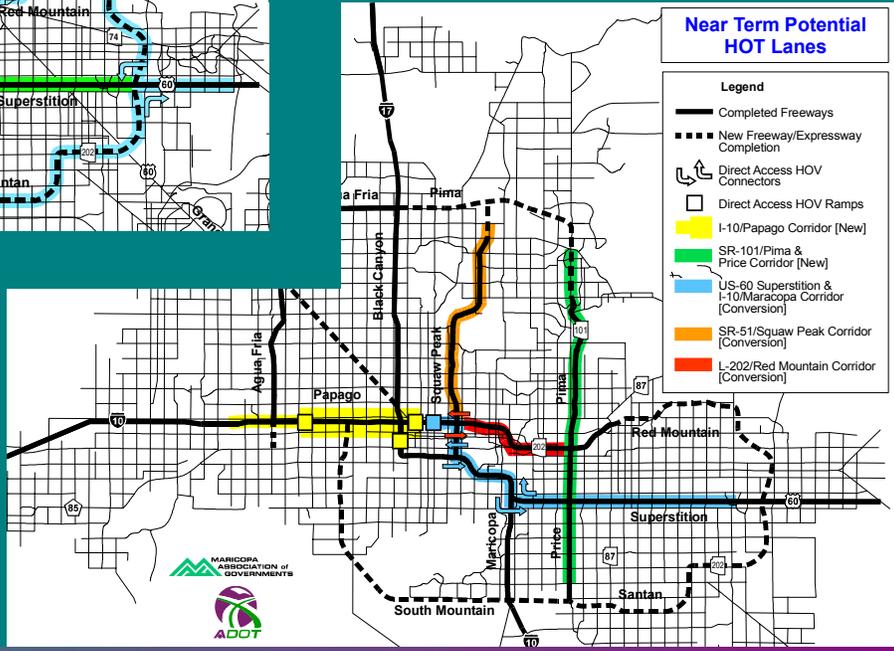
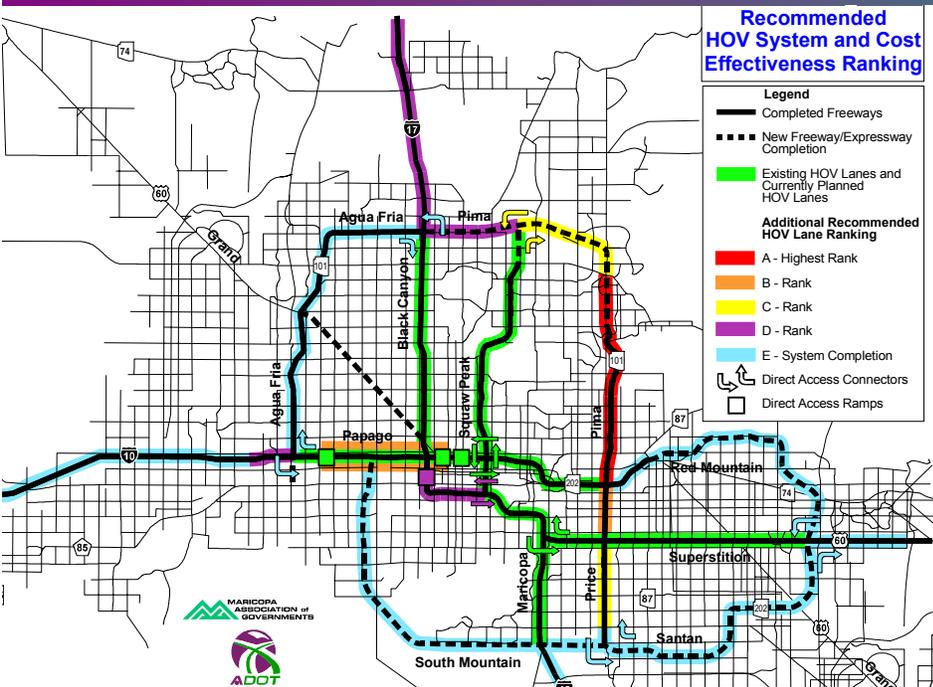


VALUE LANES STUDY HOT LANES EXECUTIVE SUMMARY

June 2002



Prepared by
PARSONS TRANSPORTATION GROUP INC.

for



**ARIZONA
DEPARTMENT OF
TRANSPORTATION**

in partnership with



HOT Executive Summary
HOT Study Update

HIGH OCCUPANCY TOLL FACILITIES
POLICY GUIDELINES AND PLAN
FOR THE MAG FREEWAY SYSTEM

Prepared for:

Arizona Department of Transportation
Maricopa Association of Governments
Regional Public Transportation Authority

Prepared by:

Parsons Transportation Group Inc.

June 2002

HOT LANES STUDY EXECUTIVE SUMMARY

VALUE LANES FISCAL FEASIBILITY AND IMPLEMENTATION

Introduction

The Arizona Department of Transportation (ADOT), in partnership with the Maricopa Association of Governments (MAG), contracted with Parsons Transportation Group to perform a Value Lane Study for the MAG area freeway system. In this context, Value Lanes represent a general concept by incorporating High Occupancy Vehicles (HOV) lanes, into High Occupancy Toll (HOT) lanes. HOT lanes can best be described as new or existing HOV lanes that are opened to non-HOV (single occupant) drivers for a fee premium in exchange for trip travel time savings, reliable travel and a less congested driving experience.

The purpose of the Value Lane Study was to provide information to policy makers on the MAG Regional Council and the State Transportation Board for use in updating the 1994 MAG HOV Plan and to assess the feasibility of converting HOV lanes to HOT lanes (a summary update to the MAG HOV Plan is presented in a separate HOV Executive Summary). The results of the HOT lanes feasibility study are presented in this HOT Lanes Executive Summary. The primary aspects of this summary include the fiscal and operational feasibility of HOT lanes and implementation issues as well as next step recommendations.

1.0 Value Lanes Fiscal Feasibility

For the evaluation of Value Lane fiscal feasibility, the MAG model results for the near-term Recommended HOV lanes (see Section 4.3 of the Final Report) were used to examine available capacity during peak periods. There is significant capacity in the “inbound” HOV lanes network during the AM peak in 2020 in all corridors except for I-10, I-17/Black Canyon and L-101/Pima (north of McDowell). And, the multi-use (i.e., general-purpose) lanes are experiencing significant congestion on most of the older “inbound” corridors. From this basis, the study participants concluded that, with the exception of I-17/Black Canyon (due to very high construction/ROW costs of over \$1billion) all of the near-term Recommended HOV lanes were potential candidates for Value Lanes. This premise is illustrated in Figure 1, which shows the “old planned” lanes and the new recommended HOV lanes as candidates for Value Lanes.

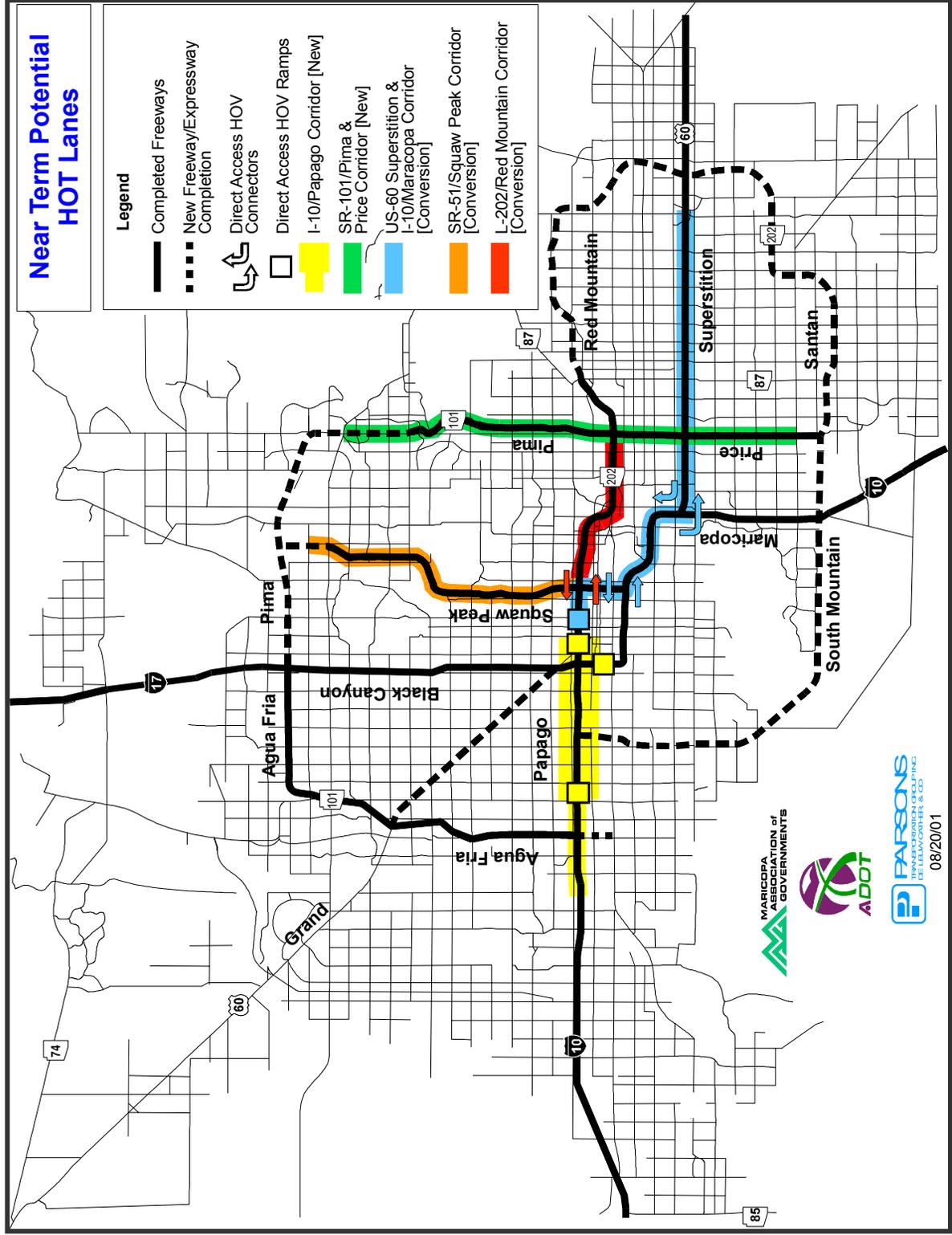
Based upon this information, five candidate Value Lane corridors were identified for the Final Recommended HOT Case. These five candidate Value Lane corridors are defined in Table 1. The five candidates are prioritized (as a potential network of Value Lanes) in Figure 1. Table 1 shows the operational variations for these five candidate Value Lane Corridors as well as the MAG model’s forecast for HOV volumes (AM peak “inbound” without toll payers). With the maximum operational capacity of these HOV facilities assumed to be 1,400 vehicles/lane/hour for one-lane and 1,700 for two-lane alternatives, it is obvious that additional spare HOV capacity is available for HOT lane operations.

Table 1
Five Candidate Value Lane Corridors for Recommended HOT Case Evaluation

Alternative	# Lanes/ direction	Type	Year	AM Peak HOV Volumes (vehicles/lane/hr)	Length (miles)	# Toll Zones	Toll Verif. Zones	HOT Ops Period
I-10/ Papago	2	New	2010 2020	450-800 600-950	10.7 12.6	2x4 2x5	Yes	24-Hour
SR-101/ Pima & Price	1	New	2010 2020	250-600 500-1400	22.5 22.5	2x10 2x10	Yes	24-Hour
US60/ Superstition & I-10/ Maricopa	1	Conversion	2010 2020	600-1100 600-1000	25.9 25.9	2x12 2x12	No	Peak periods
SR-51/ Squaw Peak	1	Conversion	2010 2020	450-900 800-1200	15.8 15.8	2x8 2x8	No	Peak periods
SR-202/Red Mountain	1	Conversion	2010 2020	400-450 400-600	9.2 9.2	2x3 2x3	No	Peak periods

As illustrated in Table 1, the Recommended HOT Case for the three “conversion” corridors is to initially operate them only during peak periods and to not add toll/HOV verification lanes to the existing HOV facilities. This is assumed for demonstration project purposes – specifically, to minimize controversy. Note that these assumptions lower potential revenues by 10% to 40% — e.g., \$2 million to \$5 million per year — across these various corridors. Likewise, although the HOV/toll verification lanes can cost about \$0.75 million per toll collection zone per direction, the revenue impact is significant (e.g., typically 13-15%, but as much as 35-37% — \$1 million to \$4 million per year, as shown in Appendix E of the final report).

Figure 1
Near-Term Potential HOT Lanes: Five Candidate Corridors



1.1 Evaluation of Fiscal Feasibility

The patronage estimates from the MAG model and the gross tolls per transaction from the fiscal evaluation in Appendix E of the Final Report are shown for the five candidate Value Lane corridors in Table 2. As shown, the patronage levels are based upon the available HOV lanes' spare capacity. The average toll provides a measure of the reasonability of the results. Note that all costs and revenues in this study are in constant year 2000 dollars.

Table 2
Recommended HOT Case Patronage Results Summary

Alternative	#Lanes/ direction	Type	Year	Length (miles)	AM Peak Toll Volumes (v//hr.)	Average Gross Toll/ transaction
I-10/ Papago	2	New	2010	10.7	~1200	\$2.87
			2020	12.6	~1100	\$2.44
SR-101/ Pima & Price	1	New	2010	22.5	~780	\$2.72
			2020	22.5	~790	\$3.94
US 60/Superstition & I-10/ Maricopa	1	Conversion	2010	25.9	~800	\$2.48
			2020	25.9	~920	\$2.79
SR-51/ Squaw Peak	1	Conversion	2010	15.8	~730	\$3.98
			2020	15.8	~740	\$4.37
SR-202/Red Mountain	1	Conversion	2010	9.2	~840	\$2.09
			2020	9.2	~860	\$2.62

The overall fiscal feasibility results are summarized in Table 3. The “new” facilities show net annual revenues from \$11 to \$20 million, which are higher than the “converted” lanes due to more available capacity and longer trips made on these longer corridors. The “conversions” reflect net annual revenues from \$5 to \$11 million. Net revenues less than the new facilities because of their shorter operating periods and higher projected violation rates. All five candidates appear to be fiscally viable since they show that construction and toll system implementation could be funded via tolls and toll revenue bonds. However, the Pima/Price would require a varying bond payment schedule to accommodate the lower initial revenues. In summary this analysis concludes that there are five strong candidates for Value Lanes in the MAG area network.

Table 3
Recommended HOT Case Fiscal Feasibility Results Summary

Alternative [Type]	Year	Annual Toll VMT	Average Estimated Net Annual Revenues	Estimated 30-year Bond* that could be funded	Estimated Con- struction Costs**	Estimated Toll System Implementation Costs	Total Costs** to Build Value Lanes
I-10/ Papago [new]	2010 2020	54M 53M	~\$19.5M ~\$16.5M	~\$175M ~\$150M	\$66M +\$13M	\$9.3M +\$1.3M	\$75M +\$14M
SR-101/ Pima & Price [new]	2010 2020	56M 57M	~\$11.5M ~\$14.8M	~\$100M ~\$130M	\$82M --	\$38.3M --	\$120M --
US60/ Super-stition & I-10/ Maricopa [conversion]	2010 2020	39M 52M	~\$9.9M ~\$11.3M	~\$90M ~\$100M	-- --	\$20.0M --	\$20M --
SR-51/ Squaw Peak [conversion]	2010 2020	13M 15M	~\$5.1M ~\$6.8M	~\$45M ~\$60M	\$30M --	\$14.8M --	\$45M --
SR-202/Red Mountain [conversion]	2010 2020	22M 26M	~\$5.5M ~\$6.0M	~\$50M ~\$55M	-- --	\$8.1M --	\$8M --

*Tax-exempt bond

** Excludes funded HOV construction, includes new HOV lane and connector costs

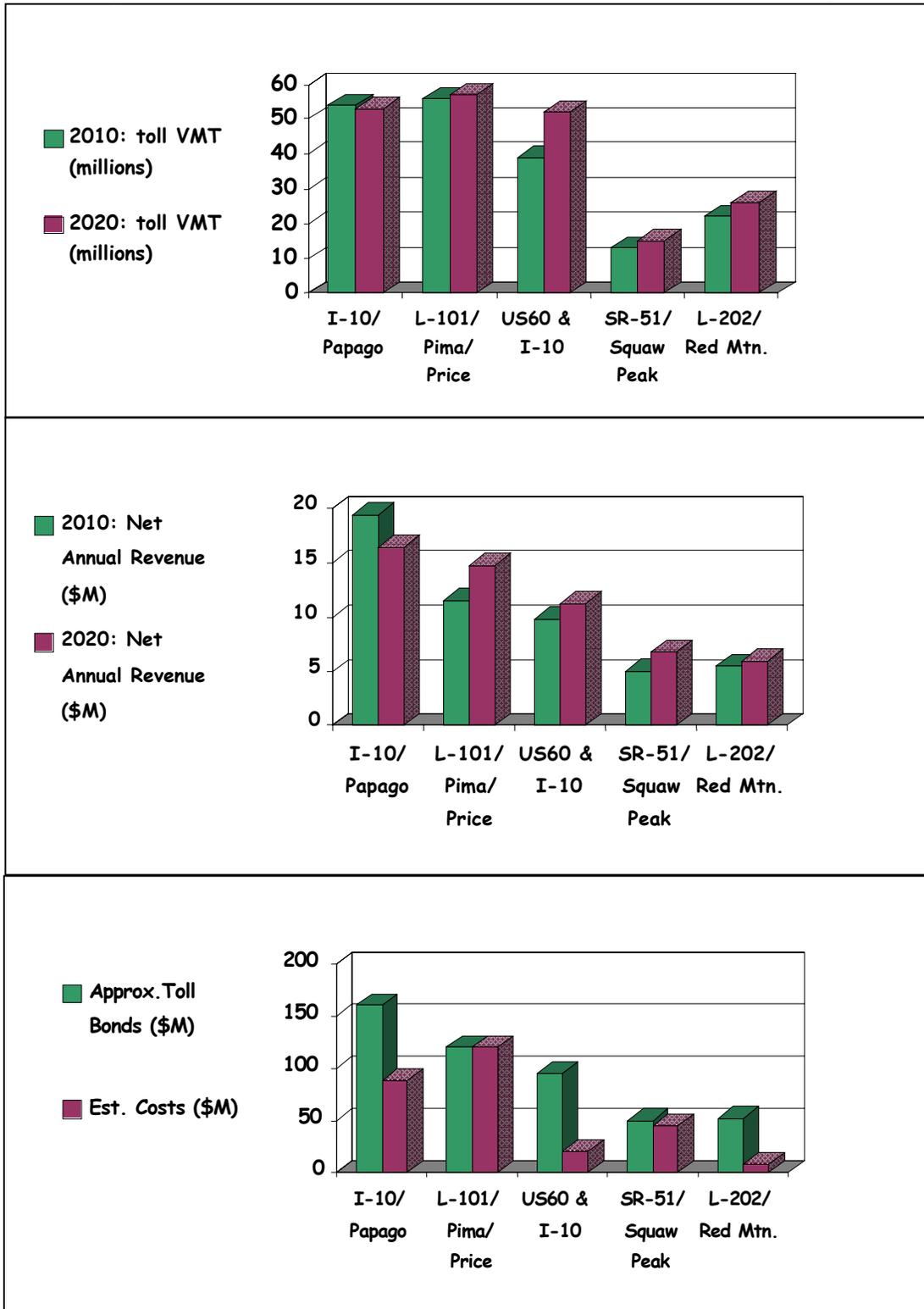
1.2 Evaluation of Alternative Demonstration Project Value Lane Corridors

To select a recommended demonstration project from these five viable alternatives, simple evaluation criteria were developed. Specifically, the criteria used to prioritize these five alternative candidates were:

- “New” lanes were given higher priority as they have no other funding source and are less controversial, therefore, they are more likely to gain acceptance from stakeholders and the public.
- High toll vehicle miles traveled (VMT) received a high priority as this is a measure of trips moving from the general-purpose lanes into the Value Lanes, which is the desired result (e.g., to use the spare capacity in the HOV lanes).
- High priority was awarded to those corridors with the highest revenue potential above their construction costs.

The VMT, net annual revenues, and estimated toll revenue bonds versus construction costs for each of the five alternatives are all shown graphically in Figure 2.

Figure 2
Comparison of Alternative Value Lane Corridors for Selection Purposes



To develop a priority ranking from these data and the criteria described above, a score was developed as shown in Table 4. The “New vs. Conversion” ranking is an arbitrary score that elevates the new candidates as shown in the table. This is not so much a “scoring” but a recommendation for HOT Lanes feasibility. The VMT and Extra Revenue rankings are directly measured from the VMT and revenue, above the construction costs given previously.

Table 4
Priority Ranking of the Candidate Demonstration Project Value Lanes

SCORE:	I-10/ Papago	L-101/ Pima/Price	US60 & I-10	SR51 Squaw Peak	L-202/ Red Mtn.
New vs. Conversion Ranking	20	20	10	10	10
VMT Ranking	5.4	5.7	4.6	1.4	2.4
Extra Revenue Ranking	7.1	0.0	7.5	0.5	4.4
Total:	32.5	25.7	22.1	11.9	16.8
RANK=	1	2	3	5	4

1.3 Conclusions

The conclusion of the fiscal feasibility study is that there are five viable corridors for potential Value Lanes that have been identified and evaluated. If there were to be a demonstration project to prove the concept and to establish acceptance, then the I-10/Papago between 79th and 3rd Avenues would be the highest ranking candidate.

2.0 HOT Implementation Issues and Recommendations

A number of topics have been addressed during the study regarding implementation of HOT or Value Lanes in the MAG region. These issues include:

1. Possible Uses of Net Revenues
2. Regulatory Requirements
3. Funding Sources
4. Demonstration Project Implementation Study
5. Public Communications Plan

These HOT implementation topics are summarized in the following subsections.

2.1 Possible Uses of Net Revenues

Possible uses of the net revenues include the following categories:

- Debt service for construction and conversion costs of HOT lanes,
- Gas tax rebate to users,

Area transit and ridesharing service, and
Other transportation investments.

If all five of the potential HOT lanes alternatives are implemented, then total annual revenues, after operations and maintenance (O&M) costs, are estimated to be around \$55.4 million by 2020, rising from \$51.8 million in 2010. Thus the amount of revenue likely to be available is relatively large over a period of 20 years, and would translate into a total bonding capacity of about \$450 million in 2020. Construction and conversion costs are estimated to total about \$282 million through 2020, potentially leaving about \$168 million that could be used for other capital expenditures.

2.1.1 Discussion of Mitigation Alternatives

Debt Service For Construction and Conversion Costs of HOT Lanes

Because the total net revenue stream is large enough to pay for the additional construction/conversion costs of the toll lanes, this is a very logical use of the money. The HOT lanes would then be self-supporting for both construction and operation.

Gas Tax Rebate

A gasoline tax rebate would be one way of addressing the stated concern of paying twice for the roadway and would be required by current Arizona law. The current gasoline tax is 36.4 cents per gallon in Arizona—18 cents state tax and 18.4 cents federal tax. The current US stock vehicle average fuel efficiency is 20.4 mpg, which is projected to rise to 21.5 mpg by 2020. The stock values are on-road efficiencies for personal vehicles, fleet vehicles, and freight light trucks¹.

Using 21.5 mpg (to account for more personal vehicles using the HOT lanes), the cost of the rebate would be between three and six percent of the 2020 annual net revenues, with the range depending on whether only the state's gasoline tax was rebated or whether both the state and federal gasoline taxes were rebated. The rebate would reduce the bonding capacity for all five alternatives by a total of \$15 to \$30 million in 2020, the range again depending what portion of the gasoline tax was rebated. After paying construction and conversion costs, the remaining total bonding capacity for the five alternatives would be between \$138 and \$153 million.

Whether a rebate should be paid is largely a political decision. The term “paying twice” is really based on a misperception of how much is being paid relative to the cost of highways. With the assumptions above, the current federal and state gas taxes for light-duty vehicles in Arizona amount to approximately 1.7 cents per vehicle mile. As the effort to raise additional revenue for highway construction indicates, the current level of gasoline tax allows the state to fund little more than highway operation and maintenance expenses. Conversely, HOT lane revenues that are adequate to cover construction expenses are only slightly decreased by rebating the gasoline tax.

Area Transit and Ridesharing Service

A portion of the revenues could be used to support increased area transit. About 36 percent of respondents mentioned the need for transit in response to Question 3 in the study's survey (the

¹ Table 47. Light-Duty Vehicle Miles per Gallon by Technology Type, US Department of Energy, March 2001 [http://www.eia.doe.gov/oiaf/aeo/supplement/suptab_47.htm]

most important transportation problems in the Valley). The actual amount of revenue dedicated to transit should be based on the expected cost effectiveness of transit service options. Likewise, some trip reduction may be gained by additional support of ridesharing, but the cost effectiveness of specific proposals should be considered.

The revenues generated from some Value Pricing demonstration projects are being used to fund new and expanded transit services. For example, new express bus service in the I-15 corridor in San Diego is being funded by the net revenues from the Value Pricing demonstration project.

Other Issues

Other equity-related issues mentioned in the study's survey included the following:

- The extra capacity of the HOV lanes should be provided for all if the lanes are part of a funded public highway, and
- There should be no fees for the use of a highway.

Both of these issues have a similar answer from a public policy perspective. Because of inflation and improving gasoline mileage, current levels of gasoline taxes and other motor vehicle fees are not enough to fund highway construction at the rate that traffic congestion is growing in areas like the MAG Region. As noted above, such fees at the state level are slightly more than the costs of maintaining the existing highway system. There are also environmental and social impacts to increased highway construction that reduce the feasibility and increase the costs of expanded highway construction. As a result, federal and state policies favor building highway lanes that increase the person-carrying, as opposed to vehicle-carrying, capacity of highways. HOV lanes that give a time incentive to ridesharing and transit are an important cornerstone of this policy.

Likewise, none of the respondents suggested that taxes should be increased to pay for expanded highways. Yet many noted the inadequacy of the existing freeways and the need for improvement. Consequently, federal and state policies are experimenting with the limited use of user fees to fund new construction, with HOT lanes being the most politically acceptable step at the moment. Value pricing also permits charging users more during the peak-period, which helps balance highway supply and demand better than the "flat" and relatively low price of the gas tax.

In other words, the toll paid by a HOT Lane user is defined as a "premium fee" for the benefits of travel time savings and reliable travel in contrast to the congested general purpose lanes on the same corridor. Toll paying and non-toll paying users pay user fees, such as gas taxes, for use of the basic freeway transportation network. Thus, the toll paid is not "paying twice" for the same road, but rather, paying once, through user fees, for the basic freeway network, and paying a "premium" to receive the benefits of a trip travel time savings and reliable and smoother travel.

2.2 Regulatory Requirements

The State of Arizona would need to establish specific enabling legislation to allow tolls on new or existing state or interstate roadways, as well as to enable an entity to perform toll collection

(operate) on the new toll facility or HOT lanes (see existing State of Arizona privatization statutes). This enabling legislation should increase the ability to bond against toll revenue by the owner of the toll facility or HOT lanes, prescribe standards for electronic toll collection and permit enforcement of toll collection requirements.

2.2.1 Establish Legislation for Toll Collection on State Highway Facilities

The State would need to consider establishing enabling legislation to permit tolls on state-owned roadways. This legislation will need to address the collection of tolls or revenue for the use and operation of equipment and facilities for travel that have been constructed, owned, operated or maintained by the toll authority. An example of similar legislation can be found in the State of California Streets and Highways Code, Bridge and Highways District Act, Section 27550, *et seq.*, enabling a (bridge or highway) "district" to:

"... study, construct, acquire, improve, maintain, and operate any and all modes of transportation within or partly outside the district, including, but not limited to, water transportation; may join with any cities, counties, districts, or state agencies, or any combinations thereof, to study and to provide any such mode of transportation as may be deemed by the board to be reasonable and appropriate to provide or to assist in providing transportation within or partly outside the district; and may pay for or finance, in whole or in part, any such study and any such mode of transportation."

2.2.2 Establish Legislation for Formation of Toll Authority and Power

The State would need to consider establishing enabling legislation to permit the formation of toll authorities and respective powers to "study, construct, acquire, improve, maintain, and operate any and all modes of transportation" facilities used for the purpose of toll collection. A toll authority could consist of local, state, county, or city agencies organized as a single entity, a joint powers authority, or a district. Similar legislation has been enacted in the State of California Streets and Highways Code, Bridge and Highways District Act, Section 27000, *et seq.* This legislation prescribes the requirements for establishing a bridge or highway "district" as the toll authority consisting of a board of elected officials and to define its charter, covenants, by-laws and/or other governing rules and regulations.

Once established, toll authorities would need to define clear objectives for toll operations and management, including toll collection business (financial) and enforcement rules, fiscal interoperability and reciprocity with other toll facilities, traffic safety enhancement, toll facility revenue generation and marketing objectives, enforcing vehicle registration and/or weight enforcement, and managing customer behavior. Most toll authorities have established agency policies and business rules from which to conduct toll operations in conjunction with state and local legislation.

2.2.3 Establish Legislation for Vehicle Code Statutes / Violations

The State would need to consider establishing enabling legislation to define vehicle code statutes as part of operating and maintaining toll facilities. In addition to vehicle codes and laws already established for public roadways, these statutes define the enforceable laws that specifically apply to toll facilities. These may include the construction of signs at each entrance to notify traffic that it is entering a toll facility, refusal of a registered owner's request to renew vehicle registration for failure to resolve toll violations and traffic fines/penalties and administrative fees for toll violations and evasion. An example of this legislation has been

enacted in the State of California, Vehicle Code, Section 4770, *et seq.*, Section 23300, *et seq.*, and Section 40250, *et seq.*

2.2.4 Establish (State/Regional) Technical Standards for Electronic Toll Collection

To promote traffic safety, efficient toll collection operations and maintenance and financial accountability, the State would need to consider establishing technical standards for electronic toll collection (ETC). These standards provide the uniform basis on which to competitively design and construct toll collection facilities and promote competition for toll equipment procurement, thus potentially reducing capital and recurring costs, and providing user (e.g., transponder tag) interoperability with other toll facilities for fiscal reciprocity between agencies. An example of this approach of using technical ETC standards can be found in the State of California's Title 21, Chapter 16, Articles 1 through 4, Section 1700 *et seq.*, the Inter-Agency Group (IAG) automated vehicle identification (AVI) transponder standard in the Northeastern U.S., and the CEN AVI standard in Europe.

2.2.5 Establishment of Toll Evasion Enforcement Statutes and Procedures

To promote effective toll collection operations, appropriate toll violation enforcement statutes would need to be enacted to ensure fiscal viability. Along with the enabling legislation permitting toll collection, the State would need to consider the establishment of enabling legislation for toll violations and evasion collection procedures. This legislation and related violation enforcement system are keys to reduced toll violations, increased toll payment compliance, enforcing customer behavior and proper transponder tag usage. An example of a toll evasion enforcement statute/regulation involves vehicle registration renewal restrictions as currently implemented and enforced by toll agencies in the State of California. The California Vehicle Code, Section 4770 *et seq.*, Section 23300 *et seq.*, and Section 40250 *et seq.* define the toll evasion provisions and due process for pursuing and collecting from toll violators.

In this case, toll violations are subject to a civil penalty, and thus, are governed by the State of California civil administrative procedures provided by the Streets and Highway Code, Division 16, Section 27000 *et seq.* These procedures define the toll evasion penalties an agency can collect from a violator, including the original toll amount, administrative fees, process service fees, and collection fees and costs for civil debt collection. These procedures also define permissible violation detection and violator vehicle identification methods, violator notification requirements and time frames, payment collection process, violation contest and appeals processes, civil judgments and Department of Motor Vehicle (DMV) registration "holds" and which agencies or jurisdictions receive the violation fines.

2.2.6 Re-evaluation of Existing State Law

The State would need to also consider changing the following law to facilitate HOT lanes:

28-7749. Tax refund or credit

A person who pays a toll to operate a motor vehicle on a roadway project that is constructed or operated pursuant to this article is entitled to and may apply for a refund or credit from the state for motor vehicle fuel license taxes, use fuel taxes or motor carrier fees paid while operating the motor vehicle on the roadway project. The director shall establish by rule the procedures for granting refunds or credits.

The law is predicated on the assumption that the State has enough money to pay for roads without use of toll revenue. Given the actual economic situation in which the State can afford slightly more than maintenance, such a rebate only encourages the State to give away money that it does not have. In addition, the law makes no distinction between federal and state gasoline taxes. Because the State cannot obligate federal gasoline taxes, the law would not likely survive a constitutional challenge. Also see the discussion in subsection 11.1.3 for the consequential loss in bonding capacity, should the demonstration project be charged for the rebate.

2.3 Funding

2.3.1 Funding under the FHWA Pilot Program 2

Funds for the FHWA Value Pricing Pilot Program were typically used to support pre-project study activities and pay for the implementation costs of value pricing projects. Costs eligible for reimbursement under Section 1216(a) of TEA-21 included the costs of planning, setting up, managing, operating, monitoring, evaluating, and reporting on local value pricing pilot projects. Recent changes in the Federal Highway Administration Value Lane Policy resulted in the deletion of program funding for continuing the opportunity to proceed with, and significantly reduces the near-term viability for a formal demonstration project. Unless alternative sources of funding can be identified and secured, the demonstration project decision to proceed may need to be delayed. The following are typical examples of specific costs that will need reimbursement:

Pre-Project Study Costs

- Impact assessment
- Modeling
- Development of monitoring/evaluation plans
- Public participation
- Market research
- Financial planning

Implementation Costs

- Costs associated with the implementation of a value pricing project, such as implementation of electronic tolling equipment, enforcement costs, costs of monitoring and evaluation and public participation.
- Costs of providing new or expanded transportation alternatives.
- Depending on the availability of funds, limited funds may be available to serve as a revenue reserve fund to provide assurance to toll authorities that a pilot test of value pricing would not jeopardize their bond covenants.
- Given the current authorization level of \$11 million per year and 15 potential projects, funding tends to be limited to the pre-project costs and implementation costs of electronic tolling equipment, enforcement costs, costs of monitoring and evaluation, and the like.

² Value Pricing Pilot Program, FHWA, April 4, 2001.

2.3.2 Other Funding

Funding of the costs of adding a lane would most likely come from one (or both) of two sources:

- A typical (and limited) federal-aid/local mix for ADOT highways, or
- Bonds backed by toll revenues.

Note: Alternative funding for a Value Lanes Demonstration Project will be needed as there are no available construction funds currently planned nor appropriated for this use.

FTA Funding Constraint on Value Lanes

At the present time, the Federal Transit Administration (FTA) has taken the official position that any HOV lanes constructed using FTA funds cannot be used for HOT or Value lanes. That is, tolls cannot be charged on HOV facilities funded by the FTA. A HOT lane project on I-25 in Denver is currently “on hold” because of that FTA position. During this study, the MAG HOV Committee members determined that, to date, FTA funds have not been used to construct the MAG Region’s HOV lanes. Hence, this FTA constraint is not an issue at this time.

2.4 Value Lanes Demonstration Project(s) Implementation Study

At the conclusions of the current study, ADOT officials and MAG will have a number of choices regarding Value Lane implementation. To take advantage of the potential benefits of implementing Value Lanes in the region, ADOT will need to take action. It is suggested that an implementation study be commissioned to help guide these future actions. The study would provide guidance for the following steps:

Pre-implementation Phase:

- Selection of the demonstration project (presumably from the alternatives identified in Section 7 of the Final Report),
- Identify and obtain legislative changes required for project (see subsection 11.2),
- Obtain funding for the demonstration project (see subsection 11.4),
- Conduct public outreach (see subsection 11.6),
- Develop plans and specifications to the project study report level,
- Select electronic system and operational concept,
- Develop relationship of demonstration project to an overall system,
- Develop monitoring and evaluation plan (see subsection 11.5),
- Conduct environmental review (if necessary),
- Establish concept of operations and maintenance for implementation, and
- Define toll system and other procurement features to bid level

Implementation Phase:

- Conduct bidding process and select contractors,
- Collect pre-project data,
- Construct in-house elements of system,
- Install toll and related equipment,

- Test toll system,
- Open demonstration project to traffic,
- Collect on-going data for monitoring and evaluation, and
- Evaluate effectiveness and impacts of project.

Action Plan

Upon completion of the Value Lanes Study, an Action Plan should be put into place by ADOT and MAG. The recommended actions to be included in this plan are:

- Incorporate the HOV and HOT recommendations into new “draft” Long Range State and Regional Transportation Plans.
- Add a design concept report and environmental assessment to the MAG and 2007 ADOT Programs for Value/HOT lanes on major segments of I-10/Papago.
- Include funding in State and Regional Programs to study locations and design concepts for HOV connectors and ramps recommended in this update to the HOV Plan.
- Include funding in State and Regional Programs to conduct the next five-year update to the HOV Plan in FY 2007.
- Pursue public education on the need for an HOV/HOT system.
- Seek legislative changes needed to allow implementation of Value Lanes.
- Include Value Lane implementation as one or two demonstration projects.
- Investigate and/or apply for applicable federal funding or other similar programs.
- Conduct Value Lanes Demonstration Project(s) Implementation Study sufficient to define necessary infrastructure, as well as toll and traffic management system requirements for procurement and, as appropriate, to satisfy project requirements (as was imposed by the FHWA Value Pricing Program for implementing a Monitoring Program and a Public Communications Plan).

2.5 Public Communications Plan

As part of an implementation study, two types of outreach activities are described in the following two subsections. The third subsection below summarizes the proposed theme to be presented.

2.5.1 Stakeholder Interviews/Presentations

As a first step in the implementation study, we recommend that one-on-one interviews be held with up to 20 key stakeholders to gauge support for a Value Lane project. Stakeholders will include representatives from local jurisdictions, environmental groups, business groups, elected officials, and agencies. The interviews play an important role in the overall process because

they provide key players with an opportunity to speak more candidly about the project and their specific concerns.

Potential interview participants were reviewed with ADOT and MAG. To help focus the discussion, questionnaire was developed and used during each interview. Interviews were conducted in person or by phone, using the standardized (and ADOT-approved) interview questionnaire. The interviews were confidential and the aggregated results were reported in a summary document.

A key objective of the stakeholder interviews would be to find a project champion as well as to inform local political representatives of the likely benefits and risks of the Value Lane proposals.

2.5.2 Public Forums

As a second step in the implementation study, public forums should be held. The study team would facilitate and graphically record the public forums at two stages in the study, with the locations of the forums depending upon the potential projects to be proposed. The forums would be designed to meet identified goals, with activities including, but not limited to, informational presentations, group discussions and individual feedback exercises. The informational video on value pricing, developed by the Humphrey Institute in Minneapolis and used during this study could be a useful educational tool in the public meetings. The team members will coordinate logistics and develop agendas and comment sheets to be used at the forums. The purpose and general format of these forums would be the following:

- Round I Forums: Preliminary Alternatives and Recommendations - The purpose of the first forum would be to present planning/development alternatives and recommendations for and community review. Participants would have an opportunity to provide feedback regarding the different alternatives and recommendations, and identify possible demonstration project for further refinement by the project team.
- Round II Forums: Potential Demonstration Projects - The final forum would present potential demonstration projects for stakeholder and community review and input.

2.5.3 Public Outreach Message

The following messages should be conveyed to the public:

- The MAG Region is growing fast and its traffic is growing even faster.
- Experts generally agree that the population will increase by 50 percent over the next 20 years, and travel will increase by 70 percent during that same time. The problem isn't just theoretical; in a late 1999 survey, 69 percent of residents said that traffic was a very important problem in the Valley. Traffic is growing; the question is: How best to deal with it?
- The Region has an extensive and growing network of High Occupancy Vehicle (HOV) lanes in place. Regarded for 20 years as a transportation-management concept that offers multiple benefits, HOV lanes encourage ridesharing and raise vehicle occupancy, both reducing traffic in the general-purpose lanes and offering those who are willing to rideshare the benefit of a dedicated and often free-flowing lane. The lanes make the existing freeway system more effective and efficient through a simple concept: Move more people, rather than just more cars.

- The MAG Region’s first HOV lanes opened in 1988, and today over 50 miles of lanes exist, with most of the lanes located on I-10, State Route 202, and I-17. But although they enjoy broad public support, the HOV lanes have not resulted in wholesale changes in the way people commute. Furthermore, societal norms chafe against the rigid day-to-day planning needed for a motorist to maximize his/her use of the HOV lanes.
- Against this background, High Occupancy Toll lanes (or HOT lanes) can best be described as new or existing HOV lanes that are opened to solo drivers for a fee. They can accomplish several goals:
 - By filling up underutilized carpool lanes, they keep HOV lanes at their optimum utilization.
 - By diverting some solo drivers from the adjoining general-purpose lanes, they help reduce congestion in those lanes.
 - They generate revenue for transportation corridor improvements.
 - They provide significant time savings and a reliable travel (premium) option to solo drivers who have a special need to reach their destination on time and are willing to pay a premium for the time savings and reliable travel privilege.
 - Although results of a late 1999 survey on the HOT lane concept were divided, they were consistent with the pre-construction and pre-education attitudes of motorists and residents in areas where HOT lanes have been built. Significantly, support for HOT lane projects grows markedly when a public education effort was undertaken to explain the project’s benefits.

With continued focused education and workshops, public opinion and attitudes towards Value Lanes can shift. While the focus group participants were widely split on the idea of “HOT lanes,” they approved of the idea of “express lanes” by a wide margin – even when told that the two concepts were identical.

These survey results, combined with the experiences of other HOV and HOT projects in the U.S., paint a surprisingly consistent picture: When the benefits of HOT lanes are properly explained and positioned as a new option rather than something forced upon the driving public, motorists tend to favor the flexibility and innovation of these projects.

3.0 CONCLUSIONS

The results of this study indicate that HOV and HOT Lanes, or Value Lanes, are feasible and a viable traffic management treatment option to maximize use of available mainline capacities for the Maricopa County area freeway network. Additionally, the concept of Value Lanes offer benefits to single occupant vehicles (SOV) drivers for a fee premium in exchange for trip travel time savings, reliable travel time and a less congested driving experience, as well as, a revenue generating source to fund Value Lanes operations and maintenance and other public transportation mode options.

The HOV lanes also enjoy strong support in the community. Seventy-nine (79) percent of respondents in the study's survey stated that they were familiar with the region's carpool lanes and had used them; 86 percent of those surveyed approved of the HOV concept, and a remarkable 66 percent said that they strongly approved of the concept. Additionally, nearly 75 percent of those surveyed agreed that more HOV lanes should be built on the region's freeways. This data supports plans to add HOV lanes.

While the general public and stakeholders have shown general interest and accept the concept of Value Lanes, it is recommended that focused Value Lanes education to the general public be continued over time and prior to implementation of the concept.

This concept of selling of excess HOV lane capacity for a fee to non-carpoolers (HOT lanes) has been identified as an approach to expand the use of the excess capacity in HOV lanes to serve a greater variety of users and generate additional revenue. A key consideration toward attracting toll-paying non-carpoolers to the HOT lanes is to ensure that smooth flowing travel conditions are maintained for all users at all times. Congestion or value pricing (i.e., adjusting the tolls for the HOT lane during periods of high traffic volumes) can be used to maintain these smooth flowing conditions. These two separate concepts are often intertwined. HOT lanes are a method to sell excess HOV lane capacity. Congestion or value pricing is a method to adjust the volume of non-carpoolers on the HOT lane to ensure smooth flowing traffic conditions by using price as the travel demand management control.

The State of Arizona's efforts to establish specific enabling legislation to allow tolls on new or existing state or interstate roadways, as well as to enable an entity to perform toll collection (operate) on the new toll facility or Value lanes (see existing State of Arizona privatization statues) will pave the way for project implementation. This enabling legislation will also provide for the bonding against toll revenue by the owner of the toll facility or HOT lanes, prescribe standards for electronic toll collection and permit enforcement of toll collection requirements.

For Value Lanes Demonstration Project programming and funding, ADOT and MAG need to use the projected 2010 and 2020 traffic demands as the basis to provide a case for secondary traffic demand management option as the Maricopa area HOV network is constructed and established. Value Lanes, as a secondary treatment, will give ADOT and MAG with a demand-based, traffic tool to manage available freeway mainline capacity while offering SOV drivers an alternative time saving, smooth travel option to the typical, congested experience. Congestion or value pricing (i.e., adjusting the tolls for the HOT lane during periods of high traffic volumes) can be used to maintain these smooth flowing conditions.

Finally, the Action Plan provides ADOT and MAG with a toolbox from which to use as a template to implement HOV lanes as a base treatment, and then introducing Value Lanes over time on those impacted freeway segments that exhibit chronic, peak period LOS E and F traffic conditions.

In conclusion, this Study and this Final Report identifies the Value Lanes "Blueprint" and Action Plan for ADOT and MAG to use as a time-phased, planning, implementation and operations guide to deploy Value Lanes in anticipation of the County's traffic growth through the years 2010 and 2020, and beyond.