

February 13, 2019

TO: Members of the Transportation Policy Committee

FROM: Mayor Jenn Daniels, Gilbert, Chair

SUBJECT: NOTIFICATION OF MEETING AND TRANSMITTAL OF TENTATIVE AGENDA

Meeting - 12:00 noon
Wednesday, February 20, 2019
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 Melissa Bettis 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 Eric Anderson, MAG Executive Director, at (602) 254-6300.

c: MAG Regional Council
MAG Management Committee

**TRANSPORTATION POLICY COMMITTEE
TENTATIVE AGENDA
February 20, 2019**

COMMITTEE ACTION REQUESTED

- 1. Call to Order
- 2. Pledge of Allegiance
- 3. Call to the Audience

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.

- 4. Approval of Consent Agenda

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 (*).

- 3. Information.

- 4. Recommend approval of the Consent Agenda.

ITEMS PROPOSED FOR CONSENT*

- *4A. Approval of the November 14, 2018, Meeting Minutes
- *4B. Safety Performance Targets for 2018 and 2019

In March 2016, the Federal Highway Administration (FHWA) announced the Final Rule for Road Safety Performance, which specified five (5) Safety Performance Measures. Each state DOT is required to establish and report on Performance Measures and Targets for calendar year 2018, with the first such report due by August 31, 2017, and annually thereafter. The Arizona DOT has established revised statewide Safety Performance Targets for calendar year 2019 and have reported them to FHWA. The FHWA Final Rule requires that MPOs must also establish safety targets and report on them to the state DOT. The Arizona DOT has recommended that MPOs in the state adopt the statewide targets. Please refer to the enclosed material.

- 4A. Review and approval of the November 14, 2018, meeting minutes.
- 4B. Recommend approval of the Safety Performance Targets for 2019 established by the Arizona Department of Transportation.

ITEMS PROPOSED TO BE HEARD

- 5. Arterial Life Cycle Program (ALCP) Policies and Procedures Exception – Reallocation of Regional Funding to the Drinkwater Boulevard Bridge Project

The Arterial Life Cycle Program (ALCP) is the financial management tool of the arterial street component of the Regional Transportation Plan (RTP). Management

- 5. Recommend exceptions to the ALCP Policies and Procedures to (1) remove the Southbound Frontage Road Connections (SAT-10-03-I) and substitute it with the Drinkwater Boulevard Bridge project and (2) reallocate savings from the Shea Auxiliary Lane from 90th Street to Loop 101 (ACI-SHA-20-30-B) prior to its completion.

of the program is guided by the ALCP Policies and Procedures, which were approved by MAG Regional Council on June 24, 2015.

The ALCP Policies and Procedures prohibit substitution of an ALCP project that is not within the same general area addressed by the original project. The ALCP Policy and Procedures also prohibit reallocation of project savings until construction has been completed or there is a high degree of certainty that it will be completed within the specified scope and schedule.

The city of Scottsdale has determined that one of its existing ALCP projects, Southbound Frontage Road Connections (SAT-10-03-I) is infeasible and has requested policy exceptions to remove the project from the program, substitute it with the Drinkwater Boulevard Bridge project, and reallocate savings from the completed Shea Boulevard at 124th Street Intersection Improvements project (ACI-SHA-20-30-N) and Shea Auxiliary Lane from 90th Street to Loop 101 (ACI-SHA-20-30-B) prior to its completion. Please refer to the enclosed material.

6. Freeway Life Cycle Program – Financial Update

The Freeway Life Cycle Program (FLCP) represents the financial management tool for the freeway and highway projects funded through Proposition 400. An update on the FLCP was given to the Transportation Policy Committee on October 17, 2018. As part of that update,

6. Information and discussion.

it was noted that the Arizona Department of Transportation (ADOT) and MAG were undergoing a thorough analysis of estimated project costs. The analysis has been completed, and updated cost estimates are significantly higher than what is currently programmed. Please refer to the enclosed material.

7. Freeway Life Cycle Program – Material Cost Change Requests

The MAG Regional Council approved a revised Material Change Policy for the Freeway Life Cycle Program (FLCP) on December 6, 2017. On November 14, 2018, a request to increase funding for three of the four projects scheduled to advertise for construction in Fiscal Year (FY) 2019 was presented to, and recommended for approval by, the Transportation Policy Committee (TPC). Two days after that action, bids for one of the three projects, SR-101L, I-17 to Pima Road, were opened and the low-bid was significantly higher than what had been estimated. Given the magnitude of the increase, it was decided that the material cost change requests for the other two projects – SR-101L, Baseline Road to SR-202L and I-17, Peoria Avenue to Greenway Road – would be re-evaluated and brought back to TPC. The estimates have since been updated, and the Arizona Department of Transportation (ADOT) has requested an additional \$22.6 million for the SR-101L, Baseline Road to SR-202L project and an additional \$5.64 million for the I-17, Peoria Avenue to Greenway Road drainage project. Please refer to the enclosed material.

7. Recommend approval of the material cost changes for the SR-101L, Baseline Road to SR-202L (\$22.6 million) and I-17, Peoria Avenue to Greenway Road drainage (\$5.64 million) projects and the corresponding amendments to the FY 2018 – 2022 MAG Transportation Improvement Program and 2040 MAG Regional Transportation Plan, as appropriate.

8. Scoping Study Recommendations for the I-10/Loop 101 System Traffic Interchange

The City of Tolleson requested a Scoping Study to determine the feasibility for constructing access to 91st Avenue from Southbound Loop 101 through its system traffic interchange with Interstate 10. Presently, access is circuitous for traffic entering the City from Loop 101. In February 2018, three planning partners – ADOT, MAG, and the City of Tolleson – started a scoping study. In November, the study concluded by identifying opportunities for improving mainline traffic flows along Loop 101, as well as a 91st Avenue connection. MAG staff will present a summary of the project and its recommendations. Please refer to the enclosed material.

9. Update on Proposition 400 Extension Tasks

Collections for Proposition 400 expire at the end of calendar year 2025. An update on the planning work underway, as well as information on the major components for the development of the Regional Transportation Plan in preparation for a transportation sales tax extension, will be provided.

10. Legislative Update

An update will be provided on potential state legislation to enable renewal of the regional half-cent sales for transportation.

11. Request for Future Agenda Items

8. Information and discussion.

9. Information and discussion.

10. Information and discussion.

11. Information.

Topics or issues of interest that the Regional Council would like to have considered for discussion at a future meeting will be requested.

12. 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

12. Information.

MINUTES OF THE
 MARICOPA ASSOCIATION OF GOVERNMENTS
 TRANSPORTATION POLICY COMMITTEE MEETING
 November 14, 2018
 MAG Office, Saguaro Room
 Phoenix, Arizona

MEMBERS ATTENDING

<p>Gilbert, Mayor Jenn Daniels: Chair *Glendale, Mayor Jerry Weiers: Vice Chair Avondale: Mayor Kenneth Weise Brookfield Residential: Brad Chelton Chandler: Councilmember Terry Roe #El Mirage: Mayor Lana Mook #Goodyear: Mayor Georgia Lord Huellmantel and Affiliates: Charles Huellmantel Maricopa: Mayor Christian Price *Maricopa County Board of Supervisors: Supervisor Clint Hickman Mesa: Mayor John Giles #Peoria: Councilmember Bridget Binsbacher</p>	<p>Phoenix: Councilmember Debra Stark Roc Arnett Consulting: Roc Arnett Gila River Indian Community: Lt. Governor Robert Stone *Scottsdale: Councilmember David N. Smith *State Transportation Board: Sam Elters *Sunland Asphalt: Doug DeClusin *Surprise: Mayor Sharon Wolcott Swift Transportation: Dave Berry #Tempe: Mayor Mark Mitchell Vulcan Materials Company: Mark Reardon</p>
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* Those members neither present nor represented by proxy.

Participated by telephone conference call. + Participated by videoconference call.

1. Call to Order

A video on public input opportunities was played.

The meeting of the Transportation Policy Committee (TPC) was called to order by Chair Jenn Daniels, Gilbert, at 12:05 p.m.

2. Pledge of Allegiance

The Pledge of Allegiance was recited.

Councilmember Bridget Binsbacher, Mayor Georgia Lord, Mayor Mark Mitchell, and Mayor Lana

Mook joined the meeting via teleconference.

Chair Daniels welcomed new members, Councilmember Debra Stark and Lieutenant Governor Robert Stone, to the meeting.

Chair Daniels reminded committee members to validate their parking stamps before leaving the meeting.

3. Call to the Audience

An opportunity was 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 period for their comments. A total of 15 minutes is provided for the Call to the Audience agenda item, unless the Transportation Policy Committee requests an exception to this limit. Those wishing to comment on agenda items posted for action will be provided the opportunity at the time the item is heard.

One public comment card was received from Mr. Andrew Marwick, a resident of Phoenix, who requested to comment on carpool lanes. Mr. Marwick stated he believes our region's traffic is now worse than ever and continuing to worsen. He gave several examples of areas in the region experiencing issues with accidents and backups. Mr. Marwick suggested widening the separation lanes from westbound 202 to north SR-51. He gave examples of his experience driving in traffic in California and Illinois. Mr. Marwick suggested focusing the attention in the Valley on the I-10 through Central Phoenix, and adding a second carpool lane to give extra incentives for residents to carpool. He also indicated that adding a second carpool lane from Tempe to the West Valley on the I-10 would improve traffic flow.

4. Approval of Consent Agenda

Chair Daniels stated that agenda items #4A through #4E were on the Consent Agenda.

Chair Daniels noted that public comment is provided for consent items. No comment cards were received.

Chair Daniels asked members if they would like to remove or have a presentation on any of the Consent Agenda items. No requests were noted.

Mr. Charles Huellmantel moved approval of the Consent Agenda items. Mayor Kenn Weise seconded, and the vote on the motion passed unanimously.

4A. Approval of the October 17, 2018, Meeting Minutes

The Transportation Policy Committee, by consent, approved the October 17, 2018, meeting minutes.

4B. Project Changes - Amendment and Administrative Modification to the FY 2018-2022 MAG Transportation Improvement Program, FY 2019 MAG Unified Planning Work Program, FY 2019 Arterial Life Cycle Program, and 2040 MAG Regional Transportation Plan

The Transportation Policy Committee, by consent, recommended approval of the proposed project changes and amendment to the FY 2018-2022 MAG Transportation Improvement Program (TIP), FY 2019 MAG Unified Planning Work Program, FY 2019 Arterial Life Cycle Program, and to the 2040 MAG Regional Transportation Plan (RTP), as appropriate.

The Fiscal Year (FY) 2018-2022 MAG Transportation Improvement Program (TIP), FY 2019 Arterial Life Cycle Program, and the 2040 MAG Regional Transportation Plan (RTP), were approved by the MAG Regional Council on June 28, 2017. The last modification of the TIP and RTP were approved at the October 24, 2018, MAG Regional Council meeting. The last modification of the Arterial Life Cycle Program was approved at the August 29, 2018, MAG Regional Council meeting. Since then, additional changes and modifications have been requested by member agencies.

4C. Federal Fiscal Year 2018 Year End Actuals Report of Federal Highway Administration Suballocated MAG Regional Funds

A summary of Federal Fiscal Year (FFY) 2018 suballocated MAG Federal Highway Administration funding is being provided for FFY 2018 that began on October 1, 2017, and ended on September 30, 2018.

This item was on the agenda for information and discussion.

4D. 2018 Annual Report on the Status of the Implementation of Proposition 400

Proposition 400 was approved by the voters of Maricopa County in November 2004, and authorized the extension of a half-cent sales tax for use on transportation projects in the MAG Regional Transportation Plan. Arizona Revised Statute §28-6354 requires that MAG issue an annual report on projects included in Proposition 400, addressing factors such as project status, funding, and priorities. The 2018 Annual Report is the 14th report in the series and covers the status of the life cycle programs for freeways/highways, arterial streets, and public transit. The full report is available on the MAG website.

This item was on the agenda for information and discussion.

4E. NHS Pavement and Bridge Condition Targets

The Transportation Policy Committee, by consent, recommended support of the ADOT statewide bridge and pavement targets for the Interstate System and the non-Interstate NHS system.

The Federal Highway Administration (FHWA) has developed a framework to assess the condition of pavements and bridges on the Interstate System and the non-Interstate National Highway System (NHS). This framework includes measures of performance for pavements and bridges, a process whereby the states and metropolitan planning organizations (MPOs), such as MAG, are to develop and update performance targets and to periodically report on performance relative to their adopted targets. An MPO may develop its own targets, or support the state targets and related processes for target updates and reporting. As developing targets for the MAG region would duplicate state efforts and add little value, support of the state pavement and bridge targets is recommended. ADOT staff is available to brief the Committee on the FHWA framework, the ADOT targets, and discuss their implication for local public agencies.

5. Draft Freeway Life Cycle Program Document

MAG Transportation Economic and Finance Program Manager John Bullen said he would be presenting agenda items 5 and 6. Mr. Bullen stated that the Freeway Life Cycle Program (FLCP) is maintained by ADOT, and implements the priorities established by the MAG Regional Transportation Plan (RTP). He added that as a result of the complexities in the delivery of these projects, there are many groups that are involved in the management and implementation of the FLCP. Mr. Bullen noted the challenge of a lack of documentation, difficulty in tracking what had occurred in the past, and variability in assumptions. He mentioned that he discussed some of the impact of these issues at last month's meeting, notably as part of structural cost increases that staff is seeing throughout the program.

Mr. Bullen stated that staff created the FLCP document to provide a centralized location for program information, with an emphasis on program management. On the backend, MAG developed a dynamic tool to retain information and centralize it into one location. On the frontend, MAG created a document to provide necessary information for member agencies and the public. The document contains a number of different elements, including a summarized list of projects to be delivered under Proposition 400; information on project locations, scope, and budget; information on when projects will be open to traffic; and programming information. He noted that the document being presented today contains changes in FY 2019 to date, and does not include the material cost change requests, nor any of the updated project costs that are still undergoing analysis. Mr. Bullen indicated that cost increases discussed at last month's meeting have not been included in this document.

Mr. Bullen stated that he would be going over elements of the FLCP document. The document provides a summarized list of projects to be delivered under Proposition 400, building on the program and rebalanced projects sheet used in the past. He said that projects have been updated to reflect comprehensive budget amounts. As an example, the budget for SR-101, I-17 to Pima

had previously been shown as \$145.5 million, leaving out \$14.025 million that had already been committed to the project. Mr. Bullen stated that MAG and ADOT continue to work together to reconcile the program.

Mr. Bullen explained that staff has also included information sheets for every project remaining in the program with detail on project location, status of implementation, schedule, scope and budget information. He also noted that all current estimates are in 2018 dollars, and as the process moves forward, staff must apply inflation and update them to 2019 dollars. During his presentation last month, Mr. Bullen mentioned that staff only has planning level estimates for half of the program due to unknowns about the projects. He stated that staff worked to document instances where there is not a lot of completed design work.

Mr. Bullen stated that the FLCP document contains programming and financial information, providing a summarized report of programmed funding in the MAG Transportation Improvement Program (TIP) and RTP. Staff is working on a financial summary that provides information on program revenues and the fund balance.

Mr. Bullen reported that moving forward, staff will continue to refine the FLCP document, as well as provide an opportunity for member agency feedback and technical review. He added that staff would continue to report on this effort to remaining policy committees, as well as technical committees. Mr. Bullen commented that staff hopes to have this document completed in time for the January 2019 TPC meeting, and to use it as a baseline for the program update.

Chair Daniels commented that January is the targeted timeframe, but since agenda item 6 gets us through Fiscal Year 2019, she asked if it would be better to take more time to conduct a thorough analysis, recognizing that just a year ago the region was in a different position. She commented that there will probably be a lot of dialogue around this effort and she would like all questions to be answered before moving forward. Mr. Anderson answered that in a perfect world, staff would have all the analysis completed and be able to provide a complete contextual picture for the material cost changes. He indicated that ADOT is ready to proceed with these projects and any delay causes other issues. Mr. Anderson commented that what Mr. Bullen presented is a preview of the management practices that have been implemented over the last two months to ensure that planners are operating on the best information available. He added that Mr. Bullen's group has done a great job at pulling this information together into one document. Mr. Anderson stated that the projects on today's agenda must move forward so the region can continue to make improvements in the highway program. He added he believes the committee also should move forward with these important, time-sensitive projects to provide staff more time to work on the comprehensive view of the financial aspects of the program.

Mr. Bullen elaborated on Mr. Anderson's comments. He said staff anticipates analysis will conclude some time in December and will be ready to present to the policy committees in January. At that time, staff should have better idea of where the program stands, the likelihood of having to revisit some of the cost numbers, and if there is an opportunity to refine them further. Mr. Bullen indicated that in January, staff would be able to discuss some of the implications of moving quickly

through an update versus taking more time.

Mr. Roc Arnett congratulated Mr. Bullen on the thoroughness of the packet of information provided to the committee. Mr. Arnett asked about project 29, SR-202L (South Mountain): I-10 (Maricopa) - I-10 (Papago), because he noticed there were no dollar amounts cited except for maintenance costs. Mr. Bullen stated that the program document only reflects projects that are moving forward, and does not necessarily incorporate projects that have been worked on in the past. The South Mountain project was initiated in 2015. He added that the information sheet included in the agenda packet represents the capitalized maintenance component of that project, which was one of the elements of a P3 delivery, and does not incorporate the South Mountain construction work. Mr. Bullen added that in the long-term, staff hopes to update the document with some of the historical projects, but the focus has been on current and future projects and establishing a baseline.

Mayor Weise asked if the recent election results both locally and nationally would affect anything that leaders are looking at when it comes to shovel ready projects. He said he believes there will be an impetus to work on an infrastructure plan and more of a focus on federal funds instead of the P3s that we have heard about recently. Mayor Weise asked what Mr. Bullen's understanding is on this issue. Mr. Bullen stated that recent changes emphasize the need for the program to be more dynamic so staff can make sure it is queuing projects appropriately, and to make sure staff can respond to changes in revenues.

Mr. Anderson elaborated on the federal picture post election. He stated that there are two thoughts for what might happen in Congress. One thought is that because of the bipartisan nature of infrastructure investment in general, there is good opportunity for a bipartisan bill to move through quickly. Mr. Anderson noted that the potential incoming Speaker of the House, Nancy Pelosi, has mentioned that infrastructure is at the top of her agenda. Another thought is that Congress would be gridlocked in the next two years. He added that a complicating factor is that Congress would have to determine where funding for infrastructure investments would come from. Mr. Anderson said there is a possibility that Congress could increase the gas tax or take some other measure. He added that staff is monitoring this situation closely.

6. Freeway Life Cycle Program – Material Cost Change Requests

Mr. Bullen moved on to discuss material cost change requests for three projects totaling \$27.1 million. He stated that this presentation is a follow-up to the FLCP update on cost increases that he presented to the TPC in October. This item represents the first formal request for additional funding. Mr. Bullen added that the requests are consistent with the Material Change Policy approved by the Regional Council last December, which stipulates that an increase of five percent or more must go through TPC and Regional Council for approval.

Mr. Bullen stated that there are four projects scheduled to go for construction in Fiscal Year (FY) 2019. The Arizona Department of Transportation (ADOT) has requested additional funding for three of the four projects in excess of five percent of their overall budget, representing a material

cost change. ADOT has requested an additional \$14.6 million for SR-101L, I-17 to Pima Road; \$8.1 million for SR-101L, Baseline Road to SR-202L; and \$4.4 million for I-17, Peoria Avenue to Greenway Road drainage. The additional funding for the three projects totals \$27.1 million. The fourth project is the I-17, Central Avenue Bridge and no increase is requested. Mr. Bullen reported that this project came in significantly over budget, and MAG has been working with partners at ADOT, City of Phoenix, and Valley Metro to come up with an interim bridge solution, working around the parameters of the South Central Light Rail Project. He added that this project had been advanced to be able to facilitate the light rail project moving forward.

Mr. Bullen stated that the first project where MAG is requesting the increase is the SR-101L, I-17 to Pima Road project. The project will add additional lanes on Loop 101 (Pima Freeway) between I-17 and Pima Road. This would include two general-purpose lanes in each direction between I-17 and 7th Avenue, and one general-purpose lane in each direction between 7th Avenue and Pima Road. Additional elements to this project include new auxiliary lanes, rubberized asphalt overlay, drainage improvements, freeway management system (FMS) upgrades, and other improvements. He explained that the Miller Road Underpass was integrated into the Arterial Life Cycle Program (ALCP), providing cost savings and minimizing disruptions to the traveling public. Mr. Bullen noted that because the work on these two projects would occur near to each other, planners were able to include that project scope into the larger freeway project. He added that the Miller Road Underpass project would be funded through the ALCP and the City of Scottsdale.

The approved budget for the project is \$159.5 million. Additional sources outside of the FLCP total \$13.4 million. In total, there is \$173 million currently programmed on the project. Mr. Bullen stated that the request today is for an additional \$14.6 million out of the program, representing a nine percent increase. He added that there are three primary factors driving this cost increase, including a \$6.6 million increase in commodity prices for concrete, rubberize asphalt, and sign structures; \$5.5 million increase in landscaping costs; and \$2.5 million in adjustment to Freeway Management System (FMS) improvements and sign quantities. Mr. Bullen addressed the increase in landscaping costs, which were underestimated. He added that staff would study this issue with a focus on setting policy parameters as to what appropriate landscaping costs would be going forward. Mr. Bullen noted that officials are seeing an increase in unit prices across the board, which have eaten away at project contingency amounts and would otherwise have been able to sustain these increases.

Mr. Bullen explained that the timing of the Material Cost Change request is driven by schedule considerations, including that the project has already advertised for construction, and additional funding is needed before the project can be awarded. He commented that bids would be opened this Friday. Mr. Bullen indicated that if funding were not secured, the process would have to start over, causing a significant schedule delay of up to a year or more. Mr. Bullen emphasized that this project has been timed with paving windows and special-event schedules.

Mr. Bullen said the second project staff is requesting funding for is the SR-101L, Baseline Road to SR-202L project. This project will add one general-purpose lane in each direction. The project would also include utility relocations, rubberized asphalt overlay, drainage improvements, FMS

upgrades and other improvements. The total approved budget for the project is \$55.0 million. He commented that ADOT has asked for an additional \$8.1 million for the project, representing a 15 percent increase. Factors driving the increase include unit prices, utility relocation costs, FMS costs, landscaping costs and proportional construction engineering costs. The total cost of these increases is more than \$8.1 million; because the initial estimate was \$5.1 million less than what had been programmed.

Mr. Bullen noted that funding is needed for this project before ADOT can authorize for design-build construction in February 2019. He added that the schedule for this project was set with consideration to the I-10, I-17 Split to SR-202L project. Improvements to the SR-101L need to be completed before work on the I-10 begins. SR-101L provides an alternate access route between downtown Phoenix and the Southeast Valley. Mr. Bullen indicated that if planners do not move forward with this project, both of the major access routes into downtown Phoenix will be under construction at the same time.

Mr. Bullen stated the third project staff is requesting a cost increase for is the I-17, Peoria Avenue to Greenway Road Drainage project. The project will replace pump stations along Interstate 17 at the Greenway Road, Thunderbird Road, Cactus Road, and Peoria Avenue interchanges with a gravity fed drainage system. This drainage system will discharge storm water into the Arizona Canal Diversion Channel (ACDC). He added that the project also would include pavement replacement, sign improvements, and Americans with Disabilities Act (ADA) upgrades. The current approved budget for the project is \$30 million, and ADOT has requested an additional \$4.4 million for the project, representing a 15 percent increase.

Mr. Bullen explained that additional funding is needed for some engineering elements including different trench type and depth, extension construction duration to ensure safety and minimize disruptions, and larger pipe size. He also mentioned that funding is needed before ADOT can advertise the project in April 2019. The project has been moving ahead of schedule and officials are waiting on a 408 permit from the Army Corps of Engineers. Mr. Bullen commented if that permit were received before March 2019, ADOT would be able to advertise this project for construction early. Timing of the project was set with consideration to future improvements of the Valley Metro light rail crossing along I-17 as part of the Northwest Phase II extension project. This project needs to be finished before that light rail extension project begins.

Mr. Bullen reported that as of June 30, 2018, the ending fund balance of the freeway program cash flow model was \$402.9 million. This amount does not include the estimated project cost increases discussed at the October 17, 2018, TPC meeting. He stated that it is anticipated that the overall project cost increases will exceed the available fund balance, and changes to the program will need to be made, including scheduled deferments and reductions, and possible deferments outside the funding horizon. Mr. Bullen noted that staff recognizes the timing for asking for additional funding is not ideal because there is not a full programmatic picture. He added that because of the schedule considerations, staff feels it is appropriate to move forward and award the additional funding to these projects to enable them to move forward.

Mr. Dave Berry asked about costs for landscaping. He mentioned that the original section of SR-51 had beautiful landscaping when it first opened and no longer has it. Mr. Berry said there are also situations where the landscaping matures and the trees become a hazard. He asked if there was a way to deal with landscaping that avoids high initial expenses and maintenance costs later. Mr. Bullen answered that landscaping has contributed to cost increases and was flagged as an area for thorough review. He stated that staff would work with ADOT to get more details and would bring that back to the TPC for information, and possibly to set policy parameters regarding the amount of landscaping to include in each project.

Mayor Weise asked Mr. Bullen for insight as to how staff plans for future cost changes. Mr. Bullen stated that the ADOT cash flow model is the driver of the project, and the entire project budgets are in a base year dollar, so all future projects would be in 2018 dollars. Every year, staff goes through a process to calculate what the inflationary increase would be and applies those to budgets throughout the program. He commented that one of the structural issues that staff has been facing in this program is this activity has not been completed since 2016. The program document is one of the catchalls that staff anticipates will be a driver of some of the cost increases. Mr. Bullen stated that under that methodology, staff would be able to look at where inflation is going in the future, and be responsive to it.

Mr. Anderson said that ADOT works with a group of experts to conduct risk assessment on construction costs. The group is tasked with providing ADOT with expert opinion on where some of the material costs items will go, including concrete, excavation activities, and other things, which then go into ADOT's calculations for the cost of future inflation on projects. He emphasized that in the cash flow model, the incremental adjustments were not being made in those projects. Staff found that many of the cost numbers for the projects included in the cash flow model were not in 2018 dollars, but were in 2014, 2015, or 2016 dollars. Mr. Anderson stated that because many of the numbers on specific projects are being updated all the time, staff had lost track of the dollar base year of some of these projects. He noted that staff is going through an activity now to correct that, so that moving forward, incremental adjustments will be made annually. Mr. Anderson said that our region has been in a flat cost market since the recession and some of the program issues did not become an issue until recently. In this current environment, everything from materials to labor costs, and the competitive nature of some of the bids have changed. He believes moving forward, officials will see incremental adjustments in these projects based on what is happening in the construction industry. Mr. Anderson added that some of the cost increases officials are seeing are based on detailed design work. As the design of a project moves forward, sometimes scope items are added, which is a normal part of the process. He mentioned that sometimes the contingency set aside is not quite enough to cover those items. Mr. Anderson explained that all of the measures staff is taking and incorporating back into the cash flow model will allow for a smoother transition moving forward.

Mayor Weise said he understood the issues with the design work. He stated that when he looked at the drainage area between Peoria and Greenway, he could understand the additional work that needed to be done, and that sometimes through a project's development, additional work needs to be done than was initially anticipated. Mayor Weise commented that he was concerned about

taking money from future projects. He asked if there is a realistic idea for what the cost overruns will be, and asked when the committee could expect an update on that. Mr. Anderson stated that staff would begin work on the process in January, and take February and March to have these discussions. He said there are projects already identified that can be moved, and gave an example of work on I-17 that would be impacted by the future SR-30. Mr. Anderson explained it would not make sense to make those improvements on I-17 until SR-30 is constructed. He said he believes it is essential for other projects to move forward and said that MAG would provide its assessment of that beginning in January.

Mr. Berry brought up the revenue side of the equation. In regards to the sales tax, he said that as inflation increases, so does the price of everything else. He noted that while it may not be an exact match, you would hope that revenue is rising as fast as the costs.

Mayor Weise stated that our region is almost three years into a robust economy. He said he was concerned with what the economy will look like in the next 2-3 years. Mayor Weise added that he hoped revenues would keep pace with overruns. He noted that he would like to see a more thorough picture and not have to go through this process every few months.

Mr. Brad Chelton asked if the revenue side would be included in the analysis given to the committee early next year. Mr. Bullen stated that there are three primary revenue sources that flow into the program. He explained that what really drives the model and future years in the model is the change in forecasted revenues. Staff does account for an increase within the cash flow model. Mr. Bullen noted that the program sees a benefit when the revenues come in higher than what was anticipated. He referenced the risk assessment panel at ADOT that was mentioned earlier, and said that activity took place this fall, providing updated revenue numbers. Mr. Bullen said that officials have seen a slight increase to sales tax going into the program that could offset some of the increases in costs that the region is seeing. He added that the other revenue sources include the Highway User Revenue Fund (HURF), also called the gas tax, and noted that the region is not seeing increases in the gas tax, but has improved from previous years. The third revenue source is federal and there are a lot of variables and unknowns. He emphasized that moving into next January, February, and March there will not be a lot of change in the amount of revenue information.

Mr. Chelton asked if ADOT owns the cash flow model that MAG reviews and provides comments. Mr. Bullen answered that he was correct.

Mr. Chelton noted that Mr. Bullen mentioned the timing of the three projects is urgent because of their relation to other projects under construction. He asked if any of the projects that follow on to the three projects detailed by Mr. Bullen would be pushed out of the Proposition 400 schedule, and if so, would that make any of the three projects less urgent. Mr. Bullen answered that in terms of SR-101 N between I-17 and Pima, that project is less driven by activities elsewhere in the system and more driven by sensitivities related to all the regional activities that occur in that part of the valley and the need to hit paving windows. He said that the I-17 drainage project is driven by a Valley Metro project and that is on track to move forward. The third project on the SR-101 N between Baseline and the 202 needs to come in prior to the I-10 improvements, and staff sees that

as one of the most significant projects remaining in the program, and was identified out of the SPINE document. He added that the Broadway Curve area presents a number of challenges to the traveling public and staff sees that as a very important project.

Chair Daniels said she wanted Mr. Anderson, Mr. Bullen and the MAG team to know that the TPC appreciates having the tough conversation now and fixing whatever systemic problems might exist within the modeling or the review periods to be better prepared in the future. She stated she appreciates that there has not been any finger pointing and that staff is looking at ways to improve the process moving forward.

Mr. Berry made a motion to recommend approval of the material cost changes for the SR-101L, I-17 to Pima Road (\$14.6 million); SR-101L, Baseline Road to SR-202 (\$8.1 million); and I-17, Peoria Avenue to Greenway Road drainage projects (\$4.4 million) and the corresponding amendments to the FY 2018 – 2022 MAG Transportation Improvement Program and 2040 MAG Regional Transportation Plan, as appropriate. Mayor Weise seconded the motion and the motion carried unanimously.

7. MAG Region Road Safety Trends

MAG Safety Engineer Mohammed Shaheed said he would provide a brief overview on the state of road safety in the MAG region. Mr. Shaheed indicated he would be highlighting past, current and future initiatives with the potential to address these trends. He noted that in the coming year, MAG would be developing an update to the MAG Strategic Transportation Safety Plan (STSP) and that he hoped this presentation would inspire a dialogue that would not only help inform the scope of the upcoming STSP, but also provide a better understanding for how the region could work towards reversing these crash trends.

Mr. Shaheed reported that a review of the data shows that overall, the annual number of crashes are increasing from 2013. He stated the good news is that fatal and severe injury crashes went down slightly from 2016 to 2017. For planning purposes, staff looks at a five-year trend to get a better picture of general safety performance. Statistics show that most crashes occur when there is the heaviest volume of vehicles on the road, and in October through March when the region sees a seasonal increase in population. There is steady crash occurrence through the week with an increase on Fridays, and during peak vehicle commute hours.

Mr. Shaheed noted that regardless of crash severity, more than 70 percent of crashes occur on the arterial system, compared to the state system in the MAG region. Isolating fatal crashes, this increases to over 80 percent occurring on local and arterial roads. He stated that following the most recent statewide safety fund programming cycle, ADOT reported that 62 percent of the available funding was programmed for projects on the state highway system, and 38 percent was programmed on the local system. This report demonstrated an increase in funds to the local system from previous funding cycles.

Mr. Shaheed indicated that nearly half of the fatal and serious injury crashes occur at intersections,

accounting for more than 12,000 serious injuries and fatalities a year. He noted that this annual trend has been the basis of the MAG Road Safety Assessment program initiated in 2011 to assess safety performance at intersections.

Mr. Berry asked if the data shows that from 2013 to 2017, there has not been a change in the total of crashes. Mr. Shaheed answered that the total number of crashes changed, but the percentage of fatal and serious injury crashes has stayed the same.

Mr. Shaheed displayed slides demonstrating that when focusing on intersections, left-turn and angle, or T-bone crashes, result in the most fatal and serious injury crashes. He explained that when making recommendations through the RSA program, staff focuses on infrastructure improvements with the best potential to address these crash types. Mr. Shaheed stated that for crashes not at intersections, single vehicle and rear end type crashes result in the most serious injuries and fatalities.

Mr. Shaheed noted that the overall number of crashes involving pedestrians compared to those not involving pedestrians is small at one percent, but is still too many. Statistics show that a pedestrian fatality occurs in nearly 30 percent of all fatal crashes in the region. He highlighted the increasing trend of pedestrian fatal crashes in the five-year analysis period. Mr. Shaheed staff received a report from the City of Phoenix earlier in the week that this year has already seen 100 pedestrian fatalities – an all-time high for this point in the year.

Mr. Shaheed displayed a wave diagram for fatal crashes involving pedestrians under different lighting conditions. A large portion of pedestrian fatalities occur at night under lighted conditions. He described the standard practice for conducting RSA field reviews both during the day and night, and during peak and non-peak periods. Mr. Shaheed said that when staff walked a particular location as pedestrians at night they noted that the lighting seemed sufficient. However, when staff drove the site, pedestrians and bicyclists became virtually hidden. He explained that because of this field review, staff made the recommendation to increase the number and brightness of the lights along the entire corridor.

Councilmember Terry Roe asked if these statistics include bicyclists as well as pedestrians. Mr. Shaheed answered that the statistics he just discussed only include pedestrians. He stated he would discuss statistics involving bicyclists during the next part of his presentation.

Mr. Shaheed stated that crashes involving bicyclists are also on the increase from 2013 overall. These crashes are even more troubling by the numbers since it is difficult to assess the potential causal factors when reviewing data available. He explained that the MAG 2019 fiscal year budget includes a project to complete an in depth review of crash reports for over 2,000 bicyclist involved crashes, regardless of severity. The main deliverable of this study will be a guidance document for local agency staff and decision makers for better information when planning new or improving existing bicycle facilities. He said that in addition, staff is coordinating with the consultant developing the Active Transportation Plan to collaborate on the development of safety elements to be included in the toolkit to be provided with their planning effort.

Mr. Shaheed addressed safety funding in the MAG region. Focusing on two of the predominant crash types reviewed earlier in the presentation, left end and rear end, there are 948 locations demonstrating five or more left-turn crashes resulting in any injury severity that could potentially be improved with a number of countermeasures. Only 17 locations were recently programmed for improvement within the limitations of the current eligibility criteria. Similarly, for rear end crashes, the region has 892 potential locations compared to 11 actual locations improved with a 2017 project. He underscored that more funding options could result in greater improvement in safety performance.

Mr. Shaheed displayed graphics to the committee to provide some context on what the issues are and what is being planned at the 17 locations where left turn sight visibility is to be improved. He explained that if a driver is waiting for a gap in the left-turn lane where there is a negative or zero offset, it is difficult to see around the line of opposing left-turning vehicles to judge a gap. Mr. Shaheed commented that a relatively low cost improvement with median modifications was the solution proposed for these locations. He added that even when there is a very narrow existing median, the opportunity to remove a portion of the median nose creates what is called a positive offset, or room for the left turning vehicle to pull further to the left providing better sight visibility of the thru lane traffic to judge the gap.

Mr. Shaheed moved on to discuss occupant use of safety devices and crash trends. He indicated that Arizona is a secondary seat belt law state. Mr. Shaheed displayed slides showing the percentage of occupants not using a safety device are significantly more likely to die in comparison to nearly the same percentage of occupants choosing to use a safety device experiencing no injury in a fatal crash.

Mr. Berry asked how many rear end collisions could be attributed to texting. Mr. Shaheed answered that it is difficult for law enforcement to determine the cause of a rear end crash, other than to determine it was due to driver distraction. He added that the current crash report form does not include a field to report texting as a factor. Mr. Shaheed explained that he could not give committee members an accurate percentage of rear end crashes caused by texting. Mr. Berry said that he believes rear end crashes due to texting while driving is being underreported. He added that he has witnessed many people texting while driving. Mr. Berry wondered why law enforcement does not look at a drivers' phone for a timestamp to determine if they were texting while driving. He added that people are running into his company trucks that are stopped at an intersection. Mr. Berry explained that truck accidents over the last 30 years have gone down, but in the last three years, have gone up. He noted there is a federal law prohibiting holding a phone while driving and talking and texting for commercial truck drivers. Mr. Berry said he believes texting and opioid use are the causes for the upward trend in accidents involving commercial trucks. Mr. Shaheed suggested one way to address this situation might be to educate the public, which he said he would discuss next.

Mr. Shaheed noted that one method of addressing the use of safety devices is through education initiatives. Currently, MAG has no funding mechanism for this type of safety education program.

Mr. Shaheed commented that education programs are a key element missing in implementing comprehensive safety improvements region wide.

Mr. Berry commented that he did not believe that education programs would have a lot of impact on the problem of opioid abuse, both legal and illegal.

Mr. Shaheed stated that in summary, the state of the MAG regions roadway safety could be described through the increasing five-year trend, especially for pedestrians. He added that in the past several years, local agencies in the MAG region have not been able to get funding from the designated federal aid funding for safety projects that is anywhere equal to the crash trends demonstrated. Mr. Shaheed noted that Highway Safety Improvement Program (HSIP) funding is highly competitive statewide, and are limited.

Mr. Shaheed said that MAG looks forward to safety being a cornerstone of an extension of Proposition 400. In the meantime, the MAG safety program in partnership with local agency staff, will continue to explore low cost initiatives, including those for education programs, and engage other modal planning activities through the sunset of the current Proposition 400.

Mayor Weise asked if when looking at pedestrian and bike statistics, the study looks at where fault is in these accidents. He stated that education programs should be directed in a certain area to be effective. Mr. Shaheed stated that analysis for pedestrian crashes found that most occur in the midblock sections of the road and away from crosswalks. He noted that when there is a bus stop a half mile from the crosswalk, pedestrians are not willing to walk that half-mile and choose to cross midblock. Mr. Shaheed explained that an education program would focus on getting pedestrians to use the infrastructure in place to keep them safe. Additionally, education would focus on making pedestrians more conspicuous to drivers by crossing in a well-lit area, or using bright or light colored clothing.

Mr. Chelton stated that it would be helpful to know the time of day and location of these pedestrian and bicycle accidents to understand how the bicycle was being used. For example, if the bicyclist was exercising or using the bike to commute to a job. He indicated that would help to narrow where to apply safety measures and how to target an education program. Mr. Shaheed noted that this information would be included in the upcoming regional bicycle safety analysis study. He added that he would use committee members' suggestions when reviewing crash reports.

Mr. Berry asked how the MAG region compares to the rest of the country. Mr. Shaheed stated that Arizona is the second worst in the nation for pedestrian safety and fatalities. Mr. Berry said it was remarkable that we are one of the most dangerous cities in the country for pedestrians. He added that he would like to help and said this should not be tolerated. Mr. Shaheed commented that Arizona as a whole, and not just our region, has an increasing trend for pedestrian fatalities.

Chair Daniels asked if there are any states or regions that have declining numbers of fatalities that Arizona officials could study to see what policies are in place, and what educational tools they are utilizing. She added that a helpful tool in the Town of Gilbert is GPS mapping that allows planners

to see trends and also see different things like length and speed of a roadway that allow for data driven decisions. Chair Daniels stated that further analysis with additional data would be helpful for officials in their decision making process.

Councilmember Debra Stark stated that Phoenix has been doing some research and said that Seattle has a successful program to combat pedestrian fatalities. She added that it might be worthwhile to study what Seattle has done. Councilmember Stark explained that during the recession, Phoenix did not hire police officers and noted that Phoenix is currently trying to strengthen its presence on the roadways. She stated that part of the problem is that Phoenix has not been enforcing the laws because there were not an adequate number of officers. Councilmember Stark added that she hopes to see an improvement in pedestrian fatalities as more officers are hired.

8. Legislative Update

MAG Public Policy and Government Relations Director Nathan Pryor stated he would be providing the committee with an update on potential state legislation to enable the renewal of the half-cent sales tax for regional transportation. MAG continues to consider seeking enabling authorization to have the Maricopa County Board of Supervisors call for the ballot. MAG saw the defeat of legislation in the 2018 session, with conversation focused on elements of the plan, including spending levels and specifically, light rail spending.

Mr. Pryor explained that since the 2018 legislative session, MAG has engaged with the Maricopa County Board of Supervisors and held a legislative boot camp with House and Senate staff members to educate them on who and what MAG is. He said MAG staff discovered during the last session that not all of the legislative staff were familiar with MAG's roles and responsibilities. In the months that followed the 2018 legislative session, MAG staff developed and the MAG Regional Council approved the MAG Policy Principles. There was also a sharing of the history and development of Proposition 400 with various groups in the Valley. Mr. Pryor stated that staff also shared Proposition 400 timelines with the various policy committees and held values mapping exercises. He said the intent of these activities is to help with the development of the next Regional Transportation Plan. Mr. Pryor reminded committee members of the upcoming Transportation Summit on December 11 that will focus on big picture transportation needs within the state.

Mr. Pryor stated that staff has heard that there could be legislative opportunity to entertain some statewide transportation solutions in the upcoming 2019 session. The leadership of the legislature is still emerging following the elections in early November. He noted that Senator Karen Fann will be the Senate president and Representative Russell Bowers will be the House speaker. Mr. Pryor added that MAG staff sees these developments as being positive relative to transportation infrastructure discussions. He mentioned that staff also had conversations with Governor Doug Ducey's office.

Mr. Pryor stated that the leadership for transportation committees in the House and Senate is still emerging. He added that MAG does not currently have a bill sponsor. Mr. Pryor noted that MAG

would continue to assess and evaluate, and if staff sees an opportunity in 2019, will focus the conversation on the enabling authorization language, rather than elements of the plan or spending levels, which would be determined later during the regional planning process. The 2019 legislative session will begin in January and Mr. Pryor said staff would push updates out to the committee via email if significant developments occurred between the November and January meetings.

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 were requested.

10. 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.

No comments were noted.

Adjournment

There being no further business, the meeting adjourned at 1:17 p.m.

Chair

Secretary

Transportation Review Committee

INFORMATION SUMMARY

AGENDA ITEM # 4B

DATE

February 13, 2019

SUBJECT

2019 Safety Performance Targets

CONTACT

Margaret Boone, Transportation Safety Program
Manager (602) 254-6300



SUMMARY

In March 2016, the Federal Highway Administration (FHWA) announced the Final Rule for Road Safety Performance, which specified five (5) road safety performance measures. The Rule requires that every state must establish and report on road safety performance measures and annual road safety targets for each of the measures. The first such report, for calendar year 2018, was due to FHWA by August 31, 2017, and due annually thereafter for subsequent years.

The five (5) safety performance measures specified by FHWA are:

- 1) Number of Fatalities;
- 2) Rate of Fatalities -- fatalities per 100 million vehicle miles of travel;
- 3) Number of Serious Injuries – all injuries classified as Incapacitating/Suspected Serious Injury;
- 4) Rate of Serious Injuries - serious injuries per 100 million vehicle miles of travel;
- 5) Total of Non-Motorized Fatalities and Non-Motorized Serious Injuries – total deaths and serious injuries involving pedestrians or bicyclists.

The Arizona DOT has submitted the second report to FHWA, for calendar year 2019, identifying statewide safety targets for each of the measures listed above. The Final Rule also stipulates that each MPO must either adopt the statewide targets or establish similar measures and targets specific to their MPO planning area, for the five performance measures, within 180 days after the State establishes targets. The MPOs are required to submit a letter to ADOT indicating support the safety performance targets by the deadline of February 27, 2019.

MPOs have two options:

- 1) agree to adopt the targets established by the State, OR
- 2) establish specific numeric targets, for the MPO planning area, based on applicable federal guidelines.

On January 22, 2019, the Transportation Safety Committee reviewed the statewide safety performance targets for 2019, and unanimously recommended that MAG approve the Safety Performance Targets for 2019 established by the Arizona Department of Transportation.

2019 ADOT Targets are:

- Number of Fatalities- 1105.1 Fatalities (5% Increase over 2018)
- Fatality Rate- 1.507 Fatalities/100MVMT (2% Increase)
- Number of Serious Injuries- 4006.0 Serious Injuries (1% decrease)
- Serious Injuries Rate- 5.610 Serious Injuries/100MVMT (4% Decrease)
- Total number of non-Motorized Fatalities and Serious Injuries- 871 (3% Increase)

ACTION NEEDED

Recommend approval of the Safety Performance Targets for 2019 established by the Arizona Department of Transportation.

PROS & CONS

PROS: The five (5) recommended 2019 safety performance targets have been established by Arizona DOT for the entire state, and would meet relevant federal requirements.

CONS: None.

TECHNICAL & POLICY IMPLICATIONS

TECHNICAL: Support of safety performance targets for 2019 will align the objectives of the MAG road safety improvement activities with the state’s Highway Safety Improvement (HSIP) program.

POLICY: The following requirements related to safety performance are in effect as of May 27, 2018: (1) Future MAG Regional Transportation Plan (RTP) updates must include safety performance measures and targets; (2) MAG Transportation Improvement Program (TIP) updates must include a description of how the TIP contributes to achieving the safety performance targets identified in the RTP.

PRIOR COMMITTEE ACTIONS

The MAG Transportation Safety Committee met on January 22, 2019, and unanimously recommended approval of Safety Performance Targets established by ADOT for 2019.

MEMBERS ATTENDING

Glendale: Kiran Guntupalli (Chair) Phoenix: Carl Langford (Vice Chair) *AARP: Tom Burch ADOT: Kerry Wilcoxon Apache Junction: Shane Kiesow * Avondale: Tom Peterson #Buckeye: John Willett #Chandler: Dana Alvidrez #El Mirage: Nick Russo FHWA: Jeff King #Gilbert: Rajnish Gupta *GOHS: Alberto Gutier #Goodyear: Hugh Bigalk	*Litchfield Park: Brandon Squire #Maricopa (City): Josh Plumb Maricopa County DOT: Mazen Muradvich for Nicolaas Swart Mesa: Ryan Hudson *Paradise Valley: Jeremy Knapp *Peoria: Brandon Forrey for Chris Lemka Pinal County: Kathy Borquez Scottsdale: Sam Taylor Surprise: Dana Owsiany Tempe: Julian Dresang *RPTA: Adrian Ruiz
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* Those members neither present nor represented by proxy.

Participated by telephone conference call. + Participated by videoconference call.

PUBLIC INPUT

None.

Transportation Policy Committee

INFORMATION SUMMARY

AGENDA ITEM #5

DATE

February 13, 2019

SUBJECT

Arterial Life Cycle Program Policies and Procedures Exception – Reallocation of Regional Funding to the Drinkwater Boulevard Bridge Project

CONTACT

Quinn Quihui Castro, Transportation Engineer,
(602) 254-6300



SUMMARY

The Arterial Life Cycle Program (ALCP) is the financial management tool for the arterial street component of the Regional Transportation Plan (RTP). Management of the program is guided by the ALCP Policies and Procedures, which were approved by the MAG Regional Council on June 24, 2015.

The ALCP Policies and Procedures prohibit substitution of an ALCP project that is not within the same general area addressed by the original project. The ALCP Policy and Procedures also prohibit reallocation of project savings until construction has been completed or there is a high degree of certainty that it will be completed within the specified scope and schedule. Since the new policy is directly correlated to the policy exceptions, the Transportation Review Committee provided the technical review of this request.

The City of Scottsdale has determined that one of its existing ALCP projects, Southbound Frontage Road Connections (SAT-10-03-I), is infeasible and has requested policy exceptions to remove the project from the program, substitute it with the Drinkwater Boulevard Bridge project and reallocate savings from the completed Shea Boulevard at 124th Street Intersection Improvements project (ACI-SHA-20-30-N) and Shea Auxiliary Lane from 90th Street to Loop 101 (ACI-SHA-20-30-B) prior to its completion.

Policy Exception and Funding Details

The City of Scottsdale submitted a request for exceptions to the ALCP Policies and Procedures for the removal of an existing ALCP project, substitution of a new project, and the reallocation of savings from a completed project prior to its completion to MAG on January 2, 2019. The basis for the request is the deficient condition of the Drinkwater Boulevard Bridge which was discovered during an investigation into the cause of failing concrete under the structure.

This project is not included in the original ALCP, but due to regional significance for traffic flow, an exception is requested to add this project to the Fiscal Year (FY) 2020 ALCP update.

The estimated cost for the Drinkwater Boulevard Bridge project is \$8.57 million, up to 70 percent (approximately \$5.999 million) of which would be reimbursable through the ALCP.

The \$5.999 million is requested to be reallocated from existing City of Scottsdale ALCP projects.

Drinkwater Boulevard Bridge Project Details

The City of Scottsdale hired a consultant engineer to inspect the Drinkwater Bridge and this revealed deterioration of the bridge columns due to water intrusion through the bridge deck. Fortunately, the deck slabs were determined to be structurally sound and it was recommended to rehabilitate the structure in lieu of full replacement of the bridge.

Phase I of the Drinkwater Boulevard Bridge Repair project was the investigation and mitigation of the water intrusion and Phase II is the construction of a new supporting wall below the existing structure, closure of open portions of the bridge deck, and a new

waterproofing membrane and drainage system on top of the structure. The estimated cost for Phase II is \$8.57 million, 70 percent of which would be reimbursable through the ALCP (approximately \$5.999 million).

Original ALCP Projects

The ALCP Policies and Procedures prohibit substitution of an ALCP project that is not within the same general area addressed by the original project. The ALCP Policy and Procedures also prohibit reallocation of project savings until construction has been completed or there is a high degree of certainty that it will be completed within the specified scope and schedule. The following are the original ALCP projects that are being requested for substitution:

Southbound Loop 101 Frontage Road Connections (ACI-SAT-10-03-I)

The original ALCP contained a project to create up to three 2-lane east-west connections between Northsight Boulevard and the Southbound Loop 101 Frontage Road. The northernmost connection would link the Northsight/Frank Lloyd Wright intersection easterly along the southern edge of the Central Arizona Project (CAP) canal. The middle and southernmost connections would use existing private driveways to connect Northsight 600 feet south of Hayden and at Butherus Drive across a large commercial plaza.

Based on a feasibility study conducted by Scottsdale, the three east-west connectors present financial and right-of-way challenges. The feasibility estimate for the design, right-of-way, and construction for the three connectors is \$6.2 million, which is \$2 million above the programmed amount. This estimate assumes that the right-of-way acquisitions would be accomplished with the Central Arizona Project (CAP) and several commercial properties who control over 90 percent of the necessary land rights. The conceptual improvements would require modifications to existing parking, drainage, and delivery access. In consideration of the increased cost, which could be significantly higher due to property owner concerns, and the uncertainty of project delivery, Scottsdale has determined this project infeasible and requests that the funding be reallocated to the Drinkwater Boulevard Bridge project.

The Southbound Loop 101 Frontage Road was included in the original ALCP within the vicinity of the Scottsdale Airpark area. The ALCP Policy and Procedures exception request

is to reallocate the funding from this area to the Downtown Scottsdale area where the Drinkwater Boulevard Bridge project is located.

Shea Auxiliary Lane from 90th Street to Loop 101 (ACI-SHA-20-30-B)

The primary objective of this project, which was originally identified through a citywide transportation master planning process, was to improve vehicular flow from northbound 90th Street to westbound Shea Boulevard and the Shea/Loop 101 northbound on ramp. Due to capacity limitations on the northbound on-ramp and right-of-way constraints along two commercial properties, the original concept has been deemed infeasible by Scottsdale. The improvements in this vicinity will be reduced in scope and the City of Scottsdale will continue to look at adding a third northbound to westbound left turn bay on 90th Street. Currently the ALCP includes \$2.31 of RARF in FY 24 and \$4.08 of RARF in FY 25. A preliminary estimate for feasible improvements in this area is \$1.00 million. Current estimated funding request for Drinkwater Boulevard Bridge project is \$2.50 million, however, Scottsdale is requesting up to \$5.33 million of the programmed \$6.39 million be reallocated to complete the bridge project.

Shea Boulevard at 124th Street Intersection Improvements (ACI-SHA-20-30-N)

The amount of regional funding requested would also include \$451,769 in project savings from the completed Shea Boulevard at 124th Street Intersection Improvements (ACI-SHA-20-30-N) currently programmed in FY 19.

Project	Regional Funding - Current	Regional Funding - Requested	Change
Southbound Loop 101 Frontage Road Connections (ACI-SAT-10-03-I)	\$3.05 m	\$0.0 m	(\$3.05 m)
Shea Auxiliary Lane from 90 th Street to Loop 101 (ACI-SHA-20-30-B)	\$6.39 m	\$2.5 m	(\$2.5 m)
Shea Boulevard at 124 th Street Intersection Improvements (ACI-SHA-20-30-N)	\$0.45 m	\$ 0.0 m	(\$0.45 m)
Drinkwater Boulevard Bridge	-	\$5.999 m	\$5.999 m

ALCP Policies and Procedures Exceptions

The ALCP Policies and Procedures prohibit substitution of an ALCP project that is not within the same general area addressed by the original project. This request is for the removal of the *Southbound Loop 101 Frontage Road Connections (ACI-SAT-10-03-1)* and the substitution of the Drinkwater Boulevard Bridge project.

Drinkwater Boulevard serves as the eastern leg of the Downtown Couplet with Goldwater Boulevard. Each leg of the couplet emphasizes a particular direction of travel, and was developed to reduce congestion and improve walkability on Scottsdale Road through the downtown area. Downtown Scottsdale is a mixed-use center of regional importance with emphasis on the integration of historic resources, specialty retail, office, residential, restaurant and hotel uses.

Drinkwater Boulevard is an existing 5-lane arterial roadway that has been fully closed to traffic due to structural issues where the roadway passes under Civic Center Mall. Prior to closure, the roadway was carrying 13,200 vehicles per day (vpd). The MAG model forecasted volume for 2040 is 22,500 vpd. The closure of Drinkwater Boulevard has increased traffic volume on Scottsdale Road by nearly 25 percent in the near term and the MAG model projects volumes would increase on Scottsdale Road, a regionally significant arterial, by 33 percent in the long term. This project would allow Goldwater and Drinkwater Boulevards to operate as intended to mitigate congestion on Scottsdale Road in the downtown area. For comparison, the project replaces a proposed 0.20 mile long 2-lane collector road across a shopping center and a 0.25 mile auxiliary lane on Shea Boulevard. The anticipated capacity of these two projects combined is approximately 10,000 vpd.

The project is in a high pedestrian activity area and will restore full pedestrian access across the City of Scottsdale's Civic Center Mall. Due to its unique location, the Drinkwater Bridge actually creates the ability for pedestrians to move freely about the Civic Center Mall, removing them from conflict with motorized traffic on Drinkwater Boulevard and providing safe travel to downtown Scottsdale retail and entertainment.

During fiscal years 2016/17 and 2017/18, the Civic Center Mall was used for 162 days of outdoor events that attracted greater than 285,000 guests. The adjacent Center for the Arts attracted greater than 250,000 visitors. Located one block south of the current road closure are Scottsdale Stadium and the Honor Health Scottsdale Osborn Medical Center. The medical center includes a 337-bed hospital and trauma center and encompasses 40

acres. The stadium hosts the San Francisco Giants' spring training games. Stadium attendance for the 2017 and 2018 Cactus League seasons was greater than 338,000 (9,940/game).

The ALCP Policy and Procedures also prohibit reallocation of project savings until construction has been completed or there is a high degree of certainty that it will be completed within the specified scope and schedule. This request includes the reallocation of up to \$5.3 million from the Shea Auxiliary Lane from 90th Street to Loop 101 (ACI-SHA-20-30-B) project to the Drinkwater Boulevard Bridge project.

Summary

The City of Scottsdale is requesting the removal of an existing ALCP project, Southbound Loop 101 Frontage Road Connections (ACI-SAT-10-03-I), as infeasible, the addition of a new ALCP project, Drinkwater Boulevard Bridge, and ALCP Policy and Procedure exceptions to reallocate funding for the new project.

PUBLIC INPUT

None

PROS & CONS

PROS: Reallocation of regional funding would allow the Drinkwater Boulevard Bridge reconstruction work to move forward. The Drinkwater Bridge would allow Drinkwater Boulevard to reopen to vehicle and pedestrian traffic, providing significant traffic operational benefits to a civic and art-centric entertainment area and without it there are significant impacts to regional traffic-flow.

CONS: The ALCP Policies and Procedures prohibit substitution of an ALCP project that is not within the same general area addressed by the original project. The ALCP Policy and Procedures also prohibit reallocation of project savings until construction has been completed or there is a high degree of certainty that it will be completed within the specified scope and schedule. These exceptions would result in the Southbound Loop 101 Frontage Road Connections project to be removed from the ALCP and require a substantial reduction in scope to the Shea Auxiliary Lane from 90th Street to Loop 101 project.

TECHNICAL & POLICY IMPLICATIONS

TECHNICAL: The Drinkwater Boulevard Bridge project provides an important and regionally significant alternative route to Scottsdale Road through downtown Scottsdale that provides congestion mitigation as well as allows for conflict-free pedestrian activity in a highly trafficked recreational area.

POLICY: The ALCP Policies and Procedures prohibit substitution of an ALCP project that is not within the same general area addressed by the original project. The ALCP Policy and Procedures also prohibit reallocation of project savings until construction has been completed or there is a high degree of certainty that it will be completed within the specified scope and schedule.

ACTION NEEDED

Recommend exceptions to the ALCP Policies and Procedures to (1) remove the Southbound Frontage Road Connections (SAT-10-03-I) and substitute it with the Drinkwater Boulevard Bridge project and (2) relocate savings from the Shea Auxillary Lane from 90th Street to Loop 101 (ACI-SHA-20-30-B) prior to its completion.

PRIOR COMMITTEE ACTIONS

On February 6, 2019, the MAG Management Committee recommended exceptions to the ALCP Policies and Procedures to (1) remove the Southbound Frontage Road Connections (SAT-10-03-I) and substitute it with the Drinkwater Boulevard Bridge project and (2) relocate savings from the Shea Auxillary Lane from 90th Street to Loop 101 (ACI-SHA-20-30-B) prior to its completion.

MEMBERS ATTENDING

Buckeye: Roger Klingler, Chair Queen Creek: John Kross, Vice Chair ADOT: Eric Gudino as proxy for John Halikowski *Apache Junction: Bryant Powell *Avondale: Charles Montoya *Carefree: Gary Neiss *Cave Creek: Carrie Dyrek	#Guadalupe: Jeff Kulaga Litchfield Park: Bill Stephens *City of Maricopa: Rick Horst *Maricopa County: Reid Spaulding as proxy for Joy Rich Mesa: Christopher Brady *Paradise Valley: Brian Dalke Peoria: Andy Granger as proxy for Jeff Tyne
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Chandler: Marsha Reed *El Mirage: Crystal Dyches #Florence: Brent Billingsley, *Fort McDowell Yavapai Nation: Phil Dorchester Fountain Hills: Grady Miller #Gila Bend: Kathy Valenzuela *Gila River Indian Community: Kathleen Curley Gilbert: René Guillen as proxy for Patrick Banger Glendale: Kevin Phelps Goodyear: Julie Arendall	Phoenix: Ed Zuercher Pinal County: Greg Stanley *Salt River Pima-Maricopa Indian Community: Bryan Meyers Scottsdale: Brad Lundahl as proxy for Jim Thompson Surprise: Mike Frazier *Tempe: Marge Zylla as proxy for Andrew Ching *Tolleson: Reyes Medrano, Jr. Valley Metro/RPTA: Scott Smith #Wickenburg: Vince Lorefice Youngtown: Jeanne Blackman
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* Those members neither present nor represented by proxy.

Participated by telephone conference call. + Participated by videoconference call.

On January 31, 2019, the Transportation Review Committee recommended exceptions to the ALCP Policies and Procedures to (1) remove the Southbound Frontage Road Connections (SAT-10-03-I) and substitute it with the Drinkwater Boulevard Bridge project and (2) relocate savings from the Shea Auxillary Lane from 90th Street to Loop 101 (ACI-SHA-20-30-B) prior to its completion.

MEMBERS ATTENDING

Apache Junction: Mike Wever ADOT: Clem Ligocki for Gregory Byres Avondale: David Janover *Buckeye: Scott Lowe Cave Creek: Hal Marron Chandler: Dan Cook El Mirage: Jorge Gastelum *Florence: Chris Salas #Fountain Hills: Randy Harrel Gila River Indian Community: Tim Oliver Gilbert: Rene Guillen Glendale: Debbie Albert, Chair	*Maricopa (City): Joshua Plumb Maricopa County: Mitch Wagner for Jennifer Toth Mesa: R. J. Zeder #Peoria: Adina Lund Phoenix: Mario Paniagua, Vice Chair #Pinal County: Scott Bender for Louis Andersen Queen Creek: Mohamed Youssef *Scottsdale: Paul Basha Surprise: Karl Zook #Tempe: Shelly Seyler
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Goodyear: Rebecca Zook *Guadalupe: Robert Thaxton Litchfield Park: Woody Scoutten	*Tolleson: Jamie McCracken *Valley Metro: John Farry *Wickenburg: David Nigh #Youngtown: Grant Anderson
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EX-OFFICIO (NON-VOTING) MEMBERS ATTENDING

- | | |
|---|--|
| *Street Committee: Kini Knudson,
City of Phoenix | *Active Transportation Committee:
Jim Hash, City of Mesa |
| *ITS Committee: Chris Hamilton,
City of Avondale | *Transportation Safety Committee:
Kiran Guntupalli, City of
Glendale |
| FHWA: Ed Stillings | |

+ - Attended by Videoconference

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

ALCP Project Change Request - General

1. General	Lead Agency (Requesting Agency)	City of Scottsdale
	Multi-Jurisdictional Project (Yes/No)	No
	Other Participating Agencies (if applicable)	
2. Contact Information	Primary Staff Contact Name	Paul Basha
	Primary Staff Contact Title	Transportation Director
	Primary Staff Contact Email	pbasha@scottsdaleaz.gov
	Primary Staff Contact Phone	480-312-7651
	Secondary Staff Contact Name	Dave Meinhart
	Secondary Staff Contact E-Mail	dmeinhart@scottsdaleaz.gov
3. Original Project	Original Project Name	Southbound Loop 101 Frontage Road Connections
	Original Project RTP ID	ACI-SAT-10-03-I
	Are you requesting to rescope/substitute more than one original project? (yes/no)	Yes
	List any additional original projects and RTP IDs you are requesting to rescope/substitute	Shea Blvd at 124th (ACI-SHA-20-03-N); Shea Auxiliary Lane from 90th St to Loop 101 (ACI-SHA-20-03-
4. Proposed Rescoped/ Substitute Project	Roadway Name	Drinkwater Blvd: Bridge Repair
	Starting Limit	2nd St
	Ending Limit	Indian School Rd
	Length (to nearest 10th of a mile)	0.2

ALCP Project Change Request - Proposed Project

1. Proposed Project - General Information	Roadway Name	Drinkwater Blvd: Bridge Repair
	Starting Limit	2nd St
	Ending Limit	Indian School Rd
	Length (to nearest 10th of a mile)	0.2
	Number of travel lanes (existing)	5
	Number of travel lanes (proposed)	5
	Open to traffic month/year	Jun-19
	Sidewalks Before?	No
	Sidewalks After?	No
	Bike Lanes Before?	No
	Bike Lanes After?	No
	Current Transit Route?	No
	Future Transit Route?	No
	If yes, expected start date?	
Brief Work Description (max 575 characters)	The Drinkwater Boulevard Bridge Repair project will include construction of a new supporting wall below the structure, closing open portions of the bridge deck, and placing a new waterproofing membrane and drainage system on top of the structure. Completion of the project will allow the five travel lanes on Drinkwater Boulevard to reopen to traffic. The project will also restore full pedestrian access across the City of Scottsdale's Civic Center Mall.	

2. Project Costs	Work Phase	Work Fiscal Year	Total Cost
	Pre-Design		
	Design		
	Right-of-Way		
	Construction	2019	\$8,570,000.00
	Other		
	Total		\$8,570,000.00

3. Regional Funding	Total Project Costs	\$8,570,000.00
	Total Regional Funding from Rescoped/Substituted Project(s)	\$5,999,000.00
	Total Regional Funding Applied to Proposed Project	\$5,999,000.00

	Total Regional Funding Savings	\$0.00
	Regional Contribution Percentage	70.00%
4. Project Change Tool Information	Volume (AAWT)	13200
	V/C Ratio	0.33
	Peak PM Volume	1222
	Peak AM Volume	907
	Crash Rates by VMT	3.21
	Crash Rates by VMT - City-Wide Average	1.5
	Crash-Rates by VMT Relative to City-Wide Average	2.14
	Serious Crashes/Fatalities	
	Segment of Regional Importance – Does the project complete or improve a segment which helps to provide a continuous link between two points of regional importance for travel or improve an intersection or interchange of two corridors of regional importance? How? (max 575 characters)	Drinkwater Boulevard serves as the eastern leg of the Downtown Couplet, which was developed to reduce congestion and improve walkability on Scottsdale Road through the downtown area. Scottsdale Road is a segment of regional importance. The closure of Drinkwater Boulevard has increased traffic volume on Scottsdale Road by nearly 25% in the near term and MAG projects volumes would increase on Scottsdale Road by 33% in the long term.
Complete Streets – Will the project improve safe access for all users above a standard roadway, including pedestrians, bicyclists, and transit riders? How? (max 575 characters)	Yes. Due to its unique location, the Drinkwater Bridge actually creates the ability for pedestrians to move freely about the Civic Center Mall without having to interact with traffic on Drinkwater Boulevard.	
Economic Development Access – Does the project provide access to existing and/or future businesses and job activity centers, shopping, educational, cultural, and recreational opportunities? How? (max 575 characters)	During fiscal years 2016/17 and 2017/18, the Civic Center Mall was used for 162 days of outdoor events that attracted over 285,000 guests. The adjacent Center for the Arts attracted over 250,000 visitors. Located one block south of the current road closure are Scottsdale Stadium and the Honor Health Scottsdale Osborn Medical Center. The medical center includes a 337-bed hospital and trauma center and encompasses a total of 40 acres. The stadium hosts the San Francisco Giants' spring training games. Stadium attendance for the 2017 and 2018 Cactus League seasons was over 338,000 (9,940/game).	
5. Miscellaneous	Please explain the reason for requesting to substitute or rescope the original project (max 575 characters)	Drinkwater Boulevard is an existing 5-lane arterial roadway that has been fully closed to traffic due to structural issues where the roadway passes under Civic Center Mall. Prior to closure, the roadway was carrying 13,200 vehicles per day. MAG forecasted volume for 2040 is 22,500 vpd. The project replaces a proposed 0.20 mile long 2-lane collector road across a shopping center and a 0.25 mile auxiliary lane on Shea Boulevard. The anticipated capacity of these two projects is approximately 10,000 vpd.
	What technical documents and supporting analysis are available to demonstrate the feasibility of the requested project? (max 575 characters)	"Civic Mall Drinkwater Bridge Renovation" by Caruso Turley Scott Structural Engineers, 9/25/2018.
	Description of how the requested project would improve mobility/safety and reduce congestion. (max 575 characters)	Drinkwater Boulevard, when open, has the capacity to carry up to 40,000 vpd. The portion of Civic Center Mall above the bridge provides conflict-free access for hundreds of thousands of pedestrians annually.

<p>What is the requested project's benefit to the MAG region?</p>	<p>In addition to reducing congestion on regionally significant Scottsdale Road, Drinkwater Boulevard serves as a primary access route for numerous tourist, medical and business destinations.</p>
<p>Did the proposed project score higher than the original project(s) in the Project Change Tool analysis?</p>	
<p>Were there any other factors that were not part of the Project Change Tool analysis that should be taken into consideration? (max 575 characters)</p>	

ALCP Project Change Request - Original ALCP Project

1. Original Project - General Information	Roadway Name	Shea Auxiliary Lane from 90th Street to Loop 101
	RTP ID	ACI-SHA-20-03-B
	Starting Limit	90th Street
	Ending Limit	Loop 101
	Length (to nearest 10th of a mile)	0.2
	Number of travel lanes (existing)	6
	Number of travel lanes (proposed/formerly proposed)	7
	Brief Work Description (max 575 characters)	Design and construct a continuous westbound lane that would eliminate 4 separate right turn bays on the north side of Shea Boulevard. The improvements would also increase capacity for vehicles traveling from westbound Shea Boulevard to northbound Loop 101.
Please explain why this project should be substituted or rescoped (max 575 characters)	The primary objective of this project, which was originally identified through a citywide transportation master planning process, was to improve vehicular flow from northbound 90th Street to westbound Shea Boulevard and the Shea/Loop 101 northbound on ramp. Due to capacity limitations on the northbound on ramp and right-of-way constraints along two commercial properties, the original concept is not feasible. The City of Scottsdale continues to look at adding a third northbound to westbound left turn bay on 90th Street at an estimated total cost of \$700,000.	

2. Project Costs	Total Design Phase Cost	\$100,000.00
	Total Right-of-Way Phase Cost	\$50,000.00
	Total Project Construction Phase Cost	\$550,000.00
	Total Additional Phase Costs (utility, etc.)	
	Total Costs	\$700,000.00

3. Regional Funding	Fiscal Year	Funding Type	Regional Amount
	2006 - 2016		
	2017		
	2018		
	2019		
	2020		
	2021		
	2022		
	2023		
	2024		\$2,308,000.00

	2025		\$4,082,000.00
	2026		
	Total Funded		\$6,390,000.00
	Unfunded		
4. Planned Improvements	Will improvements still occur on the roadway?	Yes	
	Are improvements planned in your agency's CIP or TIP? (as applicable)	Yes	
	Will the improvements add any additional thru-lanes? Please provide detail. (as applicable)	No	
	Will the improvements add any additional thru-lanes? Please provide detail. (as applicable)		
	What year will the improvements be open to traffic? (as applicable)		
5. Project Change Tool Information	Volume (AAWT)	64300	
	V/C Ratio	1.34	
	Peak PM Volume	4420	
	Peak AM Volume	4478	
	Crash Rates by VMT	2.37	
	Crash Rates by VMT - City-Wide Average	1.5	
	Crash-Rates by VMT Relative to City-Wide Average	1.58	
	Serious Crashes/Fatalities		
	Segment of Regional Importance – Does the project complete or improve a segment which helps to provide a continuous link between two points of regional importance for travel or improve an intersection or interchange of two corridors of regional importance? (max 575 characters)	The reduced project scope will improve traffic flow in the Shea Boulevard/90th Street intersection adjacent to the Honor Health Shea Medical Campus and within 1/4 mile the Loop 101/Shea Boulevard interchange.	
	Complete Streets – Will the project improve safe access for all users above a standard roadway, including pedestrians, bicyclists, and transit riders? (max 575 characters)	The reduced project scope will not create new pedestrian or bicycle facilities. Sidewalks currently exist on all four corners of the Shea/90th intersection. Pedestrian crossing time on northbound 90th Street will be increased due to the addition of an extra turn bay.	
Economic Development Access – Does the project provide access to existing and/or future businesses and job activity centers, shopping, educational, cultural, and recreational opportunities? (max 575 characters)	The intersection is adjacent to the Honor Health Shea Hospital on the southeast corner, a large commercial plaza on the southwest corner, a large commercial/hotel area on the northwest corner and an electric substation on the northeast corner.		

ALCP Project Change Request - Original ALCP Project

1. Original Project - General Information	Roadway Name	Southbound Loop 101 Frontage Road Connections	
	RTP ID	ACI-SAT-10-03-1	
	Starting Limit	Northsight Boulevard	
	Ending Limit	Southbound Loop 101 Frontage Road	
	Length (to nearest 10th of a mile)	0.8	
	Number of travel lanes (existing)	0	
	Number of travel lanes (proposed/formerly proposed)	6	
	Brief Work Description (max 575 characters)	Create up to 3 public 2-lane roadways across currently private property. The connections would link Northsight Boulevard to the southbound Loop 101 Frontage Road. The northernmost connection would link the Northsight/Frank Loyd Wright intersection easterly along the southern edge of the Central Arizona Project (CAP) canal. The middle and southernmost connections would use existing private driveways to connect Northsight 600' south of Hayden and at Butherus Dr. <u>across a large commercial plaza.</u>	
Please explain why this project should be substituted or rescoped (max 575 characters)	Real estate acquisition challenges and costs make the connections infeasible. The northernmost connection would have required encroaching 2.2 acres into the Bureau of Reclamation's right-of-way for the CAP canal. The other 2 connections would have required acquisition of private driveways totalling 4.15 acres. Based on recent acquisitions of small parcels for roadway projects in the Scottsdale Airpark area, real estate costs alone, exclusive of any condemnation costs, are currently estimated at \$8.3-\$11.0 million. The full budget for design/right-of-way/construction is \$4.36 million.		
2. Project Costs	Total Design Phase Cost	\$413,000.00	
	Total Right-of-Way Phase Cost	\$9,650,000.00	
	Total Project Construction Phase Cost	4150000	
	Total Additional Phase Costs (utility, etc.)		
	Total Costs	\$14,213,000.00	
3. Regional Funding	Fiscal Year	Funding Type	Regional Amount
	2006 - 2016	RARF	\$94,000.00
	2017	RARF	\$18,000.00
	2018	RARF	\$2,000.00
	2019	RARF	\$2,939,000.00
	2020		
	2021		
	2022		
	2023		
	2024		
	2025		

	2026	
	Total Funded	\$3,053,000.00
	Unfunded	
4. Planned Improvements	Will improvements still occur on the roadway?	No
	Are improvements planned in your agency's CIP or TIP? (as applicable)	N/A
	Will the improvements add any additional thru-lanes? Please provide detail. (as applicable)	No
	Will the improvements add any additional thru-lanes? Please provide detail. (as applicable)	No
	What year will the improvements be open to traffic? (as applicable)	
5. Project Change Tool Information	Volume (AAWT)	7500
	V/C Ratio	0.38
	Peak PM Volume	551
	Peak AM Volume	849
	Crash Rates by VMT	
	Crash Rates by VMT - City-Wide Average	
	Crash-Rates by VMT Relative to City-Wide Average	
	Serious Crashes/Fatalities	
	Segment of Regional Importance – Does the project complete or improve a segment which helps to provide a continuous link between two points of regional importance for travel or improve an intersection or interchange of two corridors of regional importance? (max 575 characters)	The project would improve connectivity in the Scottsdale Airpark between a minor arterial roadway that serves only the Airpark and the Loop 101 freeway.
	Complete Streets – Will the project improve safe access for all users above a standard roadway, including pedestrians, bicyclists, and transit riders? (max 575 characters)	The project would provide continuous sidewalks where none currently exist. Due to the anticipated low operating speeds (25 mph), bike lanes were not included.
Economic Development Access – Does the project provide access to existing and/or future businesses and job activity centers, shopping, educational, cultural, and recreational opportunities? (max 575 characters)	Only the northernmost connection would provide new access to businesses that currently have access only from Frank Lloyd Wright Boulevard. The other improvements would provide public roadways where private driveways currently exist.	

ALCP PROJECT CHANGE TOOL

2

Quantitative Criteria

CRITERIA #	QUANTITATIVE CRITERIA - ALL OBSERVED DATA	NOTES
1	VOLUME (AAWT)	POINTS ARE AWARDED IN DESCENDING ORDER WITH HIGHER AAWT RECEIVING MORE POINTS
2	V/C RATIO	POINTS ARE AWARDED IN DESCENDING ORDER WITH HIGHER V/C RATIO RECEIVING MORE POINTS
3	PEAK PM VOLUME	POINTS ARE AWARDED IN DESCENDING ORDER WITH HIGHER PM PEAK VOLUME RECEIVING MORE POINTS
4	PEAK AM VOLUME	POINTS ARE AWARDED IN DESCENDING ORDER WITH HIGHER AM PEAK VOLUME RECEIVING MORE POINTS
5	CRASH RATES BY VMT RELATIVE TO CITY-WIDE AVERAGE	POINTS ARE AWARDED IN DESCENDING ORDER WITH HIGHER CRASH RATES RECEIVING MORE POINTS
6	SERIOUS CRASHES/FATALITIES (STRUCTURAL CAUSES ONLY)	POINTS ARE AWARDED IN DESCENDING ORDER WITH HIGHER NUMBERS OF SERIOUS CRASHES/FATALITIES RECEIVING MORE POINTS

ALCP PROJECT CHANGE TOOL



Quantitative Data Justification/Description

Criteria	Project #1	Project #2	Project #3	Project #4
V/C RATIO				
PEAK PM VOLUME				
PEAK AM VOLUME				
CRASH RATES BY VMT RELATIVE TO CITY-WIDE AVERAGE				
SERIOUS CRASHES/ FATALITIES				

ALCP PROJECT CHANGE TOOL



Qualitative Criteria

CRITERIA #	QUALITATIVE CRITERIA	NOTES
1	SEGMENT OF REGIONAL IMPORTANCE	DOES THE PROJECT COMPLETE OR IMPROVE A SEGMENT WHICH HELPS TO PROVIDE A CONTINUOUS LINK BETWEEN TWO POINTS OF REGIONAL IMPORTANCE FOR TRAVEL OR IMPROVE AN INTERSECTION OR INTERCHANGE OF TWO CORRIDORS OF REGIONAL IMPORTANCE?
2	COMPLETE STREETS	WILL THE PROJECT IMPROVE SAFE ACCESS FOR ALL USERS ABOVE A STANDARD ROADWAY, INCLUDING PEDESTRIANS, BICYCLISTS, AND TRANSIT RIDERS?
3	ECONOMIC DEVELOPMENT ACCESS	DOES THE PROJECT PROVIDE ACCESS TO EXISTING AND/OR FUTURE BUSINESS AND JOB ACTIVITY CENTERS, SHOPPING, EDUCATIONAL, CULTURAL, AND RECREATIONAL OPPORTUNITIES?

ALCP PROJECT CHANGE TOOL



Qualitative Data

PROJECT #	PROJECT NAME	LOCATION	LIMITS	SEGMENT OF REGIONAL IMPORTANCE			ECONOMIC DEVELOPMENT ACCESS
				COMPLETE STREETS	Yes = 2	No = 1	
				Yes = 2	Yes = 2	No = 1	
				No = 1	No = 1	No = 1	
1	Drinkwater Blvd: Bridge Repair	Drinkwater Blvd	2nd Street to Indian School Road	2	2	2	2
2	Shea Auxiliary Lane from 90th Street to Loop 101	Shea Blvd	90th Street to Loop 101	2	1	2	2
3	Southbound Loop 101 Frontage Road Connections	Northsight Blvd	Northsight Blvd to Loop 101 frontage road	1	2	2	2
4							
5							
6							
7							
8							
9							
10							

Qualitative Data Justification/Description

Criteria	Project #1	Project #2	Project #3	Project #4
SEGMENT OF REGIONAL IMPORTANCE				
COMPLETE STREETS				
ECONOMIC DEVELOPMENT ACCESS				

ALCP PROJECT CHANGE TOOL



Assign Weights

CRITERIA #	QUANTITATIVE CRITERIA	Assign Weights
1	VOLUME (AAWT)	5.0%
2	V/C RATIO	15.0%
3	PEAK PM VOLUME	5.0%
4	PEAK AM VOLUME	5.0%
5	CRASH RATES BY VMT RELATIVE TO CITY-WIDE AVERAGE	10.0%
6	SERIOUS CRASH / FATALITIES	20.0%

CRITERIA #	QUALITATIVE CRITERIA	Assign Weights
7	SEGMENT OF REGIONAL IMPORTANCE	10.0%
8	COMPLETE STREETS	20.0%
9	ECONOMIC DEVELOPMENT ACCESS	10.0%

100.0%

Total Weight Must Equal 100%



Transportation Policy Committee

INFORMATION SUMMARY

AGENDA ITEM #6

DATE

February 13, 2019

SUBJECT

Freeway Life Cycle Program – Financial Update

CONTACT

John Bullen, Transportation Economic and Finance Program Manager, (602) 254-6300

SUMMARY

The Freeway Life Cycle Program (FLCP) is the management tool for the implementation of the freeway and highway projects identified in the MAG Regional Transportation Plan (RTP). On September 27, 2017, the MAG Regional Council approved the rebalance of the FLCP. The rebalance sets project budgets, schedules, and open-to-service years for the 37 projects that could be completed under Proposition 400. After the rebalance was approved, three material cost change actions to request additional funding were taken through the process. Following the material cost change action that was approved in April 2018, MAG and the Arizona Department of Transportation (ADOT) initiated a thorough program analysis, prioritizing updated cost estimates and schedules.

An update on the program was presented to the Transportation Policy Committee (TPC) on October 17, 2018. At that time, the program analysis had not yet concluded, but an initial review indicated that project costs had increased over program budgets due to structural program issues, right of way cost increases, scope changes, and market conditions. A more detailed overview of these factors is provided later in this summary transmittal. The analysis has since been completed, and based on the most recent ADOT

estimates, project costs have increased by \$1.58 billion over what is currently programmed. Taking into account the existing program fund balance, an estimated \$1.23 billion in projects will need to be deferred beyond the program’s funding horizon. Additional detail on the factors driving the cost increases, program finances, and next steps follows.

Cost Increase Detail

Based on updated ADOT estimates, project costs have increased by \$1.58 billion over the current program. The largest increase is in the construction phase, where costs have increased by more than \$766 million over what is currently programmed, followed by right of way/utility (\$708 million increase), design (\$86 million increase), and pre-design/environmental (\$20 million increase). A table detailing these increases, by phase, is provided below. A detailed project-by-project breakdown is included as an attachment to this agenda item.

The updated estimates represent the culmination of extensive efforts by ADOT and their three management consultants. Following the material cost change actions in the spring of 2018, ADOT asked their three management consultants to review all estimates for the remaining projects to be delivered under Proposition 400. The contracts for the three management consultants expired at the end of Fiscal Year (FY) 2018, and in their place, a new Management Consultant (MC) was procured. Once under contract, the MC was tasked with providing a second review of all remaining projects to be delivered under Proposition 400. To help facilitate this effort, the MC developed an updated project estimating tool based on current industry pricing. The MC also held several multi-day right-of-way workshops where staff from project consultant firms, ADOT project management group, ADOT right-of-way group, and MAG staff reviewed estimates on a parcel-by-parcel basis.

Phase	Program Amount*	December 2018 Estimate*	Variance*	Percentage of Variance
Pre-design& Environmental	\$ 69.93	\$ 89.65	\$ (19.72)	1.25%
Design	208.45	294.78	(86.33)	5.46%
Right of way & environmental	248.36	956.02	(707.66)	44.80%
Construction	2,602.51	3,368.54	(766.03)	44.49%
Total	3,129.25	4,708.99	(1,579.74)	

*millions, 2018 dollars

Factors Driving the Cost Increases

At the October 17, 2018, TPC meeting, it was noted that there were four primary factors driving the cost increases. Detail on each of the factors is provided below.

1. Structural program issues

MAG, in cooperation with ADOT, is responsible for setting project schedules and budgets. ADOT Financial Management Services maintains the cash flow model that is key to maintaining the fiscal constraint of the FLCP. The cash flow is organized so that all future expenditures align with MAG's Transportation Improvement Program (TIP), which is programmed in a base-year dollar. The revenue projections that are used for the cash flow are in real dollars (adjusted for inflation). A discount factor is applied to the revenues to bring them to the same dollar base as the expenditures. Under this system, project budgets in the TIP must be adjusted every year to account for inflationary factors. Currently, the revenue discount factor that is applied to the revenues is adjusted annually, as the base year changes and a new discount factor is calculated. However, project budgets have not been adjusted since they were established in 2016. As a result, the project budgets do not reflect the last few years of inflation.

Other structural issues include inconsistencies in program budgets, variances between estimated and programmed budgets across phases, and discrepancies in baseline scopes.

2. Right of Way cost increases

The right of way estimates used to produce the current project right of way programming were largely based on blanket assumptions of a cost-per-square-foot basis. As part of the program analysis, workshops were held to review right of way costs on a per-parcel basis. As a result, ADOT was able to better estimate where entire parcels would need to be acquired as opposed to partial acquisitions and estimate the costs associated with those parcel procurements. Additionally, impacts from factors that did not previously play a role in right of way estimation, such as loss of access and sign visibility, were also taken into consideration as part of the analysis.

The nature of how right of way is handled in the cash flow has also had an impact on the cost increases. Right of way costs are programmed on a gross basis instead of a net basis; any reduction in right of way expenditures is not recognized in the cash flow until the cash has been received by the fund. This ensures there is sufficient budget and cash to pay for all acquisition and right of way needs, safeguarding the program from funding shortfalls if a parcel sale does not materialize or if the sale occurs for less or later than expected. Said otherwise: funding is programmed based on the up-front cost to acquire any right of way. The sale of any remnant parcel that is not needed for the project is not taken into account until the parcel is actually sold and the cash is received because of the timing of the sale and character of the remnant parcel.

3. Scope changes

As a project moves through the design process, there are instances where a project's scope needs to be changed, expanded or reduced based on new information or updated requirements. As an example, when the I-17 and Happy Valley Road interchange improvement project was originally scoped, it was thought that a partial cloverleaf ("par-clo") interchange would provide a sufficient level-of-service for traffic operations. As part of the project design process, an analysis was conducted and it was determined that a par-clo interchange would not provide a sufficient level-of-service, but that a diverging diamond interchange (DDI) would. The right of way and engineering design requirements of a DDI differ from a par-clo and ultimately have impacts on a project's budget.

Other examples of scope changes impacting program budgets include expansion of project limits to support operational improvements, inclusion of ADA improvements beyond what had originally been anticipated, and design changes due to updated technical analysis.

4. Market conditions

The fourth factor driving cost increases is market conditions. The increase in public and private sector construction activity continues to strain the availability of construction materials and skilled labor. During the recession, most construction activity in the region was driven by the public sector. However, since the economic recovery began, private sector construction has been increasing – primarily with new home and office construction. In fact, local economic consulting firm, Elliot D. Pollock & Company, released data on November 19, 2018, noting that construction employment is enjoying its fastest rates of growth in a long time. The shortage of skilled labor has resulted in contractors increasing rates and providing financial incentives to retain employees.

Increases in material unit prices are also a crucial factor in the bid price increases. These increases are due to a combination of low availability because of the volume of construction activity and the tariffs that were enacted in early 2018. During ADOT's meeting with the low bidder on the SR-101L, I-17 to Pima project, for example, it was noted that cement for the project will be brought in from California rather than local suppliers, while the supply of fly ash (a component of concrete) will be transported into Phoenix using rail cars from distant locations.

Program Financial Overview

Funding for the FLCP comes from three primary revenue sources: the Proposition 400 half-cent sales tax, known as the Regional Area Road Fund (RARF); ADOT federal discretionary funds; and Highway User Revenue Funds (HURF). As of the July 2018 ADOT cash flow certification, approximately 40-percent of the program's revenues were from RARF, 50 percent from ADOT federal discretionary funds, and 10 percent from HURF.

The forecasts of program revenues are updated every year. Forecasts for RARF and HURF are generated from econometric models comprised of independent variables populated using a Risk Analysis Process (RAP) based on a panel of economists. The forecast of federal funds is generated using growth rates specified in the federal Fixing America's Surface Transportation (FAST) Act, which runs through 2020, and historical averages to extend it through the end of the program.

It is important to note that program revenues are projected to grow and are inclusive of inflationary factors. For example, the RARF forecast released by ADOT in the fall of 2018 estimates that between FY 2019 and FY 2020, RARF revenues would grow by 5.5 percent. *As a result, what truly drives an increase in program revenues is not necessarily an increase in actual collections over the previous year, but rather an increase in the actual collections relative to what had been forecasted.*

Program Cost Increases: Action Taken

MAG and ADOT continue to take steps to address some of the underlying issues that led to the program cost increases. One such measure, the FLCP publication, was presented to the TPC on November 14, 2018, to serve as a central repository for program information. Another activity that MAG has undertaken is a comprehensive review of construction cost data. MAG's Regional Analytics Division will be assisting in the effort, and has already begun to analyze eight years of ADOT construction bid data in an attempt to identify trends and better understand some of the factors that led to the most recent cost increases. MAG has also requested construction bid information from member agencies to assist with this effort.

Additional efforts that have been, or will be, undertaken by ADOT include:

- 1) Creation of an updated parametric estimating tool: ADOT Project Management Group has worked with their MC to develop an updated parametric estimating tool based on current industry pricing.
- 2) Creation of a Construction Cost Index: ADOT is in the process of creating a quarterly construction cost index to track changes in material and labor pricing.
- 3) Biannual construction and right of way cost updates: ADOT Project Management Group will work with their MC to establish biannual construction and right of way cost updates.
- 4) Creation of a risk register for use in all projects: ADOT will apply one of the cornerstones of the Cost Risk Analysis process – a risk register – to all projects. The risk register will help to establish a management plan to manage, and ultimately retire, the risk.

MAG and ADOT will continue to identify operational and policy oriented measures to improve management of the program.

Program Rebalance: Next Steps

State statutes require that a budget process be put into place to ensure estimated costs do not exceed the amount of estimated program revenues. With the updated project estimates, changes will need to be made to the program including schedule changes, reductions in scope, and deferrals outside the funded Proposition 400 program. Taking into account the program fund balance, approximately \$1.23 billion in projects will need to be moved out of the program.

To help facilitate this effort, MAG has initiated a comprehensive, performance-based assessment of the remaining projects in the program. For existing facilities, factors that have been analyzed include seconds of delay per mile, travel time index, and planning time index. Forecasted data from MAG's transportation demand model has also been analyzed; metrics included daily vehicle miles traveled and daily vehicle hours traveled. It is anticipated that the results of this analysis will be combined with a comprehensive, programmatic review to put together a tentative rebalancing scenario. The comprehensive review will also take into consideration factors such as project readiness, legacy factors, project implementation issues, impact of planned improvements, and financial limitations.

A tentative schedule has been constructed and included as an attachment to this agenda item. Based on the schedule, approval of a rebalanced FLCP is estimated to occur by June 2019, contingent on a finding of air quality conformity. The air quality conformity process is expected to occur throughout the summer and be completed in fall of 2019.

PUBLIC INPUT

None

PROS & CONS

PROS: A financial update on the Freeway Life Cycle Program represents an opportunity for the Transportation Policy Committee to monitor the program and gain additional context for future policy decisions.

CONS: None.

TECHNICAL & POLICY IMPLICATIONS

TECHNICAL: In the spring of 2018, MAG and ADOT initiated a thorough program analysis, prioritizing updated cost estimates and schedules. The analysis has since been completed and based on the most recent ADOT estimates, project costs have increased by \$1.58 billion over what is currently programmed. Taking into account the existing program fund balance, an estimated \$1.23 billion in projects will need to be deferred beyond the program’s funding horizon.

POLICY: A.R.S. 28-6352 (B) requires that MAG develop a budget process that ensures the estimated cost of regional freeways and highways does not exceed available revenues. Based on the most recent ADOT cost estimates, changes will need to be made to the program including schedule changes, reductions in scope, and project deferrals outside the funded Proposition 400 program.

ACTION NEEDED

Information and discussion.

PRIOR COMMITTEE ACTIONS

On November 7, 2018, an update on the Freeway Life Cycle Program was presented to the Management Committee for information and discussion.

MEMBERS ATTENDING

Buckeye: Roger Klingler, Chair Queen Creek: John Kross, Vice Chair ADOT: Eric Gudino as proxy for John Halikowski *Apache Junction: Bryant Powell *Avondale: Charles Montoya #Carefree: Gary Neiss *Cave Creek: Carrie Dyrek Chandler: Marsha Reed El Mirage: Crystal Dyches #Florence: Brent Billingsley,	Guadalupe: Jeff Kulaga Litchfield Park: Bill Stephens City of Maricopa: Rick Horst Maricopa County: Reid Spaulding as proxy for Joy Rich Mesa: Christopher Brady Paradise Valley: Dawn Marie Buckland as proxy for Brian Dalke Peoria: Jeff Tyne Phoenix: Ed Zuercher #Pinal County: Louis Anderson as proxy for Greg Stanley
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<p>*Fort McDowell Yavapai Nation: Phil Dorchester</p> <p>Fountain Hills: Grady Miller</p> <p>#Gila Bend: Kathy Valenzuela</p> <p>*Gila River Indian Community: Kathyleen Curley</p> <p>Gilbert: Patrick Banger</p> <p>Glendale: Chris Anaradian as proxy for Kevin Phelps</p> <p>Goodyear: Julie Arendall</p>	<p>*Salt River Pima-Maricopa Indian Community: Bryan Meyers</p> <p>*Scottsdale: Jim Thompson</p> <p>Surprise: Paul Bernardo as proxy for Bob Wingenroth</p> <p>*Tempe: Andrew Ching</p> <p>Tolleson: Reyes Medrano, Jr.</p> <p>Valley Metro/RPTA: Scott Smith</p> <p>*Wickenburg: Vince Lorefice</p> <p>*Youngtown: Jeanne Blackman</p>
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* Those members neither present nor represented by proxy.

Participated by telephone conference call. + Participated by videoconference call.

On October 25, 2018, an update on the Freeway Life Cycle Program was presented to the Transportation Review Committee for information and discussion.

MEMBERS ATTENDING

<p>*Avondale: David Janover</p> <p>ADOT: Clem Ligocki for Gregory Byres</p> <p>Apache Junction: Mike Wever</p> <p>*Buckeye: Scott Lowe</p> <p>*Cave Creek: Dave Peterson</p> <p>Chandler: Dan Cook</p> <p>*El Mirage: Jorge Gastelum</p> <p>*Florence: Chris Salas</p> <p>#Fountain Hills: Randy Harrel</p> <p>Gila River Indian Community: Tim Oliver</p> <p>Gilbert: Rene Guillen</p> <p>Glendale: Debbie Albert, Chair</p> <p>Goodyear: Rebecca Zook</p> <p>#Guadalupe: Robert Thaxton</p> <p>#Litchfield Park: Woody Scoutten</p>	<p>*Maricopa (City): Bill Fay</p> <p>Maricopa County: Mitch Wagner for Jennifer Toth</p> <p>Mesa: Jeff Martin for R. J. Zeder</p> <p>Peoria: Adina Lund</p> <p>Phoenix: Mario Paniagua, Vice Chair</p> <p>#Pinal County: John Kraft for Louis Andersen</p> <p>Queen Creek: Mohamed Youssef</p> <p>#Scottsdale: Paul Basha</p> <p>#Surprise: Dana Oswiany Karl Zook</p> <p>Tempe: Robert Yabes for Shelly Seyler</p> <p>*Tolleson: Jamie McCracken</p> <p>Valley Metro: John Farry</p> <p>*Wickenburg: David Nigh</p> <p>#Youngtown: Grant Anderson</p>
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* Those members neither present nor represented by proxy.

Participated by telephone conference call. + Participated by videoconference call.

On October 24, 2018, an update on the Freeway Life Cycle Program was presented to the MAG Regional Council for information and discussion.

MEMBERS ATTENDING

<p>*Mayor Gail Barney, Queen Creek, Chair El Mirage: Mayor Lana Mook, Vice Chair Apache Junction: Councilmember Robin Barker *Avondale: Mayor Kenneth Weise #Buckeye: Mayor Jackie Meck Carefree: Mayor Les Peterson Cave Creek: Councilmember David L. Smith # Chandler: Mayor Jay Tibshraeny *Florence: Mayor Tara Walter</p>	<p>#Guadalupe: Mayor Valerie Molina #Litchfield Park: Mayor Thomas Schoaf *City of Maricopa: Mayor Christian Price Maricopa County: Supervisor Denny Barney *Mesa: Mayor John Giles Paradise Valley: Vice Mayor Jerry Bien-Wilner Peoria: Mayor Cathy Carlat Phoenix: Mayor Thelda Williams Pinal County: Supervisor Todd House</p>
<p>*Fort McDowell Yavapai Nation: President Bernadine Burnette *Fountain Hills: Councilmember Nick DePorter *Gila River Indian Community: Governor Stephen Roe Lewis #Gilbert: Mayor Jenn Daniels Glendale: Mayor Jerry Weiers Goodyear: Mayor Georgia Lord</p>	<p>*Salt River Pima-Maricopa Indian Community: President Delbert Ray #Scottsdale: Mayor W.J. "Jim" Lane #Surprise: Mayor Sharon Wolcott Tempe: Mayor Mark Mitchell *Tolleson: Mayor Anna Tovar Wickenburg: Mayor Everett Sickles #Youngtown: Mayor Michael LeVault State Transportation Board: Mr. Sam Elters State Transportation Board: Mr. Jack Sellers</p>

* Those members neither present nor represented by proxy.

Participated by telephone conference call. + Participated by videoconference call.

On October 17, 2018, an update on the Freeway Life Cycle Program was presented to the Transportation Policy Committee for information and discussion.

MEMBERS ATTENDING

<p>Gilbert, Mayor Jenn Daniels: Chair Glendale, Mayor Jerry Weiers: Vice Chair *Avondale: Mayor Kenneth Weise Brookfield Residential: Brad Chelton Chandler: Councilmember Terry Roe El Mirage: Mayor Lana Mook #Goodyear: Mayor Georgia Lord Huellmantel and Affiliates: Charles Huellmantel *Maricopa: Mayor Christian Price Maricopa County Board of Supervisors: Supervisor Clint Hickman Mesa: Mayor John Giles</p>	<p>Peoria: Councilmember Bridget Binsbacher Phoenix: Mayor Thelda Williams #Roc Arnett Consulting: Roc Arnett *Gila River Indian Community: Lt. Governor Robert Stone *Scottsdale: Councilmember David N. Smith State Transportation Board: Sam Elters #Sunland Asphalt: Doug DeClusin *Surprise: Mayor Sharon Wolcott *Swift Transportation: Dave Berry #Tempe: Mayor Mark Mitchell Vulcan Materials Company: Mark Reardon</p>
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* Those members neither present nor represented by proxy.

Participated by telephone conference call. + Participated by videoconference call.

Freeway Life Cycle Program Program vs. Dec. 2018 Estimate

ID	RTP Project	Description	Pre-design & Env		Design		Right-of-Way & Utility		Construction		Total		Variance	Scheduled Construction Start	Open to Traffic
			Program	Dec. 2018 Estimate	Program	Dec. 2018 Estimate	Program	Dec. 2018 Estimate	Program	Dec. 2018 Estimate	Program	Dec. 2018 Estimate	(Program-Dec. 2018 Estimate)	Program	
1	I-10, SR-85 to Verrado Way	GPL	\$ 1.80	\$ 2.40	\$ 6.50	\$ 9.72	\$ 8.30	\$ 6.10	\$ 91.70	\$ 100.75	\$ 108.30	\$ 118.97	\$ (10.67)	Apr-20	2022
2	I-10/Fairway Drive	TI NEW											\$ -	Sep-18	2019
3	I-10/Sky Harbor West Airport Access	TI IMP	\$ 2.50	\$ 2.50	\$ 3.00	\$ 3.00	\$ 9.50	\$ 9.50	\$ 85.00	\$ 85.00	\$ 100.00	\$ 100.00	\$ -	Aug-24	2026
4	I-10, I-17 Split to SR-202L	GPL/HOV/VI IMP	\$ 17.00	\$ 33.00	\$ 16.00	\$ 40.60	\$ 12.50	\$ 61.50	\$ 480.00	\$ 547.00	\$ 525.50	\$ 682.10	\$ (156.60)	Apr-21	2024
7	I-10, SR-202L to Riggs Road	GPL	\$ 1.95	\$ 1.95	\$ 4.00	\$ 10.82	\$ 0.00	\$ 0.50	\$ 59.60	\$ 112.16	\$ 65.55	\$ 125.43	\$ (59.88)	Mar-25	2027
8	I-10/Chandler Heights Road	TI NEW	\$ 0.00	\$ -	\$ 0.00	\$ -	\$ 0.00	\$ -	\$ 15.00	\$ 15.00	\$ 15.00	\$ 15.00	\$ -	Apr-22	2023
9	I-17/Central Ave Bridge	TI/AUX	\$ 0.50	\$ 0.50	\$ 2.00	\$ 1.98	\$ 1.00	\$ 9.41	\$ 20.00	\$ 19.85	\$ 23.50	\$ 31.74	\$ (8.24)	Oct-19	2020
10	I-17, I-10 Split to 19th Avenue	AUX	\$ 5.85	\$ 11.82	\$ 13.00	\$ 34.72	\$ 8.00	\$ 77.23	\$ 190.50	\$ 359.79	\$ 217.35	\$ 483.56	\$ (266.21)	Jan-24	2027
11	I-17/Indian School Road	TI IMP	\$ 2.85	\$ 2.85	\$ 5.00	\$ 3.54	\$ 1.20	\$ 13.84	\$ 50.40	\$ 36.92	\$ 59.45	\$ 57.15	\$ 2.30	Apr-21	2023
12	I-17/Camelback Road	TI IMP	\$ 2.75	\$ 2.75	\$ 5.85	\$ 5.39	\$ 7.10	\$ 19.43	\$ 52.90	\$ 55.90	\$ 68.60	\$ 83.47	\$ (14.87)	Nov-22	2026
13	I-17/Glendale Avenue	TI IMP	\$ 2.75	\$ 0.99	\$ 6.00	\$ 4.08	\$ 6.35	\$ 16.33	\$ 59.90	\$ 42.24	\$ 75.00	\$ 63.64	\$ 11.36	Jan-25	2027
14	I-17/Northern Avenue	TI IMP	\$ 2.75	\$ 1.02	\$ 6.00	\$ 4.46	\$ 2.90	\$ 20.78	\$ 55.20	\$ 46.26	\$ 66.85	\$ 72.52	\$ (5.67)	Jan-25	2027
15	I-17, Peoria Avenue to Greenway Road	MINOR	\$ 0.20	\$ 0.20	\$ 0.30	\$ 0.30	\$ 4.50	\$ 4.50	\$ 25.00	\$ 34.27	\$ 30.00	\$ 39.27	\$ (9.27)	Sep-19	N/A
16	I-17/Thunderbird Avenue	TI IMP	\$ 3.75	\$ 3.08	\$ 15.40	\$ 8.51	\$ 0.60	\$ 3.66	\$ 93.90	\$ 88.23	\$ 113.65	\$ 103.48	\$ 10.17	Oct-26	2030
17	I-17/Bell Road	TI IMP	\$ 4.75	\$ 2.54	\$ 7.80	\$ 10.92	\$ 1.80	\$ 6.00	\$ 82.00	\$ 113.17	\$ 96.35	\$ 132.63	\$ (36.28)	Oct-26	2030
18	I-17/Happy Valley Road and I-17/Pinnacle Peak Road	TI IMP											\$ -	Apr-18	2020
19	I-17, Anthem Way to Yavapai County Line	GPL	\$ 1.80	\$ 1.80	\$ 3.20	\$ 3.20	\$ 5.00	\$ 5.00	\$ 40.00	\$ 40.00	\$ 50.00	\$ 50.00	\$ -	Apr-20	2021
20	SR-101L, I-10 to US-60	GPL	\$ 4.30	\$ 8.12	\$ 17.00	\$ 30.41	\$ 1.00	\$ 2.31	\$ 246.50	\$ 315.11	\$ 268.80	\$ 355.95	\$ (87.15)	Jan-25	2027
21	SR-101L, US-60 to 75th Avenue	GPL	\$ 1.80	\$ 1.77	\$ 6.60	\$ 7.95	\$ 0.00	\$ 0.50	\$ 85.00	\$ 82.43	\$ 93.40	\$ 92.65	\$ 0.75	Jan-27	2029
22	SR-101L, 75th Avenue to I-17	GPL	\$ 1.20	\$ 1.88	\$ 4.40	\$ 7.77	\$ 0.00	\$ 0.50	\$ 56.40	\$ 80.48	\$ 62.00	\$ 90.63	\$ (28.63)	Jan-24	2026
23	SR-101L, I-17 to Pima Road	GPL											\$ -	Mar-19	2020
25	SR-101L, Pima Road to Shea Boulevard	GPL	\$ 0.10	\$ -	\$ 6.60	\$ 6.56	\$ 0.00	\$ 0.50	\$ 57.00	\$ 67.94	\$ 63.70	\$ 75.00	\$ (11.30)	Jun-20	2022
26	SR-101L Pima Road Extension (JPA)	JPA	\$ 0.00	\$ 0.00	\$ 0.30	\$ 0.30	\$ 0.00	\$ -	\$ 3.63	\$ 3.63	\$ 3.93	\$ 3.93	\$ 0.00	Jan-20	N/A
27	SR-101L, Baseline Road to SR-202L	GPL	\$ 0.50	\$ 0.50	\$ 3.15	\$ 3.65	\$ 0.00	\$ 0.00	\$ 51.40	\$ 74.00	\$ 55.05	\$ 78.15	\$ (23.10)	Jun-19	2021
28	SR-202L, Broadway Road to Gilbert Road	HOV	\$ 1.00	\$ 1.00	\$ 4.00	\$ 7.25	\$ 0.00	\$ 0.50	\$ 48.00	\$ 75.13	\$ 53.00	\$ 83.88	\$ (30.88)	Jan-24	2025
29	SR-202L (South Mountain): I-10 (Maricopa) - I-10 (Papago) Maintenance	MAINT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6.07	\$ 6.07	\$ 6.07	\$ 6.07	\$ 0.00	Jan-22	N/A
31	SR-202L/Lindsay Road*	TI NEW	\$ 0.68	\$ 0.68	\$ 5.55	\$ 5.55	\$ 6.01	\$ 6.01	\$ 22.42	\$ 26.16	\$ 34.67	\$ 38.40	\$ (3.74)	Mar-21	2022
32	SR-202, Gilbert Road to I-10	GPL	\$ 2.00	\$ 2.00	\$ 6.00	\$ 11.67	\$ 0.00	\$ 0.50	\$ 83.70	\$ 120.97	\$ 91.70	\$ 135.14	\$ (43.44)	Jan-24	2025
33	SR-24, Ellsworth Road to Ironwood Road	NEW	\$ 0.00	\$ -	\$ 8.40	\$ 10.13	\$ 65.80	\$ 96.15	\$ 71.08	\$ 104.97	\$ 145.28	\$ 211.25	\$ (65.97)	Apr-20	2022
34	SR-30, SR-303L to SR-202L	NEW	\$ 3.00	\$ 3.00	\$ 22.00	\$ 29.79	\$ 95.50	\$ 489.75	\$ 222.00	\$ 308.74	\$ 342.50	\$ 831.28	\$ (488.78)	Jun-22	2023
35	SR-303L, MC-85 to Van Buren Street	NEW	\$ 0.50	\$ 0.50	\$ 15.00	\$ 17.02	\$ 10.70	\$ 36.21	\$ 93.80	\$ 242.56	\$ 120.00	\$ 296.29	\$ (176.29)	Aug-20	2022
36	SR-303L, Northern Avenue to Olive Avenue	TI IMP	\$ 0.15	\$ 0.15	\$ 1.30	\$ 1.61	\$ 0.60	\$ 3.06	\$ 11.10	\$ 16.66	\$ 13.15	\$ 21.48	\$ (8.33)	Jul-24	2025
37	SR-303L, Happy Valley Parkway to Lake Pleasant Parkway	GPL	\$ 0.50	\$ 0.50	\$ 4.40	\$ 3.27	\$ 0.00	\$ 0.50	\$ 36.20	\$ 33.84	\$ 41.10	\$ 38.11	\$ 2.99	Aug-19	2020
38	SR-85/Warner Street Bridge	TI	\$ 0.00	\$ -	\$ 0.20	\$ 0.20	\$ 0.00	\$ 0.00	\$ 5.30	\$ 5.42	\$ 5.50	\$ 5.62	\$ (0.12)	Aug-19	N/A
39	US-60, Greenway Road - Thompson Ranch Road	TI IMP											\$ -	3/13/2018 (actual)	2019
40	US-60/35th Avenue/Indian School Road	TI IMP	\$ 3.00	\$ 2.15	\$ 7.60	\$ 7.95	\$ 0.00	\$ 65.25	\$ 75.30	\$ 82.37	\$ 85.90	\$ 157.72	\$ (71.82)	Jan-26	2028
--	US-60/Bell Road	R/W Settlement											\$ -	N/A	N/A
41	US-60, Crismon Road to Meridian Road	GPL/HOV	\$ 0.00	\$ -	\$ 1.90	\$ 2.46	\$ 0.00	\$ 0.50	\$ 26.50	\$ 25.52	\$ 28.40	\$ 28.48	\$ (0.08)	Apr-20	2021
Total			\$ 69.93	\$ 89.65	\$ 208.45	\$ 294.78	\$ 248.36	\$ 956.02	\$ 2,602.51	\$ 3,368.54	\$ 3,129.25	\$ 4,708.99	\$ (1,579.74)		
Variance (Program - Dec. 2018 Estimate)				\$ (19.72)	\$ (86.33)	\$ (707.66)	\$ (766.03)	\$ (1,579.74)	\$ (1,579.74)						

+ Design-Build Procurement Phase

Projects in construction or completed are in gray text

ID does not reflect project priority order

Totals revised to include previously programmed Pre-design & Env

*Pre-design/Env, Design, Right-of-Way & Utility phases funded with Town of Gilbert local funds

Funding for a portion of the construction phase (\$4.6 m) will come from the ALCP, Town of Gilbert local funds, and the Town's Special Projects Fund allocation.

Print Date: February 13, 2019

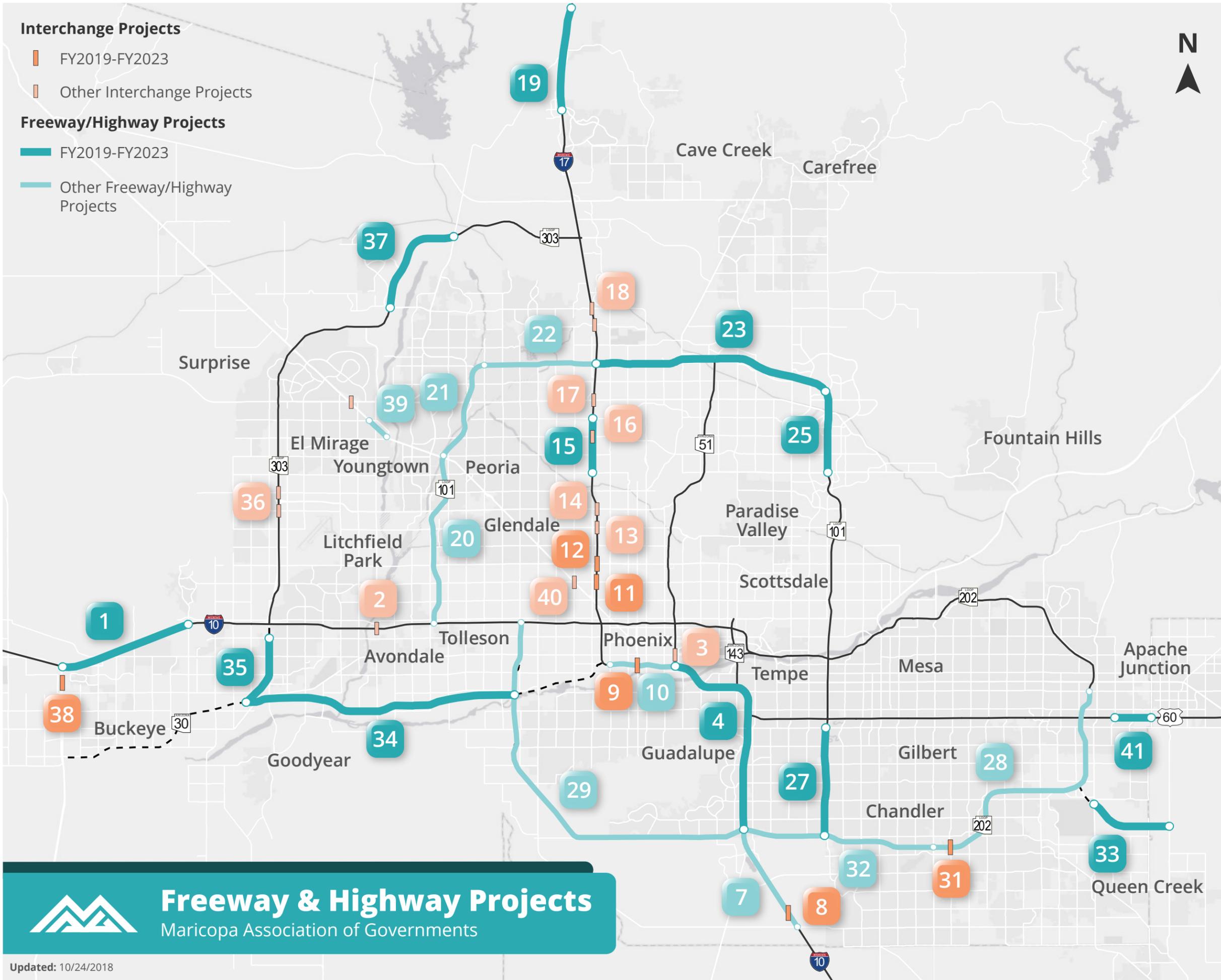
	Program	Dec. 2018 Estimate	Variance
Pre-design & Environmental	\$ 69.93	\$ 89.65	\$ (19.72)
Design	\$ 208.45	\$ 294.78	\$ (86.33)
Right-of-Way & Utility	\$ 248.36	\$ 956.02	\$ (707.66)
Construction	\$ 2,602.51	\$ 3,368.54	\$ (766.03)
Total	\$ 3,129.25	\$ 4,708.99	\$ (1,579.74)

Interchange Projects

- █ FY2019-FY2023
- █ Other Interchange Projects

Freeway/Highway Projects

- █ FY2019-FY2023
- █ Other Freeway/Highway Projects



ID Project Location

- 1 I-10, SR-85 to Verrado Way
- 2 I-10/Fairway Dr
- 3 I-10/Sky Harbor West Airport Access
- 4 I-10, I-17 Split to SR-202L
- 7 I-10, SR-202L to Riggs Rd
- 8 I-10/Chandler Heights Rd
- 9 I-17/Central Ave Bridge
- 10 I-17, I-10 Split to 19th Ave
- 11 I-17/Indian School Road
- 12 I-17/Camelback Road
- 13 I-17/Glendale Avenue
- 14 I-17/Northern Avenue
- 15 I-17, Peoria Avenue to Greenway Road
- 16 I-17/Thunderbird Avenue
- 17 I-17/Bell Road
- 18 I-17-/Happy Valley Rd and I-17/Pinnacle Peak
- 19 I-17, Anthem Way to Yavapai County Line
- 20 SR-101L, I-10 to US-60
- 21 SR-101L, US-60 to 75th Avenue
- 22 SR-101L, 75th Avenue to I-17
- 23 SR-101L, I-17 to Pima Road
- 25 SR-101L, Pima Road to Shea Boulevard
- 26 SR-101L Pima Road Extension (JPA) **(NOT ON MAP)**
- 27 SR-101L, Baseline Road to SR-202L
- 28 SR-202L, Broadway Road to Gilbert Road
- 29 SR-202L (South Mountain): I-10 (Maricopa) - I-10 (Papago) Maintenance
- 31 SR-202L/Lindsay Road
- 32 SR-202, Gilbert Road to I-10
- 33 SR-24, Ellsworth Road to Ironwood Road
- 34 SR-30, SR-303L to SR-202L
- 35 SR-303L, MC-85 to Van Buren Street
- 36 SR-303L, Northern Avenue to Olive Avenue
- 37 SR-303L, Happy Valley Parkway to Lake Pleasant Parkway
- 38 SR-85/Warner Street Bridge
- 39 US-60, Greenway Road - Thompson Ranch Road
- 40 US-60/35th Avenue/Indian School Road
- US-60/Bell Road
- 41 US-60, Crismon Road to Meridian Road

Freeway & Highway Projects

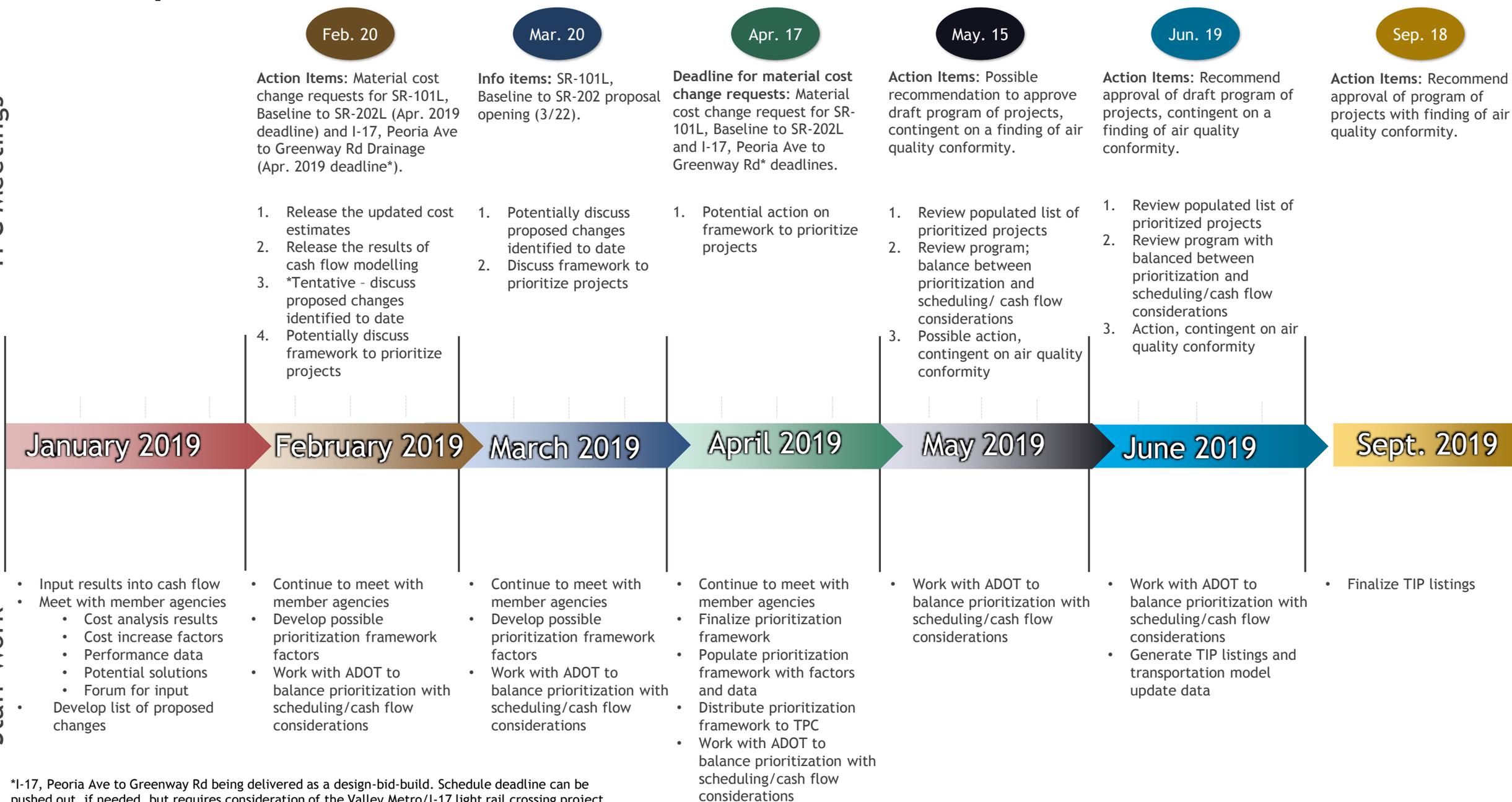
Maricopa Association of Governments

Updated: 10/24/2018

FLCP Update Schedule

TPC Meetings

Staff Work



*I-17, Peoria Ave to Greenway Rd being delivered as a design-bid-build. Schedule deadline can be pushed out, if needed, but requires consideration of the Valley Metro/I-17 light rail crossing project schedule.

Transportation Policy Committee

INFORMATION SUMMARY

AGENDA ITEM #7

DATE

February 13, 2019

SUBJECT

Freeway Life Cycle Program – Material Cost Change Requests

CONTACT

John Bullen, Transportation Economic and Finance Program Manager, (602) 254-6300

SUMMARY

On September 27, 2017, the MAG Regional Council approved the rebalance of the Freeway Life Cycle Program (FLCP). The rebalance set project budgets, schedules, and open-to-service years for the 37 projects that could be completed under Proposition 400. On December 6, 2017, the MAG Regional Council approved a revised Material Change Policy for the FLCP. The Material Change Policy defines a material cost change as an increase to the project's program amount, across all development phases, that is more than five percent (5%) overall, but not less than \$500,000.

On November 14, 2018, the Transportation Policy Committee (TPC) recommended approval of a request to increase funding for three of the four projects scheduled to advertise for construction in Fiscal Year (FY) 2019. Specifically, the Arizona Department of Transportation (ADOT) requested an additional \$14.6 million for State Route (SR) 101L, I-17 to Pima Road; \$8.1 million for SR-101L, Baseline Road to SR-202L; and, \$4.4 million for I-17, Peoria Avenue to Greenway Road drainage.

Two days after that action, bids for the SR-101L, I-17 to Pima Road were opened and the low-bid was significantly higher than what had been estimated. A total of \$68 million,

not \$14.6 million, was needed from the FLCP before ADOT could award the project to the low-bidder. This represented a 39 percent increase over the programmed budget and a \$53.4 million increase over what had been presented to, and recommended for approval by, the TPC.

Given the magnitude of the increase, it was decided that the material cost change requests for the other two projects – SR-101L, Baseline Road to SR-202L and I-17, Peoria Avenue to Greenway Road – would be considered at a later time. The estimates have since been updated, and ADOT has requested an additional \$22.6 million for the SR-101L, Baseline Road to SR-202L project (an increase and an additional \$5.64 million for the I-17, Peoria Avenue to Greenway Road drainage project. Between the two projects, the funding request totals \$28.24 million, which is \$15.74 million higher than the original request. The entirety of the difference can be attributed to an increase in unit prices as a result of the SR-101L, I-17 to Pima Road bids. Details of the request are as follows:

Project	November 2018 TPC Request*	Current Request*	Difference
SR-101L, Baseline Road to SR-202L	\$8.10	\$22.60	\$14.50
I-17, Peoria Avenue to Greenway Road	\$4.40	\$5.64	\$1.24
Total	\$12.50	\$28.24	\$15.74

*millions, 2018 dollars

Approval of additional funding for the two projects is needed before ADOT can award the construction contracts. Based on current schedules, additional funding is needed by the following dates:

- SR-101L Baseline Road to SR-202L – March 2019
- I-17, Peoria Avenue to Greenway Road – April 2019

Additional information on schedule considerations is detailed below.

In the most recent cash flow, which includes new revenue estimates for Highway User Revenue Fund and Regional Area Road Fund revenues, the FY 2026 ending balance is \$395 million. This amount does take into account the additional approved funding for the SR-101L, I-17 to Pima Road project, but does not include any of the other estimated cost increases presented as part of the previous agenda item. The additional \$28.24 million requested as part of this agenda item will decrease the program fund balance. In turn, this will reduce the overall amount available for other projects in the program.

A detailed description of each project's scope, budget, cost increase, and schedule is provided below. Technical memorandums from ADOT and a project changes table are attached.

SR-101L, Baseline Road to SR-202L

This project will add one general purpose lane in each direction on Loop 101 (Price Freeway) from Baseline Road to Loop 202 (Santan Freeway). The project work includes new concrete pavement, rubberized asphalt overlay, structures, retaining walls, drainage improvements, lighting improvements, freeway management systems (FMS), utility relocations, landscape restoration, and signing and striping. The project will be delivered by way of the design-build delivery method.

On September 26, 2017, the MAG Regional Council approved a total budget of \$55,050,000. The specific breakdown of the project budget, by phase, is as follows:

Pre-design/environmental: \$500,000

Design: \$3,150,000

Construction: \$51,400,000

On January 29, 2019, ADOT requested an additional \$22,600,000 for this project, which represents an increase of 41 percent to the overall FLCP budget. The primary factors driving this cost increase relative to DCR estimates include an \$8.6 million increase in unit prices, earthwork, pavement, and drainage; \$1.4 million increase in utility relocation costs; \$2.9 million increase in signals, lighting, and FMS; \$2.2 million increase in landscape; \$1.8 million increase in structures; and a \$10.9 million increase in construction engineering. The difference between the cost increase totals (\$27.8 million) and the requested funding (\$22.6 million) can be attributed to the fact that the DCR estimate was \$5.2 million less than the programmed funding amount.

Based on the project's current schedule, the additional funding is needed before ADOT can award the design-build phase at the April 12, 2019, State Transportation Board meeting. The project's public bid opening is scheduled for March 22, 2019; the terms of the bid stipulate that ADOT must award the contract within 60 days of the bid opening. As a result, action on the material cost change could be deferred until March, but it could delay the start of the project by at least a month.

The schedule for this project is also largely driven by the future I-10, I-17 Split to SR-202L project, which is set to begin construction in April 2021. The improvements along SR-101L need to be completed before construction begins on the I-10 to provide an alternate access route between downtown Phoenix and the southeast valley.

I-17, Peoria Avenue to Greenway Road Drainage

This project will replace the existing pump stations at the Interstate 17 (Black Canyon Freeway) traffic interchanges (TI) at Greenway Road, Thunderbird Road, Cactus Road and Peoria Avenue with a gravity storm drain system. The system will discharge the storm water into the Arizona Canal Diversion Channel. The project includes installation of 30- to 90-inch diameter reinforced concrete pipe along the I-17 frontage road, two detention basins at the I-17 and Thunderbird Road TI, pavement replacement on the frontage roads, signing, striping, improvements to Americans with Disabilities Act features within the project area, and removal of the four existing pump stations. The project will be delivered by way of the design-bid-build delivery method.

On September 26, 2017, the MAG Regional Council approved a total budget for the I-17, Peoria Avenue to Greenway Road drainage project of \$30,000,000. The specific breakdown of the project budget, by phase, is as follows:

Pre-design/environmental: \$200,000

Design: \$300,000

Right of way/utility: \$4,500,000

Construction: \$25,000,000

On December 21, 2018, ADOT requested an additional \$5,640,000 for this project, which represents an increase of 19 percent to the overall FLCP budget. The additional funding is needed due to the requirement for more robust engineering elements that stemmed from more refined design work, new hydraulic standards that were put in place after the project was originally scoped and budgeted, and increases in unit pricing.

Based on the project's current schedule, the additional funding is needed so that ADOT can advertise for construction in April 2019 for a September 2019 construction start date. However, if the permit for a pending 408 application is approved by the United States

Army Corps of Engineers by the end of this calendar year, ADOT could advertise for construction as early as March 2019.

The project's schedule is also driven by the need to have completed the improvements before the Valley Metro light rail crossing of I-17 is constructed as part of the Northwest Phase II extension project. Northwest Phase II is currently in design and is programmed for construction between 2019 and 2023.

PUBLIC INPUT

None

PROS & CONS

PROS: The \$28.24 million in additional funding will allow the SR-101L, Baseline Road to SR-202L and I-17, Peoria Avenue to Greenway Road drainage projects to move forward on their current schedules.

CONS: MAG and ADOT recently completed a comprehensive analysis of estimated costs for the remaining projects in the program. Based on the most recent ADOT estimates, project costs have increased by a total of \$1.58 billion over what is currently programmed. Taking into account the existing program fund balance, an estimated \$1.23 billion in projects will need to be deferred beyond the program's funding horizon. The additional \$28.24 million needed for these two projects will reduce the amount of funding available for other projects in the program.

TECHNICAL & POLICY IMPLICATIONS

TECHNICAL: The \$28.24 million in additional funding will allow the SR-101L, Baseline Road to SR-202L and I-17, Peoria Avenue to Greenway Road drainage projects to move forward on their current schedules. The additional funding will decrease the program fund balance, which will reduce the overall amount available to other projects in the program.

POLICY: On December 6, 2017, the MAG Regional Council approved a revised Material Change Policy for the Freeway Life Cycle Program. The Material Change Policy defines a material cost change as an increase to the project's program amount that is more than five percent (5%) overall, but not less than \$500,000. The increase is applicable across all development phases of the project.

ACTION NEEDED

Recommend approval of the material cost changes for the SR-101L, Baseline Road to SR-202L (\$22.6 million) and I-17, Peoria Avenue to Greenway Road drainage (\$5.64 million) projects and the corresponding amendments to the FY 2018 – 2022 MAG Transportation Improvement Program and 2040 MAG Regional Transportation Plan, as appropriate.

PRIOR COMMITTEE ACTIONS

On November 14, 2018, the Transportation Policy Committee recommended approval of material cost changes for the SR-101L, I-17 to Pima Road (\$14.6 million); SR-101L, Baseline Road to SR-202 (\$8.1 million); and I-17, Peoria Avenue to Greenway Road drainage projects (\$4.4 million) and the corresponding amendments to the FY 2018 – 2022 MAG Transportation Improvement Program and 2040 MAG Regional Transportation Plan, as appropriate.

MEMBERS ATTENDING

Gilbert, Mayor Jenn Daniels: Chair *Glendale, Mayor Jerry Weiers: Vice Chair Avondale: Mayor Kenneth Weise Brookfield Residential: Brad Chelton Chandler: Councilmember Terry Roe #El Mirage: Mayor Lana Mook #Goodyear: Mayor Georgia Lord Huellmantel and Affiliates: Charles Huellmantel Maricopa: Mayor Christian Price *Maricopa County Board of Supervisors: Supervisor Clint Hickman Mesa: Mayor John Giles #Peoria: Councilmember Bridget Binsbacher	Phoenix: Councilmember Debra Stark Roc Arnett Consulting: Roc Arnett Gila River Indian Community: Lt. Governor Robert Stone *Scottsdale: Councilmember David N. Smith *State Transportation Board: Sam Elters *Sunland Asphalt: Doug DeClusin *Surprise: Mayor Sharon Wolcott Swift Transportation: Dave Berry #Tempe: Mayor Mark Mitchell Vulcan Materials Company: Mark Reardon
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* Those members neither present nor represented by proxy.

Participated by telephone conference call. + Participated by videoconference call.



Infrastructure Delivery and Operations

MEMORANDUM

TO: John Bullen, Transportation and Finance Program Manager
 MARICOPA Association of Governments

^{DS}

THRU: Steve O'Brien, ADOT Project Management Group, Sr. Division Administrator

FROM: Vivian Pei-Jung Li, ADOT Project Management Group, Senior Project Manager

^{DS}

DATE: January 29, 2019

RE: Price Freeway (SR101L) Baseline Road to SR202L (Santan) - Add General Purpose Lane (H687301D) - Request to increase project funds by \$22.6M from current programmed amount of \$51.4 M for a total of \$74.0M

This memorandum provides justification for the requested additional funds needed for the construction of the Price Freeway (SR101L) Baseline Road to SR202L (Santan) - Add General Purpose Lane project. Primary Contributors to the construction cost increases are described below:

Item	DCR Estimate	Current Estimate	Increase Decrease
Removals	\$1.9M Quantities were underestimated in DCR	\$2.9M Quantity updates from DCR and increase in unit costs	\$1.0M
Earthwork/Pavement/ Drainage	\$9.3M	\$16.9M PCCP quantity increase from DCR and increase in unit costs	\$7.6M
Utility Relocations	\$0.1M Minimum utility vault and manhole adjustment	\$1.5M Added cost for SRP siphon manhole relocation and SRP Power relocation; utility sleeve extensions; EPNG utility inspection	\$1.4M

<p>Signing/Pavement Marking/ Signal/Lighting/FMS/Traffic Control</p>	<p>\$6.2M Quantities were underestimated and under scoped in DCR</p>	<p>\$9.1M Increase in pavement marking and sign structures quantities; ITS items updated to meet current criteria; two T-structures for DMS, adaptive ramp metering, weigh-in-motion and exit ramp thermal detection; added LED lighting conversion; increase in unit costs</p>	<p>\$2.9M</p>
<p>Landscape/Irrigation/Erosion Control</p>	<p>\$0.6M Quantities were underestimated in DCR</p>	<p>\$2.8M Quantity and cost updates from DCR. Irrigation system replacement; replace in kind landscape that will be disturbed.</p>	<p>\$2.2M</p>
<p>Structures/Roadway Appurtenances</p>	<p>\$10.8M DCR amount</p>	<p>\$12.6M Quantity updates from DCR and increase in unit costs</p>	<p>\$1.8M</p>
<p>Other Items/Miscellaneous</p>	<p>\$17.3M Percentage of above items</p>	<p>\$28.2M Quantity updates from DCR; added Design-Builders stipend due to delivery method; Design cost due to delivery method and proportional increase with the other items</p>	<p>\$10.9M</p>

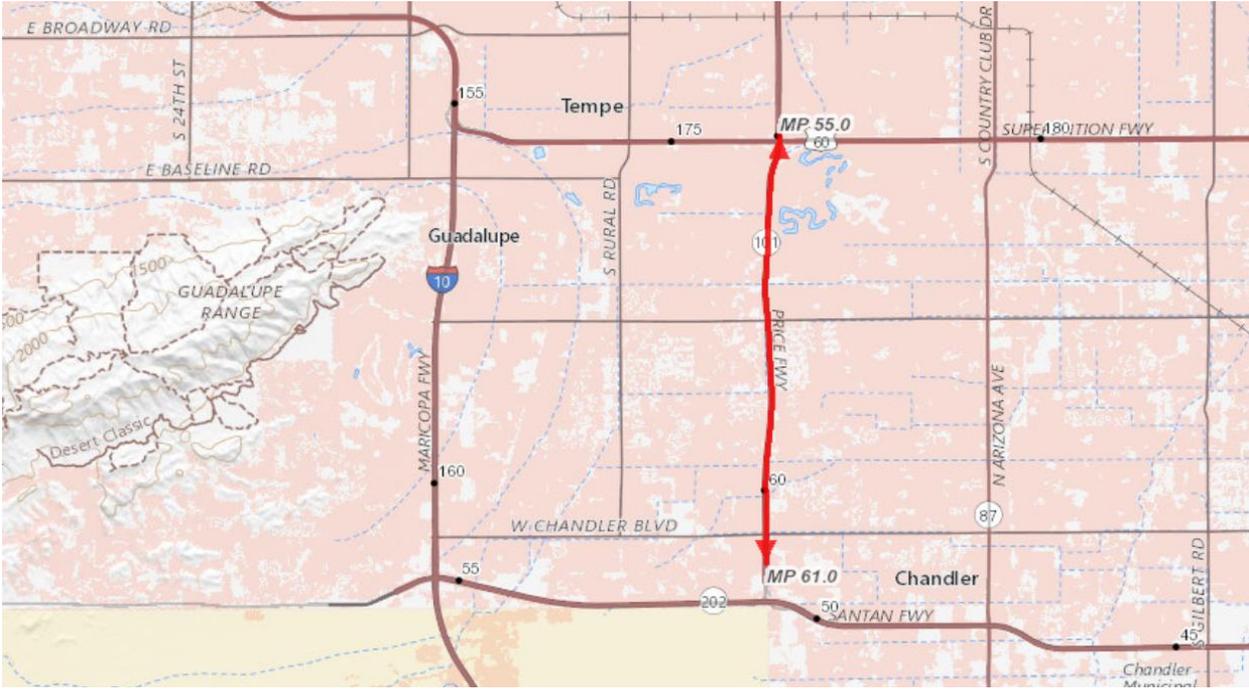


By comparing against the original estimate amount in DCR (\$46.3M), the sum of increase/decrease column in table above is \$27.8M. Based on a current programmed amount of \$51.4 M, ADOT is requesting that MAG increase the funding of this project by \$22.6M to move the project forward as currently scoped for a total construction cost of \$74.0M.

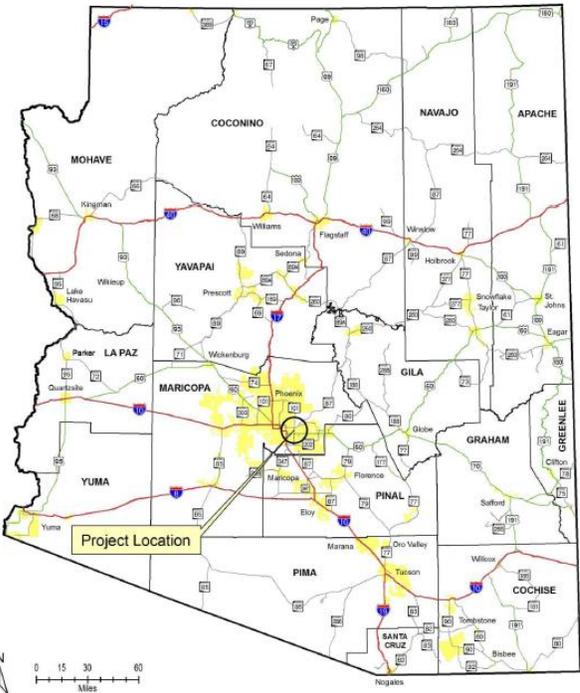
Attachments:

Project Map

Project Map



101 MA 55 H6873 01D
Federal Aid No. NH-101-B(209)T
BASELINE RD - SR 202L (SANTAN)
CONSTRUCT GENERAL PURPOSE LANE





Intermodal Transportation
MEMORANDUM

TO: John Bullen, Transportation & Finance Program Manager
Maricopa Association of Governments

THRU: Steve O'Brien, PMG Group Manager 

FROM: Tafwachi Katapa, Project Manager 

DATE: December 21, 2018

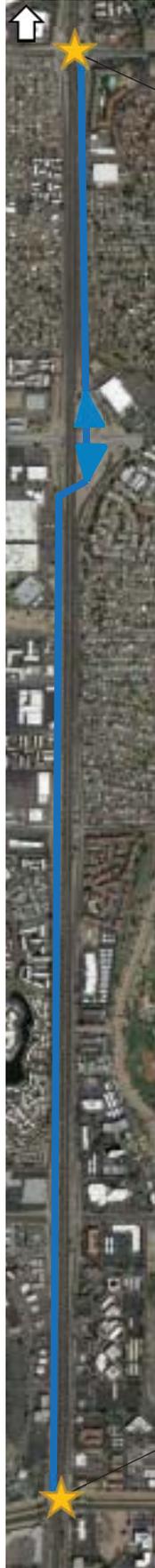
RE: I-17, Peoria Avenue to Greenway Road (F0155 01C)
Increase Construction Funding by \$5.64M for a total of \$34.3M

This memorandum provides justification for the requested additional funds needed for construction of the subject project. Primary contributors to the cost increase are described below:

Item	Programmed Amount/Basis of Previous Design	Current	Increase
Pavement	Vertical Trench (\$1.941M)	Sloped top of trenches deeper than 25 feet for stability. Full Width Impacts Frontage Roads, Ramps, and Crossroads (\$2.726M)	\$785K
Traffic	Construction duration 425 days No cost for FMS/ADA facilities (\$584K)	Construction duration 600 days, resulting in increased MOT. Replace impacted FMS (\$1.277M)	\$693K
Drainage	NOAA point precipitation estimates Design Criteria is outdated Pipe sizes (trunk) from 30 to 72-inch Trench depth up to 32-feet deep (\$12.76M)	Used NOAA Atlas 14 Vol 1 (V5) Hydrology Used ADOT HDDM-Hydrology (2014) and HDDM-Hydraulics 2007 Criteria Pipe sizes (trunk) from 30 to 90-inch Trench depth up to 34-feet deep (\$15.798M)	\$3.038M
Others		Other proportional increases in construction engineering and post design services (\$1.124M)	\$1.124M
Total Increase:			\$5.64M

ADOT is requesting that MAG increase the funding of this project by \$5.64M to move the project forward as currently scoped for a total construction cost of \$34.3M.

ATTACHMENT: Project Map



**End Project
Greenway Road
MP 211.93**

Thunderbird Road

Cactus Road

Peoria Avenue

**Begin Project
ACDC
MP 208.29**

I-17 Peoria Ave to Greenway Rd
017 MA 208 F0155 01C
October 2018

**TABLE A: Requested Freeway Life Cycle Program (FLCP) Project Changes to the
FY 2018-2022 MAG Transportation Improvement Program (TIP) and 2040 Regional Transportation Plan¹, TIP AMENDMENT #17**

Sort: Section, Agency, Location, Work Year

TIP Amendment #16																														
Agency	Section	MAG ID	Location	Federal Functional Classification	MAG Mode	Estimate Date for Completion	AQ Area	In Program	Miles	Through Lanes		Performance Categories							TIP ID	Fed ID / Grant ID	TRACS / ALI	Work	Work Year ⁴	Funding Type	Apport. Year ³	Federal	Regional	Local	Total	TIP Change Request
										Before	After	PM1	PM2T	PM2N	PM2B	PM3F	PM3S	PM3E												
ADOT	Highway	65690	101 (Price): Baseline Road - SR-202L Santan	Principal Arterial - Other Freeway or Expressway	Freeway	Mar-21	Maricopa	FLCP	6.5	8	10	Yes	No	Yes	No	Yes	No	No	DOT19-824	----	H6873	Construct widening	2019	NHPP	2019	29,980,000	44,020,000		74,000,000	Amend: Increase overall construction phase by \$22.6 m. Increase freeway program contribution by \$22.6 m. Freeway program increase represents a material cost change.
ADOT	Highway	30978	17: Peoria Ave - Greenway Road	Principal Arterial - Interstate	Freeway	Oct-20	Maricopa	FLCP	3	8	8	No	No	Yes	No	Yes	No	No	DOT19-825	----	F0155	Construct drainage improvements	2019	RARF	2019		34,300,000		34,300,000	Amend: Increase overall construction phase by \$5.641 m. Increase freeway program contribution by \$5.641 m. Freeway program increase represents a material cost change.



Transportation Policy Committee

INFORMATION SUMMARY

AGENDA ITEM #8

DATE

February 13, 2019

SUBJECT

Scoping Study Recommendations for the I-10/Loop 101 System Traffic Interchange

CONTACT

Bob Hazlett, Senior Engineer, 602 254-6300

SUMMARY

System traffic interchanges, such as The Stack, are the junction of two freeways. Their construction requires coordinated spacing of entrance and exit ramps to maximize traffic flow and minimize vehicular conflicts to allow uniform transition of traffic between freeways. Often, due to the needed geometry, system traffic interchanges inadvertently limit and restrict local access to adjacent land-uses.

The Interstate 10/Loop 101 system traffic interchange was opened to traffic in 2000 with construction of the eight-mile Aqua Fria Freeway segment between I-10 and Northern Avenue. Since its opening, the City of Tolleson has noted difficulties for traffic to reach their community from the north as there is no connection between 91st Avenue and southbound Loop 101. In 2017, the City requested a scoping study from MAG to analyze the matter and determine if such a connection can be made.

During the study process, ADOT had noted that the current system interchange's geometry and structural placement might have difficulties in accommodating a future direct HOV (DHOV) connection between I-10 on the East and Loop 101 on the north. This connection is recommended in the current MAG Regional Transportation Plan. As

the scoping study considered the 91st Avenue connection, additional effort was also completed to study the DHOV ramp.

The study began in February 2018 and was completed in November 2018 through an on-call task assignment with Burgess & Niple. The study's findings consider that both 91st Avenue and DHOV connections are feasible for construction. However, during the course of study, it was determined that additional structures would be needed, including a channelizing ramp braid to separate traffic entering Thomas Rd traffic from those exiting McDowell Rd to improve the overall efficiency of southbound Loop 101 prior to its junction with Interstate 10. A copy of the final report is attached to this transmittal summary.

PUBLIC INPUT

On November 27, 2018, the Tolleson City Council provided positive remarks on the recommendations of this scoping study. The meeting was presided by Mayor Anna Tovar.

PROS & CONS

PROS: Feasibility studies provide an opportunity to consider options, such as this connection in I-10/Loop 101 system traffic interchange, to enhance access and improve traffic flows. Recommendations from these projects form the basis for future planning efforts by MAG in developing future editions of the Regional Transportation Plan, as well as for ADOT as design concept studies begin on MAG projects.

CONS: This particular study has identified additional scope and cost that is beyond the recommended program amounts for MAG projects in the vicinity of the traffic interchange. Presently, the MAG Regional Council has approved a project for widening Loop 101 between Interstate 10 and US-60/Grand Avenue. This project is also programmed to include the DHOV connection between the two freeways.

TECHNICAL & POLICY IMPLICATIONS

TECHNICAL: The scoping study's recommendations, if pursued, adds scope to a presently planned project in the MAG Regional Transportation Plan for widening Loop 101. As presently programmed, this project is not planned for design and construction until 2025. Significant time is available to consider the study's recommendations to allow

for consideration of their inclusion in the project, as well as the additional funding for the expanded scope.

POLICY: Scoping studies are designed to provide an initial view into the feasibility of a potential project for consideration in the MAG Regional Transportation Plan. As, this study has provided an opportunity to consider the option of providing access between southbound Loop 101 and 91st Avenue, it also identified additional options for consideration in developing the overall design concept for the eventual widening of the Agua Fria Freeway. These studies are consistent with MAG's regional planning efforts for improving and maintaining an efficient transportation system.

ACTION NEEDED

For information and discussion.

PRIOR COMMITTEE ACTIONS

For information and discussion.

I-10/SR-101L System Traffic Interchange

Ramp Feasibility Analysis

Prepared for



Prepared by

BURGESS & NIPLE

1500 N. Priest Drive
Suite 102
Tempe, AZ 85281

November 2018

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- Appendix B – Conceptual Alternatives Roll Plots
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1.0 Introduction

The Interstate 10 (I-10) and State Route SR-101L (SR-101L) System Traffic Interchange (TI) Ramp Feasibility Analysis is being conducted by the Maricopa Association of Governments (MAG) to evaluate the feasibility of two new ramp connections. The Study Planning Partners include MAG, the Arizona Department of Transportation (ADOT), city of Tolleson (Tolleson), city of Avondale (Avondale), and city of Phoenix (Phoenix). The analysis is preliminary in nature; the Federal Highway Administration (FHWA) will be engaged during the next steps of project development.

1.1 Study Overview

Two additional connections were identified and evaluated during the study: (1) a new Direct High-Occupancy Vehicle (DHOV) ramp within the existing I-10/SR-101L system TI and (2) a new connection between southbound SR-101L and 91st Avenue. The proposed DHOV ramp will accommodate travel to/from the north along SR-101L and to/from the east along I-10. The proposed connection between SR-101L and 91st Avenue supplements the I-10/SR-101L system TI ramps and I-10/91st Avenue service TI ramps.

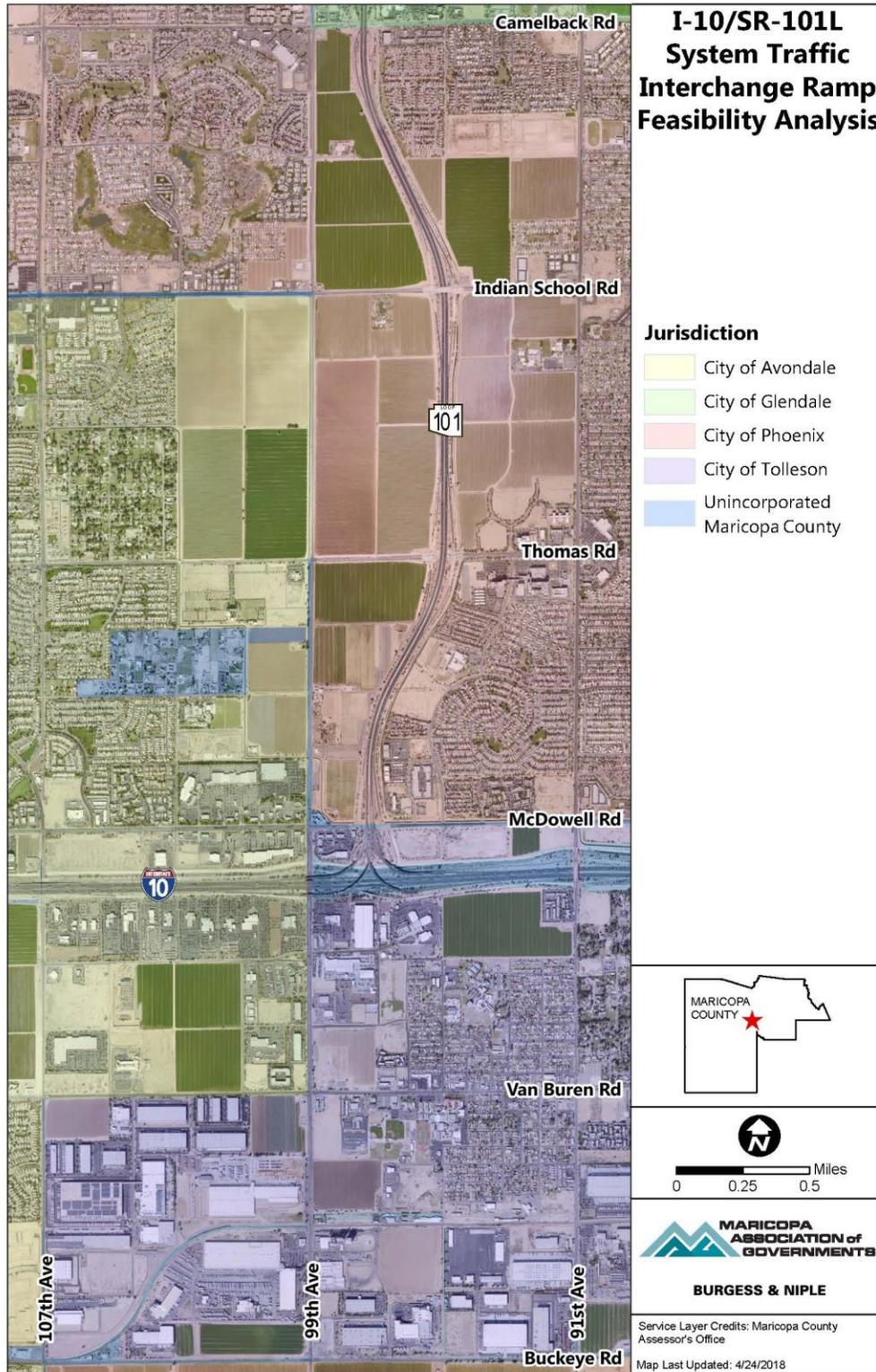
1.2 Study Area

The Study Area consists of the I-10/SR-101L system TI and is bound by 99th Avenue to the west, 91st Avenue to the east, and Thomas Road to the north. The Study Area is within both the cities of Tolleson and Phoenix, and adjacent to the city of Avondale to the west.

The system TI provides directional ramps serving all major system movements between I-10 and SR-101L. Nested within the system TI are the I-10 service TIs with 99th Avenue and 91st Avenue. Within the study area, SR-101L has a partial diamond TI at McDowell Road and a full diamond TI at Thomas Road.

A map of the Study Area is included as **Figure 1**.

Figure 1 – Study Area Map



2.0 Study Approach

2.1 Background Information

In 2016, a conceptual study produced by ADOT was undertaken to evaluate the improvements required at the I-10/SR-101L system TI to add a DHOV ramp. Produced from this was an alternative that would require the replacement of the eastbound I-10 to northbound SR-101L ramp and the 91st Avenue Bridge over I-10.

The current study is intended to identify an additional feasible alternative for the DHOV ramp and a connection from southbound SR-101L to 91st Avenue. These alternatives are planned with the future SR-101L general purpose lane (GPL) widening project in mind. Design funds for this project are currently programmed for fiscal year 2023.

2.2 Stakeholder Engagement

A kickoff meeting and two progress meetings were conducted with the project stakeholders.

2.2.1 Kickoff Meeting

The kickoff meeting took place on April 25, 2018, in the city of Tolleson's City Hall conference room. Representatives from MAG, ADOT, the city of Tolleson, and the design team attended the meeting. The meeting purpose was to introduce the study, provide an overview of the background information, review Study Area issues, and to initiate concept development. Study Area issues included weaving (lane changes) from the I-10 High-Occupancy Vehicle (HOV) lane to the SR-101L exit ramp, proper signing and layout, and reducing impacts to existing structures and private property. The attendees participated in a workshop planning exercise where multiple potential alternatives were sketched. The stakeholders agreed to reconvene in June to discuss preliminary findings.

Meeting materials for each of the following meetings, including agenda, presentation, and summary, are provided in **Appendix A**.

2.2.2 Progress Meeting One

Progress Meeting One took place on June 19, 2018, in the city of Tolleson's City Hall conference room. Representatives from MAG, ADOT, the city of Tolleson, and the design team attended the meeting. The meeting purpose was to discuss the progress made on

DHOV ramp alternatives and 91st Avenue access alternatives. Alternative specifics pertaining to right-of-way requirement, structure requirements, maintenance of traffic, driver convenience, safety, and order of magnitude cost were presented for each alternative. Meeting attendees held a brief discussion regarding potential alternative evaluation criteria. Proposed criteria were safety, value (as opposed to cost), operations (merge/weave/signage/safety), and constructability.

2.2.3 Progress Meeting Two

Progress Meeting Two took place on September 25, 2018, in the city of Tolleson's City Hall conference room. Representatives from MAG, ADOT, the city of Tolleson, and the design team attended the meeting. The meeting purpose was to discuss the DHOV ramp alternatives and the 91st Avenue access alternatives. Alternative specifics pertaining to right-of-way requirement, structure requirements, driver convenience, and safety were presented for each alternative. Alternative 1 and Alternative E were selected as the preferred alternatives for DHOV connection and 91st Avenue access, respectively.

2.3 Regional Travel

To continue to develop the DHOV lane network in the Phoenix metropolitan highway system, a connection from I-10 to SR-101L is necessary. This study investigated alternatives that would create this connection. During the study, an existing weaving issue was discovered on southbound SR-101L.

2.3.1 DHOV Connection

Six system TIs within the Phoenix metropolitan area have DHOV ramps:

- (1) I-10 (Maricopa Freeway)/SR-202L (Red Mountain Freeway)/SR-51;
- (2) I-10 (Maricopa Freeway)/US-60 (Superstition Freeway);
- (3) I-10 (Maricopa Freeway)/SR-202L (Santan Freeway and South Mountain Freeway);
- (4) SR-101L (Price Freeway)/SR-202L (Santan Freeway);
- (5) SR-101L (Pima Freeway)/SR-51; and
- (6) I-10 (Papago Freeway)/SR-202L (South Mountain Freeway) (*under construction*).

At the existing I-10 (Papago Freeway)/SR-101L (Agua Fria Freeway) system TI under study, westbound I-10 HOV traffic destined for northbound SR-101L must traverse four lanes of traffic to exit to SR-101L. A DHOV ramp would eliminate this weave.

2.3.2 Weave

A planning level weave analysis was performed for the section of southbound SR-101L between the Thomas Road entrance ramp and McDowell Road exit ramp with future year (2040) traffic using HCS7 software. The analysis assessed a build scenario in which the weave section has five lanes (four GPL and one HOV), the Thomas Road entrance ramp has one lane, and the McDowell Road exit ramp has one lane. This is the configuration proposed by the future SR-101L GPL widening project.

2040 ramp and freeway traffic volumes were developed using the 2017 volumes in the ADOT Transportation Data Management System (TDMS) as a basis and the MAG 2040 Model Year forecasts. The growth factors from ADOT TDMS were also compared to the model based growth for validation purposes.

The analysis of the planning level traffic volumes indicates the weaving segment is anticipated to perform at Level-of-Service (LOS) F in 2040 for the described configuration. This failing level of service was previously unknown and was discovered through this study.

A cursory analysis of the weave for different entrance and exit ramp lane configurations (while maintaining all existing access points) was conducted. No braided configuration was identified that provided acceptable LOS values using 2040 traffic.

2.4 Local Travel

Due to the geometric configuration of the existing I-10/SR-101L system TI and the proximity of the adjacent service TIs, there is no direct access from southbound SR-101L to 91st Avenue. In existing conditions, traffic must exit from southbound SR-101L onto McDowell Rd and travel east to reach 91st Avenue. Direct access from SR-101L to 91st Avenue is desirable for the city of Tolleson.

3.0 Preferred Alternatives

Two alternatives were investigated to provide DHOV connection and five alternatives were investigated to provide access to 91st Avenue. The stakeholders reviewed the various concepts and identified Conceptual Alternative 1: DHOV Ramp and Conceptual Alternative E: Braided Ramp to 91st Avenue as the preferred alternatives.

Appendix B includes roll plots depicting the preferred alternatives.

3.1 Alternative 1: DHOV Ramp

Conceptual Alternative 1 is a freeway-to-freeway system interchange ramp from westbound I-10 to northbound SR-101L and southbound SR-101L to eastbound I-10 for HOV traffic only.

3.1.1 Geometric Observations

The typical DHOV ramp cross-section of this alternative consists of two (2) twelve-foot lanes, with ten-foot outside shoulders and six-foot inside shoulders separated by barrier wall. The proposed construction centerline aligns with the inside barrier wall.

The ramp initially splits vertically from mainline I-10 approximately 2,000 feet west of 91st Avenue, flies over westbound I-10 and Ramp E-N, parallels the SR-101L mainline, and ties in vertically approximately 2,500 feet north of McDowell Road. There is 33 feet of separation between the southbound and northbound SR-101L bridges over McDowell Road. Consequently, the DHOV ramp is two levels (approximately 45 feet) above McDowell Road.

To create the necessary lateral space for the DHOV ramp, I-10 and SR-101L mainlines are realigned as the ramp approaches the highway mainlines to tie-in vertically. Vertical geometry was not designed, but was considered using engineering rules-of-thumb. The geometry has enabled all existing ramps to be salvaged. In this alternative, the vertical levels of infrastructure in the TI are as follows:

- Level 0: 99th Avenue
- Level 1: I-10 Mainline, McDowell Road
- Level 2: S-W Ramp, S-E Ramp, W-N Ramp
- Level 3: E-N Ramp
- Level 4: DHOV Ramp

The new fly-over structure will be elevated approximately 80 to 100 feet above Level 1 and will become the highest level in the interchange.

3.1.2 Operations

The DHOV ramp eliminates the weaving motion of traffic moving from the HOV lanes when traveling to/from the north along SR-101L and to/from the east along I-10. The elimination of weaving increases safety for all traffic on I-10 and SR-101L. Since the DHOV ramp will tie-into and extend the existing HOV lanes, the main operations concern is signing. Consequently, a detailed signing discussion is included in the following section.

3.1.2.1 Signing

The signing along westbound I-10 and southbound SR-101L will be modified to communicate the ramp destination to HOV traffic. Signs detailed below are necessary based on new roadway operations. Additionally, existing signs that conflict with proposed construction activities will need to be relocated.

The following signs would be removed along southbound SR-101L:

- "Lane Ends" warning sign located north of Thomas Road and
- "HOV Lane Ends Merge Right" overhead signs on the Indian School Road Bridge.

The following signs would be placed:

- Exit Direction signs at the nose of painted gore on both westbound I-10 and southbound SR-101L
- A sequence of Advance Guide signs on each freeway approaching the DHOV ramp:
 - On southbound SR-101L, a sign with legend "HOV EAST I-10 ½ MILE" is to be placed on the existing overhead sign structure located at Thomas Road;
 - On southbound SR-101L, a sign with legend "HOV EAST I-10 1½ MILES" is to be placed on the Indian School Road Bridge;
 - On westbound I-10, a sign with legend "HOV EAST LOOP 101 ¼ MILE" is to be placed on the 91st Avenue Bridge;
 - On westbound I-10, a sign with legend "HOV EAST LOOP 101 ½ MILE" is to be placed on the existing overhead sign structure located at the 91st Avenue exit ramp; and
 - On westbound I-10, a sign with legend "HOV EAST I-10 1½ MILES" is to be placed on the 83rd Avenue Bridge.

3.1.3 Structure Requirements

This alternative requires approximately 3,780 lineal feet of DHOV ramp structure. The pier locations of this fly-over structure can accommodate the future improvements to or replacement of the E-N Ramp when it is converted to two-lanes. All existing structures will be salvaged.

3.1.4 Right-of-Way Impacts

No new right-of way is required.

3.1.5 Construction Costs

Cost opinions were developed for each conceptual alternative and are included in **Appendix C**. Unit costs were sourced from ADOT's E2C2 Historical Unit Price web program and were escalated utilizing recent bid data. Major construction items were measured and quantified, such as pavement and structure areas. Contingencies were used where appropriate due to the high-level planning nature of this analysis. The unit costs in the cost opinion reflect data from current bid tabulations; the unit costs should be continuously updated during the future stages of project development to reflect construction cost trends.

The cost opinion for Alternative 1 is estimated to be approximately \$110 million in 2018 dollars. The largest contributor to this cost is the new bridge area that will need to be constructed.

3.2 Alternative E: Braided Ramp to 91st Avenue

Conceptual Alternative E is a freeway exit ramp from southbound SR-101L to 91st Avenue. Due to the failure of the weave between Thomas Road and McDowell Road in 2040 (discussed in Section 2.3.2), the exit from southbound SR-101L to McDowell Road is relocated and combined with the exit from southbound SR-101L to 91st Avenue.

3.2.1 Geometric Observations

The ramp initially splits from mainline southbound SR-101L north of Thomas Road, crosses over Thomas Road and the southbound SR-101L entrance ramp from Thomas Road, and then aligns adjacent to the southbound SR-101L as proposed by Alternative 1. It then provides an exit ramp to McDowell Road and flies over I-10 to connect to 91st

Avenue. The “cross-over” alignment is what gives this ramp the “braid” feature, as it is referred to colloquially. The typical cross-section of this alternative in the direction of travel consists of a twelve-foot lane, a six-foot shoulder on the left, and a ten-foot shoulder on the right. Approaching the McDowell Road exit ramp, the cross-section in the direction of travel consists of two twelve-foot lanes, a six-foot shoulder on the left, and a ten-foot shoulder on the right. The proposed construction centerline will align with the right-hand edge of travel lane.

The new fly-over structure to 91st Avenue will be elevated approximately 80 to 100 feet above ground level and will be the highest level in the interchange, along with the DHOV Ramp proposed in Alternative 1. The pier locations of this fly-over structure can accommodate the future replacement of the existing E-N Ramp for a two-lane ramp.

3.2.2 Operations

A braided ramp configuration is anticipated to perform better than the existing condition by locating the exits to 91st Avenue and McDowell Road along southbound SR-101L to north of Thomas Road. This configuration disallows vehicles entering at Thomas Road from exiting to 91st Avenue or McDowell Road, eliminating some of the weaving movement on southbound SR-101L between McDowell Road and Thomas Road. The elimination of weaving increases safety for all traffic in this location. Due to the multiple decision points created by this ramp, a primary operations concern is signing. Consequently, a detailed signing discussion is included in the following section.

3.2.2.1 Signing

The signing along southbound SR-101L will be modified to communicate the ramp destination to traffic. Signs detailed below are necessary based on new roadway operations. Additionally, existing signs that conflict with proposed construction activities will need to be relocated.

The following signs would be removed along southbound SR-101L:

- The existing overhead sign structure located north of Thomas Avenue

The following signs would be placed:

- Exit Direction signs at the nose of painted gore at where the braided exit ramp splits from the mainline and on the braided ramp, between the McDowell Road and 91st Avenue exit ramps

- A sequence of Advance Guide signs on southbound SR-101L approaching the braided ramp:
 - On southbound SR-101L, the existing Thomas Road Advance Guide sign on the Indian School Road Bridge would be replaced with a guide sign that directs to what is now the Thomas Road, McDowell Road, and 91st Avenue exit lane.;
 - On southbound SR-101L, the existing exit only Thomas Avenue Guide sign panel located on the cantilever sign structure between Thomas Road and Indian School Road would be replaced with a guide sign that directs to the Thomas Road, McDowell Road, and 91st Avenue exit lane;
 - On westbound I-10, the southbound panel of the butterfly sign structure between Thomas Road and Indian School Road would need to be replaced to reflect the changed distance to the McDowell Road exit ramp and addition of a 91st Avenue exit;
- A cantilever Guide signs on the braided ramp, at the location where the cross-section bumps out to add the parallel exit lane for McDowell Road
- Prior to the paved gore area approaching the I-10 eastbound 91st Avenue exit ramp, an Entering Roadway Added lane warning sign.
- Along the I-10 eastbound 91st Avenue exit ramp, prior to the paved gore, an Added Lane warning sign

The Dynamic Message Sign on southbound SR-101L north of Thomas will need to be relocated upstream to meet minimum guide sign spacing criteria.

3.2.3 Structure Requirements

This alternative requires structures over Thomas Road, the Thomas Road entrance ramp, McDowell Road, the S-W Ramp, the E-N Ramp, and the I-10 mainline. Structure over these roadways is necessary, however, two value engineering opportunities have been identified:

- if the necessary structures should be combined into a few longer structures and
- if the proposed ramp should remain on structure to minimize right-of-way impacts to an undeveloped parcel.

A preliminary pier arrangement was developed for the fly-over. The arrangement consists of 11 total bridge spans, with the longest spanning 243 feet. The pier locations of this fly-over structure can accommodate the future improvements to or replacement of the E-N Ramp when it is converted to two-lanes. All existing structures will be salvaged.

3.2.4 Right-of-Way Impacts

Rights-of-way are required for this alternative. The amount of right-of-way need is dependent on length of structures and construction of retaining walls versus fill slopes. The minimum right-of-way impact is 1/10 of an acre. This impact is located at a right-of-way pinch-point just south of the structure over the Thomas Road entrance ramp. This is the only location where rights-of-way are needed. The minimum impact would be maintained by constructing additional structure from the Thomas Road entrance ramp approaching to where the braided ramp parallels mainline SR-101L.

3.2.5 Construction Costs

Cost opinions were developed for each conceptual alternative and are included in **Appendix C**. Unit costs were sourced from ADOT's E2C2 Historical Unit Price web program and were escalated utilizing recent bid data. Major construction items were measured and quantified, such as pavement and structure areas. Contingencies were used where appropriate due to the high-level planning nature of this analysis. The unit costs in the cost opinion reflect data from current bid tabulations; the unit costs should be continuously updated during the future stages of project development to reflect construction cost trends.

The cost opinion for Alternative E is estimated to be approximately \$63 million in 2018 dollars. The largest contributor to this cost are the new bridges that will need to be constructed over Thomas Road, the Thomas Road entrance ramp, McDowell Road, the S-W Ramp, the E-N Ramp, and the I-10 mainline.

4.0 Conclusion

This study resulted in two preferred alternative concepts: Alternative 1 and Alternative E. These alternatives enhance regional travel, eliminate existing weaving and safety issues, and improve connectivity to support economic development. After discussions with city officials and other agencies involved with the I-10/SR-101L System Traffic Interchange Study, the study reached a consensus on the two preferred alternatives.

The following is a general list of steps that should be taken to implement the study findings:

Accept the Recommendations – The recommendations should be accepted by the MAG Regional Council and adopted as an illustrative project(s) in the Regional Transportation Plan.

Incorporate Preferred Concepts into Existing and Future Studies and Planning Documents – Involved agencies should adopt the study findings and include them in future planning efforts. Any future changes to the findings should still address the underlying issues identified by this study. Specifically, any future studies to improve the E-N Ramp should consider the preferred alternatives.

Complete ADOT Scoping Phase (Design Concept Report) – The concepts should be carried forward as Design Concept Alternatives in ADOT’s project development process. **The geometric recommendations are conceptual in nature; the formal ADOT Scoping Phase will need to be completed, including required typical local, state, and federal agencies approvals.** Use of the information contained herein for right-of-way acquisition and similar activities is not recommended until the appropriate time during ADOT’s project development process. Potential additional Design Concept Alternatives that may surface through ADOT’s process should be consistent with the operational and access goals of this study.

Prior to the final design of any improvements, additional investigation and analyses should be conducted, including necessary environmental/NEPA evaluations, geotechnical investigations, and others.

Project Funding – Funding for study improvements has not yet been identified. Agencies will need to develop a collaborative approach to funding.

Appendix A

Kickoff Meeting

I-10/SR-101L

System Traffic Interchange

Ramp Feasibility Analysis

SUMMARY

Kickoff Meeting

Wednesday, April 25, 2018
2:30 p.m.
City of Tolleson
City Hall Conference Room

Meeting Purpose – Kickoff meeting that will engage ADOT, MAG, and City of Tolleson (Tolleson) in a discussion about the study’s purpose and study area issues.

Attendees:

Steve Boschen – ADOT

Steve O’Brien – ADOT

Bob Hazlett – MAG

Jason Earp – Tolleson

Paul Gilmore – Tolleson

Reyes Medrano, Jr. – Tolleson

Pilar Sinawi – Tolleson

Dana Biscan – B&N

David Lenzer – B&N

Olivier Mirza – B&N

Jason Pagnard – B&N

Nexus Consulting (Via conference call)

1. Introductions

Bob Hazlett opened the meeting and asked attendees to introduce themselves.

2. Project Overview

Mr. Hazlett provided an overview of the project, indicating it is a feasibility study for up to three alternatives. Alternatives will investigate providing a DHOV lane for travel to/from the north along SR-101L and to/from the east along I-10 as well as a new direct connection from SR-101L to 91st Avenue. The focus will be to develop options, determine whether they are feasible, and prepare planning-level cost estimates.

3. Scope of Services and Study Goals and Objectives

Reyes Medrano, Jr. noted that 91st Avenue is the gateway to Tolleson, as well as a key entry point to the city of Avondale. A connection to 91st Avenue would benefit both communities and possibly the city of Phoenix. He noted the lack of a direct connection to SR-101L creates challenges for Tolleson when trying to attract commercial developers. He added this study may provide information for a future grant. He noted that during the 1970s, Tolleson struggled to gain access to I-10 and that they now need a direct connection to the SR-101L. Mr. Medrano expressed several of Tolleson’s goals, including supporting economic development and providing safe access.

4. Study Area Issues

Steve Boschen indicated safety is very important to ADOT; safety is a key reason for considering the DHOV ramps to eliminate weaving. Mr. Boschen stated both FHWA and ADOT would not be supportive of a slip ramp between existing ramps to connect SR-101L to 91st Avenue. Concerns include proper signing and layout, among other things. Mr. Hazlett illustrated the “football” layout required to provide DHOV lanes connecting SR-101L and I-10. In general, the “football” is a wider median to make room for the ramp terminals within the median; accordingly, I-10 would spread north and south. There was a general discussion regarding the need for the DHOV connection and safety/crash concerns. Mr. Medrano indicated that Tolleson wants to avoid impacts to private property, but understands the importance and safety of the DHOV for the region.

I-10/SR-101L

System Traffic Interchange

Ramp Feasibility Analysis

SUMMARY

Regarding a connection between SR-101L and 91st Avenue, Mr. Medrano indicated Tolleson is currently widening 91st Avenue to 4 lanes with a two-way left-turn lane. He added Van Buren Street was renamed Paseo del Luces and that Tolleson has been improving the area.

Attendees debated and identified three potential conceptual alternatives:

- Median, two-way DHOV ramp connection;
- SR-101L flyover ramp to 91st Avenue south of I-10;
- SR-101L flyover ramp to 91st Avenue north of I-10.

A study, by others, is underway to determine if the large drainage basins north of I-10 are needed.

Other provisions for consideration in alternative development are:

- Include HOV widening along SR-101L in the cost.
- Include provision for Encanto Crossing; and
- Separate cost estimates for 91st Avenue connection and DHOV connection.

5. Next Steps

Jason Pagnard indicated concept development was originally included in the second workshop, but was accomplished with group concurrence. Attendees agreed to reconvene in June to discuss preliminary findings.

I-10/SR-101L
System Traffic Interchange
 Ramp Feasibility Analysis

SIGN-IN SHEET

Kickoff Meeting
 Wednesday, April 25, 2018
 2:30 p.m.
 City of Tolleson
 City Hall Conference Room

Present	Name	Agency
<i>SIB</i>	Steve Boschen	ADOT
<i>SIB</i>	Steve O'Brien	ADOT PMG
<i>Bob</i>	Bob Hazlett	MAG
	Marisabel Delgado	City of Tolleson
<i>Jason</i>	Jason Earp	City of Tolleson
<i>Paul</i>	Paul Gilmore	City of Tolleson
<i>Reyes</i>	Reyes Medrano, Jr.	City of Tolleson
<i>P.S.</i>	Pilar Sinawi	City of Tolleson
<i>DB</i>	Dana Biscan	Burgess & Niple
<i>DL</i>	David Lenzer	Burgess & Niple
<i>Olivier</i>	Olivier Mirza	Burgess & Niple
<i>JP</i>	Jason Pagnard	Burgess & Niple

**MARICOPA ASSOCIATION OF GOVERNMENTS
TASK ORDER 6**

**ON-CALL CONTRACT NO. 780-A, BURGESS & NIPLE, INC.
FY 2017 MAG REGIONAL TRANSPORTATION PLANNING ON-CALL**

**I-10/SR-101L SYSTEM TRAFFIC INTERCHANGE RAMP FEASIBILITY ANALYSIS
0600-0110-17-E003-0780-A.000006**

TASK ORDER SUMMARY

The purpose of this project is to evaluate the feasibility of two new ramp connections within the Interstate 10 (I-10) and State Route 101L (SR-101L) system Traffic Interchange (TI).

The existing I-10/SR-101L system TI is located within the City of Tolleson, situated between 99th Avenue to the west, 91st Avenue to the east, and McDowell Road to the north. The system TI provides directional ramps serving all major system movements between I-10 and SR-101L. Nested within the system TI are the I-10 service TIs with 99th Avenue and 91st Avenue, as well as SR-101L at McDowell Road.

This project will develop an alternative(s) to accommodate a new Direct High-Occupancy Vehicle (DHOV) ramp within the existing I-10/SR-101L system TI. The proposed DHOV ramp will accommodate travel to/from the north along SR-101L and to/from the east along I-10. This project will investigate a new connection between SR-101L and 91st Avenue via the I-10/SR-101L system TI ramps and I-10/91st Avenue service TI ramps.

The Scope of Services described below will not be modified except at the Maricopa Association of Government's (MAG)'s request or with MAG's concurrence. Any services rendered by Burgess & Niple (CONSULTANT) that MAG considers to be outside the Scope of Services of this Task Order will not be the responsibility of MAG.

TOTAL TASK ORDER BUDGET

The total amount of this task order will not exceed \$79,997.46.

SCOPE OF SERVICES

Task 1: Initiate Project

The CONSULTANT will initiate the study and complete a Project Management Plan (PMP). The CONSULTANT will conduct a kickoff meeting with MAG and the Planning Partners including the Arizona Department of Transportation (ADOT), Federal Highway Administration (FHWA), City of Tolleson, City of Avondale, and City of Phoenix to familiarize all agencies with the study scope and discuss study area opportunities and constraints.

Task 2: Collect and Review Data

The CONSULTANT will obtain from MAG and the Planning Partners relevant documents, including recording drawings and studies/reports. It is anticipated that MAG will provide sufficient aerial imagery and ADOT (via MAG) will provide CAD (MicroStation) basemap files to facilitate the conceptual alternatives development process. The CONSULTANT will review the collected data.

Task 3: Develop Conceptual Alternatives

The CONSULTANT will prepare for, conduct, and document a half-day charrette with the Planning Partners technical staff to develop up to three (3) conceptual alternatives for a two-way I-10/SR-101L DHOV ramp. B&N will also develop an alternative to connect SR-101L to 91st Avenue, such as a slip ramp connection between the I-10/SR-101L system ramps and I-10/91st Avenue service TI ramps.

Following the charrette, the CONSULTANT will develop the ramp conceptual alternatives in MicroStation. Engineering judgement/rules-of-thumb will be utilized for vertical geometry. For the HOV bridge flyover layout, focus will be on the bridge span configurations, depth and substructure locations using engineering judgement/rules-of-thumb.

It is assumed that MicroStation basemap files obtained under Task 2 contain line work for the existing roadways (mainline, ramps, and crossroads). The CONSULTANT's focus will be to develop line work for only new ramps of focus under this Task Order. The CONSULTANT does not anticipate developing MicroStation line work for the existing facilities (e.g. entire I-10/SR-101L system TI). If MicroStation basemap files are not available for the existing facilities, aerial imagery will be utilized.

Task 4: Prepare Technical Memorandum

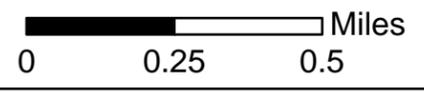
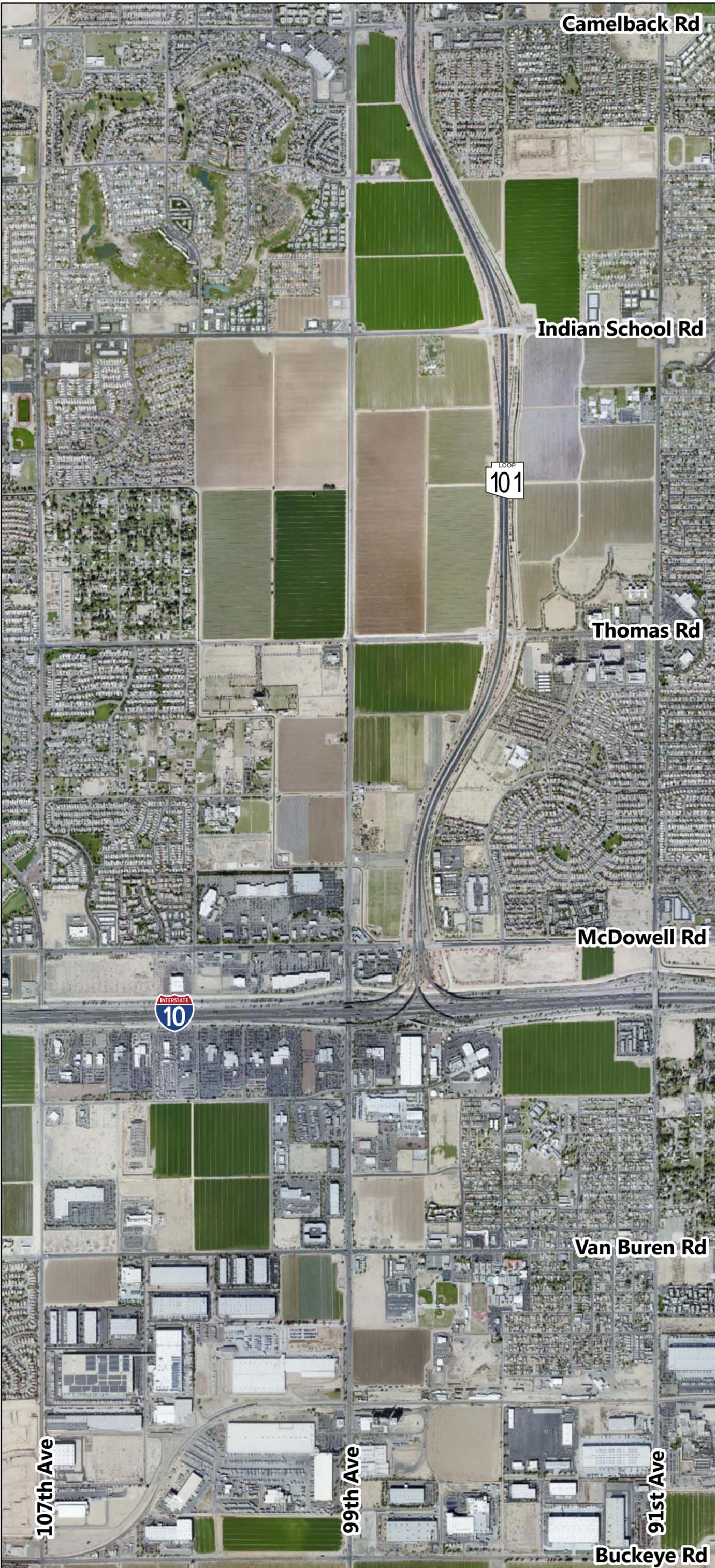
The CONSULTANT will evaluate the conceptual alternatives based on technical advantages and disadvantages of each alternative. The CONSULTANT will prepare planning-level project cost opinions for each conceptual alternative. The CONSULTANT will prepare a technical memorandum documenting the findings.

The CONSULTANT will prepare for, conduct, and document a Planning Partners meeting to present the study findings. The meeting summary will be included as an attachment to the technical memorandum.

DELIVERABLES

- Deliverable 1. The CONSULTANT will complete a PMP.
- Deliverable 2. The CONSULTANT will prepare meeting materials and document the Kickoff Meeting.
- Deliverable 3. The CONSULTANT will prepare a listing/catalog of collected data.
- Deliverable 4. The CONSULTANT will conduct a half-day charrette to develop conceptual alternatives.
- Deliverable 5. The CONSULTANT will prepare a technical memorandum documenting the study findings.

I-10/SR-101L System Traffic Interchange Ramp Feasibility Analysis



BURGESS & NIPLE

Service Layer Credits: Maricopa County Assessor's Office

Map Last Updated: 4/24/2018

Progress Meeting One

I-10/SR-101L

System Traffic Interchange

Ramp Feasibility Analysis

SUMMARY

Follow-Up Meeting

Tuesday, June 19, 2018
2:30 p.m.
City of Tolleson
City Hall Conference Room

Meeting Purpose – Present draft Conceptual Alternatives to ADOT, MAG, and the City of Tolleson.

Attendees:

Steve Boschen – ADOT
Rimpal Shah – ADOT
Bob Hazlett – MAG
Pilar Sinawi – Tolleson
Jason Earp – Tolleson

Paul Gilmore – Tolleson
Jason Pagnard – B&N
Dana Biscan – B&N
David Lenzer – B&N
Olivier Mirza – B&N

1. Introductions

Bob Hazlett opened the meeting and asked attendees to introduce themselves. A scan of the sign-in sheet is attached.

2. Project Overview

David Lenzer provided an overview of the progress made for the two DHOV Ramp Alternatives (Alternative 1 and Alternative 2) and the four 91st Avenue Access Alternatives, (Alternative A, Alternative B, Alternative C, and Alternative D). Alternative 1 and Alternative 2 provide a DHOV lane to/from the north along SR-101L and to/from the east along I-10. The four 91st Avenue Access Alternatives provide a direct connection from the SR-101L to 91st Avenue.

3. Conceptual Alternatives

Mr. Lenzer presented linework in Google Earth to illustrate the six alternatives. He explained that conceptual alternatives were developed using vertical rules of thumb. He provided the following information about the two DHOV Ramp Alternatives and the four 91st Avenue Access Alternatives:

DHOV Ramp Alternatives – Both DHOV alternatives create a “football” to provide the DHOV connection along both I-10 and SR-101L; ramp configurations vary.

- Alternative 1: This Alternative will begin widening SR-101L between McDowell Road and Thomas Road. It is anticipated it will stay within existing ADOT right-of-way and will utilize the existing bridges at McDowell Road. The DHOV ramp will be a level above the ramps over McDowell Road. The new fly-over structure will be approximately 25 feet above the existing east to north ramp (likely 70 to 80 feet above I-10). All existing structures will be salvaged in this alternative and one new, long bridge will be constructed as the highest level in the interchange. Mr. Lenzer noted that salvaging the existing structures would facilitate maintenance of traffic during construction. Mr. Hazlett stated the inside shoulders along I-10 are narrower than recommended by the AASHTO design guidelines and should be widened during construction to meet AASHTO requirements.

I-10/SR-101L
System Traffic Interchange
 Ramp Feasibility Analysis

SUMMARY

- Alternative 2: This alternative will remove and replace the existing east to north structure. The east to north movement will remain the highest level and will have a similar profile as the existing east to north ramp. The DHOV ramp profile will mirror the existing south to east ramp. Mr. Lenzer noted that the DHOV ramp bridge is shorter than the proposed bridge in Alternative 1, but the overall required bridge deck is more than Alternative 1. The existing structure carry 91st Avenue over I-10 appears to conflict with the proposed DHOV ramp and the eastbound I-10 lanes. This will require the replacement of the TIUP pier and south abutment. New right-of-way may be required.

Steve Boschen requested a cost comparison of Alternative 1 to Alternative 2.

Table 1 – Differentiating DHOV Factors		
Criteria	Alternative 1	Alternative 2
Highest level	70-80 feet	70-80 feet
Right-of-way requirement	None	Approx. 0.5 acres
Structure requirements	Construct 3780' DHOV ramp	Construct 2650' DHOV ramp Construct 2620' New E-N ramp Replace 91st Ave TIUP pier and south abutment Demolish ex. east to north structure
MOT	No unusual challenges	Demolish existing E-N ramp structure across I-10
Siphon impacts	No impact	No impact

91st Avenue Access Alternatives – All 91st Avenue Alternatives were developed to accommodate DHOV Alternative 1, and that most would accommodate Alternative 2. Mr. Lenzer noted that weave analysis had not been conducted for any of the alternatives and that they were all conceptual in nature.

- Alternative A: This Alternative will restripe the existing Thomas Road on-ramp as two lanes rather than the one lane. SR-101L will have a five-lane section. Lane 4 will exit to 91st Avenue and Lane 5 will exit to McDowell Road. This Alternative will make the travel way for 91st Avenue the highest level. Mr. Lenzer stated that a challenge associated with this alternative is the weave between Thomas Road and McDowell Road. Mr. Boschen stated he prefers this alternative due to merging, weaving, and signing requirements. Mr. Hazlett informed the attendees that SR-101L will be widened with a general-purpose lane. The concepts will be developed with this additional lane in mind, which may eliminate the two-lane on-ramp from Thomas Road.
- Alternative B: This Alternative was eliminated as the 91st Avenue ramp could not be connected to the existing ramp intersection south of I-10 without routing drivers through multiple signals.
- Alternative C: Mr. Lenzer stated that pier locations were not available for DHOV Alternative 2, but the design could likely be modified to accommodate the necessary pier locations. He also stated that this alternative does not require modifications to the exit ramp to McDowell Road. This alternative requires replacement of the southbound structure over McDowell Road. Mr. Lenzer stated that the broken back

I-10/SR-101L
System Traffic Interchange
 Ramp Feasibility Analysis

SUMMARY

curve along the proposed ramp could be optimized and potentially eliminated. Mr. Lenzer informed the planning partners that the center lane would be the decision lane for 91st Avenue Access. Mr. Lenzer stated that signing at the major ramp fork could be challenging. B&N will assess signing options. The attendees agreed that the broken back curve will need to be optimized. Mr. Hazlett noted that the current southbound structure over McDowell Road is wide enough to accommodate an additional lane.

- Alternative D: This Alternative uses a slip ramp with a tapered exit and a short weave. The slip ramp would use the existing system ramp, therefore requiring no modification to the existing structure. Mr. Lenzer noted weave challenges were present whether the ramp was shifted east or west due to the existing structure and off-ramp. Mr. Boschen expressed safety concerns with Alternative D. This alternative will not be advanced.

Table 2 – Differentiating 91st Avenue Ramp Factors				
Criteria	Alternative A	Alternative B	Alternative C	Alternative D
Accommodates either DHOV Alternative	Yes	Yes	Yes	Yes
Right-of-way requirement	None	Approx. 4.6 acres	None	None
Structure requirements	Construct 2000' ramp	Construct 3600' ramp	Construct 1020' ramp	Development of alternative stopped before determination
Driver convenience	Good	Poor	Good	Good
Safety	-	-	-	Poor

City of Tolleson staff did not have a preference and expressed flexibility with choosing an alternative for the 91st Avenue access; however, the City reemphasized the importance of SR-101L access to 91st Avenue. Pilar Sinawi asked if access to 91st Avenue was independent of DHOV ramp construction; Mr. Lenzer stated it was. Jason Earp indicated that safety is an important factor for the City of Tolleson. Mr. Hazlett stated that both projects, DHOV Ramp and 91st Avenue Access, could be constructed at the same time if funding permitted.

4. Evaluation Criteria

The attendees held a brief discussion regarding potential Alternative Evaluation Criteria. The following criteria surfaced:

- Safety;
- Operations (merge/weave/signage/safety);
- Value (as opposed to cost); and
- Constructability.

Burgess & Niple will provide examples of evaluation criteria used on similar projects to the City of Tolleson by June 29th, 2018. City staff will review and provide tiered criteria preferences to the project partners.

I-10/SR-101L
System Traffic Interchange
Ramp Feasibility Analysis

SUMMARY

Jason Pagnard asked the City to consider potential grant applications when selecting the evaluation criteria. Mr. Boschen offered to provide a checklist developed by ADOT to the group for use.

5. Next Steps

The next meeting as decided by the attendees will take place on **September 6th at 11:30 a.m.** at the City of Tolleson.

I-10/SR-101L
System Traffic Interchange
 Ramp Feasibility Analysis

SIGN-IN SHEET

Follow-Up Meeting

Tuesday, June 19, 2018

2:30 p.m.

City of Tolleson

City Hall Conference Room

Present	Name	Agency
<i>SB</i>	Steve Boschen	ADOT
	Steve O'Brien	ADOT
<i>B</i>	Rimpal Shukh	ADOT
<i>BH</i>	Bob Hazlett	MAG
	Marisabel Delgado	City of Tolleson
<i>JE</i>	Jason Earp	City of Tolleson
<i>PG</i>	Paul Gilmore	City of Tolleson
<i>RM</i>	Reyes Medrano, Jr.	City of Tolleson
<i>PS</i>	Pilar Sinawi	City of Tolleson
<i>DB</i>	Dana Biscan	Burgess & Niple
<i>DL</i>	David Lenzer	Burgess & Niple
<i>OM</i>	Olivier Mirza	Burgess & Niple
<i>JPN</i>	Jason Pagnard	Burgess & Niple

Progress Meeting Two

I-10/SR-101L System Traffic Interchange Ramp Feasibility Analysis

SUMMARY

Progress Meeting 2

Tuesday, September 25, 2018
11:30 a.m.
City of Tolleson
City Hall Conference Room

Meeting Purpose – Present roll plots and cost estimates for Alternative 1 (DHOV Ramp) and Alternative E (Braided Ramp) to ADOT, MAG, and the City of Tolleson.

Attendees:

Steve Boschen – ADOT
Bob Hazlett – MAG
Pilar Sinawi – Tolleson
Jason Earp – Tolleson

Paul Gilmore – Tolleson
Reyes Medrano, Jr. – Tolleson
Jason Pagnard – B&N
Wesley Scatena – B&N

1. Introductions

A scan of the sign-in sheet is attached.

2. Conceptual Alternatives Update and Observations

The conceptual alternatives for the ramp connection between SR-101L and 91st Avenue and the DHOV ramp between I-10 and SR-101L were reviewed. Design team observations were discussed.

91st Avenue Access Alternatives – Weave analysis was conducted on Alternatives A and C. The results of this analysis were that all of these alternatives failed. A braided ramp alternative (Alternative E) was developed as an alternative that passes weave analysis. This analysis also discovered a weaving issue that exists today given the current lane configuration for SB SR-101L. Alternative E was developed to accommodate DHOV Alternative 1.

- Alternative E:

Table 1 –91st Avenue Ramp Factors	
Criteria	Alternative E
Accommodates either DHOV Alternative	Yes
Right-of-way requirement	*1/10 acre
Structure requirements	Structures over Thomas and I-10
Driver convenience	Good
Safety	-

**Right-of way impacts may be increased or decreased by constructing fill vs. structure along the alignment near Thomas Ave.*

I-10/SR-101L

System Traffic Interchange

Ramp Feasibility Analysis

SUMMARY

There is a ROW pinch-point located just south of the structure over the Thomas Ave entrance ramp. This is the only location of ROW concern. Constructing a longer stretch of structure or placing fill would impact the amount of ROW needed. City of Tolleson staff expressed encouragement for this alternative to connect to 91st Avenue. Bob Hazlett indicated the braided ramp could potentially become a part of the future SR-101L general purpose lane widening project. Pilar Sinawi asked if ADOT or MAG could write a letter of support for this project. Steve Boschen said that would be something for MAG to consider; Bob Hazlett stated MAG would not write a letter, but could accept the project as feasible by decision of the MAG Regional Council.

Steve Boschen informed the meeting he is pushing ADOT towards performance-based practical design. He stated he sees this corridor as a cost-savings opportunity through the implementation of performance-based practical design.

It was discussed by all that since the braided ramp would fix the current weaving issue, its construction would benefit the region as a whole. This could create an opportunity for cost-sharing. Pilar Sinawi shared that USDOT made her aware of the option of applying for grant money, since the project has regional significance. Bob Hazlett said that investigation into the federal grant is not something that would be undertaken during this study. Alternative E is estimated to cost between \$60-70 million.

DHOV Ramp Alternatives – Both DHOV alternatives create a “football” to provide the DHOV connection along both I-10 and SR-101L; ramp configurations vary.

- Alternative 1: This Alternative will begin widening SR-101L between McDowell Road and Thomas Road. It is anticipated it will stay within existing ADOT right-of-way and will utilize the existing bridges at McDowell Road. The DHOV ramp will be a level above the ramps over McDowell Road. The new fly-over structure will be elevated approximately 80 to 100 feet above ground level. All existing structures will be salvaged in this alternative and one new, long bridge will be constructed as the highest level in the interchange. Alternative 1 is compatible with Alternative E and is estimated to cost approximately \$100-110 million.
- Alternative 2: This Alternative was developed by a previous study in 2007. It will remove and replace the existing east to north structure. The east to north movement will remain the highest level and will have a similar profile as the existing east to north ramp. The existing structure carry 91st Avenue over I-10 appears to conflict with the proposed DHOV ramp and the eastbound I-10 lanes. This will require the replacement of the TIUP pier and south abutment. New right-of-way may be required. Alternative 2 is estimated to cost approximately \$140 million.

The meeting consensus was that Alternative 1 is the preferred alternative for a DHOV ramp.

3. Next Steps

The draft report is due to the study team on **October 15th**. Burgess & Niple is to submit a KMZ file in conjunction with the draft report. A Council Briefing with the City of Tolleson City Council is scheduled to take place on **November 27th**.

I-10/SR-101L
System Traffic Interchange
 Ramp Feasibility Analysis

SIGN-IN SHEET

Progress Meeting 2
 Tuesday, September 25, 2018
 11:30 a.m.
 City of Tolleson
 City Hall Conference Room

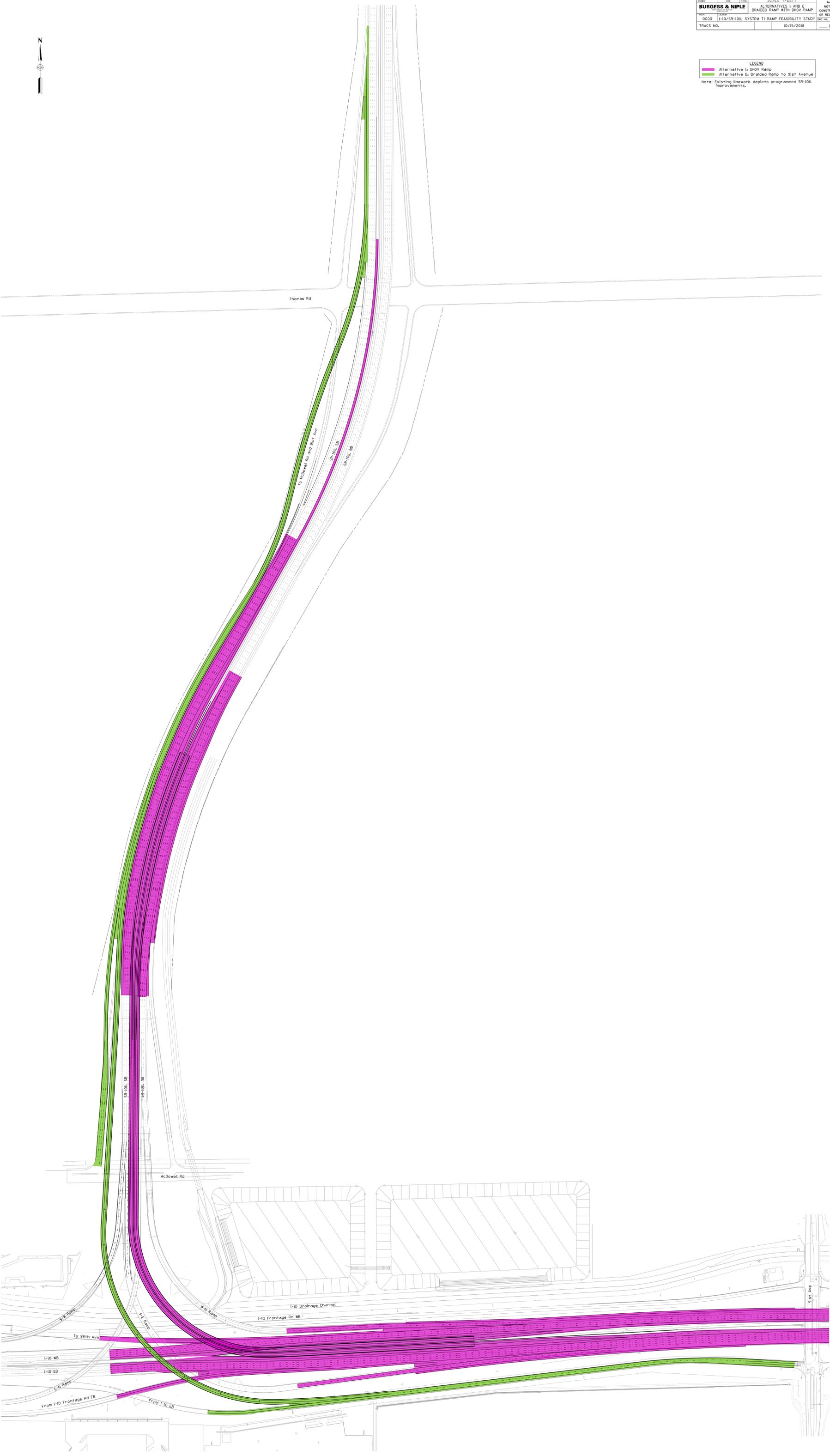
Present	Name	Agency
SIB	Steve Boschen	ADOT
	Steve O'Brien	ADOT
	Rimpal Shah	ADOT
Bo	Bob Hazlett	MAG
PS.	Marisabel Delgado	City of Tolleson
	Jason Earp	City of Tolleson
	Paul Gilmore	City of Tolleson
	Reyes Medrano, Jr.	City of Tolleson
	Pilar Sinawi	City of Tolleson
	Ana Ma	Nexus Consulting
	Bob Holmes	Nexus Consulting
JP WS	Jason Pagnard	Burgess & Niple
	Wes Scatena	Burgess & Niple

Appendix B

LEGEND

- Alternative I: DHOV Ramp
- Alternative E: Braided Ramp to 91st Avenue

Notes: Existing linework depicts programmed SR-101L improvements.



Appendix C

I-10 / SR-101L System TI
Ramp Feasibility Analysis
COST OPINION

Series	Items	Unit	Unit Cost	Alternative 1: DHOV		Alternative E: Braided Ramp	
				Qty	Segment Cost	Qty	Segment Cost
200	Bridge Removal	EA	\$ 4,000,000		\$ -		\$ -
	Pavement Removal	SY	\$ 20	50,000	\$ 1,000,000		\$ -
	Earthwork	CY	\$ 15	60,000	\$ 900,000	40,000	\$ 600,000
	Contingency and Unidentified Items	LS	30%		\$ 570,000		\$ 180,000
300 / 400	New PCCP w/base & AR	SY	\$ 60	30,651	\$ 1,839,040	27,006	\$ 1,620,387
	New AC w/ base	SY	\$ 35		\$ -		\$ -
	Rehab Pavement (ACFC-AR Overlay)	SY	\$ 35	134,495	\$ 4,707,321		\$ -
	Contingency and Unidentified Items	LS	15%		\$ 981,954		\$ 243,058
500	Drainage on-site (Reconstruct)	LS	\$ 2,000,000	1	\$ 2,000,000	1	\$ 2,000,000
	Drainage on-site (Retrofit)	LS	\$ 1,000,000	1	\$ 1,000,000		\$ -
	Contingency and Unidentified Items	LS	30%		\$ 900,000		\$ 600,000
600	New/Widen Bridges	SF	\$ 175	216,704	\$ 37,923,200	114,983	\$ 20,122,025
	Rehab Bridges	LS	Varies		\$ -		\$ -
	Contingency and Unidentified Items	LS	10%		\$ 3,792,320		\$ 2,012,203
700	MOT (high)	LS	\$ 7,000,000	1	\$ 7,000,000		\$ -
	MOT (low)	LS	\$ 5,000,000		\$ -	1	\$ 5,000,000
	Sign/Stripe/Light (Reconstruct)	LS	\$ 3,000,000	1	\$ 3,000,000		\$ -
	Sign/Stripe/Light (Retrofit)	LS	\$ 1,000,000		\$ -	1	\$ 1,000,000
	Existing FMS Modifications	LS	\$ 500,000	1	\$ 500,000	1	\$ 500,000
	New ITS	LS	\$ 3,500,000		\$ -		\$ -
	Contingency and Unidentified Items	LS	30%		\$ 3,150,000		\$ 1,950,000
800	Landscaping	LS	Varies				\$ -
	Utilities	LS	\$ 1,000,000		\$ -		\$ -
	Contingency and Unidentified Items	LS	\$ 500,000	1	\$ 500,000	1	\$ 500,000
900	Retaining Walls (Assume H(avg)=15')	LF	\$ 500	3,250	\$ 1,625,000	5,000	\$ 2,500,000
	Sound Walls (Assume H(avg)=15')	LF	\$ 525		\$ -		\$ -
	Roadway Appurtenance (High)	LS	\$ 1,500,000	1	\$ 1,500,000	1	\$ 1,500,000
	Roadway Appurtenance (Low)	LS	\$ 750,000		\$ -		\$ -
	Contingency and Unidentified Items	LS	40%		\$ 1,250,000		\$ 1,600,000
				Subtotal:	\$ 74,138,835	Subtotal:	\$ 41,927,672
Other	Mobilization	LS	8%		\$ 5,931,107		\$ 3,354,214
	Construction Engineering	LS	10%		\$ 7,413,884		\$ 4,192,767
	Contractor Quality/Survey	LS	3%		\$ 1,853,471		\$ 1,048,192
	Construction Contingency	LS	5%		\$ 3,706,942		\$ 2,096,384
	Enviromental Mitigation	LS	\$ 1,000,000	1	\$ 1,000,000	1	\$ 1,000,000
	Design	LS	8%		\$ 5,931,107		\$ 3,354,214
	ROW	Acre	\$ 100,000		\$ -	0.1	\$ 10,000
				Subtotal:	\$ 99,975,345	Subtotal:	\$ 56,983,442
ICAP		LS	10.02%	1	\$ 10,017,530	1	\$ 5,709,741
				Total:	\$ 109,992,875	Total:	\$ 62,693,183