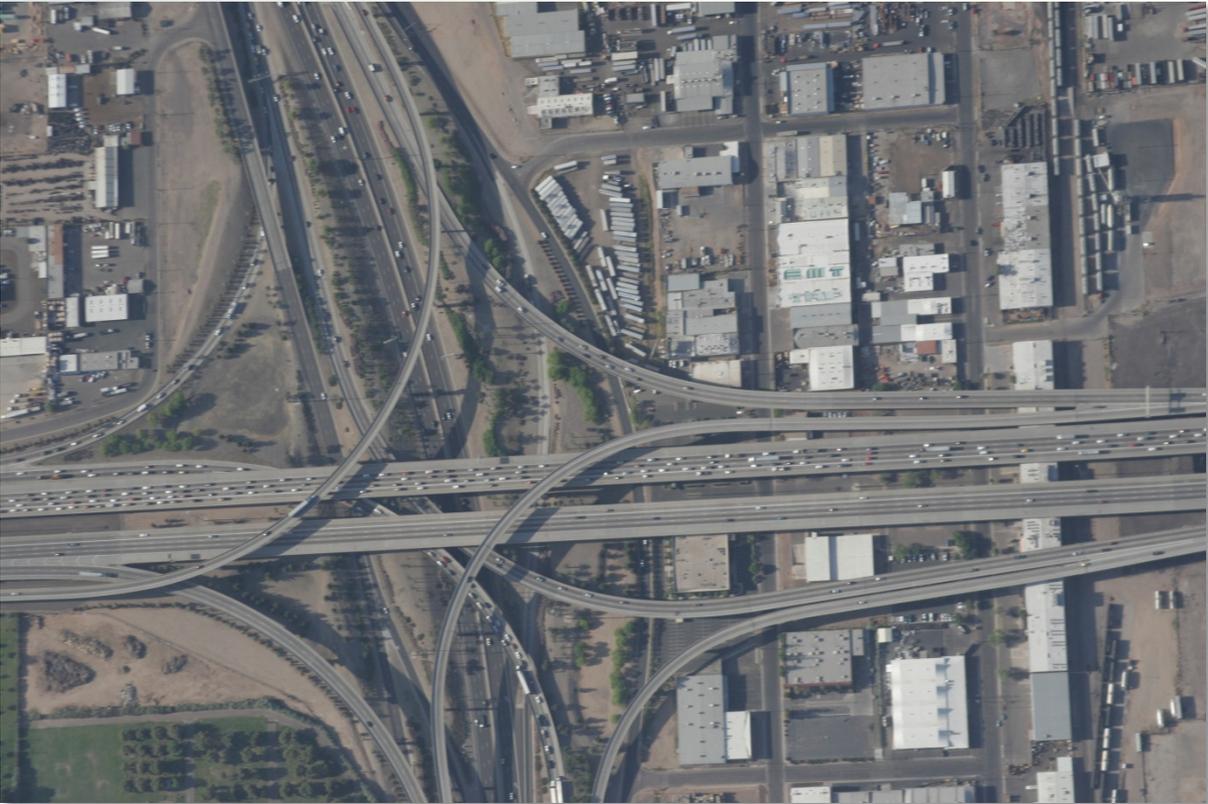


Total Cost Overruns - \$6.6 Billion

Item	Savings
Loop 202/South Mountain	\$700 million
Loop 303	\$1,300 million
Construction Bids under Engineer Estimates	\$237 million
ARRA Funded Projects	\$130 million
Design Decisions	\$11 million
Program Recommendations	\$1,800 million
	\$4.2 billion

Math Check:
 \$7.0 Billion Deferred
 - \$2.8 billion in Phase V Construction

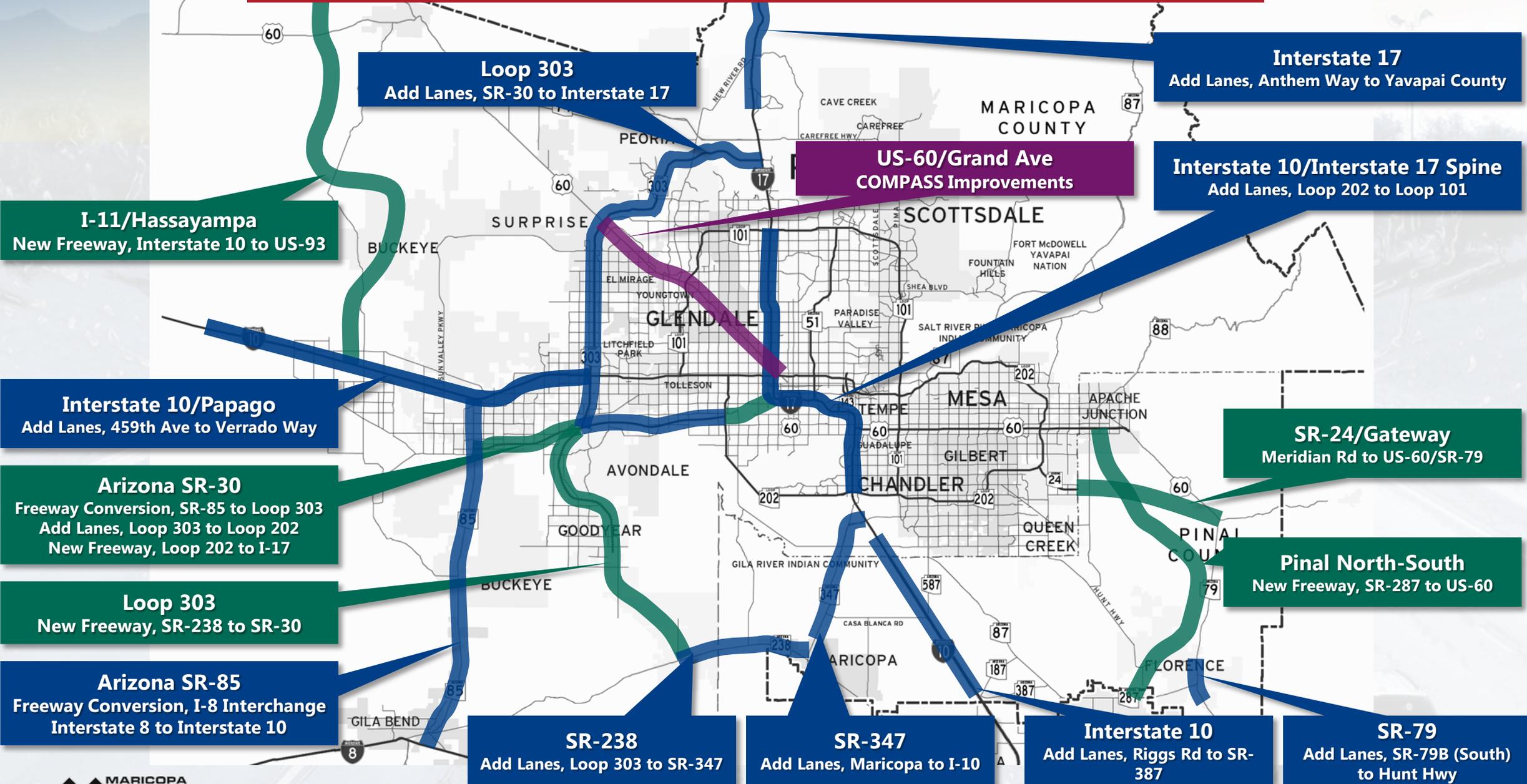
\$4.2 billion difference



Illustrative Projects 2032-2040

Regional Freeway and Highway Program

REPRESENTATIVE PROJECTS FOR PRESENTATION PURPOSES ONLY.
 Final determination will be completed with the fiscally-constrained NexGen Regional Transportation Plan.



Illustrative Projects

REGIONAL FREEWAY AND HIGHWAY PROGRAM

Improvements	Cost Opinion
New Freeway Corridors Interstate 11, SR-24, SR-30, Loop 303, Pinal North-South	\$5,500 million
Add Lanes I-10, I-17, SR-79, SR-85, SR-238, Loop 303, SR-347	\$1,900 million
New DHOV and Service Interchanges Unspecified; up to 12 locations	\$300 million
US-60/Grand Ave COMPASS Operational and Access Management Improvements	\$500 million
Operations and Maintenance for Illustrative Projects	\$500 million
	\$8.7 billion

Needs Summary

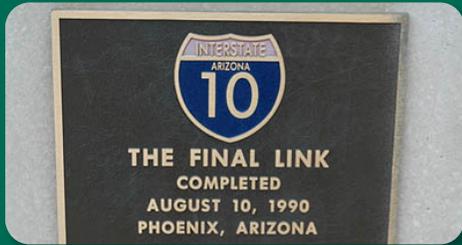
REGIONAL FREEWAY AND HIGHWAY PROGRAM

Category	Cost Opinion
Phase V Projects (2026-2031) Deferred Projects from 2009 and 2012	\$3.5 billion*
Illustrative Projects (2032-2040) Interstate 11, Pinal North-South, SR-24, SR-30, SR-85	\$8.7 billion*
Annual Operations and Maintenance 2025 System thru 2040	\$2.4 billion
Large Maintenance Projects Quiet Pavement Preservation, The Stack, Deck Park Tunnel	\$1.0 billion
	\$15.6 billion

*Includes Operations and Maintenance for that project phase.

Potential Highway Revenue Sources

Projected 2025 to 2040



Federal Highway Funds

- MAG STP and MAG CMAQ

**\$200
million**



ADOT Funds

- Includes Highway Users Revenue Fund (HURF) and Federal Aid

**\$5.7
billion**



Regional Area Roadway Fund (RARF)

- Half Cent Sales Tax

**\$7.8
billion**

Transit Deficiencies

Transit Demand Exceeding Capacity

Capital Deficiencies

New Transit Investments = Funding

Limited Service Expansion

Safe & Convenient Services

Congested Roadways

Project Eligibility for Federal Funds

Unserved Developed Areas

Unserved Growth Areas

Broadly Dispersed Employment

Needs

New/Expanded Transit Improvements

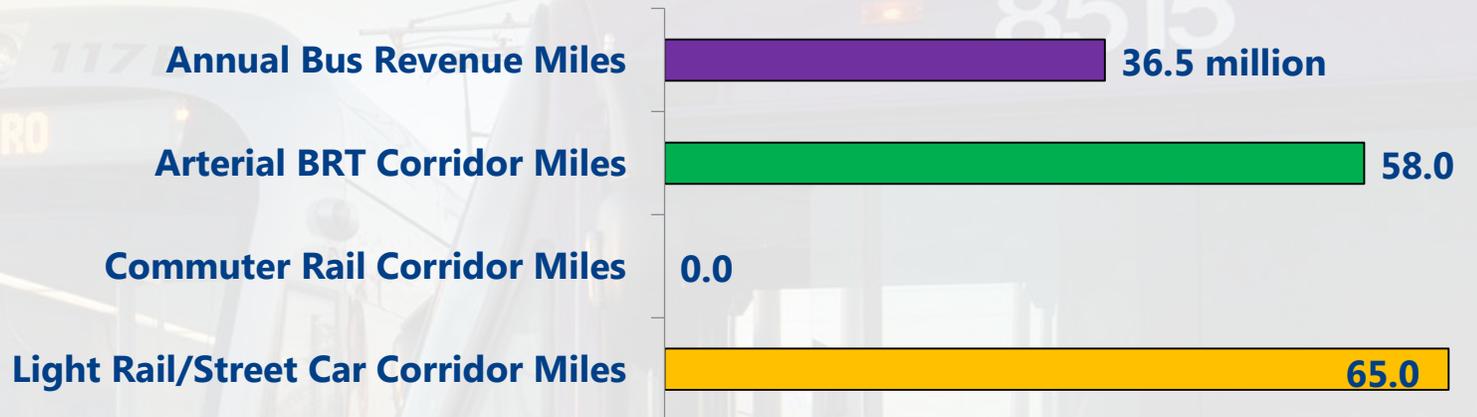
New Service Corridors

New Revenue Sources

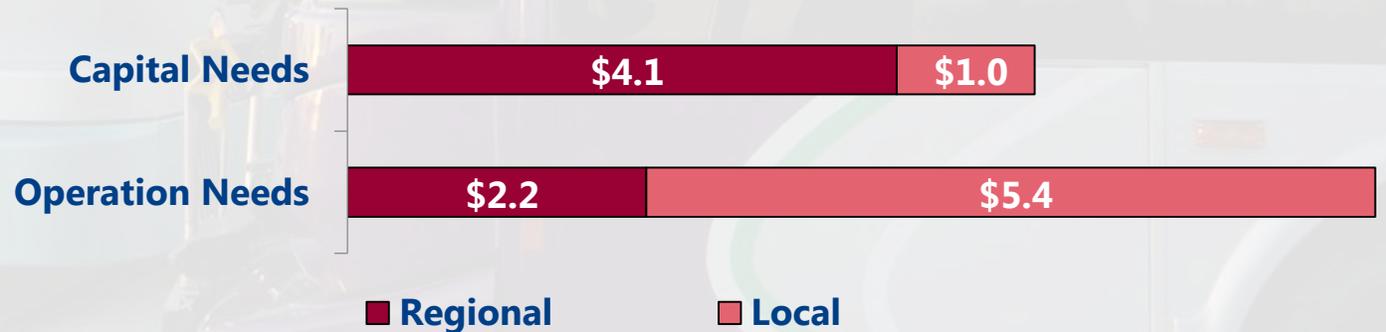
Higher Speed Travel Opportunities

Base Case

- Collection of routes.
- Fragmented Service Frequencies.
- Operation Costs for Regional Services Burden on Local Cities.

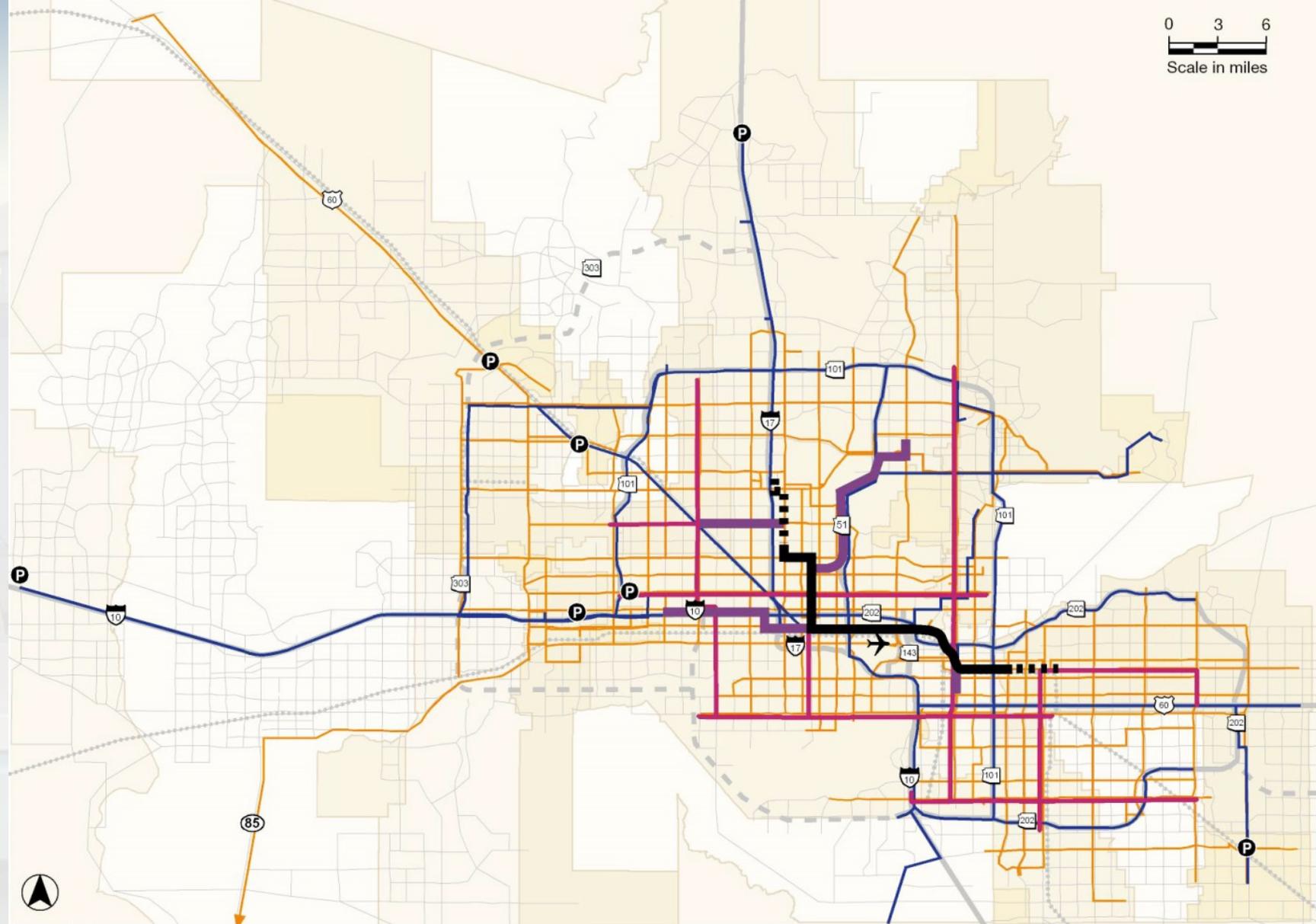


Base Case Total: \$12.7 billion
Regional Share: \$6.3 billion



Scenario 1

- Minimal service expansion: Many deficiencies not addressed.
- Shifts Light Rail operation costs to regional service.
- New Express routes and increase frequencies (32 to 192 trips) for select express routes.

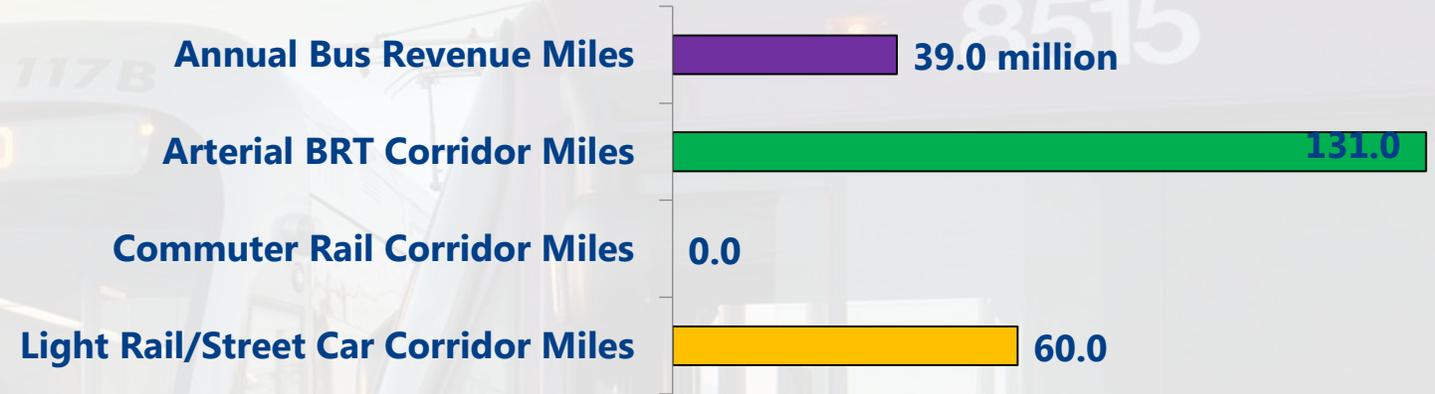


LEGEND

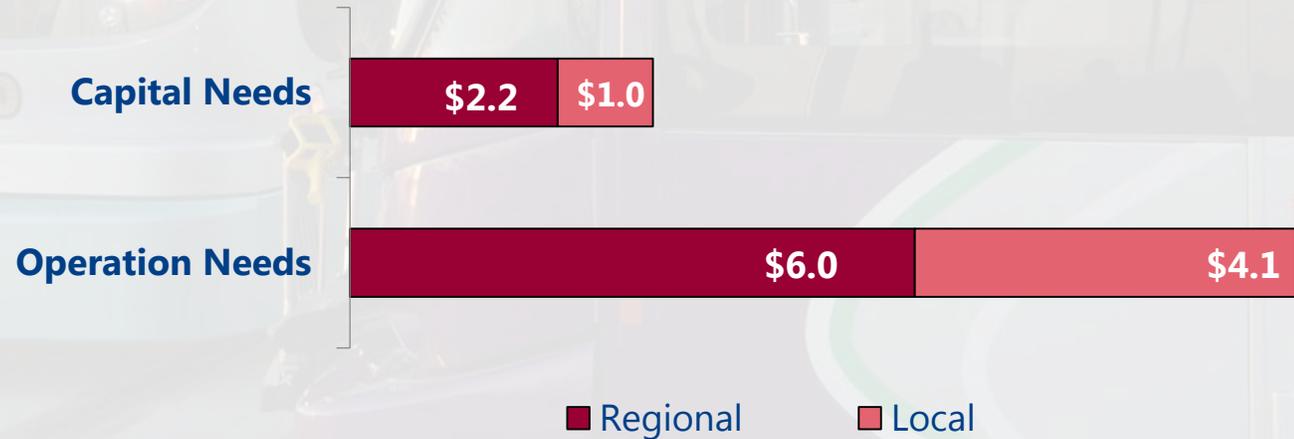
Existing and Planned Transit Service and Facilities	Freeways/Expressways	Express Bus
Light Rail Line	Existing	Regional Supergrid Bus
Light Rail Extension	Planned	Arterial Bus Rapid Transit (New or Expanded Service)
Future High Capacity Transit Corridors		New or Expanded Park-and-Ride Facility

Scenario 1

- Minimal service expansion: Many deficiencies not addressed.
- Shifts Light Rail operation costs to regional service.
- New Express routes and increase frequencies (32 to 192 trips) for select express routes.

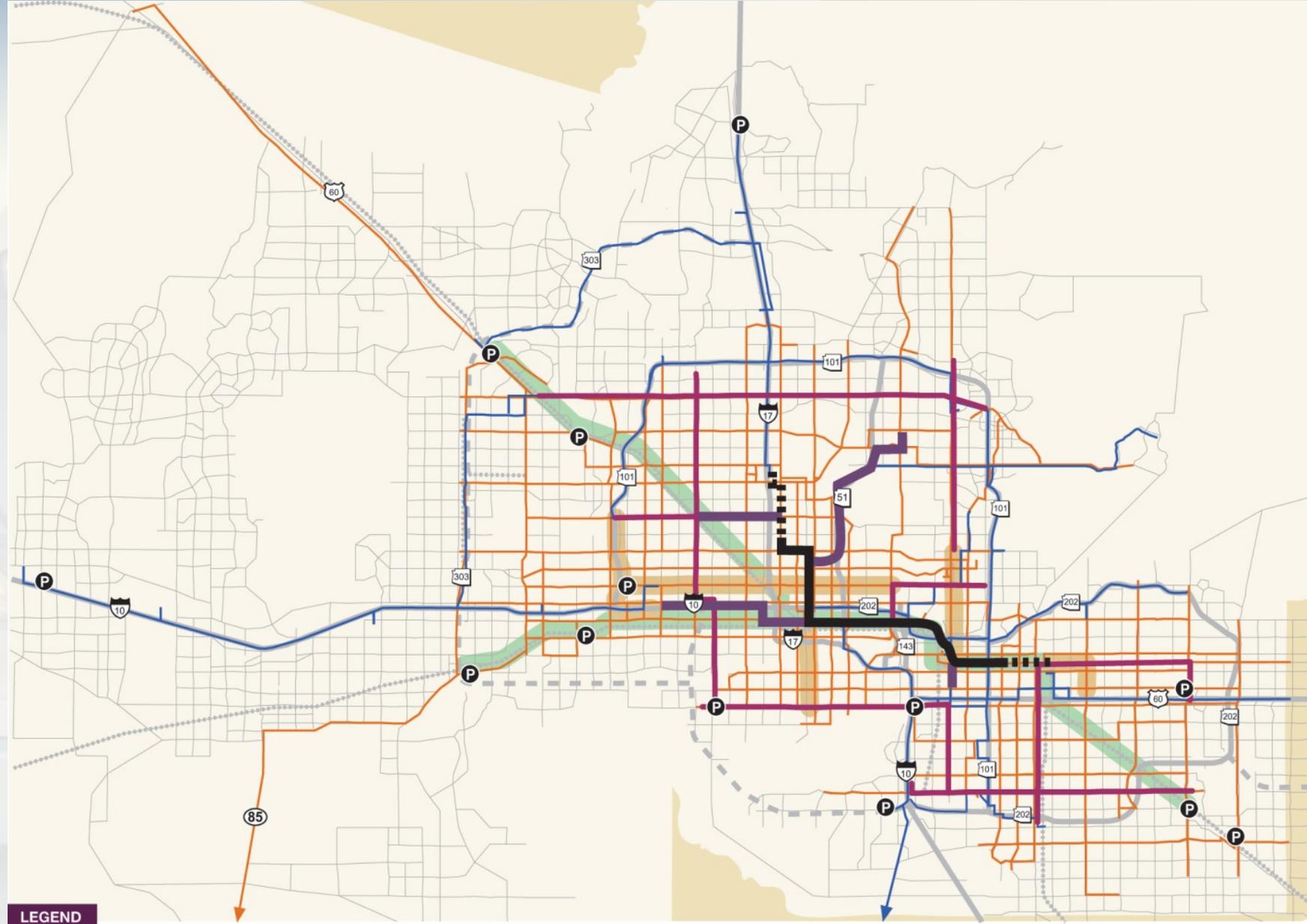


Scenario 1 Total: \$13.3 billion
Regional Share: \$8.2 billion



Scenario 2

- Higher speed options: Express, Bus Rapid Transit, Light Rail and Commuter Rail.
- Improves regional transit service levels.
- Suburban activity centers connected by frequent express routes.
- Peer Region: Denver.



LEGEND

Existing and Planned Transit Service and Facilities

- Light Rail Line
- Light Rail Extension
- Future High Capacity Transit Corridors

Freeways/Expressways

- Existing
- Planned

New High Capacity Transit

- All Day Service
- Peak Service

Arterial Bus Rapid Transit (New or Expanded Service Level)

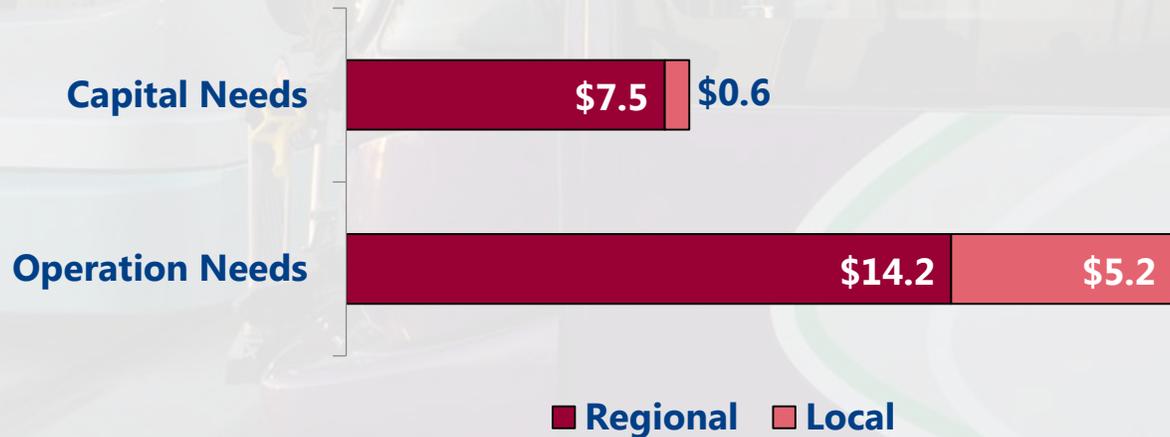
- Express Bus
- Regional Supergrid Bus
- New or Expanded Park-and-Ride Facility

Scenario 2

- Higher speed options: Express, Bus Rapid Transit, Light Rail and Commuter Rail.
- Improves regional transit service levels.
- Suburban activity centers connected by frequent express routes.
- Peer Region: Denver.

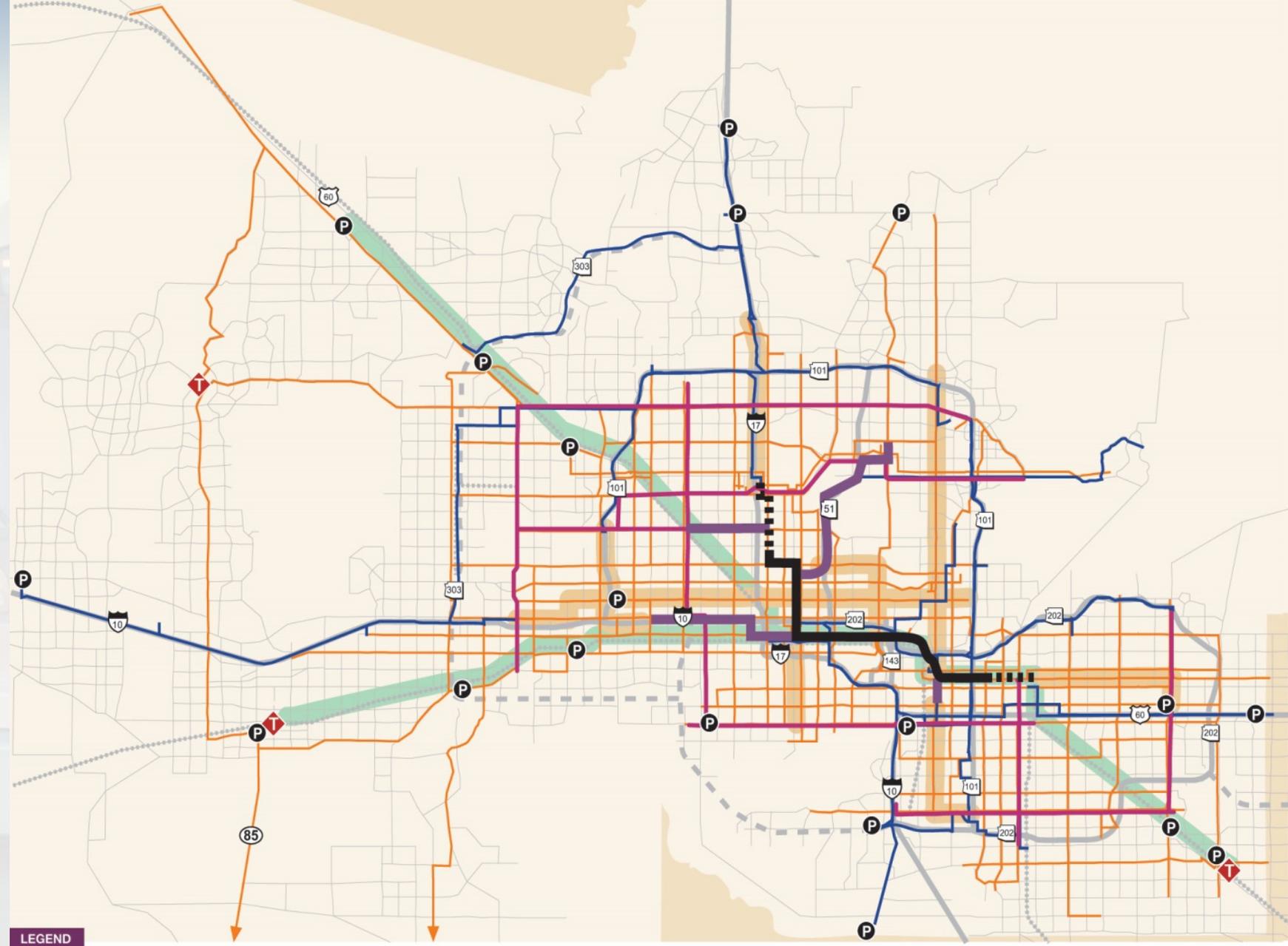


Scenario 2 Total: \$27.5 billion
Regional Share: \$21.7 billion



Scenario 3

- Provides a comprehensive regional transit system.
- Nearly all deficiencies are addressed.
- Most aggressive service expansion with many of high speed options.
- Peer Regions: Seattle and Salt Lake City.



LEGEND

Existing and Planned Transit Service and Facilities

- Light Rail Line
- Light Rail Extension
- Future High Capacity Transit Corridors

Freeways/Expressways

- Existing
- - - Planned

New High Capacity Transit

- All Day Service
- Peak Service

Arterial Bus Rapid Transit

- Express Bus
- Regional Superbus

New or Expanded Park-and-Ride Facility

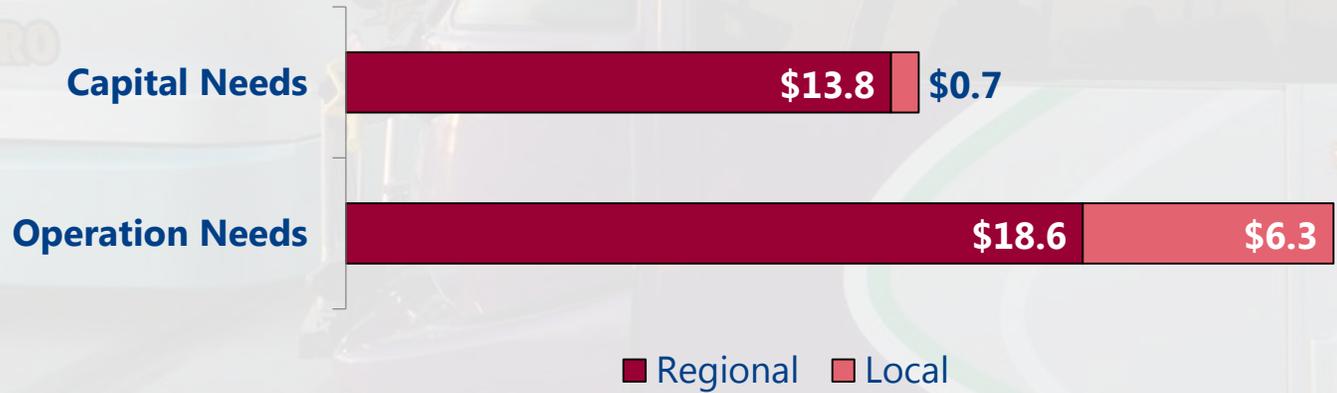
- Ⓟ New or Expanded Transit Center

Scenario 3

- Provides a comprehensive regional transit system.
- Nearly all deficiencies are addressed.
- Most aggressive service expansion with many of high speed options.
- Peer Regions: Seattle and Salt Lake City.

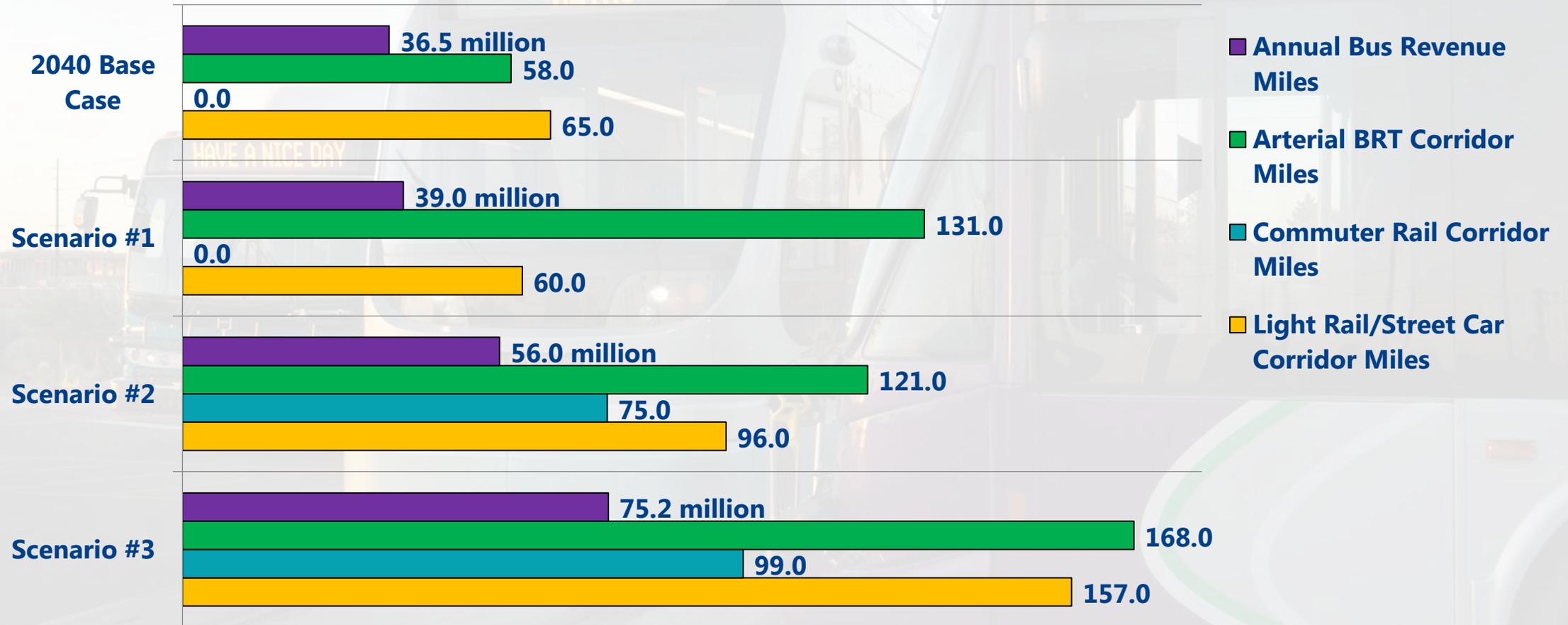


Scenario 3 Total: \$39.4 billion
Regional Share: \$32.4 billion

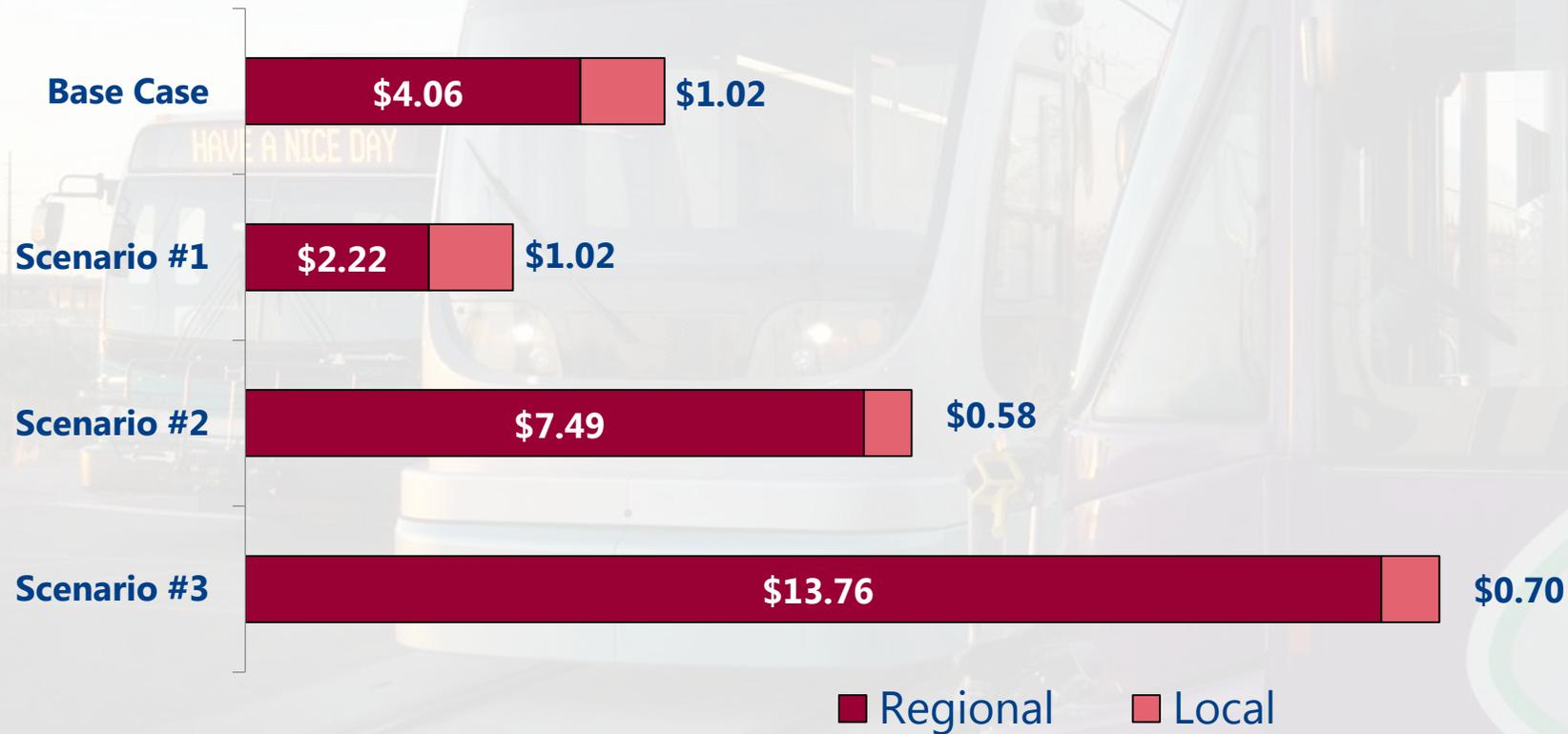


Transit System Summary

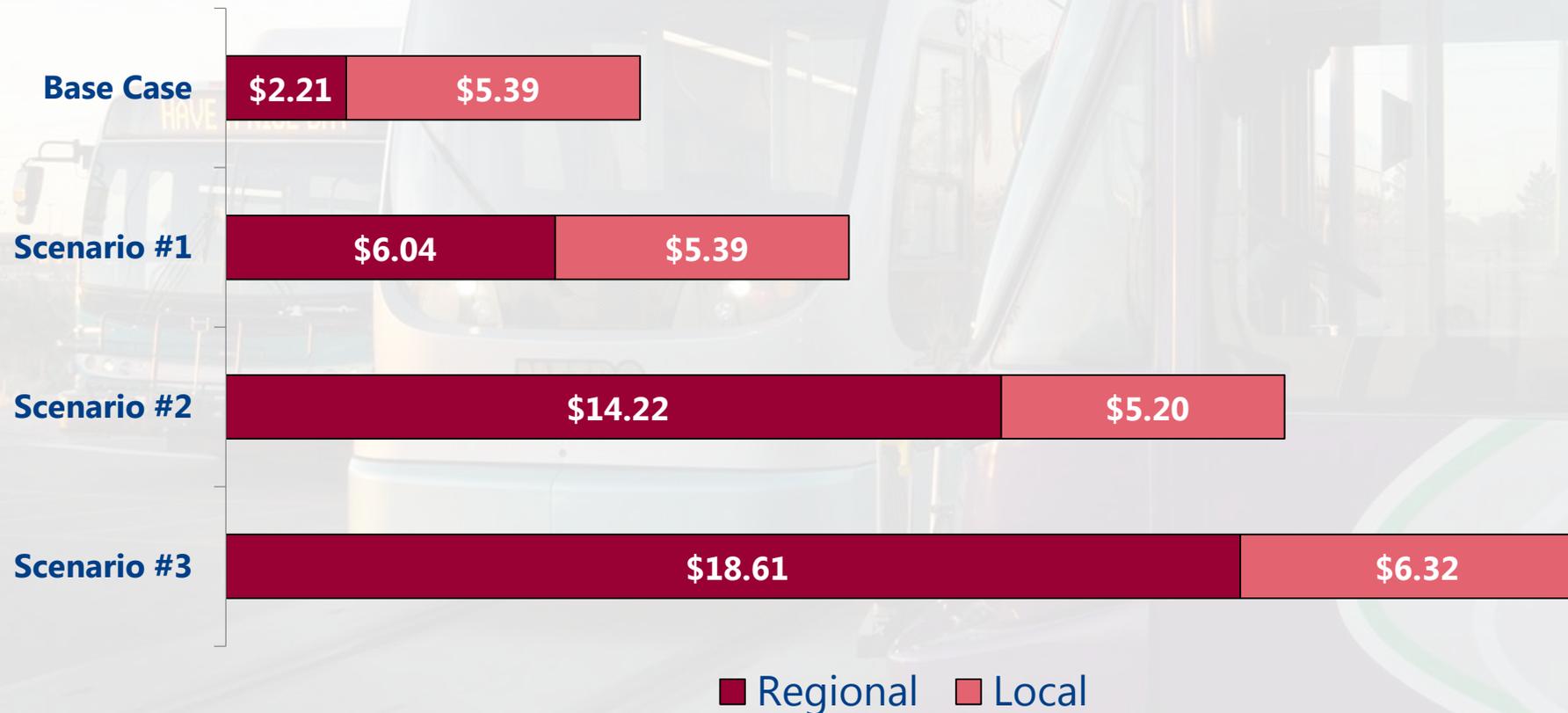
Scenario Comparisons



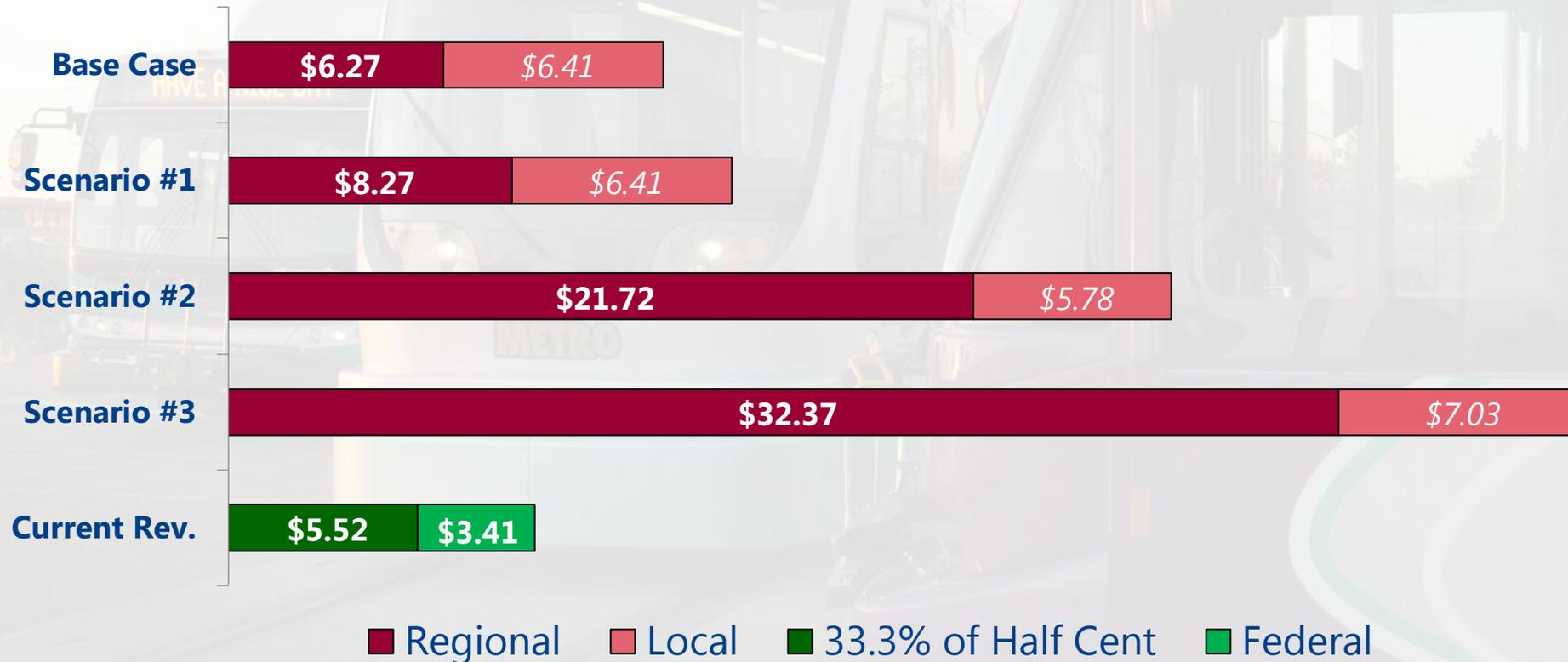
Transit Capital Needs for 20 Years (billions of 2013 dollars)



Transit Operations Needs for 20 Years (billions of 2013 dollars)



Combined Transit Capital and Operations Estimates for 20 Years (billions of 2013 dollars)



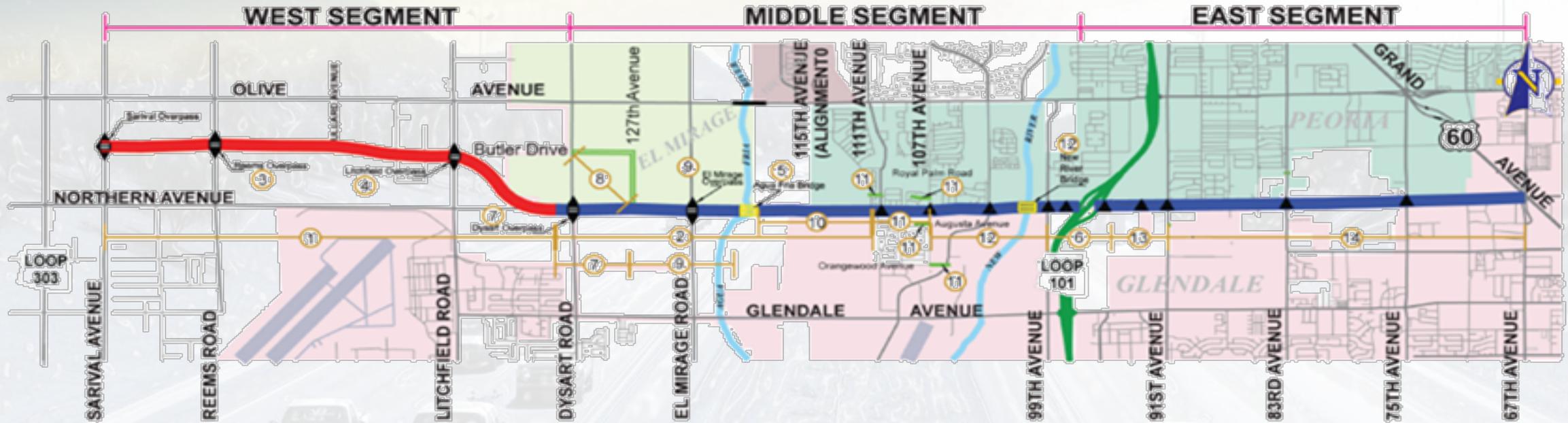
Arterial Life Cycle Program

MORE THAN 30 PROJECTS COMPLETED

- Arizona Ave. at Chandler Blvd.: Intersection Improvements
- Arizona Ave. at Elliot Rd.: Intersection Improvements
- Arizona Ave. at Ray Rd.: Intersection Improvement
- Beardsley Rd.: Loop 101 to 83rd Ave/Lake Pleasant Parkway
- Chandler Blvd. at Dobson Rd.: Intersection Improvements
- Dobson Rd. at Guadalupe Rd.: Intersection Improvements
- El Mirage Rd.: Bell Rd to Deer Valley Dr.
- El Mirage Rd.: Deer Valley Drive to Loop 303
- Gilbert Rd. at University Dr.: Intersection Improvements
- Gilbert Rd.: SR-202L/Germann Road to Queen Creek Rd.
- Greenfield Rd.: Baseline Rd. to Southern Ave.
- Guadalupe Rd./Cooper Rd.: Intersection Improvements
- Happy Valley Rd.: Lake Pleasant Pkwy to 67th Ave.
- Happy Valley: I-17 to 35th Ave.
- Hawes Rd.: Santan Freeway to Ray Rd.
- Lake Pleasant Pkwy.: Union Hills to Dynamite Rd.
- Loop 101 at Beardsley Rd/Union Hills Dr.
- Loop 101 Frontage Rd.: Hayden Rd to Scottsdale Rd.
- Pima Rd.: SR101L to Thompson Peak Pkwy.
- Pima Rd./Happy Valley Rd.: Intersection Improvements
- Power Rd at Pecos: Intersection Improvements
- Power Rd.: Baseline Rd. to East Maricopa Floodway
- Queen Creek Rd.: Arizona Ave. to McQueen Rd.
- Ray Rd.: Sossaman Rd. to Ellsworth Rd.
- Shea Blvd. at 90th/92nd/96th: Intersection Improvements
- Shea Blvd. at Mayo/134th St.: Intersection Improvements
- Shea Blvd. at Via Linda (Phase1): Intersection Improvements
- Shea Blvd.: Palisades Blvd. to Fountain Hills Blvd.
- Warner Rd. at Cooper Rd.: Intersection Improvements
- Val Vista Dr.: Warner Rd to Pecos Rd.



Northern Parkway



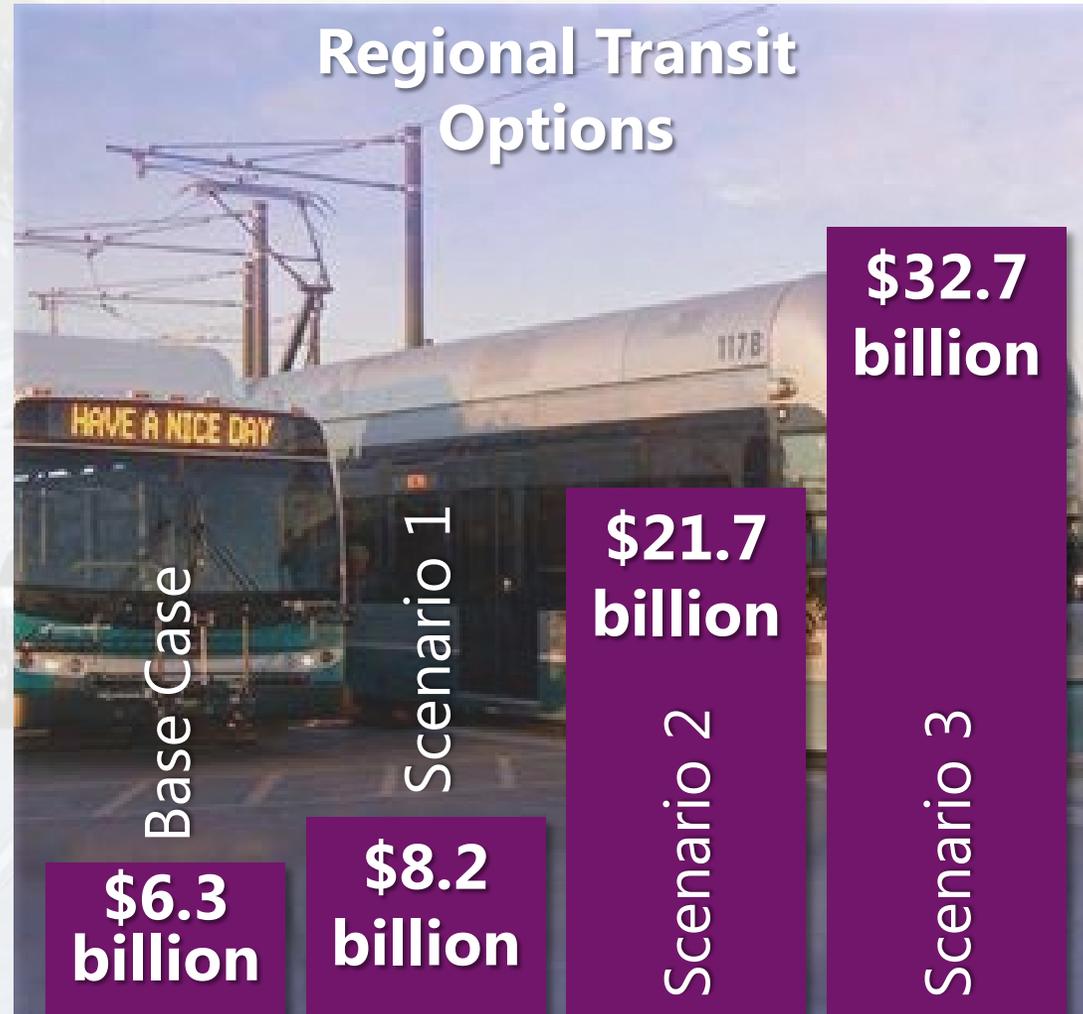
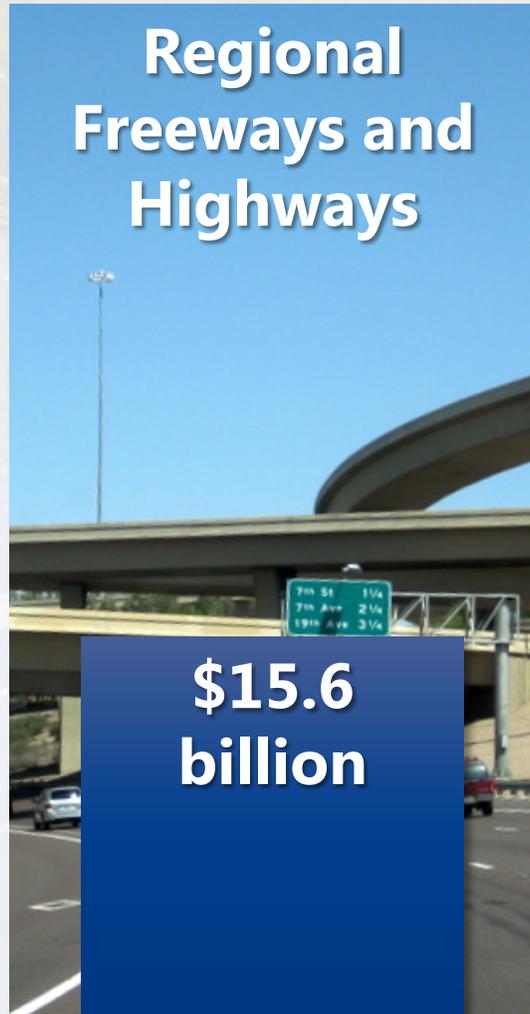
- **Largest project** in the Arterial Life Cycle Program:
 - West Segment = \$70.3 million in regional funds.
 - Middle Segment = \$141.1 million in regional funds.
 - East Segment = \$25.3 million in regional funds.
 - **Funding is only available for intersection improvements east of 91st Avenue.**

Arterials and Parkways

- Project totaling more than \$200 million deferred since 2009.
 - Largest project deferral is third phase of Northern Parkway, east of 91st Ave in Glendale.
- Average cost for municipal street operations and maintenance is **\$15,000 per lane-mile per year**.
- Arizona Parkway** network introduced as part of Hassayampa Valley and Hidden Valley Framework Studies; **indirect left turn intersections** considered throughout the Valley.

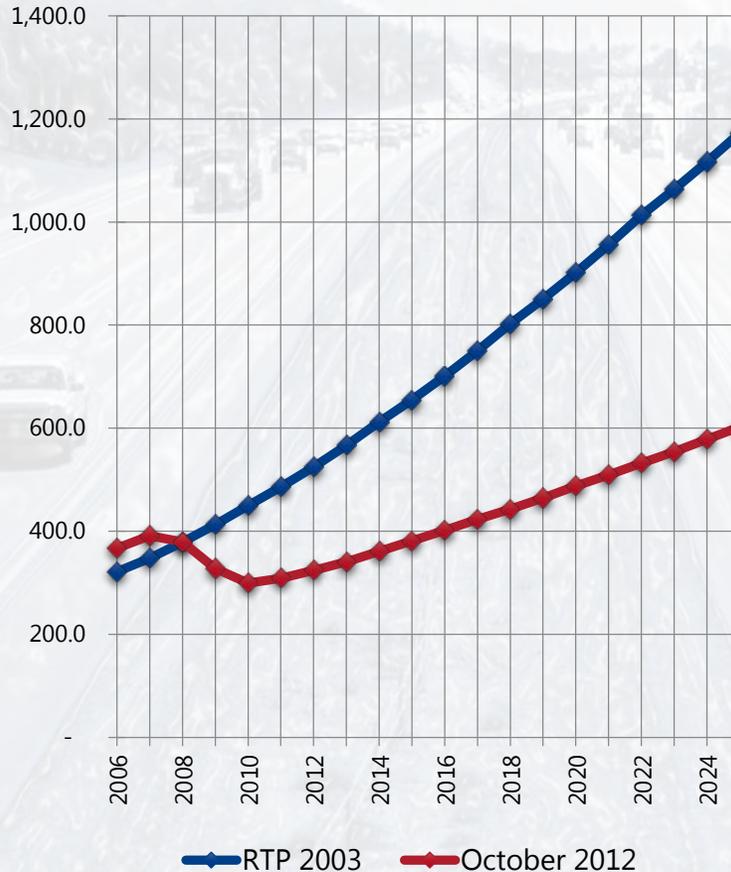
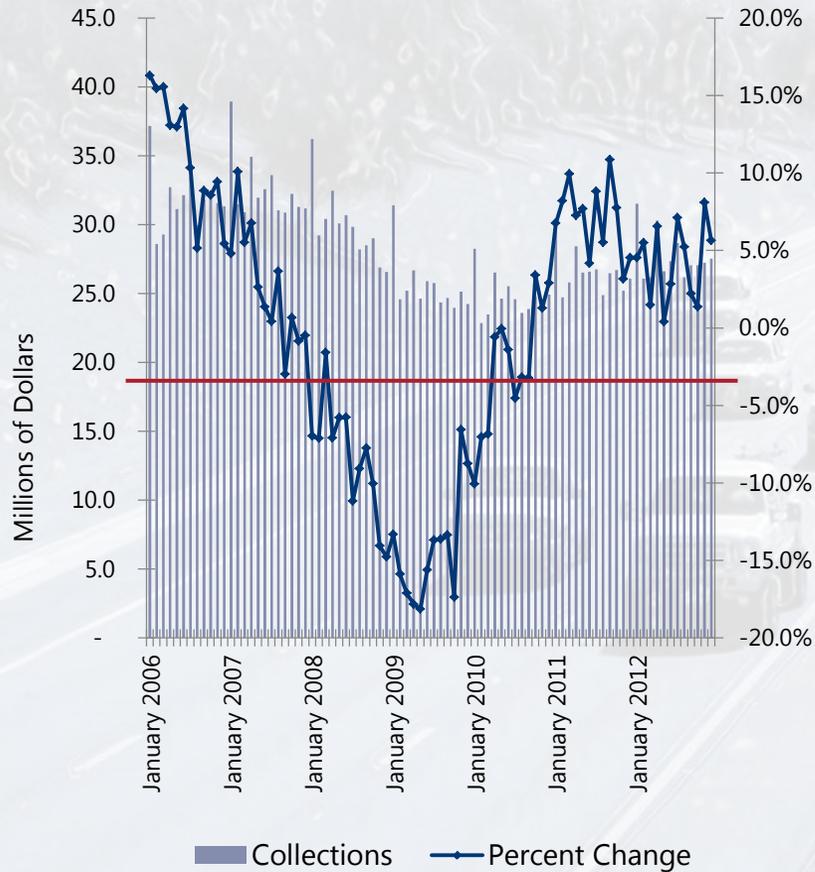
Major Regional Improvements			
PROGRAM	FUNDED	UNFUNDED	TOTAL
Arterial Streets	\$715,000,000	\$753,000,000	\$1,468,000,000
Bridges (New)	\$112,000,000	\$751,000,000	\$863,000,000
Bridges (Maint/Rehab/Replacement)	\$34,000,000	\$52,000,000	\$86,000,000
Intersection Restoration	\$17,000,000	\$94,000,000	\$111,000,000
Regional Transportation Plan	\$229,000,000	\$313,000,000	\$542,000,000
Rehabilitation Program	\$468,000,000	\$357,000,000	\$825,000,000
Total Major Regional Improvements	\$1,575,000,000	\$2,320,000,000	\$3,895,000,000
Major Drainage Improvements			
PROGRAM	FUNDED	UNFUNDED	TOTAL
Detention Basins and Channels	\$83,000,000	\$489,000,000	\$572,000,000
Storm Sewers/Storm Sewer Rehab	\$125,000,000	\$341,000,000	\$466,000,000
Total Major Drainage Improvements	\$208,000,000	\$830,000,000	\$1,038,000,000
Other Local Improvements			
PROGRAM	FUNDED	UNFUNDED	TOTAL
ADA Compliance	\$6,000,000	\$28,000,000	\$34,000,000
Bikeway/Pedestrian Bridge/Tunnel	\$22,000,000	\$21,000,000	\$43,000,000
Dam and Levee Safety Program	\$2,000,000	\$15,000,000	\$17,000,000
Dust Control	\$32,000,000	\$8,000,000	\$40,000,000
Landscape Retrofit/Screen Walls	\$53,000,000	\$18,000,000	\$71,000,000
Local Drainage	\$47,000,000	\$154,000,000	\$201,000,000
Local Street Modernization	\$139,000,000	\$161,000,000	\$300,000,000
Safety Projects/Traffic Calming	\$42,000,000	\$26,000,000	\$68,000,000
Signals (New)	\$77,000,000	\$23,000,000	\$100,000,000
Signal System Upgrade	\$25,000,000	\$52,000,000	\$77,000,000
Total Other Local Improvements	\$445,000,000	\$506,000,000	\$951,000,000
Total Infrastructure Needs	2,228,000,000	3,656,000,000	5,884,000,000

Needs Summary



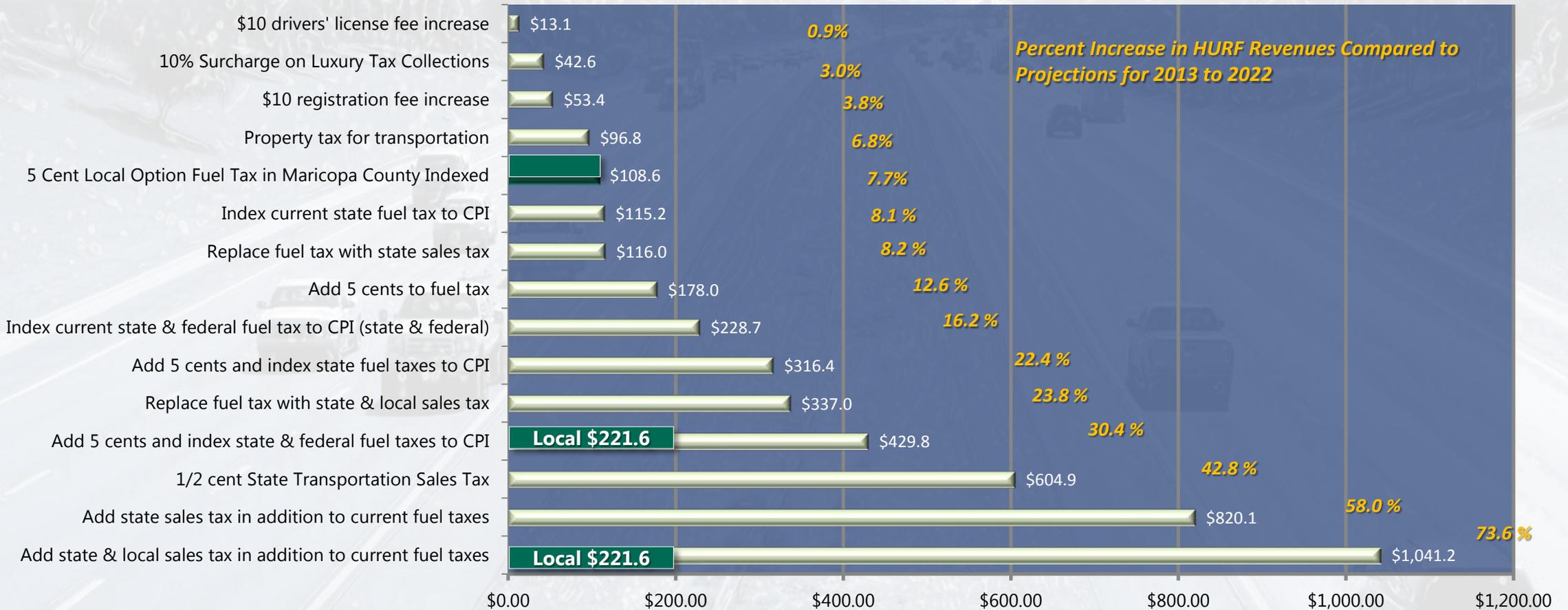
Collections, Projections, and Program

MAG REGIONAL TRANSPORTATION PLAN (PROPOSITION 400)



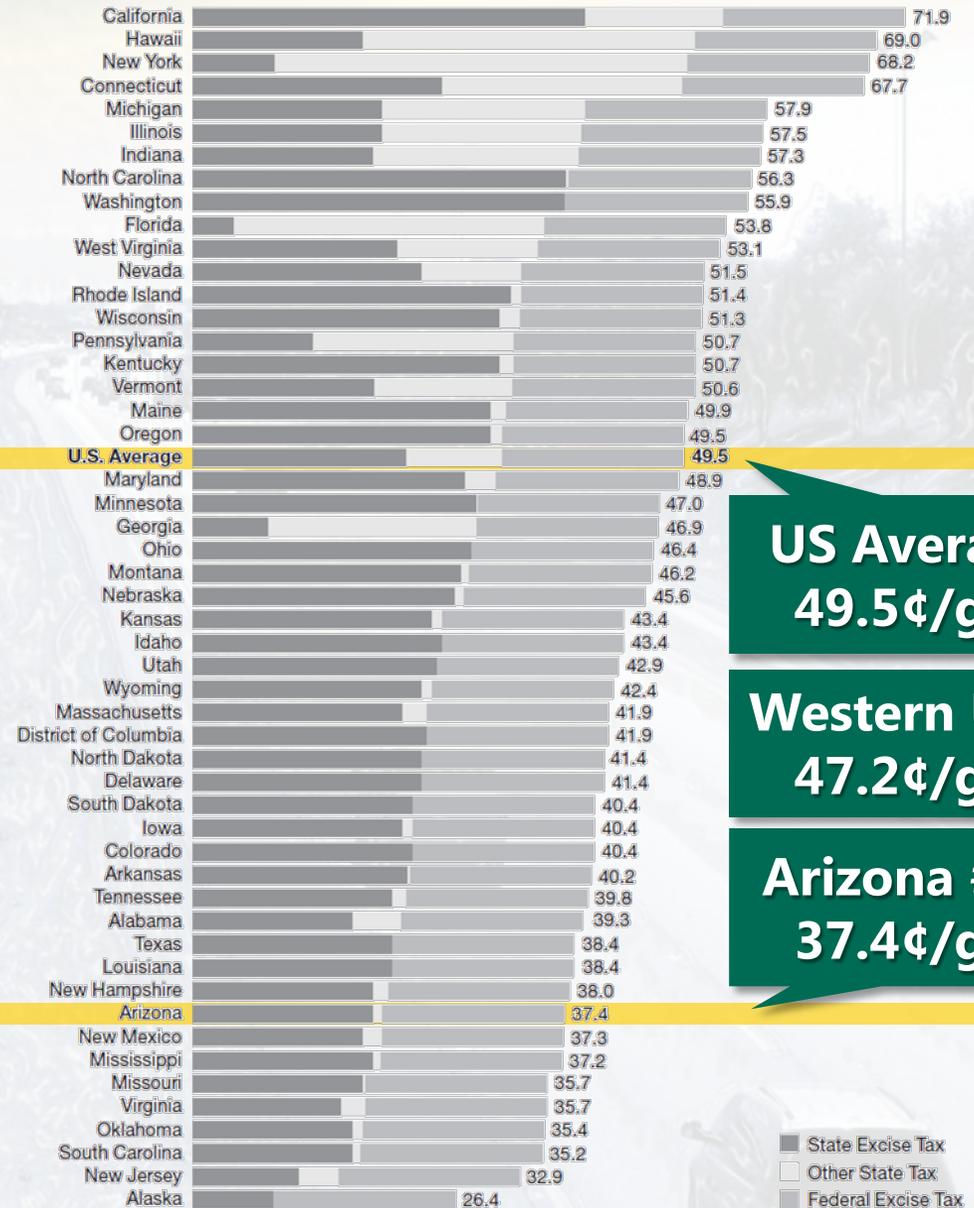
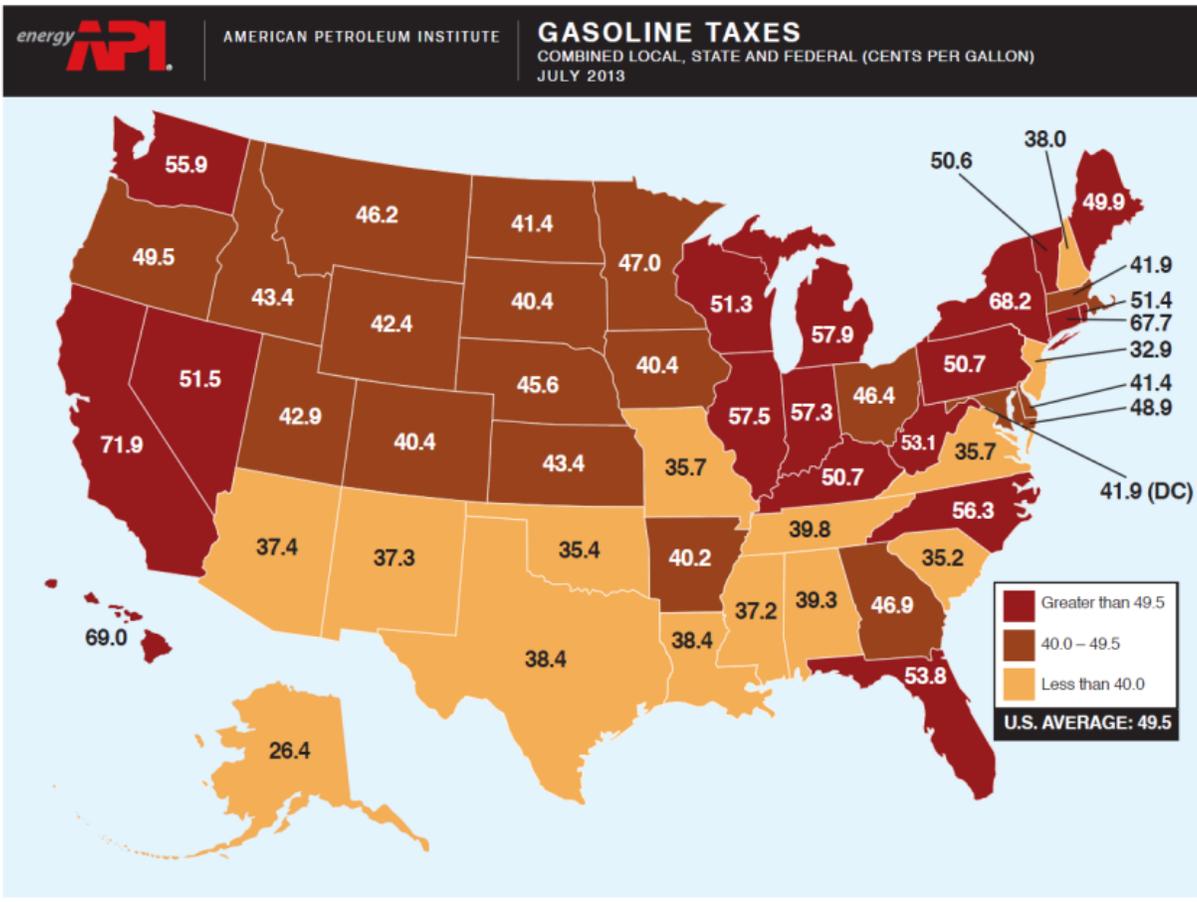
Potential Transportation Revenue Sources

Annual Average Net New Statewide Revenue 2013 to 2022 (millions of dollars)



Federal and State Gas Rates

Gasoline Motor Fuel Taxes as of July 1, 2013



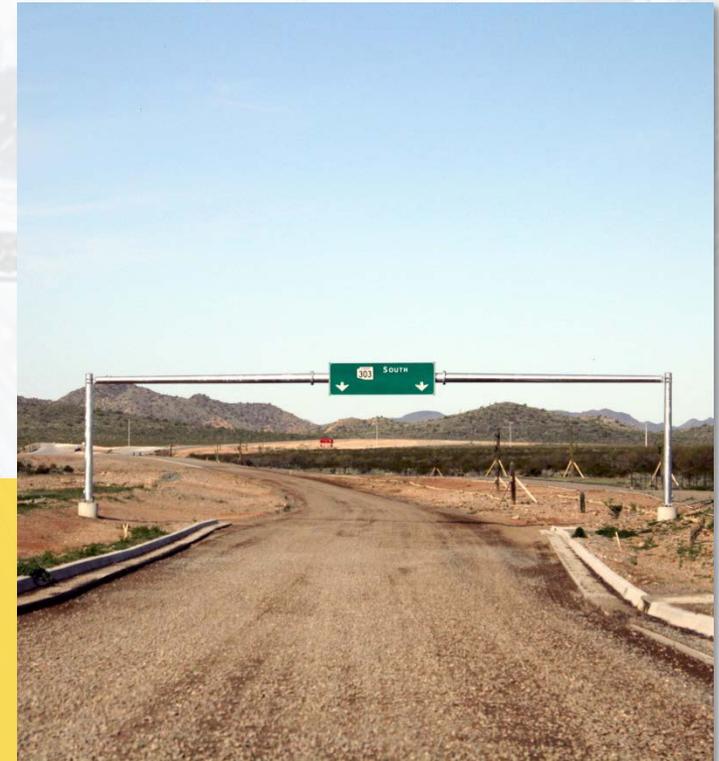
US Average
49.5¢/gal

Western USA
47.2¢/gal

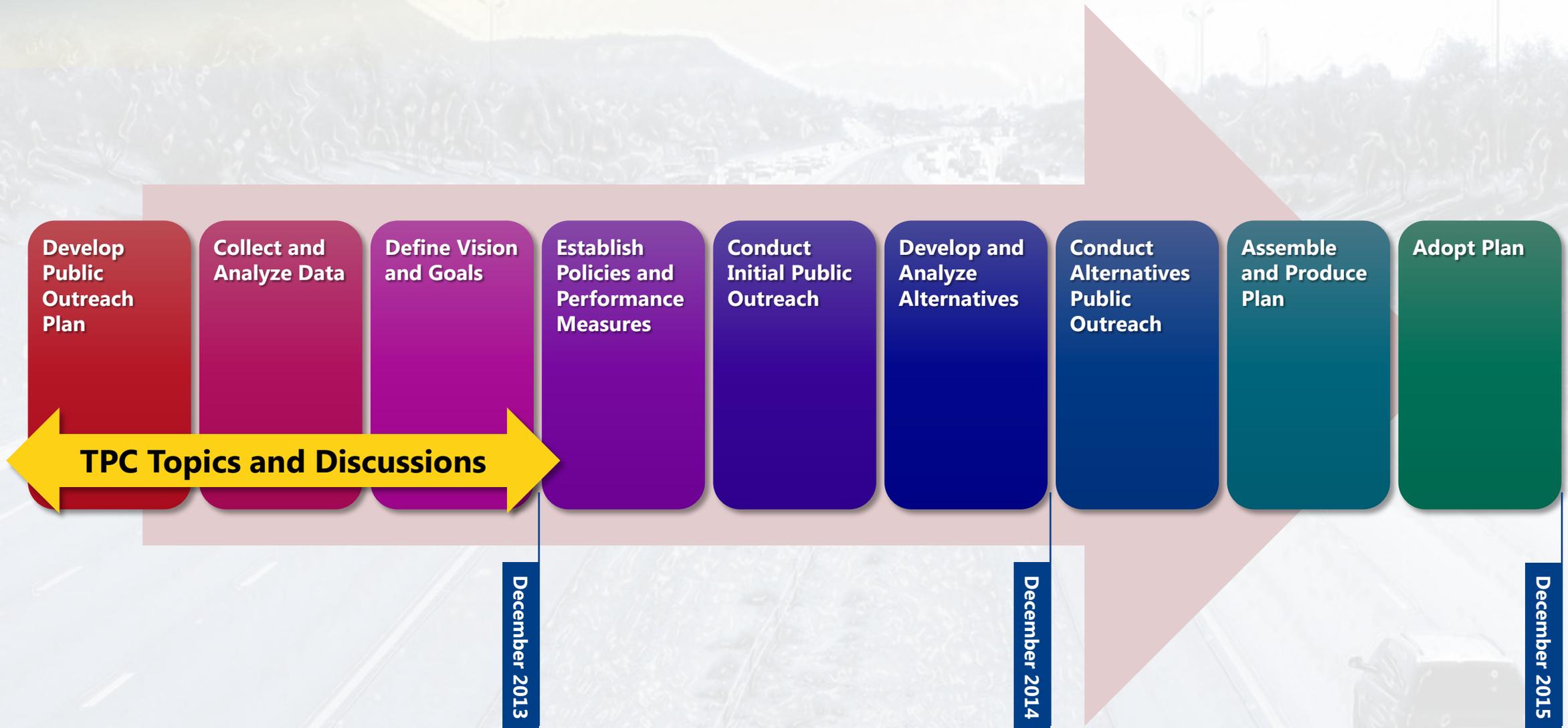
Arizona #43
37.4¢/gal

Phased Fuel Tax Increase

- 7.5-cents to 10-cents per gallon increase to meet average of Western states.
- 10-cents, phased in at 2-cents per year for five years, indexed for inflation.
 - Average annual increase of **\$434 million** over next **10 years**, increasing HURF by **30 percent**.
- Total new revenues: **\$4.3 billion** (2013 to 2022)
 - ADOT: \$2.2 billion
 - Cities: \$1.3 billion
 - Counties: \$0.8 billion
- Provides short-term funding to support road maintenance needs while alternatives to fuel taxes explored.



NexGen Regional Transportation Plan



Next Steps

- Public Opinion Survey.
- Synthesis of Public Opinion Documents.
- Survey results at **January 2014 Transportation Policy Committee.**
- Refinement of three program areas as part of NexGen Regional Transportation Plan development.



from Priest Drive Overcrossing, Tempe

Overview of Regional Transportation Needs

Eric Anderson
Transportation Director
eanderson@azmag.gov

Bob Hazlett
bhazlett@azmag.gov

Eileen Yazzie
eyazzie@azmag.gov

602 254-6300



East Sky Harbor Blvd Traffic Interchange