

April 12, 2016

TO: Members of the Transportation Policy Committee

FROM: Mayor Jerry Weiers, Glendale, Chair

SUBJECT: NOTIFICATION OF MEETING AND TRANSMITTAL OF TENTATIVE AGENDA

Meeting - 12:00 noon
Wednesday, April 20, 2016
MAG Office, Suite 200 - Saguaro Room
302 N. First Avenue, Phoenix

A meeting of the Transportation Policy Committee is scheduled for the time and place noted above. Members of the Committee may attend the meeting either in person, by videoconference, or by telephone conference call. As determined at the first meeting of the Committee, proxies are not allowed. Members who are not able to attend the meeting are encouraged to submit their comments in writing, so that their view is always a part of the process.

For those attending in person, please park in the garage under the building. Bring your ticket to the meeting, parking will be validated. For those using transit, the Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admission to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Valerie Day at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

Refreshments and a light luncheon will be provided. If you have any questions, please contact Dennis Smith, MAG Executive Director, or Eric Anderson, MAG Transportation Director, at (602) 254-6300.

c: MAG Regional Council
MAG Management Committee

**TRANSPORTATION POLICY COMMITTEE
TENTATIVE AGENDA
April 20, 2016**

COMMITTEE ACTION REQUESTED

<p>1. <u>Call to Order</u></p>	
<p>2. <u>Pledge of Allegiance</u></p>	
<p>3. <u>Call to the Audience</u></p> <p>An opportunity will be provided to members of the public to address the Transportation Policy Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Citizens will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Transportation Policy Committee requests an exception to this limit. Please note that those wishing to comment on agenda items posted for action will be provided the opportunity at the time the item is heard.</p>	<p>3. Information.</p>
<p>4. <u>Approval of Consent Agenda</u></p> <p>Prior to action on the consent agenda, members of the audience will be provided an opportunity to comment on consent items that are being presented for action. Following the comment period, Committee members may request that an item be removed from the consent agenda. Consent items are marked with an asterisk (*).</p>	<p>4. Recommend approval of the Consent Agenda.</p>

ITEMS PROPOSED FOR CONSENT*

<p>*4A. <u>Approval of the February 17, 2016, Meeting Minutes</u></p>	<p>4A. Review and approval of the February 17, 2016, meeting minutes.</p>
<p>*4B. <u>Project Changes - Amendment and Administrative Modification to the FY 2014-2018 MAG Transportation Improvement Program and to the 2035 Regional Transportation Plan</u></p> <p>The Fiscal Year (FY) 2014-2018 Transportation Improvement Program (TIP) and 2035 Regional Transportation Plan were approved by the MAG</p>	<p>4B. Recommend approval of amendments and administrative modifications to the FY 2014-2018 MAG Transportation Improvement Program, and, as appropriate, to the 2035 Regional Transportation Plan.</p>

Regional Council on January 29, 2014, with the last modification approved at the March 23, 2016, Regional Council meeting. Since then, project additions have been requested by ADOT and other general project changes by member agencies. On March 31, 2016, the MAG Transportation Review Committee recommended approval of the requested project changes. This item is on the April 13, 2016, MAG Management Committee agenda. An update will be provided on action taken by the committee. Please refer to the enclosed material.

*4C. Changes to Regionally Significant Projects Within the Draft FY 2017-2021 Transportation Improvement Program and Amendment to the FY 2014-2018 MAG Transportation Improvement Program and Amendment to the 2035 Regional Transportation Plan

Four light rail transit projects in the MAG region now require revision to their current opening dates, along with one new light rail capital structure added to the Draft FY 2017-2021 Transportation Improvement Program (TIP) and 2035 Regional Transportation Plan (RTP) Amendment, and will undergo necessary air quality conformity analysis. These changes are the result of the January 26, 2016 Phoenix City Council decision to approve the acceleration of two light rail projects, the deferral of one phase of a light rail project and the addition of one light rail station. The Tempe Streetcar project will also be deferred by one year as per the Valley Metro Transit Life Cycle Program (TLCP). This action will more closely align with the Federal Transit Administration (FTA) funding allocations and project delivery schedule. The requested project changes were recommended for approval on March 15, 2016, by the MAG Transit Committee and on March 31, 2016, by the MAG Transportation Review Committee. This item is on the April 13, 2016, MAG Management Committee agenda. An update will be provided on action taken by the committee. Please refer to the enclosed material.

4C. Recommend approval of changes to the revised opening dates for rail transit projects within the Draft FY 2017-2021 Transportation Improvement Program and an amendment to the FY 2014-2018 MAG Transportation Improvement Program and 2035 Regional Transportation Plan.

*4D. Draft FY 2017-2021 MAG Transportation Improvement Program (TIP) - Interim Listing of Projects for an Air Quality Conformity Analysis

The 1990 Federal Clean Air Act requires that regional transportation plans and programs be in conformance with all applicable air quality plans. To comply with this requirement, an air quality conformity analysis of the Draft FY 2017-2021 MAG Transportation Improvement Program - Interim Listing of Projects needs to be conducted, prior to consideration of the program for final approval. Members are being asked to review and comment as appropriate, on the Interim Listing of Projects that will undergo an air quality conformity analysis. This item is on the April 13, 2016, MAG Management Committee agenda. An update will be provided on action taken by the committee. Please refer to the enclosed material.

4D. Recommend approval of the Draft FY 2017-2021 MAG Transportation Improvement Program - Interim Listing of Projects for an air quality conformity analysis.

ITEMS PROPOSED TO BE HEARD

5. Regional Freeway and Highway Program Update – 2016 Rebalancing

The Regional Freeway and Highway Program is under review. In 2009, the Program was reviewed and the Regional Council approved the Tentative Scenario to balance an estimated \$6.6 billion shortfall due to cost overruns and revenue shortfalls. The program was also reviewed in 2012 and a Scenario was approved to balance an additional \$300 million from the program due to continuing revenue shortfalls. Since these balancing efforts, MAG and the Arizona Department of Transportation (ADOT) have been continually reviewing project budgets and program amounts to improve upon the Regional Freeway and Highway Program delivery and budgets. These efforts have paid off with successful lower than program bids received for design, construction, and right-of-way acquisition for Loop 303 and Loop 202/South Mountain Freeway projects. As a result, the program now has funds to potentially reprogram deferred Proposition 400 projects and other transportation needs throughout the Phoenix Metropolitan Area. The Transportation Policy Committee will be provided

5. Information and discussion.

an update on the overall health of the Regional Freeway and Highway Program to the begin the discussion on reprogramming these funds. Please refer to the enclosed material.

6. MAG Managed Lanes Network Development Strategy - Phase II Project Update

On November 15, 2010, the MAG Regional Council authorized procurement of consultant services to develop the MAG Managed Lanes Network Development Strategy - Phase I project. This multi-phase effort was in response to consideration for public-private-partnership (P3) opportunities in the Phoenix Metropolitan Area where high occupancy (HOV) lanes could be operated as high occupancy toll (HOT) lanes as part of an overall managed lanes strategy. In late 2013, this first phase was completed and the Transportation Policy Committee recommended proceeding with the strategy's second phase and focusing study efforts on transportation technology solutions in lieu of HOT lanes that could improve congestion and accommodate future traffic flows. Results from the second phase, which analyzed the concept of a Managed Motorways pilot, as practiced in Melbourne, Australia, will be presented in this update. Please refer to the enclosed material.

7. Update on Performance Measures and Targets Working Group

In preparation for Fixing America's Surface Transportation Act (FAST Act) legislation rulemaking and for the 2015 State Performance Audit mandated by Proposition 400, MAG convened a Performance Measures and Targets Working Group with the purpose of involving member agencies in the coordination and selection of key measures and performance targets. This item will provide the TPC an update on the status of the federal rulemaking process, and an overview of newly acquired data sources and the Working Group's progress, including proposed methodology for target selection.

6. Information and discussion.

7. Information and discussion.

- 8. Legislative Update
An update will be provided on legislative issues of interest.
- 9. Request for Future Agenda Items
Topics or issues of interest that the Transportation Policy Committee would like to have considered for discussion at a future meeting will be requested.
- 10. Comments from the Committee
An opportunity will be provided for Transportation Policy Committee members to present a brief summary of current events. The Transportation Policy Committee is not allowed to propose, discuss, deliberate or take action at the meeting on any matter in the summary, unless the specific matter is properly noticed for legal action.

Adjournment

- 8. Information, discussion, and possible action.
- 9. Information.
- 10. Information.

MINUTES OF THE
MARICOPA ASSOCIATION OF GOVERNMENTS
TRANSPORTATION POLICY COMMITTEE MEETING

February 17, 2016
MAG Office, Saguaro Room
Phoenix, Arizona

MEMBERS ATTENDING

- | | |
|---|--|
| Mayor Jerry Weiers, Glendale, Chair | Mayor Georgia Lord, Goodyear |
| # Mayor John Giles, Mesa, Vice Chair | # Mayor Mark Mitchell, Tempe |
| * Mr. F. Rockne Arnett, Citizens Transportation Oversight Committee | * Mayor Lana Mook, El Mirage |
| Mr. Dave Berry, Swift Transportation | * Mr. Garrett Newland, Macerich |
| * Mayor Cathy Carlat, Peoria | * Mayor Tom Rankin, Florence |
| Councilmember Jenn Daniels, Gilbert | Mr. Mark Reardon, Vulcan Materials Company |
| * Supervisor Clint Hickman, Maricopa County | Vice Mayor Jack Sellers, Chandler |
| Mr. Charles Huellmantel, Huellmantel and Affiliates | Vice Mayor David N. Smith, Scottsdale |
| Mr. Joseph La Rue, State Transportation Board | Mayor Greg Stanton, Phoenix |
| * Lt. Governor Stephen Roe Lewis, Gila River Indian Community | Ms. Karrin Kunasek Taylor, DMB Properties |
| | * Mayor Kenneth Weise, Avondale |
| | # Mayor Sharon Wolcott, Surprise |
- * Not present
Participated by telephone conference call + Participated by videoconference call

1. Call to Order

The meeting of the Transportation Policy Committee (TPC) was called to order by Chair Jerry Weiers at 12:10 p.m.

2. Pledge of Allegiance

The Pledge of Allegiance was recited.

Chair Weiers noted that Vice Chair John Giles, Mayor Mark Mitchell, and Mayor Sharon Wolcott were participating by teleconference.

Chair Weiers noted that on February 10, 2016, the MAG Management Committee recommended approval of the project changes requested in item #4B. Since the Management Committee recommendation, minor clerical corrections were incorporated and annotated in yellow tint on

tables B and C that were at each place. Also at each place was a legislative summary for agenda item #7.

3. Call to the Audience

Chair Weiers noted that no public comment cards had been received.

4. Approval of Consent Agenda

Chair Weiers stated that agenda items #4A and #4B were on the consent agenda. He stated that public comment is provided for consent items, and noted that no public comment cards had been received. Chair Weiers asked members if they would like to remove any of the consent agenda items or have a presentation. No requests were noted.

State Transportation Board Member Jack Sellers moved to recommend approval of agenda items #4A and #4B. Mr. Charles Huellmantel seconded, and the motion passed unanimously.

4A. Approval of the December 9, 2015, Meeting Minutes

The Transportation Policy Committee, by consent, approved the December 9, 2015, meeting minutes.

4B. Project Changes - Amendment and Administrative Modification to the FY 2014-2018 MAG Transportation Improvement Program, and as Appropriate, to the 2035 Regional Transportation Plan and FY 2016 MAG Unified Planning Work Program and Annual Budget

The Transportation Policy Committee, by consent, recommended approval of amendments and administrative modifications to the FY 2014-2018 MAG Transportation Improvement Program, and as appropriate, to the 2035 Regional Transportation Plan. The Fiscal Year (FY) 2014-2018 Transportation Improvement Program (TIP) and 2035 Regional Transportation Plan were approved by the MAG Regional Council on January 29, 2014, with the last modification approved at the January 27, 2016, Regional Council meeting. Since then, additional project changes and additions are needed. Project listing changes and additions included are not contingent on a new finding of conformity. The member agency requested project additions and changes include general highway and transit project changes. Funding types include Congestion Mitigation and Air Quality Improvement Program (CMAQ), Highway Safety Improvement Program (HSIP); FY 2015 TIGER award announcement; and locally funded project changes (See Table A). MAG is developing a new FY 2017-2021 Transportation Improvement Program (TIP). The MAG Regional Transportation Plan (RTP) allocates MAG Federal CMAQ and Transportation Alternatives (TAP-MAG) Infrastructure Program funds for certain program areas. A Call for Projects was held and an evaluation of projects submitted for Bicycle and Pedestrian projects has been completed. Those new projects and project work phases that fall within the current FY 2014-2018 TIP window and that are proposed for CMAQ and TAP funding are included in Table B. The Federal Highway

Administration (FHWA) sub-allocated funding includes the CMAQ, HSIP, Surface Transportation Program (STP-MAG), and TAP. An evaluation of FHWA funding determined that the MAG region has federal funding that is available for the Closeout programming priorities as described in the Federal Fund Programming Guidelines and Procedures that were approved by the MAG Regional Council in June 2015. A request for closeout projects was conducted and evaluated, and the results are included in Table C. If approved, items in Table C will supersede duplicate listings in Table B. On February 10, 2016, the MAG Management Committee recommended approval of the requested project changes. Since the Management Committee recommendation, minor clerical corrections were incorporated and were annotated in yellow tint on tables B and C.

5. First Year Evaluation Results from the Co-Location of DPS Officers at the ADOT Traffic Operations Center

Mr. Sarath Joshua, MAG staff, stated that in August 2014, the MAG Regional Council approved a three-year pilot program with an evaluation component to co-locate Department of Public Safety (DPS) troopers at the Arizona Department of Transportation (ADOT) Traffic Operations Center, for improving coordination necessary for faster response and clearance of major traffic incidents on the freeway system.

Mr. Joshua stated that the program began in October 2014 and it was fully operational in January 2015. He noted that the crash data were gathered using the DPS electronic reporting system, TraCS, and evaluated over a period of nine months before the co-location (January-September 2014) compared to the nine months after co-location was initiated (January-September 2015). Mr. Joshua introduced Sgt. John Paul Cartier from DPS, one of the troopers at the TOC.

Sgt. Cartier displayed the comparisons for freeway crashes without injuries and crashes with injuries for the January-September 2014 period before DPS was located at the TOC versus the January-September 2015 period after which DPS was located at the TOC. He stated that their response times, roadway clearance times, incident clearance times, and incident durations were compared. Sgt. Cartier noted that there were dramatic reductions in the times it takes to clear an incident from the roadway and mitigate a full incident after co-location.

Sgt. Cartier reported on fatal crash data for the January-September 2014 and January-September 2015 time periods. He indicated that you would expect to see a drop in the performance measures, but fatal accidents tend to be less incidents. Sgt. Cartier stated that they typically respond to 22,000 to 23,000 collisions in the MAG region annually. He explained that they are not saving as much time on a smaller number of incidents as they would on larger, less injury, or minor injury crashes. Sgt. Cartier stated that there has been a significant reduction in clearance times for fatal crashes.

Sgt. Cartier displayed the comparison for all types of crashes where the troopers have responded. He pointed out that the roadway clearance time has decreased by 54 minutes per incident and at 22,000 to 23,000 incidents, represents a lot of minutes. He noted that quicker clearance times also reduce the chances for secondary crashes to occur.

Sgt. Cartier said that the evaluation showed the number of crashes was 11,243 in 2014 and 13,862 in 2015, an increase of 23 percent. He indicated that they have been able to mitigate more incidents with the same number of people as a result of the investment of resources by the Federal Highway Administration and MAG. Sgt. Cartier stated that they are able to reduce risk and improve traffic flow and congestion, which have economic and safety impacts.

Mr. Joshua noted that a press conference on the program's first year evaluation was held on January 19, 2016. He stated that a traffic simulation model at MAG was used to estimate the difference in traffic delay experienced by travelers between 2014 and 2015, using the same observed numbers provided by DPS. He noted that in 2015, traffic delay experienced by travelers, in comparison to 2014, was reduced by nearly 8.4 million vehicle hours, which is equivalent to \$165 million in savings. Mr. Joshua advised that this number does not include potential savings from reductions in secondary crashes.

Mr. Joshua stated that MAG and ADOT are jointly funding the project at nearly \$450,000 for the first year, and approximately \$425,000 per year for years two and three. He noted that despite a 23 percent increase in the number of freeway crashes, the average time taken to clear a crash site on freeways was reduced by 54 minutes, helping traffic move more quickly, preventing secondary collisions, and potentially saving lives. Mr. Joshua noted that the cost/benefit ratio for year one is 368:1.

Chair Weiers thanked Mr. Joshua and Sgt. Cartier for their reports. He asked members if they had questions.

Ms. Karrin Kunasek Taylor asked the reason for the 23 percent increase in crashes and 19 percent increase in fatalities in one year.

Sgt. Cartier replied that several factors could contribute to the increases in crash and fatality rates, such as lower gas prices resulting in more miles being drive. He noted that there were as many as 20,000 to 30,000 more cars per day in one mile segments. Magnified across the system, it amounts to a significant increase in traffic volume. Sgt. Cartier stated that the troopers also enforce impairment and distracted driver violations and have seen violations higher. He noted that even though there are more incidents, DPS is able to manage them better because of instant proactivity.

Mr. Joshua added that they looked at the national crash numbers. The Governor's Office of Highway Safety showed a 19 percent increase in fatal crashes, which is close to the 23 percent rate of all crashes. Mr. Joshua stated that fatal crashes in the U.S. increased 14 percent and serious injury crashes in the U.S. increased approximately 30 percent. He remarked that the reasons for these increases are unknown; they possibly could be attributed people driving more due to the improved economy or lower gasoline prices, or a number of other factors.

Sgt. Cartier stated that the collision rate could be 1,600 to 1,800 some months and 2,000 another month. DPS deploys its resources on where data show the violations and crashes occur. He said that this might even out as the evaluation year goes on.

Chair Weiers noted the cost savings to the public of \$165 million. He asked the savings to DPS for not having to dispatch officers to certain incidents.

Sgt. Cartier replied that he did not have a hard number for that, however, they are working with the Federal Highway Administration on a national secondary crash analysis that they hope will provide a cost for those crashes. He indicated the 600 to 700 times that officers are dispatched to incidents such as disabled vehicles, collisions where people left the scene, or for debris, require time, fuel, and automobile wear and tear, when they could be dispatched to serious law enforcement situations that require their attention.

Chair Weiers indicated that he would be interested in seeing the results from the FHWA crash analysis.

Mr. Dave Berry expressed his alarm over the increase in the number of accidents. He asked if MAG compiled the statistics such as number accidents per vehicle mile of travel and also the rate of miles traveled.

Mr. Joshua replied yes, MAG has done reports on vehicle miles of travel. He stated that reports on vehicle miles of travel for every freeway corridor through 2012 are posted on the transportation safety page on the MAG website. He added that is something MAG has the capacity to produce.

Mr. Berry stated that a lot of drivers use various applications to determine the most optimal routes for travel. He asked if the DPS staff in the TOC utilize the information reported by drivers to notify the public right away.

Sgt. Cartier stated that ADOT's public information officer in the TOC will immediately update 511, Facebook, Twitter, and traffic applications. He noted that the Maricopa County Department of Transportation also has a traffic application that instantly updates.

6. Planning for Autonomous Vehicles

Chair Weiers called forward Mr. Eric Anderson, MAG staff, who began the presentation. He stated that the link between autonomous vehicles and safety is key. He said that MAG has been tracking vehicle technology and what it means for transportation planning. Mr. Anderson recounted his experience test driving a Tesla hands-free at 65 m.p.h. He remarked that this has implications for transportation planning, land use planning, and safety.

Mr. Anderson stated that the automobile can provide personal mobility. He displayed the 1923 issue of *Science and Invention* magazine, which focused on their concept of the automobile of 1973 and what the technology would be. Mr. Anderson stated that after WWII, the focus was on nuclear energy.

Mr. Anderson said that the *Popular Science* issue of 1938 included an article about highways of the future, in response to a proposal by a U.S. Senator for a national network of high speed

highways -- a precursor to the Interstate Highway System. He stated that the concepts showed many of the features that we are seeing today, such as lane control (the concept used cables to keep a vehicle in the lane); blind spot detection; radio-controlled traffic information; GPS mapping with a low-frequency television receiver to provide directions; automatic braking by infrared sensors; bus rapid transit in freeway medians.

Mr. Anderson stated that by the 1950s and 1960s, the concepts were coming into focus. In 1957, a consortium of electric utilities was pushing for electric vehicles that would drive themselves. In 1961, General Motors showed the “auto-control” that allowed a car to follow a buried electronic cable under the highway.

Mr. Anderson stated that the Institute of Electrical and Electronic Engineers conducted a 2014 survey of experts on autonomous vehicle technology. The survey results showed that the biggest obstacles are legal liability and acceptance by policymakers and consumers; that by 2030, new cars will not have rear view mirrors, horns and emergency brakes; by 2035, steering wheels and gas and brake pedals will be gone. Mr. Anderson noted that there is now a generation who has grown up with I-Phones and computers, and they expect that technology. He stated that the MAG transportation planning horizon is a minimum 20 year period and the challenge is the technology that will make the plan work and how quickly it will be adapted. Mr. Anderson stated that innovations to improve safety have been sought since the early days of driving.

Mr. Anderson showed a graph by the Insurance Institute for Highway Safety of primary safety components that they think are critical and the approximate year that each will reach a 95 percent saturation of the fleet with almost all of them reaching that point around 2040. The safety components include front crash prevention, lane departure warning, adaptive headlights, blind spot warning, rear camera, and rear parking sensors. Mr. Anderson remarked that vehicle improvements have been key to reductions in motor vehicle crash fatality risk. He said that with people driving more, there will be more accidents. Mr. Anderson stated that even though there are more accidents, the safety technology in newer cars significantly lowers the fatality rates.

Mr. Anderson then introduced Dr. Doug Gettman from Kimley-Horn and Associates, a nationally known expert on autonomous vehicles, who continued the presentation. He indicated that he would be speaking on autonomous and connected vehicles. Mr. Gettman stated that his company has worked on a statewide plan for autonomous vehicles for North Carolina and the Maricopa County Smart Drive Program.

Mr. Gettman stated that there are many distractions while driving that can result in crashes. He indicated he would report on the connected vehicle program, which is run by the U.S. Department of Transportation and is primarily focused on improving safety, and autonomous vehicle technology, which is primarily run by the private sector with a focus on safety and mobility.

Mr. Gettman stated that the connected vehicle program has been in operation since 1993, and has operated under other names, such as Intellidrive. He said that the connected vehicle program looks at how data from vehicle to vehicle or infrastructure to vehicle can address safety, mobility, and

the environment. Mr. Gettman stated that their 2016-2020 program is to do pilot deployments. Key applications in connected vehicles include red light running warning, blind spot warnings, and eco driving notices to inform a driver when the light will turn green and allow them make adjustments to save fuel.

Mr. Gettman stated that the technology for connected vehicles is Dedicated Short Range Communications (DSRC). He said it will allow significant communications between vehicles on such things as lane change warnings that are sent extremely quickly, for example, in one-tenth of a second. Mr. Gettman stated that these communications are called Basic Safety Messages and inform vehicles surrounding it where a vehicle is located, its speed, and whether it is accelerating or decelerating. Mr. Gettman stated that one disadvantage of DSRC is that it is line-of-sight and will only work with elements that can be seen.

Mr. Gettman stated that the key component of connected vehicles on the infrastructure side is Signal Phase and Timing (SPAT), which changes traffic signals, and is utilized in regard to red light running, railroad crossings, and eco driving.

Mr. Dave Berry asked for clarification that these connected vehicles components were all line-of-sight. Mr. Gettman replied yes, they must be set up without obstructions, such as buildings.

Mr. Gettman advised that probably starting in 2018, National Highway Safety Administration (NHTSA) will mandate that automobiles manufactured in the U.S. have the DSRC technology, and they anticipate having this technology on buses and trucks later this year. Mr. Gettman noted that the radios at intersections will not be mandated; that will be a decision of each local jurisdiction. He reported that the FAST Act includes provisions that this technology will be eligible for CMAQ funding.

Mr. Gettman stated that there is a test area for connected vehicles located in Anthem, Arizona, and the program is called Smart Drive -- a cooperative program between ADOT and MCDOT. Mr. Gettman encouraged people to take a tour of the facility. He stated that the states of Washington and Michigan have connected vehicle programs. Mr. Gettman pointed out the U.S. DOT is investing about \$65 million on its connected vehicle deployment programs in New York City, Tampa, and Wyoming. Technology has been in the research phase for approximately the last 15 years and now is in the deployment phase. They hope to prove the technology in the real world environment through these pilot programs. Mr. Gettman stated that another deployment is set for 2017.

Mr. Gettman stated that Vehicle to Infrastructure Communications is an important coalition that has come together in the past 18 months or so. It is a joint venture between the Institute of Transportation Engineers, AASHTO, and ITS America that have come together rather than working separately. Mr. Gettman stated that there are five working groups.

Mr. Gettman stated that in 1992 the Intelligent Transportation Society of America wanted to do demonstrations of automated vehicles with a fleet of Buicks. He explained that this was done with

a cable buried in the road and magnetic pucks that the vehicles follow to maintain lane centering. Mr. Gettman stated that in 2003, Caltrans demonstrated the same kind of technology on buses. He stated that in 2005, the Defense Advance Research Projects Administration asked people to compete with cars with numerous sensors showing and drive approximately 100 miles in the desert. Mr. Gettman stated that the first attempt, no one finished. The second attempt, in 2007, three finished. He stated that in 2010, technology had advanced to where Google had an automated vehicle with only one sensor showing on the top. Mr. Gettman displayed a photograph of a Mercedes in 2014 with cruise control and lane keeping assistance with no sensors showing. He noted that the sensors are being imbedded into the vehicle body. Mr. Gettman also showed a photograph of a low speed shuttle Navia, with no visible sensors.

Mr. Gettman stated that in 2016, software can be downloaded to make Teslas auto-pilot. He stated that Heathrow Airport has automated systems from the airport to the parking garage. In addition, the Google pod car has no steering wheel or pedals. Mr. Gettman displayed a picture of the City Mobile 2 transit vehicle from Europe. He explained they are automated transit vehicles that do not use pucks and can provide significant transportation for those with mobility issues. Mr. Gettman displayed a photograph of how the Google car sees the world.

Mr. Gettman showed a slide of the NHTSA organization at different operating levels of automation. Zero level is 1938; the first level includes things like electronic braking and stability control; level two is combining those two components but still requires vigilance, for example, this is where Tesla and Mercedes are today; level three is a vehicle that can somewhat, but not completely, take a person to a destination; level four is the completely driving by itself. Mr. Gettman stated that using the term “autonomous” means there is no one in the seat at all.

Mr. Gettman stated that a connected vehicle is about warnings to the driver and it takes action on its own. Connected vehicles used to be considered short term and automated is far term, but not any longer. He stated that things are happening; Google and Ford have made a \$400 million deal to develop technology; GM signed a deal with Lyft; Uber has approximately 200 people working on its automated car program. Mr. Gettman advised that people will be able to purchase a retrofit package to make their cars autonomous. Google and Ford indicated they will release their technology in 2018. Mr. Gettman stated that the 2025 to 2030 horizon is a time when these technologies will happen. He stated that Uber has indicated it will be completely automated and its drivers will be eliminated by 2030.

Mr. Gettman stated that there are only a few places in the U.S. where it is legal for autonomous vehicles to operate; most of the legislation pertains to testing. He displayed places where autonomous vehicle plans are ongoing. Mr. Gettman pointed out places planning for test tracks, such as the one at Ann Arbor, Michigan. He noted conversion plans for an abandoned New Jersey Army base and an abandoned Contra Costa County, California naval base.

Mr. Gettman stated that President Obama included \$4 billion in the 2017 budget for automated vehicle testing and deployment over the next ten years. He added that programs in Europe, Japan and other parts of the world are worth hundreds of millions of dollars.

Mr. Bob Hazlett, MAG staff, continued the presentation on the engineering implications of connected and autonomous vehicles. He said that he chairs the MPO committee for the Transportation Research Board. And at the annual meeting in January, the U.S. DOT Volpe Center discussed the need to address this technology in long range transportation plans. Mr. Hazlett stated that connected and autonomous vehicles benefitted from being a part of the FAST Act at a time when jurisdictions are updating their long range plans. He stated that changes in the size of vehicles should not be expected -- they would still require 11 foot to 12 foot lane widths.

Mr. Hazlett stated that a different approach could be needed on how interchanges and intersections are designed. Will traffic control devices even be needed? For capacity, do we set limits on how many vehicles use the system at a given time? With the increased technology, an extra lane might not be needed. Mr. Hazlett noted that speed limits are set for safe operations. Would lower speed limits be needed due to more traffic volume, or higher speed limits because driving will be safer with increased technology? He stated that these items all affect the flow rate.

Mr. Hazlett then addressed freight operations, which could change interaction with highways. There might be weather alerts advising that it is unsafe to drive in certain conditions. Mr. Hazlett stated that it all gets down to safety. Components such as safety belts and air bags have reduced fatalities, however, there is still distracted driving. Mr. Hazlett noted that included in new safety technology are such elements as blue tooth, rear backup cameras, adaptive cruise control, blind spot detection, collision avoidance/detection/mitigation; and heads up displays.

Mr. Hazlett then addressed planning and policy considerations. He spoke of how technology could impact long range transportation plans that are developed using trends. Mr. Hazlett noted that representatives from the Volpe Center ask the question, are 20-year transportation plans obsolete? Is there a need to focus more on a five-year transportation capital plan with scenario planning?

Mr. Hazlett then addressed land use plans and urban and rural form. Will this technology enable more residents to live in the city or in the country because traffic is not as big a factor? Mr. Hazlett indicated that technology could change the accessibility index that is used to project population and employment. Mr. Hazlett stated that impact assessments, fee assessments, driver's education and licensing, vehicle licensing, inspections and operations, and insurance and liability could change. He noted that one consideration is who is at fault if there is an accident with an automated car? Mr. Hazlett stated that another thought is should there be more or less regulation?

Mr. Hazlett stated that input from the TPC on how to address these emerging technologies was being sought.

Chair Weiers thanked Mr. Anderson, Mr. Gettman, and Mr. Hazlett for their reports. He asked members if they had questions.

State Transportation Board Member Jack Sellers asked if there is coordination on emerging technologies on a statewide basis with the new Transportation Systems Management and Operations (TSMO) Division at ADOT headed by Mr. Brent Cain.

Mr. Hazlett replied yes, the TSMO Division operates the ADOT Traffic Operations Center. He said that everything they work on is coordinated with ADOT.

Mr. Anderson stated that there are challenges that need to be faced. He expressed his appreciation to ADOT for tackling those challenges. Mr. Anderson stated that there could be a shift from building things to utilizing things. He indicated that we used to think of technology as long term, but it is now short term; in the next five years, vehicles will be remarkably different. Mr. Anderson stated that much of the same is happening in the freight industry: productivity, safety, and getting a good return on expenditures.

Mr. Dave Berry stated that these new technologies are all very exciting and he was grateful to MAG, ADOT, and others for looking to the future. Mr. Berry stated that much of the current investments are in fixed assets. He said that there might be a challenge in the future in spending the same amount of money and getting more throughput through technology, but the investments in technology are expensive and because it changes frequently, technology does not last as long as concrete and asphalt. Mr. Berry stated that new skill sets will be needed to work on this. He remarked that he thought the future was exciting and being able to use the same facilities to increase throughput.

Mr. Sellers stated that some people feel that driverless vehicles could replace trains. He asked if this had been studied.

Mr. Hazlett replied that technology is happening so fast that people are trying to figure out who will be impacted the most and the least. From a driverless vehicle system that is operational in the next 30 to 40 years he thought it would go to the public transportation side, for example, people might not own a private vehicle in the future and would summon a ride with a Smart device, which could be at different levels of service, such as shared or private. Mr. Hazlett indicated that he also manages the Spine study of Interstate 10 and Interstate 17, when the study team is looking at what could be implemented in that limited corridor with technology versus simply adding pavement.

7. Legislative Update

Chair Weiers noted that no legislative report was needed. He noted that the legislative summary was at each place.

8. Request for Future Agenda Items

Topics or issues of interest that the Transportation Policy Committee would like to have considered for discussion at a future meeting were requested.

No requests were noted.

9. Comments from the Committee

An opportunity was provided for Transportation Policy Committee members to present a brief summary of current events. The Transportation Policy Committee is not allowed to propose, discuss, deliberate or take action at the meeting on any matter in the summary, unless the specific matter is properly noticed for legal action.

Chair Weiers announced that the Glendale State of the City on February 25, 2016, at the Glendale Renaissance Hotel. He noted that the doors open at 5:15 p.m. and the program begins at 6:30 p.m. Chair Weiers stated that registration is through the Glendale Chamber of Commerce <http://www.glendaleazchamber.org/> and he noted that approximately 500 people are expected to attend. He said he will be discussing incredible events in the City in the upcoming year.

Mr. Smith stated that when MAG went for the election on the transportation sales tax, it prided itself in showing the public what it would receive for the tax in each of the next 20 years. He said that in the past, the public was informed that the tax would provide a freeway, or a bus route, but it is a dilemma on how to sell the next election with the new technology.

Adjournment

There being no further business, the meeting adjourned at 1:20 p.m.

Chair

Secretary

MARICOPA ASSOCIATION OF GOVERNMENTS

INFORMATION SUMMARY... for your review

DATE:

April 12, 2016

SUBJECT:

Project Changes - Amendment and Administrative Modification to the FY 2014-2018 MAG Transportation Improvement Program and, as Appropriate, to the 2035 Regional Transportation Plan

SUMMARY:

The Fiscal Year (FY) 2014-2018 Transportation Improvement Program (TIP) and 2035 Regional Transportation Plan were approved by the MAG Regional Council on January 29, 2014, with the last modification approved at the March 23, 2016, Regional Council meeting. Since then, additional project changes and additions have been requested by member agencies.

Highway project changes listed in Table A include a federally-funded railroad grade crossing safety project located in the City of Phoenix and other general highway project changes.

The project work phases to be added and amended in Table A may be categorized as exempt from conformity determinations and administrative modifications do not require a conformity determination.

PUBLIC INPUT:

None.

PROS & CONS:

PROS: Approval of this TIP amendment and administrative modification will allow the projects to proceed in a timely manner.

CONS: Project funding is still estimated and additional changes may be required.

TECHNICAL & POLICY IMPLICATIONS:

TECHNICAL: Projects that wish to utilize transportation federal funds need to be shown in the TIP in the year that they expect to commence and may need to undergo an air quality conformity analysis or consultation. All projects that are programmed with Federal Highway Administration Federal Fiscal Year 2016 funds must submit their project for obligation at the Arizona Department of Transportation no later than June 1, 2016, or funding may be lost from the project and from the region.

POLICY: This amendment and administrative modification request is in accord with MAG guidelines.

ACTION NEEDED:

Recommend approval of amendments and administrative modifications to the FY 2014-2018 MAG Transportation Improvement Program and as appropriate, to the 2035 Regional Transportation Plan.

PRIOR COMMITTEE ACTIONS:

This item is on the April 13, 2016, MAG Management Committee agenda. An update will be provided on action taken by the committee.

On March 31, 2016, the MAG Transportation Review Committee recommended approval of the project changes.

MEMBERS ATTENDING

- Avondale: Paul Lopez for David Janover
- ADOT: Kwi-Sung Kang for Mike Kies
- Apache Junction: Giao Pham
- * Buckeye: Scott Lowe
- * Cave Creek: Ian Cordwell
- Chandler: Dan Cook, Chair
- # El Mirage: Amber Wakeman for Jorge Gastelum
- * Florence: Jess Knudson
- # Fountain Hills: Randy Harrel
- * Gila Bend: Ernie Rubi
- Gila River Indian Community: Tim Oliver
- # Gilbert: Leah Hubbard
- Glendale: Debbie Albert, Vice Chair
- Goodyear: Rebecca Zook
- Litchfield Park: Woody Scoutten
- * Maricopa (City): Paul Jepson

- Maricopa County: Clem Ligocki for Jennifer Toth
- Mesa: Jeff Martin for Scott Butler
- * Paradise Valley: Jim Shano
- Peoria: Andrew Granger
- # Phoenix: Kini Knudson for Ray Dovalina
- # Pinal County: Scott Bender for Louis Andersen
- Queen Creek: Mohamed Youssef
- Scottsdale: Greg Davies for Paul Basha
- Surprise: Mike Gent
- * Tempe: Shelly Seyler
- Valley Metro: John Farry
- * Wickenburg: Vince Lorefice
- * Youngtown: Grant Anderson

EX-OFFICIO MEMBERS ATTENDING

- *Street Committee: Chris Hauser, El Mirage
- *ITS Committee: Marshall Riegel, Phoenix
- *FHWA: Ed Stillings

- *Bicycle/Pedestrian Committee: Jim Hash, Mesa
- *Transportation Safety Committee: Dana Alvidrez, Chandler

* Members neither present nor represented by proxy. + Attended by Videoconference
 # Attended by Audioconference

CONTACT PERSON:

Teri Kennedy, Transportation Improvement Program Manager, or David Massey, Transportation Planner I, (602) 254-6300.

**TABLE A: Requested amendments and administrative modifications to the
FY 2014-2018 MAG Transportation Improvement Program (TIP) and the 2035 Regional Transportation Plan¹, TIP AMENDMENT #19**

Sort: Section, Agency, Location, Work Year

TIP Amendment #19																		Reviewed By ²						
Agency	Section	Work Year ⁴	TIP ID	MAG ID	Location	Work	Miles	Lanes Before	Lanes After	Federal ID/ALI	In Life Cycle Program	TRACS/Grant ID	MAG Mode	Funding	Apport. Year ³	Federal	Regional	Local	Total	TIP Change Request	T R C	M C	T P C	R C
ADOT	Highway	2016	DOT16-469	64	35th Avenue and Indian School Rd. at BNSF crossings (025-425K & 025-424D)	Civil work and traffic signal improvements by City of Phoenix	0	0	0	----	5-year	SR204	Safety	STP-RGC	2016	152,000	-	-	152,000	Amend: Add new rail safety project.	✓	✓		
Guadalupe	Highway	2017	GDL17-401	32278	Avenida del Yaqui: Calle Senu to Highline Canal	Design of reconstruction and safety improvements	1	1	1	----	None	----	Street	Local	2017	-	-	501,690	501,690	Amend: Add locally funded project.		✓		
Guadalupe	Highway	2018	GDL18-401	32278	Avenida del Yaqui: Calle Senu to Highline Canal	Utility relocation for reconstruction and safety improvements	1	1	1	----	None	----	Street	Local	2018	-	-	390,000	390,000	Amend: Add locally funded project.		✓		
Guadalupe	Highway	2019	GDL19-401	32278	Avenida del Yaqui: Calle Senu to Highline Canal	Construct reconstruction and safety improvements	1	1	1	----	None	----	Street	Local	2019	-	-	5,541,600	5,541,600	Amend: Add locally funded project.		✓		
Maricopa County	Highway	2016	MMA15-436C	28188	Rockaway Hills Drive, beginning of Maintenance to End of Maintenance	Pave dirt road	0.7	2	2	CM-MMA-0(245)D	None	SZ086 01C	Air Quality	CMAQ	2016	235,750	-	168,520	404,270	Amend: Increase local cost by \$154,270 to reflect updated cost estimate.		✓		
Peoria	Highway	2016	PEO12-110D2	26578	Intersection of Cactus Rd and 75th Avenue	Design intersection improvement.	0.1	4	4	HSIP-PEO-0(215)A	5-year	SH535 03D	Safety	HSIP-AZ	2016	94,300	-	5,700	100,000	Amend: Add \$100,000 total additional funding to existing design phase.	✓	✓		
Peoria	Highway	2016	PEO12-111D2	44015	Peoria Ave and 75th Ave	Design intersection improvement.	0.1	4	4	HSIP-PEO-0(216)A	5-year	SH536 03D	Street Intersection	HSIP-AZ	2016	94,300	-	5,700	100,000	Amend: Add \$100,000 total additional funding to existing design phase.	✓	✓		
Phoenix	Highway	2016	PHX16-422	46556	Various locations	Off Federal-aid Highway System Bridge Inspections and AASHTOWare Bridge Rating Software for bridge inspections	0	0	0	PHX-0(330)D	5-year	T0005 01X01 D	Bridge	STP-AZ	2016	211,971	-	12,812	224,783	Amend: Increase costs from \$136,842/\$8,271 to \$211,971/\$12,812 Federal/local. Update work description.	✓	✓		
Phoenix	Highway	2016	PHX16-422A	46556	Various locations	Federal-aid Highway System Bridge Inspections and AASHTOWare Bridge Rating Software for bridge inspections	0	0	0	PHX-0(329)D	5-year	T0002 01X01 D	Bridge	STP-AZ	2016	396,957	-	23,994	420,951	Amend: Increase costs from \$228,158/\$13,791 to \$396,957/\$23,994 Federal/local.	✓	✓		
Phoenix	Highway	2017	PHX17-406	33107	Various Locations	Pontis / Virtis Software for bridge inspections	0	0	0	----	None	----	Bridge	Local	2017	-----	-----	5,299	5,299	Amend: Delete workphase from TIP. Costs included in overall bridge inspection program.	✓	✓		
Phoenix	Highway	2017	PHX17-407	33174	Various Locations	Equipment Rental for bridge inspections	0	0	0	----	None	----	Bridge	Local	2017	-----	-----	11,030	11,030	Amend: Delete workphase from TIP. Costs included in overall bridge inspection program.	✓	✓		
Phoenix	Highway	2018	PHX18-405	33107	Various Locations	Pontis / Virtis Software for bridge inspections	0	0	0	----	None	----	Bridge	Local	2018	-----	-----	5,299	5,299	Amend: Delete workphase from TIP. Costs included in overall bridge inspection program.	✓	✓		

**TABLE A: Requested amendments and administrative modifications to the
FY 2014-2018 MAG Transportation Improvement Program (TIP) and the 2035 Regional Transportation Plan¹, TIP AMENDMENT #19**

Sort: Section, Agency, Location, Work Year

TIP Amendment #19																		Reviewed By ²						
Agency	Section	Work Year ⁴	TIP ID	MAG ID	Location	Work	Miles	Lanes Before	Lanes After	Federal ID/ALI	In Life Cycle Program	TRACS/Grant ID	MAG Mode	Funding	Apport. Year ³	Federal	Regional	Local	Total	TIP Change Request	T R C	M C	T P C	R C
Phoenix	Highway	2018	PHX18-406	33174	Various Locations	Equipment Rental for bridge inspections	0	0	0	---	None	---	Bridge	Local	2018	---	---	11,030	11,030	Amend: Delete workphase from TIP. Costs included in overall bridge inspection program.	✓	✓		
Tempe	Highway	2016	TMP16-403	49836	Rural Rd within Tempe Boundaries	Conduit and Fiber Installation	0	0	0	TMP-0(241)D	None	SZ165-01C/01D	ITS	CMAQ	2016	983,626	---	59,455	1,043,081	Amend: Delete workphase. Move funding to TMP17-402 to reflect combined project as approved by ITS Committee.		✓		
Tempe	Highway	2017	TMP17-402	40077	Rural Rd within Tempe boundaries	Conduit and Fiber Installation	0	0	0	TMP-0(240)D	None	SZ166-01C/01D	ITS	CMAQ	2017	1,871,016	-	113,093	1,984,109	Amend: Add \$983,626/\$59,455 Federal/local from TMP16-403 to project to reflect combined project as approved by ITS Committee.		✓		
Tempe	Highway	2016	TMP16-406	35126	Rural Road and Southern Avenue	Phase I Design, Traffic Signal Improvements	0	0	0	---	None	---	Safety	HSIP-MAG	2016	30,000	---	135,000	165,000	Amend: Delete project from TIP.				

Notes

1. Rows in the report are sorted in order by the following columns: Section, Agency, Year and TIP ID. Changes are in red font. Deletions are shown in strike through font.

5. Changes are in red font. Deletions are shown in strike through font.

2. The following are used to indicate MAG Committees reviewing these TIP listings for amendment: TRC = Transportation Committee, MC = Management Committee, TPC = Transportation Review Committee, RC = Regional Council

3. The year the federal funds (if any) were apportioned by Congress. This item is included only for informational purposes.

4. For federal projects this is the year the project will authorize. For transit this is the year the project will appear in a grant.

MARICOPA ASSOCIATION OF GOVERNMENTS

INFORMATION SUMMARY... for your review

DATE:

April 12, 2016

SUBJECT:

Changes to Regionally Significant Projects Within the Draft FY 2017-2021 Transportation Improvement Program and Amendment to the FY 2014-2018 MAG Transportation Improvement Program and Amendment to the 2035 Regional Transportation Plan

SUMMARY:

Four light rail transit (LRT) projects in the MAG region now require revision to their current opening dates, along with one new light rail capital structure added to the Draft FY 2017-2021 Transportation Improvement Program (TIP), the FY 2014-2018 MAG TIP, and 2035 Regional Transportation Plan (RTP), and will undergo necessary air quality conformity analysis.

These changes are the result of the January 26, 2016, Phoenix City Council decision to approve the acceleration of two light rail projects, the deferral of one phase of a light rail project and the addition of one light rail station. These schedule changes are a result of the T2050 program, which was approved by Phoenix voters with the passage of Proposition 104 in August 2015. The T2050 program is a 35-year tax extension that would provide additional funding for light rail expansion, additional bus routes and street improvements. The Tempe Streetcar project will also be deferred by one year as per the Valley Metro Transit Life Cycle Program. This action will more closely align with the Federal Transit Administration (FTA) funding allocations and project delivery schedule.

The City of Phoenix Council approved the following changes on January 26, 2016 (Valley Metro Board action on these items is anticipated by spring 2016):

- Northwest Phase II, Phoenix - New opening date of 2023 from 2026.
- South Central Corridor, Phoenix - New opening date of 2023 from 2026.
- Capitol/I-10 West Phase II, Phoenix (17th Ave./Jefferson to 79th Ave./Interstate 10). This project was segmented into two phases: Phase I, Central/Jefferson to 17th Ave./Jefferson will continue to open on its RTP approved date of 2023; Phase II will now open in 2030.
- 50th Street/Washington St. Station, Phoenix - New light rail station to open in 2019.

The following change is reflected as per the TLCP:

- Tempe Streetcar - move opening year to 2019 from 2018.

This requested action is to recommend approval of the requested changes for revised opening dates for rail transit projects within the Draft FY 2017-2021 TIP, the FY 2014-2018 MAG TIP, and the 2035 RTP. These projects have work elements included in the Draft FY2017-2021 TIP, and some projects may complete work and open to service beyond this time-frame in a future year TIP.

The final approval of the project modifications for the MAG FY 2017-2021 TIP, the FY 2014-2018 MAG TIP, and 2035 RTP will be heard formally through the MAG Committee process in May-June 2016 when a new finding of conformity is completed. The accompanying chart and map reflect the current and proposed opening dates of all Valley Metro Rail light rail and streetcar corridor projects.

Additional Project details can also be found online at:
http://www.valleymetro.org/projects_and_planning/current_projects

PUBLIC INPUT:

None.

PROS & CONS:

PROS: Approval of the revised opening dates will permit the implementation of the projects consistent with the Valley Metro Transit Life Cycle Program.

CONS: None.

TECHNICAL & POLICY IMPLICATIONS:

TECHNICAL: These revisions will be included in the transportation modeling for the upcoming Draft FY2017-2021 Transportation Improvement Program (TIP), FY 2014-2018 MAG TIP, and the 2035 Regional Transportation Plan (RTP).

POLICY: These revisions provide for the implementation of the projects in the upcoming Draft FY2017-2021 Transportation Improvement Program (TIP), FY 2014-2018 MAG TIP, and the 2035 Regional Transportation Plan (RTP). Projects programmed for after calendar year 2026 are outside of the Transit Life Cycle Program (TLCP). Priority of projects for new future funding is yet to be determined.

ACTION NEEDED:

Recommend approval of changes to the revised opening dates for rail transit projects within the Draft FY 2017-2021 Transportation Improvement Program and an amendment to the FY 2014-2018 MAG Transportation Improvement Program and 2035 Regional Transportation Plan.

PRIOR COMMITTEE ACTIONS:

This item is on the April 13, 2016, MAG Management Committee agenda. An update will be provided on action taken by the committee.

On March 31, 2016, the Transportation Review Committee recommended approval of the project changes.

MEMBERS ATTENDING

- Avondale: Paul Lopez for David Janover
- ADOT: Kwi-Sung Kang for Mike Kies
- Apache Junction: Giao Pham
- * Buckeye: Scott Lowe
- * Cave Creek: Ian Cordwell
- Chandler: Dan Cook, Chair
- # El Mirage: Amber Wakeman for Jorge Gastelum
- * Florence: Jess Knudson
- # Fountain Hills: Randy Harrel
- * Gila Bend: Ernie Rubi
- Gila River Indian Community: Tim Oliver
- # Gilbert: Leah Hubbard

- Glendale: Debbie Albert, Vice Chair
- Goodyear: Rebecca Zook
- Litchfield Park: Woody Scoutten
- * Maricopa (City): Paul Jepson
- Maricopa County: Clem Ligocki for Jennifer Toth
- Mesa: Jeff Martin for Scott Butler
- * Paradise Valley: Jim Shano
- Peoria: Andrew Granger
- # Phoenix: Kini Knudson for Ray Dovalina
- # Pinal County: Scott Bender for Louis Andersen
- Queen Creek: Mohamed Youssef

Scottsdale: Greg Davies for Paul Basha
Surprise: Mike Gent
* Tempe: Shelly Seyler
Valley Metro: John Farry

* Wickenburg: Vince Lorefice
* Youngtown: Grant Anderson

EX-OFFICIO MEMBERS ATTENDING

*Street Committee: Chris Hauser,
El Mirage
*ITS Committee: Marshall Riegel, Phoenix
*FHWA: Ed Stillings

*Bicycle/Pedestrian Committee: Jim Hash,
Mesa
*Transportation Safety Committee: Dana
Alvidrez, Chandler

* Members neither present nor represented by proxy. + Attended by Videoconference
Attended by Audioconference

On March 15, 2016, the Transit Committee recommended approval of the project changes.

MEMBERS ATTENDING

*ADOT: Mike Normand
Avondale: Kristen Sexton, Vice Chair
#Buckeye: Andrea Marquez
Chandler: Jeff Martin for RJ Zeder
#El Mirage: Jose Macias
Gilbert: Kristin Myers
Glendale: Matthew Dudley for Debbie Albert
*Goodyear: Cato Esquivel
#Maricopa: David Maestas
Maricopa County DOT: Reed Kempton
#Mesa: Jodi Sorrell

*Paradise Valley: Jeremy Knapp
Peoria: Stuart Kent
Phoenix: Ken Kessler for Maria Hyatt, Chair
Queen Creek: Mohamed Youssef
Scottsdale: Gregory P. Davies for
Madeline Clemann
#Surprise: Martín Lucero
#Tempe: Robert Yabes
*Tolleson: Jason Earp
Valley Metro: Wulf Grote
#Youngtown: Grant Anderson

* Members neither present nor represented by proxy. Attended by Videoconference
Attended by Audioconference

CONTACT PERSON:

Marc Pearsall, Transit Planner III~Rail, MAG (602) 254-6300.

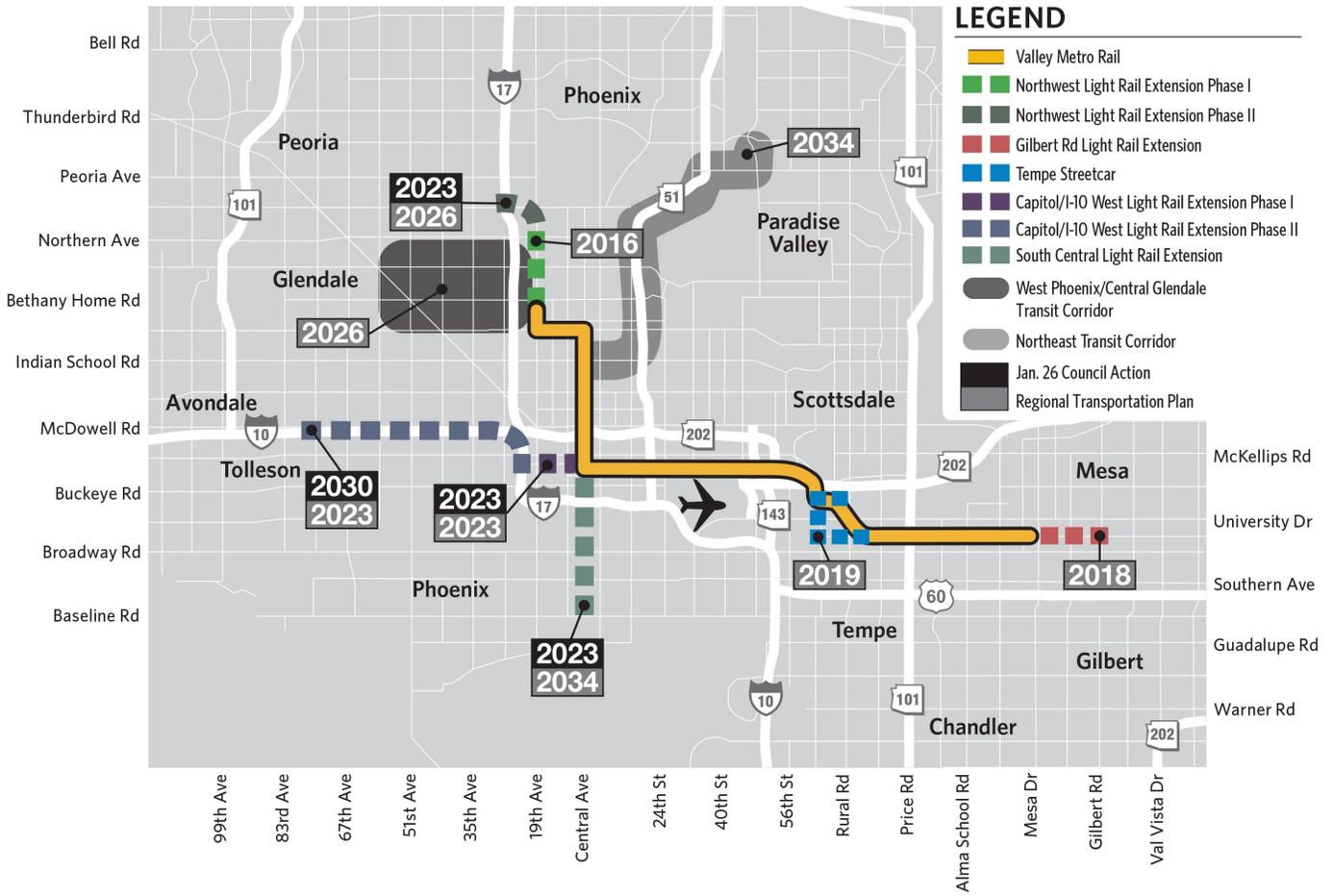
HIGH CAPACITY TRANSIT/ LIGHT RAIL - EXTENSIONS	Technology	Length	Current RTP Year Open	Revised TIP/RTP Year Open
Central Mesa (to Mesa Dr.), Mesa	LRT	3.1	2015	2015
Northwest Phase I, Phoenix	LRT	3.2	2016	2016
Central Mesa (to Gilbert Rd.), Mesa	LRT	1.9	2018	2018
Tempe Streetcar	Modern Streetcar	3.0	2018	2019 (deferred)
50 th Street/Wash. St Station, Phoenix	LRT	----	-----	2019 (new)
Northwest Phase II, Phoenix	LRT	1.7	2026	2023 (accelerated)
South Central, Phoenix	LRT	5.0	2034	2023 (accelerated)
Capitol / I-10 West Phase I (to 17 th Ave /Jefferson), Phoenix	LRT	1.4	2023	2023
West Phoenix / Central Glendale, Phoenix and Glendale	LRT	5.0	2026	2026
Capitol / I-10 West Phase II, (to 79 th Ave /Interstate 10) Phoenix	LRT	9.6	2023	2030 (deferred)
** Northeast, Phoenix	TBD**	12.0	2034	2034

*Locally Preferred Alternative (LPA) corridor currently under study.

** Technology to be determined

Projects programmed for after calendar year 2026 are outside of the Transit Life Cycle Program.

Priority of projects for new future funding is yet to be determined.



MARICOPA ASSOCIATION OF GOVERNMENTS

INFORMATION SUMMARY... for your review

DATE:

April 12, 2016

SUBJECT:

Draft FY 2017-2021 MAG Transportation Improvement Program (TIP) - Interim Listing of Projects for an Air Quality Conformity Analysis

SUMMARY:

The 1990 Federal Clean Air Act requires that regional transportation plans and programs be in conformance with all applicable air quality plans. To comply with this requirement, an air quality conformity analysis of the Draft FY 2017-2021 MAG Transportation Improvement Program - Interim Listing of Projects needs to be conducted, prior to consideration of the program for final approval. Members are being asked to review and comment as appropriate, on the Interim Listing of Projects that will undergo an air quality conformity analysis.

The TIP serves as a five-year regional guide for the preservation, management and expansion of transportation facilities and services in the MAG area, including highways, streets, ridesharing, public transit, and various congestion mitigation and air quality improvement projects. The Interim Listing of Projects contains all potentially regionally significant projects for the MAG planning area, regardless of funding source. All MAG member agencies have been consulted regarding projects incorporated into the draft documents, including locally and privately funded projects. Corrections to the Interim Listing of Projects may be submitted to state@azmag.gov. The Interim Listing of Projects may be accessed at the MAG webpage:

http://www.azmag.gov/Documents/TIP_2016-04-08_Draft-FY2017-2021-MAG-TIP-List-of-Potential-Regionally-Significant-Projects.pdf

PUBLIC INPUT:

Several public meetings have been held in conjunction with the preparation of the Draft FY 2017-2021 TIP, as well as proposed amendment to the Draft 2035 Regional Transportation Plan. A transportation public meeting is scheduled for April 27, 2016, at 10:00 a.m. in the MAG offices, and the public input received will be included in the FY 2016 Mid Phase Input Opportunity Report available prior to June 1, 2016.

PROS & CONS:

PROS: Review and verification of listings allow the projects included to undergo a conformity analysis and to continue the process to enable transportation projects to be included in the Draft FY2017-2021 TIP.

CONS: None.

TECHNICAL & POLICY IMPLICATIONS:

TECHNICAL: The Draft FY 2017-2021 MAG Transportation Improvement Program (TIP) - Interim Listing of Projects needs to undergo a conformity analysis for air quality purposes prior to the Draft

FY 2017-2021 TIP being formally approved by the Regional Council and ADOT, the Governor's designee. The conformity analysis and the federally funded program also need to be reviewed and approved by federal officials.

POLICY: Prior to Regional Council approval of the Draft TIP and conformity analysis, a public comment period of the Interim listings of projects for the Draft FY2017-2021 TIP is needed.

ACTION NEEDED:

Recommend approval of the Draft FY 2017-2021 MAG Transportation Improvement Program - Interim Listing of Projects for an air quality conformity analysis.

PRIOR COMMITTEE ACTIONS:

This item is on the April 13, 2016, MAG Management Committee agenda. An update will be provided on action taken by the committee.

On March 31, 2016, the MAG Transportation Review Committee recommended approval of the listing of projects.

MEMBERS ATTENDING

- Avondale: Paul Lopez for David Janover
- ADOT: Kwi-Sung Kang for Mike Kies
- Apache Junction: Giao Pham
- * Buckeye: Scott Lowe
- * Cave Creek: Ian Cordwell
- Chandler: Dan Cook, Chair
- # El Mirage: Amber Wakeman for Jorge Gastelum
- * Florence: Jess Knudson
- # Fountain Hills: Randy Harrel
- * Gila Bend: Ernie Rubi
- Gila River Indian Community: Tim Oliver
- # Gilbert: Leah Hubbard
- Glendale: Debbie Albert, Vice Chair
- Goodyear: Rebecca Zook
- Litchfield Park: Woody Scoutten*

- Maricopa (City): Paul Jepson
- Maricopa County: Clem Ligocki for Jennifer Toth
- Mesa: Jeff Martin for Scott Butler
- * Paradise Valley: Jim Shano
- Peoria: Andrew Granger
- # Phoenix: Kini Knudson for Ray Dovalina
- # Pinal County: Scott Bender for Louis Andersen
- Queen Creek: Mohamed Youssef
- Scottsdale: Greg Davies for Paul Basha
- Surprise: Mike Gent
- * Tempe: Shelly Seyler
- Valley Metro: John Farry
- * Wickenburg: Vince Lorefice
- * Youngtown: Grant Anderson

EX-OFFICIO MEMBERS ATTENDING

- *Street Committee: Chris Hauser, El Mirage
- *ITS Committee: Marshall Riegel, Phoenix
- *FHWA: Ed Stillings

- *Bicycle/Pedestrian Committee: Jim Hash, Mesa
- *Transportation Safety Committee: Dana Alvidrez, Chandler

* Members neither present nor represented by proxy. + Attended by Videoconference
Attended by Audioconference

CONTACT PERSON:

Teri Kennedy, or Stephen Tate, (602) 254-6300.
Project listing correction requests may be submitted via email to Stephen Tate: state@azmag.gov.

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
ADOT	2020	DOT99-124	1709	101 (Pima): Pima Rd Extension (JPA)	Construct roadway extension	3.0	0	4	Freeway	RARF-HURF	0	3,634,000	0	3,634,000
ADOT	2020		16310	60 (Superstition): Crismon Rd to Meridan Rd	Construct Widening	2.0	4	8	Freeway	NHPP	24,989,500	1,510,500	0	26,500,000
ADOT	2020	DOT14-144	20988	10 (Maricopa): 32nd St - SR202L, Santan, Phase 2	Construct Widening	11.0	10	14	Freeway	NHPP	107,502,000	6,498,000	0	114,000,000
ADOT	2021		31591	101 (Pima): SR 51 Piestewa - Princess Dr	Construct widening	6.0	8	10	Freeway	NHPP	57,617,300	3,482,700	0	61,100,000
ADOT	2019	DOT13-129	41541	10 (Maricopa): 32nd St - SR202L, Santan, Phase 1	Construct Widening	11.0	10	14	Freeway	NHPP	130,000,000	13,970,000	0	143,970,000
ADOT	2021	DOT09-698	60858	10 (Maricopa): SR202L Santan - Riggs Rd	Widen freeway from 4 lanes to 6, plus HOV lanes	6.0	4	8	Freeway	NHPP	65,195,000	3,705,000	0	68,900,000
ADOT	2021		72670	101 (Pima): Princess Dr - Shea Blvd	Construct widening	4.0	8	10	Freeway	NHPP	19,249,000	33,451,000	0	52,700,000
Avondale	2017	AVN08-801	2359	99th Ave: Indian School Rd to Osborn (W 1/2-.5 miles)	Add 1 SB & 1 NB lanes	0.5	4	6	Street	Private	0	0	2,000,000	2,000,000
Avondale	2017	AVN16-407	4223	Van Buren: 119th Avenue to Avondale Blvd (N1/2, .50 miles) Roadway Improvements	Add 2 lanes, curb, gutter, sidewalks	0.5	4	6	Street	Private	0	0	1,500,000	1,500,000
Avondale	2020		10086	107th Avenue: McDowell Road to MC85	add 2 lanes	2.0	4	6	Street	Local	0	0	7,000,000	7,000,000
Avondale	2020	AVN16-401	11076	99th Avenue: Thomas to Encanto (W 1/2, 0.5 miles)	Construct	0.5	4	6	Street	Private	0	0	2,000,000	2,000,000
Avondale	2021		15841	Van Buren, 103rd Ave. to 101st Ave	Add 1 lane, curb, gutter and sidewalk	1.0	2	3	Street	Private	0	0	1,000,000	1,000,000
Avondale	2017	AVN15-404	21337	Thomas Road: RID to 99th Avenue (N 1/2, .50 mi)	Add 1 lane	0.5	3	4	Street	Private	0	0	1,000,000	1,000,000
Avondale	2021		23477	Dysart Road: Whyman to Lower Buckeye, (W & E 1/2, .5mi)	Add new road	0.5	0	4	Street	Private	0	0	1,000,000	1,000,000
Avondale	2020		24608	Broadway: Litchfield to Avondale Blvd	Add 4 lanes, curb, gutter, sidewalk	3.0	0	4	Street	Private	0	0	3,000,000	3,000,000
Avondale	2018	AVN15-408	29304	Van Buren: 111th Avenue to 107th Avenue (N 1/2, .50 miles) Roadway	Add 4 lanes, curb, gutter, sidewalks	0.5	2	6	Street	Private	0	0	2,000,000	2,000,000
Avondale	2018	AVN16-403	39295	El Mirage (Fairway Drive) & I-10 Freeway	Construct full traffic Interchange	1.0	0	4	Freeway Interchange	Local	0	0	400,000	400,000
Avondale	2020		44693	El Mirage: Camelback to Indian School Road (E 1/2, 1.0 miles)	Add two through lanes	1.0	2	4	Street	Private	0	0	1,000,000	1,000,000
Avondale	2020	AVN15-402	49054	El Mirage: I-10 to Van Buren (E 1/2, .50 miles)	Add 2 lanes	0.5	2	4	Street	Private	0	0	1,000,000	1,000,000
Buckeye	2019	BKY13-104	108	Miller Rd: Lower Buckeye Rd to RID Canal	Construct through lanes	0.5	2	4	Street	Private	0	0	5,042,340	5,042,340

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
Buckeye	2019	BKY13-105	108	Miller Rd: Lower Buckeye Rd to RID Canal	Construct through lanes	0.5	2	4	Street	Private	0	0	2,000,000	2,000,000
Buckeye	2019	BKY13-113	1201	Watson Rd: Lower Buckeye Rd to RID Canal	Construct two through lanes	0.5	2	4	Street	Private	0	0	4,247,730	4,247,730
Buckeye	2019	BKY07-702	1866	Watson Rd: Extension to MC-85	Construct new roadway with crossing over Palo Verde Nuclear Generating Station water line, BID Canal and RR Tracks	1.0	0	2	Street	Local	0	0	2,852,000	2,852,000
Buckeye	2020	BKY16-401	3599	Rainbow Rd: Durango St to RID Canal	Construct two through lanes	1.5	2	4	Street	Private	0	0	7,000,000	7,000,000
Buckeye	2020	BKY10-902	4807	Miller Rd: Narramore Ave to Hazen Rd	Street improvements, new pavement, utility relocation as necessary, striping and sidewalks	1.0	2	6	Street	Local	0	0	3,737,210	3,737,210
Buckeye	2021	BKY13-120	6425	Pinnacle Peak Rd: 259th Ave (alignment) to 271st Ave	Construct new six lane roadway	1.0	0	6	Street	Private	0	0	1,500,000	1,500,000
Buckeye	2017	BKY13-117	10298	Desert Oasis Blvd: Beardsley Pkwy to CAP Canal	Construct new four lane roadway	0.5	0	4	Street	Private	0	0	500,000	500,000
Buckeye	2021	BKY12-113	13358	Thomas Rd: Jackrabbit Trl to Tuthill Rd	Construct two through lanes	1.0	0	2	Street	Private	0	0	500,000	500,000
Buckeye	2021	BKY13-116	13944	Southern Ave: Apache Rd to Miller Rd	Construct four through lanes	1.0	2	6	Street	Private	0	0	7,756,320	7,756,320
Buckeye	2019	BKY13-109	14078	Turner Rd: Baseline Rd to 0.5 miles north	Construct two through lanes	0.5	2	4	Street	Private	0	0	910,000	910,000
Buckeye	2019	BKY12-905	16413	Watson Rd: Durango St to Lower Buckeye Rd	Street improvements, new pavement, utility relocation as necessary, striping and sidewalks	1.0	2	6	Street	Local	0	0	2,572,970	2,572,970
Buckeye	2021	BKY12-115	17270	Westpark Loop Rd: Rooks Rd (South) to Rooks Rd (North)	Construct new four lane roadway	1.0	0	4	Street	Private	0	0	3,122,400	3,122,400
Buckeye	2017	BKY18-402	18880	Indian School Rd: Jackrabbit Trail to Sunrise Ln	Construct two additional through lanes	1.5	2	4	Street	Private	0	0	3,000,000	3,000,000
Buckeye	2019	BKY13-111	19475	Apache Rd: RID Canal to Lower Buckeye Rd	Construct two through lanes	0.5	2	4	Street	Private	0	0	2,266,667	2,266,667
Buckeye	2021	BKY13-110	23622	Apache Rd: Lower Buckeye Rd to SRP/WAPA powerline(s)	Construct two through lanes	0.5	2	4	Street	Private	0	0	2,200,562	2,200,562
Buckeye	2020	BKY12-114	28378	Beardsley Pkwy: Desert Vista Blvd (West) to Desert Oasis Blvd	Construct new four lane roadway	1.0	0	4	Street	Private	0	0	1,200,000	1,200,000
Buckeye	2017	BKY12-107	46845	McDowell Rd: Dean Rd (alignment) to Verrado Way	Construct two through lanes	1.0	2	4	Street	Private	0	0	6,400,000	6,400,000
Chandler	2019	CHN20-703	8723	Ocotillo, Rincon to Cobblestone	Roadway widening	0.5	2	4	Street	Local	0	0	6,820,000	6,820,000
Chandler	2018	CHN18-111CZ	12508	Ocotillo Road: Cooper Road to Gilbert Rd	Construct roadway widening	2.5	2	4	Street	RARF	0	4,220,847	489,153	4,710,000

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
Chandler	2017	CHN20-701	32294	Ocotillo, Redwood Dr to Norman Wy	Construct Road Widening	0.5	3	4	Street	Local	0	0	2,788,000	2,788,000
Chandler	2020	CHN12-108	32919	Ocotillo, Cobblestone to Lindsay	Construct Roadway widening	0.5	2	4	Street	Private	0	0	1,500,000	1,500,000
Chandler	2020	CHN11-105	38402	Alma School Road, Willis Road to Pecos Road	Construct Roadway widening	1.0	4	6	Street	Private	0	0	1,000,000	1,000,000
Chandler	2018	CHN17-110CZ	45793	Queen Creek Rd: McQueen Rd to Gilbert Rd	Construct roadway widening	2.0	2	6	Street	STP-MAG	4,432,804	0	7,449,196	11,882,000
Chandler	2020	CHN11-106	46678	Chandler Heights, Gilbert to Four Peaks Way	Construct Roadway widening	0.5	2	4	Street	Private	0	0	1,500,000	1,500,000
Chandler	2018	CHN18-109CZ	47131	Chandler Heights Road: Arizona Avenue to McQueen Road	Construct roadway widening	1.0	2	4	Street	RARF	0	6,037,296	7,612,929	13,650,225
Chandler	2021	CHN21-113CZ	48659	Chandler Heights Road: McQueen Road to Gilbert Rd	Construct Roadway Widening	3.0	2	4	Street	RARF	0	3,929,633	9,830,367	13,760,000
El Mirage	2017	ELM17-103CZ	1652	El Mirage Rd: Peoria Avenue to Cactus Road	Construct roadway widening	1.0	2	4	Street	RARF	0	3,837,628	774,630	4,612,258
Florence	2017	FLO17-401	2149	Attaway: Hunt Hwy to Felix	Construct New Roadway	1.0	0	4	Street	Private	0	0	1,120,000	1,120,000
Florence	2018	FLO16-403	14690	Town of Florence (Various)	Dust Mitigation on Unpaved Shoulders and Remediation	5.8	2	4	Air Quality	Local	0	0	1,800,000	1,800,000
Fountain Hills	2020	FTH20-102CZ	27512	Shea Blvd: Palisades Blvd. to Technology Dr	Construct roadway widening	2.2	4	6	Street	RARF	0	176,337	1,634,750	1,811,087
Fountain Hills	2021	FTH21-102CZ	27512	Shea Blvd: Palisades Blvd. to Technology Dr	Construct roadway widening	2.2	4	6	Street	RARF	0	1,265,991	503,187	1,769,178
Gilbert	2018	GLB12-807	2950	Lindsay Rd: Queen Creek Rd to Ocotillo Rd	Add 1 lane in each direction	1.0	2	4	Street	Local	0	0	2,446,000	2,446,000
Gilbert	2018	GLB04-105	7608	Pecos Rd: Gilbert Rd to Lindsay Rd	Reconstruct roadway to add 1 through lane in each direction	1.0	2	4	Street	Private	0	0	4,000,000	4,000,000
Gilbert	2017	GLB17-115CZ	8180	Germann Rd: Gilbert Rd to Val Vista Rd	Construct roadway widening	2.0	2	6	Street	RARF	0	6,620,672	1,061,104	7,681,776
Gilbert	2018	GLB18-115CZ	8180	Germann Rd: Gilbert Rd to Val Vista Rd	Construct roadway widening	2.0	2	6	Street	RARF	0	6,620,672	721,817	7,342,489
Gilbert	2018	GLB17-108CZ	8305	Elliot Rd at Cooper Dr	Construct intersection improvement	0.5	4	6	Street	RARF	0	1,404,083	2,010,077	3,414,160
Gilbert	2019	GLB16-108CZ	8305	Elliot Rd at Cooper Dr	Construct intersection improvement	0.5	4	6	Street	RARF	0	1,404,083	7,174,917	8,579,000
Gilbert	2018	GLB08-714	14677	Warner Rd: Higley Rd to Recker Rd	Add 2 lanes in each direction	1.0	2	6	Street	Private	0	0	3,000,000	3,000,000
Gilbert	2017	GLB08-712	16366	Ray Rd: Higley Rd to Recker Rd	Add 2 lanes in each direction	1.0	2	6	Street	Private	0	0	1,000,000	1,000,000
Gilbert	2017	GLB09-720	21812	Lindsay Rd: Pecos Rd to Germann Rd	Add 1 lane in each direction	1.0	2	4	Street	Local	0	0	2,200,000	2,200,000

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
Gilbert	2017	GLB16-107CZ	24369	Guadalupe Rd at Cooper Rd	Construct intersection improvement	0.5	4	6	Street	RARF	0	3,406,594	4,229,406	7,636,000
Gilbert	2018	GLB18-110CZ	26163	Elliot Rd at Gilbert Rd	Construct intersection improvement	0.5	4	6	Street	RARF	0	1,097,950	2,047,000	3,144,950
Gilbert	2019	GLB19-110CZ	26163	Elliot Rd at Gilbert Rd	Construct intersection improvement	0.5	4	6	Street	RARF	0	1,097,950	7,781,050	8,879,000
Gilbert	2020	GLB20-114CZ	39986	Elliot Rd at Val Vista Dr	Construct intersection improvement	0.5	4	6	Street	RARF	0	2,797,437	9,951,563	12,749,000
Gilbert	2019	GLB12-810	43657	Val Vista Dr: Ocotillo Rd to Chandler Heights Rd	Add 2 lanes in each direction	1.0	2	6	Street	Local	0	0	5,000,000	5,000,000
Goodyear	2019	GDY12-905	2534	Sarival: Harrison to Yuma	Street Improvement - Add second south bound lane and relocate power poles	0.5	2	3	Street	Local	0	0	600,000	600,000
Goodyear	2019	GDY12-903	5855	Yuma Road: Sarival to 167th Avenue	Street Improvement - 3 eastbound lanes, curb gutter, sidewalk, street lights, relocate power poles, add second lane westbound to 165th avenue	0.5	2	6	Street	Local	0	0	2,400,000	2,400,000
Goodyear	2017	GDY17-401	10796	Indian School Road - SR303 to Sarival	Construct New Roadway	1.0	2	4	Street	Local	0	0	1,127,295	1,127,295
Goodyear	2020	GDY13-914	17657	Sarival: Indian School to Camelback	Street Improvement - Construct four lane arterial street	1.0	2	4	Street	Private	0	0	4,800,000	4,800,000
Goodyear	2018	GDY97-002	27542	Elwood St: 159th Ave to Cotton Lane	Construct new 2 lane roadway, curb, gutter, sidewalk and landscape	1.0	0	2	Street	Private	0	0	400,000	400,000
Goodyear	2020	GDY13-106	42310	Yuma Road: Estrella Parkway to Litchfield Road	Construct six lanes with landscaped median	2.0	2	6	Street	Local	0	0	12,000,000	12,000,000
Goodyear	2020	GDY12-908	45129	Sarival: Mesquite to Harrison	Street Improvement - Add second south bound lane and relocate power poles	1.0	2	3	Street	Local	0	0	300,000	300,000
Maricopa (City)	2017	MAR17-401	566	MCG Highway: White and Parker to East City Limits	Construct Roadway Widening	1.0	2	4	Street	Local	0	0	12,652,250	12,652,250
Maricopa (City)	2019	MAR15-403	5965	White and Parker Rd: South of Honeycutt to Cowpath Rd	Construct Roadway Widening	1.0	2	4	Street	Local	0	0	2,000,000	2,000,000
Maricopa (City)	2018	MAR15-402	15724	MCG Highway: Porter Road to White and Parker	Construct Roadway Widening (Balance of CAG Awarded Funding)	1.0	2	4	Street	STP-MAG	28,000	0	1,700	29,700
Maricopa (City)	2018	MAR15-402C2	15724	MCG Highway: Porter Road to White and Parker	Construct Roadway Widening (MAG Awarded Pinal County STP Funding)	1.0	2	4	Street	STP-MAG	2,000,000	0	251,256	2,251,256
Maricopa (City)	2018	MAR15-402C3	15724	MCG Highway: Porter Road to White and Parker	Construct Roadway Widening (Special Projects Fund)	1.0	2	4	Street	STP-MAG	510,500	0	30,857	541,357
Maricopa (City)	2018	MAR18-402	21288	Hartman Road: Honeycutt Rd to Bowlin Rd	Construct Roadway Improvements	1.0	2	3	Street	Local	0	0	2,500,000	2,500,000
Maricopa County	2021	MMA21-122CZ	948	Northern Parkway: El Mirage Alternative Access	Construct roadway widening and improvements	12.5	4	8	Street	STP-MAG	2,666,753	0	161,193	2,827,946

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
Maricopa County	2018	MMA14-112CZ	4620	Northern Parkway: Northern Avenue at Loop 101	Construct Roadway Widening (AC)	0.5	4	6	Street	STP-MAG	9,462,062	0	571,938	10,034,000
Maricopa County	2018	MMA19-113CZ	33360	Northern Parkway: Dysart to 111th	Construct Roadway Widening (AC)	2.5	2	4	Street	STP-MAG	27,912,800	0	1,687,200	29,600,000
Maricopa County	2018	QNC13-903	36818	Riggs Rd, Ellsworth Rd to Meridian Rd	Widen roadway	3.0	0	6	Street	Local	0	0	5,550,000	5,550,000
Maricopa County	2017	MMA17-114CZ	38335	El Mirage Rd: Northern Avenue to Peoria Avenue	Construct roadway widening	2.0	2	6	Street	RARF	0	8,931,123	1,068,877	10,000,000
Maricopa County	2017	MMA14-401	41325	Riggs Rd, Hawes Rd to Ellsworth Rd	Construct roadway widening	1.0	2	4	Street	Local	0	0	3,100,000	3,100,000
Maricopa County	2017	MMA15-401	44107	Riggs Rd, Power Rd to Hawes Rd	Construct roadway widening	2.0	2	4	Street	Local	0	0	9,900,000	9,900,000
Mesa	2020	MES20-1149CZ	46901	Southern Ave at Country Club Dr	Construct Intersection Improvement	0.5	4	6	Street	STP-MAG	5,835,705	0	4,244,382	10,080,087
Mesa	2019	MES19-150CZ	651	Southern Ave at Stapley Dr	Construct intersection improvement (AC)	0.5	4	6	Street	STP-MAG	11,687,008	0	706,426	12,393,434
Mesa	2017	MES17-402	3936	Spine East Road (replacement for Crismon Road), Ray Rd to Warner Rd	Eastmark Pkw-North Phase: 1/4 east of Ray to Warner, Construct four lanes.	1.0	0	4	Street	Private	0	0	2,000,000	2,000,000
Mesa	2020	MES20-153CZ	4940	Val Vista Dr: US-60 to Pueblo	Construct roadway widening	1.5	4	6	Street	RARF	0	5,026,399	601,703	5,628,102
Mesa	2019	MES19-141CZ	8622	Elliot Rd: Power Rd to Ellsworth	Construct roadway widening	3.0	2	6	Street	RARF	0	8,724,393	4,784,204	13,508,597
Mesa	2018	MES18-136CZ	10040	Val Vista Dr: Baseline Rd to US-60	Construct roadway widening	1.0	4	6	Street	RARF	0	606,762	260,041	866,803
Mesa	2019	MES18-132CZ	16883	Elliot Rd: Ellsworth to Meridian	Construct roadway widening	3.0	2	6	Street	RARF	0	7,439,651	6,068,946	13,508,597
Mesa	2017	MES17-154CZ	23441	Baseline Rd: 24th Street to Consolidated Canal	Construct Roadway Widening	1.0	4	6	Street	RARF	0	2,929,529	1,255,513	4,185,042
Mesa	2017	MES08-802	24488	Elliot Rd: Signal Butte Rd to Mountain Rd	Widen roadway to add 1 through lane in each direction and a center turn lane	0.5	4	6	Street	Private	0	0	2,000,000	2,000,000
Mesa	2021	MES21-148CZ	28240	Pecos Rd: Ellsworth Rd to Meridian Rd	Construct roadway widening	3.0	2	6	Street	RARF	0	1,649,022	706,724	2,355,746
Mesa	2021	MES21-139CZ	31126	Broadway Rd: Dobson Rd to Country Club Dr	Construct roadway widening	2.0	4	6	Street	RARF	0	773,267	331,400	1,104,667
Mesa	2017	MES17-153CZ	35295	University Dr: Sossaman Rd to 88th St	Construct roadway widening	1.5	4	6	Street	RARF	0	700,000	300,000	1,000,000
Mesa	2019	MES08-804	36561	Ellsworth Rd: McKellips Rd to McLellan Rd	Widen roadway to add 1 through lane in each direction and a center turn lane	0.5	2	4	Street	Private	0	0	2,000,000	2,000,000

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
Mesa	2018	MES18-401	47799	Signal Butte Rd: Elliot Rd to Ray Rd	Ph2: Construct full 1/2 street; west half of Signal Butte: Point 22 Blv (Warner) to Rueben; 2/3 mile	2.0	2	6	Street	Private	0	0	1,330,000	1,330,000
Mesa	2020	MES20-152CZ	49255	Stapley Dr at University Dr	Construct intersection improvement	0.5	4	6	Street	RARF	0	2,816,580	5,192,758	8,009,338
Mesa	2021	MES21-152CZ	49255	Stapley Dr at University Dr	Construct intersection improvement	0.5	4	6	Street	RARF	0	2,816,580	5,378,583	8,195,163
Peoria	2017	PEO17-420T	246	Grand/Peoria	Construct regional park-and-ride (Grand/Peoria)	0	0	0	Transit Bus	5307	3,131,521	782,881	0	3,914,402
Peoria	2019	PEO19-105CZ	48141	Happy Valley Rd: Lake Pleasant Parkway to Agua Fria	Construct roadway widening	1.5	4	6	Street	Local	0	0	24,000,000	24,000,000
Peoria	2020	PEO20-704	5697	Dixileta Rd: Vistancia Blvd to 135th	Construct Roadway	0.8	0	4	Street	Private	0	0	6,880,000	6,880,000
Phoenix	2018	PHX18-402	8184	35th Ave: Olney Dr - Dobbins	Construction	0.5	2	4	Street	Local	0	0	2,000,000	2,000,000
Phoenix	2017	PHX15-188	15600	56th St: Deer Valley - Pinnacle Peak	Construction	1.0	2	4	Street	Local	0	0	4,800,000	4,800,000
Phoenix	2021	PHX17-403	18412	83rd Ave: Lower Buckeye - Buckeye	Construct roadway	1.0	2	4	Street	Local	0	0	2,500,000	2,500,000
Phoenix	2017	PHX17-418	19845	107th Ave, Camelback Rd to Indian School Rd	Construct additional through lanes and pedestrian and bicycle improvements	1.0	2	4	Bike/Ped	CMAQ	900,000	0	2,498,216	3,398,216
Phoenix	2017	PHX20-101CZ	22423	Avenida Rio Salado Phase II: Avenida Rio Salado: 51st Ave to 35th Ave, 7th Ave, and 7th Street	Construct Roadway Widening	3.0	3	6	Street	Local	0	0	14,900,000	14,900,000
Phoenix	2018	PHX17-101CZ	22423	Avenida Rio Salado Phase II: Avenida Rio Salado: 51st Ave to 35th Ave, 7th Ave, and 7th Street	Construct Roadway Widening	3.0	3	6	Street	Local	0	0	1,990,000	1,990,000
Phoenix	2019	PHX21-101CZ	22423	Avenida Rio Salado Phase II: Avenida Rio Salado: 51st Ave to 35th Ave, 7th Ave, and 7th Street	Construct Roadway Widening	3.0	3	6	Street	Local	0	0	399,000	399,000
Phoenix	2021	PHX18-411	25433	Cave Creek Rd: Union Hills - Pima Fwy	Construction	1.0	4	6	Street	Local	0	0	3,000,000	3,000,000
Phoenix	2018	PHX17-409	25574	27th Ave: Lower Buckeye - Buckeye	Construction	1.0	2	4	Street	Local	0	0	6,600,000	6,600,000
Phoenix	2017	PHX17-405	29906	35th Ave: Dobbins Rd - Baseline Rd	Construction	1.0	2	4	Street	Local	0	0	4,800,000	4,800,000
Phoenix	2020		37130	Gantzel Rd, Hash Knife Draw Rd To (0.5 Miles North)	Widen Roadway	0.5	3	6	Street	Private	0	0	1,500,000	1,500,000
Phoenix	2018	PHX09-620	38110	91st Ave: Indian School Rd to Camelback Rd	Reconstruct roadway to 74ft section, adding 1 through lane in each direction	1.0	4	6	Street	Local	0	0	4,000,000	4,000,000
Phoenix	2020	PHX20-744	38700	Van Buren St: 7th Street to 24th Street	Construct Bicycle Lanes and Pedestrian Improvements	2.0	4	2	Bike/Ped	TAP-MAG	2,310,350	0	139,650	2,450,000

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
Pinal County	2020		15801	Skyline Dr, (0.5 East Of Felix Rd) To (0.5 Miles East)	Widen Roadway	0.5	2	3	Street	Private	0	0	500,000	500,000
Pinal County	2020		17870	Bella Vista Rd, (Sierra Vista Rd Alignment) To Quail Run Ln	Widen Roadway	1.0	2	3	Street	Private	0	0	1,000,000	1,000,000
Pinal County	2020		20387	Meridian Rd, Ocotillo Rd to Pima Rd	Construct Roadway	1.0	0	2	Street	Private	0	0	2,000,000	2,000,000
Pinal County	2020		23808	Ralston Rd, Teel Rd to 0.7 Miles North	Pave and Widen Roadway	0.8	2	3	Street	Private	0	0	750,000	750,000
Pinal County	2020		25773	Bella Vista Rd, Attaway Rd To Quail Run Ln	Widen Roadway	1.0	2	3	Street	Private	0	0	1,000,000	1,000,000
Pinal County	2019	PNL19-402	46602	Germann Road: Meridian Road to Ironwood Drive	Construct Roadway Widening and Improvements	1.2	0	4	Street	STP-MAG	1,630,060	0	98,530	1,728,590
Queen Creek	2021		9412	Ryan Rd: Crismon to Signal Butte	Construct New Roadway	2.0	0	2	Street	Private	0	0	3,182,228	3,182,228
Queen Creek	2021	QNC07-719	11683	Hawes Rd: Queen Creek Rd to 1/2 mile south	Widen roadway	0.5	2	3	Street	Private	0	0	1,000,000	1,000,000
Queen Creek	2020	QNC13-102	12531	Rittenhouse Rd: Loop Rd N and Alliance Lumber	Intersection Improvements	2.4	2	4	Street	Local	0	0	600,000	600,000
Queen Creek	2020		13728	Power Rd: Ocotillo to Chandler Heights	Construct New Roadway	1.0	2	4	Street	Local	0	0	8,350,000	8,350,000
Queen Creek	2017	QNC07-701	26782	Chandler Heights Rd: Ellsworth Rd to 204th St	Widen roadway	0.5	2	4	Street	Private	0	0	500,000	500,000
Queen Creek	2021		32807	Power Rd: Riggs to Hunt	Construct New Roadway	1.0	2	4	Street	Local	0	0	8,250,000	8,250,000
Queen Creek	2019	QNC07-735	33662	Queen Creek Rd: Crismon Rd to 213th St	Widen roadway	1.0	2	4	Street	Private	0	0	2,500,000	2,500,000
Queen Creek	2018	QNC07-707	34984	Ellsworth Rd: Ocotillo Rd to Queen Creek Wash	Widen roadway and add Bike Lane	1.0	2	3	Street	Local	0	0	500,000	500,000
Queen Creek	2020		36402	Hunt Highway: Power to Sossaman	Construct New Roadway	1.0	2	4	Street	Local	0	0	7,050,000	7,050,000
Scottsdale	2018	SCT13-113CZ	4095	Pima Rd: Via Linda to Via De Ventura	Construct roadway widening	1.3	2	4	Street	RARF	0	1,236,494	929,925	2,166,419
Scottsdale	2018	SCT18-112CZ	4292	Pima Rd: Krail to Chaparral Rd	Construct roadway widening	1.8	2	4	Street	RARF	0	3,399,900	1,457,100	4,857,000
Scottsdale	2019	SCT19-112CZ	4292	Pima Rd: Krail to Chaparral Rd	Construct roadway widening	1.8	2	4	Street	RARF	0	4,806,651	8,711,349	13,518,000
Scottsdale	2020	SCT20-118CZ	7209	Raintree Drive: Hayden Road to Loop 101	Construct roadway widening	1.0	4	8	Street	RARF	0	4,550,000	10,123,501	14,673,501
Scottsdale	2018	SCT14-124CZ	12577	Southbound Loop 101 Frontage Road Connections	Construct roadway widening	0.8	0	4	Street	RARF	0	1,495,899	1,104,101	2,600,000
Scottsdale	2018	SCT15-107CZ	21671	Redfield Rd: Raintree Dr to Hayden Rd	Construct roadway widening	1.0	3	4	Street	RARF	0	1,350,000	650,000	2,000,000

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
Scottsdale	2018	SCT17-139CZ	25253	Happy Valley Rd: Pima Rd to Alma School Rd	Construct Roadway Widening	2.2	2	4	Street	RARF	0	5,302,274	3,697,726	9,000,000
Scottsdale	2018	SCT14-122CZ	29852	Raintree Drive: Scottsdale Rd to Hayden Rd	Construct roadway widening	1.2	0	2	Street	RARF	0	4,550,000	9,025,000	13,575,000
Scottsdale	2019	SCT17-125CZ2	36968	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd	Construct roadway widening	1.0	4	6	Street	RARF	0	10,254,982	4,394,993	14,649,975
Scottsdale	2020	SCT17-125CZ	36968	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd	Construct roadway widening	1.0	4	6	Street	RARF	0	3,200,000	1,371,429	4,571,429
Surprise	2020		9555	Happy Valley Road between El Granada Blvd to US60	Construct 2 lanes in each direction with curb, gutter, and sidewalks	5.0	0	4	Street	Private	0	0	5,000,000	5,000,000
Surprise	2017		10259	Bullard Avenue between Peoria and Greenway Road	Construct 2 lanes and a separated bike track	3.0	2	4	Street	Private	0	0	3,000,000	3,000,000
Surprise	2020		10823	Cactus Road from 175th Ave to Perryville Road	Construct 2 lanes in each direction with curb, gutter, and sidewalks	1.5	2	4	Street	Private	0	0	1,500,000	1,500,000
Surprise	2018		39227	Peoria Avenue between Sarival Ave to Reems Road	Construct 3 lanes in each direction with curb, gutter, and sidewalks	1.0	2	6	Street	Private	0	0	1,000,000	1,000,000
Valley Metro Rail	2017	VMR13-104T	13425	Tempe Streetcar: Rio Salado Parkway to Apache Blvd/Dorsey	Construct Transitway	3	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2018	VMR15-108T	13425	Tempe Streetcar: Rio Salado Parkway to Apache Blvd/Dorsey	Construct Transitway	3	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2019	VMR18-433T	13425	Tempe Streetcar: Rio Salado Parkway to Apache Blvd/Dorsey	Construct Transitway	3	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2020	VMR18-422T	49041	Capitol/I-10 West Phase I (Central/Jefferson St to 17th)	Fixed guideway corridor - Capitol/I-10 West Phase I - construct	0	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2021	VMR18-426T	49041	Capitol/I-10 West Phase I (Central/Jefferson St to 17th)	Fixed guideway corridor - Capitol/I-10 West Phase I - construct	0	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2017			50th Street (50th St./Washington St - East Phoenix)	New Light Rail Station - 50th Street - Construction	0	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2018			50th Street (50th St./Washington St - East Phoenix)	New Light Rail Station - 50th Street - Construction	0	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2019			50th Street (50th St./Washington St - East Phoenix)	New Light Rail Station - 50th Street - Construction	0	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2020			South Central (Central Ave/Jefferson St- Central Ave/Baseline Rd - South)	Fixed guideway corridor - South Central - Construction	0	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2021			Northwest Extension Phase II (19th Ave/Dunlap to Metrocenter - NW)	Fixed guideway corridor - Northwest Phase II - Construction	0	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2021			South Central (Central Ave/Jefferson St- Central Ave/Baseline Rd - South)	Fixed guideway corridor - South Central - Construction	0	0	0	Transit Rail	TBA	TBA	TBA	TBA	TBA
Valley Metro Rail	2017	VMR18-102GTEZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Guideway and Track Elements	2	0	0	Transit Rail	CMAQ	2,105,799	0	127,286	2,233,085
Valley Metro Rail	2017	VMR17-102GTEZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Guideway and Track Elements	2	0	0	Transit Rail	STP-MAG	4,030,587	0	243,630	4,274,217
Valley Metro Rail	2017	VMR20-102SSCZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Sitework and Special Conditions	2	0	0	Transit Rail	CMAQ	4,217,378	0	254,921	4,472,299
Valley Metro Rail	2017	VMR17-102SSCZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Sitework and Special Conditions	2	0	0	Transit Rail	STP-MAG	4,672,287	0	282,418	4,954,705

DRAFT FY 2017 - FY 2021 MAG Transportation Improvement Program, List of Potential Regionally Significant Projects

Agency	Work Year	TIP ID	Project ID	Location	Work	Miles	Lanes Before	Lanes After	MAG Mode	Funding	Federal	Regional	Local	Total
Valley Metro Rail	2017	VMR17-102SSTZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Stations, Stops and Terminals	2	0	0	Transit Rail	STP-MAG	667,933	0	40,373	708,306
Valley Metro Rail	2018	VMR20-102SSCZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Sitework and Special Conditions	2	0	0	Transit Rail	CMAQ	2,936,627	0	177,506	3,114,133
Valley Metro Rail	2018	VMR18-102SSTZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Stations, Stops and Terminals	2	0	0	Transit Rail	CMAQ	1,213,106	0	73,327	1,286,433
Valley Metro Rail	2018	VMR18-102SSTZ2	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Stations, Stops and Terminals	2	0	0	Transit Rail	STP-MAG	1,786,894	0	108,009	1,894,903
Valley Metro Rail	2020	VMR20-102SSTZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Stations, Stops and Terminals	2	0	0	Transit Rail	CMAQ	581,553	0	35,152	616,705
Valley Metro Rail	2020	VMR19-102SSTZ	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Stations, Stops and Terminals	2	0	0	Transit Rail	STP-MAG	200,000	0	12,089	212,089
Valley Metro Rail	2020	VMR20-102SSTZ2	41266	Mesa Main Street: Mesa Dr to Gilbert Rd LRT	Stations, Stops and Terminals	2	0	0	Transit Rail	STP-MAG	1,760,369	0	106,406	1,866,775

MARICOPA ASSOCIATION OF GOVERNMENTS

INFORMATION SUMMARY... for your review

DATE:

April 12, 2016

SUBJECT:

Regional Freeway and Highway Program Update – 2016 Rebalancing

SUMMARY:

Arizona Revised Statutes (ARS) 28-6352 (A) requires a budget process that ensures the estimated cost of the freeways and other controlled access highways in the Regional Transportation Plan (RTP) does not exceed the total amount of revenues estimated to be available. The MAG Regional Freeway and Highway Program is subject to this requirement. In an oversight capacity, MAG staff collects and reviews project and financial data related to the Program from the Arizona Department of Transportation (ADOT). The program is reviewed from year-by-year, corridor, and individual project perspectives to ensure the funds are available for program delivery. The year-by-year process, referred to as “cash flow” is completed through a modeling effort for the program between Fiscal Years (FY) 2006 and 2026. These horizon years coincide with the life of the half-cent Maricopa County Transportation Excise Tax, which was passed by the voters of Maricopa County in November 2004. This funding is placed in the Proposition 400 Regional Area Roadway Fund (RARF).

In 2009, the Regional Freeway and Highway Program was reviewed and the Regional Council approved the Tentative Scenario to balance an estimated \$6.6 billion shortfall due to cost overruns and revenue shortfalls. In 2012, based upon MAG and ADOT estimates, the Program was reviewed and the Regional Council approved a scenario to balance an additional \$390 million shortfall due to even lower revenue projections in the RARF. Since 2009, approximately \$7 billion was balanced from the Regional Freeway and Highway Program.

Since 2012, MAG has been working with ADOT and the Federal Highway Administration (FHWA) to improve upon project development by (a) improving upon designs and maximizing safety to minimize right-of-way and construction material needs; (b) identifying and planning for alternative delivery strategies to advance early design and construction; and (c) developing a better understanding of project risks to improve design and construction management, and ultimately performance. These three-step initiatives, coupled with improving RARF, Highway User Revenue Fund (HURF), and projected revenues from federal legislation (Fixing America's Surface Transportation Act), have helped the Regional Freeway and Highway Program realize a surplus in available cash flow. Given this surplus, it is possible to reprogram projects balanced out of the program in both 2009 and 2012 for delivery by the 2026 program horizon.

In initiating this reprogramming process, there are a number of factors to consider before identifying the specific projects to include in a 2016 rebalancing scenario. At the time of this summary transmittal, the following four issues have been identified based upon continuing conversations with ADOT, FHWA, and MAG member agencies:

- **Project Priorities** - When Maricopa County voters passed Proposition 400 in 2004, the Regional Freeway and Highway Program was also simultaneously approved with specific

projects and timing. In both 2009 and 2012, the rebalancing scenarios approved by the Regional Council were based upon principles consistent with the original planning goals and objectives used to establish the Regional Transportation Plan in 2003. This meant that projects programmed in later phases of the program, such as the entire SR-30/Interstate 10 Reliever Freeway corridor, portions of SR-24/Gateway Freeway, full build-out of Loop 303 in the North Valley, and capacity expansion projects along Loop 101/Agua Fria and Loop 202/Santan Freeways, were deferred. Regional Council minutes from 2009 and 2012 are clear that these project priorities were paramount in establishing the rebalancing scenarios and that these needs should be considered if and when funding is available.

- **Travel Demand** - Since adopting the Regional Transportation Plan in 2003, development patterns throughout metropolitan Phoenix have changed, especially in light of the 2008-2009 economic downturn. Parts of the Valley economy have reemerged since the recession. However, the growth has not been uniform and as a result there are portions of the system that are seeing congestion and developing bottlenecks not anticipated when the Plan was initially identified in 2003. Therefore, it may be a necessity to consider projects that may be outside of the original Program, to meet the evolving travel demand needs.
- **Project Readiness** - As projects were deferred beyond the 2026 horizon and outside Proposition 400 funding, ADOT, FHWA, and MAG slowed their development process. The development process includes pre-design and conceptual planning, environmental clearances, and the potential for early right-of-way acquisition. It is also important to consider that the Program is also delivering the largest Proposition 400 projects (Loop 202/South Mountain and the Interstate 10/Interstate 17 SPINE corridor) over the next five years that command considerable resources. All potential projects will need to undergo evaluation and risk analyses to assess readiness and program budgets.
- **Funding Realities** - While the cash flow surplus does account for upwardly revised RARF and HURF revenue projections, along with the expanded federal FAST surface transportation act recently approved by the United States Congress and President, unforeseen economic realities still exist during the final ten years of the Regional Freeway and Highway Program. Therefore, it may be prudent to consider retaining a portion of the surplus in 2016 and revisit this matter again at a later date to monitor these realities.

Policy guidance is an important step in establishing the 2016 rebalancing scenario for the Regional Freeway and Highway Program. Consideration of these four issues and applying their criteria for identifying the scenario initiate the rebalancing process. It is recommended that this process conclude in Fall 2016 for incorporation into the next update of the Regional Transportation Plan and Air Quality Conformity analysis.

PUBLIC INPUT:

No public input has been received at this time.

PROS & CONS:

PROS: Development of the 2016 scenario, based upon principles consistent with the original planning goals and objectives used to initially establish the Regional Transportation Plan in 2003, provides a basis and direction for governing the remaining funds available for regional freeway and highway construction.

CONS: The policy issues identified in this narrative demonstrate the complexity of reprogramming the Regional Freeway and Highway Program. Although it is possible to consider these broad-based policy issues, not all travel demand needs will be met with this 2016 rebalancing effort. The Program will

need continual monitoring to keep costs contained and risks managed to enable future rebalancing efforts that could deliver additional projects for meeting travel demand.

TECHNICAL & POLICY IMPLICATIONS:

TECHNICAL: The 2016 scenario for reprogramming additional projects into the Regional Freeway and Highway Program has technical implications for meeting performance and air quality targets. The reprogrammed projects could address congestion and bottlenecks not anticipated during the initial development of the Regional Transportation Plan in 2003. This congestion could affect the air quality.

POLICY: The process used to develop the 2016 Scenario for the Regional Freeway and Highway Program builds upon the rebalancing efforts undertaken in 2009 and 2012. Additional policy considerations, noted above, are needed to reflect the dynamic nature and change in travel demand that has evolved since the initial development of the Program in 2003.

ACTION NEEDED:

Information and discussion.

PRIOR COMMITTEE ACTIONS:

No previous actions have been taken on the 2016 rebalancing of the Regional Freeway and Highway Program.

CONTACT PERSON:

Bob Hazlett, MAG Senior Engineering Manager, 602 254-6300.

MARICOPA ASSOCIATION OF GOVERNMENTS

INFORMATION SUMMARY... for your review

DATE:

April 12, 2016

SUBJECT:

MAG Managed Lanes Network Development Strategy - Phase II Project Update

SUMMARY:

On November 15, 2010, the MAG Regional Council authorized procurement of consultant services to develop the MAG Managed Lanes Network Development Strategy - Phase I project. This multi-phase effort was in response to consideration for public-private-partnership (P3) opportunities in the Phoenix Metropolitan Area where high occupancy (HOV) lanes could be operated as high occupancy toll (HOT) lanes as part of an overall managed lanes strategy. In late 2013, this first phase was completed and the Transportation Policy Committee recommended proceeding with the strategy's second phase and focusing study efforts on transportation technology solutions that could improve congestion and accommodate future traffic flows. This significant finding to employ and expand technology, in lieu of a congestion pricing or tolling solution, served as the premise in scoping this project's second phase.

Of the technology solutions presented during the first phase of the project, considerable interest was expressed to consider a Managed Motorways strategy and approach in metropolitan Phoenix. The term, Managed Motorways, comes from Australia, and redefines urban freeways to use integrated data collection sensors along the roadway, coupled with advanced system management tools, to monitor and control real-time conditions to ensure a higher and more consistent level of freeway performance. The agency, VicRoads, the state department of transportation for Victoria, Australia, has successfully implemented Managed Motorways along multiple corridors in the Melbourne metropolitan area. Melbourne has about the same population as metropolitan Phoenix.

Theoretically, a freeway lane should accommodate up to 2,200 vehicles each hour. In the MAG region, the data is showing us that we are only accommodating an average of 1,400 vehicles per hour in each lane along most corridors. In Melbourne, the advanced instrumentation and active real-time monitoring has allowed the system to carry closer to 2,000 vehicles per hour in each lane . . . at a uniform speed, with less congestion, and fewer crashes. What has happened with this approach has been an increased travel flow without the need for significantly expanding the facility with additional lanes, ramps, and traffic interchanges.

Using the VicRoads criteria, an analysis was conducted of the MAG system to identify a potential corridor for piloting a Managed Motorways strategy. A critical component for Managed Motorways is adequate ramp lengths for traffic entering the freeway, ramp meters, and instrumentation. As the MAG system is the newest and most modern freeway network in the United States, it was possible to consider the concept along multiple freeways. For piloting purposes, the recommendation was to select southbound SR-51, from Loop 101 to Interstate 10 and Loop 202 for testing the concept.

The study also identifies additional equipment, primarily additional roadway detectors, sensors, and equipment, that would be needed to retrofit SR-51 for the operation. These items would improve the ramp metering capabilities, interconnected with the ramp intersection signals themselves, to protect and maximize the traffic flow on the freeway. Finally, as advanced real-time traffic monitoring software is a necessity for the Managed Motorway concept, the study has also identified a strategy to share through

internet cloud computing the programs used by VicRoad. It is the belief that this type of pilot program allows ADOT an opportunity to test the concept with a minimal equipment investment and low software needs before determining if deployment is suitable for the remaining MAG freeway system.

For consideration, the Colorado Department of Transportation (CDOT) is well underway in implementing this cloud computing approach as a pilot for Interstate 25 in metropolitan Denver along the recently enhanced T-REX corridor. Utah Department of Transportation (UDOT) is also in the final stages of implementing a Managed Motorways application along Interstate 15 in metropolitan Salt Lake City just south of their Downtown. Both CDOT and UDOT are rapidly advancing these concepts to protect close to a combined \$3 billion in recent infrastructure investments that have addressed congestion, but are in need of enhancements.

Additional details about the study's recommendation will be presented to the Committee in this briefing. As the study is being completed, certain policy matters will need discussion, including identifying the funding opportunity for this pilot operation along SR-51.

PUBLIC INPUT:

No public input has been received at this time.

PROS & CONS:

PROS: Real-time traffic monitoring is an essential next step for the MAG freeway system to enhance the investment made over the past 30 years by protecting mainline flows and improving reliability and consistent performance. Varying opportunities exist for implementing a Managed Motorways concept and the recommendations of this project represent a low-cost solution SR-51 pilot project.

CONS: At this time, none. Some liability concerns have been expressed about the real-time traffic monitoring using a cloud computing with Australia that are under study by ADOT.

TECHNICAL & POLICY IMPLICATIONS:

TECHNICAL: The recommendations for a pilot program along SR-51 include additional equipment and communications technologies that presently do not exist in the corridor. This matter has been coordinated with ADOT, operator of SR-51, and their requirements are being addressed in the report draft. It is important to note that the additional equipment has a multi-purpose use beyond the Managed Motorways operation proposed by this project.

POLICY: The pilot program recommended for SR-51 represents a directional change to employ technology ahead of a construction action for meeting the travel demand in a freeway corridor. As technology continues to unfold, including the emerging world of connected and autonomous vehicles, Managed Motorway strategies present an opportunity to collect and provide the datasets these vehicles will need to safely and efficiently accommodate future transportation in metropolitan Phoenix.

ACTION NEEDED:

Information and discussion.

PRIOR COMMITTEE ACTIONS:

No previous actions have been taken on the second phase of the MAG Managed Lanes Network Development Strategy.

CONTACT PERSON:

Bob Hazlett, MAG Senior Engineering Manager, 602 254-6300.