MARICOPA ASSOCIATION of GOVERNMENTS

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April 10, 2012

TO: Members of the Transportation Policy Committee

FROM: Mayor W. J. "Jim" Lane, City of Scottsdale, Chair

SUBJECT: NOTIFICATION OF MEETING AND TRANSMITTAL OF TENTATIVE AGENDA

Meeting - 4:00 p.m.
Wednesday, April 18, 2012
MAG Office, Suite 200 - Saguaro Room
302 N. First Avenue, Phoenix

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

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

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

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

c: MAG Regional Council
MAG Management Committee

TRANSPORTATION POLICY COMMITTEE
TENTATIVE AGENDA
April 18, 2012

	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.	3. Information.
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 (*).	4. Recommend approval of the Consent Agenda.

ITEMS PROPOSED FOR CONSENT*

*4A. Approval of the March 21, 2012, Meeting Minutes	4A. Review and approval of the March 21, 2012, meeting minutes.
*4B. Arterial Life Cycle Program Status Report The Arterial Life Cycle Program (ALCP) Status Report provides an update on ALCP projects scheduled for work and/or reimbursement in the current fiscal year, program deadlines, revenues, and finances for the period between October	4B. Information.

2011 and March 2012. Please refer to the enclosed material.

*4C. Project Changes - Amendment and Administrative Modification to the FY 2011-2015 MAG Transportation Improvement Program

The Fiscal Year (FY) 2011-2015 Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP) 2010 Update were approved by the MAG Regional Council on July 28, 2010 and have been modified thirteen times with the last modification approved by the MAG Regional Council on March 28, 2012. Since then, there is a need to modify projects in the programs. This item is on the April 11, 2012, MAG Management Committee agenda. An update will be provided on action taken by the committee. Please refer to the enclosed material.

4C. Recommend approval of amendments and administrative modifications to the FY 2011-2015 MAG Transportation Improvement Program, the FY 2012 Arterial Life Cycle Program and to the Regional Transportation Plan 2010 Update, as appropriate.

ITEMS PROPOSED TO BE HEARD

5. Regional Freeway and Highway Life Cycle Program Update

The Regional Freeway and Highway Program Life Cycle Program is under review. In 2009, the Program was reviewed and the Regional Council approved the Tentative Scenario to balance an estimated $6.6 billion shortfall due to cost overruns and revenue shortfalls. Based upon MAG and Arizona Department of Transportation (ADOT) estimates, the Program is projected to have an additional shortfall of approximately $300 million due to even lower revenue projections in the Proposition 400 Regional Area Roadway Fund. MAG and ADOT are presently evaluating five scenarios to balance the program and incorporate the reduced revenue estimates. These scenarios include options for repositioning projects to improve cash flow and an alternative for the SR-303L/Estrella Freeway corridor to meet travel demand needs in the Southwest Valley. Major freeway corridors will be reviewed, including those in the Southeast Corridor Major Investment Study. A presentation of the scenarios that are presently under study will be made to the TPC.

5. Information, discussion, and input.

This item is on the April 11, 2012, MAG Management Committee agenda. An update will be provided on input from the committee.

6. Update on the MAG Managed Lanes Network Development Strategy - Phase I Project

6. Information, discussion and input.

On November 15, 2010, the MAG Regional Council authorized procurement of consultant services to develop the MAG Managed Lanes Network Development Strategy - Phase I project. This multi-phase effort was in response to consideration for public-private-partnership (P3) opportunities in the Phoenix Metropolitan Area where high occupancy vehicle (HOV) lanes could be operated as high occupancy toll (HOT) lanes as part of an overall managed lanes strategy. Since the last presentation on this project to the Transportation Policy Committee in October 2011, the project consultant has developed eight planning papers on the following topics: Project Goals and Objectives, Legal and Regulatory Issues, HOV Hours of Operation, HOV Occupancy, HOV Separation Treatment, Pricing and Tolling Methods, Procurement and Financing, and Initial Assessment of Potential Managed Lanes. A summary of the recommendations from these papers is attached to this agenda, and the links to the papers themselves can be found on the MAG website. As the study team completes further research on this project, comments are sought from the Transportation Policy Committee on these recommendations from the planning papers as the region considers a Managed Lanes Network strategy. Please refer to the enclosed material.

7. Legislative Update

7. Information, discussion, and possible action.

An update will be provided on legislative issues of interest.

8. Request for Future Agenda Items

8. Information and discussion.

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

9. 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	9. Information.

MINUTES OF THE
MARICOPA ASSOCIATION OF GOVERNMENTS
TRANSPORTATION POLICY COMMITTEE MEETING

March 21, 2012
MAG Office, Saguaro Room
Phoenix, Arizona

MEMBERS ATTENDING

Mayor W. J. "Jim" Lane, Scottsdale, Chair
Mayor Jackie Meck, Buckeye, Vice Chair
F. Rockne Arnett, Citizens Transportation Oversight Committee
Ron Barnes, Total Transit
* Mayor Bob Barrett, Peoria
Dave Berry, Swift Transportation
* Jed Billings, FNF Construction
Councilmember Ben Cooper, Gilbert
Councilmember Shana Ellis, Tempe
Councilmember Dick Esser, Cave Creek
Victor Flores, State Transportation Board
* Mark Killian, The Killian Company/Sunny Mesa, Inc.
Phil Matthews, Salt River Pima-Maricopa Indian Community
Garrett Newland, Macerich
Mayor Marie Lopez Rogers, Avondale
Mayor Georgia Lord, Goodyear
Mayor Elaine Scruggs, Glendale
Councilmember Jack Sellers, Chandler
Mayor Scott Smith, Mesa
* Mayor Greg Stanton, Phoenix
Karrin Kunasek Taylor, DMB Properties
Supervisor Max W. Wilson, Maricopa County
Mayor Sharon Wolcott, Surprise

* Not present
# Participated by telephone conference call
+ Participated by videoconference call

1. Call to Order

The meeting of the Transportation Policy Committee (TPC) was called to order by Vice Chair Jackie Meck at 4:05 p.m. Vice Chair Meck conducted the meeting while Chair Lane was in transit.

2. Pledge of Allegiance

The Pledge of Allegiance was recited.

Mayor Elaine Scruggs, Councilmember Dick Esser, and Mayor Sharon Wolcott participated in the meeting by telephone. Mayor Scott Smith also joined the meeting via teleconference while in transit to the meeting.

Vice Chair Meck noted that Mayor Sharon Wolcott's appointment as the Geographic Balance Representative to the TPC was ratified by the Regional Council in January.

Vice Chair Meck noted that at each place was a corrected results matrix for agenda Item #5 and a legislative summary for agenda item #7.

Vice Chair Meck announced that on March 14, 2012, the MAG Management Committee unanimously recommended approval of agenda item #4B, Project Changes - Amendment and Administrative Modification to the FY 2011-2015 MAG Transportation Improvement Program that is on the TPC agenda.

Vice Chair Meck requested that members of the public fill out blue cards for Call to the Audience and yellow cards for consent or action items on the agenda, and then turn in the cards to staff, who will bring them to him. He stated that parking garage validation and transit tickets for those who used transit to attend the meeting were available from staff.

3. Call to the Audience

Vice Chair Meck stated that an opportunity is provided to the public to address the Transportation Policy Committee on items that are not on the agenda that are within the jurisdiction of MAG, or non action agenda items that are on the agenda for discussion or information only. 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. Those wishing to comment on agenda items posted for action will be provided the opportunity at the time the item is heard.

Vice Chair Meck recognized public comment from Andrew Marwick, who said that he believed there were alternatives to the South Mountain Freeway to relieve traffic congestion. He suggested improvements be made to I-17, the ministack, Baseline Road/I-10, and I-10/US-60. Mr. Marwick also questioned how people will be able to access Northern Parkway from I-17. He stated that there are viable alternatives that would cost less than building the South Mountain Freeway. Vice Chair Meck thanked Mr. Marwick for his comments

4. Approval of Consent Agenda

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

Mr. Flores moved to approve agenda items #4A and #4B on the consent agenda. Supervisor Wilson seconded, and with no further discussion, the motion carried unanimously.

4A. Approval of the January 18, 2012, Meeting Minutes

The Transportation Policy Committee, by consent, approved the January 18, 2012, meeting minutes.

4B. Project Changes - Amendment and Administrative Modification to the FY 2011-2015 MAG Transportation Improvement Program

The Transportation Policy Committee, by consent, recommended approval of the amendments and administrative modifications to the FY 2011-2015 MAG Transportation Improvement Program, the 2012 Arterial Life Cycle Program, and as appropriate to the Regional Transportation Plan 2010 Update. The fiscal year (FY) 2011-2015 MAG Transportation Improvement Program and Regional Transportation Plan 2010 Update were approved by the MAG Regional Council on July 28, 2010, and have been modified twelve times with the last modification approved February 22, 2012. Since then, there is a need to modify projects in the programs. Tables A and B include a list of proposed administrative corrections and project changes in the Arterial Life Cycle Program. These modifications are mainly clerical and minor adjustments to financial information. Table C contains project modifications that include redistribution of American Recovery and Reinvestment Act (ARRA), Transportation Enhancement funding, project deferrals and project cancellations. Transit projects include minor budget adjustments and deferrals to the future. On March 14, 2012, the MAG Management Committee recommended approval of the requested changes.

5. Implementation of the Proposition 400 Performance Audit

Chair Lane arrived at the meeting.

Monique de los Rios-Urban, MAG staff, provided a followup to the report on the Proposition 400 Performance Audit recommendations presented to the TPC in January 2012. She noted that a full report and the recommendations are available on the MAG website. Ms. De Los Rios-Urban stated that this was on the TPC agenda for information and discussion. She added that under state law, no MAG committees were required to take action on the recommendations, however, state law does require board action from the State Transportation Board, the Maricopa County Board of Supervisors, the Board of the Regional Public Transportation Authority, and the Board of the Citizens Transportation Oversight Committee (CTOC). Ms. de los Rios-Urban stated that this presentation would include the results of these board actions and MAG'S implementation plan in response to the recommendations pertaining to MAG.

Ms. de los Rios-Urban noted that a revised matrix of all board actions for each of the recommendations and MAG's responses were at each place. She indicated that the matrix was developed as a graphic tool to illustrate the steps in the proposed implementation plan. Ms. de los Rios-Urban stated that not all boards responded to all recommendations and the Auditors identified the agencies that were required to respond in each case. She pointed out that the green check mark indicated full agreement with the recommendation, the yellow check mark indicated agreement with modifications, and the red cross indicated that the agency is not in agreement. Ms. de los Rios-Urban also noted that the recommendations highlighted with red dots are the ones that received most unanimous agreement or disagreement by agency boards.

Ms. de los Rios-Urban then addressed the matrix in detail and noted the recommendations that were supported by all of the boards. Audit Recommendation number 7 was to continue to

implement the current transportation system and strive to continually reassess system performance to make modifications as necessary; Audit Recommendation number 14 was to ensure that documentation describes basis, source, deliberations, outcome, and rationale for resulting actions and decisions related to project and RTP changes; Audit Recommendation number 15 was to summarize and communicate data to MAG committees on options, alternatives, risks, opportunities and impacts for each alternative related to congestion or performance; Audit Recommendation number 20 was to memorialize, document and maintain discussions at RTP Partner meetings to include items discussed, agreements reached and action items.

Ms. De Los Rios-Urban stated that Audit Recommendation numbers 22 and 23 pertain to TPC membership and composition and CTOC structure and staffing. She stated that number 22, to adjust MAG Transportation Policy Committee membership requirements to include RPTA and METRO transit representatives, was not supported by MAG and Maricopa County. She noted that RPTA, the State Transportation Board and CTOC did not provide a direct response in agreement or disagreement. Ms. de los Rios-Urban stated that Audit Recommendation number 23, to reaffirm the role of CTOC and increase effectiveness by implementing several changes (among them to be staffed by MAG), was generally accepted by the boards with modifications. She explained that in response, MAG will prepare a White Paper on the changes. Ms. de los Rios-Urban stated that recommendation numbers 22 and 23 would require state legislative action to be implemented.

Eric Anderson, MAG Transportation Director, stated that the Auditors recommended that RPTA and METRO have representatives on the TPC. Mr. Anderson noted that membership and representation of modal interests was discussed extensively back when the TPC was formed in 2002, and it was felt that because of the representation of member agencies already on both boards, representation on the TPC was considered to be duplicative. Mr. Anderson stated that with the passage of Proposition 400 in 2004, the composition of the TPC is in state law and any changes would have to be brought through state law. He said that any proposed changes to the composition of the TPC would be brought forward to the TPC for direction.

Ms. de los Rios-Urban stated that one of the observations shared by RTP partners is that the Audit report itself was somewhat repetitive, not very clear, and in cases inconsistent. In order to define an implementation plan, staff grouped the 25 recommendations into categories according to common themes of Documentation, Analysis, Coordination, Reporting, and Organization.

Ms. de los Rios-Urban stated that the recommendations grouped in the Documentation category included preparing summary notes of RTP partner meetings and summary notes of all coordination meetings, creating links to all committee meetings, links to web archives, database entries for all Congestion Management Program programming activities, dashboard reporting, performance reporting, and project report card reporting.

Ms. de los Rios-Urban stated that for the recommendations grouped in the Coordination category, the Auditors mentioned the need for coordination among the RTP Partners. She noted that coordination sessions among agencies to integrate formats and track implementation progress are already underway. Ms. de los Rios-Urban stated that the implementation plan will be to develop

standardization of formats and reporting methodologies and to possibly create an intranet cross-agency communication tool.

Ms. de los Rios-Urban stated that there are five recommendations that refer to the Reporting category. She said that staff is proposing creating an internet interactive dashboard, and a project report card, continuing performance reporting, and develop a system to communicate all website links and source information.

Ms. de los Rios-Urban stated that the recommendations grouped in the Organizational category were interpreted differently by the partners and actions from the boards were varied, so MAG proposes to monitor the existing transit memorandum of understanding and see if any modifications are necessary and to develop white papers on the TPC and CTOC suggested changes for TPC and Regional Council consideration.

Chair Lane thanked Ms. de los Rios-Urban for her report and asked if there were questions.

Supervisor Wilson asked for clarification of a timeframe for completion of the goals. Ms. de los Rios-Urban replied that the Auditor will return to the agencies in six months after the December 2011 publication of the Audit Report to see the progress of the implementation plan. Ms. de los Rios-Urban stated that staff is working on several of the items currently. She stated that the dashboard requires a significant programming effort and is anticipated to be completed in six to eight months.

Supervisor Wilson asked about status reports on the matrix. Ms. de los Rios-Urban replied that periodic status reports will be provided and a timeframe could be provided on each of the recommendations. She noted that no action was needed on the recommendations today.

Chair Lane asked for clarification that guidance was being requested from the TPC on whether they wanted to consider a statutory change as noted in Recommendation #22. He added that it seemed as if the recommendation was more or less dismissed as unnecessary. Mr. Anderson stated that the Audit expressed interest to have transit agencies be members of the TPC. He stated that back in 2002 when the TPC was being formed, there was extensive discussion of the structure and policies. Mr. Anderson stated that because many of the current TPC were not on the TPC when the committee was formed, staff would like to document that discussion in the White Paper. Then the TPC could decide to leave the committee structure as is or consider an alternate structure. Mr. Anderson noted that a different structure would require legislative action.

Chair Lane stated that the TPC could review the background information and discuss whether there is a reason to change the composition.

Mr. Smith stated that when the TPC was formed, there was extensive discussion regarding its composition. He said that the TPC was envisioned to include elected officials and representatives of regional business. Mr. Smith stated that the regional business representatives were put into statute which specified that one of the regional business seats must represent transit. He noted that this is

the seat currently held by Mr. Barnes. Mr. Smith stated that the elected officials said they are already directing the transit boards and having representatives from those agencies on the TPC was unnecessary.

Mayor Lord asked if this was the first Audit. Mr. Smith noted that in the past, numerous audits were conducted on the half cent sales tax for transportation, however, almost all of the money went to freeways. With Proposition 400, one-third of the sales tax goes to the Transit Program and the role of the Citizens Transportation Oversight Committee changed. Mr. Smith stated that this is the first audit to look at a multimodal program and that is why issues have arisen. He stated that back in the 1990s, there were organizational issues between MAG and ADOT that an audit helped to resolve. Mr. Smith added that the roles and responsibilities of each agency were later put into state statute. He stated that one of the Audit recommendations was to monitor closely the Transit Memorandum of Understanding (MOU). Mr. Smith reported that the MAG Executive Committee and the two transit agencies worked for many months to develop the MOU, which clearly defines roles and responsibilities.

Mr. Berry asked if Recommendation numbers 22 and 23 were included in the ballot language and said that he thought a governance provision was included in the ballot language. Mr. Berry commented that the reason CTOC was staffed by ADOT was to create independence and degrees of separation and here this independence is being broken down.

Mr. Anderson replied that staff had extensive discussions with the auditors on this issue. He noted that CTOC was created in the mid-1990s to oversee the highway program, which was being staffed by ADOT at the time. Mr. Anderson said that he thought the auditors deduced that if Proposition 400 is a multimodal program, CTOC, in its capacity to have oversight of the program, should be staffed by a multimodal agency, much the same as it was staffed by a highway agency (ADOT) when it had oversight of the highway program. Mr. Anderson expressed that MAG is willing and able to staff CTOC, but the more independent perspective might be better. He added that staff recommended disagreement with this recommendation and this is the reason it is being brought to the TPC.

Mr. Berry expressed that an agency with independent oversight was important and still is, and needs to be kept in mind moving forward.

Mayor Smith asked for clarification because it appeared that CTOC is not independent right now. Mr. Anderson replied that Mayor Smith was correct; even under Proposition 300 CTOC was not independent, but was staffed by ADOT, the agency over which it had oversight.

Mr. Berry stated that in his recollection, what Mr. Anderson described was correct. He said that there were concerns with ADOT as the freeway planner staffing CTOC. Mr. Berry stated that after MAG's role was more clearly defined by the Legislature, staffing of CTOC by ADOT became more independent of MAG.

Mayor Smith noted that for CTOC to be truly independent, it would be staffed neither by MAG nor ADOT.

Mr. Arnett stated that CTOC has looked extensively at Recommendation number 23. He said that members agreed to some portions of the recommendations, but there was some pushback regarding staffing by MAG. Mr. Arnett suggested that rather than making that change, have a joint relationship so that CTOC will keep its independence. He added that CTOC is an oversight agency, not a watchdog agency.

Chair Lane asked for clarification of the status of CTOC's discussions.

Mr. Arnett replied that the committee did not agree with all portions of the recommendation: the consolidation or staffing by MAG. He indicated that he thought there might be a method for staffing by both organizations but they are working through that.

Chair Lane asked if there was any conversation with the auditors when the determinations were made that some of the recommendations were conflicting and duplicative. Ms. de los Rios-Urban replied that the final recommendations were provided by the auditor to MAG just at the deadline. She added that conflicting versions of the same report were delivered to MAG the day of the deadline and there was not an opportunity to convene a meeting. Ms. de los Rios-Urban most of the duplicative items and conflicting parts were not necessarily in the listing of recommendations, but were mentioned by the auditors as ideas they had.

Chair Lane asked if there was concurrence to this list. Ms. de los Rios-Urban replied that the TPC heard a presentation in January on MAG's responses to the Audit recommendations. She noted that the packet included the original language and the link to the letter. Ms. de los Rios-Urban stated that in an attempt to clarify items, she summarized the language.

Chair Lane asked the next steps for implementation of the recommendations. Mr. Smith stated that it is envisioned to return to the TPC to provide an update on items that are being prepared for implementation. He stated that the White Papers would provide historical background and it is good to memorialize the decisions made by the TPC.

Mr. Anderson stated that the auditors will be back in June to see what MAG is doing to implement the recommendations and staff could get clarification if necessary. He said that the auditors will return for another visit in one year, in June 2013, to draft a final report that will be provided to the Auditor General's office.

Chair Lane stated that it is important to have a good summary of the recommendations and the plan for implementation.

Mr. Anderson stated that staff will continue to add to the matrix target dates for the completion of milestones will be included.

Supervisor Wilson stated that there is not enough information here for him to make a decision, other than faith in staff's judgment. Mr. Anderson stated that he thought the White Paper for the TPC composition would provide that background.

6. SR-202L/South Mountain Freeway Corridor Design Review

Bob Hazlett, MAG Senior Engineer, stated that the Arizona Department of Transportation (ADOT) has been planning the SR-202L/South Mountain Freeway corridor through the Environmental Impact Statement (EIS) and Location/Design Concept Report (L/DCR) process since 2001. He explained that as part of this process, ADOT has developed cost opinions of approximately $2.4 billion for constructing the 22-mile freeway corridor. Mr. Hazlett stated that the current Regional Freeway and Highway Program estimate for the corridor is $1.9 billion as approved by the Regional Council through the October 2009 rebalancing effort.

Mr. Hazlett stated that MAG engaged Burgess and Niple, Inc., to do an independent cost review of the SR-202L/South Mountain corridor to determine if the ADOT cost opinions were reasonable and whether savings could be realized through alternative designs to bring the estimate closer to the program amounts. He noted that when the rebalancing effort took place, there were $6.6 billion in cost overruns due to increased right-of-way, construction material, and labor costs and the largest item, scope growth due to design decisions.

Mr. Hazlett reviewed how the cost estimates for the SR-202L/South Mountain Freeway have increased over time: In 2002, $48.7 million per mile for a total estimated cost of $1.1 billion; in 2006, $78.7 million per mile for a total estimated cost of $1.7 billion; in 2008, $97.6 million per mile for a total estimated cost of $2.1 billion; in 2010, $100.3 million per mile for a total estimated cost of $2.1 billion; in 2011, $109.2 million per mile for a total estimated cost of $2.4 billion. Mr. Hazlett remarked that even though the cost has doubled, this is not the most expensive freeway in the U. S., the Big Dig in Boston, Massachusetts, has that distinction.

Mr. Hazlett stated that the Burgess and Niple consultant team included staff with expertise from the California, Florida, Ohio, and Texas Departments of Transportation. He also noted that this team had minimal expertise with ADOT practices to prove a true independent review of the proposed freeway corridor design and costs.

Mr. Hazlett stated that the budget analysis showed that right-of-way accounts for approximately one-third of the project cost and raw construction costs represent about 38 percent of the project cost. He noted that about 40 percent of the right-of-way has been acquired already by ADOT.

Mr. Hazlett stated that one important thing is to take the cost opinions and apply for contingencies to account for unforseen expenses. He said that ADOT is a conservative agency and wants to deliver the project successfully, so it used a combined design contingency of 75 percent at this level of design. Mr. Hazlett stated that the team thought this was too high because a typical contingency for new corridors around the country is in the range of 30 to 40 percent at this level of design.

Mr. Hazlett stated that the consultants looked at the design of the facility and compared it to other states and to the AASHTO Policy Green Book. He said that these design guidelines range from the absolute minimum to meet safety standards, to desirable. Mr. Hazlett stated that ADOT's design standards are beyond the desirable range. He said that someone from the review team stated that public infrastructure projects should be in the Ford Taurus design range, but ADOT's design standards were in the Ferrari range. Mr. Hazlett stated that one of the recommendations of the analysis was to change the design approach to see if cost savings could be realized. He said that the design approach is optimized for functionality, safety, and cost.

Mr. Hazlett stated that safety would not be compromised at all. He stated that the alignment could be optimized by using broader horizontal and vertical geometric standards to not use as much land area, but still be safe for motorists and to coordinate with other disciplines, such as drainage, utilities, and right-of-way.

Mr. Hazlett stated that the consultants reviewed the design standards. He said that ADOT designs for high speeds on system interchanges, whereas other states and the AASHTO guidelines have lower design speeds to slow down traffic. Mr. Hazlett displayed an aerial photo of I-10 and 59th Avenue using a tighter ramp design that still conforms to the safety guidelines and leaves more land for development.

Mr. Hazlett then displayed possible design alternatives that could provide the most benefit for the money. He stated that the consultants identified approximately $500 million to $650 million that could be shaved from the budget. Mr. Hazlett stated that these cost savings have been provided to ADOT for review and they will get back to MAG.

Mr. Hazlett then reviewed the remaining steps of the draft environmental impact statement (EIS). He said that the draft EIS is in the final review stage and ADOT anticipates having it ready for a 90-day public review period by July, after which the comments will be incorporated and issues mitigated. Mr. Hazlett indicated that the final EIS will be produced around the end of the year and a record of decision anticipated in early 2013.

Chair Lane thanked Mr. Hazlett for his presentation and asked if there were questions.

Supervisor Wilson asked if changes from a cost review would affect bidding. Mr. Hazlett replied that the cost review was only to get the program amount in line and the bid process would not take place until after the record of decision in 2013.

Mayor Smith asked if ADOT or MAG decides the kind of freeway – to design standards or to cost. He asked if it was a policy decision or one based on engineering.

Mr. Anderson replied that this has been an historical issue. MAG has the responsibility for the program, sets the budget, and has the authority to approve or disapprove cost changes. Mr. Anderson stated that Proposition 300 freeways were going through developing areas and land acquisition at that time was easier. He explained that right after Proposition 400 passed, there were

significant increases in costs, such as cement and oil, and a couple of years later, this all collapsed. Mr. Anderson stated that one of the objectives is to induce highway designers to respect budgets. He explained the process that toward the end of the process, at the 15 or 30 percent design level, costs are added up and they are what they are, and the opportunity is lost for cost savings. Mr. Anderson stated that this presentation was about designing to a budget and staff has been diligent about conveying that there is only a certain amount of money. He said that if we continue to design projects we cannot afford, we will build projects that serve only a portion of the population. Mr. Anderson stated that other projects will suffer if the South Mountain Freeway is built with a $400 million to $500 million cost overrun. He said that the average cost per mile on the Santan Freeway was in the $40 million to $45 million per mile. Mr. Anderson stated that right-of-way costs actually have risen for right-of-way for the South Mountain Freeway since 2006, and there is concern at ADOT that there will not be enough money to buy the needed properties. He indicated that good cost estimates are needed because they have implications for the program. Mr. Anderson stated that projects ten years out are moving out of the program due to high cost estimates.

Mayor Smith stated that the Santan is a beautiful freeway, but to what standards was it designed? If we have acceptable and minimum standards and we have been building to desirable plus standards, at what point was the budget determined and at what point do we say we have limited resources? Mayor Smith remarked that design drives the budget rather than the budget defines the design. He asked who makes the decision to go from minimum to desirable plus? Mayor Smith mentioned the cost of a system interchange that increased dramatically because each stakeholder wanted a feature. He said that his question is at what point are the design standards decided and who makes the decision?

Mr. Smith stated that MAG staff has discussed this with ADOT. He stated that ADOT Director John Halikowski's leadership has been great and he has brought in all of his principal people to the discussions. The Burgess and Niple recommendations were reviewed with them and they are aware we have $1.9 billion. Mr. Smith stated that in the past, if a project cost increased slightly when the bids came in, the project was built, however, if the South Mountain has a cost of $2.4 billion, MAG cannot be in a position to tell ADOT to approve the bid. Mr. Smith stated that it is beneficial to have outside experts confirm what we thought. He also noted that increased right-of-way costs do not make sense with the recession. Mr. Smith expressed understanding for ADOT wanting to be conservative in order to be able to deliver the project, but what is being delivered is the issue. Mr. Smith also stated that if we can get the same performance for less money and take fewer properties off the tax rolls, that seems logical.

Mr. Anderson stated that in conversations with ADOT management is the recognition that ADOT needs to change how it works internally. He indicated that it appeared to him that no one person at ADOT is ultimately responsible for delivering a project on time, on schedule, and on budget. Mr. Anderson remarked that Mayor Smith was correct – the design is determining the budget. He explained that the way the budget works, the design is taken to a certain point and then the cost estimates are developed. Along the way, commitments are made to stakeholders for certain elements. No one has asked if there are other ways to build this project for less money.

Mayor Smith stated that he thought ADOT does a great job. He said that improved planning – route planning or what the route is – needs to be addressed.

Chair Lane noted that ADOT is beginning a reexamination of its process.

Ms. Taylor stated that the report said that $560 million in savings could be realized from the consultant's recommendations. She asked if that would result from design changes or changes to the 75 percent contingency. Mr. Hazlett replied that the savings would be realized from all elements. He noted that the contingency recommendation would yield approximately $120 million to $160 million.

Ms. Taylor asked the percentage contingency they were recommending. Mr. Hazlett replied the recommendation is a 50 percent contingency.

Ms. Taylor asked the contingency amount was included in the unidentified items of the budget shown in the orange section of the pie chart. Mr. Hazlett replied that this was not contingency, it was a budget item ADOT includes and it represents about nine percent of construction costs to cover additional design items that might have been overlooked. Ms. Taylor remarked that it is, then, a redundant contingency.

Mr. Hazlett stated that this is not uncommon in other Departments of Transportation across the country. He related that the Virginia Department of Transportation had an interchange project on I-95. The engineers said the project would cost $90 million and they were told $15 million was available and they did it for $15 million.

Chair Lane concurred that it probably occurs across the country in a variety of ways, but in good times or bad times, we should probably take a harder look at these design items as Mayor Smith suggested.

Supervisor Wilson asked the status of the draft EIS. Mr. Hazlett replied that the draft EIS is in final review by FHWA, ADOT, cooperating agencies, and legal. He added that the draft EIS is anticipated to be available for public review this summer.

7. Legislative Update

Nathan Pryor, MAG Intergovernmental Policy Coordinator, provided an update on legislative issues of interest. Mr. Pryor pointed out that a legislative summary was at each place. He reported that federal surface transportation reauthorization expires on March 31, 2012. He said that there are two bills; the Senate bill, called MAP21, is a two-year bill with a slight funding increase that consolidates a number of programs. Mr. Pryor noted that there are concerns about what the bill means for metro areas. He noted an amendment by Senator Bagich to address these concerns did not make it into the bill. Mr. Pryor stated that the Senate passed its bill on March 14, 2012, but is on hold.

Mr. Pryor stated that the House bill has stalled. He noted that there are a number of challenges: not enough votes, concern for transit, and a potential change in leadership. Mr. Pryor explained that the Senate has to hold its bill until they get a House version because the House bill needs to be the bill of origin due to financial implications. Mr. Pryor stated that the House might have a hearing next week regarding extending the current legislation to June 30. He also noted that reauthorization might take place in 2013 due to the primaries and the presidential election this year. Mr. Pryor stated that the Intermountain West COG and MPO directors are concerned with both bills, which diverge from the sentiments of Senator Moynihan in terms of funding to regions. Mr. Pryor stated that continuing the current provisions to next year after the presidential election would be acceptable to regions.

8. Request for Future Agenda Items

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

No requests were noted.

9. Comments from the Committee

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

No comments from the Committee were noted.

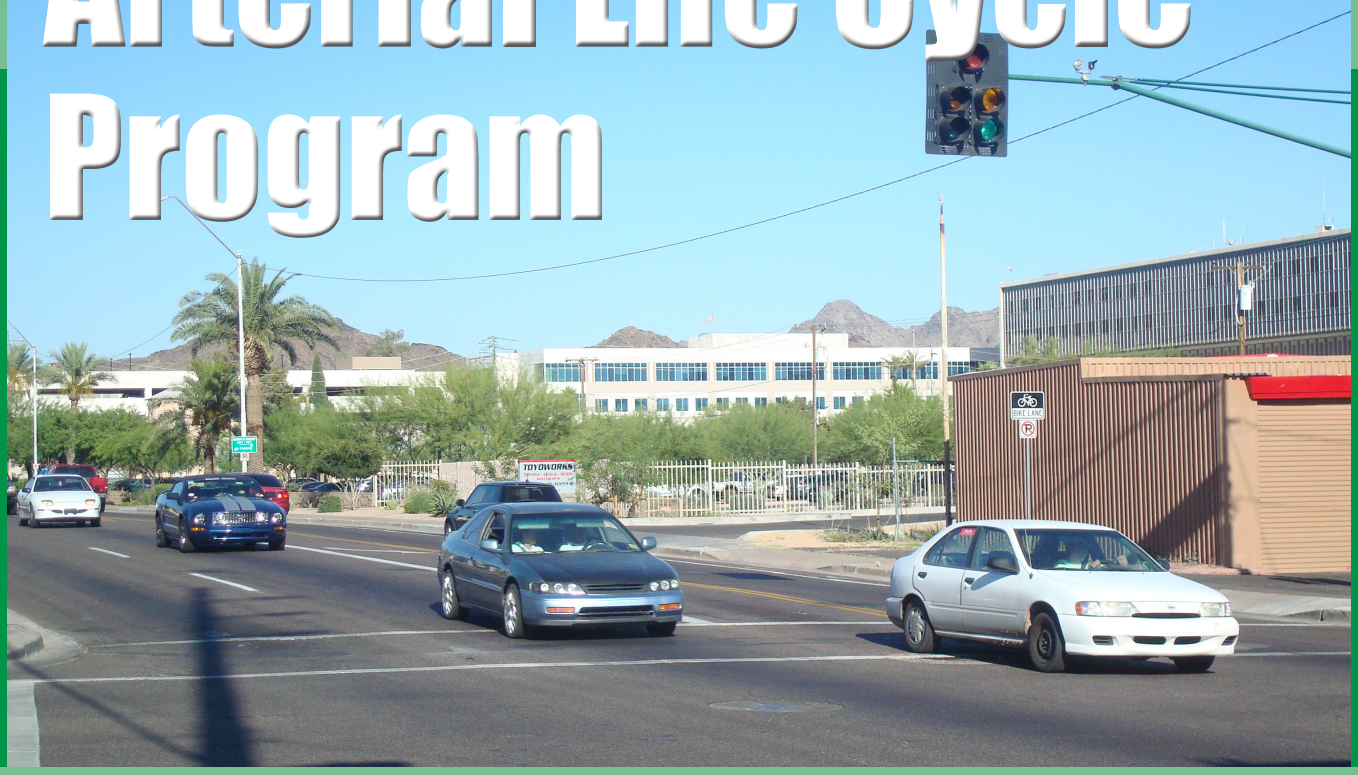
Adjournment

Mr. Arnett moved and Supervisor Wilson seconded to adjourn the meeting at 5:25 p.m.

_____
Chair

_____
Secretary

Arterial Life Cycle Program



Status Report

October 2011-March 2012

ON THE MOVE
PARTNERS IN PROGRESS

REGIONAL TRANSPORTATION PLAN

MARICOPA ASSOCIATION of GOVERNMENTS

CONTENTS

ALCP Revenue and Finance

In November 2004, the voters of Maricopa County approved Proposition 400, which extended the ½-cent sales tax for transportation through 2025. The tax extension was divided among freeways (56.2%), transit (33.3%) and arterial streets (10.5%) The Arterial Life Cycle Program (ALCP) receives dedicated sales tax revenues from Proposition 400 allocated for transportation improvements to the arterial road network in Maricopa County.

The Regional Transportation Plan (RTP) adopted in 2003 allocates three revenue sources to fund projects in the ALCP. The revenue sources include the half-cent sales tax; Surface Transportation Program – MAG Funds (STP-MAG); and, Congestion Mitigation and Air Quality Improvement Program Funds (CMAQ). Revenues from the ½-cent sales tax allocated to arterials are deposited into the Regional Area Road Fund (RARF) account on a monthly basis.

TABLE 1. FY 2012 PROPOSITION 400 COLLECTIONS (July 2011 - February 2012)

	Freeways	Arterial Streets	Transit	TOTAL
July	$15,032,996	$2,808,656	$8,907,452	$26,749,104
August	$13,985,947	$2,613,033	$8,287,047	$24,886,026
September	$14,873,959	$2,778,942	$8,813,218	$26,466,119
October	$14,982,882	$2,799,293	$8,877,758	$26,659,933
November	$14,163,259	$2,646,160	$8,392,109	$25,201,527
December	$14,638,099	$2,734,876	$8,673,464	$26,046,439
January	$17,699,979	$3,306,936	$10,487,710	$31,494,624
February	$14,646,909	$2,736,522	$8,678,684	$26,062,115
TOTAL	$120,024,029	$22,424,418	$71,117,441	$213,565,887

**Amount excludes debt service from Prop 300*

Table 1 provides a breakdown of Proposition 400 revenues collected between July 2011 and February 2012 by mode.

Fiscal Year 2012 started on July 1, 2011. Since then, $22.4 million in additional RARF revenues have been deposited into the arterial account. To date, more than $217.5 million Regional Area Road Funds have been collected for the arterial improvements in the region. As of March 2012, the RARF account balance was $49 million.

TABLE 2. TOTAL RARF COLLECTIONS Estimate v. Actual FY2012 (July 2011 - February 2012)

	Estimated Total RARF	Actual Total RARF*	Percentage Difference
July	$26,810,000	$26,749,104	-0.2%
August	$25,029,000	$24,886,026	-0.6%
September	$25,750,000	$26,466,119	2.8%
October	$25,954,000	$26,659,933	2.7%
November	$25,680,000	$25,201,527	-1.9%
December	$26,207,000	$26,046,439	-0.6%
January	$31,476,000	$31,494,624	0.1%
February	$25,157,000	$26,062,115	3.6%
TOTAL	$212,063,000	$213,565,887	0.7%

**Amount excludes debt service from Prop 300*

During the first eight months of FY2012, $213.5 million in total RARF revenues have been collected. The amount collected is slightly higher than forecasted for that period. Estimated and actual RARF revenue collections from July 2011 to February 2012 are summarized in Table 2.

MARICOPA ASSOCIATION of GOVERNMENTS
Transportation Division
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The RTP dedicates approximately 3.65% percent of the ALCP RARF funds for planning and implementation studies in the region. The funding allocated for implementation studies is contingent on RARF revenue collections. As a result, the amounts programmed in the ALCP are estimates derived the Arizona Department of Transportation (ADOT) RARF Revenue Forecasts published annually. The remaining regional budget for the implementation studies fluctuate concurrently with the forecasts. Since 2006, $7.5 million in RARF revenues have been deposited into the RARF Studies account.

For more information about the MAG Implementation and Planning Studies, please see the appendices in the approved Arterial Life Cycle Program available for download at: http://www.azmag.gov/Projects/Project.asp?CMSID2=1065&MID=Transportation

ALCP PROJECT HIGHLIGHT: PHASE 1 OF NORTHERN PARKWAY

A ground breaking ceremony commerating Phase 1 construction activities for Northern Parkway was held on February 29, 2012. The ceremony was attended by, Mayor Lana Mook (City of El Mirage), Mayor Elaine Scruggs (City of Glendale), and Mayor Bob Barrett (City of Peoria), and Chairman Max Wilson (Maricopa County).

The 12.5 mile project extends between Loop 303 and US 60/Grand Avenue will traverse along the current Butler Road alignment between Loop 303 and Litchfield Road north of Luke Air Force Base and then shift southeastward along the current alignment of Northern Avenue through the cities of El Mirage, Glendale, Peoria and Maricopa County.

The first phase of Northern Parkway includes the interim construction of a four-lane facility between Sarival Avenue to Dysart Road. The ultimate configuration of Northern Parkway will consist of six travel lanes and a center median. Northern Parkway is intended to serve as reliever for Bell Road and as a major east-west route in the West Valley.

FY 2012 ARTERIAL LIFE CYCLE PROGRAM

On February 22, 2012, the MAG Regional Council approved an update to the FY 2012 Arterial Life Cycle Program, the MAG FY 2011-2015 Transportation Improvement Program (TIP), and Regional Transportation Plan (RTP) 2010 Update. An electronic copy of the updated FY 2012 ALCP may be downloaded from the MAG website at: http://www.azmag.gov/Projects/Project.asp?CMSID2=1065&MID=Transportation.

ALCP PROJECT STATUS

Detailed information about projects underway are provided in Tables 3 and 4. Table 3 lists projects programmed for work and/or reimbursement in FY2012, the amount programmed for reimbursement in FY2012, and ALCP project requirements submitted to-date. Table 4

details project reimbursements and expenditures for projects programmed for work and/or reimbursement in FY2012.

This is the 15th Status Report for the Arterial Life Cycle Program. Semi-annually, MAG provides member agencies with an update on the projects in the ALCP. This report and all other ALCP information are available online at http://www.azmag.gov/Projects/Project.asp?CMSID2=1065&MID=Transportation.

TABLE 3. FY 2012 ARTERIAL LIFE CYCLE PROGRAM

SCHEDULE FOR PROJECTS PROGRAMMED FOR WORK AND/OR REIMBURSEMENT IN FY12

RTP Project	Programmed in the FY12 ALCP	Programmed Reimb. in FY12 (millions)	Reimb. in FY 2012 (millions)	ALCP Project Requirements		
				Overview (PO)	Agreement (PA)	Needed in FY12
CHANDLER						
Chandler Blvd/Alma School: Intersection Improvements	Work and Reimbursement	$ 2.872	$ -	Completed 3/2008	Completed 7/2008	PRR
Gilbert Rd: SR-202L/Germann Rd to Queen Creek Rd	Reimbursement Only	$ 0.674	$ 0.674	Completed 7/2006	Completed 9/2006	PRR
Gilbert Rd: Queen Creek Rd to Hunt Hwy	Work and Reimbursement	$ 1.826	$ -	---	---	PO, PA, PRR
Gilbert Rd: Queen Creek Rd to Ocotillo Rd	Work Only	$ -	$ -	---	---	PO, PA, PRR*
Ocotillo Rd: Arizona Ave to McQueen Rd	Work Only	$ -	$ -	---	---	PO, PA, PRR*
Price Rd: Santan Fwy to Germann Rd	Reimbursement Only	$ 3.053	$ -	Completed 7/2010	Completed 8/2011	PRR
Ray Rd at Alma School Rd: Intersection Improvements	Work Only	$ -	$ -	Completed 3/2006	Completed 7/2006	PRR*
CHANDLER/GILBERT						
Queen Creek Rd: Val Vista Dr to Higley Rd	Work and Reimbursement	$ 1.294	$ -	---	---	PO, PA, PRR
EL MIRAGE						
El Mirage Rd: Cactus to Grand & Thunderbird Rd: El Mirage to Grand	Work Only		$ -	---	---	None
FOUNTAIN HILLS						
Shea Blvd: Technology Dr to Cereus Wash	Work and Reimbursement	$ 0.148	$ 0.027	Completed 8/2008	Completed 10/2008	PRR
GILBERT						
Guadalupe Rd/Cooper Rd: Intersection Improvements	Work and Reimbursement	$ 1.443	$ -	Completed 5/2010	Completed 10/2010	PRR
Ray Rd: Val Vista Dr to Power Rd	Work Only	$ -	$ -	---	---	PO, PA, PRR*
GILBERT/MARICOPA COUNTY/MESA						
Power Rd: Santan Fwy to Pecos Rd	Work and Reimbursement	$ 3.041	$ -	---	---	PO, PA, PRR
MARICOPA COUNTY						
El Mirage Rd: Bell Rd to Picerne Dr	Work Only	$ -	$ -	---	---	PO, PA, PRR*
El Mirage Rd: Northern to Cactus	Work Only	$ -	$ -	---	---	None
Gilbert Rd: Bridge over Salt River	Work Only	$ -	$ -	---	---	PO, PA, PRR*
Northern Pkwy: Sarival to Dysart	Work and Reimbursement	Funds Obligated in FFY 10/11	$ 0.596	Completed 4/2010	Completed 3/2011	PRR
Northern Pkwy: ROW Protection	Work and Reimbursement	Funds Obligated in FFY 10/11	$ 0.597	Completed 4/2010	Completed 3/2011	PRR
Northern Parkway: Dysart to 111th	Work Only	$ -	$ -	---	---	PO, PA, PRR*
Northern Parkway: Sarival Overpass	Work Only	$ -	$ -	---	---	PO, PA, PRR*
Northern Parkway: Reems Overpass	Work Only	$ -	$ -	---	---	None

* Per the ALCP Policies and Procedures approved on December 9, 2009, only the Progress Report Section of PRR is required

SCHEDULE FOR PROJECTS PROGRAMMED FOR WORK AND/OR REIMBURSEMENT IN FY12

MARICOPA COUNTY (Cont'd)						
Northern Parkway: Litchfield Overpass	Work Only	$ -	$ -	—	—	None
Northern Parkway: Agua Fria Bridge	Work Only	$ -	$ -	—	—	None
MESA						
Dobson/University: Intersection Improvements	Work Only	$ -	$ -	—	—	PC, PA, PRR*
Mesa Dr: US60 to Southern Ave	Work and Reimbursement	$ 7.591	$ 0.289	Completed 3/2007	Completed 1/2008	PRR
Southern at Country Club Dr: Intersection Improvements	Work Only	$ -	$ -	Completed 2/202	In Process	PA, PRR*
Southern Ave/Stapley Dr Intersection Improvements	Work and Reimbursement	$ 1.368	$ 0.038	Completed 3/2007	Completed 6/2007	PRR
PEORIA						
83rd Avenue: Butler Rd to Mountain View	Work and Reimbursement	$ 0.584	$ -	Completed 8/2010	Completed 9/2010	PRR
75th Ave at Thunderbird Rd: Intersection Improvement	Work and Reimbursement	$ 1.431	$ -	Completed 8/2010	Completed 9/2010	PRR
Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave	Work and Reimbursement	$ 9.016	$ 9.016	Completed 7/2009	Completed 8/2010	PRR
Lake Pleasant Pkwy: Dynamite Blvd to CAP	Work and Reimbursement	$ 2.645	$ -	Completed 5/2006	—	PA, PRR
PHOENIX						
Avendia Rio Salado: 51st Avenue to 7th Street	Work and Reimbursement	$ 23.189	$ -	Completed 1/2012	In Process	PC, PA, PRR
Black Mountain Blvd: SR-51 and Loop 101/Pima Fwy to Deer Valley Rd	Work and Reimbursement	$ 1.288	$ -	Completed 10/2007	In Process	PA, PRR
Sonoran Blvd: 15th Avenue to Cave Creek	Work and Reimbursement	$ 18.208	$ -	Completed 11/2010	Completed 10/2011	PA, PRR
SCOTTSDALE/CAREFREE						
Pima Rd: Thompson Peak Parkway to Pinnacle Peak Parkway	Work and Reimbursement	$ 8.477	$ 4.641	Completed 6/2008	Completed 7/2008	PRR
SCOTTSDALE						
Pima Rd: Via Linda to Via De Ventura	Work Only	$ -	$ -	Completed 4/2010	—	None
Pima Rd: Via De Ventura to Krail	Work and Reimbursement	$ 4.057	$ -	Completed 4/2010	—	PA, PRR
Pima Rd: Thomas Rd to McDowell Rd	Work Only	$ -	$ -	Completed 4/2010	—	PA, PRR
Northsight Blvd: Hayden to Frank Lloyd Wright Blvd	Work and Reimbursement	$ 2.465	$ -	—	—	PC, PA, PRR
Frank Lloyd Wright at 76th/78th/82nd Street: Intersection Improvements	Work and Reimbursement	$ 0.070	$ -	—	—	PC, PA, PRR
Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Parkway	Work and Reimbursement	$ 3.944	$ 0.063	Completed 5/2010	Completed 7/2010	PA, PRR
Shea Blvd at 120/124th St: Intersection Improvements	Work and Reimbursement	$ 1.400	$ -	—	—	PC, PA, PRR
Shea Blvd: SR-101L to 96th St: ITS Improvements	Work and Reimbursement	$ 0.433	$ -	Completed 7/2011	—	PC, PA, PRR
Shea Blvd at Frank Lloyd Wright Blvd: Intersection Improvements	Work Only	$ -	$ -	—	—	PC, PA, PRR*
Shea Blvd at 125th St: Intersection Improvements	Work Only	$ -	$ -	—	—	PC, PA, PRR*
Shea Blvd at 136th St: Intersection Improvements	Work Only	$ -	$ -	—	—	PC, PA, PRR*

* Per the ALCP Policies and Procedures approved on December 9, 2009, only the Progress Report Section of PRR is required

TABLE 4A. ARTERIAL LIFE CYCLE PROGRAM

STATUS OF RARF-FUNDED PROJECTS UNDERWAY IN FISCAL YEAR 2012

Consistent with the Fiscal Year 2012 ALCP updated on February 22, 2012

FACILITY/LOCATION	SCHEDULE FOR WORK (W) AND/OR REIMB. (R) FY 2012	REGIONAL FUNDING					TOTAL EXPENDITURES			FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb through FY11 (YOE$)	FY 2012 Est. Reimb. (2011$)	Est. Reimb FY13-FY26 (2011$)	Total Reimb FY06-FY26 (2011$, YOE$)	Unfunded Due to Deficit (2011$)	Expend through FY11 (YOE$)	Estimated Future Expend FY12-FY26 (2011$)	Total Expend FY06-FY26 (2011$,YOE$)			
CHANDLER												
Chandler Blvd/Alma School: Intersection Improvements	W/R	0.475	2.872	0.000	3.347	0.942	0.679	10.523	11.202	2012	0.25	
Gilbert Rd: SR-202L/Germann Rd to Queen Creek Rd	R	6.078	0.674	0.000	6.752	0.000	10.316	0.000	10.316	2010	1.30	Project Completed
Gilbert Rd: Queen Creek Rd to Hunt Hwy	W/R	0.000	1.826	1.418	3.244	0.000	1.763	2.808	4.571	2012	4.00	Design & ROW Project Only
Gilbert Rd: Queen Creek Rd to Ocotillo Rd	W	0.000	0.000	7.537	7.537	0.000	0.000	10.767	10.767	2012	1.00	Construction Project Only
Ocotillo Rd: Arizona Ave to McQueen Rd	W	0.000	0.000	5.295	5.295	1.408	1.712	12.317	14.028	2017	1.00	
Price Rd: Santan Fwy to Germann Rd	R	0.000	3.053	0.000	3.053	0.000	4.440	0.000	4.440	2008	1.25	Project Completed
Ray Rd at Alma School Rd: Intersection Improvements	W	2.217	0.000	0.000	2.217	0.000	7.878	4.122	12.001	2012	0.25	
CHANDLER/GILBERT												
Queen Creek Rd: Val Vista Dr to Higley Rd	W/R	0.000	1.294	12.030	13.324	0.000	11.211	7.823	19.034	2012	2.00	Project scope reduced by 1 mile due to developer contributions.
EL MIRAGE												
El Mirage Rd: Cactus to Grand & Thunderbird Rd: El Mirage to Grand	W	0.000	0.000	1.788	1.788	0.000	0.000	2.554	2.554	2012	NA	Design Project Only
FOUNTAIN HILLS												
Shea Blvd: Technology Dr to Cereus Wash	W/R	0.153	0.148	2.285	2.586	0.000	0.218	4.239	4.457	2012	0.80	
GILBERT												
Guadalupe Rd/Cooper Rd: Intersection Improvements	W/R	0.385	1.443	3.230	5.058	0.000	2.678	4.614	7.292	2012	0.50	
Ray Rd: Val Vista Dr to Power Rd	W	0.000	0.000	16.638	16.638	0.000	18.199	5.713	23.912	2012	4.00	

Reimb. Reimbursement(s) YOE Year of Expenditure $ Dollars * Measured in centerline miles

FY Fiscal Year Expend Expended/Expenditures Est Estimated

STATUS OF RARF-FUNDED PROJECTS UNDERWAY IN FISCAL YEAR 2012
Consistent with the Fiscal Year 2012 ALCP updated on February 22, 2012

FACILITY/LOCATION	SCHEDULE FOR WORK (W) AND/OR REIMB. (R) FY 2012	REGIONAL FUNDING					TOTAL EXPENDITURES			FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb through FY11 (YOE$)	FY 2012 Est. Reimb. (2011$)	Est. Reimb FY13-FY26 (2011$)	Total Reimb FY06-FY26 (2011$, YOE$)	Unfunded Due to Deficit (2011$)	Expend through FY11 (YOE$)	Estimated Future Expend FY12-FY26 (2011$)	Total Expend FY06-FY26 (2011$,YOE$)			
GILBERT/MARICOPA COUNTY/MESA												
Power Rd: Santan Fwy to Pecos Rd	W/R	0.000	3.041	12.407	15.448	0.000	10.026	18.700	28.726	2012	1.50	
MARICOPA COUNTY												
El Mirage Rd: Bell Rd to Picerne Dr	W	0.000	0.000	0.000	0.000	0.000	0.964	5.072	6.036	2014	0.50	
El Mirage Rd: Northern to Cactus	W	0.000	0.000	1.140	1.140	0.000	0.000	1.629	1.629	2012	NA	Design Project Only
MESA												
Dobson/University: Intersection Improvements	W	0.000	0.000	0.000	0.000	4.921	2.492	4.537	7.030	2012	0.50	
Mesa Dr: US60 to Southern Ave	W/R	1.086	7.591	6.403	15.080	0.000	1.552	19.991	21.543	2013	1.00	
Southern at Country Club Dr: Intersection Improvements	W	0.000	0.000	5.901	5.901	0.000	0.244	8.185	8.429	2013	0.50	
Southern Ave/Stapley Dr Intersection Improvements	W/R	0.219	1.490	10.413	12.122	0.000	2.455	14.888	17.343	2013	0.50	
PEORIA												
83rd Avenue: Butler Rd to Mountain View	W/R	0.000	0.584	3.570	4.154	0.000	0.456	6.355	6.811	2013	1.00	
75th Ave at Thunderbird Rd: Intersection Improvement	W/R	0.462	1.431	0.000	1.893	0.000	0.681	5.549	6.230	2013	0.20	
Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave	W/R	11.618	9.016	0.000	20.634	0.000	50.277	0.000	50.277	2010	5.00	Project Completed
Lake Pleasant Pkwy: Dynamite Blvd to CAP	W/R	0.000	2.645	13.867	16.512	11.114	2.780	3.729	6.509	2014	2.50	
Lake Pleasant Pkwy: CAP to SR74/Carefree Hwy	W	0.000	0.000	0.000	0.000	0.000	0.000	3.544	3.544	2024	1.80	Advance ROW acquistion to occur in FY 2012
PHOENIX												
Sonoran Blvd: 15th Avenue to Cave Creek	W/R	0.000	18.208	14.364	32.572	0.000	30.993	30.838	61.831	2013	7.00	

Reimb. Reimbursement(s) YOE Year of Expenditure $ Dollars * Measured in centerline miles
FY Fiscal Year Expend Expended/Expenditures Est Estimated

STATUS OF RARF-FUNDED PROJECTS UNDERWAY IN FISCAL YEAR 2012
Consistent with the Fiscal Year 2012 ALCP updated on February 22, 2012

FACILITY/LOCATION	SCHEDULE FOR WORK (W) AND/OR REIMB. (R) FY 2012	REGIONAL FUNDING					TOTAL EXPENDITURES			FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb through FY11 (YOE$)	FY 2012 Est. Reimb. (2011$)	Est. Reimb FY13-FY26 (2011$)	Total Reimb FY06-FY26 (2011$, YOE$)	Unfunded Due to Deficit (2011$)	Expend through FY11 (YOE$)	Estimated Future Expend FY12-FY26 (2011$)	Total Expend FY06-FY26 (2011$,YOE$)			
SCOTTSDALE/CAREFREE												
Pima Rd: Thompson Peak Parkway to Pinnacle Peak Parkway	W/R	10.911	8.477	4.560	23.948	0.000	25.511	8.701	34.212	2012	1.50	
SCOTTSDALE												
Pima Rd: Via Linda to Via De Ventura	W	0.000	0.000	1.339	1.339	0.000	0.000	2.354	2.354	2013	1.30	
Pima Rd: Via De Ventura to Krail	W/R	0.000	4.057	3.454	7.511	0.000	10.732	0.000	10.732	2012	1.30	
Pima Rd: Thomas Rd to McDowell Rd	W	0.000	0.000	6.080	6.080	0.000	0.350	8.342	8.692	2013	1.00	
Northsight Blvd: Hayden to Frank Lloyd Wright Blvd	W/R	0.000	2.465	6.689	9.154	0.000	1.006	12.071	13.077	2013	0.35	
Frank Lloyd Wright at 76th/78th/82nd Street: Intersection Improvements	W/R	0.000	0.070	0.775	0.845	0.000	0.000	12.071	12.071	2014	0.50	
Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Parkway	W/R	0.694	1.229	9.672	11.595	0.000	2.059	29.213	31.273	2013	2.00	
Shea Blvd at 120/124th St: Intersection Improvements	W/R	0.000	1.400	0.000	1.400	0.000	1.089	0.910	2.000	2012	0.40	
Shea Blvd: SR-101L to 96th St: ITS Improvements	W/R	0.000	0.433	0.000	0.433	0.000	0.619	0.000	0.619	2010	1.00	
Shea Blvd at Frank Lloyd Wright Blvd: Intersection Improvements	W	0.000	0.000	0.664	0.664	0.000	0.685	0.263	0.948	2012	0.25	
Shea Blvd at 125th St: Intersection Improvements	W	0.000	0.000	0.880	0.880	0.000	0.126	1.132	1.257	2012	0.25	
Shea Blvd at 136th St: Intersection Improvements	W	0.000	0.000	0.376	0.376	0.000	0.000	0.537	0.537	2012	0.25	

Reimb. Reimbursement(s) YOE Year of Expenditure $ Dollars * Measured in centerline miles
FY Fiscal Year Expend Expended/Expenditures Est Estimated

TABLE 4B. ARTERIAL LIFE CYCLE PROGRAM

STATUS OF FEDERALLY FUNDED PROJECTS UNDERWAY IN FISCAL YEAR 2012

Consistent with the Fiscal Year 2012 ALCP updated on February 22, 2012

FACILITY/LOCATION	SCHEDULE FOR WORK (W) AND/OR REIMB. (R) FY 2012	OBLIGATIONS					TOTAL EXPENDITURES			FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Obligated through FFY11	Est. Obligations FFY12	Est. Obligations FFY13-FFY26	Total Federal Funding FFY2006 - FFY2026	Unfunded Due to Deficit (2011$)	Expend through FY11 (YOE$)	Estimated Future Expend FY12-FY26 (2011$)	Total Expend FY06-FY26 (2011$,YOE$)			
MARICOPA COUNTY												
Northern Pkwy: Sarival to Dysart	W/R	57.618	0.000	0.000	57.618	0.000	21.085	61.226	82.311	2013	4.10	
Northern Pkwy: ROW Protection	W/R	2.601	0.000	0.000	2.601	0.000	3.716	0.000	3.716	2011	12.50	
Northern Parkway: Dysart to 111th	W	0.000	0.000	16.568	16.568	0.000	0.000	23.669	23.669	2014	2.50	
Northern Parkway: Sarival Overpass	W	0.000	0.000	3.180	3.180	0.000	0.000	4.543	4.543	2013	0.10	Construction Project Only
Northern Parkway: Reems Overpass	W	0.000	0.000	7.315	7.315	0.000	0.000	3.135	3.135	2014	0.10	
Northern Parkway: Litchfield Overpass	W	0.000	0.000	8.199	8.199	0.000	0.000	11.713	11.713	2015	0.10	
Northern Parkway: Agua Fria Bridge	W	0.000	0.000	5.804	5.804	0.000	0.000	8.291	8.291	2015	0.10	
PHOENIX												
Avendia Rio Salado: 51st Avenue to 7th Street	W/R	0.000	23.189	21.505	44.693	0.000	18.298	53.524	71.822	2015	6.00	Work and funds advanced to FY12
Black Mountain Blvd: SR-51 and Loop 101/Pima Fwy to Deer Valley Rd	W/R	1.300	1.288	19.942	22.530	0.000	3.737	28.489	32.226	2014	2.00	Work and funds deferred from FY12

Reimb. Reimbursement(s) YOE Year of Expenditure $ Dollars * Measured in centerline miles

FY Fiscal Year Expend Expended/Expenditures Est Estimated

Agenda Item #4C

MARICOPA ASSOCIATION OF GOVERNMENTS
INFORMATION SUMMARY... for your review and action

DATE:
April 10, 2012

SUBJECT:
Project Changes – Amendments and Administrative Modifications to the FY 2011-2015 MAG Transportation Improvement Program, and the FY 2011 Arterial Life Cycle Program.

SUMMARY:
The Fiscal Year (FY) 2011-2015 Transportation Improvement Program (TIP) and Regional Transportation Plan 2010 Update, were approved by the MAG Regional Council on July 28, 2010 and have been modified 13 times with the last amendment approved by the Regional Council on March 28, 2012. Since then, there have been requests from Arizona Department of Transportation (ADOT), cities, and Maricopa County to modify projects in the program.

The attachment listings in Table A (modifications to the TIP) and Table B (non-TIP) are for the FY 2012 Arterial Life Cycle Program (ALCP) that includes changes to the Northern Parkway project which Maricopa County is requesting to advance construct Phase II. All changes to Northern Parkway relate to an updated cost and work schedule. The fiscal balance for funds programmed for this project per year are maintained. These adjustments are necessary for the project to move forward.

Table C in the attachment are project change requests from ADOT, Mesa, Phoenix, and Scottsdale which contain clerical and minor adjustments to financial information on several projects, one project deletion, one project split, one new design project, and two pavement preservation projects.

Table D in the attachment are project change requests from ADOT that meet the MAG Regional Freeway Program definition of Material Cost Changes. The Material Change Policy is attached for your reference.

All of the projects to be added and modified may be categorized as exempt from conformity determinations and administrative modifications do not require a conformity determination.

PUBLIC INPUT:
None.

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

CONS: None.

TECHNICAL & POLICY IMPLICATIONS:
TECHNICAL: Projects that wish to utilize transportation federal funds need to be shown in the TIP in the year that they expect to commence and may need to undergo an air quality conformity analysis or consultation.

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

PRIOR ACTIONS:

MAG Management Committee: This item is on the April 11, 2012 MAG Management Committee agenda. An update will be provided on action taken by the committee.

MAG Transportation Review Committee: On March 29, 2012 this item was recommended for approval.

MEMBERS ATTENDING

Scottsdale: David Meinhart, Chair
Avondale: David Fitzhugh, Vice-Chair
ADOT: Robert Samour for Floyd Roehrich
Buckeye: Jose Heredia for Scott Lowe
Chandler: Dan Cook for Patrice Kraus
El Mirage: Lance Calvert
Fountain Hills: Randy Harrel
* Gila Bend: Eric Fitzer
* Gila River: Doug Torres
Gilbert: Kurt Sharp for Leah Hubbard
Glendale: Terry Johnson
Goodyear: Cato Esquivel
Guadalupe: Gino Turrubiartes
Litchfield Park: Paul Ward for Woody Scoutten
Maricopa County: John Hauskins
Mesa: Jeff Martin for Scott Butler
Paradise Valley: Bill Mead
Peoria: Andrew Granger
Phoenix: Ray Dovalina for Rick Naimark
Queen Creek: Tom Condit
RPTA: Bryan Jungwirth
Surprise: Bob Beckley
Tempe: Chad Heinrich
Valley Metro Rail: John Farry
* Wickenburg: Rick Austin
Youngtown: Grant Anderson for Lloyce Robinson

EX-OFFICIO MEMBERS ATTENDING

* Street Committee: Charles Andrews, Avondale
Bicycle/Pedestrian Committee: Katherine Coles, City of Phoenix
* ITS Committee: Debbie Albert, Glendale
* Transportation Safety Committee: Julian Dresang, City of Tempe

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

ACTION NEEDED:

Recommend approval of amendments and administrative modifications to the FY 2011-2015 MAG Transportation Improvement Program, the FY 2012 Arterial Life Cycle Program and to the Regional Transportation Plan 2010 Update, as appropriate.

CONTACT PERSON:

Teri Kennedy, Transportation Improvement Program Manager, (602) 254-6300.

TABLE A. Amendments and Administrative Modifications to the FY2011-2015 TIP and the FY2012 ALCP

Maricopa County has requested to advance construct Phase II of Northern Parkway, which includes the projects listed in Tables A and B below. The Arizona Department of Transportation (ADOT) and the Federal Highway Administration require advanced work to be reflected in the Transportation Improvement Program (TIP) if the work is programmed to occur during the current TIP window (Fiscal Years 2011 – 2015). Reimbursements also must be programmed in the TIP if (1) the reimbursement is programmed to occur in the current TIP window and (2) the reimbursement will occur in a different fiscal year than work occurred. Maricopa County also has requested to reallocate existing programmed ALCP federal funds allocated to Northern Parkway to different segments of the corridor based on the anticipated program schedule. The total amount of federal funding in the ALCP allocated to the program has not changed, and federal funds were not advanced in the requested programming.

Table A includes all the requested project changes to be made to the FY 2011 – 2015 TIP and the FY 2012 Arterial Life Cycle Program (ALCP). Table B includes all requested project changes to be made to the FY 2012 ALCP only. The federal funds in the ALCP were not advanced in the requested programming.

Agency	Work Year	Reimb. Year	TIPIDN	Location	Work	Miles	Lanes Before	Lanes After	Funding	Federal	Regional	Local	Total	Reimb Fund Type	Reimb. Amount	Note
Maricopa County	~~2012~~	~~2013~~	~~MMA12-106RZ~~	Northern Parkway: Sarival to Dysart	Reimbursement for roadway widening	4	4	6	STP-MAG	~~$ 7,030,207~~	~~$ -~~	~~$ -~~	~~$ 7,030,207~~	STP-MAG	$ 7,030,207	Amend. Delete line item from the TIP. ALCP funds reallocated to other segments. Clerical error on TRC version, miles was incorrectly listed as 2 miles.
Maricopa County	~~2012~~	~~2014~~	~~MMA12-106RZ2~~	Northern Parkway: Sarival to Dysart	Reimbursement for roadway widening	4	4	6	STP-MAG	~~$ 5,000,000~~	~~$ -~~	~~$ -~~	~~$ 5,000,000~~	STP-MAG	$ 5,000,000	Amend. Delete line item from the TIP. ALCP funds reallocated to other segments. Clerical error on TRC version, miles was incorrectly listed as 2 miles.
Maricopa County	~~2012~~	~~2015~~	~~MMA12-106RZ3~~	Northern Parkway: Sarival to Dysart	Reimbursement for roadway widening	4	4	6	STP-MAG	~~$ 4,030,207~~	~~$ -~~	~~$ -~~	~~$ 4,030,207~~	STP-MAG	$ 4,030,207	Amend. Delete line item from the TIP. ALCP funds reallocated to other segments. Clerical error on TRC version, miles was incorrectly listed as 2 miles.
Maricopa County	2013	2013	MMA13-106CLZ	Northern Parkway: Sarival to Dysart	Construct and landscape roadway widening	4	4	6	HURF	$ 495,970	$ -	$ 27,758	$ 523,728	STP-MAG	$ 495,970	Amend. Add line item to the TIP. Work continued from previous FFYs. Clerical error on TRC version, miles was incorrectly listed as 2 miles.
Maricopa County	2014	2014	MMA14-106CLZ	Northern Parkway: Sarival to Dysart	Construct and landscape roadway widening	4	4	6	HURF	$ 2,409,973	$ -	$ 134,877	$ 2,544,850	STP-MAG	$ 2,409,973	Amend. Add line item to the TIP. Work continued from previous FFYs. Clerical error on TRC version, miles was incorrectly listed as 2 miles.
Maricopa County	2012	2013	MMA11-923	Northern Parkway: Dysart to 111th	Design bridge construction and roadway widening	2.5	2	4	HURF	$ -	$ -	$ 242,000	$ 242,000	STP-MAG	$ 169,400	Amend. Change in project scope to include bridge. Total work phase cost increased.
Maricopa County	2013	2013	MMA11-923RZ	Northern Parkway: Dysart to 111th	Reimbursement for design of bridge construction and roadway widening	2.5	2	4	STP-MAG	$ 169,400	$ -	$ -	$ 169,400	STP-MAG	$ 169,400	Amend. Add line item in the TIP. Reimbursement for work in FFY12. Received reallocated ALCP funds.
Maricopa County	2013	2013	MMA13-118DZ	Northern Parkway: Dysart to 111th	Design bridge construction and roadway widening	2.5	2	4	STP-MAG	$ 1,600,967	$ -	$ 686,129	$ 2,287,095	STP-MAG	$ 1,600,967	Amend. Add new line item to the TIP. Total work phase cost increased. Received reallocated ALCP funds.
Maricopa County	2014	2014	MMA14-118DZ	Northern Parkway: Dysart to 111th	Design bridge construction and roadway widening	2.5	2	4	STP-MAG	$ 651,204	$ -	$ 279,087	$ 930,291	STP-MAG	$ 651,204	Amend. Add new line item to the TIP. Total work phase cost increased. Received reallocated ALCP funds.
Maricopa County	2012	2013	MMA11-922	Northern Parkway: Dysart to 111th	Acquisition of right-of-way for bridge construction and roadway widening	2.5	2	4	HURF	$ -	$ -	$ 1,630,134	$ 1,630,134	STP-MAG	$ 1,141,094	Amend. Changed project scope to include bridge. Increased work phase total cost. Received reallocated ALCP funds.
Maricopa County	2013	2013	MMA11-922RZ	Northern Parkway: Dysart to 111th	Reimbursement for acquiring of right-of-way for bridge construction and roadway widening	2.5	2	4	STP-MAG	$ 1,141,094	$ -	$ -	$ 1,141,094	STP-MAG	$ 1,141,094	Amend. Add new line item to the TIP. Reimbursement advanced from FFY16 to FFY12. Received reallocated ALCP funds.
Maricopa County	2013	2013	MMA13-118RWZ	Northern Parkway: Dysart to 111th	Acquisition of right-of-way for bridge construction and roadway widening	2.5	2	4	STP-MAG	$ 865,197	$ -	$ 370,799	$ 1,235,996	STP-MAG	$ 865,197	Amend. Changed project scope to include bridge. Increased work phase total cost. Received reallocated ALCP funds.
Maricopa County	2013	2013	MMA13-118RWZ2	Northern Parkway: Dysart to 111th	Acquisition of right-of-way for bridge construction and roadway widening	2.5	2	4	HURF	$ 815,890	$ -	$ 349,667	$ 1,165,557	STP-MAG	$ 815,890	Amend. Add new line item in the TIP. Increased work phase total cost. Received reallocated ALCP funds.
Maricopa County	2014	2014	MMA14-113RWZ	Northern Parkway: Dysart to 111th	Acquisition of right-of-way for bridge construction and roadway widening	2.5	2	4	STP-MAG	$ 3,205,268	$ -	$ 1,373,686	$ 4,578,954	STP-MAG	$ 3,205,268	Amend. Add new line item in the TIP. Increased work phase total cost. Received reallocated ALCP funds. Work to occur in FFY14.
Maricopa County	2014	2014	MMA14-113CX	Northern Parkway: Dysart to 111th	Construct bridge and roadway widening	2.5	2	4	STP-MAG	$ 327,638	$ -	$ 140,416	$ 468,055	STP-MAG	$ 327,638	Amend. Changed project scope to include bridge. Work deferred from FFY13 to FFY14. Increased total work phase cost. Received reallocated ALCP funds.
Maricopa County	2014	2015	MMA15-113CX	Northern Parkway: Dysart to 111th	Construct bridge and roadway widening	2.5	2	4	HURF	$ -	$ -	$ 5,757,438	$ 5,757,438	STP-MAG	$ 4,030,207	Amend. Changed project scope to include bridge. Increased total work phase cost. Received reallocated ALCP funds.
Maricopa County	2015	2015	MMA15-113RZ	Northern Parkway: Dysart to 111th	Reimbursement for constructing bridge and roadway widening	2.5	2	4	STP-MAG	$ 4,030,207	$ -	$ -	$ 4,030,207	STP-MAG	$ 4,030,207	Amend. Add new line item in the TIP. Received reallocated ALCP funds.
Maricopa County	2014	2016	MMA14-113CZ	Northern Parkway: Dysart to 111th	Construct bridge and roadway widening	2.5	2	4	HURF	$ -	$ -	$ 5,370,353	$ 5,370,353	STP-MAG	$ 3,759,247	Amend. Add new line item in the TIP. Increased total work phase cost. Received reallocated ALCP funds.
Maricopa County	2015	2016	MMA15-113CZ	Northern Parkway: Dysart to 111th	Construct bridge and roadway widening	2.5	2	4	HURF	$ -	$ -	$14,543,914	$14,543,914	STP-MAG	$10,180,740	Amend. Add new line item in the TIP. Increased total work phase cost. Received reallocated ALCP funds.
Maricopa County	~~2012~~	~~2016~~	~~MMA14-111DZ~~	Northern Parkway: Agua Fria Bridge	Advance Design roadway widening	0.1	0	4	HURF	~~$ -~~	~~$ -~~	~~$ 614,143~~	~~$ 614,143~~	STP-MAG	$ 429,900	Amend. Delete project from TIP. Work to be conducted as part of Northern Parkway: Dysart to 111th Avenue. ALCP funds reallocated to other projects. Clerical error on TRC version,listed in table B (s/b table A).

TABLE A. (Continued)

Agency	Work Year	Reimb. Year	TIPIDN	Location	Work	Miles	Lanes Before	Lanes After	Funding	Federal	Regional	Local	Total	Reimb Fund Type	Reimb. Amount	Note
Maricopa County	~~2015~~	~~2016~~	~~MMA15-111CZ~~	Northern Parkway: Agua Fria Bridge	Advance Construct roadway widening	0.1	0	4	HURF	~~$ -~~	~~$ -~~	~~$ 7,676,790~~	~~$ 7,676,790~~	STP-MAG	$ 5,373,753	Amend. Delete project from TIP. Work to be conducted as part of Northern Parkway: Dysart to 111th Avenue. ALCP funds reallocated to other projects. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	~~2012~~	~~2016~~	~~MMA12-925~~	Northern Parkway: Reems Overpass	Design roadway widening	0.1	0	4	HURF	~~$ -~~	~~$ -~~	~~$ 1,040,582~~	~~$ 1,040,582~~	STP-MAG	$ 728,407	Amend. Delete project from the TIP. Work to be conducted in a new Project combined with the Litchfield Overpass project. ALCP funds reallocated to other segments. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	~~2013~~	~~2016~~	~~MMA13-008CZ~~	Northern Parkway: Reems Overpass	Construct roadway widening	0.1	0	4	HURF	~~$ -~~	~~$ -~~	~~$ 4,704,730~~	~~$ 4,704,730~~	STP-MAG	$ 3,293,311	Amend. Delete project from the TIP. Work to be conducted in a new Project combined with the Litchfield Overpass project. ALCP funds reallocated to other segments. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	~~2014~~	~~2017~~	~~MMA14-008CZ~~	Northern Parkway: Reems Overpass	Construct roadway widening	0.1	0	4	HURF	~~$ -~~	~~$ -~~	~~$ 4,704,730~~	~~$ 4,704,730~~	STP-MAG	$ 3,293,311	Amend. Delete project from the TIP. Work to be conducted in a new Project combined with the Litchfield Overpass project. ALCP funds reallocated to other segments. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	~~2012~~	~~2016~~	~~MMA14-110DZ~~	Northern Parkway: Litchfield Overpass	Design roadway widening	0.1	0	4	HURF	~~$ -~~	~~$ -~~	~~$ 1,172,064~~	~~$ 1,172,064~~	STP-MAG	$ 820,445	Amend. Delete project from the TIP. Work to be conducted in a new Project combined with the Reems Overpass project. ALCP funds reallocated to other segments. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	~~2014~~	~~2017~~	~~MMA14-110CZ~~	Northern Parkway: Litchfield Overpass	Construct roadway widening	0.1	0	4	HURF	~~$ -~~	~~$ -~~	~~$ 5,270,631~~	~~$ 5,270,631~~	STP-MAG	$ 3,689,442	Amend. Delete project from the TIP. Work to be conducted in a new Project combined with the Reems Overpass project. ALCP funds reallocated to other segments. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	~~2015~~	~~2017~~	~~MMA15-110CZ~~	Northern Parkway: Litchfield Overpass	Construct roadway widening	0.1	0	4	HURF	~~$ -~~	~~$ -~~	~~$ 5,270,631~~	~~$ 5,270,631~~	STP-MAG	$ 3,689,442	Amend. Delete project from the TIP. Work to be conducted in a new Project combined with the Reems Overpass project. ALCP funds reallocated to other segments. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2012	2013	MMA12-117DZ	Northern Parkway: Reems and Litchfield Overpasses	Design roadway widening and overpasses	0.2	0	4	HURF	$ -	$ -	$ 331,053	$ 331,053	None	$ -	Amend. Add new project to the TIP. Combined Reems and Litchfield overpass projects. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2013	2013	MMA13-117DZ	Northern Parkway: Reems and Litchfield Overpasses	Design roadway widening and overpasses	0.2	0	4	STP-MAG	$ 347,606	$ -	$ 148,974	$ 496,580	STP-MAG	$ 347,606	Amend. Add new project to the TIP. Combined Reems and Litchfield overpass projects. Received reallocated ALCP funds. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2013	2013	MMA13-117CZ	Northern Parkway: Reems and Litchfield Overpasses	Construct roadway widening and overpass	0.2	0	4	HURF	$ -	$ -	$ 516,237	$ 516,237	None	$ -	Amend. Add new project to the TIP. Combined Reems and Litchfield overpass projects. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2014	2016	MMA14-117CZ	Northern Parkway: Reems and Litchfield Overpasses	Construct roadway widening and overpass	0.2	0	4	HURF	$ -	$ -	$ 9,808,503	$ 9,808,503	STP-MAG	$ 6,865,952	Amend. Add new project to the TIP. Combined Reems and Litchfield overpass projects. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2014	2016	MMA14-112DZ	Northern Parkway: Northern Avenue at Loop 101	Design roadway widening and overpasses	0.5	4	6	HURF	$ -	$ -	$ 1,072,371	$ 1,072,371	STP-MAG	$ 750,660	Amend. Increased total work phase cost. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2015	2016	MMA15-112DZ	Northern Parkway: Northern Avenue at Loop 101	Design roadway widening and overpasses	0.5	4	6	HURF	$ -	$ -	$ 500,000	$ 500,000	STP-MAG	$ 350,000	Amend. Add new line item to the TIP. Work to occur in FFY15. Increased total work phase cost. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2015	2016	MMA14-112RWZ	Northern Parkway: Northern Avenue at Loop 101	Acquire right-of-way for roadway widening and overpass	0.5	4	6	HURF	$ -	$ -	$ 3,342,340	$ 3,342,340	STP-MAG	$ 2,339,638	Amend. Deferred from FFY14 to FFY15. Clerical error on TRC version,listed in table B (s/b table A)..
Maricopa County	2015	2016	~~MMA15-112CZ~~	Northern Parkway: Northern Avenue at Loop 101	Construct roadway widening and overpass	0.5	4	6	STP-MAG	$ 1,123,232	$ -	$ 481,385	$ 1,604,617	STP-MAG	$ 1,123,232	Amend. Delete line item from the TIP. Worked deferred from FFY2015. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2015	2017	~~MMA15-112CZ2~~	Northern Parkway: Northern Avenue at Loop 101	Construct roadway widening and overpass	0.5	4	6	HURF	~~$ -~~	~~$ -~~	~~$ 5,549,846~~	~~$ 5,549,846~~	STP-MAG	$ 3,884,892	Amend. Delete line item from the TIP. Worked deferred from FFY2015. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2014	2016	MMA14-119DZ	Northern Parkway: Dysart Overpass	Design roadway widening and overpass	0.1	0	4	HURF	$ -	$ -	$ 500,000	$ 500,000	STP-MAG	$ 350,000	Amend. Add new project to the TIP. Work advanced from FFY16. Total work phase cost increased. Clerical error on TRC version,listed in table B (s/b table A).
Maricopa County	2015	2016	MMA15-119DZ	Northern Parkway: Dysart Overpass	Design roadway widening and overpass	0.1	0	4	HURF	$ -	$ -	$ 500,000	$ 500,000	STP-MAG	$ 350,000	Amend. Add new project to the TIP. Work advanced from FFY16. Total work phase cost increased. Clerical error on TRC version,listed in table B (s/b table A).

TABLE B. Amendments and Administrative Modifications the FY2012 ALCP (Non-TIP Project Changes)

Agency	Work Year	Reimb. Year	TIPIDN	Location	Work	Miles	Lanes Before	Lanes After	Funding	Federal	Regional	Local	Total	Reimb Fund Type	Reimb. Amount	Note
Maricopa County	2016	2016	NONE	Northern Parkway: Dysart to 111th	Reimbursement for constructing bridge and roadway widening	2.5	2	4	STP-MAG	$ 3,759,247	$ -	$ -	$ 3,759,247	STP-MAG	$ 3,759,247	Amend. Add new line item. Received reallocated ALCP funds. Previous table showed TIP ID. This version removed the TIP ID.
Maricopa County	2016	2016	NONE	Northern Parkway: Dysart to 111th	Reimbursement for constructing bridge and roadway widening	2.5	2	4	STP-MAG	$10,180,740	$ -	$ -	$10,180,740	STP-MAG	$10,180,740	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2016	2016	NONE	Northern Parkway: Reems and Litchfield Overpasses	Reimbursement for constructing roadway widening and overpass	0.2	0	4	STP-MAG	$ 6,865,952	$ -	$ -	$ 6,865,952	STP-MAG	$ 6,865,952	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2016	2016	NONE	Northern Parkway: Northern Avenue at Loop 101	Reimbursement for design of roadway widening and overpasses	0.5	4	6	STP-MAG	$ 750,660	$ -	$ -	$ 750,660	STP-MAG	$ 750,660	Amend. Received reallocated ALCP funds.
Maricopa County	2016	2016	NONE	Northern Parkway: Northern Avenue at Loop 101	Reimbursement for design of roadway widening and overpasses	0.5	4	6	STP-MAG	$ 350,000	$ -	$ -	$ 350,000	STP-MAG	$ 350,000	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2016	2016	NONE	Northern Parkway: Northern Avenue at Loop 101	Reimbursement for acquiring right-of-way for roadway widening and overpasses	0.5	4	6	STP-MAG	$ 2,339,638	$ -	$ -	$ 2,339,638	STP-MAG	$ 2,339,638	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2017	2017	NONE	Northern Parkway: Northern Avenue at Loop 101	Reimbursement for constructing roadway widening and overpass	0.5	4	6	STP-MAG	$ 3,884,892	$ -	$ -	$ 3,884,892	STP-MAG	$ 3,884,892	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2016	2016	NONE	Northern Parkway: Dysart Overpass	Reimbursement for design of roadway widening and overpasses	0.1	0	4	STP-MAG	$ 350,000	$ -	$ -	$ 350,000	STP-MAG	$ 350,000	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2016	2016	NONE	Northern Parkway: Dysart Overpass	Reimbursement for design of roadway widening and overpasses	0.1	0	4	STP-MAG	$ 350,000	$ -	$ -	$ 350,000	STP-MAG	$ 350,000	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2016	2017	NONE	Northern Parkway: Dysart Overpass	Design roadway widening and overpass	0.1	0	4	HURF	$ -	$ -	$ 2,784,856	$ 2,784,856	STP-MAG	$ 1,949,399	Amend. Total work phase cost increased.
Maricopa County	2017	2017	NONE	Northern Parkway: Dysart Overpass	Reimbursement for design of roadway widening and overpasses	0.1	0	4	STP-MAG	$ 1,949,399	$ -	$ -	$ 1,949,399	STP-MAG	$ 1,949,399	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2017	2017	NONE	Northern Parkway: Dysart Overpass	Construct roadway widening and overpass	0.1	0	4	STP-MAG	$16,310,508	$ -	$ 6,990,218	$23,300,726	STP-MAG	$16,310,508	Amend ALCP. Total work phase cost increased. Received reallocated funds.
Maricopa County	2017	2018	NONE	Northern Parkway: Dysart Overpass	Construct roadway widening and overpass	0.1	0	4	HURF	$ -	$ -	$ 6,281,408	$ 6,281,408	STP-MAG	$ 4,396,986	Amend ALCP. Total work phase cost increased.
Maricopa County	2018	2018	NONE	Northern Parkway: Dysart Overpass	Reimbursement for constructing roadway widening and overpass	0.1	0	4	STP-MAG	$ 4,396,986	$ -	$ -	$ 4,396,986	STP-MAG	$ 4,396,986	Amend ALCP. Received reallocated ALCP funds.
Maricopa County	2016	2016	NONE	Northern Parkway: Corridorwide ROW Protection	Acquire right-of-way for roadway widening	12.5	0	0	STP-MAG	$ 700,000	$ -	$ 300,000	$ 1,000,000	STP-MAG	$ 700,000	Amend ALCP. Total segment cost increased.
Maricopa County	2017	2017	NONE	Northern Parkway: Corridorwide ROW Protection	Acquire right-of-way for roadway widening	12.5	0	0	STP-MAG	$ 700,000	$ -	$ 300,000	$ 1,000,000	STP-MAG	$ 700,000	Amend ALCP. Total segment cost increased.
Maricopa County	~~2018~~	~~2020~~	NONE	Northern Parkway: Corridorwide ROW Protection	Acquire right-of-way for roadway widening	12.5	0	0	STP-MAG	~~$ -~~	~~$ -~~	~~$ 114,156~~	~~$ 114,156~~	STP-MAG	$ 79,909	Amend ALCP. Delete line item from ALCP. Reallocated ALCP funds. Work will not occur in FFY18.
Maricopa County	~~2019~~	~~2020~~	NONE	Northern Parkway: Corridorwide ROW Protection	Acquire right-of-way for roadway widening	12.5	0	0	STP-MAG	~~$ -~~	~~$ -~~	~~$ 114,156~~	~~$ 114,156~~	STP-MAG	$ 79,909	Amend ALCP. Delete line item from ALCP. Reallocated ALCP funds. Work will not occur in FFY19.
Maricopa County	~~2020~~	~~2020~~	NONE	Northern Parkway: Corridorwide ROW Protection	Acquire right-of-way for roadway widening	12.5	0	0	STP-MAG	~~$ -~~	~~$ -~~	~~$ 114,156~~	~~$ 114,156~~	STP-MAG	$ 79,909	Amend ALCP. Delete line item from ALCP. Reallocated ALCP funds. Work will not occur in FFY20
Maricopa County	2018	2018	NONE	Northern Parkway: Interim construction	Reimbursement for roadway widening	12.5	0	0	STP-MAG	$ 8,381,161	$ -	$ -	$ 8,381,161	STP-MAG	$ 8,381,161	Amend ALCP. New segment in the ALCP. Received reallocated ALCP funds.
Maricopa County	2019	2019	NONE	Northern Parkway: Interim construction	Reimbursement for roadway widening	12.5	0	0	STP-MAG	$ 9,178,747	$ -	$ -	$ 9,178,747	STP-MAG	$ 9,178,747	Amend ALCP. New segment in the ALCP. Received reallocated ALCP funds.
Maricopa County	2020	2020	NONE	Northern Parkway: Interim construction	Reimbursement for roadway widening	12.5	0	0	STP-MAG	$ 319,636	$ -	$ -	$ 319,636	STP-MAG	$ 319,636	Amend ALCP. New segment in the ALCP. Received reallocated ALCP funds.

Table C. Non-ALCP Project Changes to the Fiscal Year 2011-2015 MAG Transportation Improvement Program

4/11/2012

HIGHWAY

TIP #	Agency	Project Location	Project Description	Fiscal Year	Length miles	Lanes Before	Lanes After	Fund Type	Local Cost	Federal Cost	Regional Cost	Total Cost	Requested Change
~~DOT12-832~~	~~ADOT~~	~~10 : Perryville Rd TI~~	~~Design traffic interchange~~	~~2012~~	~~0.2~~	~~TI~~	~~TI~~	~~RARF~~	$0	$0	~~$1,300,000~~	~~$1,300,000~~	Delete design project from FY 2012. The scope and funds for this project will be added to the proposed design build project at the Perryville Rd TI in FY 2013.
DOT13-929	ADOT	101 (Pima Fwy): Shea Blvd to Chaparral Rd	Design general purpose lane	2012	5	8	10	RARF	$0	$0	$3,400,000	$3,400,000	Admin Mod: Decrease total budget by $3,000,000 (Decrease of Regional funds $3,000,000). Split project into two (see DOT12-139): Change name to Shea Blvd to Chaparral Rd from Shea Blvd to SR202L, Red Mtn Fwy.
DOT12-139	ADOT	101 (Pima Fwy): Chaparral Rd to SR202L (Red Mtn Fwy)	Design general purpose lane	2012	5	8	10	RARF	$0	$0	$3,000,000	$3,000,000	Amend: Original DOT13-929 split into two projects. Add a new roadway design project in FY 2012 for $3,000,000.
DOT12-100	ADOT	Mt. Ord - Slate Creek	Pavement Preservation	2012	6.0	4	4	NHS	$199,500	$3,300,500	$0	$3,500,000	Admin Mod: Change name to "Mt. Ord - Slate Creek" from "MP 218 - 224".
DOT12-140	ADOT	202 (Santan Fwy): Lindsay Rd to Gilbert Rd	Convert flat rate load centers to metered service for freeway lighting (pilot project).	2012	1	6	6	NHS	$10,431	$172,569	$0	$183,000	Amend: Add a new pilot project in FY 2012 for $183,000.
DOT12-141	ADOT	74: Picacho Wash to Jct I-17	Design pavement preservation	2012	8.8	2	2	STP-AZ	$17,955	$297,045	$0	$315,000	Amend: Add a new design pavement preservation project in FY 2012 for $315,000.
DOT12-142	ADOT	87: Hunt Highway to Riggs Rd	Construct pavement preservation	2012	1.14	4	4	STP-AZ	$39,900	$660,100	$0	$700,000	Amend: Add a pavement preservation construction project in FY 2012 for $700,000.
MES13-902	Mesa	West Side Real Time Adaptive Project (initial deployment in Fiesta district), West city limits to Country Club drive, Broadway to Baseline	Upgrade central traffic control system software to accommodate a lite version of adaptive control	2013	12	4	4	CMAQ	$150,000	$318,182	$0	$468,182	Amend TIP: Update the location description to better specify the initial deployment area. (Per CIP FY 11-16, page 140 ITS 022)
MES13-906	Mesa	Bluetooth sensor deployment at approximately 80 intersections to determine travel times along key Mesa E-W and N-S corridors	Construction	2013	40	4	4	CMAQ	$200,750	$381,818	$0	$582,568	Amend TIP: Update the location description, better specify technology, cost increase. Per CIP Fy 11-16, page 132 ITS 023
PHX12-104	PHOENIX	Various Locations	Pontic/Virtis Software for bridge inspections	2012				Bridge	$5,299	$87,663	$0	$92,962	Change local and fed Cost, and funding source. Total project decreased by $1,018. Federal funding of $87,663 utilized from Statewide funds.
PHX12-105	PHOENIX	Various Locations	Equipment rental for bridge inspections	2012				Bridge	$11,030	$182,471	$0	$193,500	Change local and fed Cost, and funding source. Total project increased by $49,759. Federal funding of $182,471 utilized from Statewide funds.
SCT13-102	Scottsdale	Hayden Rd/Thomas Rd	Design Intersection improvement	2012	0.5	N/A	N/A	HSIP	$8,550	$141,450	$0	$150,000	Increase project cost $2,222 local, $36,747 Fed, total work phase cost increase $38,969. The additional cost increase available from HSIP (statewide) funds. Work phase was originally programmed under award budget.
SCT12-102	Scottsdale	Hayden Rd/Thomas Rd	Construct Intersection improvement	2014	0.5	N/A	N/A	HSIP	$74,990	$1,240,631	$0	$1,315,621	Increase project cost $11,702 local, $193,600 Fed, total work phase cost increase $205,302. The additional cost increase available from HSIP (statewide) funds. Work phase was originally programmed under award budget.
~~MAG12-803~~	~~MAG~~	~~Regionwide~~	~~Regionwide bicycle safety education program~~	~~2012~~	~~----~~	~~----~~	~~----~~	~~CMAQ~~	~~$73,000~~	~~$165,000~~	~~$0~~	~~$238,000~~	Amend: Delete project form TIP; project is to be funded with PL funds in the UPWP.

Table D. Material Changes To the Regional Freeway Program and to the Fiscal Year 2011-2015 MAG Transportation Improvement Program

4/11/2012

HIGHWAY

TIP #	Agency	Project Location	Project Description	Fiscal Year	Length miles	Lanes Before	Lanes After	Fund Type	Local Cost	Federal Cost	Regional Cost	Total Cost	Requested Change
DOT12-103	ADOT	10: Wintersburg Rd and Sun Valley Parkway	Pavement Preservation	2012	0.5	4	4	IM	$119,700	$1,980,300	$0	$2,100,000	Amend: Increase total project budget by $1,669,000 ($95,133 Local, $1,573,867 Federal). Change name to Wintersburg Rd. TI and Sun Valley Parkway TI, from Sun Valley Parkway TI. This project will include milling and replacing pavement on ramps and cross roads with AC. The project originally included only the Sun Valley Parkway TI and is being expanded to also include the Wintersburg TI, which is also in need of pavement work. Funds for this project will be provided by ADOT statewide subprograms, which will not affect RTP cash flow.
DOT12-131	ADOT	51: Glendale Ave to SR101L (Pima)	Construct FMS	2012	9	8	8	CMAQ/ STP-AZ	$177,270	$2,932,730	$0	$3,110,000	Amend: Increase total project budget by $1,110,000 (Federal: CMAQ remains unchanged, increase to add STP-AZ $1,046,730, and $63,270 local). The cost increase is due to extending the original FMS project limits from "Bell Rd - SR101L" to "Glendale Ave - SR101L", in order to address additional FMS functions. The work between Glendale Ave. and Bell Rd. includes: (1) install ramp meters, (2) replace acoustic detectors with loop detectors, and (3) upgrade FMS in the corridor from analog to digital. Work between Bell Rd. and SR 101 on SR 51 involves installing ramp meters, CCTV cameras, loops, and DMS signs. Funding for the cost increase will be provided by ADOT statewide program contingency funds, which will not affect RTP cash flow.
DOT10-6C29	ADOT	60 (Grand Ave): 71st Ave to McDowell Rd, Phase 1	Roadway improvements and Pavement Preservation	2012	10	6	6	NHS	$0	$18,199,900	$1,100,100	$19,300,000	Amend: Increase total project budget by $3,900,000 ($222,300 Local, $3,677,700 Federal) from $15,400,000 to $19,300,000. The cost increase is due to the addition of pavement preservation work to the scope of the project. It is more efficient to combine the pavement preservation work with this project than to develop a separate pavement preservation project. Funds for this project will be provided by ADOT district minor project funds, which will not affect RTP cash flow.
DOT12-106	ADOT	87: Jct SR202L to Gilbert Rd	Pavement Preservation	2012	5.2	6	6	NHS	$199,500	$3,300,500	$0	$3,500,000	Amend: Increase total project budget by $1,400,000 ($79,800 Local, $1,320,200 Fed). The cost increase is due to a scope change from the original milling & replacing 1/2" friction course (only), to include milling & replacing 2" existing pavement, plus the 1/2" friction course. The additional milling & replacing are necessary because underlying cracks and rutting would propagate through a newly placed friction course and significantly shorten the life of the pavement preservation project. Funds for this project will be provided by ADOT statewide subprograms, which will not affect RTP cash flow.

Material Change Policy for the
MAG Regional Freeway Program

The 1991 Performance Audit for the MAG Regional Freeway Program recommended that:

> Any significant program changes which have major priority or fiscal implications need to be resolved through the involvement of the MAG Regional Council. This body of elected officials can and should provide a valuable forum for assessing and guiding decisions regarding the scope, timing, and financing of the MAG Program at the program and corridor levels. (Recommendation 4.47 of the 1991 Performance Audit of the MAG Freeway Program.)

Since the 1991 Audit, MAG has processed all changes to budgets, project scope, or schedules requested by the Arizona Department of Transportation (ADOT) through the MAG Regional Council for approval. With seven years of project history and with the recommendation of the 1997 Performance Audit, MAG and ADOT are proposing to limit the requested changes that are processed through the Regional Council to those that are material. Under this proposal, all changes will be provided to MAG, however, only the changes that meet definition of **"**material change" will be forwarded to the Regional Council for action. Requested changes, including those that are below the material change threshold, will be provided to the MAG Transportation Review Committee (TRC) for information. If a requested change must be expedited to meet ADOT's project schedule, a material change may go to the Management Committee and Regional Council without going to the TRC first.

Definition of Material Change

A. **Material Cost Change:** An increase in the cost of a project that is more than five (5) percent of the adopted project budget, but not less than $500,000 or any increase greater than $2.5 million.

B. **Material Scope Change:** A change in a project scope that results in a material cost change and all scope changes that modify project limits by a mile or more, a horizontal alignment change outside of the adopted corridor limits that requires an updated environmental assessment, a vertical alignment or cross-section profile modification that causes the profile classification to change from depressed, at grade or elevated, changes to an interchange location of a 1/4 mile or more, adds design elements (including additional lanes), or adds a new project to the program. Any scope change that causes a material cost change to occur must be approved by the Regional Council.

If the material scope change is requested by a local jurisdiction and meets the definition of an enhancement, then the local jurisdiction must also provide the necessary funding to complete the enhancement. If the material scope change is requested by ADOT, the cost of the scope change, if approved, can be paid from Regional Freeway System funding with the concurrence of the Regional Council. (See A.R.S 28-6353)

According to A.R.S. 28-6351, enhancement means an addition that exceeds generally accepted engineering or design standards for the specific type of facility. ADOT should ensure that the design elements of each new segment meet generally accepted engineering or design standards adopted or accepted for general use by ADOT and are supported by traffic volumes and patterns, the need to serve major public facilities and the need to provide a balanced, multimodal transportation system for Maricopa County.

C. **Material Schedule Change:** A change in the approved schedule for the start of design, right of way, or construction that causes: (1) completion to be delayed by more than three months, or, (2) the completion of the construction phase of the segment to be delayed beyond the year shown on the latest Certified Regional Freeway System map. For the purposes of this policy, completion means that the segment is open to traffic.

Process to Review and Approve Changes

A. ADOT will forward all requested changes to MAG.

B. MAG will review each requested change with respect to the definition of material change. Each material change will be reviewed for the impact on the budget, schedule and scope of the MAG Freeway Program.

C. All of the requested changes, except expedited changes that must be forwarded directly to the Management Committee, will be presented to the TRC as information. Those changes that represent material changes will be highlighted.

D. Material changes will be forwarded to the MAG Management Committee with a recommendation by MAG staff for approval or disapproval.

E. The material change and the recommendation of the MAG Management Committee will be forwarded to the MAG Regional Council for final action.

F. MAG advises ADOT of approved changes.

Approved by the MAG Regional Council May 27, 1998

Agenda Item #6

MARICOPA ASSOCIATION of GOVERNMENTS
302 North 1st Avenue, Suite 300 ▲ Phoenix, Arizona 85003
Phone (602) 254-6300 ▲ FAX (602) 254-6490

April 10, 2012

TO: Members of the Transportation Policy Committee

FROM: Bob Hazlett, P.E., Senior Engineering Manager

SUBJECT: SUMMARY OF WHITE PAPER RECOMMENDATIONS – MAG MANAGED LANES NETWORK DEVELOPMENT STRATEGY – PHASE I PROJECT

On November 15, 2010, the MAG Regional Council authorized procurement of consultant services to develop the MAG Managed Lanes Network Development Strategy - Phase I project. This multi-phase effort was in response to consideration for public-private-partnership (P3) opportunities in the Phoenix Metropolitan Area where high occupancy vehicle (HOV) lanes could be operated as high occupancy toll (HOT) lanes as part of an overall managed lanes strategy. Since the last presentation on this project to the Transportation Policy Committee in October 2011, the project consultant has developed eight planning papers on the following topics:

- Project Goals and Objectives
- Legal and Regulatory Issues
- HOV Hours of Operation
- HOV Occupancy
- HOV Separation Treatment
- Pricing and Tolling Methods
- Active Traffic Management and Managed Freeways

A summary of the recommendations from these papers is attached to this memorandum, and the links to the papers themselves can be found on the MAG website at: http://www.azmag.gov/Projects/Project.asp?CMSID=4190.

In addition to the attached information, the consultant has completed a Tier I screening of the MAG Regional Freeway system to identify segments that could be suitable for a priced managed lanes implementation. The Tier I screening considers existing and projected HOV demand, available capacity, and constructability as parameters for the assessment. The overall result of this screening has noted that the most favorable attributes for capacity and operations tend to contribute to least favorable characteristics for constructability. For example, the Tier I screening of SR-51/Piestewa Freeway suggests that existing and future travel demand are very favorable for priced managed lanes, but the ability to construct to full design standards, especially between the Interstate 10/SR-202L Mini-Stack and Northern Avenue would be difficult.

As information from the Tier I Screening is still under study, preliminary data from this effort will be presented to the Transportation Policy Committee in its briefing on Wednesday, April 18, 2012. Questions or comments related to the MAG Managed Lanes Network Development Strategy – Phase I project should be directed to me at 602 254-6300 or bhazlett@azmag.gov.

Managed Lanes Network Development Strategy – Phase I

White Paper
Summary of Recommendations

MARICOPA ASSOCIATION OF GOVERNMENTS

Prepared by:

PARSONS BRINCKERHOFF

In cooperation with:

ECONorthwest
HS Public Affairs

Revision History

Revision	Date	Description	Submitted by
1.0	04/06/2012	Initial draft for internal review	DJH
1.1	04/09/2012	Draft for client review	DJH

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1.0 BACKGROUND

The Maricopa Association of Governments (MAG) is working in cooperation with the Arizona Department of Transportation (ADOT), Federal Highway Administration (FHWA), and other regional partner agencies to explore the regional managed lanes system, including determining future needs for High-Occupancy Vehicle (HOV) system expansion and the potential for introducing enhanced lane management techniques such as value pricing in the form of High-Occupancy Toll (HOT) lanes, and active traffic management. The outcome of this effort will be a MAG Managed Lanes Network Development Strategy – Phase I Report that will guide future planning and investment in HOV and Managed Lanes facilities in the region.

To support the evaluation of the managed lanes network in the MAG region, a series of technical "white papers" have been developed to examine the relevant issues by drawing upon the substantial and growing research and experience on managed lanes around the nation. These white papers will assess the pros and cons associated with each relevant issue to better enable the regional partners to reach conclusions on the feasibility and specific technical aspects of managed lanes for the Phoenix area. The complete series of white papers will be made available for review on the MAG website. The following is a bulleted summary of the key recommendations of the policy and practice white papers. The subsequent sections provide additional narrative regarding the policy and practice recommendations, in no particular order of priority.

1.1. Regional Managed Lanes Goals and Objectives

Goals	Objectives
Improved Mobility	• Reduce travel times and improve travel time reliability • Manage travel demand and traffic congestion • Improve/maximum existing system infrastructure • Maximize use of technology • Increase capacity • Provide mobility options • Improve transit service options, efficiency and reliability
Revenue Alternatives	• Leverage existing revenue sources • Access new/alternative revenue sources • Accelerate project delivery to complete the system • Support ongoing operations and maintenance • Support transit service provision • Better plan future investments
Public and Political Support	• Support public education and outreach • Identify/foster political champions • Facilitate equitable distribution of costs whereby users pay for what they use
Improved Environmental Quality	• Provide air quality benefits • Enhance quality of life

1.2. Access Treatment

- Utilize near-continuous access design and operations
  - Maintain consistency with the current continuous access for the region's HOV lane system
  - Afford operational, enforcement and toll collection benefits of restricted access in strategic locations
  - Traffic conditions and other design, operational and cost considerations will determine specific segments for limited access

1.3. Lane Separation

- Continue current HOV lane separation techniques in conjunction with managed lanes
  - Primarily utilize a combination of painted line and painted buffer lane separation
  - Barrier separation where elevated segments (including Direct HOV ramps) or contraflow operations are involved.
- Begin modifying existing HOV markings to reflect the Manual of Uniform Traffic Control Devices (MUTCD)

1.4. Hours of Operation

- Expand hours of operation to ensure time savings and reliability throughout more of the day
  - Initially expand peak hours of operation
    (5:00 AM to 10:00 AM; 2:00 PM to 7:00 PM)
  - Establish performance thresholds for expanding to daytime and weekend hours of operation
    (e.g., 5:00 AM to 9:00 PM)
  - Any change in hours of operation will require extensive public outreach and analysis to explore potential impacts to traffic.
- Ensure regional consistency to promote familiarity and support for managed lanes

1.5. Occupancy Requirements

- Maintain existing occupancy requirement of two or more persons per vehicle (2+) during initial deployment of HOT
  - Permit eligible carpools to use managed lanes facilities toll-free
- Require all managed lanes users to carry a transponder with switchable settings to declare carpool status
  - Simplify enforcement while ensuring flexibility to adjust over time
- Ensure regional consistency in occupancy requirements
  - Possibly utilize different uniform occupancy requirement for all regional HOV facilities compared to regional HOT facilities

1.6. Pricing Methods

- Utilize variable pricing to manage lanes based on levels of congestion within segments of each facility.
    - Fixed-schedule variable pricing provides predictability for users
    - Dynamic variable pricing can better adjust for real-time demand
- Calculate tolls on a per mile basis but communicate toll rates to customers per-segment
    - Utilize per-facility pricing for full length trips on multi-segmented corridors

1.7. Active Traffic Management and Managed Freeways

- Active Traffic Management utilizes various Intelligent Transportation System technologies to dynamically manage and control traffic using following strategies:
    - Speed Harmonization/Lane Control
    - Queue Warning
    - Hard Shoulder Running
    - Junction Control
    - Dynamic Re-routing
    - Traveler Information
- Managed Freeways implement a comprehensive package of strategies to fully manage access to and demand for a freeway facility
    - Utilize integrated data collection sensors along the roadway and advanced system management tools to monitor and control real time traffic conditions to ensure a more consistent level of freeway performance

2.0 REGIONAL MANAGED LANE GOALS AND OBJECTIVES

Managed lane goals and objectives should be consistent with regional and statewide goals and objectives, and should represent one component of a larger congestion management planning effort, since managed lanes are only one of the many tools available. Although managed lane vision, goals, and objectives for central Arizona will be unique and specific to local needs, examples from other areas provide appropriate guidance as a basis for further consideration and development in a local context.

Building upon the vision and guiding principles for transportation the State of Arizona and MAG region, and goals and objectives for managed lanes in other areas, specific goals and objectives for managed lanes in the MAG region were identified by the Project Planning Partners Advisory Group. These goals and objectives will establish the parameters by which subsequent specific policy elements can be defined and the performance of managed lanes can ultimately be evaluated.

Table 2-1 MAG Region Managed Lanes Goals and Objectives

Goals	Objectives
Improved Mobility	• Reduce travel times and improve travel time reliability • Manage travel demand and traffic congestion • Improve/maximum existing system infrastructure • Maximize use of technology • Increase capacity • Provide mobility options • Improve transit service options, efficiency and reliability
Revenue Alternatives	• Leverage existing revenue sources • Access new/alternative revenue sources • Accelerate project delivery to complete the system • Support ongoing operations and maintenance • Support transit service provision • Better plan future investments
Public and Political Support	• Support public education and outreach • Identify/foster political champions • Facilitate equitable distribution of costs whereby users pay for what they use
Improved Environmental Quality	• Provide air quality benefits • Enhance quality of life

Overall, the Project Partners placed an emphasis on improving mobility over revenue alternatives, with providing travel time reliability being identified and the most important aspect of mobility. In balancing potentially conflicting mobility and revenue goals, the group placed 2/3 emphasis mobility and 1/3 revenue, where the emphasis on revenue should be used to meet the mobility goals. The group felt that utilizing revenue to leverage existing funding should be a priority over generating new revenue. Achieving political support was also viewed as a key goal to advocate and facilitate implementation of a network of managed lanes within the MAG region.

3.0 ACCESS TREATMENT

Arizona's experience with HOV lanes began with construction commencing in 1983, and completion of the first operational facility on I-10 in 1988. The lanes were (and continue to be) constructed with a continuous line and/or buffer separation design, as shown in Figure 3-1.

Figure 3-1 Sample Lane Separation Treatments on Phoenix-area HOV Lanes

There are three types of access to the existing HOV lanes in the Phoenix area, based upon the location within the corridors.

The first pertains to the mainline HOV lanes, where continuous access to the HOV lanes is provided at all points. Vehicles may cross the painted buffer, regardless of the width and appearance of the buffer at that point, provided such a movement otherwise conforms to moving vehicle guidance and safety requirements.

The remaining two conditions pertain to direct-access to the HOV lanes from other facilities. Freeway-to-freeway direct connectors provide dedicated freeway-to-freeway movement between HOV lanes without weaving, thus positively affecting operations across all lanes of travel at these interchanges. Direct access ramps (DAR) provide dedicated connections from intersecting arterial streets to the HOV lanes. In the MAG region, these direct-access provisions are collectively referred to as Direct HOV (DHOV) ramps. In both cases, the construction of these access ramps may be costly, but the operational benefits can be significant at key locations (Figure 3-2).

Figure 3-2 Sample DHOV Ramps in the Phoenix-area

As the requirements of the Phoenix area managed lane network are developed, it is recommended that a regional tolling approach utilizing near-continuous access design and operations be defined to best maintain consistency with the current continuous access system in place for the region's HOV lane system while affording the

operational, enforcement and toll collection benefits of restricted access in strategic locations. Prevailing traffic conditions and other design, operational and cost considerations will need to be evaluated to determine the specific segments or corridors that require the application of limited access to maximize the efficiency and effectiveness of a managed lanes network.

A regional preference for utilizing near-continuous access allows the region to focus subsequent efforts to identify system-based options for resolving various operational and enforcement issues associated with access to managed lanes. Preliminary options include the expanded use of technology and operational treatments that can positively affect compliance. Altogether, developing a near-continuous access managed lane system is possible – and desirable – but these issues must be addressed as planning and design of the managed lanes system proceeds.

Near-continuous access is currently utilized on managed lanes facilities in Salt Lake City, Utah, and Minneapolis, Minnesota, as depicted in Figure 3-3.

Figure 3-3 Sample Near-Continuous Access Managed Lanes

A: I-15 (Salt Lake City) **B: I-35W (Minneapolis)**

4.0 LANE SEPARATION

Three different approaches for separating managed lanes from adjacent general purpose lanes are typically used on facilities in the United States.

- Painted line/buffer separation (as found on HOV lanes throughout California, and priced managed lanes facilities including I-15 in Salt Lake City and SR-167 in Seattle)
- Traffic channelizer separation (as found on SR-91 in Orange County, California, I-10 in Houston, and I-95 in Miami)
- Barrier separation (as found on I-15 in San Diego and I-25 in Denver)

All HOV lanes in Arizona currently exhibit painted line/buffer separation approach of employing pavement markings to communicate the HOV lane(s) next to adjacent

general purpose traffic lanes. Solid single or double white (with chevrons) pavement markings are standard in Arizona. The 2009 Manual on Uniform Traffic Control Devices (MUTCD) updated the pavement markings guidance as they pertain to Line and Buffer Separated managed lanes (including both HOV lanes and priced managed lanes). The guidance is as follows:

- Prohibited access segments consist of double-solid white lines on either side of the buffer and chevron markings if the buffer is wider than 4 feet.
- Discouraged access segments consist of two solid white lines. The MUTCD is silent on the desired width of the discouraged-access segment.
- Permitted (open) access segments should consist of either single or double wide broken lines without buffer.

All three conditions are shown in Figure 4-1 and Figure 4-2 below.

Figure 4-1 Controlled Access Buffer-Separated Lane Markings (2009 FHWA MUTCD)

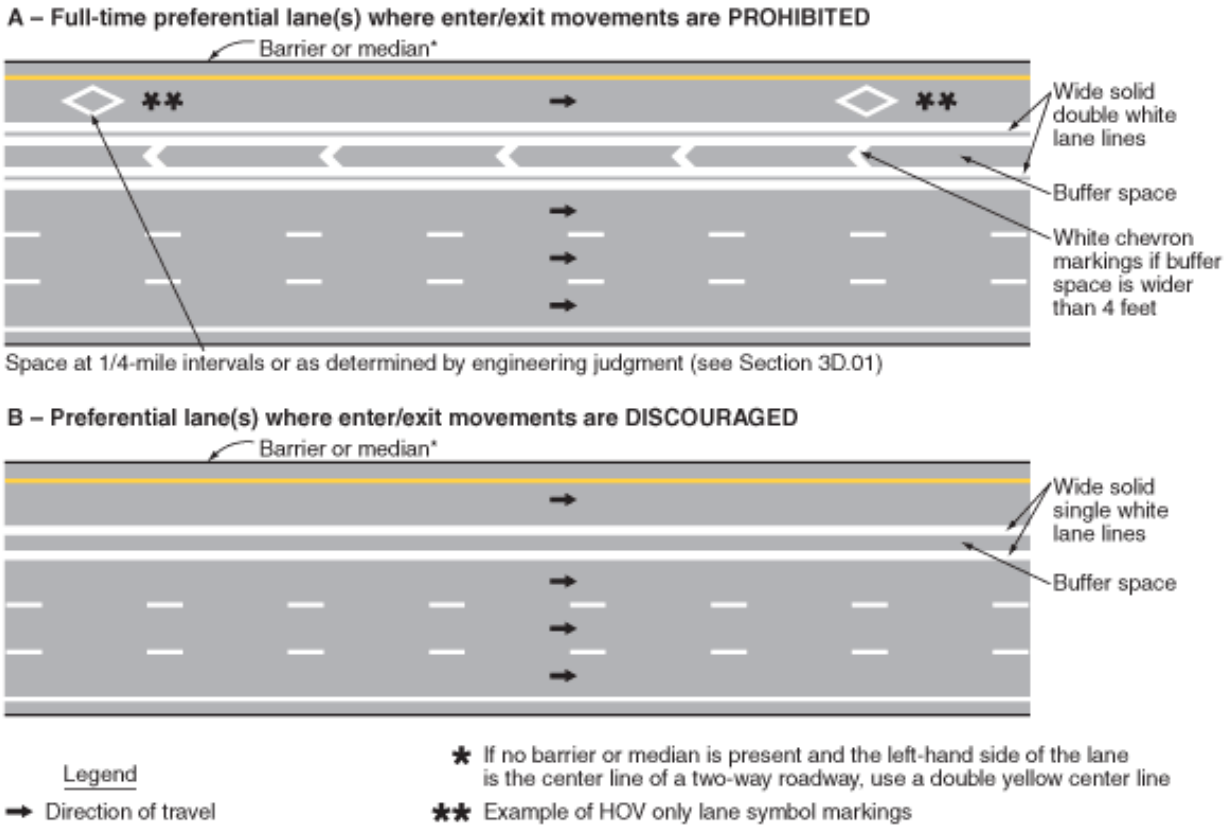
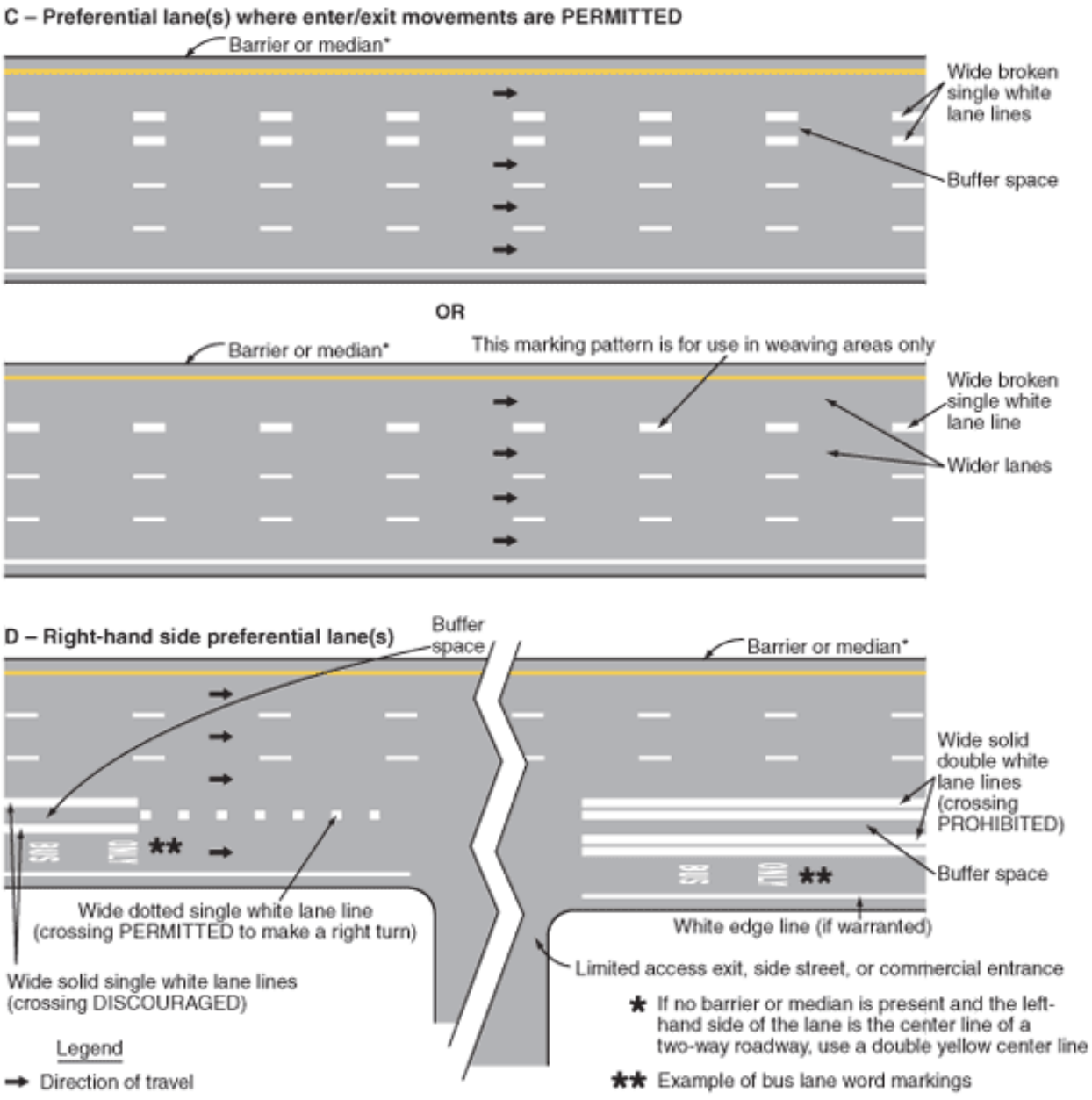


Figure 4-2 Open Access Buffer-Separated Lane Markings (2009 FHWA MUTCD)



For the MAG region, a continuation of the current HOV lane separation techniques is generally recommended in conjunction with the implementation of managed lanes. This approach would continue to primarily utilize a combination of painted line and painted buffer lane separation. Barrier separation would continue to be the preferred separation technique where elevated segments (including DHOV) or contraflow traffic conditions are involved.

It is recommended that ADOT begin the process of modifying the existing HOV lane marking to reflect the recently adopted provisions of the MUTCD. Specific

modifications involve the use of wide broken striping to designate continuous access, as illustrated previously in Figure 4-2. Modifying lane marking to be consistent with MUTCD will be critical to ensure limited access can be clearly demarked and enforced should managed lanes implementation in the region result in the use of near-continuous or limited access treatments. Similarly, ensuring lane markings reflect MUTCD requirements will ensure managed lanes facilities in the MAG region and consistent with applications elsewhere in the nation.

5.0 HOURS OF OPERATION

HOV lanes in Maricopa County currently operate part time. Occupancy restrictions on the lanes are in effect Monday through Friday between 6:00 AM to 9:00 AM, and 3:00 PM to 7:00 PM. During all other periods and during weekends the HOV lanes effectively operate as general purpose lanes and are open to all traffic.

As one of several tools available for managing traffic, implementing a consistent policy for hours of operation for a managed lane facility should complement other demand management strategies such as occupancy restrictions, tolling policy and access treatments. In the context of a managed lanes network spanning a metropolitan area, efforts should also be made to ensure that policies such as hours of operation are consistent to promote familiarity and support of the managed lanes concept. Any expansion to the hours of operation coupled with the introduction of pricing will require extensive public outreach and further analysis to explore potential impacts to traffic.

For the MAG region, it is recommended that the hours of operation expand from the current part-time hours of operation with the introduction of pricing to ensure time savings and reliability benefits throughout a greater portion of the day. Initially this approach could include expanded peak period hours of operation (e.g., 5:00 AM to 10:00 AM; 2:00 PM to 7:00 PM) as a means to maintain part-time operations while affording greater ability to manage HOT demand during the shoulders of the peak period. This approach could also be accompanied by establishing system performance thresholds that would trigger further incremental expansion of hours of operation to ultimately achieve daytime hours of operation (e.g., 5:00 AM to 9:00 PM) across the system. This approach could also include consideration for implementing weekend hours of operation that would extend the ability to manage HOT demand during weekends when recreational and special event traffic in the MAG region can create congestion at certain times in specific corridors (e.g., recreational traffic on southbound I-17 on Sunday or holiday Monday afternoons; sporting or concert event traffic near University of Phoenix Stadium, Sun Devil Stadium, downtown Phoenix, spring training baseball stadiums).

6.0 OCCUPANCY REQUIREMENTS

HOV lanes in Maricopa County currently operate part time. A uniform HOV 2+ (two-or-more persons per vehicle) minimum occupancy policy is enforced during these operational times.

Due to the high level of interconnectivity across the existing regional HOV system, it is recommended that a uniform minimum occupancy requirement for HOT facilities be applied in the MAG region to ensure consistency across corridors and to minimize driver confusion. However, due to the clear differences between HOT and HOV lane operations, it could be possible to utilize a different uniform occupancy requirement for all regional HOV facilities compared to regional HOT facilities. For the MAG region, it is recommended the existing carpool minimum occupancy requirement of two or more persons per vehicle (2+) be maintained during the initial deployment of HOT operations to ensure existing carpool users continue to be rewarded for their beneficial travel behavior. To continue to promote carpool, vanpool and transit modes as the highest priority for using managed lanes, it is recommended that eligible carpools be permitted to utilize managed lanes facilities without a requirement to pay a toll. In light of continuous advances in technology and associated reductions in costs to acquire tolling related equipment, it is recommended that all managed lanes users be required to carry a transponder with switchable settings to self declare carpool status, like the example depicted in Figure 6-1 which is being developed for projects in Los Angeles, California. The requirement for all managed lanes users to carry a switchable transponder simplifies the process of delineating and enforcing eligible carpools from other users, while also ensuring sufficient flexibility to adjust policies over time.

Figure 6-1 Example Switchable Transponder

Image source: LA Metro

The recommended approach for managed lanes occupancy should also be supplemented by establishing system performance thresholds that would trigger further incremental changes in minimum occupancy requirements (i.e., increases in minimum occupancy to 3+) for both HOV and HOT facilities, and commensurate changes in HOV tolling policy specifically on HOT facilities (i.e., HOV 3+ no-toll; HOV 2 discounted toll). Initial system design considerations and requirements for all managed lanes users to utilize a switchable transponder will ensure the flexibility to facilitate changes in occupancy requirements without the need for significant design or technology changes.

7.0 PRICING METHODS

Phoenix's HOV lane system currently permits certain vehicle types during specified periods of the day (morning and afternoon peak periods), wherein other vehicle types are restricted from the lanes. The current system has approximately 375 lane miles, with more under development. Existing permitted users include carpools with two or more occupants, vanpools, motorcycles, and buses.

For the implementation and operation of priced managed lanes, additional permission would be granted to single- and/or low-occupancy vehicles (SOV/LOV) – depending upon either HOV 2+ or HOV 3+ definition for the corridor – that do not meet the prevailing occupancy requirements and carry an active transponder/account, or otherwise meet established criteria for paying tolls. Nationally, initial priced managed lane applications involved existing HOV facilities with demonstrable underutilization. However, more recent proposals have examined the potential of implementing priced managed lanes in more constrained conditions, including in conjunction with increasing the occupancy requirement where overutilization is degrading the performance of the HOV facilities, or as a means of providing higher returns on investment from the provision of new capacity.

As both revenue generation and demand management attributes are incorporated within any pricing scheme, the challenge is how to balance the effects of each objective within the pricing system. As with any management system, capabilities and limitations of the pricing system will have consequential effects on achieving the pricing objectives. Consistent application of any tolling program is important to customer understanding and as an equitable means of adopting and implementing a tolling policy. Overall, the business rules must anticipate all scenarios, and apply them consistently. For the managed lanes these may include:

- Balancing the needs of revenue generation and demand management within the toll algorithm;
- Establishing differential toll rates by vehicle class and occupancy
- Determining minimum toll rates for uncongested conditions, maximum toll rates for saturated conditions on general-purpose lanes, maximum toll rates for incidents on the managed lanes; and
- Determining toll rates for downstream segments from point of entry (e.g., charged the prevailing toll per segment or the "entrance toll" locked in at point of vehicle entry to system).

Operational and system parameters affect the customer's use of the pricing system. There are multiple points of contact with the customer:

- Hours of Operation. When are the managed lanes open and accepting customers?

- Exemptions. Exemptions and discounts can be offered by vehicle occupancy, class, or other qualifications. All *operational* priced managed lanes offer free access to at least HOV 3+. In order to provide exemptions or discounts, it is necessary to determine a declaration mechanism.

- Communication of Price. In order to make an informed decision concerning use of the priced managed lanes, the customer must understand the price for making his or her trip. The more complicated the system of pricing (e.g., per mile pricing), the more difficult it will be for the customer to estimate the trip cost.

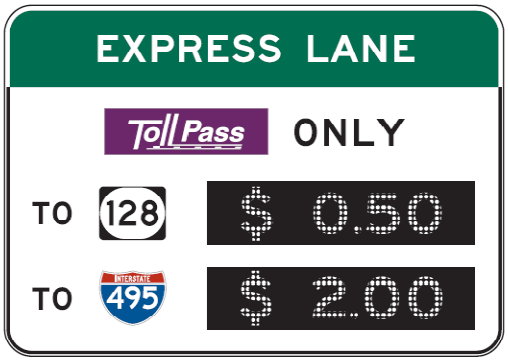
- Lock in of Price. After communicating the price, the customer must have reliance the price will not change once he or she has committed to use of a managed lane toll segment or facility.

- Overrides. In certain cases, conditions will deteriorate rapidly within the managed lane facility. In this situation, refunds or toll negation may be necessary as travel time reliability is jeopardized. Furthermore, diversion of general purpose traffic into a managed lane may also be necessary during periods of incident response.

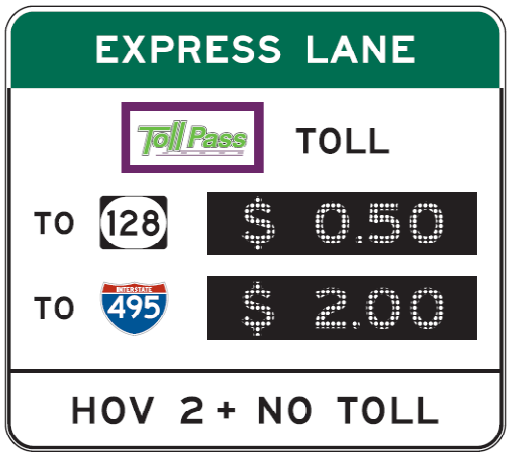
Fixed-schedule variable and dynamic pricing provide the ability to price managed lanes relative to the level of congestion with segments of each facility, although options and tradeoffs exist. Fixed-schedule variable pricing provides predictability for users because the toll schedule is published in advance, although the use of fixed-schedule pricing precludes the ability to adjust tolls to manage demand in real-time based on prevailing traffic conditions. In contrast, dynamic variable pricing can better adjust toll to reflect for real-time demand but reduces the ability for drivers to be aware of the toll rate in advance of their travel.

A consistent customer experience on the managed lane system will be informed by a combination of interactions with the customer. As it pertains to pricing, applying a consistent pricing algorithm (particularly in the case of dynamic pricing) and pricing interval are critical. In terms of the pricing interval, per-mile, per-segment, and per-facility, are each workable options, but come with benefits and challenges. Calculating tolls on a per mile basis is typical, especially on dynamic pricing facilities that utilize automated tolling algorithms to calculate tolls. Per-segment pricing is generally applied as the most effective option for communicating toll rates to customers, as illustrated in Figure 7-1. Per-segment pricing can also be used in conjunction with per-facility pricing for full length trips on multi-segmented facilities.

Figure 7-1 Segmental Toll Rate Regulatory Signs for Managed Lanes (MUTCD 2009)



R3-48



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8.0 ACTIVE TRAFFIC MANAGEMENT AND MANAGED FREEWAYS

Since the 1990's, Phoenix area agencies have been engaged in a variety of traffic management and ITS endeavors, including the following:

- Freeway Management
- Incident Management
- Traveler Information
- Arterial System Operations
- Managed Lanes

Active Traffic Management (ATM) utilizes various ITS technologies to manage traffic flow and lane use. The key differentiator of ATM from other ITS applications is the approach to ***dynamically*** manage and control traffic using and integrating the following strategies:

- **Speed Harmonization/Lane Control**: utilizing regularly spaced, over lane speed and lane control signs to dynamically and automatically reduce speed limits in areas of congestion, construction work zones, accidents, or special events to maintain traffic flow and reduce the risk of collisions.
- **Queue Warning**: utilizing either side mount or over lane signs to warn motorists of downstream queues and direct through-traffic to alternate lanes, effectively utilizing available roadway capacity and reducing the likelihood of collisions related to queuing.
- **Hard Shoulder Running**: using the roadway shoulder (inside or outside) as a travel lane during congested periods to alleviate recurrent (bottleneck) congestion for all or a subset of users such as transit buses. Hard shoulder

running can also be used to manage traffic and congestion immediately after an incident.

- **Junction Control**: using lane use control, variable traffic signs, and dynamic pavement markings to direct traffic to specific lanes (mainline or ramp) within an interchange area based on varying traffic demand, to effectively utilize available roadway capacity to reduce congestion
- **Dynamic Re-routing**: changing major destination signing to account for downstream traffic conditions within a roadway network or system.
- **Traveler Information**: providing estimated travel time information and other roadway and system conditions reports allowing travelers to make better pre-trip and in-route decisions.

The concept of Managed Freeways builds upon the ITS applications of ATM and the dynamic demand management capability of managed lanes to implement a comprehensive package of strategies to fully manage access to and demand for a freeway facility. Managed Freeways utilize integrated data collection sensors along the roadway and advanced system management tools to monitor and control real time traffic conditions to ensure a more consistent level of freeway performance.

ATM strategies have been successfully implemented in Europe for many years. In the US, both WSDOT and MnDOT have successfully implemented ATM strategies, as depicted in Figure 8-1. Beyond ATM, fully integrated managed freeways are emerging as a strategy for maximizing the efficiency of roadways. The successful deployment of the M1 Freeway Management System in Melbourne, Australia, as pictured in Figure 8-2, has demonstrated the effectiveness of implementing a comprehensive package of strategies to fully manage access to and demand for a freeway facility by combining the ITS applications of ATM and the dynamic demand management capability of managed lanes. The MAG region has previously demonstrated a commitment to implementing advanced traffic management techniques. ATM and managed freeways represent the latest techniques for regional stakeholders and decision makers to consider as they collectively address existing and ongoing travel demand.

Figure 8-1 Example Active Traffic Management

I-35W, Minneapolis, Minnesota

Image source: MnDOT

Figure 8-2 Example Managed Freeway

Image source: VicRoads

Paying for Predictability

U.S. Managed Lanes Projects

Special Report

Building a Highway System for the Next Generation: The social and economic costs of further highway expansion in urban areas are high. A managed-lane (ML) approach allows policymakers to more effectively manage demand provided there are other transport alternatives. As congestion levels rise, Fitch Ratings expects to see more of these projects, coupled with improved transit options as ML projects by themselves may not be able to solve congestion over the longer term.

Driver Response to Pricing Demystified: At the early stage of development, a lack of data presented serious challenges to the financing of managed lane (ML) projects. Existing congestion levels are now better understood based on 16 years of history on the 91 Express Lanes project and data from the Federal Highway Administration (FHWA) and Texas Transportation Institute (TTI), which measure road performance on a regular basis. Recent empirical data also adds clarity on how drivers respond to changing conditions and price.

A Sound Foundation with Some Volatility: ML projects have a robust traffic base to build from, but will prove more volatile than a typical toll road. While urban roads are much more resilient to economic conditions and fuel prices than other types of toll roads, small changes in general purpose lane (GPL) volume leads to bigger changes in travel times, magnifying the impact on MLs.

Conservative Assumptions: Free flow capacity varies by roadway and is heavily influenced by traffic composition. Likewise, ML capture rates can also vary within a project, depending on roadway configuration. To account for these variances, Fitch will utilize conservative capacity thresholds, ML capture rates, and corridor growth rates when constructing base and rating case scenarios. Scenarios will also reflect performance differences by project segment.

Sensitivity Analysis Is Key: When analyzing ML projects, Fitch conducts various sensitivities. Fitch's analysis shows that changes in price and GPL volumes have bigger impacts on projected revenue than changes in capture rates.

Related Research

Fitch Affirms North Tarrant Express Mobility Partners, LLC Revs at 'BBB–'; Outlook Stable, Dec. 16, 2011

2012 Outlook: U.S. Transportation Infrastructure — Stability Likely but Some Downside Exists, Dec. 15, 2011

Fitch Affirms Orange County Trans Auth's (CA) 91 Express Lane Rating at 'A', Dec. 7, 2011

Downshifting: U.S. Transportation Reacts as GDP Growth Flattens, Sept. 7, 2011

Fitch Affirms LBJ Infrastructure Group LLC Rev Bonds at 'BBB–'; Outlook Stable, June 2, 2011

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Urban Highway Expansion Is Becoming Costly and Complicated

Policymakers have dealt with growing urban congestion in phases over the last four decades. Phase I included a significant expansion of the highway system. Phase II focused on adding high occupancy vehicle (HOV) lanes to encourage more efficient use of the highway system given the social and economic cost of expansion.

As traffic volumes increase, policymakers continue to struggle with the cost of expansion versus rising congestion levels. The emerging phase III appears to build on phase II by converting existing HOV lanes into MLs — highway lanes where vehicles with one or two passengers (HOV2+/HOV3+) ride free and cars with a single occupant (SOV) pay a toll set to keep the MLs operating at free flow speeds. In many cases, existing HOV lanes are underutilized. Converting them into an ML configuration adds capacity and makes the asset more efficient for moving vehicles.

Many transportation officials see managed lanes as an increasingly viable option, particularly as state departments of transportation (DOTs) and regional transportation agencies experience declining resources for highway expansion and political appetite for increased transit funding is uncertain. In addition to this, urban street networks are at or above capacity. The Virginia Department of Transportation opted for a self-supporting ML application on Interstate 495 (I-495) with a capital cost of approximately $2 billion in lieu of a planned expansion of GPLs with a cost of $4 billion and no toll revenue to cover the additional operating expenses. According to the FHWA, there are many permutations of a ML application, including HOV lanes, value priced lanes, high occupancy toll (HOT) lanes, or exclusive/special use lanes. In this report, an ML project is one that utilizes some form of dynamic pricing on lanes immediately adjacent to free GPLs.

As state DOTs evaluate potential ML projects, each will have its own unique set of policy objectives and challenges that affect potential revenue generation. Some may allow bus rapid transit (BRT) on the MLs. This may be a low-cost public transportation solution that may ultimately move more people, but it will reduce ML capture rates and revenue since buses limit the SOV capacity that the project can sell and will also result in slower ML speeds, thus diluting the value to an SOV. Others may opt for an HOV2+ policy where cars with one passenger are free, again reducing the SOV capacity the project can sell, and possibly making violation enforcement more challenging. Finally, a tolling strategy that maximizes total corridor throughput rather than revenue may also be desired. It is important that project sponsors and lenders recognize that ML projects are not one-size-fits-all, and Fitch will evaluate each project on its own merits.

An ML Application Allows Policymakers to Manage Demand

The capacity of transportation assets is not infinite and each additional vehicle beyond free flow capacity does impose an economic cost. Shaping the price based on usage is an economic concept conceived to alleviate, if not eliminate, the economic loss associated with congestion. This is analogous to the pricing strategy employed by parking garages, airlines, major sports leagues, and even some transit systems. Under this model, high-value trips pay for certainty, while lower value trips either take longer due to congested GPLs or occur in off-peak hours. In the end, the true cost of a trip is revealed.

The primary goal of utilizing this strategy on a public highway is to encourage the most efficient use of a finite resource. Many urban highways operate at or above capacity during prime

Related Criteria

Rating Criteria for Infrastructure and Project Finance, Aug. 16, 2011

commuting hours, meaning their performance is poor. Given the urban nature of these facilities, adding more capacity can be costly because of right-of-way constraints. In addition, this may not be the most effective policy choice as the new capacity will encourage additional demand that the adjacent urban street network can not handle, resulting in congested conditions reappearing in the near future.

Implementing a pricing framework should result in lower value trips diverting to public transportation, taking longer or occurring in off-peak periods when there is sufficient roadway capacity. Higher value trips will opt for the certainty of the MLs, for a price. This approach has been embraced by DOTs as evidenced by the plethora of projects that have come along over the last several years (*see table below*). While MLs can provide congestion relief, improved transit options may be required over the longer term to allow economic growth to continue at historical rates.

Managed Lanes Project History

Facility	Location	Year of Opening	Configuration	Pricing Approach
91 Express Lanes	Orange County, CA	1995	2x2	Maximize Throughput and Meet Financial Obligations
I-394	Minneapolis	2005	2 Reversible	Maintain Free Flow
I-25	Denver	2006	2/3 Reversible	Maintain Free Flow
I-15	San Diego	2008	4 with Moveable Barrier	Maximize Total Throughput
I-95	Miami	2008	2x2	Maximize Total Throughput
I-10	Houston	2009	2x2	HOV/Transit Maximization
I-85	Atlanta	2011	1x1	Maintain Free Flow
I-495	Northern VA	Expected 2012	2x2	Revenue Maximization
I-595	Fort Lauderdale, FL	Expected 2014	2x2	Maximize Total Throughput
I-635	Dallas	Expected 2013–2016	2x2	Revenue Maximization
SR 820	Fort Worth, TX	Expected 2015	2x2	Revenue Maximization
US 36	Denver	Under Development	1 Reversible	Maintain Free Flow
I-95	Northern VA	Under Development	3 Reversible	Revenue Maximization
SR-91 Extension	Riverside County, CA	Under Development	2x2	Revenue Maximization

HOV – High occupancy vehicle.
Source: Fitch.

Existing Congestion Levels and Driver Behavior Better Understood

Macro Level Data Provides a Basis for Analysis

For more than a decade, the 91 Express Lanes in Orange County, CA, provided the only empirical evidence for highways supporting the concept of managing demand through price. And, since the project essentially serves as a land bridge, it was not viewed as an ideal comparator when looking at other stretches of congested urban highways with more ingress/egress options. As more projects entered the development stage, many in the marketplace felt that the lack of data presented a serious challenge to the viability of project financing. It has been Fitch's view that a close evaluation of asset performance, coupled with a growing source of data from the FHWA and TTI and empirical data from operating projects does provide information to help understand how drivers will respond to a managed lane configuration. What is less certain is how price-sensitive drivers will be.

Current projections and empirical data indicate pricing multiples of 3x for short distances or short periods of time relative to other tolled assets. However, there may be some relationship between average peak hour ML prices and rates on toll facilities that act as congestion relievers. Average ML rates well in excess of these rates may be difficult to justify. On a

number of toll roads in the U.S., toll rates are at or exceed 30 cents/mile, almost 3x the super peak rate of 98 cents/mile on the 91 Express Lanes.

Since the decision to take a managed lane is driven by price, understanding the value of the service provided (travel time savings and travel time predictability) is critical. The closer peak-hour speeds and travel times are to the free flow condition, the lower the value proposition to the user, which results in lower toll rates, lower revenue, and less public sector value from the investment.

There are a number of ways to evaluate road performance from a macro perspective, including more recent data collected by the FHWA. The FHWA looks at several measures to capture the level of congestion, including the planning time, the planning time index, and, the buffer index. Planning time is defined as the 95th percentile of observed travel times. The planning time index reflects how much larger the planning time, or "buffer," is compared with "free flow" travel time. The buffer index is the size of the buffer as a percentage of the average travel time, or the 95th percentile minus the average, divided by the average. This data can help analysts understand existing conditions and form a view of the macro picture.

In addition data showing the composition of traffic (heavy goods vehicles [HGVs] versus passenger cars) is important as a higher percentage of HGVs will affect driver behavior, acting to slow traffic. Where HGVs are present, traffic slows due to more limited sight and spacing between lanes that creates a passenger car equivalent (PCE) of 2.0x or greater depending on size of the HGVs and the grade of the road section. The introduction of BRT on a ML project could have the same slowing effect, within the ML, meaning fewer vehicles can be allowed into the ML.

The alignment of the road is also important since grades and curves can lead to lower free flow capacity as drivers naturally slow when going through a curve or driving up an incline. In addition, sections that involve weaving as a result of interchanges or exit ramps to critical arterials also act to lower free flow capacity and lead to queuing. An FHWA report on traffic and congestion reliability states that vehicle merging "has the most severe effect on traffic flow, with the exception of really bad weather." Likewise, downstream features of the road network, along with future roadway expansion and/or improvements, also need to be evaluated since they can also affect free flow capacity.

On the capacity side, FHWA reports indicate that a straight lane of highway with a posted speed limit of 55 miles per hour (mph) and ideal geometric and traffic conditions is thought to accommodate 2,200 passenger cars per lane per hour (v/l/h). Once roadway alignment, weaving, and HGVs are taken into consideration, the theoretical capacity of most urban highways can fall significantly, especially given the number of exit ramps and interchanges over short distances. In Fitch's view, 2,200 v/l/h is a conservative measure of capacity when developing volume/capacity ratios for projects with HGVs or a less than ideal configuration. Fitch may use a higher capacity measure for long, straight, and flat segments of road. Most ML facilities preclude the use of MLs by HGVs. Where HGVs are allowed to use the MLs, Fitch will closely analyze the value proposition as HGVs tend to be more price-sensitive.

Empirical Data More Readily Available

Beyond macro level data on general congestion levels, empirical data on other projects is now becoming available. Review of publicly available information on the Interstate 95 (I-95) MLs in Miami-Dade County, FL reveal that high-value trips do respond to congestion by switching to the MLs.

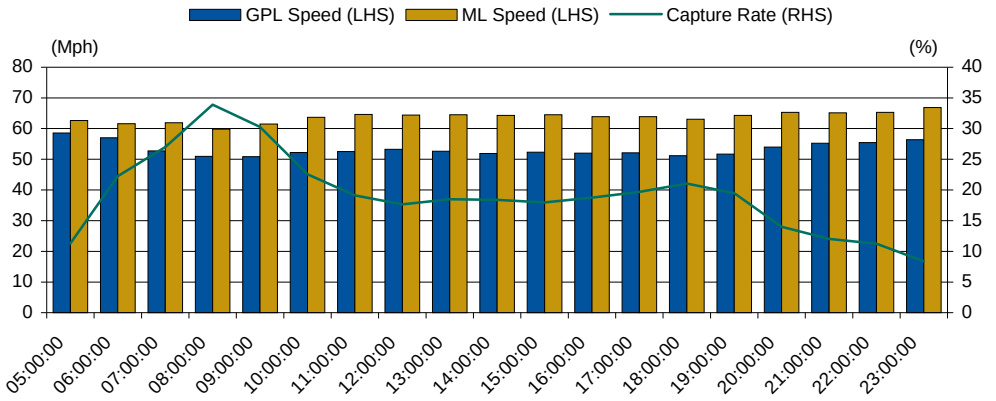
Fitch evaluated count data in 15-minute increments for GPLs and MLs at three locations in the southbound and northbound directions over a 12–14 moth period. Data selected was the first full week of each month over the 12–14 month time frame. Fitch also analyzed related GPL and ML speed data and calculated hourly volume-to-capacity (VC) ratios and capture rates. What can be seen in the charts on pages 6–7 is that at GPL speeds below 40 mph, ML capture rates approach and exceed 30%. What is also evident is how different performance can be by segment.

In the northern section, southbound traffic has a VC ratio of between 70% and 80% during the morning peak, with GPL speeds of just over 50 mph and capture rates of between 27% and 33%. In the middle segment, the VC ratio ranges between 113% and 117% during the same time and GPL speeds drop below 40 mph, but the capture rate is nearly identical. At the southern end, the VC ratio ranges between 101% and 123% with GPL speeds of between 47 mph and 62 mph and the ML capture rate still ranges between 29% and 31%.

GPL speed appears to be the most significant driver of behavior. As seen in the charts below, speeds remain at or above free flow conditions despite heavy volumes in the middle of the day. This may be due to different driver behavior during the middle of the day, with less weaving at major exit ramps, allowing for more vehicles at free flow speeds than during the morning and evening peak periods. However, it does indicate that drivers are willing to pay for predictability even when the GPLs are performing, since the ML capture rate does hover at 20% during the nonpeak period between the morning and evening rush hours.

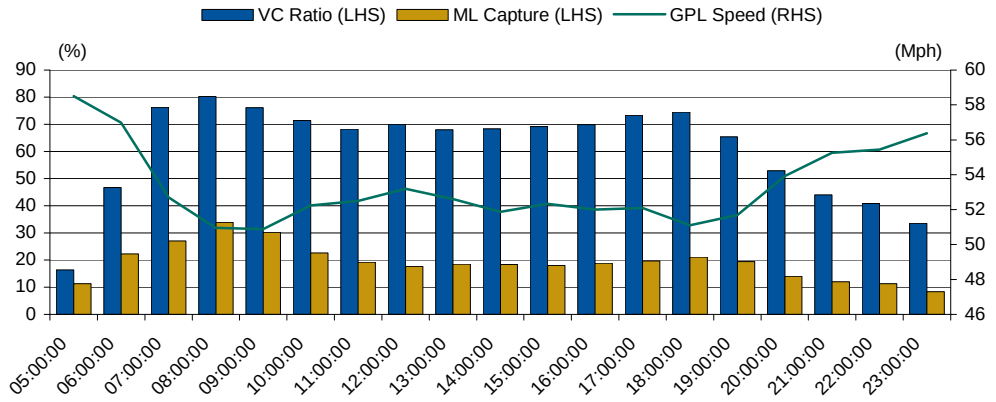
The toll policy embraced by the Florida Department of Transportation (FDOT) is set to maximize throughput of the overall corridor and not maximize revenue; the ML capture rates reflect this. They are also reflective of an “HOV2+ = free” policy. Under a revenue maximization scenario, ML capture rates would likely be lower, particularly in the shoulder and midday period as toll rates would likely be higher than what FDOT currently charges. Most importantly, the data is a second piece of evidence that congestion pricing does change behavior and can be used to manage demand.

Southbound Traffic at Northern End of Project



ML – Managed lanes. GPL – General purpose lane.
Source: Florida Department of Transportation.

Southbound VC Ratio and Capture Rates — Northern End

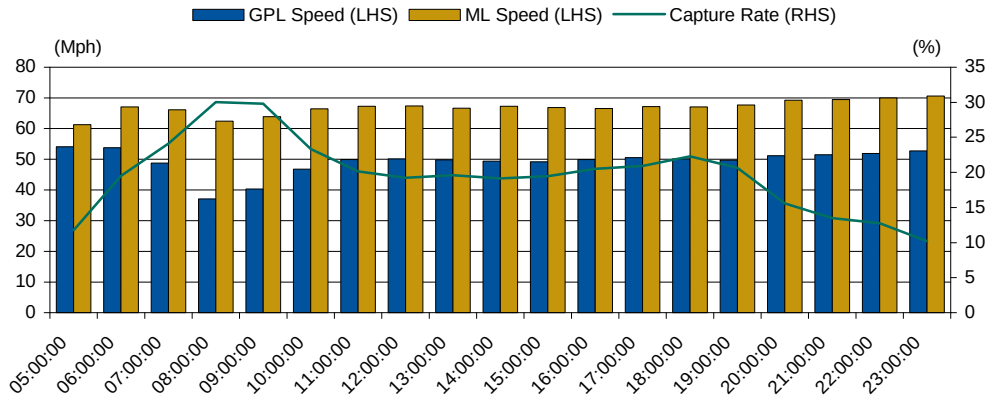


VC – Volume to capacity. ML – Managed lanes. GPL – General purpose lane.
Source: Florida Department of Transportation.

Southbound traffic on the northern end of the project exhibits different characteristics than the middle or southern segments:

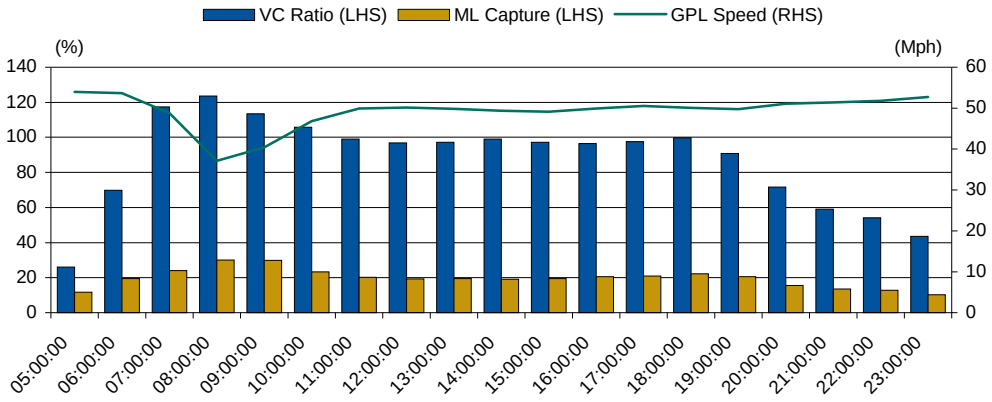
- ML speed consistently at or above 60 mph.
- In the morning peak, capture rates jump despite GPL speeds of 50 mph.
- Despite speeds in the low 50 mph range and reasonable VC ratios, capture rates remain at 20%.

Southbound Traffic at Middle of Project



ML – Managed lanes. GPL – General purpose lane.
Source: Florida Department of Transportation.

Southbound VC Ratio and Capture Rates — Middle Segment

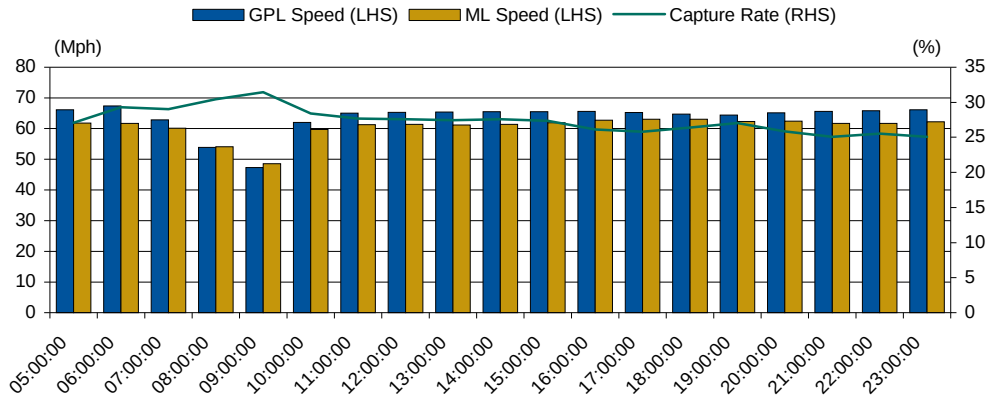


VC – Volume to capacity. ML – Managed lanes. GPL – General purpose lane.
Source: Florida Department of Transportation.

The middle segment is more congested during the morning peak, but ML capture rates are not that different:

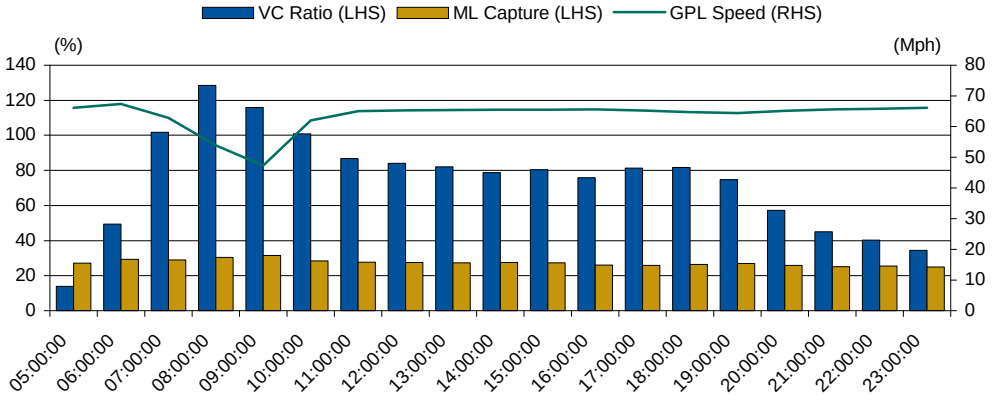
- The VC ratio is approximately 120% in the morning peak.
- GPL speed falls below 40 mph in the morning peak.
- Despite significantly slower GLP speed than in the northern section, ML capture rate does not exceed 30%.
- Similar to northern end, capture rates in the middle of the day stay at approximately 20%, possibly due to HOV usage.

Southbound Traffic at Southern End of Project



ML – Managed lanes. GPL – General purpose lane.
Source: Florida Department of Transportation.

Southbound VC Ratio and Capture Rates — Southern End



VC – Volume to capacity. ML – Managed lanes. GPL – General purpose lane.
Source: Florida Department of Transportation.

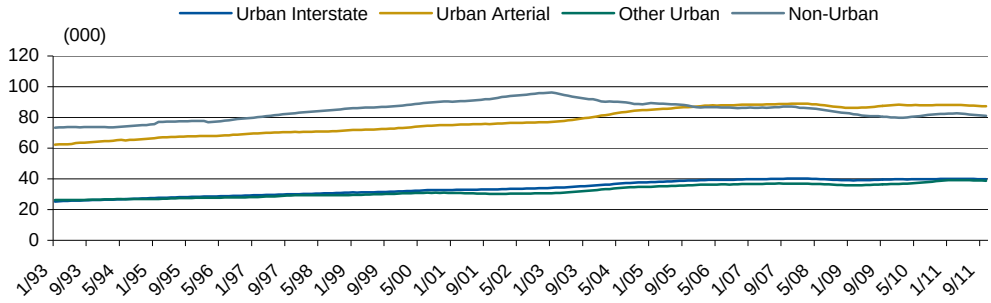
Both ML and GPL peak hour speeds are slower on the southern end, hinting at more congestion:

- The VC ratio hits a maximum of more than 120% in the peak period.
- Both ML and GPL speeds fall below 50 mph during morning peak, triggering the highest capture rates.
- Despite limited difference between GPL and ML performance in the middle of the day, the ML capture remains at 20%.
- Similar to northern end and middle segment, capture rates in the middle of the day stay at approximately 20%.

ML Projects Have Sound Foundation, but Will Be More Volatile

The impact of the global financial crisis and rising fuel costs were particularly harsh in Orange County, CA. Total 91 Express Lanes traffic dropped by 5.5% between 2007 and 2011, but ML traffic dropped by 17.2%, or three times as much. However, ML toll revenue is only down by 12.6% due in part to inflationary adjustments to nonpeak hour toll rates, the MLs ability to capture some GPL traffic at a lower price, and changes in the shoulder hour volume. In 2007, the highest super-peak rate was $10.25. As of February 2012, it is $9.75. GLP volume changes do have a significant impact on ML volumes, but drivers will still pay for travel time certainty; it is just a question of price.

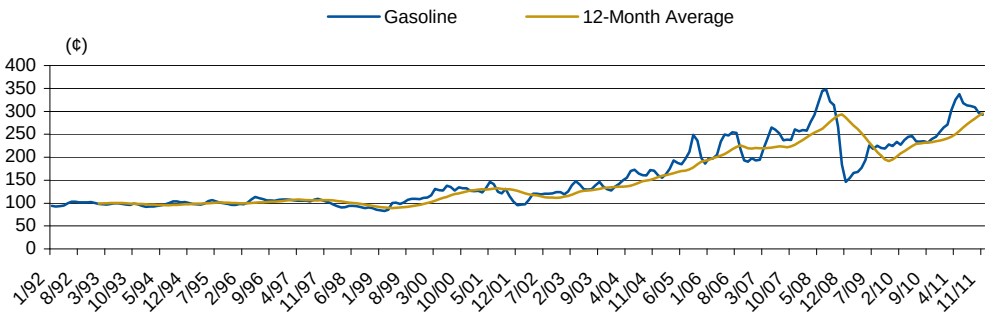
12-Month Moving Average by VMT Component
(1993 to Present)



VMT – Vehicle miles traveled.
Source: Federal Highway Administration.

As seen in the chart above, vehicle miles traveled (VMT) on urban road segments has shown slow but relatively steady growth over time (a CAGR of about 2.5%) and less volatility to high fuel prices and economic conditions. The chart below highlights just how much fuel prices have changed over the last eight years. In particular, the trend in urban VMT components has shown significant resilience relative to non-urban VMT. Meanwhile, according to the TTI, freeway lane miles have grown at a CAGR of only 0.7% between 1992 and 2010, leading to increasing congestion.

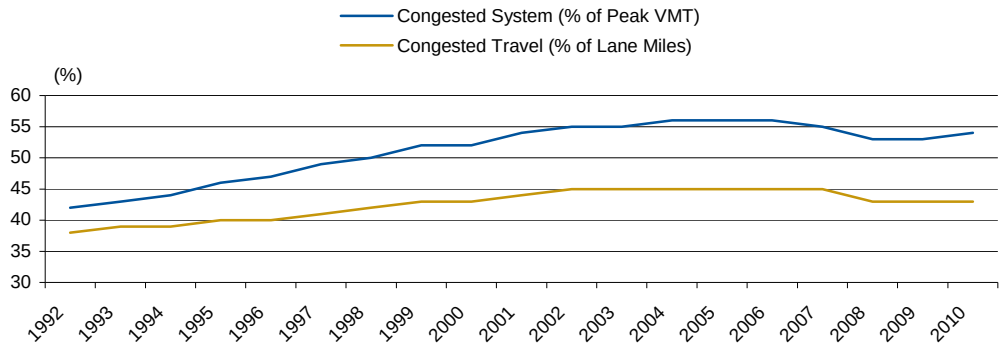
U.S. City Average Price Index for Gasoline



Source: Bureau of Labor Statistics.

The FHWA and TTI have been tracking different measures of congestion over time, with broader measures looking at the percentage of VMT occurring in the peak hours and the percentage of lane miles congested. Data collection on monthly delay hours in 20 U.S. cities began in 2007. While overall congestion levels have dropped from their peak in 2007 (*see the chart below*), congestion levels have begun to increase again, and Fitch expects this trend to continue as economic growth begins to take hold.

TTI Congestion Measurement



VMT – Vehicle miles traveled.
Source: Texas Transportation Institute (TTI).

Despite the resilience of urban traffic volumes over the past several years, the data from the Florida I-95 project and from the 91 Express Lanes indicate how sensitive ML traffic is to small changes in GPL performance. In the case of the SR-91, a combination of an additional GPL, fuel prices, and the implosion of the subprime lending business resulted in less corridor volume and higher speeds on the GPLs. This 1.6% reduction in total traffic in fiscal 2011 translated to a 9.6% reduction in overall ML volumes.

As shown in the table below, small changes in total volume on the I-95 project between 7:00 a.m. and 8:00 a.m. and between 3:00 p.m. to 4:00 p.m. lead to big changes in overall performance, causing congestion and stimulating ML demand. At 8:00 am, a 5.3% increase in total volume reduced GPL speed by 3.3% and increased the ML capture rate by 25.5%. In the afternoon, a 3.5% increase in total volume reduced GPL speed by 19.5% and increased the ML capture rate by 8.3%.

The key takeaway here is that while urban roads are generally more resilient to economic conditions and fuel prices than other types of toll roads, small changes in volume lead to bigger changes in performance, meaning ML projects will experience significant changes in volume and pricing power. At GPL speeds above 50 mph, capture rates and pricing power is much more limited than at speeds of 35 mph to 40 mph.

Northern End of Project

Time	v/l/h	Cumulative % Change	GPL Speed	Cumulative % Change	ML Capture	Cumulative % Change
Southbound						
07:00:00	1,676		52.7		27.0	
08:00:00	1,765	5.31	51.0	(3.30)	33.9	25.52
09:00:00	1,675	(0.10)	50.9	(3.44)	30.2	11.97
Northbound						
15:00:00	1,788		55.2		25.5	
16:00:00	1,850	3.48	44.4	(19.46)	27.6	8.25
17:00:00	1,790	0.14	34.5	(37.48)	28.2	10.70
18:00:00	1,875	4.86	33.8	(38.83)	28.3	11.14

v/l/h – Passenger cars per lane per hour. GPL – General purpose lane. ML – Managed lanes.
Source: Florida Department of Transportation.

Fitch's Analytical Approach Utilizes Conservative Assumptions

From Fitch's perspective, ML projects are brownfield not greenfield, and therefore, are more dependent on organic economic growth in the urban area, particularly employment. Once a view on economic growth has been formed, Fitch will focus its traffic analysis on understanding the combination of "price" and the point at which GPL speeds and VC ratios trigger drivers to switch to the MLs. As described above, these decision points are influenced by a number of factors, including: road alignment; the percentage of HGVs on the road; the presence of major interchanges; overall economic conditions; planned improvements to the road network; and most importantly, level of service goals and HOV/BRT policy choices. Fitch's analysis will be tailored to each project as these factors can lead to very different revenue profiles and thus need to be accounted for on an individual basis.

The approach to evaluating traffic and revenue sensitivity is somewhat top-down. Fitch starts by analyzing employment patterns in the area, along with overall growth on the facility since employment and urban VMT can be highly correlated. Fitch assumes that future corridor growth will continue, albeit slowly given the trends outlined earlier, and that growth will be influenced by expectations for employment. That said, highways do have capacity limits and Fitch may assume that growth rates in the peak hours slow over time, especially where VC ratios are in excess of 100% and speeds are below 40 mph.

Fitch recognizes that the addition of MLs may increase overall road capacity and can induce some traffic and, thus where there is a strong and clear argument Fitch may reflect a small one-time increase in overall corridor volume when the facility comes online. Fitch will utilize a conservative estimate of highway capacity (i.e. 2,200 v/l/h) when applying capture rates at specific volume to capacity ratios. Capture rates (the percentage of corridor traffic that chooses the ML) at specific VC ratios will be developed on a case-by-case basis, but will be informed by empirical data from other facilities and HOV/BRT policy. Fitch may also assume that HOV3 vehicles utilize the MLs at greater rates over time. It is Fitch's expectation that ML revenue will behave like a derivative, meaning as GPL volume grows, ML revenue will grow at faster rates. Likewise, when the amount of GPL traffic declines, ML traffic and revenue will drop more.

Given this volatility, higher liquidity levels throughout the life of the debt are critical to help support cash flow during periods of economic weakness. All else being equal, an ML project rated 'BBB' needs to have more financial flexibility either in the form of structured liquidity or a highly flexible debt structure than a typical toll road given the potential volatility in annual cash flows. However, if congestion levels truly exist, ML project risk is more a function of finding the right price point.

Sensitivity Analysis Is Key

In thinking about sensitivities, Fitch will look at a 25% or more reduction in price across peak and interpeak periods. Additionally, Fitch will run a shock test during the operational phase to see how the facility responds to a significant reduction in volume (approximating the impact of a network improvement or economic slowdown) with slow growth thereafter. Sensitivities on ML capture rates will also be conducted. The charts below visually demonstrate a hypothetical Fitch traffic analysis.

The "base" assumption is a 4x4 GPL facility with two MLs in each direction and toll policy set to allow free passage for HOV3+. There is no BRT application and HOV usage is limited. Traffic is generally balanced in both directions with strong morning and evening peak periods. Chart 1 below demonstrates how total corridor growth evolves over a 40-year period, and how this growth affects ML growth and market share.

ML Capture Rates

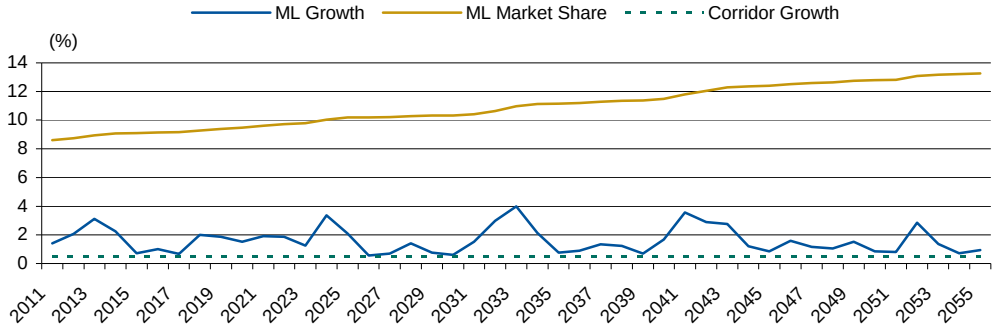
(%)

VC Ratio	Capture Rate
5.00	0.00
10.00	0.50
15.00	1.00
20.00	2.00
25.00	2.50
30.00	3.00
35.00	3.00
40.00	3.00
45.00	3.50
50.00	4.00
55.00	5.00
60.00	6.00
65.00	6.50
70.00	7.00
75.00	9.00
80.00	10.00
85.00	10.50
90.00	12.00
95.00	12.00
100.00	15.00
105.00	17.00
110.00	20.00
115.00	26.00
120.00	26.00
125.00	27.00

ML – Managed lanes. VC – Volume to capacity.
Source: Fitch.

The ML Capture Rates table to the left highlights the VC ratios and related capture rates used to develop the hypothetical base scenario and are based on empirical data. A key assumption behind these rates is an assumed toll policy set to maximize revenue. If an HOV2 or a BRT policy is utilized, capture rates for tolled vehicles could be lower.

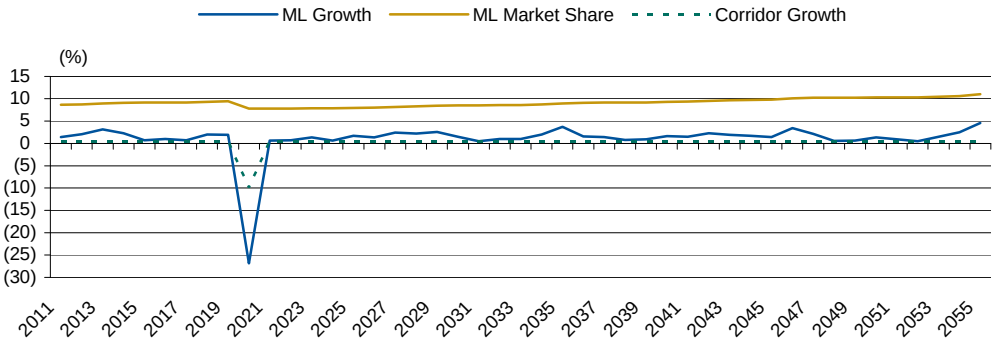
Chart 1: Base Scenario — Managed Lanes vs. Corridor Growth Rates and Market Share



ML – Managed lanes.
Source: Fitch.

Chart 2 reflects the same assumptions as Chart 1, except it demonstrates the impact of a one-time drop in corridor traffic of 10%, approximating a significant change to the network, an economic downturn, or a change in commuting patterns. Chart 3 shows the impact of a 10% reduction in the base capture rate assumptions shown above while Chart 4 shows the gross revenue line associated with the base scenario and three sensitivities: the 10% reduction in growth; the 10% reduction in capture rates; and a 25% reduction in opening year toll rates.

Chart 2: 10% Reduction in Corridor Volume



ML – Managed lanes.
Source: Fitch.

Under the base scenario, total corridor traffic grows at 0.05% and capture rates remain constant throughout the 40-year period. This reveals that over time, the growth on the MLs is much higher than total corridor traffic. However, total projected ML volume never exceeds 14% of total corridor traffic (market share). Eastbound ML market share on the SR-91 reached 13% in 2007, but the addition of another GPL and the impact of the global financial crisis reduced this to 12.8% in 2011.

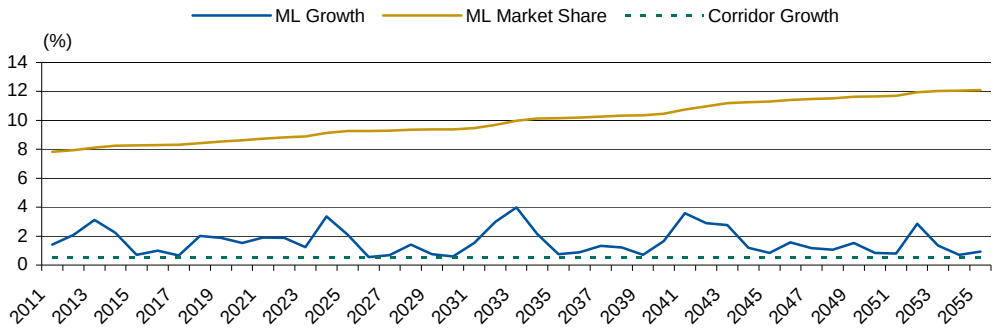
The uneven jumps in ML growth rates indicate periods where the VC ratio triggers the use of the next highest capture rate, meaning that while overall corridor traffic remains the same, more cars are diverting to the MLs. See the table above on the left to see how capture rates change

significantly as the VC ratio moves from 40% to 80% and then again from 100% to 125%. Fitch's approach is conservative in that toll rates simply grow at 1% above inflation, when in reality, rates in peak periods would continually be adjusted higher to maintain free flow conditions in the ML.

Chart 2 below shows the effect of a 10% reduction in total corridor volume in 2020 with all other assumptions remaining the same. The impact of this change results in a more than 25% reduction in ML volume, and ML market share only approaches 10% in 2051. This sensitivity also results in a 48% reduction in revenue from the base scenario. In this situation, management has two options: leave toll rates relatively high and have much less volume, or bring toll rates down significantly to maintain volume. Either way revenue will be greatly reduced.

Chart 3 demonstrates ML sensitivity to changes in capture rates. A 10% reduction in the ML capture rates shown above reduces the ML market share from the base scenario. Essentially, ML market share grows at a slower rate, achieving a market share of nearly 12% by 2051 compared with the base scenario market share of approximately 13%. While the capture rates are not that different, this does result in a 10% reduction in revenue by 2051.

Chart 3: 10% Reduction in ML Capture Rates

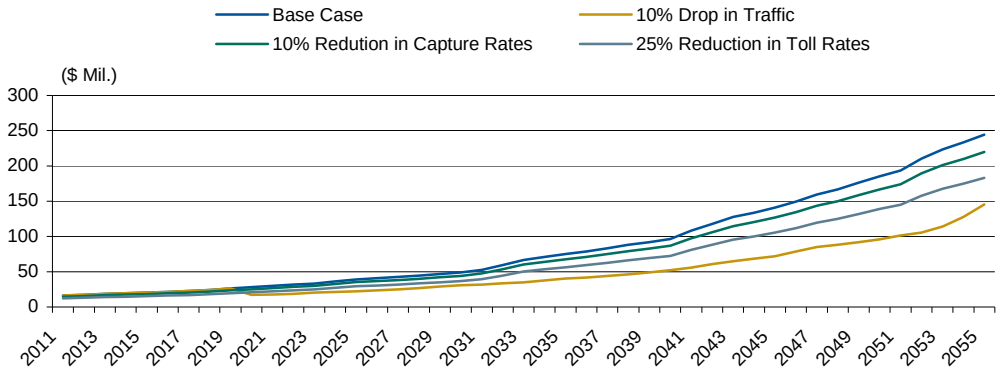


ML – Managed lanes.
Source: Fitch.

The final sensitivity is a 25% reduction in the initial toll rates from the base scenario, with future increases left unchanged. This results in a 25% reduction in revenue in 2051. Chart 4 below shows gross revenue associated with each of the sensitivities. What is clear is that the one-time drop in 2020 corridor volume has the greatest impact on revenue as 2051 revenues would be 48% below the base case. Such a drop in traffic will also result in a drop in pricing power. However, as demonstrated in the VMT data at the beginning of this report, and in other reports published by Fitch, volume on urban roads tends to be much more resilient to economic downturns, meaning that corridor traffic loss is less likely to exceed 10% and should be followed by subsequent growth. However, more fundamental changes in the network due to additional GP lanes, elimination of downstream bottlenecks, and shifts to transit would be permanent.

ML projects aren't the solution to all congestion problems, especially where reversible GPL lanes or transit are cost-effective alternatives. Depending on the situation and long range transportation plan, Fitch may assume a future network change or lower capture rates and pricing power over time to reflect these risks. Where transit and reversible lanes are not viable options, ML capture rate assumptions will be held constant. If BRT and HOV2 policies are utilized, the capture rates and starting place will likely be lower than the hypothetical base case above. Also, Fitch may assume that bus and HOV usage grows over time.

Chart 4: Revenue Scenarios — Assuming Fitch Rating Case



Source: Fitch.

For more information on Fitch's toll road criteria, please see Fitch's Web site at www.fitchratings.com.