

# Arizona Perspectives on Priced Managed Lanes and Toll Roads (2014-2015)



Arizona Department of Transportation Research Center



# Arizona Perspectives on Priced Managed Lanes and Toll Roads (2014–2015)

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# SI\* (MODERN METRIC) CONVERSION FACTORS

## APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
<b>LENGTH</b>				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
<b>AREA</b>				
in <sup>2</sup>	square inches	645.2	square millimeters	mm <sup>2</sup>
ft <sup>2</sup>	square feet	0.093	square meters	m <sup>2</sup>
yd <sup>2</sup>	square yard	0.836	square meters	m <sup>2</sup>
ac	acres	0.405	hectares	ha
mi <sup>2</sup>	square miles	2.59	square kilometers	km <sup>2</sup>
<b>VOLUME</b>				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft <sup>3</sup>	cubic feet	0.028	cubic meters	m <sup>3</sup>
yd <sup>3</sup>	cubic yards	0.765	cubic meters	m <sup>3</sup>
NOTE: volumes greater than 1000 L shall be shown in m <sup>3</sup>				
<b>MASS</b>				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
<b>TEMPERATURE (exact degrees)</b>				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
<b>ILLUMINATION</b>				
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m <sup>2</sup>	cd/m <sup>2</sup>
<b>FORCE and PRESSURE or STRESS</b>				
lbf	poundforce	4.45	newtons	N
lbf/in <sup>2</sup>	poundforce per square inch	6.89	kilopascals	kPa

## APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
<b>LENGTH</b>				
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
<b>AREA</b>				
mm <sup>2</sup>	square millimeters	0.0016	square inches	in <sup>2</sup>
m <sup>2</sup>	square meters	10.764	square feet	ft <sup>2</sup>
m <sup>2</sup>	square meters	1.195	square yards	yd <sup>2</sup>
ha	hectares	2.47	acres	ac
km <sup>2</sup>	square kilometers	0.386	square miles	mi <sup>2</sup>
<b>VOLUME</b>				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m <sup>3</sup>	cubic meters	35.314	cubic feet	ft <sup>3</sup>
m <sup>3</sup>	cubic meters	1.307	cubic yards	yd <sup>3</sup>
<b>MASS</b>				
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
<b>TEMPERATURE (exact degrees)</b>				
°C	Celsius	1.8C+32	Fahrenheit	°F
<b>ILLUMINATION</b>				
lx	lux	0.0929	foot-candles	fc
cd/m <sup>2</sup>	candela/m <sup>2</sup>	0.2919	foot-Lamberts	fl
<b>FORCE and PRESSURE or STRESS</b>				
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in <sup>2</sup>

\*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.  
(Revised March 2003)

# CONTENTS

EXECUTIVE SUMMARY.....	1
CHAPTER 1. INTRODUCTION .....	5
CHAPTER 2. LITERATURE REVIEW.....	11
CHAPTER 3. INTERVIEWS WITH TOLLING FACILITIES OFFICIALS.....	49
CHAPTER 4. INTERVIEWS WITH ARIZONA PUBLIC OPINION INFLUENCERS .....	77
CHAPTER 5. FOCUS GROUPS WITH THE ARIZONA PUBLIC .....	99
CHAPTER 6. SUMMARY OF FINDINGS.....	137
REFERENCES.....	143
APPENDIX .....	151

## LIST OF FIGURES

Figure 1. Managed Lane Applications .....	13
Figure 2. Priced Managed Lanes Operating or in Construction .....	33
Figure 3. Factors Influencing Public Opinion on Tolling .....	137

## LIST OF TABLES

Table 1. Information on Municipalities of Mayors Interviewed .....	79
Table 2. Focus Groups Schedule .....	107
Table 3. Summary of Discussions with Arizonans (2014-2015) .....	139



## LIST OF ACRONYMS

AASHTO .....	American Association of State Highway and Transportation Officials
AAA .....	American Automobile Association
AMTA .....	Arizona Motor Transport Association
ADOT .....	Arizona Department of Transportation
ARS .....	Arizona Revised Statutes
ATA .....	Arizona Trucking Association
BATIC.....	Build America Transportation Investment Center
CAG .....	Central Arizona Governments
CBO.....	Congressional Budget Office
CDA.....	comprehensive development agreement
CFD .....	community facilities district
CPTC .....	California Private Transportation Company
DB.....	design–build
DBF .....	design–build–finance
DBFOM .....	design–build–finance–operate–maintain
DOT .....	department of transportation
EIS.....	environmental impact statement
ETC .....	electronic toll collection
FAST.....	Fixing America’s Surface Transportation Act
FDOT.....	Florida Department of Transportation
FHWA .....	Federal Highway Administration
HCTRA .....	Harris County Toll Road Authority
HOV .....	high-occupancy vehicle

HOT ..... high-occupancy vehicle toll

HTF ..... Highway Trust Fund

HURF ..... Highway User Revenue Fund

ICPP ..... Integrated Congestion Pricing Plan

ISRRPP ..... Interstate System Reconstruction and Rehabilitation Pilot Program

ISTEA ..... Intermodal Surface Transportation Efficiency Act

IBTTA ..... International Bridge, Tunnel and Turnpike Association

ITEP ..... Institute on Taxation and Economic Policy

KML ..... Katy Freeway Managed Lanes

LACMTA..... Los Angeles County Metropolitan Transportation Authority

LPA ..... local public agency

MAG ..... Maricopa Association of Governments

MAP-21 ..... Moving Ahead for Progress in the 21<sup>st</sup> Century Act

MBUF ..... mileage-based user fee

METRO ..... Metropolitan Transit Authority of Harris County

MnDOT ..... Minnesota Department of Transportation

MPD..... Multimodal Planning Division, Arizona Department of Transportation

MPO ..... metropolitan planning organization

NCHRP ..... National Cooperative Highway Research Program

NCSL ..... National Conference of State Legislatures

OCTA ..... Orange County Transportation Authority

PAG..... Pima Association of Governments

P3 ..... public-private partnership

RCTC..... Riverside County Transportation Commission

RTP ..... regional transportation plan

RUC..... road use charge

SAFETEA-LU..... Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

SANDAG ..... San Diego Association of Governments

SCMPO ..... Sun Corridor Metropolitan Planning Organization

SDSU..... San Diego State University

SOV..... single-occupant vehicle

SPR ..... State Planning and Research

TAC..... Technical Advisory Committee

TEA-21 ..... Transportation Equity Act for the 21st Century

TOT..... truck-only toll

TPF..... Transportation Pooled Fund

TRB ..... Transportation Research Board

TxDOT..... Texas Department of Transportation

UDOT ..... Utah Department of Transportation

UMTRI ..... University of Michigan Transportation Research Institute

UTC..... university transportation center

VDOT ..... Virginia Department of Transportation

VMT..... vehicle miles traveled

VPPP ..... Value Pricing Pilot Program

WisDOT ..... Wisconsin Department of Transportation

WSDOT ..... Washington State Department of Transportation



## **EXECUTIVE SUMMARY**

Traffic congestion is a major challenge for high-density and high-growth areas across the country—wasting fuel, increasing vehicle emissions, and delaying the movement of passengers and freight—all of which mean significant costs for highway users as well as the national economy. In Arizona, drivers in the central metropolitan region (primarily Phoenix and surrounding communities in Maricopa County) experience significant highway congestion and lengthening peak demand periods.

The problem of traffic congestion is compounded by the gap between the cost of needed transportation projects and existing funding sources and levels that are remaining static at best. As Arizona's population grows and urbanization expands, the need will also grow for the Arizona Department of Transportation (ADOT) and local and regional transportation agencies to more actively manage the highway system.

The concept of tolls and other forms of road pricing is garnering increased interest nationwide as an alternative method of financing, as well as a means of managing congestion and providing drivers with roadway options. One reason for this renewed interest is the emergence of electronic toll collection (ETC) technology in the late 1980s and early 1990s. ETC enables drivers to pay tolls electronically rather than stopping to pay at a toll booth, making toll road travel far more convenient. Another factor contributing to increased interest in lane pricing and tolling was Congressional passage of a series of bills that not only loosened the long-standing restrictions against tolling on highways receiving federal aid, but also created pilot programs through which tolling authority could be granted to state and local transportation agencies. These statutes are as follows: Intermodal Surface Transportation Efficiency Act (ISTEA), enacted in 1991; Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998; Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted in 2005; Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012; and Fixing America's Surface Transportation Act (FAST), enacted in 2015 (IBTTA 2017).

States that have utilized legislative changes to construct or enhance tolling facilities have financed a number of their projects through public-private partnerships (P3s). These partnerships are regulated by state law and require enabling state legislation. Currently 33 states—including Arizona—as well as Washington, DC and Puerto Rico, have passed legislation allowing the use of P3s in highway financing (NCSL 2015).

### **PURPOSE OF STUDY**

This research study examined Arizonans' knowledge and perceptions of current transportation funding sources and options for transportation financing, such as priced managed lanes and tolling. Additionally, several topics were explored with regular highway users, such as commuting distances and experiences; perceptions of traffic congestion and its effects on quality of life, the economy, etc.; and views on advantages and disadvantages of tolling and priced managed lanes. The overall objective was to identify and gain insight into specific factors that influence public opinion toward acceptance or rejection of priced managed lanes and tolling.

Qualitative research was conducted among three segments of the public in Arizona and other states:

- Arizona public influencers – Interviews were conducted with Arizonans who are public influencers—that is, individuals and organization representatives who directly influence public opinion regarding transportation issues in central Arizona.
- Arizona highway and motor vehicle users – Focus groups were conducted with members of the public who are regular or frequent highway and motor vehicle users and live and/or work in the central Arizona region.
- Other states with toll facilities – Interviews were conducted with senior managers of DOTs and metropolitan planning organizations (MPOs) in states that have constructed and are currently operating successful priced managed lane facilities.

## **FINDINGS**

This study identified the primary factors influencing public acceptance of priced managed lanes and tolling projects:

- Understanding of transportation funding sources, allocation, and use, and the need for additional revenue to address current and projected shortfalls
- Understanding of the need for a specific managed lane and tolling project, including the opportunity to see demonstrable, measurable benefits for users and non-users alike, such as positive performance data from similar facilities
- Perceived equity and fairness of the transportation system for all users, particularly regarding availability of low- or no-cost alternatives, such as express bus service on a managed lane facility, existence of a parallel roadway with no tolling, etc.
- Implementation of operational practices and systems that support driver safety and smooth traffic flow, enforce toll violation penalties, and keep the public informed about the facility
- Use of toll revenues only to support highway construction, infrastructure maintenance and enhancement, or expansion of public transportation systems
- Support from key influencers outside the lead agency serving as project champions

All the foregoing factors underscore the need for an extensive ongoing public involvement and communication prior to, during, and after implementation, including formal and informal mechanisms for public feedback.

Also identified were a variety of practices and strategies that have been used by transportation agencies in other states to address these factors throughout the planning and implementation of successful managed lanes and tolling facilities in their states.

These findings can be used to inform ADOT's efforts to develop and gain public support for needed transportation projects as well as new or expanded transportation financing mechanisms. ADOT can also use these findings to identify areas and topics where it requires more in-depth information on public perceptions, attitudes, and information needs related to priced managed lanes and tolling. This information may be obtained through targeted qualitative research and a statewide quantitative survey among a statistically representative sample of Arizona residents.





## CHAPTER 1. INTRODUCTION

Traffic congestion is a major challenge facing high density and high growth areas today. Congestion wastes fuel, increases vehicle emissions, and delays the movement of passengers and freight—all of which mean significant costs for highway users as well as the national economy. According to a report jointly produced by the Texas A&M Transportation Institute and INRIX, Inc., U.S. traffic congestion in 2014 cost average urban Americans \$160 billion, including an extra 6.9 billion hours in travel delay and an extra 3.1 billion gallons of wasted fuel. At the local level, the 2014 national averages for 15 large urban areas, including Phoenix, were 63 hours lost and 27 extra gallons of fuel, for a cost of \$1,433 per auto commuter. Drivers in the Phoenix-Mesa metropolitan area lost more than one work week (51 hours) to travel delay and purchased nearly 25 extra gallons of fuel in 2014, for a cost of \$1,201 per auto commuter (Schrank et al. 2015).

Congestion also has a public health cost. Research conducted by the Harvard Center for Risk Analysis at the School of Public Health estimated that the fine particulate matter emissions that can be traced back to traffic congestion—i.e., vehicles idling in traffic jams—in the nation’s 83 largest urban areas led to more than 2,200 premature deaths in the U.S. in 2010. For the Phoenix-Mesa metropolitan area, the 2010 estimate was 15 premature deaths and the projection for 2030 increases to 17. Although auto emissions have been decreasing slightly nationwide, the study projects that by 2030, the attributable number of premature deaths will only drop to 1,900 annually. Furthermore, the number of vehicle miles traveled in the Phoenix-Mesa area is projected to increase 33 percent from 2000 to 2030; of the 83 urban areas included in the study, only 12 were projected to experience a higher increase over the same time period. The authors caution that the estimates for individual urban areas are less certain than those for the 83 urban areas combined, due to factors specific to each urban area, such as construction of roads or facilities that might contribute to increases or decreases in congestion over particular time periods (Levy et al. 2010).

Compounding the problem of traffic congestion is transportation funding that is not keeping pace with inflation. Transportation projects in the United States are funded primarily by a combination of revenue sources at the federal, state, and local levels. Motor fuel taxes account for approximately 25 percent; a mix of vehicle and other taxes and fees, including sales and property taxes charged by state and local governments, provide another 22 percent; and appropriations from general funds account for about 27 percent (BATIC 2010).

### FEDERAL FUNDING

The Highway Trust Fund (HTF) is the main funding source for the federal government’s investments in highway and transit infrastructure and is primarily funded through the federal tax on motor fuels, commonly referred to as the *gas tax*. This poses a significant problem in that the tax has remained unchanged at 18.4 cents per gallon of gasoline and 24.4 cents per gallon on diesel fuel since its last increase in 1993. Consequently, its purchasing power has dropped more than 28 percent since 1997, the year in which the federal government decided the gas tax should be used exclusively for transportation purposes (ITEP 2014).

To make up for the dwindling value of the gas tax, Congress has transferred \$140 billion from the General Fund to the HTF since 2008. Unless a solution is found, Congress will again have to transfer general funds to the HTF in 2020. The Congressional Budget Office (CBO) projects that beginning in FY2021, federal revenues dedicated to surface transportation will fall short of spending obligations by an average of \$20 billion annually (Kirk 2017).

In August of 2016, the Federal Highway Administration (FHWA) announced \$14.2 million in grants for states to explore alternative revenue mechanisms to help sustain the long-term solvency of the Highway Trust Fund. The grants will fund eight projects that are piloting a variety of options to raise revenue, including on-board vehicle technologies to charge drivers based on miles traveled and multi-state or regional approaches to road use charges. Road use charges (RUCs) are also known as mileage-based user fees (MBUFs) or vehicle miles traveled (VMT) fees. The projects funded by the grants will address common challenges involved with implementing user-based fees such as public acceptance, privacy protection, equity and geographic diversity, and will also evaluate the reliability and security of the technologies available to implement mileage-based fees. Pilot programs include Oregon's OreGo user-fee pilot program launched in July 2015 and the California Road User Charge (RUC) Pilot, launched in July 2016. ADOT is a member of RUC West, an organization of 14 western state DOTs that are sharing resources and collaborating on projects to explore road use charging as a revenue generation method for their states. RUC West has three membership tiers: Tier 1, states that are actively promoting RUC; Tier 2, states that are conducting RUC research pilot projects; and Tier 3, the group that includes Arizona, consisting of states that are researching or monitoring RUC programs (RUC West 2017).

## **STATE FUNDING**

At the state level, the majority of transportation funding—approximately 80 percent—comes from taxes and fees from motor vehicle users, tolls, general fund appropriations, and bond proceeds. In Arizona the largest portion of ADOT revenue, approximately 35 percent, comes from motor vehicle registration, title, license, and related taxes. Fuel and motor carrier taxes and fees account for the second largest portion of ADOT revenue, approximately 24 percent. Capital grants and contributions represent the Department's third largest revenue source at 22 percent (ADOT 2017).

Like the federal government, 13 states have gone 20 years or more since raising their fuel tax, including 11 that surpass the federal government's 24-plus years. The latter group includes Arizona; as of July 1, 2017, it has been nearly 27 years since the state's last fuel tax increase (ITEP 2017). The majority of states (30) continue to levy fixed-rate fuel taxes and, as with the federal fuel tax, these fixed-rate state fuel taxes are not keeping pace with inflation. However, other states are taking steps to increase fuel tax revenues. Since 2013, 24 states and the District of Columbia have raised or revised their fuel taxes; in slightly over half (13), the relevant legislation was passed or became effective in 2017. Currently, 20 states and Washington, DC, have a variable-rate gas tax that automatically adjusts, to some degree, with inflation or prices (NCSL 2017).

Like many states, Arizona is struggling to address the growing gap between anticipated revenue and the cost of planned transportation projects. Over the past 20 years, the concept of tolls and other forms of

road pricing has garnered significant attention nationwide as an alternative method of financing as well as a means of managing congestion and providing drivers with roadway options. Currently, 34 states plus Puerto Rico have at least one tolled road, bridge, or tunnel, including two of Arizona's neighboring states, Utah and Colorado (IBTTA 2015). While high occupancy vehicle (HOV) lanes have been in place in Arizona since 1998, no form of priced managed lanes has ever been used in the state (Chang et al. 2008a).

In July 2009, Arizona enacted legislation that authorizes the use of public-private partnerships (P3s) to finance, construct, operate, and maintain transportation projects. The untitled act, commonly known as HB 2396, gives ADOT broad authority and flexibility to consider "a variety of project delivery methods and forms of agreements" for using P3s to develop new and enhanced facilities. It also creates a mechanism to allow toll-paying motor vehicle operators to apply for rebates or credits for their "motor vehicle fuel license taxes, use fuel taxes, or motor carrier fees paid while operating the motor vehicle on the roadway project" (ARS 2017).

### **INDICATIONS OF DECLINING MOTORIZATION**

While the total number of miles driven annually has been increasing due to population growth, the number of miles traveled annually per adult has declined. From 2004 to 2016, the annual average for miles driven per adult decreased 6 percent, from 13,300 miles to 12,500 (Hodges 2016). A declining rate of annual miles driven per adult has also been reported in a study conducted by the University of Michigan Transportation Research Institute (UMTRI) examining trends in various aspects of motorization in the US from 1984 through 2015, such as the annual rates of miles traveled, vehicle ownership, and fuel consumption per person, per licensed driver, per household, and per registered vehicle. To date, analyses of the data from the study have been published in nine reports from 2013 through 2017, with the most recent report confirming the study's earlier findings that the distance-driven rates per person and per household both peaked in 2004, and the vehicle-ownership rates per person and per household peaked in 2006 (Sivak 2017).

The UMTRI study also reported that:

- Both distance-driven rates, per person and per household, were down in 2015—7.8 percent on average—from their 2004 rates, although they rebounded slightly—2.1 percent on average—between 2013 and 2015. The rate per person for 2015 was at about the same level as the rate for 1997, while the rate per household for 2015 was at about the same level as for 1994 (Sivak 2015).
- Both vehicle-ownership rates, per person and per household, were down in 2015—4.4 percent on average—from their 2006 rates, although they also rebounded slightly—1.4 percent on average—between 2012 and 2015. The rate per person for 2015 is at about the same level as the rate for 2000, while the rate per household for 2015 is at about the same level as for 1993 (Sivak 2015).

- It is too early to tell whether the slight increases in distance-driven and vehicle-ownership rates occurring from 2012 to 2015 signal the beginning of a new upward trend in US motorization (Sivak 2017).

## **ROAD PRICING AS A MEANS OF ADDRESSING FINANCING AND CONGESTION ISSUES**

Tolling and pricing involve charging fees for the use of a roadway facility. The revenue generated may be used to pay for highway operations and maintenance and, in many cases, as the primary source of repayment for long-term debt used to finance the toll facility itself.

Tolling involves the imposition of per-use fees on motorists to utilize a highway. Historically, these fees have been fixed, distance-based tolls that vary by vehicle type, but not by time of day. Their primary purpose has been to generate revenue.

Pricing involves the imposition of fees or tolls that vary based on the level of demand for travel on a highway facility. The fees may vary according to a fixed schedule or in real-time based on actual travel conditions. Also known as congestion pricing, value pricing, variable pricing, peak-period pricing, or market-based pricing, this strategy manages demand by imposing a fee that varies by time of day, direction of travel, type of vehicle, number of occupants, and/or other factors. While pricing generates revenue, this strategy also seeks to manage congestion, environmental impacts, and other external costs.

The emergence of electronic toll collection (ETC) technology in the late 1980s and early 1990s encouraged a renewed interest in tolling and other forms of road pricing. ETC improves traffic flow by enabling drivers to pay tolls electronically, making toll road travel far more convenient than when drivers had to pay at a toll booth. An added benefit of non-stop toll collection is the reduction of emissions in the toll facility area. ETC technology has continued to evolve, and systems now contain features that classify vehicles for proper tolling as well as aid in enforcement.

Additionally, interest in tolling and other forms of road pricing received a boost from Congressional passage of a series of bills loosening the long-standing restrictions against tolling on highways receiving federal aid, outlined in Title 23 of the U.S. Code. These bills, now statutes, are briefly described below.

- The Intermodal Surface Transportation Efficiency Act (ISTEA), enacted in 1991, relaxed several longstanding restrictions on states' ability to implement toll facilities on federal-aid projects; for the most part, however, these projects could not be part of the Interstate system. ISTEA also established the Value Pricing Pilot Program (VPPP), which allowed select states to establish variable congestion-based pricing on some existing Interstate highways.
- The Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998, established the Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP), which permitted three states to toll existing Interstate highways to fund needed maintenance or improvement,

provided the states could show that the needed maintenance or improvement could not occur through any other form of highway funding.

- The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted in 2005, further increased state flexibility to toll federal-aid highways, including the Interstate system, through the implementation of two pilot programs.
- The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, significantly eased restrictions on the programs introduced in SAFETEA-LU, including removal of the limit on eligible projects. Under MAP-21, all states can toll newly added lanes on federal-aid highways so long as the number of non-tolled lanes is not reduced, and newly constructed federal-aid highways added to the Interstate system.
- The Fixing America's Surface Transportation Act (FAST), enacted in 2015, modified the pilot program (ISRRPP) introduced in TEA-21. FAST clarifies that states—rather than state agencies—have authority to proceed, thereby acknowledging the authority of state legislatures to implement a project. FAST also specifies timeframes within which states with provisional approval must complete the requirements or risk losing their approval. As noted above, ISRRPP offered three slots for qualified programs, and those went to Missouri, North Carolina, and Virginia. No tolling projects came to fruition under the program; North Carolina and Virginia withdrew from the program, and Missouri failed to meet the requirements for its proposed project before the state's approval expired. However, the ISRRPP was extended by the FAST Act for another three years. In October of 2017, FHWA announced a call for new applications for projects, with an application due date of February 20, 2018.

The purpose of this research study was to identify and gain insight into specific factors that influence public opinion toward acceptance or rejection of priced managed lanes and tolling. To achieve that goal, the study examined public attitudes and perceptions regarding topics related to the management and funding of highway systems, including current transportation funding; options for increasing revenue and managing traffic congestion; and alternative transportation financing strategies, such as public-private partnerships (P3s).

Insights into public attitudes, perceptions, concerns, and information needs regarding priced managed lanes and tolling were obtained through the following components of this study:

- Literature review to locate and review previous investigations into the attitudes of the American public, including case studies
- Interviews with senior managers of departments of transportation (DOTs) and metropolitan planning organizations (MPOs) that have constructed and are currently operating successful priced managed lane facilities
- Interviews with Arizonans who are public influencers and/or represent organizations that influence public opinion in the area of transportation

- Focus groups with members of the general public who are regular or frequent highway and motor vehicle users

Each of the above components is discussed in detail in a chapter of this report.

## CHAPTER 2. LITERATURE REVIEW

This chapter reports on the findings from the literature search and review. In the period since this research study began, potential trend changes have been seen in public opinion regarding strategies for financing roadway construction and maintenance, such as the use of tolling versus taxes and the use of tolling as a general revenue source. Wherever possible, the original literature search findings have been updated to include the most current information available on the attitudes of the American public regarding the construction, financing, and operation of highway systems through the use of priced managed lanes and toll roads.

### OBJECTIVES AND METHODOLOGY

The objectives of the literature search were to:

- Identify and analyze published reports and other sources of information on public opinion about existing toll roads and managed lane facilities, as well as managed lane projects yet to be completed.
- Summarize findings concerning public opinion on the use of managed lanes and toll roads, and identify common themes, trends, and factors that influence public acceptance or rejection of tolling and road pricing projects and facilities.
- Identify successful practices in public outreach and engagement strategies to engender support for highway management strategies that involve managed lanes and toll roads.

Numerous research studies and publications examining public attitudes and perceptions regarding the management and funding of highway systems through managed lanes and toll roads were reviewed, including:

- Completed public opinion research (studies, surveys, polls, focus groups, etc.) conducted on a national, state, or local scale, including research compilations
- Papers presented at national and regional meetings of such organizations as the Transportation Research Board (TRB) and presentations at such conferences as the National Congestion Pricing Conference sponsored by the TRB Congestion Pricing Committee
- Case studies and “before and after” project implementation survey reports published by state departments of transportation (DOTs) and metropolitan planning organizations (MPOs)
- References cited in the above materials

This review primarily focused on material from 2008 and later. The relevant literature prior to that date was synthesized in *NCHRP Synthesis 377: Compilation of Public Opinion Data on Tolls and Road Pricing* (Zmud and Arce 2008), a comprehensive report that was part of the National Cooperative Highway Research Program (NCHRP) conducted by the Transportation Research Board (TRB) and was also consulted for this review.

## **MANAGED LANES AND TOLL ROADS DEFINED**

While the application of managed lanes dates back almost 50 years and includes early busway, bus lane, and high-occupancy vehicle (HOV) lane treatments, the term *managed lanes* was not commonly applied until the late 1990s. Within the transportation practitioner community today, definitions of managed lanes vary slightly according to their design or operational applications, geographical location, etc. In general, however, the body of relevant literature defines managed lanes as designated lanes and roadway facilities where the flow of traffic is actively managed to respond to changing conditions and maintain an assured level of service (Fitzpatrick et al. 2016; FHWA 2017a). Managed lanes are typically implemented in roadway corridors that suffer from recurring congestion. Examples of managed lane facilities include high-occupancy vehicle (HOV) lanes, high-occupancy toll (HOT) lanes, truck-only toll (TOT) lanes, variable priced lanes, and express lanes. For this study's purposes, managed lane facilities also include toll roads, bridges, and tunnels.

The various operational strategies used in managed lanes have been organized into three groups by the Federal Highway Administration (FHWA): pricing, vehicle eligibility, and access control. These strategies are briefly described below, and Figure 1 shows potential applications for the three types of strategies, with single applications depicted at the left and more complex, blended applications moving to the right of the diagram (FHWA 2008).

- Pricing strategy refers to both fixed-price (traditional) toll lanes and value-priced toll lanes. The latter use variable tolls to manage demand and reduce congestion, such as charging higher prices during peak traffic periods and lower during non-peak periods.
- Vehicle eligibility strategy refers to lanes that allow or restrict certain vehicles, often by minimum occupancy. HOV lanes are the earliest and most common example, and many of the nation's first HOV lanes were solely for buses or buses and vanpools. More recently, the managed lane technique of HOT lanes has emerged, combining occupancy requirements with pricing strategies by permitting single-occupant vehicles (SOVs) to use HOV lanes with the payment of a toll. The FHWA has suggested that states should consider converting HOV lanes to HOT lanes whenever the capacity of the HOV lanes is underutilized and congestion occurs in the general-purpose lanes, so long as states comply with the statutory criteria for HOT lanes, including automatic tolling, dynamic tolls that vary with level of congestion, adequate enforcement, and ongoing monitoring and modification of operations when approaching degraded conditions (FHWA 2017b).
- Access control strategy refers to lanes that are open to all vehicles but have limited entry and exit locations or times to minimize turbulence in vehicle flow. Examples include highway express



lanes with lengthy stretches between access and egress points and the use of reversible lanes on streets to increase capacity during peak traffic periods.

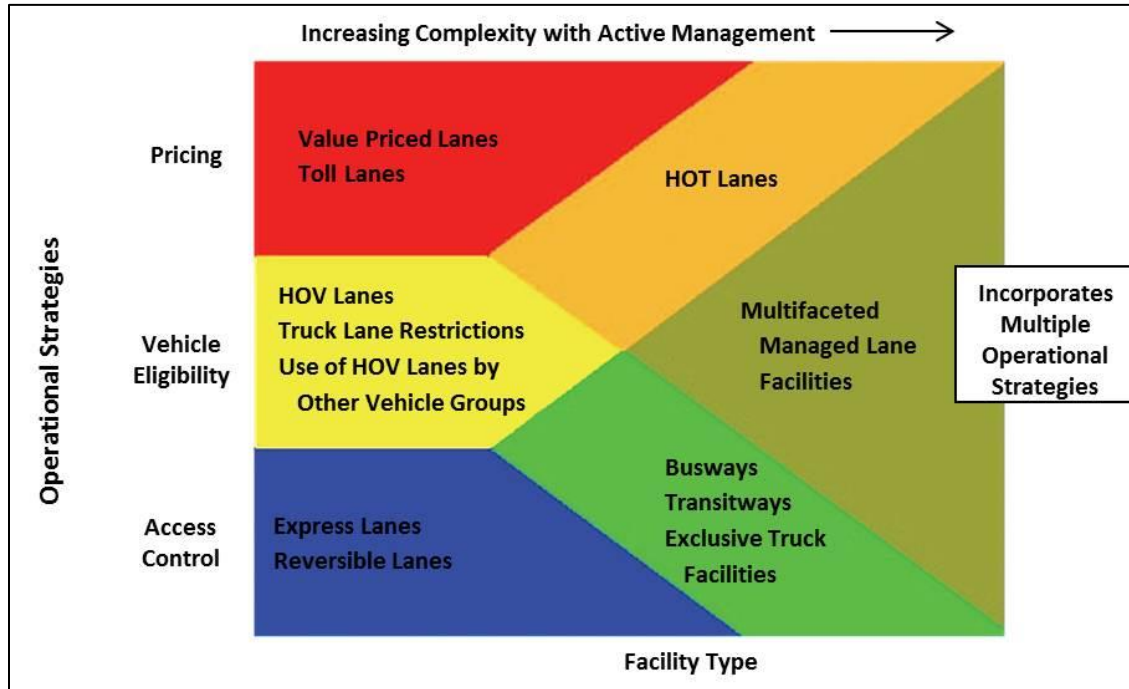


Figure 1. Managed Lane Applications (FHWA 2008)

## PUBLIC OPINION REGARDING TOLLING AND MANAGED LANES

Public support for tolling and managed lanes is influenced by a number of factors, including the type of pricing, the use of revenues, and the information provided on these and other related topics to members of the public when their opinions on tolling are being sought. The latter factor is particularly important; numerous research studies have reported that support for tolling rises significantly with public understanding of the need for a facility, fairness of its implementation, and benefits to be derived. Conversely, negative views of tolling can stem from lack of information on the most basic aspects of a project, such as the misperception that tolls are primarily collected manually as they were on early toll roads. The extent of public support can also be affected by the characteristics of the individuals whose opinions are being sought. The general public is in reality a collection of multiple publics, including special interest groups and other population segments that may have strong views on particular aspects of transportation funding (Zmud and Arce 2008). Also, members of the general public who consider themselves either current or potential users of the managed lanes facility typically express stronger support than those who never expect to be users.

## Toll Roads

Among the various types of roadway pricing, Americans are most familiar with—and generally most supportive of—toll roads, or what is referred to in the literature as *traditional tolling*, a fee charged to all (non-emergency) vehicles to use a road, bridge, or tunnel. Traditional tolling fees are fixed; they do not vary by time of day, day of the week, current traffic conditions, etc.

The United States contains nearly 6,000 total miles of toll roads, bridges, and tunnels that are in operation. Most of these facilities were planned and/or constructed over 50 years ago, prior to the 1956 Federal-Aid Highway Act providing for a coast-to-coast interstate highway system. Many subsequently became part of the interstate system (FHWA 2016), and nearly all have added or converted to electronic toll collection.

As noted earlier, the level of public support for tolling will vary depending on the context in which it is presented and the wording of the questions. Support for traditional tolling is consistently higher when it is presented:

- Along with other revenue generation mechanisms, and respondents are asked to select their preference, than when it is presented alone and respondents are asked “how they feel” about tolling, or similarly broad questions (Ellen et al. 2012, Zmud and Arce 2008).
- As a source of funding to be used solely for transportation—primarily roadways and, to a lesser degree, public transit (Ellen et al. 2012, HNTB 2013, 2017).
- As the funding mechanism for a specific project rather than as a revenue source to be used for roadway maintenance (Ellen et al. 2012; HNTB 2009, 2010). However, as discussed later, public opinion appears to be shifting toward greater support of tolling as a general revenue source.

### **Tolling Versus Taxes as a Funding Mechanism**

Numerous national, regional, state, and local surveys and research studies have been conducted over the past several years examining public attitudes concerning various ways to finance roadway construction and maintenance. The clear majority of these have found that the public prefers the use of tolls over taxes as a funding mechanism (Zmud and Arce 2008; Ellen et al 2010; HNTB 2009, 2010, 2011, 2012, 2013). However, as discussed below, recent surveys indicate that the public may have become more accepting of a combination of tolling, user fees, and taxes.

#### *National Surveys and Studies*

HNTB Corporation, an engineering, architecture, and planning firm specializing in infrastructure projects both in the U.S. and internationally, has been conducting a series of national surveys called *America THINKS* for nearly a decade. These surveys examine public attitudes in a variety of areas related to infrastructure, including construction, maintenance, and financing.

HNTB surveys conducted from 2009 through 2013 consistently showed that the public preferred tolls over all other funding mechanisms, particularly an increased gas tax. Support for tolling also appeared to grow slightly during that same period (HNTB 2009, 2010, 2011, 2012, 2013). For example:

- In a 2010 survey, when presented with the choices of new roads funded by new tolls, new roads funded by increased gas tax, or no new roads at all, respondents favored tolls or no new roads at all (41 percent for each) over an increased gas tax (18 percent).
- In response to the same question on the same survey conducted in 2013, support had grown to 46 percent for tolls and decreased to 28 percent for the option of no new roads at all. The latter prospect had apparently become so unappealing that support for an increased gas tax grew to 25 percent
- The 2013 survey also looked at preferences for funding or not funding (i.e., eliminating) individual types of transportation facilities, such as major bridges, major tunnels, and interstate and state highways. For all facilities, a clear majority of respondents would rather see them funded by either increased tolls or gas taxes than eliminated altogether, with tolls being the preference.

However, as discussed below, findings from recent surveys conducted by HNTB and other organizations suggest that public opinion may be shifting in favor of a combined use of revenues generated from tolling, user fees, and increased taxes to support funding of infrastructure projects. These findings also suggest that age may be a factor in that shift, with millennials more likely to support funding through increased taxes.

- In 2016, HNTB conducted three surveys that studied issues associated with funding in general, tolling, and transit development and mobility. The findings from all three surveys were compiled in a report, *Americans' Views on U.S. Transportation*, and highlighted the emergence of generational differences in views on transportation funding. Key findings from the two surveys on funding and tolling, which differ somewhat—possibly depending on the survey focus and specific wording used—include the following:
  - Given three options to fund needed infrastructure over the next ten years—tolls, a vehicle miles traveled (VMT) tax or mileage-based user fee, and higher taxes—Americans prefer tolls (45 percent) and a VMT or mileage-based user fee (32 percent) over higher taxes (23 percent). It is noteworthy that the option regarding taxes was worded as “higher taxes,” which is accurate but may have influenced response choices.
  - A similar question in another HNTB survey provided different response options focused solely on taxes and a user fee. Specifically, for the question, “How would you prefer to pay to maintain and build local roads, bridges, and tunnels over the next 10 years?” the response choices were higher property taxes, higher sales taxes, higher federal gas

taxes, and a user fee in lieu of gas taxes; tolling was not mentioned. Collectively, slightly more than half (55 percent) selected taxes over a user fee in lieu of gas taxes (45 percent). Higher federal gas taxes received the greatest support (24 percent), followed by higher sales taxes (20 percent) and higher property taxes (11 percent).

Responses were examined for generational differences using the following four categories: millennials, ages 18–34; Gen Xers, ages 35–49; boomers, ages 50–68; and seniors, ages 65 and over. This analysis found the emergence of generational differences in views on how infrastructure should be funded over the next 10 years, with 68 percent of millennials preferring to pay increased taxes over a user fee in lieu of gas taxes, compared with 58 percent of gen-Xers, 43 percent of baby boomers, and 51 percent of seniors voicing the same preference. Regarding the specific types of taxes to be increased, millennials and Gen Xers are four times as likely as their baby boomer and senior counterparts (16 percent versus 4 percent) to prefer higher property taxes, and more millennials (25 percent) and Gen Xers (21 percent) than baby boomers (14 percent) would opt to pay with higher sales taxes.

Another generational difference emerged regarding user fees, such as vehicle miles traveled or mileage-based user fees. Almost four in five Americans (77 percent) ages 18 to 24 are likely to support these types of fees versus 63 percent of those ages 25 and older. Americans ages 18 to 24 are also more likely than those ages 25 and older (79 percent versus 67 percent) to agree that priced managed lanes should be considered when making improvements to the nation’s highways.

HNTB national director of priced managed lanes and vice president Matthew Click notes that “The differences among younger Americans from their older counterparts in how to fund infrastructure is likely a reflection of their increased reliance on public transit over private automobiles, and a lower rate of home ownership.” (HNTB 2016)

- A survey conducted by HNTB in July 2017 on paying for infrastructure found that 70 percent of Americans expressed a willingness to pay more, through a combination of tolls and higher taxes, to fund maintenance of existing roads, bridges, and tunnels as well as construction of new ones. This figure increased to 84 percent if those revenues were guaranteed by law to exclusively fund transportation infrastructure projects. The preferred means for generating funds were as follows: 30 percent prefer a combination of tolls and higher taxes, 25 percent prefer tolls and other fees for using roads, bridges or tunnels, and 15 percent prefer higher taxes such as those for fuel, sales, and property.

When asked about the use of tolling alone as a funding mechanism, 66 percent of respondents supported the use of tolls to fund critical infrastructure projects if funding from other sources is insufficient (HNTB 2017).

These recent HNTB surveys also report that:

- Nearly seven in 10 Americans (69 percent) are willing to pay a toll, even when a free alternative is available, to save time or avoid being stuck in traffic (HNTB 2016).
- Over three-fourths (76 percent) of Americans support the concept of reduced toll rates for low-income users (HNTB 2017).
- Eight in 10 Americans (80 percent) support adding tolls to existing highways and interstates if the funds are directed to specific uses, while 20 percent would never support tolls on existing highways and interstates. The preferred uses were: reducing congestion (41 percent), improving safety (40 percent), adding vehicle capacity (34 percent), and adding transit capacity (21 percent) (HNTB 2017).
- Regarding the use of priced managed lanes, 70 percent of Americans believe they should be considered when making improvements to the nation's highways (HNTB 2017).
- Nearly three in four Americans (73 percent) support the use of public-private partnerships as a way to maintain existing and build new transportation infrastructure (HNTB 2017).

Findings from another national survey conducted in 2017 also show that most Americans would support higher taxes for transportation under certain conditions, and that age appears to be a factor in the level of support. Because this survey has been conducted annually for eight years by the Mineta Transportation Institute at San Jose State University to assess trends in public support, most survey questions have been identical for all eight years, with the exception being the addition six years ago of a section focusing on support for public transit. The survey explores national support for federal tax options for raising federal transportation revenues, testing variations on raising the federal gas tax, creating a new mileage tax, and creating a new sales tax. While neither tolling nor priced managed lanes are addressed in the survey, several of the findings provide insights into trends in public opinion regarding the use of taxes to pay for transportation infrastructure, including significant differences among age groups. The findings also echo those of studies on public opinion regarding tolling—when respondents are given more information about the need for and use of the additional revenues, the level of support is greater (Agrawal and Nixon 2017).

Key findings include the following:

- From 2010 to 2017, support for a 10-cent per gallon increase in the federal gas tax has increased from 23 percent to 36 percent. These figures are for the presentation of the tax increase with no additional information provided.
- Six variations of the 10-cent increase in the federal gas tax were also tested, each providing some type of additional information ranging from the annual tax burden of the increase for the typical driver to an explanation that revenues will be spent to improve roadway safety. The

addition of any of the six types of information raised support considerably; in 2010, the lowest level of support with any additional information provided was 30 percent, and in 2017, the lowest level was 52 percent, as compared with 23 percent and 36 percent noted above.

- When respondents were informed that revenues would be spent to maintain streets, roads, and highways, 78 percent said they would support a 10-cent federal gas tax increase. In 2011, the first year that option was tested, the level of support was 62 percent.
- Support for a flat mileage tax of one cent per mile was generally consistent throughout the eight years of the survey, with 21 percent support in 2010 and 23 percent support in 2017. A variation of the mileage tax in which the rate would be higher for vehicles that pollute more and lower for those that pollute less raised the level of public support considerably, from 33 percent in 2010 to 45 percent in 2017.
- The researchers also examined support levels for the different tax options by subgroups, including age. Respondents in the youngest age group, 18 to 24, were more likely to support all the taxes than respondents in the oldest age group, 55 and older. The average difference in support for the taxes was 19 percentage points for the youngest group when compared with the oldest group.

Several national polls on transportation have recently been conducted by media and polling organizations. Most of these polls are brief, asking anywhere from one to 10 questions. The findings from questions related to funding vary widely, which is to be expected based on the wealth of public opinion studies that show question context and wording have a significant effect on level of support. These findings are presented below.

- A Washington Post-ABC News poll in January 2017 asked the following: “There is a proposal to offer nearly 140 billion dollars in tax cuts for private companies if they pay to build new roads and other transportation projects. The companies then could charge tolls for people to use these roads, bridges, and transportation. Do you support or oppose this proposal? Do you feel that way strongly or somewhat?” Responses among the 1,005 people polled were as follows: 66 percent were opposed to the plan, with 44 percent strongly opposed and 22 percent somewhat opposed; 29 percent said they would support that plan, with 11 percent saying they backed it strongly and 18 percent saying they were somewhat supportive of tolls (Halsey and Clement 2017).
- A Bloomberg News National Poll conducted in July 2017 asked, “Do you think it is okay to increase the federal gas tax to pay for roads and bridges in your state?” Among the 1,001 respondents, 55 percent said yes, 41 percent said no, and 4 percent were not sure (Niquette and McCormick 2017).

- Rasmussen Reports, a public opinion polling organization, conducted a poll in October 2017 asking the following: “Americans pay a federal tax of 18.4 cents on each gallon of gas, and a proposal has been made to raise this tax to help pay for the Trump administration’s \$1 trillion infrastructure plan. Should the government raise the gas tax to help meet new transportation needs?” Among the 1,000 Americans polled, 54 percent were opposed to the increase, 33 percent supported the increase, and 13 percent were unsure. It is important to note that the reference to “the Trump administration’s \$1 trillion infrastructure plan” created a political context for the question that was likely to have influenced responses. (Rasmussen Reports 2017).

The organization also conducted a 9-question survey in 2014 that focused primarily on the condition of existing roads, bridges, and tunnels, and included the following question about how their maintenance should be funded: “A proposal has been made to allow states to put tolls on Interstate highways to help pay for highway and other infrastructure repairs. Do you favor or oppose putting tolls on Interstate highways for infrastructure maintenance?” Responses were as follows: 65 percent were opposed, 22 percent were in favor, and 14 percent were undecided (Rasmussen Reports 2014).

### **Regional, State, and Local Studies**

The majority of regional, state, and local studies on tolling and priced managed lanes have been conducted for market research purposes to examine stakeholder perceptions of and attitudes toward tolling, particularly as compared with other transportation funding options. Others have been conducted to determine customer satisfaction with existing facilities, sometimes with an eye toward possible expansion to other roadways. As might be expected, findings from these studies have varied considerably, with some reporting public support for the use of tolling and priced managed lanes and others reporting opposition.

Respondents’ experience with tolling appears to be an important factor in their support. In areas that have toll roads and toll lanes, those who use them regularly are more supportive of expanding the use of tolling. In studies conducted in areas where there were no toll roads, focus group participants expressed some opposition, much of which displayed a lack of knowledge about current toll technologies. For example, some individuals voiced perceptions of old-style toll booths and manual collection (Lawrence 2006); others displayed a basic understanding of electronic toll collection systems but skepticism about the technology’s ability to perform certain functions, such as identify the number of occupants in vehicles using HOV lanes (Li 2007). A random survey of registered voters conducted as part of one study found that 25 percent of the respondents who opposed tolling changed their mind when told that they would not have to stop at toll booths (Lawrence 2006). Several studies reported that support for tolling often carries an expectation that transit options will also be improved and/or expanded. In a number of public opinion surveys, respondents felt that a portion of the toll revenue should be directed to that purpose (Zmud and Arce 2008).

Presented below are findings from recent regional, state, and local surveys of public opinion regarding tolling, priced managed lanes, and/or other means of transportation funding.

*Mountain-Plains Consortium (members are universities in five states: Colorado North Dakota, South Dakota, Utah, and Wyoming)*

A survey was conducted in 2015 examining public perceptions of different transportation funding options already in use or having the potential for use in the future. The target audience consisted of individuals residing in the five states represented by the consortium members: Colorado, North Dakota, South Dakota, Utah, and Wyoming. Respondents were given a brief explanation of the eight funding options listed below and asked to identify the one they preferred:

1. Increasing the federal gas tax collected at the time of purchase
2. Increasing the state gas tax collected at the time of purchase
3. Collection of additional taxes and fees on other driving-related items
4. Collection of additional sales tax on all goods
5. Use of highway tolling
6. Use of High Occupancy Toll (HOT) lanes
7. Use of cordon pricing
8. Use of mileage-based user fees

The preference among respondents in all five states was increasing the federal gas tax. Increasing the state gas tax was the second most frequently selected in four of the states; Utah was the exception, with HOT lanes coming in second. Support for the use of highway tolling was lukewarm, selected third most frequently only by Wyoming and Colorado—and in the latter, it was tied with two other options, HOT lanes and an additional sales tax. It is important to note that only 1,163 qualifying completed surveys were received among the 15,945 sent, a response rate of 7.30 percent; the researchers' goal had been a response rate of 11.67 percent for each state (Albeiruti et al. 2015).

### *Florida*

Florida has many managed lane facilities, including the three bridges that comprise the tolling facilities of Lee County in southwest Florida. The first two toll facilities, the Sanibel Causeway and the Cape Coral Bridge, opened to traffic in 1963 and 1964, respectively. When the third and final toll facility, the Midpoint Memorial Bridge, opened to traffic in 1997, it coincided with the introduction of electronic toll collection (ETC) on all Lee County toll bridges, branded locally as the LeeWay system. Approximately six months later Lee County introduced a variable pricing program that reduced tolls by 25 percent during off-peak hours for drivers using a transponder. The tolling rates differ by facility, but the 25 percent



discount applies to all. Use of the transponder also enabled drivers to pass through the toll facility without needing to stop. During the variable pricing trial period, users were surveyed on their satisfaction with the pricing policy, the LeeWay system, and the level of customer service. A significant majority (82 percent) said the system was excellent or above average in meeting its goal of providing smooth and fast crossing of the bridges (Lee County DOT 1999, 2013).

Over time, several enhancements were made to the LeeWay system to improve customer service.

- In 2004, LeeWay and other toll systems used throughout the state became interoperable.
- In 2007, the county adopted a one-way toll collection policy for two of the bridges on a trial basis, with tolls eliminated in the eastbound direction and doubled in the westbound direction, causing no change in the net cost of a round trip. The third bridge already had one-way tolling. The program was highly popular and was implemented permanently the following year.
- The Pay-by-Plate program was introduced in 2009, to give rental car customers— primarily tourists or seasonal residents—the same convenience of using a tolling facility without stopping. The program uses license plate information to identify rental vehicles and collect tolls electronically through three private companies.
- LeeWay and its Florida toll agency partners became interoperable with North Carolina Turnpike Authority (NCTA) and their NC Quick Pass program in 2013, and with the Georgia State Road and Tollway Authority (SRTA) Peach Pass program in 2014. With this agreement, LeeWay transponder customers can use their transponders on North Carolina and Georgia toll facilities, and transponder customers in those states can do the same on LeeWay and other toll facilities throughout Florida. Long-term plans call for interoperability with other states as well (Lee County DOT 2016).

Another study in Florida examined the potential for implementation of express lanes along the state's extensive turnpike system consisting of 483 miles of toll roads and serving an average of 2.3 million customers daily. This three-phase project, the Integrated Congestion Pricing Plan (ICPP), began in February 2011 and was completed in July 2015. When the study was initiated, it was among the first in the nation to consider express lanes on an existing system of toll roads. Rather than simply raising tolls for everyone in all the lanes during peak periods of congestion, this strategy allows the addition of express lanes alongside existing toll lanes, thereby giving drivers the choice to pay a higher toll to bypass congestion. The study was conducted by Florida's Turnpike Enterprise (FTE) with partial funding through the FHWA Value Pricing Pilot Program and focused on the large urban areas of the state that experience long periods of traffic congestion—southeast Florida (Miami-Dade County), Tampa, and Orlando. In each area, one turnpike widening project that was already in the FTE's work program was selected to be evaluated for the potential addition of express lanes. Ultimately, all three projects were selected for implementation of express lanes (FTE 2015).

FTE developed a public outreach program to explore public opinion and attitudes about express lanes on the turnpike system and concurrently educate people about the use of express lanes and their benefits. Outreach efforts were coordinated with elected officials and stakeholders in the three regions where the turnpike projects were considered, and consisted of two primary activities:

- A series of 10 focus groups with individuals recruited from each of the three regions and representing a mix of tolling customers who use the transponder, toll-by-plate, or cash payment system. All groups were also structured to include both frequent and infrequent users of the turnpike. The moderator-guided discussions were aimed at exploring customers' perceptions of express lanes on the turnpike system regarding effectiveness, equity, pricing, perceived value of service, and other considerations, and at gaining a better understanding of how individuals will likely use the turnpike express lanes.
- A stated preference survey of turnpike drivers in the three regions to gain insight into the public's valuation of express lanes as an option for improving travel speed and time reliability and reducing traffic congestion. The survey instrument was customized for each respondent by presenting questions and modifying wording based on respondents' previous answers. These dynamic questionnaire features allowed for the presentation of realistic future conditions that correspond with respondents' reported experiences. The survey also asked about drivers' turnpike travel characteristics (e.g., origin, destination, purpose, and frequency), what toll information they need when planning their travel route and when selecting between express or general toll lanes, and how to best provide this information during their travel (FTE 2014).

Nearly all focus group participants agreed that the turnpike provided a much better travel experience than other facilities in the area, and that they liked the express lanes concept for the turnpike, particularly after its benefits were explained to them. When presented with an alternative strategy to express lanes—one that would instead raise tolls in all lanes during peak periods—the clear majority preferred having the choice that express lanes provided. Participants also overwhelmingly supported prohibiting trucks from the express lanes, and most preferred having two express lanes in each direction rather than one (RSG 2013).

Findings from the stated preference survey, which garnered approximately 3,000 responses, revealed that faster travel time was the primary reason for favoring the express lanes (79 percent of respondents). Other reasons included easier driving in the express lanes, the perception of being safer, and fuel savings. However, only half the respondents said they would be willing to pay the additional toll to use the express lanes even if doing so guaranteed them faster travel or reliable (consistent) travel time; another 17 percent said they might. The researchers noted that drivers' willingness to pay for a premium toll versus a standard toll appears to be lower than the willingness to pay for a tolled facility versus a toll-free facility, and that this is consistent with findings from a similar project in another city involving the addition of express lanes on an existing toll road (FTE 2014).

## Georgia

- A statewide survey of Georgia drivers asked respondents about their willingness to pay for five different transportation funding mechanisms: increase in the state per-gallon gas tax, replacement of the per-gallon gas tax with a vehicle miles traveled (VMT) tax, creation of an employee-parking lot fee, building of new roads as toll roads, and implementation of a variable toll for use of HOV lanes by low-occupancy vehicles. When asked about each mechanism independently, respondents' highest levels of support were for toll roads (51 percent) and employee-parking lot fees (\$2 to \$4 monthly). When asked to rank the different options, respondents' top three were the variable toll (43 percent), the \$2 per month parking fee (40 percent), and the building of toll roads (37 percent). Respondents were also asked the maximum amount they would be willing to pay in tolls to reduce trip time by 35 minutes for a 10-mile trip. Slightly more than one-third (35 percent) said they would pay no more than \$1.00, while 53 percent would pay no more than \$3.00 (Ellen et al. 2012).
- In February 2015, the Georgia State Road & Tollway Authority (SRTA) and Georgia Regional Transportation Authority (GRTA) launched Ride Transit, part of an innovative pilot program called Commuter Credits. Commuter Credits consisted of three programs enabling people to earn toll credits: Ride Transit, Shift Commute, and Start a Carpool. The Ride Transit component awarded toll credits to people who used GRTA Xpress (state-operated commuter bus) routes instead of driving and using their toll accounts during Metro Atlanta's heavily congested morning and evening commute periods. Individuals who rode *Xpress* buses along the I-85 Express Lanes were eligible for a toll credit of \$2 per trip for up to five trips per month, equaling a total of \$60 over six months.

The results were positive for the Ride Transit Program. Eighty percent of the participants who signed up for the six-month Ride Transit pilot earned toll credits totaling nearly \$9,000, which equated to nearly 4,500 transit trips. The "carrot" of earning toll credits was perceived by participants as a welcome counterbalance to the perceived "stick" of increasing congestion-priced tolls (APTA 2017).

## Washington

The state of Washington has a long-standing and extensive tolling system, including 14 bridges financed with bonds and paid for with tolls from the 1930s through the 1980s. Additionally, three facilities represent a range of tolling options (Stone 2013):

- State Route 16 – Washington's first electronic facility opened in 2007 and uses fixed toll rates to repay construction bonds.
- State Route 167 – Washington's first HOT lane facility opened in 2008 and uses dynamic toll rates to manage traffic performance.

- State Route 520 – This Urban Partnership Agreement (UPA) project is being implemented in phases. Part of the funding comes from tolling, which uses variable toll rates to manage traffic.

Following years of public discussion, planning, design, and engineering work, the Washington State Department of Transportation (WSDOT) began construction on the SR 520 Bridge Replacement and HOV Program in 2011. This extensive program, which involves replacing the highway’s aging and weather-vulnerable bridges as well as making significant transit and roadway improvements throughout the corridor, is occurring in separate, phased projects based on funding and other factors. Among the completed projects is the Floating Bridge and Landings Project, which replaced the 53-year-old, SR 520 floating bridge. The old bridge had only two lanes in each direction, no shoulders, and no HOV lanes. The new bridge features two general-purpose lanes and one transit/HOV lane in each direction, and shoulders that allow vehicles to pull over in case of a breakdown.

The project was funded by a variety of state and federal sources, including SR 520 tolling that began on the old bridge in December 2011 and on the new bridge when it opened in 2016. Early in the planning process, WSDOT developed, implemented, and maintained a wide range of public engagement activities to secure public commentary and feedback, including an online survey, a phone survey, and traditional comment-gathering methods such as public open houses, printed comment forms, an interactive website, and an e-mail address for submitting comments. The phone survey garnered responses from 1,200 people, and more than 15,000 responses in total were received from all other outreach activities.

Key findings included the following (520 Tolling Implementation Committee 2009):

- Respondents supported tolling to help fund the bridge by a nearly two-to-one margin (59 percent to 30 percent). Support for tolling increased to 69 percent when respondents learned about electronic tolling and that there would be no toll booths.
- Respondent support for variable tolling was more than two to one, with 65 percent in favor and 31 percent opposed.
- Respondents preferred that tolling begin immediately (on the old bridge) rather than waiting several years for the new bridge to be completed by a margin of nearly three to one (60 percent to 23 percent), particularly if it would mean lower toll rates. This pertained to one of several specific scenarios presented in the telephone and online surveys.
- When asked what they would do if a toll went into effect, the public’s top three responses were as follows:
  - Pay the toll: 30 percent
  - Take another route: 26 percent
  - Take transit: 17 percent

Overall, tolling and priced managed lanes have helped states close transportation funding gaps and improve mobility. As a result, several of the states discussed earlier are planning additional facilities, and other states are considering tolling as a viable financing option. However, this literature review also determined that the last few years have seen some pushback by state legislatures against the use or expansion of tolling, even in states with one or more tolling and priced managed lanes facilities in operation. The reasons for this renewed opposition are varied, and in some instances, tied to a unique circumstance in the specific state, as noted in the examples below.

- The Connecticut legislature has been battling about bringing back tolls for several years. The state enacted a ban on tolls since the 1980s, when a deadly crash occurred at a tollbooth, killing several people in the line of cars waiting to pay. When electronic toll collection (ETC) systems became widespread, eliminating the need to stop to pay a toll, the push to reinstate tolling began gaining momentum, fueled by the state's economic woes and the fact that nearly all the other New England states had tolling. But it has remained an uphill battle. In March 2017, the state's transportation committee passed a bill giving the Department of Transportation approval to begin the four-year planning process of implementing tolling, but the bill stalled in the House due to lack of support and was never debated. Those opposing the legislation say that tolling is unnecessary because the state has a spending problem rather than a revenue problem, and that transportation projects could be funded by reprioritizing state borrowing and limiting other non-transportation projects. Opponents also point to the large number of tolls (10 to 12) proposed for each of the two major roadways crossing the small state, noting that the tolls would create a significant financial burden for the many Connecticut residents commuting to jobs across the state and in neighboring New York City. The bill was not taken up again in 2017, but state legislators who support tolling say they will reintroduce legislation in 2018. In January 2018, the governor and the commissioner of the state department of transportation jointly released a list of hundreds of transportation projects totaling \$4.3 billion being postponed until the legislature appropriated new revenue for the nearly insolvent state transportation fund (Slone 2015, CTDOT 2018).
- In Kentucky, legislation proposed in 2014 and 2015 to authorize public-private partnerships failed both times.
  - The 2014 legislation, HB 407, was passed by the legislature but vetoed by then-Governor Beshear primarily for two reasons: (1) it banned the use of tolls on a bridge replacement project (Brett Spence Bridge) being considered for joint implementation with the state of Ohio, despite Ohio's Governor Kasich having already signed legislation allowing tolling on the bridge, and (2) it prohibited entering into a P3 agreement with the state of Ohio without the scrutiny of the Kentucky legislature.
  - The 2015 version of P3 legislation, HB 443, again prohibited tolling on the replacement bridge and did not allow for cities and counties to engage in P3 projects. The bill passed in the state House but stalled in the Senate where there was strong sentiment to hold

off on passage in favor of working with the incoming administration to include local governments as part of the P3 process.

- Consequently a new version of P3 legislation, HB 309, was introduced and signed into law in 2016 by the newly installed Governor Bevin. The legislation was a compromise in that it did authorize state and local governments to use public-private partnerships to develop transportation and other types of infrastructure projects. However, it also contained a stipulation that the state legislature must approve any transportation project that would link Kentucky and Ohio, and it specifically prohibited the imposition of tolls on any such project connecting the two states, which includes the proposed replacement of the Brett Spence Bridge. That project is on hold while Kentucky explores funding options other than tolling (Slone 2015, NCPP 2016).
- Texas, which was emerging as a leader in tolling and public-private partnership highway projects just a decade ago, is now experiencing growing anti-tolling sentiment. Tolling facilities are plentiful—the state has around 25 toll roads—but so is the debt accompanying their construction. Since 2007, Texas and its tolling authorities have sold nearly \$27 billion in bonds for toll facilities, 62 percent more than the second-biggest borrower, California.

In 2014, the political scene changed significantly with the election of Governor Abbott, who had campaigned on a platform of increased highway investment with no new toll roads. That position had popular support, according to the Texas A&M Transportation Institute's Texas Transportation Poll conducted that year. Of 15 alternative strategies for "solving transportation issues" in the state, Texans ranked "building more toll roads" as the least desirable, with a mean score of 3.06; the two highest ranked strategies were "timing traffic signals more effectively" and "doing a better job of managing accidents," at 8.07 and 7.14, respectively (Simek and Geiselbrecht 2014). The growing anti-tolling sentiment manifested in a flurry of new highway-related legislation, including proposal of an amendment to the state constitution to give the Texas Department of Transportation (TxDOT) about \$1.7 billion a year in additional funding, with the caveat that the money could not be used on toll projects; Texas voters approved the amendment by a 4-to-1 margin. State lawmakers also filed more than a dozen bills aimed at either slowing new toll road projects or dismantling them altogether. The House Transportation Committee held hearings in September 2016 to consider the latter idea, during which committee members heard from TxDOT's executive director that it would cost around \$24 billion to immediately pay off every publicly operated toll road in the state, quashing—at least temporarily—the idea of dismantling existing toll roads. Nevertheless, anti-tolling activists continued to argue that toll rates in the state are too high and that many toll roads end up being ill-conceived projects that can't pay for themselves. Tolling advocates warn that the shift away from the "users pay/users benefit" model is exactly the wrong direction to take, threatening toll concessions implemented as part of public-private partnerships as well as revenues that had been anticipated by state and local government tolling agencies (Poole 2015). They also argue that a shift away from tolling, a form of user fee, will make it that much more difficult to

transition from per-gallon taxes to per-mile charge, which they see as inevitable (Dunphy 2015, Slone 2015).

### **High-Occupancy Vehicle (HOV) and High-Occupancy Vehicle Toll (HOT) Lanes**

High-occupancy vehicle (HOV) lanes are limited to vehicles carrying a minimum number of people. Typically, the minimum is one passenger in addition to the driver, referred to as HOV+2 lanes, but some areas have HOV+3 lanes that require a minimum of two passengers in addition to the driver. Many HOV operators permit certain other vehicles to use these lanes as well, such as motorcycles, buses, emergency vehicles, and law enforcement officers.

HOV lanes first appeared in the late 1960s and were intended to serve as an incentive to encourage carpooling by reducing lane traffic and, presumably, travel time experienced by HOVs. HOV lanes have been implemented in more than 30 metropolitan areas and are the most prevalent type of managed lanes nationwide (Perez et al. 2012). However, several factors—including revenue generation; legislative mandates; and both underutilization, or “empty-lane syndrome,” and overutilization, or peak-hour congestion, in HOV lanes—have led to policy changes in HOV systems. Federal initiatives such as the Value Pricing Pilot Program and the Urban Partnership Agreement (UPA) Congestion Reduction Demonstration Program have also contributed to policy changes (Chang et al. 2008b).

In recent years, some transportation agencies have also extended permission to use HOV lanes to certain energy-efficient and low-emission vehicles, collectively referred to here as *hybrids*. Federal legislation requires agencies that grant these permissions to monitor and report on lane performance to show that the HOV facility has not become degraded as a result of the expanded usage. A recent review of these programs nationwide identified several issues that agencies should consider prior to expanding HOV lane access to hybrids, including additional congestion, reduction in carpooling as a possible result, confusion among user groups, treatment of hybrids from other states, criteria for hybrid eligibility, and treatment of hybrids if the HOV lanes are subsequently expanded to become HOT lanes (Turnbull 2014).

The question of how to treat hybrid vehicles if the HOV lanes become HOT lanes, may be more significant than it appears at first glance. A conversion of HOV2+ to HOT3+ lanes in Miami that permitted hybrids to drive in the new lanes without paying a toll found that 50 percent of the non-tolled cars were hybrids (Zimmerman 2013).

HOT lanes are the most common and fastest growing form of managed lanes in the United States. The literature includes numerous public opinion studies and surveys related to HOT lane creation and HOV-to-HOT lane conversion projects. Several examples are discussed below.

- The I-15 FasTrak® Express lanes in San Diego, California, primarily funded by the FHWA Value Pricing Pilot Program as a three-year demonstration project for congestion pricing, were sponsored by the San Diego Association of Governments (SANDAG) and the California Department of Transportation (Caltrans). Prior to the demonstration project, the I-15 Express

Lanes facility consisted of an eight-mile stretch of four HOV express lanes in the center of the highway and were largely underutilized. The congestion pricing project extended the lanes an additional 20 miles and permitted solo drivers to use the lanes for a fee, while HOVs and transit vehicles continued to use the lanes for free. The first phase of the project, called ExpressPass, permitted a limited number of solo drivers to pay a flat fee for unlimited use of the I-15 Express Lanes. The second phase, which remains in place, implemented the FasTrak electronic tolling system and allowed solo drivers to pay a per-trip fee to use the lanes. The fees are adjusted dynamically based on time of day and traffic levels in the I-15 Express Lanes to maintain level of service. Unique features of the facility include a moveable center barrier that allows a change to three priced lanes in the peak travel direction; multiple access points from the main lanes to the express lanes approximately every two to three miles; ramps providing direct access to the express lanes; and dynamic pricing that can change as frequently as every six minutes.

An independent evaluation of the I-15 pricing project was conducted to determine whether it had met its objectives and to assess public opinion of the facility, including satisfaction with and perceptions of travel conditions, pricing and price sensitivity, and awareness and attitudes towards the pricing project. Public opinion data collection occurred in five waves throughout the duration of the project. The survey sample was composed of two main segments: ExpressPass/FasTrak customers and other I-15 users, including both solo drivers and carpoolers.

The percent of customers and carpoolers who considered the project a success increased throughout the project, with the final data reporting that over 90 percent of ExpressPass/FasTrak customers and over 50 percent of I-15 carpoolers judged the program a success. While only 39 percent of I-15 solo drivers considered the program a success, they agreed that solo drivers should be allowed to use the Express Lanes for a fee and considered the project to be fair to travelers in both the main lanes and the Express Lanes. The majority of customers were satisfied with the system of dynamic per-trip pricing, and this preference increased during the project. Customers' most cited reason for joining the program was the need for on-time arrival. They felt strongly that the FasTrak lanes positively impacted their travel time, and their perceptions of time savings were in the 20-minute range, which agreed with actual measurements (Samdahl and Swisher 2015).

In post-project interviews, project management team members and other stakeholders identified several factors as contributing to the success of the project: a strong political champion throughout the project; extensive public outreach that included 25 marketing events and a customer newsletter and hotline; and timely responsiveness to operational issues (e.g., negative comments about the merging into the FasTrak-only lane led to a structural change, which was then widely communicated to the public).

- The Orange County Transportation Authority in California regularly surveys the general public to determine customer satisfaction. A survey of 1,300 users of the 91 Express Lanes conducted in 2014 reported a 91 percent satisfaction rate. Respondents reported using the lanes for visiting friends and family (67 percent); for shopping or recreational purposes (63 percent); and for their



work commute (60 percent, a significant increase over the 46 percent reported in the 2011 survey). In the three-year period between surveys (2011 and 2014), the average number of weekly trips rose from 2.7 to 3.9 (OCTA 2011, 2014).

- The Katy Freeway Managed Lanes (KML) project in Houston, Texas, is a four-lane facility that was constructed within the center of Interstate 10. The project, which became fully operational in 2009, represents a three-way partnership of the Texas Department of Transportation (TxDOT), the Harris County Toll Road Authority (HCTRA), and the Metropolitan Transit Authority of Harris County (METRO). The facility uses a time-of-day pricing scheme that varies by day of week, time of day, and direction of travel. During peak periods, the inside lane is designated as an HOV only lane and is free for qualifying vehicles. During non-peak periods, both lanes are toll lanes.

An online survey of KML travelers was conducted in 2012 to examine typical travel on the freeway, their use or non-use of the managed lanes and their reasons for use or non-use, and their socioeconomic characteristics. Additionally, interviews were conducted with individuals who were involved with or instrumental in the development and ongoing operations of the facility in an effort to identify best practices and highlight lessons learned. Interviewees included elected officials and current and former employees of TxDOT, METRO, HCTRA, and Harris County government. The traveler survey found that 58 percent of respondents had used the managed lanes at least once. Primary reasons for using the lanes were less stress, a perceived safer commute, and the absence of trucks. Cost was the most frequently cited reason for not using the lanes, followed by not enough travel time savings, and general avoidance of tolls whenever possible (Goodin et al. 2013).

Findings from the interviews were presented as lessons learned:

- Account for conflicting visions. Each agency or stakeholder had a unique project vision and carried a responsibility to address that vision. Additionally, each group had objectives and goals, and occasionally they conflicted.
- Find stakeholders and project champions. These individuals can have powerful influence, which came in handy in mitigating conflicts and pushing projects through to completion. For example, when the project ran short of funding, stakeholders brought HCTRA onto the team as a financial partner.
- Agree on a lead agency and establish agreements to define roles. Though difficult to establish, interagency agreements enabled the agencies to cooperate and collaborate, and helped the operating committee resolve conflicts in a timely manner. When coordination problems occurred, TxDOT would sometimes step in as the lead agency and make unilateral decisions to keep the process moving forward.

- Build in flexibility. Using the framework that established the working relationships, agencies had to learn to adapt to circumstances. Their willingness to do so was characterized as vital to the project's success.
- Maintain strong working relationships. Respecting the other agencies, trusting each other, and having freedom to challenge one another's ideas created a mutually shared out-of-the-box attitude and willingness to find creative solutions (Goodin et al. 2013).
- The SR 167 HOT lanes were implemented in Washington in 2008 as a four-year pilot project and a possible precursor to other HOT lane projects if they were successful in achieving their objective of relieving peak-hour traffic congestion and maintaining free-flow traffic conditions in the HOT lanes. The HOT lanes were created by converting HOV lanes and are separated from the general purpose (GP) lanes by a solid double white line that is illegal to cross. Access into and exit out of the HOT lanes was originally restricted to designated access zones, with six northbound and four southbound access zones; this restriction was later removed, as discussed below. The lanes use dynamic variable tolling, with rates calculated based on real-time data obtained from sensors embedded in the road, to maintain speeds of at least 45 miles per hour in the HOT lanes. The variable toll rate is calculated approximately every five minutes, and depending on traffic conditions, the toll rate ranges from 50 cents to \$9.00 (originally \$6.50 when the facility opened). Drivers with an electronic Good to Go! Pass may pay the variable toll to use the HOT lane when space is available. In addition, cars carrying two or more people, vanpools, buses, and motorcycles may use the HOT lane toll-free without a pass. If the HOT lanes reach capacity, they are switched to HOV only (WSDOT 2016).

Approximately six months prior to the project launch, members of the Washington State Department of Transportation (WSDOT) SR 167 project team held a peer review forum to meet with an expert panel consisting of transportation officials from three states that had previously implemented one or more metropolitan-area HOT lane facilities: California, Minnesota, and Colorado. The WSDOT team presented its implementation plan, and panel members reviewed each component and offered recommendations on ways to improve the project prior to its launch. Many of the panel's recommendations and comments were incorporated into the project strategies and are discussed later in this report in the section on lessons learned and successful practices (Brady 2007).

In August 2014, WSDOT changed the access controls for the SR 167 HOT Lanes, allowing continuous access into and out of the HOT lanes at any location. WSDOT conducted an electronic survey in December 2014 to obtain customer feedback about the change. The researchers requested input from 44,276 users who had paid to use the SR 167 HOT Lanes at least once during the previous eight months; 3,962 responses (9 percent) were received. The overall response from the public toward the change was positive despite its operational impact. The respondents felt the new access configuration allowed the corridor to operate more safely because of the increase in freedom to enter and exit the HOT lanes. However, they also indicated that weaving into and out of the HOT lanes had increased. WSDOT plans to assess

whether traffic trends under the new access configuration indicate a detriment in the performance of the HOT lanes over time.

The most recent annual performance summary for the SR 167 project is for FY 2016 (July 1, 2015 thru June 30, 2016). A survey of over 8,200 customers who had paid to use the HOT lanes within the previous year found high overall satisfaction with the HOT lanes among all income groups; individuals with household incomes below \$50,000 reported the highest satisfaction levels with the speed in the HOT lanes and with the time saved relative to the toll paid. Overall, 66 percent of HOT lane users across all income groups stated that they were satisfied with the amount of time saved relative to the toll they paid.

The SR 167 HOT lanes have been generating revenue to cover operating costs since April 2011. In FY 2016, the tolling revenue was \$1.4 million, \$365,000 below the projected value, which was attributed to failure of one of the toll collection servers occurring in February and continuing until it was replaced in May. Financial data for FY 2017 appears to bear this out, reporting tolling revenue of \$2.7 million for the year (WSDOT 2016).

Clearly, tolling has evolved considerably from its roots as a flat fee charged for use of a bridge or tunnel or a fee charged for use of a road based on distance traveled. As seen in many of the facilities described above, tolling facilities today often incorporate a variable pricing system to manage congestion. The following section on value pricing discusses this mechanism in detail.

### **Value Pricing**

Value pricing—also called *congestion pricing*—refers to the practice of charging a direct user fee to lessen market demand for the roadway—that is, reduce traffic congestion. As a lane management strategy, it works by shifting travel to other transportation modes or to off-peak periods. Removal of even 5 percent of the vehicles from a congested roadway can enable a system to flow more efficiently, allowing more cars to move through the same physical space (FHWA 2008). While pricing generates revenue, its primary goal is to improve transportation system effectiveness. There is a consensus among economists that congestion pricing represents the single most viable and sustainable approach to reducing traffic congestion (FHWA 2017c), and the concept has been gaining traction across the country.

- A national survey conducted in 2013 on priced managed lanes showed that awareness of this concept was low among Americans in general (less than one in five, or 17 percent). However, when the concept was explained, 48 percent said they would be likely to use these lanes when available.
- In comparison, a national survey conducted in 2016 by the same firm, but examining the broader topic of transportation mobility, reported that 69 percent of Americans agree that priced managed lanes should be considered when making improvements to U.S. highways—a strong indication that public awareness of this concept had grown considerably (HNTB 2016).

- The following year, a national survey focused on paying for infrastructure found that almost six in ten Americans (59 percent) reported they would be likely to use priced managed lanes to avoid congestion and save time (HNTB 2017).

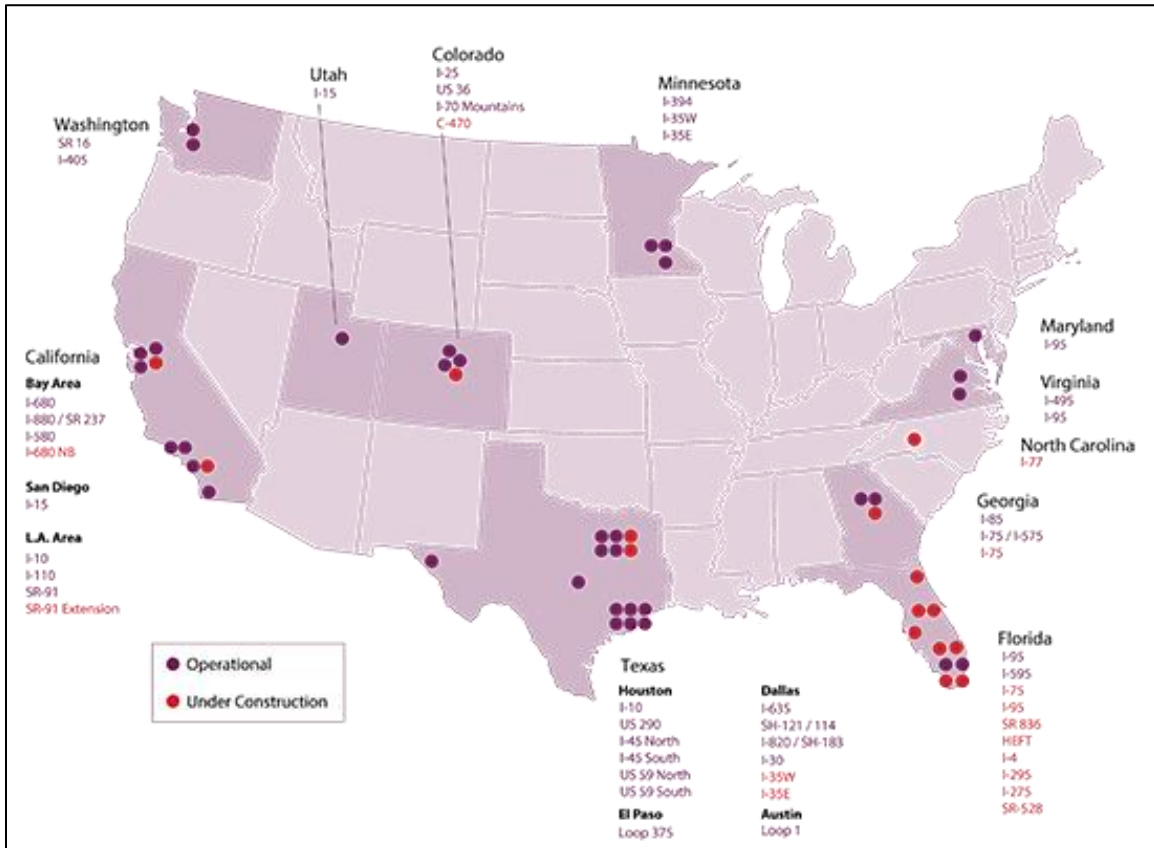
Furthermore, despite critics' concerns about equity, and contentions that these "Lexus lanes"—as they have been referred to in popular media—would only appeal to a select elite, most Americans appear to disagree.

- The 2013 survey reported above showed that nearly two in three Americans (65 percent) considered priced managed lanes to be a useful option rather than a luxury and would choose to use them in a variety of instances ranging from medical emergencies to much less serious situations. In fact, 81 percent said they would be likely to use the lanes to make up time due to running late (HNTB 2013).
- In the 2016 survey reported above, 69 percent of Americans said they would be likely to use a tolled highway over a free alternative if they could save time and avoid being stuck in traffic (HNTB 2016).

The issue of equity in the use of priced managed lanes has been examined in a variety of public opinion studies as well as project reports. When asked if they would be likely to use priced lanes, the percentage of respondents saying yes showed little difference between drivers with income of more than \$50,000 annually and those making less than \$50,000 annually—76 percent and 75 percent, respectively (HNTB 2013). A review of the FHWA's Value Pricing Pilot Program (VPPP) found that perceptions of unfairness may be overstated and that differences in incomes of facility users were minimal, noting that user surveys show general use across a wide range of incomes, with only slightly greater use among higher-income motorists. The report concluded that equity issues are ever-present and likely to persist, but project impact studies to date show no great disparity in use across income groups, and equity impacts have not been an impediment to implementation (Bhatt et al. 2008).

Regarding public opinion about value priced lanes in general, feasibility studies on value pricing projects often find neutral or skeptical opinions, or even outright resistance. However, public opinion begins to shift toward acceptance as projects get under way, and will continue to grow for well-managed projects, particularly among priced lane users (Bhatt et al. 2008). This finding underscores the argument for early and continuing outreach throughout project implementation, followed by ongoing customer service surveys to examine upward or downward trends in customer satisfaction and assess the causes of any such trends.

According to the FHWA, as of February 2017, there were 35 priced managed lane facilities operating across the country and an additional 15 under construction. The locations of these projects are shown on the United States map in Figure 2, which the FHWA Office of Innovative Program Delivery makes available for downloading (FHWA 2017c).



**Figure 2. Priced Managed Lanes Operating or in Construction, February 2017 (FHWA 2017c)**

A study conducted in Washington, D.C., explored the baseline opinions of the general public toward congestion pricing and whether more information and education about pricing could influence their attitudes. The study also sought to identify key factors that make a pivotal difference in determining opinions—issues like fairness, effectiveness, or privacy. More than 300 participants who were broadly representative of the region came together in five forums—two in Virginia, two in Maryland, and one in the District of Columbia—that each lasted four-and-a-half hours.

Presentations provided information on the current and projected state of transportation funding and congestion and three hypothetical congestion pricing scenarios (Swanson and Hampton 2013):

1. Priced Lanes on All Major Highways – variably-priced lanes on all Interstate highways, as well as some other major roadways
2. Pricing on All Roads and Streets – variable, per-mile pricing using vehicle-based GPS systems
3. Priced Zones – drivers pay a fee to enter or drive within a designated area

Key findings included:

- A significant majority of participants agreed that congestion is a critical problem facing the region and emphasized its personal impacts on lifestyle choices.
- Of the three scenarios, Scenario 1 (Priced Lanes on All Major Highways) garnered the most support. People liked it because it offers choices, is optional, and offers added predictability.
- People had strong negative reactions to the GPS-based Scenario 2 (Pricing on All Streets and Roads). They saw it as an invasion of privacy, too complicated, and impossible to implement.
- People were skeptical about the effectiveness of the scenarios, particularly in reducing congestion. They did not believe that pricing could reduce demand because, they said, driving for most people is a necessity, not a choice—people in this region drive because they must, not because they want to. Similar comments have been noted in other studies as well.
- People want to know that congestion pricing is part of a wider strategic vision that will enhance their community and their lives.

### **COMMON TRENDS, THEMES, AND FACTORS ASSOCIATED WITH PUBLIC ACCEPTANCE OR REJECTION**

This section is based on the eight themes identified in the *NCHRP Synthesis 377: Compilation of Public Opinion Data on Tolls and Road Pricing* (Zmud and Arce 2008). That report, which gathered results from public opinion polls, surveys, and focus groups conducted during the years 2000 to 2007, is a comprehensive analysis of public opinion data on road pricing. As would be expected, many funding mechanisms and forms of road pricing have developed or evolved since its publication, and the public opinion surveys and polls discussed in this literature review provide insights into those recent developments—but they also continue to support the themes identified in the NCHRP Synthesis report and discussed below.

1. The public wants to see the value.

The more clearly and directly the toll or other charge is linked to a benefit, the greater the support. The key lesson to be learned here is that the individuals who comprise the general public perceive and value benefits differently from one another. For some, the environmental benefits of reduced emissions due to congestion might carry the most weight; others may place greater value on having more options and greater flexibility to choose among them. Therefore, it is important to identify and communicate benefits from a variety of perspectives, including the individual, the local community, and society as a whole.

Additionally, research studies investigating the development of improved models for forecasting roadway demand and estimating the effect of pricing on demand found that improvements in travel time reliability are at least as important as improvements in average travel time. These studies have found that many drivers pay to use managed lanes when adjacent toll-free lanes are traveling at nearly the same speed, indicating that the “guarantee” of a reliable travel time may be of great value in terms of attractiveness to the user. This finding underscores the importance of addressing key bottleneck points, using intelligent transportation systems to monitor and adapt to congestion levels, and using systems that avoid nonrecurring congestion and recover from such congestion as quickly as possible (Parsons Brinckerhoff et al. 2013; Burris et al. 2012; Tilahun and Levinson 2010).

Accompanying a willingness to pay tolls is an expectation of better driving conditions. More than 9 in 10 Americans (93 percent) expect tolled roads to be better than non-tolled roads, with the highest expectations being for better quality and less congestion (HNTB 2013).

2. The public wants to react to tangible and specific examples.

Support for tolling is consistently higher when the toll is applied to a specific project. Surveys in California and Florida found that the majority of respondents supported the completion or extension of existing toll roads. In Texas, when potential toll road users were surveyed about their general attitudes toward tolls, only 45 percent believed that tolls were needed. However, when asked their opinions about specific toll roads under construction at the time, 51 percent approved of them (Ellen et al. 2012).

3. The public cares about the use of the revenues.

Support tends to be higher when revenues are allocated for specific uses, not agencies, and when those uses include highway infrastructure, public transit improvements or expansions, or speeding up highway construction. The public also feels strongly that revenues should be used in the region or community where they were generated (Ellen et al. 2012). In San Diego, the successful passage of a sales tax to fund transportation projects was credited to two key factors: (1) a fixed amount of the annual tax revenue is dedicated to local bicycle and pedestrian projects and to smart growth, and (2) an independent taxpayer oversight committee was

implemented to monitor and regularly report to the public on the status, schedule, and expenditures of the funds (Parsons Brinckerhoff et al. 2013).

Additionally, nearly half of Americans (46 percent) think that state government should have primary responsibility for planning and funding infrastructure projects, and 47 percent think state government does the best job of managing and maintaining infrastructure projects. (HNTB 2009). Americans are also becoming more aware of the importance of regional transportation planning. In a subsequent survey, when asked who the primary decision maker for addressing interstate highway needs should be, the preference was evenly split between the state DOT and local and regional transportation authorities (HNTB 2011).

4. The public learns from experience.

It is probably unrealistic to expect strong support from the public at the outset of a project, although the existence of similar successfully implemented projects will speed up support. Studies have found that support typically increases with time and usage (Ellen et al. 2012). Ongoing customer service and two-way communications are critical factors in building public acceptance, as are prompt responses to system problems that often occur during the early days of implementation.

5. The public uses knowledge and available information.

When the public is provided with objective and thorough explanations about a tolling or managed lane project, support will be greater. This includes information on the need for the project, the pros and cons and how the benefits outweigh the costs, and the mechanics of the project. Numerous studies have found that much of the public knows very little about the source or extent of transportation funding, and that support for tolling projects increases with understanding of the funding shortfall (Swanson and Hampton 2013, Wright and Strickhouser 2013, Ellen et al. 2012, Zmud and Arce 2008).

6. The public believes in equity but wants fairness.

The issue of *equity* refers to the public's belief that all drivers should be able to take advantage of the various pricing options being offered on a roadway. Concerns about inequity are reflected in the perception that only the wealthy will be able to use tolled lanes—often referred to as the “Lexus lanes” perception. Such concerns are reduced or eliminated when the public perceives the overall program as being fair due to other features offsetting the equity issue, such as expanded transit service or available alternative routes for those with lower incomes.

The issue of fairness also relates to concerns about how effectively a tolling system can identify violators and how violations will be enforced. Lower support for tolling on existing roads than on new roads also reflects concerns about fairness, as expressed in such comments as “I’ve already paid for the road with my taxes; adding a toll means I’m paying twice.”



Several studies have found that equity and fairness concerns can be allayed when respondents have more information. During focus groups conducted in San Diego prior to expansion of existing HOT lanes and the addition of a moveable barrier, participants expressed concern about the fairness of tolls for lower-income drivers. However, when they understood that HOVs and bus rapid transit (BRT) would be given high priority in the HOT lanes, and that the HOT lanes would ease congestion for everyone in the main lanes, participants' perception of the project as fair was strengthened, and their equity concerns dissipated (Zmud and Arce 2008).

In a series of discussion groups about potential HOT lane projects being considered in Washington, D.C., participants were asked about their perceptions of funding shortfalls at the beginning and end of the 4 1/2-hour discussions. Participant perception of shortfalls as a critical problem increased by 13 percentage points at the end of the discussion. Additionally, choice is important; participants were far more concerned about losing options than about "Lexus lanes" (Swanson and Hampton 2013).

Support is lower when the public perceives a program to be unfair. Therefore, it is important that congestion pricing plans offer reasonable alternatives, such as parallel routes and expanded transit service. It is also important to communicate the benefits of the plan for all drivers, as well as the experience of drivers on similar facilities in other locations. As noted earlier, a review of the FHWA's Value Pricing Pilot Program (VPPP) found general use across a wide range of incomes, with only slightly greater use among higher-income drivers.

7. The public wants simplicity.

When the mechanics of a tolling or other managed lane project are simple and therefore easier to understand, public support is higher than for projects whose pricing system is highly complex. When the concept of tolling or managed lanes is first introduced, people are often more likely to support more straightforward and obvious solutions, such as increasing taxes and registration fees (Swanson and Hampton 2013). For that reason, it is important to introduce and discuss tolling in a context that compares it with other options, and to begin a tolling program with a simple, easy-to-understand system.

8. The public favors tolls over taxes.

Most of the literature shows that tolling is preferred when compared with other revenue mechanisms. However, as discussed earlier, public opinion is shifting toward a combined use of tolling, mileage-based fees, and taxes, and this shift appears to be driven by millennials and Gen-Xers. Support can be strengthened by emphasizing the fairness and choice aspects of tolling—i.e., tolling revenues are generated and applied locally, unlike the gas tax, and tolling gives drivers a choice because only users pay the toll.

## EFFECTIVE PRACTICES

This section presents a variety of practices identified from the literature review as contributing to successful tolling and managed lane projects.

### Effective Practices in Planning

- Identify champions from outside the lead agency, such as elected officials, business groups, and community groups. Academic partners also bring credibility to projects as independent voices. To draw bipartisan support from elected officials, build coalitions that cross political views, geographic boundaries, business interests, and socioeconomic backgrounds. The majority of successful projects have had vocal champions in the legislature, and some, such as Minnesota, also benefited from having the governor as an active champion.

In a presentation on gaining support and buy-in from elected officials, speakers noted that politicians from each end of the political spectrum can find common ground on pricing issues as a revenue source. Including expanded transit options within the same area can also help engender support from legislators (Cloyed 2013).

- Define pricing objectives early using a collaborative process, make them widely known, and use them to guide project decisions. The public often has difficulty understanding the benefits of congestion pricing, so it is important not only to emphasize benefits like reduced travel time and improved travel time reliability, but also to include them among the performance indicators that will be used to evaluate the project.
- Collect good baseline data for general purpose lanes and for existing HOV lanes within the corridor by using small intervals to observe peak period changes; WSDOT recommends aggregating lane-specific information on speed and volume into 5-or 15-minute average summaries. This is an often-overlooked strategy, with data being collected in intervals that are too large to provide meaningful information. Good baseline data not only helps to measure performance and guide pricing decisions but can also be used for reporting and marketing purposes. For example, in tracking and communicating system performance results, WSDOT's congestion measurement principles include the use of accurate, real-time data rather than modeled data whenever possible as well as language and terminology that are meaningful to the public ("plain English"). In addition, WSDOT and Washington State Transportation Center researchers use a two-year span for current and baseline year data in order to more accurately identify changes and trends seen on the state highway system that might be missed by a one-year comparison (WSDOT 2016).
- Develop a simple application and registration process for participation in the transponder electronic payment program, along with a distribution plan aimed at helping low-income customers get a transponder and set up an account, particularly when no credit card is available. Consider setting up service centers in grocery stores, using bilingual service representatives, etc.

- Develop a workable long-term enforcement plan as soon as possible and be prepared to explain it to the media; public concern about “cheaters” is common. However, it is best to hold off on full enforcement until the team is confident that enough public education has occurred. Plan for a grace period of four to six weeks before citations are issued; if real-time enforcement is being used (e.g., state troopers, highway patrol), consider having officers issue warning notices to violators during this period.
- Develop training for customer service representatives, a script for any staff handling phone inquiries, and a one-page information piece on each facility for inclusion in the welcome package that accompanies purchase of a transponder.

### **Planning Practices to Be Avoided**

The SR 520 Bridge Replacement and HOV Program in Washington, discussed earlier, is generally considered successful now, but it experienced significant planning and administration problems during its construction that resulted in a delay of approximately nine months past the completion deadline, an estimated \$40 million in lost revenue, and confusion among the public, particularly users of the facility. Consequently, the State Auditor’s Office conducted a performance audit of the project aimed at avoiding similar issues in future tolling projects. Key findings from that report are briefly presented here as a cautionary tale about practices to be avoided (Washington State Auditor’s Office 2013).

Three factors created a level of risk to the project’s success:

- Technology barriers – WSDOT wanted a statewide system that would be easy for customers to use on multiple highways and bridges. However, because Washington state law requires precise accounting to track tolls collected at each facility, the system needed more advanced accounting elements than what the tolling industry was familiar with and had delivered for other states. Also, at the time, only three other states – Minnesota, North Carolina, and Georgia – were using a unified statewide tolling program that relied on all-electronic tolling.
- Disagreements about needs – WSDOT project stakeholders disagreed about whether they were purchasing a toll collection service or developing an IT and accounting system to collect tolls.
- Tight deadline pressure – The Federal Highway Administration paid for the new tolling system under a grant designed to support innovative methods to ease traffic congestion. These grants were intended for projects that could be completed quickly. The grant agreement included a specific SR 520 tolling start date. Although the Federal Highway Administration extended the deadline several times to meet WSDOT’s needs, the deadline pressure affected WSDOT’s project management decisions.

Another lesson learned from the audit was that an unclear management approach complicated the ambitious project. WSDOT had created the Toll Division to manage its existing tolling program prior to this project getting under way, and the Toll Division lacked the executive support and decision-making authority needed for this project. According to the audit, the Division fell short in three areas:

- Incorporating risks – Although WSDOT identified numerous risks to the project’s success, it did not fully integrate those risks into project development and management or its vendor selection process. For example, all vendors received low overall scores; WSDOT selected a vendor that scored very low on its proposed technical accounting approach, a known high-risk area.
- Managing project – WSDOT struggled to proactively manage both the project and the vendor. Although it developed a sound project management plan, it did not always follow the plan and did not update it to reflect changes. Because the plan was not being updated, the vendor often received conflicting direction, which caused further delays.
- Holding vendor accountable – As the vendor struggled to understand project requirements and meet project deadlines, WSDOT became more involved in the vendor’s work and conducted less project oversight. Because WSDOT’s primary goal was to have an operational system, it delayed assessing damages and did not apply all available financial penalties for poor performance.

### **Effective Practices in Pricing**

- When implementing variable pricing, start with a simple, straightforward strategy that is easily understood. Using variable tolls that change at predetermined times of the day, referred to as *fixed variable pricing*, is an example of a simple pricing system. It is familiar to the public due to its similarity to time-of-day usage plans offered by utility companies and is easier to implement because it does not require development of a pricing algorithm.
- If a pricing algorithm is used, it must be monitored closely to determine its responsiveness to changing traffic conditions. As usage increases, the algorithm can be modified as needed to maintain desired capacity. Some states use hybrid pricing (both fixed and dynamic) when launching a tolling facility, opening it with fixed variable pricing and collecting user data for at least six months; this data is used to develop a dynamic pricing algorithm to be implemented later (Perez et al. 2012).
- Consider the roadway length that will be tolled as well as the congestion reduction objectives when determining pricing. Is it long enough to align pricing with distance traveled—that is, should short trips on segments of the road cost less than full-roadway trips? Or is it more beneficial for smooth traffic flow to discourage managed lane usage for short trips?
- An effective marketing strategy appears to be the promotion of discounted rates for non-peak hours. Increased tolls for peak hours may be viewed as penalizing those with inflexible schedules, but off-peak discounts have proved acceptable. Use a variety of media to advertise

the discount, including radio and print media advertisements, billboards, point-of-sale displays, newsletters, press releases and media kits, and presentations to community groups and employers.

- A sense of choice is clearly an important factor in cultivating public support for congestion pricing. As noted in the Washington, D.C. study, the public can be skeptical about whether congestion pricing will truly reduce congestion (Swanson and Hampton. 2013). Effective messaging will show that congestion pricing can create specific and beneficial transportation alternatives. Additionally, congestion pricing proposals should avoid offering limited choices that do not provide individuals with a reasonable array of alternatives. In some cases, this may mean maintaining toll-free lanes. In other cases, it may mean improving transit service or other alternatives before implementing road pricing.
- In the case of HOV-to-HOT lane conversion projects, some unhappiness on the part of current HOV lane frequent users is to be expected. It is important to consider the current HOV lane usage policies when setting pricing, such as treatment of hybrid and low emissions vehicles, usage during off-peak hours, etc. Several states with a peak-hour policy similar to Arizona's—i.e., allowing HOV lane use by any vehicle during off-peak hours—encountered major customer pushback when they attempted to implement tolling on a round-the-clock basis. In Minnesota, the pricing schedule was changed in less than a week to return to the peak-hours only schedule that the HOV lanes had used.
- Establish upper and lower toll rate limits. Set toll rates to be competitive with transit fares, so that the public sees real choices and doesn't consider itself "priced out of the market."
- If the project is initiated with dynamic pricing, a backup time-of-day pricing mechanism should be ready to implement in its place, with toll rates based on rolling time-of-day data from previous periods.

### **Effective Practices in Operations**

- Contingency plans and protocols are critical for managing unexpected backups due to enforcement or traffic incidents. Various scenarios and bottleneck management strategies (e.g., manual override to temporarily close a lane segment) should be thoroughly tested prior to launch because unnecessary delays will breed negative public opinion early in the project. For example, on Washington's SR 167, as a car passes through the toll facility and its transponder is read, an overhead light flashes to indicate a valid transaction (e.g., sufficient funds in transponder account). Because the project relies on state troopers to monitor the lanes and provide real-time enforcement when the light doesn't flash, possible bottlenecks can occur around the areas used by the troopers to safely pull drivers off the road.

- Controlling the cost of back office operations is important, particularly in congestion pricing projects, because the high cost of implementation costs is often a barrier to public and legislative acceptance. Even when the primary project objective is reducing congestion rather than maximizing revenue, it is important to demonstrate that excess revenues and back office cost savings are being reinvested into the system. By moving transaction processing and account data storage from costly dedicated servers to cloud computing, managers can lower costs across multiple facilities and increase flexibility of operations.
- As much as possible, obtain customer feedback throughout the process to test scenarios, signage visibility, etc., to minimize the need for frequent corrections.

### **Effective Practices in Public Engagement, Communications, and Marketing**

- For HOT lane projects, create an easily defined brand, such as Express Lanes or Express Toll Lanes. The HOT lanes term may be perceived as jargon and not customer-oriented.
- Gather public opinion data on specific projects, funding scenarios, equity issues, etc., using focus groups and surveys. Ensure that diverse income groups are represented and analyze responses by segment to identify the benefits of greatest value to that segment (e.g., commuters, regular HOV lane users, frequent off-hours travelers). Equity issues (e.g., the perception that value pricing creates “Lexus lanes” that only high-income drivers will use) have been of less concern to the public than many decision makers and influencers believe; have the data ready to make the case that priced lane users represent all income groups. Messaging strategies used by successful projects have included the following:
  - Priced managed lanes represent a user fee, not a tax; the user is gaining travel time savings and reliability, and non-users are not being charged (responding to opposition based on the argument that taxpayers have already paid for the road).
  - Priced managed lanes provide additional choices. People of all income groups say they would be likely to use them on occasion, and only a small minority of people say they would use them all the time.
  - Priced managed lanes encourage people with flexible schedules to travel during non-peak hours, thus reducing traffic congestion during peak hours.
- Develop messaging that is clear, honest, and reinforced with ongoing communications. As noted earlier, information should be provided to members of the public when their opinions on tolling are being sought; public support is greater when people understand the project, why it is needed, etc. It is important for the messaging to accurately reflect the project’s objectives and revenue expectations and not oversell them. Washington’s SR 167 HOT lanes were created primarily to relieve peak-hour traffic congestion. Toll revenues were to be used for construction and operating costs of the facility and for hiring of additional state troopers for enforcement, so

there was no expectation of revenues exceeding costs (although this did occur in the third year of operation). All communication regarding the project stated the revenue expectations clearly and explained the HOT lane conversion as a means of making use of surplus HOV lane capacity. Also, because the SR 167 tolling was considered a pilot project and a pre-cursor to eventual implementation of HOT lanes on other corridors, the review panel suggested that the project messaging also communicate that in a positive way—e.g., “This is a demonstration period to fine-tune the system and assess its ability to reduce traffic congestion” (Brady 2007).

- Prepare extensively for the media. Public opinion is strongly influenced by the media, so it is important to anticipate and be prepared to answer questions that reporters will likely ask when the project is announced—particularly social equity issues. Develop materials with graphics to illustrate location and operation of the managed lane facility, how enforcement will work, etc. If possible, representatives of the agency (or agencies) implementing the project should meet with members of the media before the launch to determine what they need to know for their stories and ensure they have a clear understanding of how they lanes will work. The review panel for Washington’s SR 167 HOT lanes also cautioned the WSDOT team that some negative coverage is inevitable; the key is to be prepared, address problems as quickly as possible, and get the message out on how the problems were resolved.

## **ADDITIONAL TRANSPORTATION FINANCING AND FUNDING STRATEGIES**

The term *innovative finance* has been applied to a variety of mechanisms, techniques, and tools to supplement or provide alternatives to traditional federal funding of transportation projects. These techniques have been designed to assist states in maximizing their ability to leverage federal grant dollars, attract new sources to make financial investments in transportation projects, and accelerate project completion dates. The Build America Transportation Investment Center (BATIC) notes that innovative finance “is a broadly defined term that encompasses a combination of techniques and specially designed mechanisms to supplement traditional financing sources and methods,” and that “several of these techniques may not be new or particularly innovative outside the transportation sector” (BATIC 2017).

Among the finance techniques rapidly gaining ground are those that are based on greater involvement of the private sector in sharing the risk of developing, building, and operating transportation facilities, referred to as public-private partnerships, or P3s.

### **Public–Private Partnerships (P3s)**

As briefly discussed earlier, the FHWA Office of Innovative Program Delivery defines public–private partnerships (P3s) as “contractual agreements between a public agency and a private entity that allow for greater private participation in the delivery of transportation projects. Typically, this participation involves the private sector taking on additional project risks, such as design, construction, finance, long-term operation, and traffic revenue” (FHWA 2017d).

P3s have become more prevalent in roadway building and expansion projects primarily due to two federal transportation funding reauthorizations that relaxed constraints on their use: The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted in 2005, and Moving Ahead for Progress in the 21st Century (MAP-21), enacted in 2012. Specifically, SAFETEA-LU expanded eligibility for private activity bond use to highways and freight transfer projects and imposed a \$15 billion volume cap. Private activity bonds used for highway improvement projects have tax-exempt status, making them an attractive source of low-cost financing. MAP-21 relaxed (to a small extent) prior prohibitions regarding tolling on the federal-aid highway system. As of October 1, 2012, public agencies are no longer required to execute a tolling agreement with FHWA to impose tolls on federal-aid highways. MAP-21 also includes provisions for imposing tolls on high-occupancy vehicle (HOV) lanes that are converted high-occupancy toll (HOT) lanes, as well as four toll pilot programs managed by FHWA prior to MAP-21.

Additionally, P3s generally require special state legislation, which varies widely from state to state. As of June 2016, 35 states (including Arizona), Washington, DC, and Puerto Rico have passed legislation providing the legal authority for private sector participation in transportation projects to varying degrees (FHWA 2017e). Arizona has a comprehensive statute, enacted in 2009, that authorizes ADOT to enter into agreements with private entities to design, build, finance, maintain, operate, manage and/or lease transportation facilities, or for any other project delivery method that ADOT determines will serve the public interest (ARS 2017).

Three main types of P3s have been used for highway projects in the United States (FHWA 2017d):

1. Design–Build (DB) projects, the most common of the three – Set up as fixed-price contracts between a private entity and a public agency to jointly manage the design and construction of a new roadway facility.
2. Design–Build–Finance (DBF) projects – The private partner provides the necessary up-front capital and is generally repaid by a state or local government in a series of installments funded by taxes, fees, or tolls.
3. Design–Build–Finance–Operate–Maintain (DBFOM) projects – In addition to the elements of a DBF project, the private partner agrees to perform operations and carry out maintenance on the highway for a specific period.

The literature search found no public opinion surveys or studies that specifically investigated attitudes about using public-private partnerships (P3s) to build or oversee managed lane facilities. However, several priced managed lane projects have involved P3s, and these are discussed below.

### *Minnesota*

After a decade of public discussion and political debate—and two failed efforts—the Minnesota Department of Transportation (MnDOT) opened the state’s first high-occupancy toll (HOT) lanes facility,



the I-394 MnPASS Express Lanes, in 2005. The project converted underperforming high-occupancy vehicle lanes on I-394 into high-occupancy toll lanes that allowed solo drivers the opportunity to pay an electronic fee to bypass congestion. The intent was to improve the efficiency of I-394 by increasing the person- and vehicle-carrying capabilities of the existing (HOV) lanes, maintaining free-flow speeds for transit and carpools, and using electronic toll collection for dynamic pricing and electronic enforcement. Because previous attempts at this project had been defeated by public opposition, it was considered imperative to involve and inform decision makers and the public through effective education and outreach. Consequently, the I-394 Express Lane Community Task Force—composed of legislators, community leaders, interest groups, and concerned citizens—was formed. Its mission was to provide advice and guidance to the Commissioner of Transportation during development of the project as well as to champion the project with the public.

Early in the deliberations, the task force members were provided information on the rationale behind HOT Lanes and were briefed on projects in other parts of the country. The task force chair and five members visited the I-15 HOT lane project in San Diego and the SR 91 Express Lane project in Orange County, California, to see these projects in action and get a better understanding of how they work. Project meeting agendas were carefully planned to provide ample opportunity for task force members to hear technical and policy presentations on important topics, ask questions, and discuss them in detail, and input from the task force was taken seriously and treated respectfully. An analysis of the planning and implementation process included in the final project report concludes that the task force was created as the centerpiece of the project's public involvement program and served as an important element in assuring that all aspects of potential concern were addressed by MnDOT, with the majority resolved prior to implementation.

Another innovative feature of the project was MnDOT's use of a streamlined procurement process similar to Design-Build as a means to deliver the project at least a year earlier than under a traditional process. MnDOT secured approval to issue a Request for Public-Private Partnership Proposal (RFPP) that asked the private sector for design-build and operate proposals with an in-kind or financial contribution to the project through professional expertise or technology applications. The partnering team chosen for the project was led by Wilbur Smith Associates and SRF Consulting Group, which specialized in planning, engineering and project management. They became integral to the process and acted as consultants to the I-394 Express Lane Community Task Force. Associate partners include Raytheon, experts in toll technology, and Cofiroute, a toll road operator.

To overcome public concern that the toll authority would price the facility to maximize revenue collection and then use the revenue how it pleased, MnDOT hired an internationally reputable toll operator, provided space at a state-owned customer service center, and established strict protocols. The operator collects the money for MnDOT and deposits the money directly into a state account, reducing the opportunities for fraud. The operator was hired under a professional technical services agreement, so there are no incentives regarding the amount of revenue collected (Munich and Patterson 2006).

As presented by MnDOT in a 2016 workshop on congestion pricing, the goals and objectives of MnPASS are to (BATIC 2016):

- Reduce and manage congestion in a manner that's cost-effectively and more sustainable over the long term
- Improve the movement of people through highway corridors during peak periods (increase person throughput)
- Offer a faster, more reliable congestion-free choice for commuters;
- Improve bus transit service and increase ridership
- increase car/van pooling (HOV use)

Current usage data indicates that most people using MnPASS are riding transit or carpooling. While single occupant MnPASS customers represent approximately 32 percent of the total vehicles in the lane (i.e., vehicles moved), they only account for approximately 12 percent of the total people in the lane (i.e., people moved). An analysis of before and after quantitative and qualitative data indicated that the I-394 HOV to HOT Conversion pilot project was deemed a success, based on the following criteria:

- Lane use increased 20 percent
- Violation rates decreased by over 50 percent
- Speed and travel time reliability was maintained for transit and HOVs
- Corridor peak hour volumes increased 7-21 percent
- Corridor miles of congestion decreased by about 50 percent
- Corridor crashes decreased 12 percent
- The majority of all income groups supported the facility by a 3-to-1 margin

### *Virginia*

Virginia was an early leader in P3s, passing the Public-Private Transportation Act (PPTA) of 1995. Between 2000 and 2012, the state implemented nearly \$7 billion in major transportation projects statewide under the PPTA. One of the characteristics of the PPTA is that it permitted private sector entities to submit unsolicited project proposals.

In 2002, Fluor Daniel, a US-based, Fortune 500 firm, submitted an unsolicited proposal to VDOT to build four new high occupancy toll (HOT) lanes on Interstate 495 that would expand capacity and deliver new

travel choices, including a network for buses and carpools. VDOT embraced the plan on the grounds that a partnership with the private sector and tolling would help VDOT deliver improvements more quickly and with fewer tax dollars, provide new travel choices, and reduce impacts on the community and the environment. In fact, the new approach would reduce home impacts from the 350 estimated to need removal in a previous VDOT plan to just eight homes, effectively eliminating a significant factor in public opposition to the previous plan.

Subsequently, Transurban Group joined Fluor as its primary partner in the concessionaire team. VDOT advanced a competitive procurement, series of environmental reviews, and public engagement process for the new project, and in 2005, local leaders voted to include HOT lanes as part of the region's long-range transportation plan. In 2007, VDOT finalized a long-term partnership agreement with Capital Beltway Express (CBE), the consortium led by Fluor Daniel and Transurban, for implementation of the Capital Beltway High Occupancy Toll (HOT) Lanes project, commonly referred to as the Interstate 495 Express Lanes. The design-build-finance-operate-maintain (DBFOM) contract made CBE responsible for the highway's design, construction, financing, operation, and maintenance for 75 years following completion. Specifically, CBE would expand a 14-mile stretch of highway to 12 lanes from 8 lanes; reconstruct the 8 preexisting general purpose lanes; incorporate high-occupancy tolling (HOT) into 4 of the 12 lanes; replace 58 bridges and reconstruct 10 interchanges; and add pedestrian and bicycle facility improvements.

Project funding sources totaled \$2.1 billion, with over half financed through \$1 billion in public debt—a \$586 million TIFIA loan and \$586 million in private activity bonds (tax-exempt bonds issued by the private concessionaire). The dedicated revenue stream to repay the debt is the dynamically priced toll revenue. The agreement also includes a revenue-sharing mechanism between the public and private partners.

To make the project financially viable for VDOT and prevent the agency from absorbing the concessionaire's debt responsibilities in the future, the I-495 Express Lanes Comprehensive Agreement shifted revenue risk entirely to the private sector. VDOT and the Commonwealth of Virginia avoided any contractual obligation to pay bondholders and lenders, including TIFIA, or to compensate the private concessionaire. This risk transfer relied on the concessionaire's profit motivation to contain costs and generate adequate toll revenues to pay back any outstanding debt. This proved to be an excellent strategy; when early demand fell short of expectations, Transurban found it necessary in 2014 to infuse an additional \$280 million in equity and release \$150 million in reserves into the project to stabilize its finances and debt service (Bolanos et al. 2017, Daito et al. 2013). Since then, usage has continued to grow; for fiscal year 2017, Transurban reported 96,000 average daily trips and \$157 million in toll revenues, representing increases of 12.8 percent and 23.7 percent, respectively, over the previous year's figures (Transurban Group 2017).

Construction began in July 2008, and the express lanes opened ahead of schedule in November 2012, featuring fully electronic toll collection using transponder technology and dynamic tolling based on real-time traffic conditions. The project is estimated to have supported more than 16,000 jobs and pumped \$3.5 billion into the economy at its peak, including on-site construction jobs, transport of supplies and

equipment, and non-direct jobs supported by workers spending paychecks in the local community. The project also awarded \$490 million to small and disadvantaged businesses, the largest in Virginia's history for a single transportation project.

### *California*

The Orange County, California, SR-91 Express Lanes opened in December 1995 as a four-lane, 10-mile toll facility in the median of SR-91. Initial operations were under a private developer, California Private Transportation Company (CPTC); in January 2003, the Orange County Transportation Authority (OCTA) purchased the private project for \$207.5 million, beginning public operations. The State of California saved construction and operating/enforcement costs, and Orange County gained property taxes from CPTC of \$6.8 million in the first 6 years. While SR-91 experienced initial public and political support, it diminished with the rise of issues around private operation of the facility. Specifically, controversy arose around a "non-compete clause" in the CPTC-Caltrans agreement preventing the addition of lanes or building of mass transit on the nearby Riverside Freeway, to ensure profit for the express lanes. Under the non-compete provision, CPTC sued Caltrans over its widening at the interchange with the Eastern Transportation Corridor. The suits were dismissed only upon OCTA purchase of the facility. Two unsuccessful state bills sought to void the non-compete clause and have the public sector acquire the lanes by condemnation. Media coverage portrayed CPTC as a "monopoly" with a 35-year operations contract. As the controversy continued, commuter group approval of private companies operating toll roads decreased to 30-45 percent between 1996 and 1999, compared to 50-75 percent approval in 1996. However, commuters generally approved of HOT lanes in concept, with approval rates in the 45 to 75 percent range (Sullivan 2000).

## **CHAPTER 3. INTERVIEWS WITH TOLLING FACILITIES OFFICIALS**

Tolled facilities—including bridges, roads, and tunnels—currently operate in 35 states, as well as the U.S. territory of Puerto Rico (IBTTA 2015). Many of the oldest facilities, such as the Pennsylvania, Maine, and New Jersey Turnpikes, were started or completed prior to establishment of the federal Interstate Highway System in 1956. Although initial funding rules for the interstate system prohibited the collection of tolls on federally aided roads, these facilities were grandfathered into the system to ensure connectivity without added expense (Weingroff 2013).

Since then, federal funding has extended beyond the interstate system, and federal legislation during the past 20 years has supported expanded use of tolling and managed lane facilities on roadways, including segments of interstate highways. FHWA statistics show that 235 new toll-based highway improvement projects were begun since passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1992 (Perez and Lockwood 2009). Facilities such as these were the focus of this research study.

Based on the literature search, which identified several states that have constructed and are currently operating successful managed lane facilities, as well as on recommendations from the project's Technical Advisory Committee (TAC), a list of 13 MPOs and state DOTs was compiled. Key individuals from these organizations were individually contacted by e-mail to request their participation in a personal phone interview aimed at learning more about their agency's experiences related to constructing and operating managed lanes facilities.

### **INTERVIEW OBJECTIVES**

The purpose of the interviews was to obtain information and insights from the interviewees on practices they identified as successful and on lessons learned pertaining to the planning, implementation, reporting, and leveraging of public opinion about priced managed lanes and tolling facilities. Specifically, the following topics were addressed:

- Factors driving project selection and implementation of tolling facilities
- Public response to priced managed lanes and tolling
- Outreach and marketing campaigns used to explain the benefits of priced managed lanes and tolling to various constituent groups
- Project success stories
- Key lessons learned
- General advice for ADOT

## **INTERVIEW METHODOLOGY AND PARTICIPANTS**

The 13 individuals identified as potential interviewees were contacted individually by the ADOT project manager, with an e-mail requesting their participation in an interview and alerting them that the research consultant would be contacting them. The consultant followed up by e-mail, providing additional information on the purpose of the interview and a link to an electronic calendar with interview slots; to facilitate the interview, the questionnaire to be used was also attached. The questionnaire is provided in Appendix A of this report.

Four of the 13 potential interviewees did not respond. A total of nine interviews were conducted by telephone over the two-week period of May 12 through May 23, 2014. Six of these interviews were conducted with representatives from state DOTs; the remaining three were conducted with a representative from a regional transportation authority, a transportation commission, and a regional toll road authority.

## **OVERVIEW OF MANAGED LANE FACILITIES DISCUSSED WITH AGENCY REPRESENTATIVES**

The participating agencies and their facilities discussed are listed below.

- Florida Department of Transportation (FDOT) – I-95 Express Lanes
- Minnesota Department of Transportation (MnDOT) – Express lanes on I-35E, I-394, and I-35W, and 8 new HOT lane projects currently under construction
- Texas Department of Transportation (TxDOT) – General discussion regarding both the Katy Managed Lanes and Sam Houston Tollway
- Harris County Toll Road Authority (HCTRA), TX – Katy Managed Lanes, with some discussion of the Sam Houston Tollway
- Utah Department of Transportation (UDOT) – I-15 express lanes and managed lanes generally
- Virginia Department of Transportation (VDOT) – I-495, I-95, and I-66 corridors
- Washington State Department of Transportation (WSDOT) – Express lanes (SR 167 HOT Lanes, I-405 express toll lanes to open mid-2015, SR 520 bridge toll)
- Los Angeles County Metropolitan Transportation Authority, CA (LACMTA, also referred to as MTA and branded as Metro) – I-10 and I-110 express lanes
- Riverside County Transportation Commission (RCTC), CA – I-15 and SR 91 express lanes

Within the context of these interviews, the following terminology applies:

- The terms *express lanes*, *managed lanes*, and *tolled managed lanes* were often used by interviewees synonymously with HOT lanes, which combine occupancy requirements with pricing strategies by permitting single-occupant vehicles (SOVs) to use HOV lanes with the payment of a toll.
- *Toll roads* refer to traditional tolling facilities that charge a fixed toll fee based on number of vehicle axles and/or distance traveled, and do not adjust the fee for time of day or day of week; an example of a traditional toll road is the Sam Houston Tollway in Texas.

### **Primary Goals of Facilities**

All interviewees noted that goals vary, depending upon the implementing agency, and that goals are multi-faceted and typically support a comprehensive plan to improve mobility while providing consumers options and choices. The most frequently cited goals were to relieve congestion and to provide a funding source to design, build, operate, and maintain tolling projects.

The Texas DOT representative noted that his agency had different goals for toll roads and managed lanes: the goal for toll roads is to generate funds to be used for accelerated construction on new projects and new alignments, while the goal for managed lanes is primarily congestion relief aimed at providing more reliable travel time to proceed through a corridor. The Florida DOT interviewee stated that express lanes are used to manage congestion, thereby serving to defer major widening projects, while toll road projects actually finance the improvement in many cases; that is, the toll exists to support the road, and absent the toll, there would be no facility. The Riverside County Transportation Commission (RCTC) representative noted that managed lane (express lane) goals vary depending upon the implementing agency, and that RCTC's goals include: offering an option for drivers to pay for reduced-congestion travel, ensuring carpoolers free-flow speeds, providing congestion-free express transit bus usage, and using tolls as a new funding source for design/build/operate/maintain projects. The Washington DOT representative noted goals that include revenue generation (e.g., SR 16 and Tacoma Narrows Bridge), traffic performance (e.g., SR 167 HOT lanes, which maximize an underutilized HOV lane that will also benefit the general-purpose lanes), and both revenue and traffic performance (e.g., SR 520 and the I-404 express lanes; the latter, which are scheduled to open in late 2015, will manage traffic with the potential to provide funding for future projects along the corridor).

Examples of specific goals cited by interviewees, along with relevant comments, are as follows:

- Congestion relief, providing an option or choice for reduced-congestion travel, and traffic management
  - o *"The key thing that we're trying to do is congestion relief along corridors that, if you've ever been in the Washington, DC area, you'll know are pretty crowded, especially during the AM and PM peak periods."* (VDOT)

- o *“Congestion management/improving person throughput on highways during weekday peak rush hour periods” (MnDOT)*
- o *“It is about moving more vehicles, but it’s also about moving more people, and making our system more efficient, more effective. . . . you’re not going to be able to add a lot of new capacity, so you’ve got to maximize the capacity you have.” (WSDOT)*
- Enhance transit (express bus usage) – In Florida, the level of express bus service had declined due to higher congestion in the HOV lanes. The project created an additional express lane (for a total of two) for use by mass transit, 3+ carpoolers (vehicles carrying a minimum of two passengers in addition to the driver), and other specified users.
  - o *“We allow the buses to utilize the [HOV] facility for free so that we could promote transit, promote HOV along each of the corridors.” (VDOT)*
- Take advantage of the existing capacity offered through an underutilized HOV lane
  - o *“I don’t want anybody to ever think we’re focused on generating revenue. The only interest I have in generating revenue is having enough to cover my costs. It’s only ever been about mobility and being efficient in that lane...Our system is remarkably lean and mean. I mean, we’re not collecting a whole lot. Our maximum toll rate is \$1. So we’re collecting hardly anything and we’re covering our costs doing it.” (UDOT)*
- Provide a funding source to design, build, operate, and maintain tolling projects
  - o *“The reality of limited state/federal dollars coupled with our agency’s own sales tax dollar limitations led to looking at alternative funding including P3 and tolling. . . .We’re generating a lot of revenue and we’ve been able to defer a lot of capacity expenditures on the corridor by doing a better job managing demand.” (FDOT)*

### **Key Drivers of Public Acceptance**

The Florida DOT representative noted that two factors were particularly important in gaining acceptance of managed lane projects: providing the public with choices, and resolving a significant, highly visible transportation problem.

- *“Any solution to congestion should be...based in large part on choice, driver choice, consumer choice. What are the options that they’re being given, what options are being taken away, and if so, how is that being mitigated?”*
- *“The second theme is—and a lot of people don’t want to hear this, I’ll tell you there are some states that are venturing out into these things and doing so against a lot of advice—you have to have a problem to solve. This can’t be a fad or, ‘I want to do this because everyone else is doing it.’ There has to be a real problem to solve. And not just a problem as perceived by agency*



*people, but a real problem as perceived by the consumer. There has to be unbearable—again, in their eyes—intolerable levels of congestion.”*

She also noted that the geographical area of this particular express lane project—south Florida—had a strong commuter assistance program in place prior to the project, thereby providing an infrastructure for some of the changes to be made.

- *“That’s not something that we did two weeks before the project launched. This is something that we’ve been working on and had been working on for many years. A good, successful ride sharing, ride matching, vanpool, and carpool program, so that when we deployed some of the strategies that we did, we already had an institutional infrastructure in place. I’m sharing all this with you because . . . knowing what they are and how we believe they attributed to our success helps you develop a mitigation plan for not having some of those conditions....so you know there is going to be some risk associated with not having great tolling experience, not having a good infrastructure for commuter assistance services.”*

When asked to identify some of the key drivers of public acceptance of managed lanes or tolling, the agency stakeholders suggested the following:

- Understanding of the benefits of managed lanes for users and non-users alike
- Opportunity to see and experience benefits, such as improved traffic flow, reduction in overall congestion and travel time, increased travel time reliability, etc.
- Incremental implementation of value pricing, allowing time for data collection on performance metrics as well as for use of data in public education
- Availability of options and alternatives, such as express bus service on managed lane facility, existence of parallel roadway with no managed lane facility, etc.
- Unified, consistent messaging from all project partners regarding the need for the facility and the planned use of revenues
- Reduction of “pain points” in people’s daily lives
  - o *“I’ve learned that most people don’t care about roads until they’re impacted by them....So if I can show them the benefits that I believe are going to be brought about because of the new infrastructure, or the new capacity, or the managed lanes, or the toll roads, I think that they feel a little bit better that we’re not just doing it to do it. We’re doing it because there’s thirty minutes’ savings of time to get from point A to B, or there’s a reduction in gas, or the congestion....There are all those different factors that truly do affect their lives on a daily basis. And if you can find those things, then they’ll start listening.” (VDOT)*

Many of the interviewees believe that the tipping point toward or away from public acceptance is primarily a function of the performance data collected. If the data show a reduction in average commuting time, widespread and equitable usage across socioeconomic levels, and free flow speeds, public acceptance will continue to grow.

- *“My anecdotal observation here is you will always have about 30 percent that will always be opposed to it. So you’ll never get to a consensus point, but if you can get to a place where you’re actually showing value for express toll lanes, that it’s a choice and that you have the opportunity to use it when you need it, it’s there. Then you get more and more acceptance going forward.”*  
(WSDOT)

One of the most frequent responses from interviewees with regard to ongoing challenges in implementing or expanding tolling projects was the need to continually correct the misperception that a tolling project is generating “extra” money. They emphasize that the purpose of the project, the anticipated revenue and its intended use, and the likelihood of the project being in the red for some period of time must be reiterated over and over in all public outreach materials, presentations, discussions, etc.

The WSDOT representative noted that tolling creates the assumption that there will be money made, and a key lesson learned by his agency is the need to make expectations clear about why you’re tolling— that it’s to manage traffic, not make money. He also stressed that it is important to make expectations clear in other areas, such as what drivers can expect when the facility first opens. Then, as the project proceeds, use the data as evidence to validate the expectations you set.

- *“With SR 520, we worked hard to set expectations: there’s going to be a drop in traffic about 50 percent and it’s going to gradually grow back. When you’re very clear about those expectations, you repeat ‘this is what we said and this is what’s happening’; then it validates and the public begins to trust what you’re saying because you’re proving what you’ve said before.”*

He also noted a strategy used for Washington’s SR 167 project that he thought would be particularly helpful to ADOT.

- *“It officially was a pilot. It was approved by legislation to be a four-year pilot. So you lead with, ‘We have an HOV lane here, it’s underutilized. Let’s test this as a pilot, see how it’s working.’ I think we were the seventh HOT lane in the country, or something of that nature. And so we led with that, and we also said it was a four-year pilot, and would start off operating in the red, and then traffic would grow, and after four years we’d be in the black. It almost worked out exactly that way, even with the recession and gas prices going up.”*

WSDOT makes extensive use of social media for information as well as traffic updates. Twitter accounts are maintained for the overall agency, the regions, and for the electronic tolling system, *Good To Go!* The agency account has approximately 60,000 followers. From the interviewee's perspective,

- *“Social media is imperative now; you can't have a campaign without it. During the campaign we monitor social media and measure negative comments versus positive, just to get a pulse on what the public is saying and their questions and reservations, and then we address that.”*

His final comments about factors that help drive public acceptance were focused on the importance of conducting research, allotting a significant amount of time to planning, and sticking to the plan.

- *“Invest in research and test your messages....it's kind of the measure twice, cut once. It's definitely worth your time and investment. We do a lot of prep work, research, surveys, trying to find out what's in it for me from the driver perspective. What's the problem? Do you even understand that there's a problem, and how can we address it? Is it options? We just do a lot of surveys and research, we locate the drivers that are going to be using these places where we are considering tolling, how they use their route. We don't make any assumptions on where they're going, we actually find out where they're going and why they're going.”*
- *“Also, this is kind of as much a mantra for me right now, is keep your eye on the ball and plan...if you want to get your investment back and target your money, you plan, you spend your time on planning and then start your outreach about a year in advance with the hard work that's a little bit of elbow grease, but has high value, and then splash it with the bigger price tag of paid advertising. You plan and you go according to the plan.”*

## **Performance Metrics**

Typical performance metrics used by the agencies representatives interviewed include the following:

- Reduction in travel times; travel time savings during the peak periods; travel time reliability
- Operating speed
- Person throughput (how many people are you actually pulling or pushing through the corridors, as opposed to the number of cars; how reliably is it being done, and at what speed?)
- Growth in use of alternative choices, such as transit ridership, park-and-ride usage, vanpooling and carpooling
- Safety in the corridor (reduction in number of accidents)
- Ability to expand the system
- Number of tolling (toll road) transactions
- Number of transponders issued during pilot period

Agencies also identified other measures of success. For example, Los Angeles County Metro considers its measures of success to include accessibility to everyone, regardless of income; self-sustainability of the program (i.e., non-reliance on an ongoing public subsidy); and demonstrated synergy of tolling and transit among its measures of success:

- *“The fact that we had over 4,000 households enrolled in the [toll credit] program, more than \$100,000 in toll credits were issued, it really diffused those folks who said, ‘This is unfair [for low-income drivers].”*
- *“It’s not that it needed to make money; generating that toll revenue, that’s kind of cream off the top, but it at least had to not require an ongoing subsidy. And it has more than demonstrated that.”*
- *“A survey of new transit riders found that more than a third on each corridor (I-10 and 110) said that the conversion to express lanes influenced them to take transit. That’s the big win for us, that we’re actually using price to change behavior.”*

### **Length of Time from First Discussions to Implementation**

The typical length of time from discussion of a project to its completion was five to 10 years. As would be expected, the biggest factor affecting the length of time was the project’s complexity. At the simplest end, for example, was Utah’s first managed lane facility—a 62-mile stretch of highway on which the HOV lane was converted to an HOT lane. The project did not require any roadway widening, nor did it incorporate electronic tolling; cars were issued a sticker that qualified them to use the HOT lane. That program took only two years to implement. In contrast, the Katy Managed Lanes facility in Texas—which involved reconstruction of a 20-mile stretch of I-10 from six lanes and one HOV lane to 24 lanes and four tolled managed lanes in the center—took approximately 20 years from start to finish. Several individuals also cited the environmental impact statement (EIS) process as a factor affecting the length of time, particularly in projects requiring roadway reconstruction or widening.

One interviewee also noted that the lengthy period prior to start-up is typical, as is turnover among agency staff, elected officials, and other sponsors or champions; therefore, adaptation is critical.

- *“For us, from beginning to end here, it will be about 10 years through initial startup, through environmental, through funding, through design construction and opening. For you, there’s going to be turnover, probably at whatever agency might be this project’s sponsor, there’s going to be turnover of elected officials, and that’s challenging because you might get an initial champion at the agency or an elected official and they might get termed out or they may take another job, so I think you can never stop looking for the next champion or to build that going forward because these projects take so long.” (RCTC)*

All interviewees agreed that extensive outreach to the affected communities, as well as securing a champion among local and state elected officials, helped shorten the process by reducing public and political opposition. The next section examines the variety of communication and outreach strategies employed by the agencies to gain support from elected officials and the general public for the concept of managed lanes and toll roads as well as for specific projects.

## **GAINING ACCEPTANCE OF PRICED MANAGED LANE AND TOLL ROAD FACILITIES**

### **Communication Strategies for Gaining Support from Elected Officials**

The interviewees concurred that a limited availability of state and federal dollars often fueled agency discussions to explore alternative funding, including public-private partnerships (P3s) and tolling. Several interviewees noted that, because funding is such a common issue, taking a straightforward approach with elected officials—i.e., presenting the facts regarding the dollar amount that would be required for a project, the funding alternatives, the ability to start the project sooner if it were tolled, etc.—was often successful in garnering an official’s support for the project because tolling was clearly seen to be the most logical solution. The TxDOT representative stated his belief that these efforts are particularly effective when they are focused on a local elected official who wants the specific project to move forward to benefit his/her constituents, and that, once convinced, these local leaders make good champions and usually have greater credibility in the community than the DOT.

- *“If you can get local leaders saying that this is what we need to do if we want to make this happen, they have a lot more credibility than typically the DOT will have. So those local champions are critical for success in my opinion.”*

In many cases, existing HOV lanes were universally perceived by the agency, elected officials, and the public as underutilized, so projects to convert HOV to HOT lanes were widely supported as an opportunity to take advantage of the unused capacity. On I-95 in Florida, however, congestion was heavy on both the general purpose and HOV lanes, causing a degradation in the level of service provided by buses using the HOV lanes. Consequently, FDOT’s strategy was to first add capacity by re-striping to create an additional lane that would then become one of two express lanes in the new facility (the other express lane was the original HOV lane). With regard to garnering political support for this project, the FDOT representative noted that it is important to understand the priorities of elected officials.

- *“We have a good feel for what is important to our elected officials. Down in southeast Florida, for example, transit is very important to the politicians here. We know that, and so the 95-express project included a very significant transit funding component.”*

One strategy used by several agencies to help attract political support early in the process was to create an advisory committee made up of local elected officials, state legislators, and/or senior staff from local DOT districts, with the composition of the group depending on the scope of the project and the sponsoring agency. These committees help ensure that officials and legislators understand the project objectives and policies, and often serve to create champions for the project. Washington DOT reported two variations on the committee strategy:

- The SR 520 bridge tolling project utilized a tolling implementation committee made of the Transportation Commission Chair, the Secretary of Transportation, and the executive director of the Puget Sound Regional Council (local MPO). The committee was tasked with conducting extensive public outreach, studying options for implementing tolling, and reporting its findings. This was viewed by the WSDOT representative as a successful strategy that focused on “*how* tolling could be implemented, not *if* tolling should be implemented.”
- For the state’s I-405 express lanes project, two committees participated in the process. An executive advisory committee made up of local elected officials from the cities and counties on the route, along with local legislators, provided input in such areas as the project’s phasing plan, carpool policy, and funding strategies. A national expert review panel, convened by the WSDOT Secretary of Transportation and made up of individuals with expertise in policy, planning, finance, academics, and operations, was charged with providing an independent evaluation of WSDOT’s proposal to implement express toll lanes, specifically focusing on four areas: (1) viability and consistency of the policy governing the project; (2) validity of the methodology used in the corridor research study that led to the proposed project; (3) logic and reasonableness of the phasing plan and strategies; and (4) validity of the financial assumptions, methods, and forecasts.

The Virginia DOT representative noted that an internal communication work group is created for every project, made up of stakeholders among the VDOT staff, such as personnel from the communication office and from DOT districts who can provide insights regarding the transportation-related concerns of public officials in their areas, public positions, etc. The group develops an overall project communication plan that includes specific strategies for communicating with public officials as well as other audiences.

Additionally, during the planning process the Virginia DOT follows a protocol mandated by the implementation manual for the state’s 2012 Public-Private Partnership Transportation Act to ensure consistency in the process used for determining whether a project has the potential to be a P3. The framework for solicited/planned projects consists of six actions, each of which represents a greater investment of time and money in the project, and five decision points that serve as evaluation checkpoints. Reports, meeting minutes, and status updates are easily accessed on the website.

- *“Is this still a good P3? Has the information that’s been developed over the project development stage allowed us to still think of this as a good P3? Does it meet the criteria? Different things like that. So those decision points within our framework help us make the decision as we go along on whether it still is a good P3 and a good value for the citizens.”*

The Riverside County Transportation Commission representative noted that his agency benefited from strong leadership by its Executive Director. This was reflected in the director’s public designation of the agency’s first express lane project—its largest and most complex project ever undertaken—as its “flagship” project, which generated interest and attention from elected officials, the media, and the general public. Additionally, the director’s extensive efforts to cultivate positive relationships with local officials produced several advocates and champions.

- *“We managed to cultivate a good relationship with her (a local mayor) and she became an advocate for the project as did our county supervisors and that was integral. And I credit our executive director of our agency and a few others for being able to accomplish that.”*

## **Communication Strategies for Gaining Support from the General Public**

### *Conducting Market Research*

To gain insight into potential users’ perceptions of and attitudes toward managed lane facilities, many agencies began their research efforts with focus groups rather than surveys. Focus groups are often used to provide information to participants as well as obtain insights on their perceptions and opinions. In some focus groups, for example, the group facilitator provided factual information about the concept, cost, overall operation, etc., of managed lane facilities before asking the participants questions about their receptivity to the concept and/or to specific projects. An additional benefit of focus groups is that participants can ask questions of the facilitator as well as interact with other participants to better understand a topic, clarify the meaning of the facilitator’s question before responding, etc.—thereby gaining additional information that will presumably improve the quality of the response. These benefits were noted in several studies discussed in the literature review.

Survey questionnaires, along with focus groups, are typically used during and after project implementation to examine customer satisfaction, identify problem areas, etc. Specific segments of the general public with whom agencies have conducted surveys and focus groups before, during, and/or after implementation include the following:

- Potential stakeholders of new project—e.g., residents of communities adjacent to the corridor, owners and employees of businesses adjacent to the corridor, individuals who frequently travel the corridor (e.g., sales representatives)
- Bus drivers, including operators of both municipal and private, chartered buses

- Regular carpoolers, particularly in areas or corridors with high usage
- Low-income populations
- Individuals enrolled and not enrolled in programs designed to remove economic barriers and promote managed lane usage
- Non-English-speaking populations
- Users of existing managed lane facility—typically representing a range of usage frequency and invited to participate in group discussions at various periods following initial implementation, such as two, six, and 12 months
- Non-users of existing managed lane facility

The Virginia DOT representative suggested the following guidelines for market research and public outreach:

- Start early and be transparent.
  - o *“I tell people when I go out to different places, I’ve got 8,200,000 people that I work for, and that’s the citizens of the Commonwealth. So they ought to know what we’re doing. I know in some cases you’re working with the private sector, and they have proprietary elements and trade secrets and different things like that, but as much as possible, get the word out early. The key to that, and what I try to tell leadership here is, ‘Wouldn’t you rather know now that there is a tremendous amount of opposition associated with this? Or would you want to know after you spend \$10 million on studies and all sorts of different things?’ If you know now, you can try to solve it now. If it’s not solvable, then you got that money to invest somewhere else if need be. So I would start the message early and put it out there and then have a good conversation about it. I mean, you’re going to get opponents. You’re going to get proponents. If you can find that champion along the corridor that’s going to help you out that has the credibility, all the better.”*
- Cultivate support from public officials.
  - o *“They hear from their constituents all the time. If they’re extending that positive message about your project, that’s going to extend to their constituents. They’re going to say, ‘Well, my elected official up here thinks that this is a positive thing, and this is why.’”*
- Do enough studies so you can tell the public what the benefits are going to be.
  - o *“Are you going to be able to get home twenty minutes quicker? Are you going to be able to reduce congestion by two miles? Is this chokepoint now going to be something that*



*has free flow associated with it? How's it going to impact your peak hours? Does it reduce your peak hours from three hours to two and a half hours? Those are the things that truly, positively affect the lives of the people that you're talking to."*

- Getting the message right, and doing so early, are so important.
  - o *"Because if you don't, it's going to go down a path where it's hard to come back from. It's hard to retract . . . somebody reads it, and then they pass it along to their friends. It's so hard to go back on something, so getting that message right early is important."*

The Riverside County Transportation Commission (RCTC) representative and Florida DOT representative offered the following suggestions related to market research and polling:

- *"Review local, state, and national polls regarding managed lanes and tolling, as they generally support tolling more strongly than other funding options (e.g., gas tax hike, VMT, sales tax, property tax). Communicate the information from these polls to your board and elected officials; there is still much to do to convince some people that toll is not a four-letter word. Conduct your own polling with a reputable polling firm that is recognized by your region."* (RCTC representative, California)
- *"You cannot spend too much money on marketing and outreach. When you think you've done all your outreach and you've planned for all the outreach you're going to do, triple that and you will still be short. We thought we had a pretty healthy budget—we easily could have tripled it."* (FDOT representative)

#### *Focusing on Directly Affected Communities*

The interviewees noted that particular attention should be paid to the stakeholder communities—those communities adjacent to the corridor—and to population segments within those communities to identify needs or concerns specific to those segments. Strategies aimed at specific segments within stakeholder communities can also be used to support public outreach to residents in other communities. Presented below are the key public outreach strategies identified by the individuals interviewed, along with relevant comments.

The Virginia DOT representative used the term *first responders* in referring to the individuals and businesses in the affected communities along a project corridor and noted that it is important to understand that these communities may have different concerns and needs, even when they line the same corridor.

- *"We had probably seven or eight meetings with the first responders along the corridor....You really need a team down there that knows the area, knows the people, and knows the audiences*

*that will be affected by this, so that you can really reach out to them....We had meetings with a lot of different homeowner associations. They were concerned about noise. They were concerned about air quality....Transit operators along the corridor were resistant because they felt that the existing system that they had in place with the HOV lanes worked for them. They were concerned that the capacity would be filled up with the managed lanes and people utilizing the managed lanes, and they wouldn't have the travel time reliability that they have under the current arrangement....but we resolved that."*

In a similar vein, the representative from Minnesota DOT and the individual from Los Angeles County Metro noted that it is important to understand that acceptance or high usage of a managed lane or tolling facility in one corridor or area does not necessarily facilitate acceptance of a similar project in another corridor or area, even when they areas are geographically close to each other. Both referred to the idea of "starting from scratch" with subsequent projects because the potentially affected communities may be unfamiliar with or even unaware of the existing facility and may have different socioeconomic demographics and transportation needs than the communities served by the existing facility.

- *"As we move on to other corridors around the Twin Cities, even though we have these lanes operating successfully in these corridors, when we go to another corridor which is kind of on the other side of the city in St. Paul, on 35-E, we find that basically, there's a lot of people that don't even know what MnPASS is, a lot of people that certainly have never used or experienced those other corridors because they never commute on that other side of town during rush hour periods....They wouldn't even probably notice the HOT lane designation. So we found that certainly having facilities there that are successful helps. It doesn't help near to the level we thought it would....We were thinking, 'This won't be a problem. We've got these over here. They're operating well, and we were really surprised that nobody knew about them, nobody understood it. (MnDOT)*
- *"We essentially deployed two HOT lane conversions at the same time with the I-10 and the I-110. Our neighbor, Orange County, was looking at expanding their HOT lanes . . . even though they've had the most successful HOT lane in the country, it was a clear example that just because you have success or a moderate success in one corridor you can't take for granted that people in another corridor understand the program and want the program." (LACMTA)*

Like Los Angeles County, Riverside County also borders on Orange County, and the Riverside County Transportation Commission (RCTC) representative had similar comments to those of LACMTA. He noted that, although the benefits of express lanes are generally known to RCTC constituents because they regularly use the express lane facility that has been operating in the adjacent Orange County since 1995, RCTC's marketing plan for the 2017 opening of its first express lane project will nevertheless use a highly targeted approach for outreach and communications to specific population segments, such as current

users of the carpool lanes that are being replaced with tolled express lanes. RCTC plans to address transit and carpool advocates with carefully crafted messages that highlight the benefits of free-flow carpool lanes, free-flow express bus travel featuring new buses, proximity to Park-n-Ride lots and Metrolink commuter rail stations, etc.

- *“We also dedicated five million dollars of project costs to provide to our sister transit agency to purchase new express buses.”*

As previously noted, the TxDot representative stated his belief that local champions are critical and also highlighted the need for ongoing communication to address the concerns of those who live and work adjacent to the corridor.

- *“The people immediately adjacent to the corridor often have concerns because they don’t understand how it’s going to impact their quality of life, whether it’s going to hurt their business or not. All those questions...I think it becomes an education process. You can never stop talking. I can’t stress that enough. You can never stop reaching out to the public even if you’re almost through with construction.”*

#### *Utilizing Audience-Centric Approaches*

The Los Angeles County Metro representative reported use of a variety of strategies aimed at specific population segments:

- *“We just did a pilot in an African-American community. We were having trouble with awareness, so we decided to do a Metro Sundays program where we would take our van—her name is Mel for Metro Express Lanes....We identified six churches along one of the express lanes route and asked the pastor if we could come there for one Sunday...The power of having a pastor stand up in front of the congregation and say that he or she uses it [the facility], or the pastor taking five minutes out of the service and asking if any of the congregation use it, and they stand up and say they do... It’s just reinforcing for us the power of personal endorsements that the community really finds credible. More so than us, we’re the government telling you this is good for you.”*

Additionally, the agency discovered that the number of transponder registrations among the Spanish-speaking population was low, which raised concerns about possible misperceptions of the program within this population segment, such as that a driver’s license was required to sign up. A focus group was held among Spanish speakers, and it was determined that misperceptions were not an issue; this population segment simply had a lower interest level in use of the facility. However, the focus group also produced other valuable information for the agency:

- *“One of the takeaways was that they were really influenced by major radio and TV personalities that appear on Spanish language TV. That led us to planning for something where we could look for endorsements that would be more effective in attracting the community. Also they told us they really like mobile apps, etc.”*

The TxDOT representative noted that the outreach program needs to be segmented and customized by audience, particularly for large projects, and emphasized the importance of using every communication channel available.

- *“You need to have an outreach program for industry...for elected officials...for your stakeholders—which I’ll classify as the people adjacent to the corridor, both the residential and local businesses—and you need an outreach program for the overall public who may not have their homes or businesses impacted right away....but are going to be the people who ultimately use it. Four or five outreach programs are what you need to be successful, and it’s not a one-time process; success is dependent upon starting that discussion and continuing it right through the opening celebration.”*
- *“From social media to corridor newsletters to speaker’s bureaus. We have people who will go out...if they can find two people to talk to, they will. Small homeowners’ associations, chambers of commerce, all of those...”*

### *Promoting Benefits and Value*

The interviewees identified a number of communication strategies directed at promoting the benefits of managed lane and tolling facilities. They noted that most of these strategies are also applicable to countering opposition voiced by elected officials and/or the general public.

- Educate stakeholders regarding limited state and federal dollars and available funding sources, to help them own the decision about a managed lane facility.
  - *“If I was going to build a new facility I wouldn’t start off by saying, ‘Hey this is a toll road,’ I’d start off by saying, ‘Here are the options, here are the pros and cons, we know this project is running whatever the cost of the project is going to be. We know we have X number of dollars, or we know we don’t have X number of dollars. If we need to move this project forward, how can we do that? Is the local county willing to put in money? Is the city willing to put in money? It kind of comes down to, the last thing you try is ‘What if we tolled it?’ ....You have to get people to the point where they say, ‘If we want to wait 20 years, we can, or we can agree that we’re going to toll it and we can be driving on it in three.’” (TxDOT)*

- Identify potential pain points as early in the process as possible, and develop and promote positive solutions, such as Los Angeles County Metro creating a discount program for low-income commuters.
  - *“One of the groups to target outreach to is low-income, because you’re trying to battle a well-intentioned myth that somehow the program is unfair to people of low income. But if you actually talk to low-income commuters, they don’t see it as unfair. So it’s very important....we have done market research, again focus groups, before and after to try to understand what the HOT lane conversion with these projects would mean to them, and how they’re responding to it. We created a discount program for low-income commuters. We’re the only one in the country to do this, and we did it principally because we require everyone to have a transponder to use the lanes and we didn’t want that transponder requirement to be a barrier to access the system. So we issued a one-time \$25 toll credit to qualifying low-income commuters in LA County. There are almost 5,000 households enrolled in the program.*
  - *“One of the challenges though....whenever we’ve asked people if they’re aware of this program, the awareness was in the low single digits. So we recently conducted a focus group of low-income commuters, those who are enrolled in our plan, we call it the equity plan, and those who are not. What we found was that people don’t identify themselves as ‘equity’—they were looking for ‘low-income assistance’—so we’re going to rebrand the program, but they loved the program once they found out about it.” (LACMTA)*
- Provide examples of benefits of congestion relief for facility non-users as well as users, e.g., tolling supports other, larger projects.
  - *“The word tolling gets a very conditional, knee-jerk reaction. It’s like ‘no way, we’re a Western state, we have a right to travel because of nature.’ Information does tend to help people get there as you go through the process. You have to demonstrate value to somebody that it is actually going to make their life better or their trip better. ‘You actually are getting something from this, whether it’s travel time, reliability, whatever.’” (WSDOT)*
- Present the concept of managed lanes as additional driver choices used by wide range of socioeconomic groups; support with findings and data from similar facilities in areas with similar demographics.
  - *“You’ve got to address equity of everything in tolling—is this fair? Is it fair to the low-income person, obviously the Lexus Lane syndrome? Why are you charging this area of the state or this area of the region and not that other area of the region?” (WSDOT)*
- Emphasize transparency in reporting on the effectiveness of facilities by publicizing usage data through a variety of channels, as data becomes available. Examples of usage data include type

and age of cars, income levels of drivers using managed lanes, satisfaction rates available via polls, etc. Examples of internal channels include agency's annual report, website, blogs, etc.

- Provide media with “before and after” data—e.g., data on traffic volume and travel times—prior to launch of facility and then continuing to update it at regular intervals once facility is launched; also, providing media with regular revenue reports, each of which is prepared in the same format to eliminate any perception that the data is being manipulated to appear more favorable than it is.
- Emphasize transparency in operations.
  - *“We invited and still do invite groups (media, elected officials, students, etc.) to tour our Traffic Management Center so that people could see how we currently manage I-95 and how express lanes would be incorporated into our existing strategies.” (FDOT)*
- Leverage positive satisfaction levels among current customers (or customers in other areas).
  - *“We’ve started a friends and family referral program because they told us they’re more influenced by friends and family, and that was the convincing thing to encourage them to go ahead and try the system. And then of course once they’ve tried it they loved it.” (LACMTA)*
  - *“There’s no doubt that higher percentages of more wealthy income groups use the lanes, at least as full-paying customers, than in lower income groups. So that does happen. But we’ve heard in the surveys that we do that the lower income groups still like it...Even though they might not use it as much, they like the option being there if they need to get to a job interview on time, to pick up their kid from daycare on time. They still like the option and use it once in a while.” (MnDOT)*

### *Addressing Myths and Misperceptions*

Most of the individuals interviewed concurred that the greatest opposition to managed lanes comes from the “Lexus lanes” misperception that only the wealthy would use managed lanes. They also concurred that the best countering strategy is to use data from existing facilities in their states or other states showing that this is not the case—that, while drivers in higher-income groups may use the lanes most frequently, people across all socioeconomic groups use the lanes occasionally, and this is true of facilities nationwide.

- Washington DOT posts usage information in its annual reports and on blogs, showing the types of vehicles that use the lanes as well as annual survey findings reporting the income levels of HOT lane drivers. Additionally, to address concerns about severe traffic impacts due to tolling, the agency provides the media with traffic forecasts prior to the launch of a facility and, once tolling starts, provides regular updates on traffic volume and travel time.

- Utah DOT established performance measures to track usage and found that that the average HOT users were not luxury vehicles. Fleet vehicles were common, and passenger cars represented the full spectrum of makes and models. Several other states also implemented performance measures as a means of more quickly providing proof of trip/travel time benefits and improvements.

As noted earlier, agencies also focus their public outreach efforts on communicating the benefits that may be derived by non-users of the facility, such as reduced congestion and improved traffic flow in the general-purpose lanes, enhancements to transit service, etc. Interviewees also noted that just as important as providing data to support the argument that managed lane facilities are beneficial to all drivers is taking proactive steps to increase the likelihood that this will in fact be the case with the planned facility.

- Florida DOT employed several strategies aimed at ensuring that users of the general-purpose lanes would benefit from other drivers' use of the managed lane facility. These included a purposeful decision not to reduce the number of general-purpose lanes; adoption of aggressive incident clearance strategies for the entire corridor; and new transit service additions, with additional buses added to the existing express bus service. Additionally, an accelerated construction schedule combined with the decision to open the facility in phases, enabled the agency to provide evidence of travel time improvements for all users before the project was even completed.
- In its communications, Virginia DOT highlights the existence of free, alternative options to the road with the managed lane facility and emphasizes that having a free alternative is part of the agency's policy in planning locations for these facilities.

Agencies reported that other common misperceptions include the beliefs that: tolling facilities represent double taxation "because we already paid for the road with our gas taxes"; the proposed facility isn't needed and is being implemented solely to make money; and for P3 projects with foreign investors, profits are going to foreign companies and/or that a foreign company owns the facility. Across the board, the individuals interviewed felt that the primary strategy for countering these perceptions is extensive public outreach focused on providing the evidence and the facts that counter these perceptions—and maintaining those outreach activities before, during, and after launch of the facility.

- *"So you've really got to talk to them about, 'Well, yeah, taxes pay for infrastructure, but the taxes aren't enough to pay for a \$2.1 billion tunnel. So we believe that there are benefits associated with the positive impacts that this tunnel can do along the corridor itself, and that's why we're tolling it....that you're going to get home quicker, that you're going to reduce your gas bill because you're not sitting in two or three miles of backed up traffic.' Different things like that."* (VDOT)

- *“A lot of time you hear, especially with P3 projects and such, that you’re selling the road to somebody. And typically, a lot of the entities are foreign, so people get this impression that these guys are going to make a ton of money on it.” (TxDOT)*

The need to correct the misperception that a tolling project is generating “extra” money is considered by many of the interviewees to be a significant ongoing challenge. They emphasize that the purpose of the project, the anticipated revenue and its intended use, and the likelihood of the project being in the red for some time must be reiterated over and over in all public outreach materials, meetings, presentations, media statements, etc.

- *“I think there are a number of misconceptions out there. Probably the biggest ones are that just because we’re tolling it; it’ll make a lot of money. In reality, there are very few projects that are 100 percent toll viable— almost every toll road has to have some type of subsidy or funding from other sources to make it work.”*
- *“...Picture a managed lane project through downtown Phoenix...you’d probably have to rebuild most of the bridges, the cross-street bridges that go over it to widen it out to get those extra lanes in there...there’s probably not sufficient room in the median to put those lanes in there, so you’d probably have to push the existing lanes out and rebuild all those existing lanes. If Phoenix is like most places, those lanes may not be in very good shape anyway and they may need replacing because they’ve been there for 30 years.... So in reality, you add maybe two lanes more in each direction, but you rebuilt the whole thing....So they don’t pay for themselves and that’s a misconception that people have...Almost every toll road has to have some type of subsidy or funding from other sources to make it work. (TxDOT)*

All interviewees concurred that, whatever the specific communication strategy being employed, public outreach should be as grassroots as possible, favoring small-scale neighborhood and community forums and, whenever possible, co-hosting them with local organizations and facilities, such as churches, community centers, homeowner associations, business groups, trucking associations, social service organizations, etc.

- *“It’s at local levels that the relationships are built...We don’t have a bunch of engineers who design in a vacuum. They have to go to HOA meetings (and they don’t always like it), they have to go to those meetings, they have to present their ideas, they have to write letters explaining why we have to do this or do that, and they are engaged in the process of communicating what we are doing to the community.” (FDOT)*
- *“At first we held something like six Metro hosted community workshops. We barely got any attendance. We quickly learned that we could be more effective if we partnered with somebody in the community who already had credibility. So we would get on neighborhood council*



*agendas, or look for organizations that we could co-host with, and then we got much better attendance.” (LACMTA)*

### **Additional Communication Tools**

The interviewees also identified a number of additional communication tools, techniques, and channels that they considered effective in conducting outreach aimed at gaining public support, as follows:

#### *Tools and Techniques*

- Use of a dedicated resource, such as a marketing and communications specialist hired to focus exclusively on toll projects
- Development of incentive or promotional campaigns, particularly programs utilizing social media to spread the word
- Availability of materials in Spanish and use of Spanish language website and blogs
- Community-centered outreach to obtain speaking engagements, attend planned meetings, and/or schedule and co-host public forums—contacts could include clergy, business and civic organizations, ethnic organizations, community safety/security organizations, home ownership associations (HOAs), city and town councils, etc.
- Presence in the general community, such as exhibits at fairs, expos, neighborhood and local area events, etc.
- Use of exhibit vehicle that provides information through a visual, interactive experience
- Expanded effort to tap into existing networks and communication channels to reach limited English speakers, low-income populations, etc., such as cooperative efforts with other state agencies, local service provider agencies, etc.

#### *Communication Channels*

- Public and private commuter assistance programs
- Employee transportation coordinators, such as vanpool and carpool coordinators
- Media channels
  - o Radio and television, including live call-in radio and public/community TV; news releases; collateral materials, such as fact sheets, brochures, reports, etc.
  - o Billboards, use of Highway Advisory Radio (HAR), leveraging communication channels available through transportation partners, such as a presence on their websites

## Operational and System Strategies for Gaining Public Support

In addition to outreach strategies, the interviewees identified operational strategies that helped engender public support, with development and maintenance of a highly responsive customer service program being one of the most frequently cited. They concurred that a well-managed customer service system is critical for public acceptance of a managed lane facility and noted that customers often expect glitches to occur in new facilities and systems; thus, the key is to resolve the problems quickly and visibly.

- The Minnesota DOT representative noted that the agency's first managed lane project actually created a new traffic issue, a bottleneck that had not been foreseen and needed to be dealt with immediately.
  - *"We had to quickly turn around and build an auxiliary lane to deal with the bottleneck that we created. We built an auxiliary lane in three months. That was the big issue that was going to threaten to derail the whole project. They had to get in there quick and fix the problem that they created."*

Other operational strategies that agencies found to be effective included the following:

- Adoption of aggressive incident clearance strategies for the entire corridor
- Expansions of transit service, such as addition of buses providing express service
- Retention of HOV qualification at 2+ (this decision was made in response to intense public objection to a suggested change to 3+ for HOV lane qualification)
- Opening of project in phases as a means of more quickly providing data regarding trip/travel time improvements
- Existence of a no-charge alternative roadway treated as a key factor in selecting a roadway for managed lane implementation
- Offering of confidential account option for individuals creating accounts for toll payment—i.e., enabling individual to set up an account without entering a name and to maintain a balance by paying at walk-in centers

The Utah DOT representative also noted some of the challenges associated with facility administration, including the need for his work team to become “tolling experts” in a short period of time.

- *“That’s not something that should be underestimated if Arizona is thinking about doing it the same way. It’s hard to avoid making mistakes. I think we’ve done a pretty good job but there’s a learning curve, I guess, is what I’m saying. If you’re going to hire experts and have a staff of people who know all about toll collection and toll systems, the ins and out, then that’s great. And if not, then your staff is going to have a little bit of a learning curve.”*

He also noted that one of the things his group had learned the hard way was that it is not a good idea to combine toll collection equipment from competing vendors, because it created problems due to equipment incompatibility.

In discussing the operational challenges of managed lanes, the HCTRA representative expressed the opinion that enforcement is one of the most difficult aspects but also one of the most needed, because drivers who cheat the system ultimately increase the cost for everyone. He also acknowledged that drivers’ criticisms of priced managed lanes facilities as “Lexus lanes” —i.e., that only a limited portion of drivers can afford to use them—is somewhat credible when comparing usage fees for a traditional tolling facility like the Sam Houston Tollway with those for the Katy Managed Lanes facility. As voiced below, his concern is that managed lane fees will continue to rise due to the growing population as well as the difficulty in enforcing compliance.

- *“The most difficult part of managed lanes is operating them....The biggest complaint is cutting down on people cheating the system. There still is not a good way to manage compliance....You only have X amount of concrete....If that space is eaten up by people claiming to be HOV and they’re not, then your toll price is going up based on people cheating you, and those paying the toll are having to pay more.” (HCTRA)*
- *“That’s when I see that priced managed lanes are very different from a toll road. The average toll on the Sam Houston Tollway is going to run about \$1.70. At peak hour on the Katy, it’s \$7, and we’re going to have to up it again.” (HCTRA)*

### **Previous Unsuccessful Efforts and Lessons Learned**

Several individuals reported that the agencies they represent had previously experienced unsuccessful attempts to implement at least one managed lane project. The vast majority of factors identified as contributing to the unsuccessful attempts were related to a lack of upfront communication with the public. These included a lack of planning and preparation to overcome specific anti-tolling arguments expressed by the public as well as general public opposition to tolling; passage of legislation for public-private initiatives but no public outreach about potential projects prior to introducing potential P3 firms;

and in Minnesota, a perception of unfairness among the project's affected communities (e.g., "Why do we have to pay a toll when other areas don't?").

For the most part, these unsuccessful efforts served as learning experiences, and the agencies subsequently implemented successful projects. Minnesota's unsuccessful project was a toll-financed road, and its failure due to a last-minute change in vote by one of the cities on the corridor has doused any enthusiasm for revisiting that type of project. Additionally, the state's efforts to implement a conversion of HOV to HOT lanes on two corridors took 10 years to come to fruition. Since then, however, a regional transportation plan was developed that calls for at least eight other conversions, and the MnDOT representative believes that this regional system approach has contributed to greater public acceptance and eliminated the perception that certain communities are being unfairly treated.

The TXDOT representative named the Trans-Texas Corridor project, which was to have included a number of corridors extending the length of the state, as the agency's most notable failed project. He noted that the project was too big, and getting local support was difficult because the corridors were devised to take people from one point in the state to another by going through rural areas, and the people in those rural areas didn't care for it.

- *"Toll projects, they have to be driven, they aren't going to do well out in a rural area. You really have to have those projects centered around metropolitan areas because (a) that's where the traffic is going to generate significant revenues, and (b) those are the people who are stuck in traffic and waste an extra thirty minutes a day each way to get to work."*

The Virginia DOT representative identified increased education about the reasons for implementing a managed lane facility as an important ongoing challenge and noted that explaining new tolling on a previously non-tolled road was a significantly more difficult task.

- *"A couple of years ago, there was the attempt to try to toll [part of] I-95. There was a lot of public outreach, a lot of public meetings, and a lot of public outrage....associated with 'I-95 is already built. I'm riding on it for free now, and now you want to toll me without a free alternative, without any real justification as to what benefit I gain associated with you tolling it.' So that died pretty quickly.*

*"In Virginia, the only way that we're going to be able to toll different facilities is utilizing a managed lane alternative....We need to show people...the benefits associated with implementing a managed lane alternative. Do I increase your capacity? Do I get you home quicker? Do I reduce congestion? Do you now have an alternative if you want to go HOV? Do you have an alternative that gives you more ride time and reliability if you want to use the bus, because who wants to pay for a bus and then sit in traffic when you can sit in traffic in your car?"*

*“So those are the things I think that as a department, if you’re going to put managed lanes out there, you need to get ahead of them and really show them, ‘Here are the advantages that we think this type of project can bring.’”*

Virginia DOT also utilizes post-implementation debriefing sessions with private sector partners to identify lessons learned and enhance operational practices.

- *“We try after each project to have a sit-down with our private sector partners to identify the lessons learned. On every one of them, we can identify where communication could be increased or bettered or things that we may have missed. Let’s try to identify what we need to do on the next project. So setting up those—whether we want to call them debriefings or lessons learned or whatever they are—it helps us structure and learn and gain from the experience of the past so that we don’t get hit by it again on future projects, or at least we can recognize it when it’s coming and try to solve it as quick as possible.”*

## **USE OF P3s AS PROJECT FUNDING AND FINANCING STRATEGIES**

The individuals interviewed for this study reported having used a variety of funding mechanisms and strategies, including federal pilot program grants to states, Transportation Trust funds, TIFIA, UPA grant, design-build, P3s, concession agreements, toll revenues, moving from sticker to electronic tolling, toll revenue bonds, state funding or special state legislation funding, and local sales tax. Per the objectives for this study, only the usage of P3s was further explored.

The FHWA Office of Innovative Program Delivery defines public–private partnerships (P3s) as “contractual agreements between a public agency and a private entity that allow for greater private participation in the delivery of transportation projects. Typically, this participation involves the private sector taking on additional project risks, such as design, construction, finance, long-term operation, and traffic revenue” (FHWA 2017d).

Three main types of P3s have been used for highway projects in the United States (FHWA 2017d):

1. Design–Build (DB) projects, the most common of the three – These are set up as fixed-price contracts between a public agency and a private entity for both architectural/engineering services and construction. The design-build entity may be a single firm, a consortium, joint venture or other organization assembled for a particular project.
2. Design–Build–Finance (DBF) projects – The private partner provides the necessary up-front capital and is generally repaid by a state or local government in a series of installments funded by taxes, fees, or tolls.

3. Design–Build–Finance–Operate–Maintain (DBFOM) projects – In addition to the elements of a DBF project, the private partner also agrees to perform operations and/or carry out maintenance on the highway for a specific period.

Following are the primary points made by DOT and MPO senior managers in describing their personal experience with P3 projects.

*Florida Department of Transportation (FDOT)*

FDOT considers P3s as the best way to deliver large-scale infrastructure in partnership with the private sector. Florida has primarily used availability payment models in its P3s on express lanes. The availability payment model removes revenue risk from the concessionaire, which enables FDOT to negotiate a good price. FDOT sees another benefit to this model in that it addresses public perception concerns regarding private sector control over toll rates. For example, when the public expressed its perception that a private, for-profit entity would have the authority to raise tolls and, therefore, could conceivably make exorbitant profits, the agency reinforced the fact that the tolls will be administered, managed, and controlled by the DOT, and not by the private party.

*Texas Department of Transportation (TxDOT)*

The TXDOT representative noted that P3 projects are not generally well understood, and a certain amount of suspicion about how they work is often voiced by the public.

- *“You have to be very transparent in your methods and your contracting type because a lot of people think a lot of these P3 contracts and design build contracts are done in a back room and they’re obviously not. They’re much too complex and complicated for that, but again, people don’t understand it and you get a lot of sound bites out there from people who don’t understand it and the newspapers typically pick up and carry. I think just a lot of education, a lot of local leadership, and a lot of transparency so that people can understand that these aren’t backroom deals, that these are truly above-the-board selection processes.”*

Approximately half of all projects constructed by TxDOT are P3 partnerships—referred to in Texas as concession projects or comprehensive development agreement (CDA) projects—and half are straight Design-Build (DB). About half the concession projects (P3s) require the developer to do the financing, and are “pure concession,” that is, at-risk or revenue-at-risk projects. The other half are done through the DOT (considered more of a DB project and handled more like a concession type project).

The TxDOT representative noted that, if the agency is able to finance a project, it can be done as DB, DBM, or as a DBOM (Design, Build, Operate, Maintain) with gap financing (i.e., the concessionaire finances the project for five or six years and DOT pays it back).

- *“We’ve got quite a few tools in our toolbox. We have the capability for full concession, which are design, build, operate, maintain, and finance for up to 52 years and we have the ability to do design, build, maintain projects or DBOM projects for any number of years. Usually we’ll do those to about 25 years, typically. So we do all the financing or most of the financing.”*

#### *Virginia Department of Transportation (VDOT)*

VDOT has established guidelines for determining whether a project has the potential to be a P3, putting the project through a multi-level screening protocol mandated by the implementation manual for the state’s 2012 Public-Private Partnership Transportation Act. As noted earlier, the protocol consists of six actions, each of which represents a greater investment of time and money in the project, and five decision points that serve as evaluation checkpoints. This protocol is used beginning with the earliest stages of project consideration because P3s are developed in a somewhat different manner from DB or DBM projects. The VDOT representative related the following noteworthy benefit of a project being considered as a P3 early in its planning:

- *“We were going to build or widen the Capital Beltway, not with HOV lanes or with managed lanes. We were just going to widen it. Or the partner was just going to widen it. And there was a tremendous uproar from the citizens because we were taking, I think, some 300 homes and some 20 businesses, and all sorts of different things because of the impact associated with the right-of-way for just a widening. So the private sector came in and gave us an unsolicited proposal and said, ‘Look. We can put this managed lane alternative in here, toll it with the HOT, or with the managed lane with the HOT, and we’ll reduce all of these impacts associated with the adjacent properties.’ And really, in the end, I think they took about – I don’t know – six acres, six or seven acres, and maybe impacted one business. So that’s where the private sector came in and brought their innovative ideas to, really, a project that was doomed if we were going to try to take 300 homes along that corridor.”*

The agency representative attributes VDOT’s success with P3s to several factors, including developing a relationship with the private sector that is based on consistency and fairness; ensuring that the program is dynamic and responsive to change; and addressing concerns regarding foreign investors.

- *“We’ve reached out to the private sector. We’ve had really good conversations with potential partners along the corridor itself....What we’ve tried to do is create consistency within those guidelines, consistency within the process. We’ve tried to standardize a lot of the documentation. Really, the key things that the private sector looks at, in my opinion anyway, is that if you start a procurement, you finish a procurement, so that if they’re going to invest resources in a project here in the Commonwealth of Virginia....we want to make sure that there’s a project there, that there’s a good, fair procurement, and that there’s a competitive environment created within that procurement...We have more and more companies and entities*

*come to us and talk to us about investing in infrastructure here in the Commonwealth through the P3 program. So if we can maintain that high level of interest, then we know we can get a good competitive return and make sure that the Commonwealth gets the best investment for their dollars.”*

- *“The market changes. The provisions within contracts change. Policies change. The administration and principles and priorities of the different administrations change. In fact, right now we’re going through a redevelopment of our guidelines just so that we can make sure that we’ve got increased transparency and increased competition and more awareness of what a P3 is, and the positives and the risk elements of a P3. It’s just not stagnant. It evolves all the time.”*

He identified the most common concerns regarding P3s with foreign investors—ownership of the roadway, profit taking, and potential for cutting out local contractors—and emphasized that it is critical to address these concerns and to correct misperceptions by educating the public regarding ownership, economic development opportunities afforded and realized by the project, the net gain benefits to the state, etc.

- *“The Commonwealth maintains ownership of the facility. They are leasing the facility from us, so they can’t pick it up and take it back to Scandinavia or Australia. So we try to stress that to the public and those who bring this up. And second, we try to note a couple of things. For example, in the Midtown Tunnel, there are 156 different subcontractors on that project. And those 156 subcontractors are coming from Virginia. Whether it’s a \$20,000 contract or a \$15 million contract, that’s being done in Virginia. Those profits and taxes and all that economic development opportunities along that corridor are here in Virginia. So we try to stress the economic development not only in the short term, but in the long term of jobs created for the construction and jobs created because the facility is there....Also there’s a DBE program, Disadvantaged Business Enterprise Program, that the federal government maintains, and the Commonwealth maintains a SWAM program, which is the Small Women and Minority-Owned business program. We have goals that are set up within these contracts to have a certain amount of the contract utilized by these entities. So on 495, which was a \$1.7 billion contract, nearly \$500 million of it was set aside specifically for the goal for DBEs and for SWAMs.”*



## **CHAPTER 4. INTERVIEWS WITH ARIZONA PUBLIC OPINION INFLUENCERS**

Public influencers play an important role in informing and framing discussions specific to priced managed lanes and toll roads. These influencers typically include elected or appointed officials, representatives of consumer and public interest advocacy groups, and spokespersons for organizations associated with relevant occupations and industries.

To gain greater understanding of the diverse perspectives and opinions of Arizona’s public influencers and their constituents regarding funding strategies for highway maintenance, preservation, and expansion—particularly the use of managed lanes and toll roads—17 individuals identified as public influencers were invited to participate in one-to-one, in-person interviews. Of those 17 invitees, 12 individuals agreed to participate, including elected and appointed local and state officials as well as representatives of various advocacy groups. Detailed information on the participants is provided later in this chapter.

### **INTERVIEW OBJECTIVES**

The literature review identified a number of themes and factors typically associated with public acceptance or rejection of priced managed lanes and toll roads. Additionally, the interviews with MPO and state DOT representatives provided insights into strategies for addressing the most common public concerns related to priced managed lanes and toll roads. The purpose of the public influencer interviews was to better understand the views of these individuals and their constituents on the broad range of topics identified earlier as having a significant role in the public’s consideration and likelihood of acceptance of priced managed lanes and toll roads. These topics included:

- Perceptions of current congestion levels
- Identification of high-priority transportation issues
- Knowledge of transportation funding tools and mechanisms
- Understanding of current and anticipated funding for maintaining and building transportation infrastructure
- Factors influencing receptivity to priced managed lanes and toll roads in Arizona

### **INTERVIEW METHODOLOGY AND PARTICIPANTS**

The Technical Advisory Committee (TAC) for this research study identified the public influencers to be asked to participate in interviews. The TAC’s decision was informed by the findings from earlier components of this study regarding factors typically associated with public acceptance or rejection of managed lanes and toll roads and with strategies for addressing common public concerns. Individuals who were selected also represented constituencies with high interest in and/or high likelihood of being strongly impacted by implementation of priced managed lanes and toll roads in Arizona. The list of potential interviewees included representatives of relevant advocacy organizations, the state transportation board, and county boards of supervisors, as well as mayors of municipalities adjacent to

and/or heavily reliant on Interstate 10, the major highway connecting the state's two largest cities of Phoenix and Tucson. Information on the participating Arizona influencers is provided below.

Potential interviewees were individually contacted by e-mail, receiving an initial e-mail invitation from the director of the Arizona Department of Transportation (ADOT) that laid the groundwork for follow-up communication from the consulting research firm. The invitation explained that the purpose of the interview was to learn more about the personal viewpoints of interviewees and of their constituency or membership regarding transportation issues and concerns, with particular focus on highway infrastructure funding and the topic of priced managed lanes and toll roads in Arizona. The e-mail from the research firm requested the individual's participation in an in-person interview to be held at his/her office or other preferred location and included a link to an electronic calendar with a broad choice of interview scheduling options. The questionnaire to be used for the interview was also provided as a courtesy to inform the interviewee of the general content of the discussion. Individuals who did not respond received a second invitation that referenced the previous invitations from the ADOT director and the research firm.

#### **OVERVIEW OF INTERVIEWS WITH PUBLIC INFLUENCERS**

Twelve of the 17 potential interviewees agreed to participate, and their interviews were conducted over the two-week period from February 10 to March 4, 2015. Listed below are the final interviewees; for interviewees other than mayors, a description of the organization they represent is also provided.

##### **State and Local Board Officials**

- Kelly Anderson – Chairman, Arizona State Transportation Board (term ended December 2015)  
The Arizona State Transportation Board, which is responsible for establishing a complete system of state highway routes in Arizona, is granted policy powers by the Governor and serves in an advisory capacity to the Director of the Arizona Department of Transportation. The Board awards construction contracts, monitors the status of construction projects, and has the exclusive authority to issue revenue bonds for transportation financing.
- Anthony Smith, Board Chairman (term ended January 2015) and District 4 Supervisor, Pinal County Board of Supervisors  
The Pinal County Board of Supervisors is a governing body that oversees the operation of county government. The Board crafts an annual budget providing revenue for individual departments and elected offices. One of the primary jobs of the Board is to establish the county property tax rate and the budget for the coming year. The Board of Supervisors also has the authority to fill vacancies in county and legislative offices and other boards and commissions, pass resolutions, and enact ordinances, regulations, and zoning changes as authorized by state law.

**Mayors** (Table 1 below provides detailed information on the interviewees' municipalities)

*Maricopa County Municipalities*

- Jackie Meck – Mayor, City of Buckeye
- Jim Lane – Mayor, City of Scottsdale
- John Giles – Mayor, City of Mesa

*Pima County Municipality*

- Jonathan Rothschild – Mayor, City of Tucson

*Pinal County Municipality*

- Bob Jackson – Mayor, City of Casa Grande

**Table 1. Information on Municipalities of Mayors Interviewed**

<b>City</b>	<b>Population</b>	<b>Size (Sq. Mi.)</b>	<b>Median Household Income 2012–2016</b>	<b>Interviewee</b>
Buckeye	2010 – 50,876 2016 est. – 64,629	375.26	\$58,711	Mayor Jackie Meck
Casa Grande	2010 – 48,571 2016 est. – 54,534	109.67	\$46,017	Mayor Bob Jackson (term ended 12/5/16)
Mesa	2010 – 439,041 2016 est. – 484,587	136.45	\$50,615	Mayor John Giles
Scottsdale	2010 – 217,385 2016 est. – 246,645	183.92	\$76,543	Mayor Jim Lane
Tucson	2010 – 520,116 2016 est. – 530,706	226.71	\$37,973	Mayor Jonathan Rothschild

Source: U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits. Accessed February 20, 2018 at <https://www.census.gov/quickfacts/fact/table/US/PST04521>.

**Advocacy Organization Representatives**

- AAA Arizona, Linda Gorman, Director of Communications and Public Affairs (Maricopa County based, with statewide constituency)

The American Automobile Association, now commonly known as AAA, is a not-for-profit organization of clubs serving more than 50 million members in the United States and Canada. AAA serves its members through a network of 1,100 offices. AAA Arizona, the Arizona affiliate of AAA, was founded in 1927 and has grown to more than 800,000 members statewide. The club's

500+ employees operate 11 AAA offices and six AAA Auto Repair facilities in the Phoenix area, Tucson, and Prescott.

- Arizona Trucking Association, Tony Bradley, President and CEO (Maricopa County based, with statewide constituency)  
Through a federation of state associations (including the Arizona Trucking Association), affiliated conferences, and individual members, American Trucking Associations is committed to developing and advocating innovative, research-based policies that promote highway safety, security, environmental sustainability, and profitability. Its staff works to educate policymakers and the general public about the essential role trucking plays in the economy, promote responsible policies to improve highway safety, and advance the industry's environmental goals. The Arizona Motor Transport Association (AMTA), as the Arizona association was originally called, was incorporated on September 9, 1937 as a non-profit trade organization. AMTA officially changed its name to Arizona Trucking Association (ATA) in early 2004.
- East Valley Partnership, Roc Arnett, President and CEO (Maricopa County based, with specific Phoenix-area constituency)  
The East Valley Partnership is a coalition of civic, business, educational, and political leaders dedicated to the economic development and promotion of the east valley of Greater Phoenix, Arizona. The organization actively advocates in areas such as economic development, education, transportation and infrastructure, arts, behavioral health, and other important areas.
- Goldwater Institute, Byron Schlomach, Director, Center for Economic Prosperity (Maricopa County based, with nationwide constituency)  
Founded in 1988 with the support of the late US Senator Barry Goldwater, the Goldwater Institute's stated mission is to defend and strengthen the freedom guaranteed to all Americans in the constitutions of the United States and all fifty states. The organization conducts public policy research and engages in litigation against federal, state, and local governmental bodies to advocate adherence to constitutional law and to protect individual rights in such areas as health care, union practices, school choice, and free enterprise.
- Sonoran Institute, Ian Dowdy, Program Director, Sun Corridor Legacy Program (Pima County based, with regional [North American West] constituency)  
The nonprofit Sonoran Institute, founded in 1990, works across the West to conserve and restore natural and cultural assets and to promote better management of growth and change. The Institute's community-based approach emphasizes collaboration, civil dialogue, sound information, local knowledge, practical solutions and big-picture thinking. The Institute's stated mission is that it "inspires and enables community decisions and public policies that respect the land and people of western North America."

Additionally, five of the 17 invited interviewees did not respond: specifically, the designated representatives from the Phoenix Chamber of Commerce, Maricopa County Board of Supervisors, Arizona Tax Research Association, Pima County Board of Supervisors, and Arizona Automobile Hobbyist Council.

In the remainder of this report, individuals identified above as elected or appointed officials are referred to as *officials*; individuals identified above as representatives of advocacy organizations are referred to as *advocates*. Additionally, it should be noted that influencers often used the terms *express lanes*, *tolled managed lanes*, and *HOT lanes* interchangeably during their interviews.

## **INTERVIEW DISCUSSION TOPICS**

### **Perceived Current State of the Highway Infrastructure**

All influencers acknowledged ADOT's current focus on system-wide maintenance and preservation of existing highway infrastructure. Several comments regarding current infrastructure reflected the interviewee's location and/or constituency.

#### *Maricopa County Interviewees*

Interviewees from Maricopa County, officials as well as advocates, described the current state of the highway infrastructure as good, with basic infrastructure in place and a robust system of generally well-maintained interconnecting highways and roadways serving the area. Their primary infrastructure-related concerns centered on the following:

- Relieving congestion and increasing capacity
- Ensuring access to suburban areas around Phoenix through expansion projects
- Securing funding for projects offering safety improvements
- Ensuring a long-range funding system in place to support expansion aimed at: (a) staying a step ahead of projected increases in population growth; (b) building future-looking smart corridors (which one influencer described as providing a corridor for energy for multimodal transit, data, and other uses beneficial to the state); and (c) positioning Arizona for regional and statewide opportunities for economic development and growth through commerce and trade

Only one of the Maricopa County interviewees, an elected official, noted that long-range funding must also address maintenance and repair needs likely to occur within the next five to 10 years for roadways in the west valley. This individual noted that, while efforts are under way to obtain grants and set aside funding, adequate funds may not be available when they are needed for infrastructure preservation.

Additionally, two interviewees from Maricopa County expressed concerns regarding lack of funding to support preservation priorities, citing examples of older roads and bridges in rural areas of the state—particularly in northern Arizona, where these older roads and highways support commerce, tourism, and connectivity to trade corridors. The concern is that many of these roads may deteriorate significantly before getting the attention they need.

### *Pima and Pinal Counties Interviewees*

The officials from Pima and Pinal Counties noted the lack of funding for repairs and preventive maintenance and the challenges inherent in balancing current infrastructure improvement priorities with expansion planning needs. They perceived the current state of the highway infrastructure as insufficient to support critical expansion needs stemming from three primary issues:

- The projected growth in Arizona’s population in the Sun Corridor region, which extends through Pima and Pinal Counties
- Opportunities to foster industrial development in the southern region of the state and the reemergence of manufacturing and distribution hubs in that area
- Establishment of international trade and commerce corridors between Arizona and Mexico

### **Infrastructure Project Priorities**

In discussing priorities, the interviewees identified infrastructure projects of particular importance to their constituencies, touching on short-term needs to maintain, preserve, or expand existing infrastructure as well as long-term expansion opportunities.

### *Maricopa County Interviewees*

Interviewees from Maricopa County characterized their priority projects as aimed at:

- Enhancing connectivity throughout the state through an intermodal system
- Reducing congestion
- Supporting commerce and trade

These same individuals identified the following as priority projects:

- Expansion of State Route 24, which will connect the Loop 202 Santan Freeway with Ellsworth Road near Phoenix-Mesa Gateway Airport, and is scheduled to open in May 2015 (also known as the Gateway Freeway)
- The North-South Corridor, an area between U.S. Route 60 in Apache Junction and I-10 near Eloy and Picacho that is under study to identify and evaluate a possible connecting route
- Improvements in the Verrado Way to State Route 85 section of I-10 in the far west valley
- Alternate route or congestion reliever options such as State Route 30 in the west valley, a route parallel to and south of I-10 and connecting the Loop 202 to SR 85
- Construction of the proposed Interstate 11, with most of these interviewees referring to the I-11 Phoenix-to-Las Vegas connector segment

### *Pima and Pinal Counties Interviewees*

Interviewees from Pima and Pinal Counties characterized their priority projects as aimed at:

- Providing regional and statewide opportunities for improving congestion and traffic flow and addressing safety-related concerns

- Energizing growth in areas earmarked for future development
- Positioning Arizona for economic growth through the proposed I-11 international trade corridor that would connect Las Vegas and Phoenix, with long-term plans calling for extension south to Mexico and north to Canada. Interviewees commented favorably on the international trade and economic development opportunities presented by the highway. However, they also voiced their perception that public discussions about I-11 appear to be predominantly focused on the Phoenix to Las Vegas connector segment rather than on extension to Mexico. This is an important point, because public meetings have, in fact, discussed multiple routes in southern Arizona for extension to Mexico.

These same individuals identified the following as priority projects:

- State Route 189, located in the city of Nogales (Santa Cruz County) and leading to the recently expanded Mariposa Port of Entry, one of the busiest cargo ports along the U.S./Mexico border
- I-10 widening, including portions crossing reservation lands
- The North-South Corridor Study, discussed above

While every interviewee’s project priorities included references to I-11, officials from Pima and Pinal Counties spoke far more frequently and emphatically about the statewide economic benefits to be derived from this project than did officials from Maricopa County. The Pima and Pinal Counties officials, as well as most of the advocates, expressed a broad perspective that looked beyond local community and regional area interests to focus on the economic health, growth, and prosperity that highway infrastructure projects bring to Arizona’s economy. They stressed their belief in the importance of building transportation corridors that enable Arizona to become a logistics hub for commerce out of Mexico, and voiced their concern that a decision not to build out the southern segment of I-11 first, and to begin instead with the northern Phoenix–Las Vegas segment, would represent a missed opportunity and might result in losing the commerce route to California or Texas.

### **Primary Transportation-Related Concerns**

#### *Maricopa County Interviewees*

Interviewees from Maricopa County identified a number of transportation-related concerns, including funding to support:

- Highway infrastructure improvements to relieve congestion and increase capacity
- Expansion or widening of existing corridors, such as SR 24 and the portion of I-10 from SR 85 to Verrado Way
- The host of interrelated factors that promote economic growth and vitality, “only one of which is transportation and infrastructure,” as noted by one of the interviewees

Primary concerns at the city level include funding to support surface street repairs, preventive maintenance, and transportation system improvements to ensure that the mobility needs of the

population as a whole are being met. The latter includes expanding transit systems to be commensurate with the size and population of the cities they serve, as well as to ensure that these systems meet the needs of people residing in underserved areas. Underlying all these concerns was the need to aggressively address expected growth through capital investments in transportation infrastructure.

#### *Pima and Pinal Counties Interviewees*

Officials from Pima and Pinal Counties identified the transportation issues of greatest concern to themselves and their constituents as the following:

- Congestion
- Quality of life issues defined as the building and strengthening of local economies to attract businesses, minimize commute times and travel distances, cut down on the overall amount of time that people spend on the roads, lessen pollution, and improve overall quality of life
- Infrastructure improvements to facilitate access, capacity, and traffic operations on high-usage roads in rural areas, such as State Route 347 in Maricopa
- Availability of funding to implement local infrastructure improvements, including surface street repairs, preventive maintenance, and traffic flow improvements (e.g., right turn lanes, dual left turn lanes, upgrading and adding traffic signals)
- Building up the regional infrastructure to promote development of logistics hubs

#### *Advocate Interviewees*

Interviewees representing advocacy groups were unanimous in identifying transportation funding and congestion among their primary concerns, along with the need to give greater priority to infrastructure projects in rural and urban areas throughout the state. They expressed concerns about the lack of funding to adequately address maintenance, preservation, and expansion of highway infrastructure to meet the demands of Arizona's growing population and enable the state's economic development and stability. Their concerns about congestion included increased commute and drive times during peak periods, and choke points along major segments of the highway system where traffic typically slows.

Specific concerns voiced during the interviews included:

- The cost of congestion to Arizona's economy, including losses to the trucking industry due to driver hours spent in congested traffic
- Factors contributing to high congestion levels, such as the I-10 and Interstate 17 interchanges and other areas that no longer accommodate current traffic levels
- Prioritization of infrastructure projects; the individuals voicing this concern shared the opinion that instead of addressing the most immediate priority—congestion relief in the Phoenix metropolitan area—ADOT and MAG appeared “determined” to follow approved plans that may not reflect current needs



- Availability and accessibility of multiple transportation options, with ongoing improvements in mass transit systems and development of a regional multimodal transportation plan
- The push and pull of priorities, especially in rural areas where funding allocations for maintenance and preservation often conflict with constituent desires for expansion
- The overriding need to ensure that discussions aimed at identifying congestion relief strategies also include other approaches for reducing traffic, such as improving employment opportunities in local communities so people can live and work in the same county rather than having to commute long distances to work; one interviewee noted that “over 50 percent of our people leave the county every day to work in one of the other counties.”

### **Congestion Levels**

When asked about their constituents’ views on congestion levels during peak commute times, the influencers acknowledged that congestion in the Phoenix metropolitan area during these periods is a problem and likely to be of growing concern as the population increases. However, the overwhelming majority (11 of the 12 interviewees) did not think that the level of congestion should be characterized as “intolerable,” citing several reasons for that opinion:

- Drivers define congestion differently; for many people, peak period traffic in the Phoenix metropolitan area pales in comparison to their driving experiences in other parts of the county, such as California, the East Coast, and large Midwest cities like Chicago.
- The satisfactory condition of the highway infrastructure, coupled with a sufficient number of general purpose and HOV lanes, positively influences driver perceptions of congestion because traffic tends to continue moving during peak periods, however slowly, and flows freely during non-peak periods.
- People have simply adjusted to the ebb and flow of traffic volumes, especially during the winter visitor and high-traffic event seasons, such as baseball’s spring training.

Despite their belief that the public currently views congestion levels as tolerable, the influencers concurred that if nothing were done to address congestion, public perception would likely change. Six of the interviewees expressed the view that without action specifically aimed at reducing congestion, population growth rates would likely cause roadway congestion to reach intolerable levels within the next five to seven years.

## Knowledge of Transportation Funding Tools and Mechanisms

To learn more about their opinions regarding viable tools and mechanisms to address the shortage in transportation funding as well as strategies to increase public awareness and understanding of this issue, the influencers were asked to comment on their level of knowledge and that of the general public regarding the means by which highway infrastructure is funded. A number of officials noted that they regularly receive information from ADOT and regional associations such as the Maricopa Association of Governments (MAG), Pima Association of Governments (PAG), Central Arizona Governments (CAG), and the Sun Corridor Metropolitan Planning Organization (SCMPO) regarding funding at the federal and state levels, and that these entities do a good job of keeping them well informed on issues impacting ADOT's budget. While most influencers described themselves as somewhat to significantly more knowledgeable than the general public, many officials stated that they are continually working to improve their understanding of how various funding tools and financing mechanisms, such as public-private partnerships (P3s), operate.

Advocates expressed similar views but tended to describe their own level of knowledge and understanding of funding tools as fairly extensive, citing their ongoing involvement in transportation funding discussions at the regional, state, or national levels. However, like the officials, advocates admitted to being somewhat less familiar with the details and intricacies governing transportation infrastructure financing options like P3s.

Both officials and advocates concurred in their belief that the public's awareness of and knowledge about how transportation projects are funded is quite low. Several interviewees expressed confidence that the public is generally aware that fuel taxes provide a revenue stream for transportation funding, but few believed the public is aware that the federal fuel tax has not been increased since 1993 or that the federal Highway Trust Fund is rapidly approaching insolvency. The influencers identified several factors that they believe have contributed to the public's lack of knowledge regarding the nationwide transportation funding problem and its effect on Arizona:

- The sheer complexity of the subject
- The number and variety of funding sources used to support funding for highway infrastructure, either in whole or in part (e.g., vehicle registration, Proposition 400<sup>1</sup> sales tax, and federal and state fuel taxes)
- The extensive amount of information that needs to be conveyed to enable understanding of how revenues are generated, collected, appropriated, and dispersed through the state's Highway User Revenue Fund (HURF)

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<sup>1</sup> Originally established in 1985 through Proposition 300, this transportation tax represents the major funding source for the MAG Regional Transportation Plan (RTP). The Maricopa County Transportation Excise Tax was extended to 2025 when voters approved Proposition 400 in November 2004 to continue the countywide half-cent (0.5%) transportation tax.

- The ongoing challenge of getting people’s attention “in a sound bite–oriented culture” in order to educate them about an issue that they generally do not give much thought to and/or assume is being addressed through other taxes they pay.

These public influencers do not think that the public has a good understanding of the problem and its impact on the state’s ability to ensure that the highway system is properly maintained, meets the needs of Arizona’s growing population, and effectively poises the state for economic growth. They acknowledged that education is a critical component in engaging the public in serious discussion about how to address transportation funding issues and raise awareness of what it costs to build, maintain, and repair Arizona highways in terms that people can readily understand. They also recognized that they have a role in helping inform the public. When asked about the extent to which elected officials have effectively communicated, informed, and educated the public about this issue, several officials commented that they need to assume a more active role, along with other key stakeholders such as industry and business leaders, and that strong leadership is needed to rally support around this issue. Additionally, several of the interviewees expressed their concern that if Arizona were to entertain another tax measure to help fund transportation, similar in concept to Proposition 400, a lot of work would need to be done to educate the public and to provide assurances regarding how funds would be dispersed and used.

### **Viable Transportation Funding Tools**

When asked to identify viable transportation funding tools and mechanisms, these influencers named a broad range of options that included various types of user fee models, licensing or surcharge fees, bonds, and taxation models that primarily center on use of a sales tax. Their comments about these options are discussed below.

While interviewees expressed differences in preferred funding tools, most agreed that a combination of funding mechanisms was needed to address the long-term need for a sustainable revenue source to support highway infrastructure and other transportation system projects in Arizona. All interviewees expressed the opinion that the “real answer” lay at the federal level, with a need for Congress to pass long-term funding for transportation infrastructure. This view is shared by local, state, and federal elected officials, business and transportation leaders, and public transit advocates around the country, as evidenced by the 350 individuals and organizations that participated in “Stand Up for Transportation Day” on April 9, 2015. The nationwide event was organized by the American Public Transportation Association to “highlight and strongly advocate for the need for a long-term, sustainable, and reliable federal transportation funding bill.” At the time, the most recent federal transportation funding legislation, MAP-21, had been enacted in 2012 and would have expired in September 2014 had it not been temporarily extended through May 2015. It was subsequently extended four more times, through December 4, 2015, when the Fixing America’s Surface Transportation (FAST) Act was signed into law, providing transportation funding through fiscal year 2020.

## *User Fee Models*

Public influencers who favored continued use of a user fee model based on fuel taxes expressed a variety of opinions about the structure of that model. Some were in favor of raising the fuel tax, while others were opposed to raising the tax but were in favor of indexing the fuel tax to inflation, with an annual adjustment based on the metric used when the fuel tax was set at its current rate of 18 cents per gallon. Still others were in favor of doing both—raising the tax and indexing it to inflation. Those influencers who favored the user fee model based on fuel taxes—including those who viewed it as a short-term or intermediary solution—cited its advantages of transparency (knowing the exact amount of money from each gallon of gas that represents combined state and federal taxes)<sup>2</sup> and ease and efficiency in administration. However, they noted that questions regarding the long-term efficacy and sustainability of this model would need to be addressed, such as the impact of mobility trends, fuel-efficient vehicles, and electric vehicles on revenue projections.

A few interviewees suggested one means of ensuring that motorists who drive electric cars pay their “fair share” is to adopt a version of a vehicle miles traveled (VMT) fee-based tax. The version favored by interviewees is one of eight VMT approaches evaluated in a 2009 National Cooperative Research Program Report (Sorenson et al. 2009). In the interviewee-favored approach, a formula would be used to calculate the average number of vehicle miles likely to be traveled, the VMT fee would be assessed based on that calculation, and drivers would be permitted to pay the fee on a monthly, quarterly, or yearly basis, with the right to dispute the amount paid if the number of actual miles driven is less. The interviewees saw this approach as having the additional benefit of reducing the public’s concerns about infringement on personal privacy that have been voiced with regard to VMT approaches requiring installation of a GPS tracking device on each vehicle to track its miles traveled (Sorenson et al. 2009).

Other comments concerning the user fee model included the need to explore innovative ways to ensure alignment between the cost to build infrastructure and the assignment of that cost to those most likely to use and benefit from the infrastructure. One interviewee suggested that a greater portion of the cost of a regional infrastructure be borne by the counties most likely to derive economic benefits from it, and that this could be accomplished either by contributing their regional tax dollars or by creating a county tax for that purpose. The I-11 project was cited as an example of a regional infrastructure project that will benefit multiple counties: Maricopa, Pinal, Pima, and Yavapai.

### **Public-Private Partnerships (P3s)**

Nationwide, public-private partnerships (P3s) have increasingly been used to finance infrastructure expansion and build projects that feature tolling facilities. The interviewees noted that P3 models could be used as financing tools to expedite construction of highway infrastructure. Nine of the 12 interviewees expressed favorable or somewhat favorable views of P3s, while the remaining three expressed unfavorable views. The interviewees’ comments are discussed below.

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<sup>2</sup> Effective April 1, 2015, the combined local, state, and federal gasoline taxes in Arizona total 37.4 cents per gallon.

### *Favorable or Somewhat Favorable Views of P3s*

In total, nine of the 12 interviewees expressed generally favorable views of P3s. The majority (six) of these individuals voiced their belief that ultimately Arizona will have no other option than to implement a P3 solution. They also believe that the public will accept the state's use of this funding mechanism, due to either prior experience with tolling facilities (e.g., having lived in other states with P3-financed and operated tolling facilities), or to a generally positive view of free enterprise or profit-driven models that entice private sector investment as a means of expediting public infrastructure improvements.

Three individuals expressed qualified support for the use of P3s, identifying assurances that they felt were necessary to safeguard the integrity of the process and delivery of the project. These needed assurances included:

- One group, headed by a strong and impartial leader, to investigate P3 options (vis-à-vis multiple independent studies conducted by such entities as ADOT, MAG, etc.)
- Transparency to ensure the legitimacy of the project and justification for adoption of a P3 toll facility model (i.e., needed to relieve congestion, provide a more efficient and safe travel option, and implemented to support the public interest)
- Implementation of an open and transparent contractor selection process
- Contract provisions that best serve the public interest regarding facility operations (i.e., use of electronic tolling collection (ETC), incorporation of a sunset clause)
- Accountability to ensure that agreements are adhered to and that toll revenues are reinvested in facility maintenance and operations, enforcement, and safety improvements

### *Unfavorable Views of P3s*

Among the three interviewees who do not favor P3s, the following views were expressed:

- Opposition to P3s that incorporate a tolling mechanism on existing lanes and infrastructure
- Concerns about self-serving interests and decision making that might not always reflect the needs of the broader community ("the fox guarding the hen house"), although there are ways to navigate and mitigate these concerns
- Reservations about the ability of a P3 to generate the funds necessary to accomplish the building of major infrastructure corridors
- Belief that the general public would be a valuable stakeholder in informing the process and ensuring representation of its values

- Comprehensive review of public-private partnership options needed, to identify array of other applications and uses to support building of highway infrastructure (versus the traditional association with tolling facilities)
- Variety of financing and funding mechanisms (P3s and non-P3s) should be explored for all projects

### *Licensing or Surcharge Fees*

Ideas regarding the use of licensing and surcharge fees as a transportation funding tool ranged from assessing owners of electric cars an annual vehicle license surcharge to imposing tax-deductible user fees on motorists who use the roadways for profit, such as freight carriers or taxi cab drivers.

### *Taxation Models*

Influencers who favored taxation other than that imposed on fuel presented diverse ideas and opinions on how these taxes might be structured. These ideas included:

- The use of property taxes to fund local road improvements (repairs, maintenance, and builds)
- Statewide or county-specific sales taxes similar in concept to Maricopa County’s Proposition 300 and Proposition 400 ballot initiatives discussed earlier
- Transportation taxes at the city level, such as the 0.3 percent increase in sales tax that was approved by Phoenix voters with the passage of Proposition 104 in August 2015. The increase became effective January 1, 2016, and will last 35 years, supporting the city’s \$31.5 billion transportation plan for new light rail lines, expansion of bus lines, and street improvements.

In discussing taxes, these influencers were sensitive to the expected negative reaction of voters to a new tax initiative but believed that passage of such an initiative would provide the most viable means for a sustainable and dedicated funding source to support highway infrastructure projects. They were also optimistic that voter support could be obtained if the tax ballot measure were appropriately communicated, the public informed and educated on how transportation revenues would be used, and assurances provided regarding the appropriation of revenues and transparency in how funds are dispersed. Officials, in particular, noted the need to inform the public about the planned use of revenues in straightforward language (e.g., for highway infrastructure versus transit), presenting revenues in relation to services received, such as cost per mile of interstate highway. Advocates for interest groups in favor of pursuing a sales tax increase noted the need to frame the conversation in terms of making a commitment to the future—empowering Arizona’s next-generation economy—and to create a narrative that emphasizes the importance of this infrastructure investment as visionary, forward-thinking, and equitable.

### *Other Options*

As noted earlier, interviewees encouraged review and investigation of creative and innovative ways to fund infrastructure. The majority expressed the belief that there is no single solution to the transportation funding problem at the state and local levels, and that a combination of funding mechanisms is needed. When asked about other options to support funding for highway infrastructure, a few interviewees made suggestions, noting that while they did not have in-depth knowledge about how these funding mechanisms worked or exactly how they could be adapted to meet the needs of the state or local government, they believed the mechanisms should be explored. The following ideas were presented:

- Leverage the value of properties that will benefit from the building of new transportation routes—for example, properties along the proposed I-11 corridor—by using them as collateral to help finance infrastructure. An example provided was the creation of a community facilities district (CFD) and a property lien to fund water and sewer infrastructure in remote areas, with the lien created with a lengthy payoff period (e.g., 20 years) and distributed across an entire community to minimize the annual cost for each property owner.
- Restore impact fees in areas where they were reduced—specifically, rural or small urbanized areas in the central Arizona corridor. Impact fees are imposed by local governments on developers of new projects to help pay for infrastructure and public services that will be needed for the development. Arizona legislation passed in 2011 significantly restricted use of impact fees, which forced some growing communities to absorb costs previously paid for by those fees.
- Explore ways to reinstate the HURF Exchange program, which enabled rural local governments to exchange their federal transportation dollars with ADOT for state-generated funding in order to bypass the requirements and additional administrative costs that accompany federal aid. ADOT had been forced to suspend the Exchange program from 2009 to 2017 due to insufficient operating revenue; however, as of October 1, 2017 (after these interviews took place), ADOT announced reinstatement of the program.
- Investigate new ways of allocating HURF revenues. The current method is based on population, meaning that a large, spread-out city with many miles of roads to maintain will get a smaller share than a more compact city with a higher population but fewer roadway miles to maintain.
- Identify creative uses of P3 infrastructure financing options that are not associated with the implementation of tolling facilities.

### **Influencer Views on Communication and Outreach Regarding Transportation Funding**

The public influencers were asked to comment briefly on two communication and outreach issues: what they believe it will take for the public to realize that transportation funding is an issue that needs to be addressed; and what they believe needs to happen in the area of stakeholder relationships to foster

understanding of critical needs, identify viable solutions for addressing transportation funding challenges, and effectively utilize resources.

Interviewees believe that public responsiveness to transportation funding issues is likely to occur at a tipping point when the failure to maintain, preserve, or build infrastructure—coupled with heavily congested roadways—is perceived as unacceptable, producing a significant negative impact on one’s quality of life. Other factors identified as likely to contribute to this tipping point included concerns about highway and travel safety, lack of alternate travel choices, and inaccessibility of transportation systems. These factors—as well as strong leadership to make a convincing argument for proactively addressing the transportation funding problem—were viewed as likely catalysts for galvanizing public response.

Regarding stakeholder relationships, influencers suggested these strategies:

- Actively encourage and facilitate collaboration and cooperation among regional partners to promote a macro view of highway infrastructure and transportation system needs and statewide impact.
- Take proactive steps to reduce or eliminate the perceived divisiveness, territorialism, and distrust that leads to dilution of resources as priorities conflict and entities compete to advance their agendas.
- Adopt a holistic and statewide approach to expansion planning (versus an approach viewed as dominated by Maricopa County).

A few interviewees also expressed their personal opinions regarding the need for:

- Strong leadership from someone “neutral”—i.e., removed from ADOT, MAG, PAG, CAG, and SCMPO—but with knowledge of both transportation issues and public input strategies, and able to use that knowledge to engage and unify stakeholders in “an initial project to try a P3 that’s fully financed, fully funded, fully constructed by an outside source...however, it works, it works”
- Repositioning of ADOT’s and MAG’s priorities to more appropriately respond to immediate infrastructure and congestion relief needs in the Phoenix metropolitan area; the individuals citing this need perceived the agencies to be inflexible about following approved plans that may no longer reflect the current growth and evolution of the state
- ADOT and MAG to acknowledge their responsibility to examine issues through the lens of the general public—the everyday Arizonans who pay sales and gas taxes—and not those parties who stand to financially benefit from expansion planning projects



## **Priced Managed Lanes and Toll Roads**

The final topic addressed in the interviews with public influencers was priced managed lanes and toll roads. Discussion began with a brief summary of the general concept of priced managed lanes and high-occupancy toll (HOT) lanes as a specific type of managed lane. This summary, presented below, had been previously provided to interviewees by e-mail, along with questions to be asked during the interview.

“Priced managed lanes are an example of a congestion management strategy that has been used by a number of other state DOTs to help mitigate traffic congestion, while toll roads provide the opportunity to expand capacity and accessibility by generating revenues to help offset operating costs. Common sense dictates that, for a user to be willing to pay for a service, he or she must benefit from it in some way. For priced lane users, this benefit is most likely travel time savings or reliability. Often, a priced lane will offer a more reliable trip than adjacent general-purpose lanes—non-tolled lanes—or a different route. Drivers can choose to use the priced lane if they judge the travel time savings or reliability to be worth paying the toll.

HOT (high-occupancy toll) lanes are one type of priced managed lanes. HOT lanes are HOV (high-occupancy vehicle) lanes that allow vehicles that don’t meet occupancy requirements to pay a toll to use the lane. Variable pricing is often used to maintain reliable performance at all times.”

### *Arizona’s Non-utilization of Priced Managed Lanes and Toll Roads*

The influencers identified several factors that they believe have contributed to Arizona not implementing priced managed lanes or toll roads. These include:

- An absence of need because funding has been sufficient to sustain expansion
- Negative perception of tolling in other parts of the country
- An Arizona culture associating the state with the Old West and its iconic image of self-reliance, individualism, and “as far as you can see” vistas of free-use lands, and influencing Arizonans’ attitudes about land and road usage
- Taxpayer opposition to paying for infrastructure “that has already been paid for”
- Equity issues regarding fair and equal access to the transportation system—in particular, one interviewee noted that many rural communities in Arizona have minimal local transportation infrastructure and rely heavily on the state highway system, so installing toll lanes or roads would force residents of these communities to use these facilities

## **Perceptions of Public Receptivity to Priced Managed Lanes and Toll Roads**

In discussing public receptivity to priced managed lanes and toll roads, the influencers' comments reflected the diverse viewpoints of their constituencies. In fact, several interviewees noted that differences in how congestion levels are perceived by motorists in urban versus rural areas of the state—particularly in southern and northern Arizona communities that are crossed by interstate highways—will significantly influence public opinion.

Influencers expressed varying degrees of support for the use of priced managed lanes and toll roads. Most voiced some qualification of their support, identifying factors that they saw as critical for ensuring thoughtful consideration of all available options for financing, location, operations, etc., and for identifying and addressing the public's concerns about managed lanes.

Among the 12 influencers interviewed, three expressed strong support, six expressed qualified support, and three were generally opposed to the use of priced managed lanes and toll roads in Arizona. Three of the individuals who expressed some degree of support for the overall concept also voiced the opinion that a pilot or trial project should be implemented.

### *Strong Support*

Three of the 12 influencers expressed strong support for the use of priced managed lanes and toll roads in Arizona. These interviewees identified the following as critical success factors:

- P3 financing model
- Implementation of an aggressive education program
- Electronic tolling collection (ETC) facilities
- Pilot /trial program (Interviewee believes that the public anticipates conversion of existing highways to toll roads at some point in the future and, therefore, needs to see an example of a tolling facility action to understand the benefits, including improvements in highway safety)

### *Qualified Support*

Six of the 12 influencers expressed qualified support for the use of priced managed lanes and toll roads in Arizona. These interviewees identified the following as critical success factors:

- Pilot or test project model—two interviewees felt this was needed to:
  - “Demonstrate that it will work and pay for itself”
  - Substantiate the value and benefits that tolled facilities provide to motorists
  - Identify the pricing thresholds likely to incentivize use

Among the two interviewees who favored implementation of a pilot:

- One did not believe the public would be receptive to tolling facilities but felt that Arizona needed to try a test program.

- One favored the use of priced managed lanes over toll roads, voicing concern that toll roads in other states have not met revenue projections.
- Implementation of priced managed lanes or toll roads on new highway infrastructure only (cited by three interviewees)
- One interviewee felt that implementation of toll lanes (which he defined as fixed lanes that are always tolled) “are not an appropriate use in many places, should be narrowly applied, and only in the right and appropriate places.”

Each of the following was cited as a critical success factor by at least one interviewee:

- Coalition of stakeholders led by a strong leader to secure transportation funding
- Transparency in how toll revenues are used
- Application of a congestion pricing model that uses non-fixed lanes, i.e., lanes that revert to general purpose, no-fee lanes during non-peak periods

One interviewee also noted that the organization he represents does not have a policy position on priced managed lanes and toll roads specifically but, rather, advocates for an open, transparent, and public process that diligently examines and evaluates: (a) associated implications and concerns from a social equity and environmental perspective and (b) use of funding options that provide for the most equitable and appropriate cost burdens. He also stated that there may be situations in which the organization would advocate for investment in urban infrastructure and increased funding to support mass transit versus building highways.

### *Little Support*

Three of the 12 influencers expressed little support for the use of priced managed lanes and toll roads in Arizona, expressing doubt about the successful implementation of these projects. These individuals voiced the following concerns and opinions:

- These facilities are charging the public for use of existing infrastructure and priced managed lanes that may not offer the public a direct cost benefit.
- The public does not think there is a need for tolling; the benefits of use will not be perceived as justifying the cost, particularly in areas outside the Phoenix metropolitan area; and concerns continue to be raised in other states about the efficacy of priced managed lanes to relieve congestion, especially as traffic volumes build in those lanes.
- Compression of traffic in priced lanes, their capacity and safety, and the ability of toll facility operators to effectively control and retain the advantages of use—which the speaker defined as increased speed, increased capacity, and decreased collisions—are potential problems. This

individual believes that implementation of priced managed lanes would be a “hard sell” because the advantages of use, as noted above, need to be proven, and forward-looking thinking and planning are needed in the area of technology innovation, such as managing the use of intelligent cars in both tolled and non-tolled lanes.

#### *Conversion of HOV Lanes to Priced Managed Lanes*

Seven of the 12 influencers shared their views on converting HOV lanes to HOT lanes or some other form of priced managed lanes. Three were flatly opposed, and another favored implementation of full toll roads over implementation of priced managed lanes. The reasons given by these four individuals were as follows:

- Opposition to changing existing infrastructure from non-tolled to tolled
- Concern about social equity and limiting use to motorists who can afford to pay
- Belief that the conversion would not provide capacity gains or relief of congestion
- Preference that a new lane be constructed and that the existing HOV lane become a general-purpose lane

The remaining three individuals were either unsure about motorists deriving any benefit from the conversion of HOV lanes, or thought that conversion was an option that needed further investigation or should be included in proposed plans for priced managed lanes or toll roads.

#### *Demonstrated Benefits for the Public*

The influencers identified several benefits that they believed would have to be demonstrated to the public in order to gain support and acceptance of the implementation of priced managed lanes and toll roads in Arizona. The most frequently mentioned were travel time savings, travel time reliability, improvements in quality of life (e.g., “less time spent in gridlock and more time spent on the things that matter most to people—family time, personal leisure or free time”; “less stress or frustration in commuting to and from work”), and less congestion overall, as well as improved traffic flow in the general-purpose lanes. They also cited safety as a corollary benefit that should be discussed when communicating with the public.

Other benefits that the influencers believed need to be demonstrated were the following:

- Assurances that roadway projects will be prioritized appropriately to meet demand in high-volume traffic areas through the use of P3s, which will enable financing and expedited building of new infrastructure due to incentives offered to the private companies
- Opportunity to promote car and van pools that lead to decreased pollution levels
- Cost savings associated with less wear and tear on vehicles caused by stop-and-go traffic

One individual noted the challenges associated with efforts to demonstrate benefits, such as how to quantify intangibles like improved quality of life. This topic was also touched on in discussions about the need to better understand and appeal to the values that motivate user choice, such as the value that people ascribe to their time and the factors that increase or decrease that value. An example of this is the set of conditions that influence a decision of whether to use a tolled facility on a particular trip. The influencers also believed that the public would require a number of process and operational assurances in order to fully accept implementation of priced managed lanes and tolling.

### *Process*

- Open, transparent, and public forum for discussion of potential tolling models for Arizona
- Adequate levels of public engagement, participation, and input
- Recognition of and responsiveness to the multi-faceted aspects and implications of implementing a toll lane or toll road facility—such as the impact not only on the party that is paying the toll (motorist), but also on the community (or communities) most affected by (and possibly experiencing a financial burden due to) the facility—and the need to study equitable options for reinvesting revenues from that facility to help mitigate any such burden
- Explanation of the fundamental “why” behind the project, in terms of its benefits to the community, such as contributing to a more diverse economy, creating local jobs, supporting sustainability, etc.

### *Operational*

- Non-tolled travel routes that are viable, comparable alternatives to the tolled facilities
- Openness to varying perspectives regarding use of toll collection revenues generated—for example, some interviewees advocated for facility-based reinvestment to cover maintenance and upgrade costs, including safety-related improvements; others advocated for the purposeful assignment of revenues to a public good, which they identified as use for other infrastructure to address concerns regarding inequities in access and use
- Transparency in disclosure of performance metrics and outcomes, and accountability for the private partners in P3s—the interviewees noted the need for full disclosure of the contractual terms governing use of P3 financing options to deliver tolling facilities, and a few individuals identified specific stipulations that they believed needed to be incorporated into these agreements, such as a sunset clause to terminate toll collection activities when a facility’s total revenue has equaled its cost
  - Ongoing monitoring to ensure that the repurposing of lanes for the tolling project does not diminish the capacity of general purpose lanes



## **CHAPTER 5. FOCUS GROUPS WITH THE ARIZONA PUBLIC**

Qualitative research was conducted utilizing focus groups with members of the Arizona general public. Ten focus groups were conducted, with a total of 76 participants. The research objectives were to gain greater understanding of the public's perception of traffic congestion on Arizona highways, views on possible implementation of toll roads and/or tolled lanes in Arizona, and knowledge of highway transportation funding in Arizona. General areas to be addressed during these discussions included the following:

- Traffic congestion on Arizona highways in metropolitan areas
  - Factors perceived as contributing to congestion
  - Commuter experiences and top-of-mind concerns
  - Impact of traffic congestion on family, community, overall quality of life
- Previous or current experience using toll roads and/or tolled lanes
  - Concerns, expectations, and needed assurances and information related to possible use of tolling in Arizona
- Highway transportation funding in Arizona
  - Perception of public knowledge about Arizona funding
  - Support for different funding options

### **FOCUS GROUP METHODOLOGY**

#### **Recruitment and Participation**

Potential focus group participants were recruited from the following sources:

- Individuals who had previously participated in an unrelated ADOT-sponsored study during which they reported regularly driving the Interstate 10 corridor between Phoenix and Tucson and also expressed interest in participating in future ADOT-sponsored group discussions regarding transportation-related topics.
- Individuals who had signed up to receive ADOT travel advisories by e-mail.

This recruitment strategy was intended to assure that all potential participants were active users of Arizona highways as well as interested in issues related to safe driving. These potential participants were

sent an e-mail reminding them of their stated interest in participating in transportation-related group discussions and inviting them to complete a brief online questionnaire (screener) that would be used to determine their eligibility for participation. A link to the questionnaire was provided in the e-mail, along with general information on the discussion group topics and scheduling. Individuals were also informed that for this study, ADOT was interested in speaking with drivers who live, work, or attend school in at least one of the four counties of interest (Maricopa, Pima, Pinal, and Yavapai), and that if they met the eligibility requirements and participated in a group discussion, they would receive \$75 at the conclusion of the group to thank them for their time.

The criteria used to determine eligibility to participate in a focus group were as follows:

- Age 18 or older
- Arizona resident, either full-time or part-time
- Primarily uses Arizona highways to get to and from work and/or school
- Occupation or employer not affiliated with the transportation sector or industry

Recruitment was also dependent upon other factors—such as current or previous experience with using toll roads, lanes, or bridges outside of Arizona—as well as the number of groups to be held and the desired number of participants per group (ideally six to eight, with no more than 10 participants).

A total of 76 individuals participated in the ten focus groups, which were conducted in November and December 2015. Six groups were conducted in Maricopa County in the Phoenix metropolitan area, including locations in the eastern and western suburban areas, and two were conducted in Pima County in the Tucson metropolitan area. Additionally, one group was held at a location in Pinal County (Queen Creek) and one group at a location in Yavapai County (Prescott Valley). The complete focus group schedule is presented in Table 2.



**Table 2. Focus Group Schedule**

<b>Date</b>	<b>Geographical Area</b>	<b>Facility Location</b>	<b>Attendees</b>
November 17	North Phoenix, Maricopa County	Partners In Brainstorms offices	11
November 18	Central Phoenix, Maricopa County	Burton Barr Library	10
November 19	Prescott Valley, Yavapai County	Prescott Valley Civic Center	5
December 2	Phoenix eastern suburbs, Maricopa County	Mesa Public Library, Main Library	9
December 3	Greater Tucson area, Pima County	Wheeler Taft Abbett Sr. Library	7
December 8	Tucson, Pima County	John D. Valdez Library	9
December 9	Phoenix east valley, Maricopa County	Mesa Public Library, Main Library	5
December 10	Phoenix western suburbs, Maricopa County	Glendale Public Library, Main Library	10
December 15	Queen Creek, Pinal County	Queen Creek Library	4
December 16	Central Phoenix, Maricopa County	Burton Barr Library	6

Demographics of the focus group participants were as follows:

- Gender – Slightly more than half (53 percent) were male.
- Age – The majority of participants were under age 55. Individuals between the ages of 18 and 34 comprised 13 percent of all participants; those 35 to 54 comprised 46 percent; individuals 55 to 64 comprised 24 percent; and those 65 and older comprised 17 percent.
- Race – The large majority of participants (86 percent) were White/Caucasian.
- Education – Nearly three-quarters of participants (74 percent) had a college degree.
- Income – Participants were nearly evenly split between those whose reported annual household income was under \$75,000 and those whose reported income was \$75,000 or more. Individuals reporting annual household income of less than \$75,000 comprised 45 percent of all participants, with 21 percent reporting income under \$50,000 and 24 percent reporting income of \$50,000-\$74,999. Individuals reporting annual household income greater than \$75,000

comprised 47 percent of all participants, with 14 percent reporting income of \$75,000-\$99,000 and 34 percent reporting income of \$100,000 or more. Additionally, 7 percent of participants preferred not to provide this information.

- Travel behavior –The majority of participants reported daily travel on Arizona highways and traveling during peak periods (69 and 63 percent, respectively).
- Experience with tolling – More than half the participants (57 percent) reported having lived or worked in a state that had tolled roads, lanes, or bridges. Additionally, the majority (63 percent) reported having used a tolled road, lane, or bridge within the past five years, and nearly half (46 percent) reported having used both manual and electronic toll collection facilities.
- General opinion regarding tolling – This question used a 7-point rating scale, where 1 meant *tend to strongly oppose* and 7 meant *tend to strongly support*, as well as a *do not know* option. The percentages of participants expressing opposition and support were the same at 33 percent each, while 17 percent were neutral in their response. Additionally, 17 percent selected *currently don't know enough about topic to make an informed decision*.

### **Framework for Discussion**

A discussion guide was developed for use in all groups (modified slightly for the Yavapai County group), and each group discussion lasted approximately 90 minutes. The discussion guide was designed to gain a richer understanding of the public's experience with tolling and opinions and attitudes about it, particularly as they relate to overall concerns, perceptions and misperceptions, and the tipping points for public opinion becoming favorable toward the tolling concept in Arizona. The guide also sought to identify specific critical concerns and issues that ADOT would need to address if efforts to implement tolling in Arizona were to move forward. Specific topics addressed in the discussion groups included the following:

- Drivers' perceptions regarding their commute to and from work or school
- Views about traffic congestion on Arizona highways during peak travel periods (rush hours)
- Driver experience, if any, with use of toll roads or tolled lanes, including toll collection methods
- Perceived advantages and disadvantages of tolling, including top-of-mind concerns and needed assurances to encourage drivers to consider use of toll roads or tolled lanes
- Personal and perceived public knowledge of how highway transportation projects are funded in Arizona

## FOCUS GROUP TOPICS AND FINDINGS

### Driver Behaviors and Commuter Experience

Participants were asked to estimate the time and distance of their commute to work or school. The majority of participants reported average one-way travel times of 45 minutes or less, as follows:

- 5 percent reported less than 15 minutes
- 27 percent reported 15–30 minutes
- 31 percent reported 31–45 minutes
- 23 percent reported 46-60 minutes
- 8 percent reported 61–75 minutes
- 4 percent reported 76-90 minutes
- 3 percent reported a travel time greater than 90 minutes

As might be expected, participants who lived and worked in urban centers reported shorter commute times and travel distances than those who lived in outlying suburban locations. Additionally, a number of participants reported differences between their travel time into work and their travel time home, citing traffic volumes, traffic flow, and other factors such as their work schedules. Participants also reported varying travel distances that ranged from a low of seven to 10 miles to a daily average commute of nearly 100 miles one way. One participant who works as a commercial driver reported traveling more than 350 miles per day.

When asked to briefly describe their commute during peak travel periods, most participants who reported using I-10 and interconnecting highways in the metro Phoenix and central Tucson areas spoke about the frustration, stress, and concerns for their personal safety that often characterized their drive. Participants spoke about high traffic volumes, slow travel speeds, and the unpredictable commute times due to roadway conditions such as crashes, construction, and residual delays from earlier traffic incidents. They also voiced concerns about distracted and “problem” drivers and the pervasive impact that drivers exhibiting poor driving behaviors have on both highway safety and traffic congestion.

Participants in several groups compared their current commuting experience with their previous experience while living or working in urban areas in other parts of the country (e.g., the East Coast, Chicago, Los Angeles), generally indicating that their Arizona experience is much less stressful. When asked their perception of a reasonable one-way commute time, most participants identified 25 to 30 minutes, or, at the very most, 40 minutes, as their personal drive-time threshold. Participants residing in the west valley, however, reported a 45- to 60-minute drive time as reasonable, with several noting that their concern is not so much with their drive time as with driving on highways where they feel safe.

- “I would say I’m okay with the times as far as like a 50- or 55-minute commute. There’s nothing wrong with the times. It’s the aggravation factor that if they can make it to where it’s safer and I don’t feel like I’m at risk every single time that I try to get on the 101 with people cutting over and doing that....It’s not about the time as much as it’s more about the safety and just the procedure so I don’t have to take chances every single time I get on the freeway.” (Phoenix west valley)

Participants whose reported commutes included travel on low-traffic highways and travel routes that included more surface streets than highways, as well as those who either lived near their place of employment or had the flexibility to travel during “off periods,” described their commuting experiences in far more favorable terms.

### **Factors Contributing to Highway Congestion**

Participants identified a number of factors that they believe contribute to traffic congestion on Arizona highways and negatively impact their commuter experience, including problem drivers, population growth that includes a seasonal influx of visitors and part-time residents, a rise in the number of high-density housing areas (which participants likened to mini-cities), and highway construction.

- “We have a lot of people commuting and going out where there’s cheaper housing and things like that. But we are not a place where we necessarily grow up. We grow out for lots of different reasons, because it will block our view....And I think that also helps to contribute, because we’re not built for a city of this size of population. Most cities of this size are a lot smaller and higher up.” (Mesa)
- “Lately, because of the construction and there being no alternate routes, I have to check the traffic reports to make sure that I select the proper route to go home or I could be delayed for quite a while because there’s no alternate route from Sierra Vista. Once you get past the road to Sonoita, which is the Highway 82/83 area, if I go past that, and I realize there’s a whole bunch of traffic on I-10, then I’ll be stuck for up to one hour in traffic.” (Tucson)

Participants in each group also commented on what they perceive as highway planning and design issues that contribute to traffic congestion and engender concerns about highway safety, such as the number of lane changes needed to move from HOV lanes to exit lanes or to the designated lanes for connecting to another highway, reductions in the number of lanes, and the length of highway ramps.

- “I guess sometimes I get frustrated or annoyed at the design, what I see as design flaws that make people have to make unnecessarily large number of lane changes. I think that makes the freeways less safe than they would otherwise be.” (Queen Creek)

- “I’m surprised they don’t learn from other cities that have freeways like Los Angeles. They have freeways where you really can go on the HOV lane but still get off and turn left. You don’t have to go right.” (Phoenix west valley)
- “Poor design. Not enough of a lead....they have a very short on-ramp so you don’t have a good chance, as traffic is coming into you at 75 miles an hour, to actually get onto the freeway and make enough speed or whatever because your ramp is not a diamond—like there are cloverleaves still out there where I am.” (Tucson)

A number of participants voiced the opinion that ADOT appears to be behind in planning for population growth in urban and fast developing areas of the state and in addressing the residents’ corollary transportation needs. Participants in eight of the 10 groups cited the need for a viable public transportation system to help ease traffic congestion. These participants stated that they would use public transportation if travel routes were appropriately designed to provide access to urban work locations and large-scale employers located throughout the metropolitan areas, and if travel times offered an advantage over drive times. Based on their comments, it appears that many participants may incorrectly believe that ADOT is responsible for planning and oversight of public transportation such as bus service and light rail. In fact, responsibility for these projects is at the regional or local level, with funding primarily secured through federal programs, local taxes (e.g., city or county sales tax revenues), and other sources, such as federal and non-federal grants, cooperative agreements, loans, Transportation Excise Tax Revenue bonds, and, as is the case in Maricopa County, use of state lottery revenues.

A few participants also raised the issue of ADOT funding constraints—that is, ADOT not having the funds needed for highway construction or improvements—as a factor contributing to the perceived inability of the department to adequately plan for transportation infrastructure needs. In a few groups, participants expressed the opinion that planning efforts were also thwarted by political influences.

#### *Insufficient Planning for Growth*

- “I don't know if ADOT—I'm sure that they must have the information about population growth, huge developments going on like Verrado out in the west valley. And there's I-10, it's two lanes to handle this. They must have that information, so there's a disconnect between providing the transportation infrastructure to provide for those people, and what is an assumed route for them to go to and from work, and then implementing that sufficient infrastructure.... They're always chasing the population as opposed to being in step with it.” (Phoenix)
- “I think it has a lot to do with money. I know that the highway that's supposed to go in the west valley below I-10—I can't remember what route it's supposed to be. That's been tabled, and they said they might get to that in about 2025. And that's supposed to alleviate the traffic on the 10. Well, they can't do anything with it because they don't have the money to even start it or—it's just, I think money is a big thing.” (Phoenix)

### *Limited Public Transportation*

- “State Farm down at Tempe Town Lake, the reason they chose that site is because of the light rail and all the freeways there. So, economically, if we show we have a good system throughout the Valley instead of one central location—you know, if we had that rail going up and down the freeways and had accessibility in other places—you could attract more large companies that have more employment.” (Phoenix)
- “You know, the East and the west valley have grown a lot in the last five, ten years, you know, even sooner than that. And unfortunately, there’s a lot of people who don’t own vehicles that do rely on public transportation, friends, or family—things of that nature—and let’s say they make a toll road—the toll road is the only way for these people to get to work. Say they’re working three jobs or supporting three kids or whatever—an unfortunate situation that happens to a lot of people here in the Valley—what’s going to happen to them? ‘Oh my gosh, now all of a sudden I have to budget gas money; I have to budget car maintenance—now I have to budget an extra \$10 to \$15 a month just to go to and from work on this toll road.’ I hate to say it, but the public transportation system out here—yeah, it stinks, especially in the east valley. I mean, if I can use public transportation to work every day, I would, but I checked it out once to go from my home in Mesa, which is very close to the [State Route] 60. To go from my home in Mesa to downtown Phoenix by car takes me about 25 to 30 minutes. By bus or light rail takes me about an hour and a half. That’s crazy. That’s ridiculous.” (Phoenix)
- “There’s no reliable transportation alternative from Sierra Vista to Tucson. I used a commuter van service system to get down there, but I think a regular bus service down there would be beautiful. And the light rail for day trippers, people that have friends up in Phoenix, back and forth to Tucson, there’s a lot of trade back and forth and I think the light rail would be great.” (Tucson)

### *Impact of Political Influence on Planning Process*

- “The number of lanes is reduced coming into Tempe, and if you go back historically, it was a former Tempe mayor who fought tooth and nail to make sure that there wasn’t an appropriate number of lanes there because of noise abatement.” (Mesa)
- “You have thousands of people sitting there on a daily basis wasting fuel all because of the eccentricities of political involvement.” (Mesa)

Participants in groups conducted in Yavapai, Pima, and Pinal Counties noted a need for region-specific solutions, such as the following:

- Highway transportation option to address congestion and projected population growth in the Prescott Valley area (Yavapai County)

- “I hope ADOT can do something soon, because I know Prescott Valley and Prescott both are supposed to get, what is it, 5,000 new homes? There’s talk of this builder who’s coming in here, and he’s going to build I think it’s 5,000 in Prescott Valley, and 5,000 in Prescott. So this quad-city area is really going to grow. And Highway 69 is just not capable of handling it. I would say, just in this last year, the traffic on 69 has doubled. It takes double the time to get from Prescott Valley to Prescott.” (Prescott Valley)
- Options for the Tucson metropolitan area, with some participants advocating for a toll road loop around the city and others arguing that improved surface street conditions were a better solution:
  - “I would pay a toll to be on a loop through Tucson that would take you to the east – to the northeast and around. I would definitely pay a toll for that. So for the convenience of getting through town on a loop like what Phoenix has, I think most people in Tucson would pay a toll to be able to use it.” (Tucson)
  - “For those that live up like in Catalina or Oro Valley, it would probably shave 15 minutes off—just the freeway part of it, but our biggest problem—yeah, it’s the freeway in the afternoon—but it’s the fact we don’t really have really good systems through town.” (Tucson)
- Full-length tolling options, via use of a tolled lane, for persons who commute to Phoenix from the far east valley and Pinal County
  - “If you're commuting from work, say in the Gold Canyon area, and you're driving 60 miles into work or 40 miles or 50 miles, and you're going to pay for a 20-mile tolled lane, why isn't it 60 miles long? They don't want to go halfway; they want to go all the way. And generally if we're out in this area, it's either to downtown or in the corporate areas.” (Queen Creek)

### **Impact of Traffic Congestion**

When asked to comment about the impact of Arizona highway traffic congestion on their work life or employment-related decisions, participants reported that traffic considerations had influenced the following:

- Decisions about where to live – Several participants reported that they had made a conscious decision to avoid traffic, live closer to work, and as reported by a few participants, relocate, moving from the outskirts into the central urban area. Two participants commented on their contrasting point of view, having decided to accept the trade-off of living in a rural area and commuting a long distance to their place of employment.

- “We chose to live where we live to avoid traffic. That was one of the major considerations.” (Tucson)
- “I used to live in San Tan Valley and there was this big plan for a highway bypass. They kept pushing it back, so eventually after so many years of waiting for the highway that didn’t happen, I moved back into town. It saves your sanity when you just get closer to the job. It’s cheaper housing now in San Tan Valley, but with the drive as the gas prices rose through the roof, and the planned highway that did not happen, we just moved back in town.” (Mesa)
- Decisions related to employment – Some participants reported that traffic-related considerations had influenced their job-seeking behaviors, consideration of specific employment opportunities, and/or decision to change employers.
  - “I’m in the process of job hunting right now. I look at the jobs —sorry, too far, or whatever freeway—so, I try to make it within a reasonable amount of miles.” (Phoenix west valley)
  - “I used to drive an hour each way to work, and that commute was one of the reasons I looked for another job. My biggest barrier right now is that if a train happens to be coming through at the wrong time, then I could be stuck there.” (Tucson)
- Changes in work behaviors –Participants also reported changing their work behaviors to lessen the impact of traffic congestion on their work and home life. These changes included telecommuting, working flex-time shifts (e.g., four 10-hour days), adjusting workday start and end times, and scheduling work-related travel to avoid peak periods. For example, a pilot who lives in Gold Canyon, located in the far east valley, noted that he often opts not to bid on one-day flight schedules in order to avoid the same-day back-and-forth commute to Sky Harbor airport in Phoenix.
- Changes in personal driving behaviors – Participants reported allowing more “buffer time” to accommodate unforeseen delays in getting to and from work; being more vigilant when driving (e.g., heightened awareness of traffic conditions and problem drivers); and increasingly relying on technologies (e.g., mobile apps) to aid their travel plans and provide information regarding commuter delays caused by traffic incidents or weather, such as dust storm events.
- Employer-adopted programs to promote safe driving – One participant, a professional driver, reported that his employer had implemented safe-driving courses and educational programs in an effort to reduce costs associated with traffic crashes while improving overall employee safety.
  - “My employer—we’re just seeing (especially inside the City of Phoenix) more and more accidents, daily....so, of course that impacts your employer. It’s costing them money and people are getting hurt, and you’re losing their services. So, they really made a very



conscientious effort toward safety. When you educate people, you're going to get improvement. We have seen – I mean, just phenomenal improvement and now at least every week, we're taking driver safety and "what do you do in a particular situation?" classes. Less accidents, less lost time from work and—I know from my own driving—my own driving safety has improved. I'm really thankful for that." (Phoenix)

Regarding the impact of Arizona highway traffic congestion on their overall quality of life, participants reported the toll that it takes on family life, including available time with family and friends, personal lifestyle choices, and household expenditures. Also noted were the economic and environmental impacts of congestion and stressors that contribute to aggressive driver behaviors and the increased likelihood of traffic-related incidents. Traffic congestion was believed to impact overall quality of life in the following ways:

- Results in less time with family and impacts one's home life
  - "It steals time from families....I have two kids, my time with them is valuable, so it just takes away from time with them, or to get to their activities, or it takes time from work because it takes longer to get to their activities. It crunches into your time management." (Greater Tucson)
- Causes people to stay home and not take advantage of leisure time or recreational opportunities that require travel
  - "You don't want to go out and do anything because anywhere you go, it's frustrating. Everything is either closed, they're working on it, or there's a lot of traffic. I don't want to go all the way over to the other side of town, even though it's something you want to go do." (Phoenix)
- Increases costs, at the household level, for a service call or having a repairman come out to the house (i.e., companies charging a transportation fee or minimum service charge for coming out to home)
  - "We needed some work done on our garage, and the workman was down in Mesa, and we had to pay an hour of that person's time to get to our house to do the work, and then pay for another hour of their time to go back. So this stuff really adds up. I can't imagine what it costs UPS and FedEx to be stuck in traffic." (Phoenix)
- Increases costs to operate and maintain a car and, to some extent, car purchasing decisions
  - "Higher insurance costs for your car. You know Arizona has higher insurance costs than California? That was a big shock to us when we moved here. Our accident rates are much higher here than in California. I think part of that is because you have a clash of car cultures here. Phoenix has a unique problem because you've got all these different

cultures converging in Phoenix, especially in the wintertime. You've got people who come here from the East Coast where they're bringing in their East Coast driving mindset. You've got people from Chicago doing their Chicago thing. Californians are doing their California thing. And you got Ma and Pa Kettle from Kansas; they've never been on the freeway before." (Queen Creek)

- "And for me it's my car choice. I would love to be driving one of those little Priuses that get all that mileage for my commute, but I don't dare be in a car any smaller than the one I'm in because of the traffic on the highway." (Tucson)
- Increases pollution and has a direct impact on the environment
  - "We get our brown cloud several times a year, which you would think is an L.A. type of thing. But it hovers because people are sitting on the highway. It's a lot of output from all the vehicles. We don't have mass transit for the type of population we have in the greater Phoenix area. So we have five million people and the light rail, and now we voted to expand it, but really, come on. People don't ride it. It doesn't go where people need to go." (Phoenix)
- Adds to personal stress levels and tensions that contribute to aggressive driving behaviors, all of which impact highway safety
  - "It happens more and more in the Tucson area anyway, where there is road rage and there's the anger....to me, that's one of the biggest things I see. You can just see people are angry on the freeway or they're not in a good mood driving because of how congested it is." (Tucson)
- Impacts Arizona's economy and ability to attract businesses and residents
  - "It wastes time, and time is money. It also is economic in that if it gets bad enough, people will make choices about moving here—I know I'm not going to move to L.A. because the traffic is horrible." (Phoenix)

In discussing their perceptions of Arizona traffic congestion levels during peak travel periods (rush hours), most participants described congestion as either a major or moderate problem. Few participants, however, described congestion as having reached intolerable levels, which they defined as a regular expectation of congestion and back-ups due to crashes (i.e., "I expect there will be an accident. I expect there's going to be, actually, at least two accidents and everybody's backed up, and I expect it's going to take me at least 40 to 45 minutes to get home.").

## Tolling Experience and Perceptions

Participants were asked how they would likely define or describe tolling and the first associations that come to mind when they hear the phrases *tolling*, *toll roads*, and *tolled lanes*. Subsequent questions focused on gaining insight into driver experiences using tolled facilities, toll collection methods that participants were most familiar with and had used, and their general opinions about tolling based on their driving experiences in states with tolling. Among the 76 participants, nearly all reported having used a toll road or tolled lane.

Key findings from this discussion were as follows:

- While some participants thought of tolling as a user fee and considered it fair, the clear majority considered tolling to be a tax that they viewed negatively.
- Most participants were unfamiliar with the term *tolled lanes*, and few reported ever having used one. Many participants described a tolled lane as something akin to an HOV lane that you have to pay to use; early in the discussion, tolled lanes were referred to as “rich people’s lanes,” with one participant stating, “I’ve seen it in the Long Beach area where they have a couple lanes that are the ‘go fast if you have the money’ lanes, and then if you don’t, you’re sitting over there with everybody else.”
- One participant who had used both toll roads and tolled lanes drew a distinction between the two, stating, “The express lanes and the tolled lanes I use out of convenience, versus a toll road out of just pure necessity—you just have to use it because there’s no other alternative.” (Phoenix west valley)
- Overall, participants did not perceive tolling as a congestion management strategy. The clear majority associated tolling with revenue generation and, in a few instances, rejected the idea of its proposed use as a congestion mitigation tool.
  - “It’s about revenue. That’s what we’re talking about.” (Tucson)
  - “I’ve been on very few toll roads, but I really didn’t see the difference as far as the traffic or anything else. So my first thought is revenue for the state.” (Queen Creek)
  - “I would use it maybe as a sales pitch that it was for controlling congestion.” (Phoenix)

Most participants reported some experience with tolling and having used a toll road or tolled lanes during the past five years. Their primary reasons for using tolling facilities were to avoid traffic, save time, travel the most direct route, and avoid the frustration of being stuck in traffic. Other reported benefits included well-maintained roads, frequently patrolled highways, and the ability to travel at a higher rate of speed. Several participants who had used tolled lanes reported their familiarity with variable pricing. Participants reported having used toll roads and tolled lanes in the following states:

California, Colorado, Connecticut, Florida, Indiana, Kansas, New Jersey, New Hampshire, New York, Ohio, Oklahoma, Pennsylvania, and Texas. Following are some examples of their comments about the positive aspects of tolling:

- “That was the best thing I’ve ever paid for. In California, I did it where you could either go the long way through the regular freeway or you could pay the toll and take the shortcut freeway to get to Laguna Beach.” (Tucson)
- “Perfect. Perfect roads. The conditions were great and there was very little traffic on the road. They were patrolled . . .” (Phoenix)
- “I lived in Houston. I would use it primarily for speed. We liked it because it was private and you could really speed.” (Phoenix)
- “On the [California] 91 lanes it’s always variable pricing. So, it depends on time of day, direction of travel, all that kind of stuff factors in. So it’ll tell you what the toll currently is. You can make up your mind if you want to either pay it or not and you want to take your chances in the free lanes.” (Phoenix west valley)

However, participants in each group also stated that they had often used a toll road because it was the only travel route available to them. Many participants reported that they had been initially unaware that they were using a toll road or tolled lane and that they sometimes found the signage very confusing. Participants who reported negative experiences with their use of tolling facilities cited the lack of alternative travel routes, ever-increasing toll rates that financially burden individuals just trying to get to work each day, and the long-term sustainability of tolling, especially in light of problems experienced by other states and toll authorities, such as the 2014 filing of bankruptcy by the operator of the Indiana Toll Road.

- “In Oklahoma, it’s not an option, it was just the freeway system and that’s where they go and you had to use it, so you used it.” (Tucson)
- “They are very confusing. You don’t realize that you’re actually in these tolled lanes until it’s too late. You can’t get out of it either.” (Phoenix west valley)
- “At one point I had three different jobs in D.C., Maryland, and Virginia, so it was nothing but toll roads everywhere. And it took out a lot of my paycheck that way.” (Mesa)

Participants reported using a range of toll collection methods, including:

- Manned toll booth facilities that accepted cash and credit card payments
- Drop-in coin basket collection methods
- EZ Pass or similar electronic transponder systems

While participants knew that electronic toll collection methods tracked one's use of toll roads or tolled lanes, they were not wholly familiar with the particulars of currently available technologies, payment systems and methods, or customer service implications. Participants whose only tolling experiences were with coin collection baskets or manned toll booth facilities voiced concerns about the safety hazards and congestion-related problems that they thought such systems present (e.g., cars having to slow down, long lines of cars). All participants agreed that if Arizona were to implement tolling, it would need to use proven state-of-the-art technology solutions that provide a safe toll collection method. They also stressed the importance of clear signage so drivers have sufficient advance notice to decide whether they want to enter a tolled portion of the highway, and noted this was particularly important because Arizona has so many tourists driving its highways.

- "This was in Florida between Fort Lauderdale and Miami. Going into Miami there were express lanes, and you have an electronic thing—I'm trying to remember—there was no stopping or anything, you just get in that lane and you go. I'm not sure how they monitored it but they did. So it was relatively easy to use." (Tucson)
- "I've seen that....It's done electronically, which I really thought that with technology, it puts the safety back into traveling. Because toll roads where you stop and pay, and you're in a rush, and you stop and go, that's just setting up safety bombs." (Phoenix west valley)

### **Attitudes and Opinions Regarding Tolling in Arizona**

Participants expressed divergent views about the possibility of tolling being implemented in Arizona, ranging from strong support to strong opposition. A few participants voiced a neutral position, stating that they did not have enough information to make an informed decision. Regardless of the extent to which they supported or opposed tolling, the clear majority of participants raised questions or expressed concerns regarding implementation of tolling in Arizona. Comments from those opposed as well as those in support provided insights into factors and conditions that would be critical to advancing public discussion about tolling in Arizona.

Participants generally opposed to tolling expressed the belief that tolling impinges on the fundamental principles of equity and fairness, accessibility and accommodation, and the common good of publicly funded infrastructure. They also expressed concerns about its efficacy. In contrast, participants who

were generally supportive of tolling, expressed the opinion that tolling reflects the fundamental principles of choice, user fees, and demonstrated value.

Participants in all groups agreed on the importance of accountability, transparency, and full disclosure regarding collection and use of toll revenues, with a significant majority expressing distrust of public officials. Additionally, many participants drew a distinction between the use of tolling on highway infrastructure that was, in their words, “already paid for with taxes” versus its use on new highway construction projects and expressed their views on the use of public-private partnerships to finance highway tolling projects. These topics are addressed in the following sections.

### *General Opposition to Tolling*

A number of participants stated that their objection to tolling was a matter of principle; they strongly believe that roadways serve a common good and should be accessible to all. Many of these individuals expressed the view that tolling is a form of double taxation, imposes undue burden on the economically disadvantaged, and represents an elitist paradigm.

The efficacy of tolling was also questioned. Several participants were unconvinced that tolling would relieve congestion, improve traffic flow, or provide drivers the added advantages of well-maintained roadways and an overall better driving experience. To the contrary, several believed that tolling would increase congestion levels. Participants also commented on potential problems, such as the:

- Logistical aspects of placing tolling facilities on the existing highway system that runs through the Phoenix metropolitan area
- Potential impacts on surface street traffic volumes and the potential environmental impact should tolling result in fewer people opting to carpool
- Privacy concerns regarding use of toll collection method
- Operational aspects of implementation, such as the ability to monitor and address tolling violations
- Project selection and associated funding and financing options

Presented below are particularly relevant comments from participants generally opposed to tolling.

- “I think of a roadway not as a privilege, but as a common good that we’re all paying taxes for to begin with. So why is it that we’re being charged this extra luxury tax? Unless there’s a whole new road that’s coming up that’s privately funded through this other way, these roads have already been—we’ve all been paying for them. I come from an area where you have county taxes, you have city taxes, and you have your car’s registration and state taxes on your cars. You’re being taxed multiple times on the same thing. So it’s that same idea of why?” (Mesa)

- “I consider the freeway system—the road system—to be something that should be paid for solely by taxes and I shouldn’t have to get charged extra for that. That’s why they call them free, right?” (Phoenix)

Participants in each group maintained that tolling is a form of double taxation, because their taxes have paid for and continue to pay for repair and maintenance of the roadways.

- “Anywhere there’s toll roads, I avoid them. I stay away from them. I don’t feel like I should be paying to drive on a highway that I’m already paying taxes to take care of.” (Tucson)
- “It’s double taxes...because I think you pay it twice: what we are already paying for—the maintenance of the road—and then we have to pay a toll on that?” (Phoenix)

Many participants believe that tolling is an unfair and elitist practice that places an undue burden on economically disadvantaged segments of the population because they simply cannot afford the added expense.

- “It’s another option for people who have money and can afford to do that so they can travel faster. Other people who don’t have the money need to get to work in the same amount of time. Without knowing anything else about it, it feels unfair to me—more of the same stuff we’re doing in this country.” (Queen Creek)
- “I just think it’s unfair to people who can’t afford it. It may limit people’s economic opportunities to travel and work; they have to travel a toll road every day. Also I think it shows a lack of ability to come up with a funding solution that’s not relying on tolls.” (Tucson)

Several participants did not accept that tolling would deliver on its promises of reduced congestion levels, improved traffic flow, reduced travel time, and better maintained roads.

- “When I think of a toll road, I think of like Chicago, New Jersey, and New York, and it’s horrible. I mean it’s just as congested. (Mesa)
- “I don’t notice any difference between the highways I drove back East (toll roads) and the highways I drive here. No difference in how they’re maintained or whether they’re faster or less congested.” (Tucson)

Participants also voiced concerns about how toll roads or tolled lanes could possibly “work” in the metropolitan Phoenix area. They could not envision the logistics of tolling facilities being incorporated

into or supported by the existing infrastructure of interconnecting highways that feed into major travel routes, such as the I-10.

- “I don’t know if they have room for it, if they’re thinking about doing it here. They don’t have room for the traffic they’ve got, how are they going to have room to put this stuff in?” (Phoenix)
- “Okay, the toll roads will be some place where it would make the commute shorter, but it won’t make it shorter, like for you, when you have to go through to the 101. Because the toll road may be over here, but it’s not going to cut that congestion where everything comes together. How are you going to put a toll road there when you’ve got all those different ways coming in? It doesn’t make sense to me.” (Mesa)

Participants raised concerns about tolling facilities contributing to increased traffic on surface streets when drivers choose to use alternate routes and the possibility that tolling could result in more commuters opting not to carpool, thereby increasing pollution levels.

- “I think it would add to the congestion on the freeways, plus the parallel surface streets. The freeways have taken some of the congestion off the surface streets, but now it’s going to go back to the surface streets if there are toll roads.” (Mesa)
- “It’s like it almost takes away the incentive of carpooling and having the HOV lane.” (Mesa)

A few participants voiced concerns about privacy issues related to billing, and the privacy issue resurfaced later when the group discussed highway funding options that included vehicle miles traveled (VMT) and installation of tracking devices.

- “I’d never drive on one. I’d never pay it but I know at least 30 percent of the people I work with would. And, hey, 30 percent of the people off of my road is good for me. So let people have it that want it. I’m never going to want it and I know that one of the initiatives was because of loss of privacy because people hate EZ-Pass. They don’t want to give out all that information about what they’re driving or having all of that kind of stuff.” (Tucson)
- “One thing I’ve learned about some of them, you pay a monthly fee and that just gives you a pass to access. Or is it one of these things where they mail you a bill, or you have to recharge your card, and every time it reads your sensor it takes some off? Because I wouldn’t trust it.” (Phoenix)

Participants also voiced concerns about toll violation enforcement, particularly the: (a) likely effectiveness of these efforts, given the perceived ineffectiveness of current policing efforts to monitor



and ticket drivers for HOV lane infractions, and (b) additional organizational or bureaucratic entities or layers that would need to be put into place.

- “I think my concern is how are they going to enforce that? Because they’re not even enforcing the HOV lanes.” (Phoenix west valley)
- “I think toll lanes would be next to impossible to enforce. How could you...you’re going to have to pay someone out there to patrol, it so it would become ineffective.” (Tucson)
- “I personally do not feel that tolled lanes work. Maybe because I’m used to the Northeast where they toll the whole road. You knew getting on there you were going to have to pay a toll. If you didn’t want to use the toll road, you didn’t have to. I think in the long run when you do the tolled lanes, you’re going to spend an excessive amount of money trying to monitor it, finding out who should be there; who shouldn’t be there, and it would turn into, I think, a nightmare which eventually they’re going to charge the people more money to try to correct.” (Phoenix)

### *General Support for Tolling*

Participants expressed the view that tolling provides drivers with choices and demonstrates value as measured by reduced levels of congestion, reductions in travel times, and an overall improved driver experience. They feel that the decision to use a toll road or tolled lane is strictly a matter of personal choice and presumes a non-tolled travel route alternative.

- “I tend to have less of a socialist view on this project if they could build a new lane with taxes to pay for it. If they have to convert what they currently have in the HOV lanes and make it a paid lane, depending on the speed of my egress and ingress, I may or may not pay for it, but that’s an option that I have, just like everybody in this room has an option as to what size vehicle you drive, what the cost of that vehicle is. Those people that purchase a \$70,000 vehicle pay much more in taxes than those people who drive beaters. It’s the economies of life. That’s the democracy that we live in. We make choices.” (Mesa)
- “I think it actually has a kind of effect for making it more equitable for everybody as long as they can still get free access to the freeway. There are still free lanes available. Otherwise, if they make the entire road a toll road, well that has a disproportionately hard effect on poor people. They can’t get anywhere unless they pay this toll. It’s an aggressive type of taxation. I’m looking at it from the other side, though, if you just have it as more of a convenience, as a “Hey, if you want to go a little faster, a little easier,” why not let that person who has got gazillions of dollars go through if they want to pay seven bucks for the lane at peak time and it’s worth it to them? It’s just one less car that’s in the general-purpose lanes, and the more you can at least deflect it off of there, it makes more sense. And not to mention you are separating traffic and you’re not going to get all this zigzagging back and forth across the lanes. It will help to make the flow a little more orderly.” (Phoenix west valley)

Participants also believed that tolling is a fair and equitable option because it is based on a user-fee principle that appropriately shifts the cost for highway repair and maintenance to those drivers who travel the roadways. Some participants likened it to a fair tax that provides highway users (taxpayers) with tangible benefits and, unlike other taxes, a recognized value in reduced travel times, less congested highways, and an improved driving experience (e.g., better maintained roads).

- “What I like about the idea of the toll road is that those people who are using the road are paying for it. If there are businesses or other commercial people who are utilizing that road more, they’re causing more of the deterioration. To me it seems fair that whoever uses the road would pay for it versus a gasoline tax for everybody where there are lots of people who don’t use the road.” (Tucson)
- “To me, that’s what a toll road is all about—the reason you have a toll road is because everyone doesn’t want to pay the toll. So, there are fewer people on it. I’ll pay the toll. I’d be happy to, but I’m getting a return from that as opposed to most of the other taxes I have to pay.” (Phoenix)
- “Time is money, particularly to me, and anything that I can do to increase my profitability, I’m going to do it. My perception is that if you put in a toll lane, and I can get from point A to point B and not spend an extra one and a half hours on the road each day, I’ll do it in a heartbeat.” (Mesa)

When discussing assurances needed by the public, these participants expressed views similar to those who opposed tolling regarding the need for transparency and accountability during the planning, design, implementation, and execution of the project. They also noted that the benefits of toll road or toll lane usage must be readily realized.

- “Number one, tolling can be an effective solution to help alleviate these traffic issues that we have, providing consumers with an additional choice, an equitable choice for that matter. Number two, whatever planning, designing, engineering that goes into this, it needs to be very well considered and thought out in all aspects as to how it affects the current scenario versus anything that’s proposed in the future. And third, it needs to be managed with a level of transparency—accountability of where those funds are spent and exactly how they’re allocated back into the system itself—that we’re not just paying for additional administrative overhead to run a tollway authority and taking away all the good the toll lanes or roads would provide.” (Phoenix west valley)
- “I’ve experienced toll roads in many states—California, back East. I think that they’re a great idea, but I do think that there needs to be accountability—absolutely. As a driver, I have the

option to get in the toll lane. I make the decision to pay the expense. I do want to see where the money's going." (Phoenix)

- "I think I represent the 35-and-under crowd, and that's the crowd that's okay with paying a little more for things....I think many people in my age group and under would be okay with it too. I don't mean to stereotype but the demographic that I represent is okay with spending money on things if they get something out of it." (Phoenix west valley)

#### *Implementation of Tolling on Existing Highway Infrastructure versus New Construction Projects*

As noted earlier, focus group participants drew a distinction between, and had differing views of, implementation of tolling on existing highway infrastructure and on new construction—with no prompting from the discussion leader about making a distinction. Their comments addressed tolled lanes—both as conversions from HOV lanes and as newly constructed lanes—as well as full toll roads, and frequently referenced the highway's initial funding source as a relevant factor.

- "Not necessarily even new versus old construction, but where the funding had originally come from, how were those roads originally built? Were they built using DOT funds? Were they built using state funds? Because if they are typically federally or even state funded, that's a common good. To me, that's our tax money that went into that. That was part of our general funds, depending on the county, depending on the city." (Mesa)

#### *Opposition to Repurposing Lanes as Tolled Lanes*

Participants who did not favor converting lanes on an existing highway to tolled lanes (e.g., from HOV or general-purpose lanes) expressed the view that these conversions would have no real benefit for the drivers using the remaining general use lanes and that current capacity and lane configurations do not support an easy-to-use and safe driving experience. They also expressed concerns about charging a fee to use a lane or highway that has been paid for through taxes and other public funding mechanisms, such as bonds. For many of these participants, the preferred option is to construct a tolled lane using separate funding or financing or to forego adding lanes in favor of converting to a toll road.

- "You can't take a lane off the existing highway and make it a toll lane." (Prescott Valley)
- "If they just made the HOV lane a toll lane but didn't add a specific extra lane, it's like they still have the same number of lanes but all of a sudden they're charging for one; it doesn't improve the situation. So if there were extra lanes, like a dedicated toll way, I think I would be fine with that because then people could choose to have an express route and then everyone else could

be stuck in the same three, four lanes, or whatever. But as far as maintaining the same current road situation, I think that would be a problem.” (Phoenix)

### *Support for Construction of Toll Roads versus Conversion of Existing Highways*

Participants who favored construction of toll roads over conversion of existing highways to toll roads, as well as over efforts to integrate tolled lanes, voiced the opinion that construction would: (a) provide opportunities to build bypass or reliever routes, including alternate truck-only routes to ease congestion while ensuring commuters continued access to non-tolled roadway alternatives; (b) mitigate concerns about double taxation; (c) provide a better solution in areas where widening of existing highways to construct tolled lanes is not feasible; and (d) enable drivers to realize reductions in travel times.

- “When I say toll road, for example, if they built an I-10 reliever and that reliever was built to the south and it was the same thing, I would not necessarily object to it being a toll road, as long as the existing I-10 was still free and you still had an alternative. If you built a parallel toll road, it would be kind of the same thing as the lanes in that case. I say that because I-10 is so bad in the west valley that I have to avoid it. So if they built a reliever and they said it’s a toll road, again, sign me up. I would be happy to do that and I would be one less car on 10, which would then theoretically make it better for those folks that either can’t afford or just don’t want to pay that money to travel on the new road.” (Phoenix west valley)
- “So if you did a toll road, and if it could support itself, and make it efficient, and have limited access so you can bypass Tucson—where all your truckers have to go around Tucson and bypass the inner city and then they exit up there at Tangerine and get back on I-10 at 82—that would be efficient.” (Tucson)
- “I definitely agree that using the existing lanes isn’t really going to solve anything because the roads are already just so congested as it is. It’s not going to help at all. I agree that if it’s something that we’re already paying taxes on, it’s kind of a little bit hard to swallow that. But at the same time, I would definitely be willing to pay for a toll road if it means less time on the road, as well as my husband. He’s lived – we’ve both lived in California, and we both paid monthly fees for the transponders to be able to get to work faster. We did it for years. So it’s definitely something we would be willing to do.” (Mesa)

To better understand and compare public opinion regarding a proposal to toll existing highways and a proposal to toll new construction, participants were asked to complete a brief worksheet at the conclusion of the focus group. The worksheet asked, “Would you support or oppose putting tolls on Arizona highways, either for all lanes on a road—that is, toll roads—or for specific lanes, tolled lanes?” The question requested two responses, one regarding tolling implemented on “existing highways” and the other regarding tolling implemented on “new construction.” Among the 66 participants who

answered this question, 39 (59 percent) opposed, 15 (23 percent) supported, and 12 participants (18 percent) were undecided about implementing tolling on existing highways. Regarding implementation of tolling on new construction, 8 participants (12 percent) opposed, 45 (68 percent) supported, and 13 participants (20 percent) were undecided.

### **Public-Private Partnerships (P3s)**

As noted earlier, participants introduced the topic of public-private partnerships (P3s) into the discussion about tolling with virtually no prompting from the moderator and expressed a range of views regarding the viability of using P3s for financing, operating, and maintaining tolling facilities.

Several participants made particularly interesting comments regarding the use of P3s to finance highway tolling projects:

- “This could be a self-funded project. If you look at the history of tolls, they pay for themselves very, very quickly. So what I’m saying is there are private people, if they want to get in, it’s a profit-making deal. So you shouldn’t have to take more money from the public. They will try and they will probably succeed because this is what happens, but that money is payback. It is an investment, but it comes back big time. Over the years, I know Connecticut and New York are still doing great. Texas is going gangbusters on tolls.” (Mesa)
- “Is there any of these toll roads that would be maintained, and run, and put down by a private company versus the government, where your toll is really going to that company to build the road, maintain the road – you know, and it’s a nongovernment entity? Is that – is there any kind of a distinction there?” (Mesa)
- “Then you’re going away from the double taxation thing, because you know that the money that you’re paying goes to the company that’s maintaining that road and built it. That’s how you would expect the company to collect the funds to build the road, and also to maintain the road. And, of course, if it’s a company they have to make some profit versus, say, the City of Phoenix doing a parallel road on one of the freeways and charging a premium to take that road, like paying to take the HOV lane, just to get those few people a benefit in return for paying some extra money for whatever they’re going to use the money for. So there’s a difference. I would have a lot harder time doing the double taxing than paying for a private company to build a private road, privately maintained. Say you’re building a 303 around South Mountain, that’s the only way around. So it would be nice if it was a public road; we know our taxes already went to pay for that, and any time I drive over to the racetrack or something that’s over there, I don’t have to pay a fee to get on it. So I guess I’m talking from both sides of my mouth here, but it would be easier to accept versus a private company taking over something that has already been paid for by taxpayer dollars and we still have to pay for the road.” (Phoenix)

Participants who were favorable or neutral in their view of P3s cited potential benefits, including: (a) non-use of taxpayer funds to finance construction; (b) efficiencies realized throughout all phases of the construction project; (c) technical expertise and specialization of contractors regarding facility management; and (d) timely delivery of the project. A number of these participants also identified assurances needed by the public, including the reinvestment of toll revenues into the road (e.g., for road maintenance and facilities management).

- “They [companies] are better at getting the job done.” (Phoenix)
- “The airport makes a lot of profit, but that money cannot go anywhere else except within the airport. Tolling is the same; no matter what, it has to stay in the road to pay the employees, keep the road improved.” (Phoenix)
- “We know that there’s a reason why sometimes they privatize some governmental services. Because sometimes it’s supposed to run better. And some – not all the time – run more efficiently. So if I don’t know the details, I’m not going to make a judgment. It’s not necessarily the money is going for profit versus the road. I don’t know for sure if it’s going to be that way, so I can’t make a judgment.” (Phoenix)

Participants who were opposed to the use of P3s raised concerns about: (a) ownership of the tolling facility and the perceived carte blanche rights of companies to raise tolls and decide how to use toll revenues; (b) the potential for cost cutting by companies to maximize profits, resulting in delivery of an inferior product or service; (c) the contract award process and the possibility that some companies have political influence; and (d) the perceived lack of need for P3s—i.e., ADOT, rather than private companies, should build and manage tolling facilities.

#### *Ownership of Facility*

- “What I do know about toll roads is that there’s a difference between public and private toll roads. For me, a negative impact would be having any private company own that road. I would be completely neutral or for toll roads run by the state, where the funding only goes to that road.” (Phoenix)
- “The Indiana toll road is public—or owned by a private company, who is profiting from a 99-year lease from it. And they’re allowed to increase the tolls and it’s not run by the state and that money goes to somebody.” (Phoenix)

#### *Profit Motivation*

- “If they’re a company they have to make a profit, and that means they’re going to do the bare minimum to maintain it. What they do is going to be the bare minimum as far as quality, cost, everything they can do to make profits. They’re not going to use the best of everything because that’s not to their advantage.” (Mesa)

### *Possible Political Influence*

- “Seems like a chance for a lot of political hanky-panky and dirty dealing. Favored business people will get contracts and they'll put money in the pockets of politicians.” (Queen Creek)
- “Having the toll go to a for-profit private enterprise—I would be completely against it and would be against it every time it came through.” Another participant responded, “Just look at the mess the prisons are in.” (Phoenix)

### *Perceived Lack of Need for P3s*

- “I don't think we have an issue in Arizona where projects are being built over budget and things like that. The contractors that are building roads and the light rail, they've actually done it for the most part on time and under budget. It's just the fact that we don't have funding, and that's holding back projects from moving forward. But when funding is identified and then they actually start building stuff, it gets built on time and on budget. So, from the perspective of building new roads, I don't think we need to have a private company to build a road and then collect a toll on it. I think ADOT should be able to collect a toll and manage all the revenue, but then sub-contract some of these projects individually. Because if you sign a 99-year lease, like someone mentioned, you're just giving away that revenue stream for 100 years. But I think having private companies involved with bits and pieces of it is okay.” (Phoenix)

### **Assurances Needed by the Public**

Participants were asked to identify the assurances that they would need to motivate their use of a tolled facility, whether a toll road or tolled lane. The purpose of this discussion was to better understand driver expectations regarding the demonstrated value and advantages (i.e., the return for their investment in having paid the toll); overall quality of their driving experience; and the administrative and operational components of a tolling project that would likely engender a more favorable view of tolling and instill public confidence in the system. Participants, including those who appeared resolute in their opposition to tolling, were asked to help provide insight into factors and conditions that would be critical to advancing public discussion about tolling in Arizona. This discussion also facilitated identification of public information needs that should be addressed when seeking to positively influence general impressions of tolling and opinions regarding specific tolling projects or proposed endeavors. When asked about assurances, participants identified numerous top-of-mind concerns and considerations related to the overall objectives of tolling and the operational aspects of project implementation.

### *Key Findings*

The public needs to understand the vision for tolling in Arizona and needs information regarding the scope and cost of the project(s); the cost justification, including anticipated revenues in relation to expenditures to build, operate, and maintain the facility; and how toll revenues will be used.

- “I don’t know if that toll road would only be for a certain stretch to be maintained, or the entire freeway system in the Valley, or something like that. I don’t know how that would go, but it would have to be very, very, very specific in order for me to buy into something like that. It’s just we’ve been burned.” (Mesa)
- “If you’re going to build a road to bypass apocalyptic traffic downtown, and you’re going to fund that with a toll, I don’t have a big issue with that if we’re talking about a government-funded road. If it goes away when the road is done, not if it keeps going up every year and then they just turn that money into the blank checks that the politicians are using to fund whatever else, then it turns into this revenue stream. And they don’t need another revenue stream....” (Phoenix)
- “I think my concern would just be, we all know some of the costs that come into play as a taxpayer. If there was the cost of building a new toll system—whether it be additional lanes—the collection devices, the monitoring, the funding, the maintenance, the upkeep, is that really going to be enough of a financial gain to justify the expense?” (Prescott Valley)
- “It is my opinion that toll roads won’t fly in Arizona. If the fastest way to get from here to Phoenix was on a safe, reliable, well-maintained toll road, I’d get on the toll road. But I’m trying to take more of a global perspective and I don’t see enough funding coming from tolling to generate the revenue that it would take to construct a tolled highway. The tolled revenue is just not going to be enough. The revenue source has to come from somewhere else.” (Tucson)

Tolling should serve as a user-choice option, with drivers having access to free travel route alternatives.

- “If they are going to toll roads, it has to be made pretty clear what is the public’s alternative to not using those roads.” (Phoenix)
- “The other thing that bothered me is that there’s choice. That if there’s tolling, that there’s also not tolling.” (Greater Tucson)

Tolling should offer demonstrated benefit and advantage to drivers as measured by less congestion, improved traffic flow, reduction in travel times, and faster travel speeds.

- “Decreased travel time and decreased traffic congestion.” (Phoenix)
- “Less traffic, no bumper-to-bumper traffic, and that’s because it’s a higher speed. Most conversations I’ve heard about toll lanes is that you pay the money to be able to have specific traffic on those lanes, and basically it’s a higher speed than what the normal speed is. Say it’s 70 over here on these four lanes, it could be 80 here.” (Queen Creek)



The location of tolling facilities should provide drivers a direct benefit and advantage in travel routes.

- “For me it would depend on where it’s located. So between here and Phoenix? I may consider it.” (Tucson)
- “They need speed and a useful place that a lot of people will see the benefit of getting from point A to point B in a speedy manner. If it is the same route, or if it takes longer, or there aren’t many (people) in that location that need to get from point A to point B, some people are going to say, ‘Why are you building that road when you have ten cars on it?’” (Phoenix)

Tolling facilities should incorporate design features and technology that provide drivers a safe driving experience and address their concerns regarding lane changes and entering and exiting the highway or tolled lane.

- “If you have an exit every mile, it’s not doing any good. You’ve got an exit every 2, 3 or 4 miles at least, because otherwise you’re just repeating what you already have. You don’t want to be worrying about people coming on and coming off. Limit the access—like it’s 91st, it’s 75th, it’s 43rd. I don’t want to worry I’ve got time to get over, and you’ve got time to get on.” (Phoenix west valley)
- “(As an engineer) I would say that when it’s designed, those engineers need to start with a clean sheet of paper and not try to take what we have and try to squeeze these new lanes in there and sacrifice what we already have. With some freeways it may mean that you’re working on both sides, both the interior and the exterior. You’re going to have to widen some. But not only are you getting the bang for the buck, which we were talking about the funding for, but also that consideration for the safety factor, that if it’s going to be that far left lane, they’re not going to have to cut across four other lanes to get on and off. There would be the few exits, and always on that left side. Because there’s always going to be more traffic. What’s it going to be 50 years from now?” (Phoenix west valley)

Tolling facilities should employ electronic tolling systems that use state-of-the-art technology, such as connectivity with personal navigation devices (PNDs), and do not require drivers to slow down.

- “First of all, electronic tolling no matter what. No slowdowns, booths, stops, cards, license plate things, mail stuff—forget all that. But transponder-based, easy, limited access, restricted on and off of those lanes. And maybe some dedicated exits for it would be good, and variable pricing in the sense that you don’t have to worry about it being just as backed up as the regular roads.” (Phoenix west valley)
- “The expectation that I have, I work for Garmin now. I want my PND to be able to show me what the toll is. I need predictability in the PND that’s doing the route on the car, so you can then

choose your route to say which way you want to go, whether that changes the toll route, whether it changes the amount of time that is displayed for the route, all that sort of stuff. We need to have predictability for that, so a device that's in the car all by itself with no external communication, other than radio to be able to pick up traffic, can accurately tell you what those maneuvers are going to be." (Mesa)

Tolling facilities should provide safety features such as emergency pull-off areas and expedient removal of disabled vehicles.

- "Part of the safety issue would be access if you have a car issue or there's a problem or whatever, you have room to pull off so the people coming up behind you and driving very fast are not going to run into you." (Queen Creek)
- "I have two things that I think about semis (semi-trailer trucks). They damage roads and wear them out a lot more because of the tire situation, they have those tire treads and to me that's part of the safety feature. The other thing about tolled roads, if they really would be that well maintained in terms of the pavement quality.... somehow be of higher quality than what might be found on the general freeway.... that is safer during a rainstorm, safer overall for our weather conditions." (Greater Tucson)

Tolling facilities should be designed to address driver concerns regarding truck traffic (e.g., truck-only travel lanes, alternate or bypass routes for trucks).

- "I think it would be nice if semis weren't allowed on it. I think people would be more prone to pay for it. It would be faster, safer." (Greater Tucson)
- "The other thing is, a lot of the roads back east, they don't let the tractor-trailers travel on them, or they give them a specific lane to travel in. Out here, they can travel just about anywhere they want to. That's what tears up the roads—the extra weight that you're putting on them." (Phoenix)

Tolling facilities must have mechanisms in place to enforce compliance and penalties for violations.

- "It's got to feel as though the only people who are using it are the ones paying for it." (Phoenix)

Tolling must offer drivers an overall better driving experience.

- “Have to create a superior service; it can’t be the same freeway we have always been on; it has to be a faster way for you to get around. It has to be a benefit. Drivers want something better than what is already provided for free.” (Phoenix)
- “There must be an easy way to pay, and there must be good customer service if there are issues with paying a toll. And there must be transparency in how the money is spent, that it’s spent specifically for that road.” (Tucson)

The public expects fiscal oversight, accountability, and transparency in toll revenue collection and use—how toll revenues are appropriated and used. These issues were discussed with regard to tolling facilities operated by the state as well as by private entities.

- “I think there should be some regulatory oversight saying that they should have to meet the same standards that the state highway has to meet, the same regulations, and those types of things. I’d want inspections, I’d want all the things that the state has to go through. So when the legislature asks for a report on the state of our highways, there’s an auditor general’s office that does that. There’s all these different entities that have to report on what the state has done with their money. I think, that the same standards need to be held for the private entity.” (Phoenix)
- “First word that springs to mind is accountability. Who’s watching over the money that is collected with tolls? I had experience with toll roads in Illinois, driving all around the Chicago metropolitan area, and the thing that springs to mind is ‘expensive.’ You have to budget even more money, besides gas, besides car maintenance, and it just seems like it’s an unneeded expense unless I could see clearly where the money’s going and what it was spent on.” (Phoenix)
- “Where is the money going? Are our taxes paying for that road already, and this money is going somewhere else—they always tout the police, fire, and schools, to sell something, and then it goes somewhere else. So, to me, that would be more important than the actual road itself because, in general, roads are pretty good no matter where you go.” (Mesa)

Participants in each group repeatedly expressed the view that revenues collected from tolls should be used for roads and not diverted for other uses. To better understand what distinctions the public might make regarding the appropriate use of toll revenues, two questions on this topic were included in the worksheet distributed to participants at the conclusion of each session: “Would you support or oppose putting tolls on Arizona highways if the money collected was used for repairs to the state’s highways, roads, and bridges?” and “Would you support or oppose putting tolls on Arizona highways if the money collected was used to build new highways?” A total of 75 participants answered each question.

Regarding the use of toll revenue for repairs, 43 participants (57 percent) expressed support, while 52 participants (69 percent) supported the use of toll revenues to build new highways.

- “For me, it’s where that money pool is dedicated to. I want to be assured that 100 percent or 95 percent of all tolls collected get put into that road or fund that road in some way, not to a company. If it is a public/private, they’re giving us essentially a loan so they should get something. But I would want to know that a very high percentage of all that money goes to the road.” (Phoenix)
- “I would expect that the money is to go into the roads, and I don’t expect it to go somewhere else.” (Mesa)
- “If the road is paid for, don’t take that money and start, ‘Okay we can beat this cash cow and spread that money elsewhere.’ It’s for the road. It’s for the maintenance of the road and that’s about it.” (Phoenix west valley)

Toll rates should be perceived as fair. Tolling facility rates should be published, with information regarding rate schedules, guidelines governing toll rate increases, and programs in place for economically disadvantaged populations.

- “For me, it’s about the cost. How much is this going to impact me financially? So is it small? Is it large? That’s going to determine if I’m going to use it or not.” (Mesa)
- “You know what you’re going to get charged and an authority would publish the rates. It’s not going to be a surprise like it’s 8 bucks today and it was only \$4 yesterday. Or if it’s volumetric and it’s based on that, to know at least what the upper and lower limits of that are.” (west valley)
- “For people who are lower income or can’t afford the tolls or it would be some sort of hardship for them....with the bus system we have low income bus passes and that kind of thing....I would think there would have to be something in place if there was no other option to get back and forth to somewhere.” (Tucson)

The impact of a tolling facility should be perceived by the public as minimal—an inconvenience to be tolerated during the construction phase of the project—and not a major disruptive force impacting adjacent communities and neighborhoods.

- “First of all, where are you going to put it? You can’t use existing roads. I don’t know how they can widen I-17 any more than it is. But let’s assume that can be done—no tax dollars are to be used; they fund strictly by tolls; at least the tolls would maintain that road perfectly. But new

roads, where you are going to put it up going through an existing neighborhood, that would be really hard to sell. The public has to feel like there is absolutely no impact on them at all, except for having the inconvenience of an actual construction itself.” (Phoenix)

### **Knowledge about Highway Transportation Funding**

The discussion groups explored participants’ knowledge regarding the ways in which highway transportation projects are funded in Arizona and their perceptions of the general public’s level of knowledge in this area. A poll of the participants asked them to assess their own level of knowledge about transportation funding in Arizona, rating it as either knowledgeable, with a firm grasp of the topic; somewhat knowledgeable; or having little knowledge about this topic. Slightly less than half the participants (47 percent, or 36 individuals) believed they were somewhat knowledgeable, a third (33 percent, or 25 participants) reported having little knowledge, and one-fifth (20 percent, or 15 participants) reported having a solid understanding of transportation funding in Arizona. Participants were also asked to discuss their views on how highway maintenance, repair, preservation, and construction projects should be funded. The most frequently cited funding sources were fuel tax, sales tax, vehicle registration–related fees, and bonds. While participants did not reference specific federal funding sources such as the Federal-Aid Highway Program (FAHP), which is the primary source of funding for construction of Arizona highways, roads, and streets, they did appear to be aware that highway projects are paid for with federal and state highway funds collected through fuel and other tax revenues. A Several participants also identified voter-approved supplemental tax revenues in the Phoenix and Tucson metropolitan areas as another funding source for highway projects.

#### *Fuel Tax Revenues*

All participants stated that they were aware that the fuel tax (i.e., the per-gallon tax on gasoline and diesel fuel) was used to support highway transportation funding, although only a handful of participants came close to stating the correct amount of the tax. Participants were then asked about their general support or opposition to using the fuel tax to fund highway projects. Those who generally supported the use of the fuel tax did so because it is a user-fee tax, with several commenting on the need to raise or adjust it to keep pace with inflation. One participant, however, stated that if he were given a choice of paying a toll or a higher fuel tax, he would opt to pay the toll.

- “The gasoline tax, and there’s a diesel tax, too....It seems to me that they haven’t raised those in 10, 20 years. It’s always been, whatever it is now, I don’t know, 15, 18, 20 cents a gallon. So those costs haven’t gone up as much as the general cost of living. People always gripe about whether they should raise the gas tax again, but I think the fuel tax is the way to go.” (Prescott Valley)
- “I don’t know if most people know that their gas tax goes towards infrastructure. So to me the question is, would I be willing to pay a toll on a road that’s paying for itself, or pay 10 to 20 percent or more in gas tax, to cover the roads? And the answer would be I’d rather pay a toll.” (Phoenix)

When asked whether they thought that use of the fuel tax was a viable and sustainable option to support highway transportation funding projects, a significant majority of participants noted the ongoing changes that are posing serious threats to a reliance on the fuel tax, specifically the growing number of fuel-efficient vehicles, vehicles using alternate fuel technologies, and vehicles that do not need to purchase fuel (i.e., all-electric vehicles). Most participants agreed that other funding mechanisms need to be investigated. They also agreed that if tolling were implemented, electric and hybrid vehicles should not be exempt from paying tolls.

- “I think the gas tax is at the end of its life expectancy. We need to get rid of the gas tax and get our funding from something else.” (Phoenix)
- “I drive a hybrid so I drive a lot of miles and use less gas. For the future, it’s [fuel tax] not going to be viable to fund our roads. Some people have been looking at miles per driven, a tax on that—I don’t know how that would be implemented. That, or increasing registration fees for vehicles, and higher registration fees for commercial vehicles that damage the roads more, those are things I can think of.” (Tucson)
- “As good as it is to have alternative fuel vehicles, if you have an electric car you’re not paying this, right? But those folks should have to pay their fair share, so I would not be in favor of—if a toll road goes in—an alternative fuel vehicle, or an electric vehicle, getting a free ride or a reduced rate.” (Phoenix west valley)

Participants also identified the following tools and strategies as potential funding sources for highway projects. However, they were apparently unaware that one of these suggested sources—state lottery revenues—is designated by law to be used only to support public transportation projects in Maricopa County; these revenues cannot be used for highway projects.

- Increases in existing vehicle-related taxes, such as vehicle registration fees or driver’s license fees, that contribute to highway transportation funding;
- Vehicle miles traveled (VMT) fee
- Rental car fees similar in concept to a hotel bed tax
- New sales tax, similar to that created by Proposition 400, or county transportation taxes
- Funding derived from other sources, such as tax on alcohol and lottery revenues
- Efforts to obtain more funding at the federal level (e.g., federal aid and stimulus money, grants)
- Tolling

For each of the above strategies, participants expressed a range of views. For example, some participants objected to the idea of increasing vehicle registration fees, stating their belief that fees in Arizona are extremely high and that they would prefer other options that were user-based (e.g., gasoline tax, tolling). Regarding a VMT fee, several participants said they would need to better understand the implementation and to what extent it would involve GPS tracking—an aspect that engenders concerns about personal privacy. In discussing sales tax increases and the potential creation of a tax specifically designed to support highway transportation funding through a ballot proposition, participants also expressed conflicting viewpoints.

On the topic of needed information, several participants commented on the need to inform and educate the public regarding the appropriation of funding for transportation projects and on the need to hold elected officials accountable for ensuring that funds are used for their intended purpose.

- “I think the public perception is that the fuel tax is collected, and it goes into a slush fund with no accountability. If it were communicated that a portion of the existing motor vehicle fees, whether through the vehicle license tax or something else, is dedicated towards infrastructure—either new construction, or repair— I think it might be more palatable to the public because everybody sees the roads crumbling; so they would know there’s a dedicated fund that is slated for that. I think that might come across a little bit more welcoming. Right now, by raising the (fuel) tax, it gets frustrating because you don’t know where that’s going to.” (Prescott Valley)

### **Need to Explore Options Other Than Tolling**

Regardless of whether they supported or opposed tolling, participants expressed the need for fiscal responsibility and accountability in transportation funding and stated that other options besides tolling should be explored to address highway funding issues and transportation options for the public. Specific areas of concern were noted, as follows:

- Appropriation, management, and use of funds that are currently available to fund highway transportation projects, including concerns and questions that reflected some distrust of public officials
  - “In general, I have a problem with toll roads only because I see it as a failure-free movement that is paid for with taxes and other things, the gas tax and such. I just feel there’s a national problem with the funding of highways, and it’s unfortunate that because we’re a growing state we have to come up with some alternative ways to fund them. I don’t know what the way to do that is, but I think there would be some hardships on people and it would go into the cost of business and other things for people. I’m from back East, I’ve experienced the use of toll roads. They’ve had a lot of corruption in the toll for Massachusetts. And they’ve gotten rid of some of them because people got so angry with paying the tolls that they got rid of the toll once the original bonds were paid on those roads. I think people would be more likely to use a

toll road if it provided an alternative faster route, because time is money for people. But again there is that issue of a separate road for people who have more money.” (Tucson)

- “Where’s all the general fund money going that was supposed to be for maintaining these roads in the first place? What have you done that you can’t maintain these roads? It’s poor economics and I start questioning my leaders as far as how they’re spending our money too.” (Mesa)
- “I would be against it, and I think Arizona wastes a tremendous amount of money as it is on their roadway system. Just the way they light the freeway system, it’s vastly overlit. In California they don’t light their freeways at all except for on-ramps. Most people that have been there don’t even know that. And it shows you how unneeded it is. It’s just a total waste of money. So before we start talking about toll roads and stuff like that, I think Arizona should be a lot more efficient about how they spend money now.” (Queen Creek)
- Need for a multi-pronged approach to addressing congestion
  - “I don’t think we can use one method of travel to solve everybody’s transportation problem. It’s got to be a multiple attack. If you build a highway or freeway or interstate that’s 48 lanes wide (laughter), people are going come drive on it and it’s going to be clogged again. If ADOT, or whoever, gets toll roads in place and is successful in building it, the only thing I’d be concerned about is if it’s going to be really a good system. How are we going to keep it from getting congested like that? Does that mean that they build more toll roads and have those get congested too? In other words, all of a sudden every road in the valley is a toll road and we still have the congestion.” (Phoenix)
- Failures in the current system, including non-enforcement of laws regarding motor vehicle use and driver infractions, which lead to skepticism regarding enforcement of toll rules violations.
- Need for the state to be cognizant of the potential impact that tolling could have on tourism and consider other options
  - “Because Arizona is heavily dependent on tourism, you’re going to get people that come visit that maybe will not understand the system, and there may be infractions or confusion, and ultimately there might be a backlash of people that may not want to visit. If it’s a fund-collecting issue, maybe raising that in a different way that isn’t as visible, maybe an increase in the vehicle license tax, a modest increase, might accomplish the same thing and not damage the tourism portion of what Arizona depends on. It could also be something that could be put into the rental agencies and collected through the rental cars.” (Prescott Valley)



## Participant Suggestions on Meeting Public Information Needs

Throughout these discussions, participants expressed the belief that the general public is not knowledgeable about the funding of Arizona’s highway transportation projects. They noted that information must be provided to the public on this subject as well as on the host of topics related to tolling, and that ADOT and other transportation agencies need to proactively anticipate and address public information needs. Feedback about drivers’ prior experiences with tolling and toll collection methods and the assurances or conditions that need to be in place to advance public receptivity to tolling provides insights into these information needs, as does the feedback regarding highway funding. Following are some of the key points raised regarding information needed by the public:

- Inform and educate the public about highway transportation funding—sources; issues impacting availability of funds to repair, maintain, preserve, and construct highways; and current and future challenges. Participants expressed a need to have information presented in simple language and in a context that they can relate to, such as likening this to one’s personal budget.
  - “I think one thing we just talked about is that ADOT hasn’t gotten as much in terms of revenue as they would’ve expected, because of the recession. So the revenues are down. And one thing that should be considered is the fact that the gas tax, which is the majority of revenue for projects, maintenance, and everything, hasn’t been increased for a long time. I think that is the simplest way to drive home the point. There’s the gas tax in 1993, here’s the gas tax today, it’s the same. Does your car that you buy cost the same, do the groceries you buy cost the same? No. I think it’s a pretty simple to understand issue for anybody that prices do go up over time, and this is one flat tax that has not gone up with the cost of gasoline.” (Phoenix)
  - “And explaining here’s where we foresee things being in 10, 20, 30 years, and this is what is needed to move these people and products efficiently. And this is what it costs. Just doing that and saying, how do we raise the money to do this? And here are some options, and these are the pros and cons for each of those options.” (Phoenix)
  - “I think just communication that it’s apparent that infrastructure is falling behind and needs to be funded, and vehicle license tax is the large bucket when it comes to registration. And it can be communicated that X amount of dollars, based on the value of the vehicle or a flat rate, will be dedicated towards infrastructure. I think that over time people won’t argue about that because then they know that their monies are going towards something that they can benefit from.” (Prescott Valley)
- Inform and educate the public on how funds earmarked for transportation are appropriated and spent, and do so in such a manner that it gives the public a big-picture overview of the process and key decisions.
  - “How is transportation funded? How have funds been used? What is the current status? Is it really more money needed or an allocation issue?” (Phoenix)

- “I don’t know how the money’s dispersed, but in Phoenix they’re always working on the freeways. Like the 101, they’re expanding it all the time, the exits are getting bigger. Tucson, they don’t do any of that. It’s not like our exits, our on-ramps, our off-ramps are getting bigger and improved like in Phoenix. Whatever freeway you’re on, they’re working on it, they’re making it better. So I don’t know how the money’s dispersed.” (Tucson)
- “I don’t know how much is given to the highway, and I don’t know whether it’s being used well or not. I just know what the media tells me, right? And I don’t know enough about this topic to really know if the media is giving me enough information or not. But I do know that the roads are congested, and that when I moved here 22 years ago there were less than half a million in people in greater Tucson, and there are now more than a million. And I don’t think the roads have kept up with that.” (Greater Tucson)
- “I know some people were saying we need more money, more taxes. I can’t say that for sure, because maybe it hasn’t been handled efficiently—the money, the taxes that the governmental agencies have collected. So, I can’t say for sure that I wouldn’t agree with increasing the tax unless I had more information as far as how is this money that they already collected, how is it handled, why do we need more...?” (Phoenix)
- Advocate for and sell the benefits of a good statewide transportation system—what it means to the state, local economies, and the public—and communicate this message to the public.
  - “Letting people know that everybody, whether you use a certain road or not, everybody benefits from having good transportation. Everything goes across the roads. Goods and services, people, food—we need that infrastructure to be efficient and safe. Even if you don’t drive a particular road, even if you don’t drive at all, we all need collectively for those things to be proper. We Americans don’t understand a lot of those kinds of issues in a collective sense very well.” (Phoenix)

When discussing tolling, participants identified numerous assurances that speak directly to information needs, including “making the case” for tolling in Arizona, the core assumptions or ideology of tolling (e.g., choice), the benefits and advantages, and the administrative and operational aspects of implementation. As noted earlier, few participants immediately associated tolling with a congestion relief strategy; rather, it was viewed by the majority as a revenue-generating tool. One of the key takeaways from these discussions is that the public wants candid, straightforward, and direct discussion regarding tolling—call it what it is, present the details necessary to aid informed decision making, and don’t shy away from hearing the good, the bad, and the ugly regarding public opinion and attitudes. This includes providing information specific to:

- The overall vision or plan as well as the specifics regarding proposed projects and the process that will guide public involvement

- “What's the distance of the roads, as far as what the toll road or tolled lanes would be? Is it a 20-mile or is it a 30-mile or 40 miles? Where is it going to take place? Is it a straight lane or is it going to intersect with the other freeways—what are you going to get for the money that you're going to pay to get on these tolled lanes?” (Phoenix)
- “Who's going to be able to use that tolled lane that you're talking about? Is it anyone, or is it just a selected size of car, or how many people, like an HOV or something like that? Are there going to be large trucks in there? Or, is there going to be just anybody that wants to purchase? I'm just saying that you're not being specific as to what we're getting into” (Queen Creek)
- Cost, cost justification, and funding
  - “So, I'd say where, how much, and how much of a bureaucracy you're going to need to implement this plan and maintain it?” (west valley)
  - “What it would cost the state. You know, is it going to be cost effective in the long run, and what's the initial cost going to be. Would it mean my taxes are going up, or, you know, where is the money coming from?” (Queen Creek)
- Other states' experiences with tolling and proof of effectiveness regarding the advantages provided to drivers and improvements to state highway transportation systems, including expansion and new construction projects
  - “I'd have to say, 'What states are doing what things? What's working, what's not? How long have they been doing it? How much do we need it in Arizona? How do we know what we need in Arizona? What's going on with the population? And about 20 other things. But I don't know the answers to any of those, so to give an opinion would be kind of silly for me.’” (Queen Creek)
- Public-private partnerships (P3) financing options (e.g., proposed use in Arizona; pros, cons, and myths; application in other states that have tolling; public interest safeguards in contract selection and award process, implementation and oversight)
- Current or future studies that ADOT will be conducting on the topic of tolling in Arizona and other options under consideration to address current and anticipated gaps in transportation funding
- Core principles that will guide discussion regarding tolling in Arizona (e.g., assurances regarding alternative, free road and lane travel options; provisions to address concerns regarding accessibility by different segments of the population; use of variable pricing to assure congestion relief during peak travel times).

Participants also provided their input regarding steps that ADOT should take to help educate and communicate with the public regarding tolling. Suggestions included use of news media outlets, consumer-directed mailings, and electronic communications through online and social media outlets; use of existing ADOT channels; and development of educational programs to prepare drivers for and educate them about implementation (e.g., how to use, payment methods).

- Communication tools should include use of mass media such as newspapers, radio and television, and direct mail, and implementation of an aggressive education program.
  - “Educate the public about the need to increase funding for a project, for one thing. Tell the public what the problems are through newspaper articles, radio, TV, or mailing. (Prescott Valley)
  - “We have a very big population of transplants coming and going—half-year residents. We need to have a very robust education system and PSAs, or whatever it might be, so they know, ‘Hey, yeah, we’re now in a toll area,’ or this is what to expect. Because if you don’t know what to expect, you’re going to get lots of tickets; you’re going to be caught off-guard, and that’s not a good thing.” (Mesa)
- Educate drivers in order to influence driving behaviors.
  - “I’ve seen it back East and it works fine, but they also educate the public. They invite people in for classes, “If you want to come for this, this is what we’re going to have, this new highway.” They don’t do that here in Arizona.” (Phoenix)

## CHAPTER 6. SUMMARY OF FINDINGS

This chapter consolidates the findings from the research study components—literature review, interviews with DOT and MPO representatives in states that have successfully implemented tolling projects, interviews with key Arizona influencers, and focus group discussions with members of the Arizona general public— to present issues and topics of particular importance to Arizonans in considering the value and benefits of tolling and priced managed lanes.

A primary goal of this research was to identify the factors that influence or are associated with public acceptance or rejection of priced managed lanes and tolling. As seen in Figure 3 below, these distinct but interrelated factors are supported by communications and public involvement strategies to advance public discussion of the tolling option and enable informed decision-making.



**Figure 3. Factors Influencing Public Opinion on Tolling**

The findings specific to each factor are presented in Table 5 and include a summary of the overall opportunities derived from discussions with representatives of other transportation agencies in-state and out-of-state as well as a representative sample of the Arizona drivers. Details are provided in previous chapters of this report.

Overall, the information gathered in this report provides a framework for examining the deliberative thought process engaged in by the public on the subject of tolling. It shows the progression from public awareness and knowledge about tolling and transportation funding (i.e., problem recognition), and moves through consideration of tolling (i.e., inquiry and exploration of feasibility) and thoughtful deliberation as information and assurances are provided, to likely support in the use of tolled facilities.

The public believes that they will benefit from the following:

- Ensuring transparency in its consideration of tolling
- Actively educating the public about the economic benefits of a statewide transportation system that effectively connects people, goods, and services
- Clearly communicating straightforward, unbiased information on the current and anticipated state of transportation funding
- Acknowledging regional differences in transportation system needs and priorities
- Keeping the public informed about planning and implementation efforts
- Soliciting public input on issues directly impacting highway users, adjacent affected communities, and the general public
- Issuing timely reports on toll facility performance and finances in clear, concise, easy-to-understand language

In conclusion, ADOT can also use the findings from this research study to identify areas and topics where it requires more in-depth information on Arizonans' perceptions, attitudes, and information needs related to priced managed lanes and tolling. People's perception on this issue may also be influenced by changes in travel behavior and the impact of technology innovations on transportation systems and thus should also be given consideration. To obtain that information, it is suggested that ADOT conduct targeted qualitative research and a statewide quantitative survey among a statistically representative sample of Arizona residents.

**Table 3. Summary of Discussions with Arizonans (2014-2015)**

<b>FACTOR: Public Understanding of Transportation Funding</b>	
<b>Public Perspectives</b>	<b>Opportunities</b>
<p>The public:</p> <ul style="list-style-type: none"> <li>• Views tolling as a tax rather than as a user fee</li> <li>• Prefers to address gaps in highway funding by exploring options other than tolling</li> <li>• Has limited understanding on: <ul style="list-style-type: none"> <li>• How transportation projects are funded</li> <li>• Transportation funding shortfall that affects ADOT’s ability to manage the highway system</li> <li>• Road use charges (RUCs), such as vehicle miles traveled, (VMT) or mileage-based fees</li> </ul> </li> <li>• Questions the sustainability of fuel tax revenues to fund transportation projects</li> <li>• Needs assurances regarding use of public-private partnerships to finance highway transportation projects and that earmarked highway funds are used for their intended purpose</li> </ul>	<p>Develop communications to educate the public about:</p> <ul style="list-style-type: none"> <li>• ADOT’s role in managing the highway system</li> <li>• How highway projects are funded, costs associated with building and maintaining the state highway system, allocation and appropriation of funds, and funding shortfalls</li> <li>• Traditional and innovative funding sources</li> <li>• Potential consequences of lack of action</li> </ul>
<b>FACTOR: Need for and Value of Tolling</b>	
<b>Public Perspectives</b>	<b>Opportunities</b>
<p>The public:</p> <ul style="list-style-type: none"> <li>• Questions whether Arizona needs to implement tolling</li> <li>• Does not believe that traffic congestion during peak periods has yet reached intolerable levels</li> <li>• Associates tolling with revenue generation rather than congestion relief</li> <li>• Is generally unfamiliar with priced managed lanes and is skeptical that tolled facilities and priced managed lanes can relieve congestion and improve traffic flow</li> <li>• Opposes conversion of non-tolled lanes to tolled lanes</li> <li>• Requires project-specific information and cost-benefit justification before considering support of tolling</li> </ul>	<p>Establish the case for a tolled facility — supported by a cost-benefit justification for project implementation.</p> <p>Educate the public about:</p> <ul style="list-style-type: none"> <li>• Current and projected statistics on population growth, highway usage, and urban congestion</li> <li>• Impacts of traffic congestion on the economy, environment, and society</li> <li>• Demonstrated effectiveness of priced managed lanes on reducing congestion and producing other benefits</li> <li>• Project-specific toll facility planning efforts</li> </ul>

**Table 3. Summary of Discussions with Arizonans (2014-2015)**

<b>FACTOR: Perceived Equity and Fairness</b>	
<b>Public Perspectives</b>	<b>Opportunities</b>
<p>Public stance seems rooted in personal views regarding equity and fairness:</p> <ul style="list-style-type: none"> <li>• Supporters view tolling as fair because they believe it allows drivers to make choices, represents a user fee rather than a general fee, and has demonstrated value.</li> <li>• Opponents view tolling as unfair because they believe it limits accessibility and accommodation for some members of the public (i.e., only higher-income drivers can afford to pay tolls) and impinges upon the common usage of publicly funded roadways.</li> </ul> <p>Public acceptance of tolling is likely to be based on perceptions regarding:</p> <ul style="list-style-type: none"> <li>• Fairness of tolling program practices</li> <li>• Transparency in the processes used to make program changes</li> <li>• Facility performance</li> <li>• Accountability governing transportation authority and partners</li> </ul>	<p>Keep the public informed about the steps taken to safeguard the public interest and to assure transparency and accountability.</p> <p>Collect usage, performance, and financial data for ongoing monitoring and assessment of efficacy and effectiveness, including usage across socioeconomic groups and impact to traffic flow in tolled and general purpose lanes.</p>
<b>FACTOR: Operational Practices and Systems</b>	
<b>Public Perspectives</b>	<b>Opportunities</b>
<p>The public needs assurance regarding:</p> <ul style="list-style-type: none"> <li>• User access to reasonably comparable free travel route alternatives</li> <li>• Electronic tolling that eliminates stopping to pay the toll</li> <li>• Improved traffic flow in all lanes and personal benefits of tolling (saved travel time, faster travel speed, reliable trip times, less congestion)</li> <li>• Safe roadway design features and rapid-response incident clearance</li> <li>• Toll violation enforcement</li> <li>• Timeliness, accuracy, and transparency in reporting usage, performance, and financial data</li> <li>• Accountability in performance goals and revenue projections</li> <li>• Policies and practices to safeguard the public interest</li> </ul>	<p>Develop branded communication channels, such as a project website and electronic newsletter.</p> <p>Develop communications materials designed to:</p> <ul style="list-style-type: none"> <li>• Educate and inform the public on key issues</li> <li>• Instruct motorists on using transponders and setting up accounts for tolling</li> <li>• Cross-promote services like transit</li> <li>• Add usage incentives, such as commuter assistance and low-income programs</li> <li>• Report on collected data for usage, performance, and finances</li> <li>• Support customer service and evaluate customer satisfaction</li> </ul>



**Table 3. Summary of Discussions with Arizonans (2014-2015)**

<b>FACTOR: Use of Toll Revenues</b>	
<b>Public Perspectives</b>	<b>Opportunities</b>
<p>The public believes that toll revenues should be used for transportation projects only. Public views differ on whether that means:</p> <ul style="list-style-type: none"> <li>• Full reinvestment in the toll facility</li> <li>• Purposeful assignment to other state highway projects</li> <li>• Purposeful assignment to improve public transportation systems, such as transit</li> </ul> <p>The public wants clear, straightforward information on:</p> <ul style="list-style-type: none"> <li>• Fiscal and regulatory oversight of toll facility operations</li> <li>• Costs of building, operating, and maintain each toll facility</li> <li>• Cost-benefit analysis of whether projected revenues justify investment</li> </ul>	<p>Gather and assess public opinion on:</p> <ul style="list-style-type: none"> <li>• Traffic congestion</li> <li>• Funding of highway projects</li> <li>• Tolling and the use of toll revenues</li> </ul> <p>Solicit input from public influencers regarding:</p> <ul style="list-style-type: none"> <li>• Investments of toll revenues</li> <li>• Transparency in the governance of the state’s highway system.</li> </ul>
<b>FACTOR: Reactions of Arizona Public Opinion Influencers</b>	
<p>Arizona influencers hold differing views regarding:</p> <ul style="list-style-type: none"> <li>• Transportation system needs and priorities</li> <li>• How to fill the gap in transportation funding</li> <li>• How to relieve traffic congestion</li> <li>• Whether tolling is needed</li> <li>• Whether tolling effectively meets its objectives</li> </ul> <p>Arizona influencers concur that:</p> <ul style="list-style-type: none"> <li>• The long-term solution to the funding gap is at the federal level.</li> <li>• ADOT and partnering agencies should explore all funding options, rather than focus on tolling, and recognize that a multi-source funding approach is needed.</li> <li>• Assurances are needed to build public receptivity to tolling.</li> </ul> <p>Arizona influencers see the need for:</p> <ul style="list-style-type: none"> <li>• Public education on transportation funding, P3 financing models, and review and investigation of innovative funding for infrastructure</li> <li>• Public education on congestion relief strategies</li> <li>• Influential individuals to advance public discussion of transportation funding issues</li> </ul>	



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**APPENDIX**  
**INTERVIEW QUESTIONNAIRES**



**QUESTIONNAIRE FOR INTERVIEWS**  
**WITH DOT AND MPO SENIOR MANAGERS**

The one-hour interview is designed to learn about: (a) the factors driving project selection and implementation of managed lanes and/or toll roads in your state or area; (b) public response to tolling; (c) outreach and marketing campaigns used to sell the benefits of tolling to various constituent and stakeholder groups; (d) project success stories; (e) key lessons learned; and (f) words of advice. Please note that in this context, managed lanes and toll roads refer to fully tolled roads, high-occupancy toll lanes, and/or priced or variably priced managed lanes.

To be as efficient as possible with your time during the interview, we are providing the questions in advance. Also, any additional information that you can provide via written response to these questions, along with samples of reference, marketing, and educational materials, would be greatly appreciated. Kindly e-mail your completed questionnaire (bullet point responses are fine) to Partners In Brainstorms at [pib@pib1.com](mailto:pib@pib1.com) prior to your scheduled telephone interview. We will use your responses to help guide our discussion and avoid repetition. Thank you in advance for your help.

**Interview Questions**

**Your name:**

**Name(s) of anyone else who will participate in the interview:**

**Agency or organization:**

**Background information (15 minutes)**

1. What is the primary goal of the managed lanes and/or toll road system in your state or area?
  
2. In terms of adoption and implementation of managed lanes and/or toll roads in your state or area:
  - a) How long did it take from when discussions first began until they materialized into project plans, construction, and completion?
  
  - b) How did you garner the internal support at your agency and the external political and public support needed to move the project forward?

- c) Did your state or area experience any unsuccessful attempts to introduce and roll out plans for managed lanes and/or toll roads? If so, please describe the overall outcome and its effect, if any, on current and/or future planned initiatives.
- d) Are any managed lanes and/or toll road projects currently being considered in your state or area? If so, at what stage are these projects?

3. What funding strategies has your state or area used to deliver managed lanes and/or toll road projects?

- a) If your state or area has utilized public-private partnerships (P3s), please describe how this funding strategy evolved. Has it been perceived as successful as envisioned? Why or why not?

**Public Acceptance of Managed Lanes and/or Toll Roads (10 minutes)**

4. What concerns and misperceptions about managed lanes and/or toll roads has your agency had to address or attempt to dispel? What strategies did you employ to address public concerns or objections?

5. Did your outreach, communication, or marketing plans target specific stakeholder groups, partnering entities, or consumer or public interest groups? If so, please identify these groups, the engagement strategies you used, and the perceived effectiveness of these strategies to garner support.

6. Which stakeholder, consumer, or public interest groups proved most and least responsive to initial outreach and marketing efforts? Did this change over time? If so, how and why?

**Your Perspective (35 minutes)**

7. In general, what do you believe drives or motivates public acceptance of managed lanes and/or toll roads?

8. If your project was initially negatively received, was there a tipping point at which your state or area embraced it? What factors or dynamics fueled acceptance of your project?

- a) What tools or mechanisms were used to identify these factors or dynamics (e.g., public opinion surveys or polls, feedback from partnering agencies or organizations, research studies)?

b) What are the major success stories that your state or area has experienced in implementing and/or expanding these projects? How do you define and measure success?

c) What are the ongoing challenges to implementing or expanding tolling projects in your state or area?

9. Several factors are generally considered important to successful implementation of managed lanes and/or toll road projects. Aside from site selection and decision-maker support, what would be on your short list of critical success factors?

**In Closing**

10. What advice would you offer regarding early stage efforts to assess public opinion and conduct outreach regarding managed lanes and/or toll roads?

## Focus Group Questionnaire

### Task 5: Focus Groups – Discussion Guide

*This discussion guide will serve as a roadmap of the major topics to be discussed during focus groups conducted with members of the public in the Phoenix metropolitan areas.*

#### Section 1

(5 minutes)

#### Opening & Housekeeping

*Moderator introduces herself to the group and provides a brief overview of what to expect. Key points include:*

- ▶ My name is **[NAME]** and I'm with Partners In Brainstorms, a market research firm.
- ▶ Our goal this evening is to solicit your input and feedback on four key topics:
  1. Driving behaviors and your commute
  2. Traffic congestion
  3. Tolling
  4. Transportation funding

#### **Guidelines for participation—housekeeping**

- ▶ In this room there are no right or wrong answers—only your opinions—and everything you say is confidential. We hope you will be candid in providing feedback because your opinions are important to us. We will not use your names in any reports and it is important that you tell us what you think—not what you think we want to hear or what the other people sitting around this table want to hear. *(Moderator stresses mutual respect, courtesy, and patience in allowing everyone the opportunity to freely voice their opinions—not talking over one another, etc.)*



- ▶ To help me stay on track and take notes, a couple of my colleagues are assisting me, and one of them may periodically slip me a note with an additional question for the group.
- ▶ Just a couple of things:
  - We are recording this session so I can go back and listen more closely to what you have said.
  - I would appreciate it if you would speak clearly and one at a time. Also, if you have a mobile phone or device with you, please turn it off or place it on silent during the group.
  - At the conclusion of the group—7:30 pm—each of you will receive \$75 in appreciation for your time and participation this evening.
  - Housekeeping
    - Turn off cell phones and other mobile devices
    - Location of restroom facilities

## Section 2

(5 minutes)

### Group Member Self-Introductions

Moderator asks group members to introduce themselves. <Post questions on flip chart>

Let's begin with introductions. As we go around the table, please tell the group:

- a) Your name or preferred nickname
- b) How long have you lived in Arizona? If not a native, where did you move from? City or town and state?

## Driving Behaviors; Discussion of Driver Experiences

To begin our discussion, we'd like to learn more about your driving behaviors. I have some of the information you provided from the online questionnaire you completed and have just a few questions.

1. Using one of the **index cards** in front of you, please jot down:
  - Your first name
  - Where your commute to work and/or school starts and ends? (e.g., Scottsdale to Phoenix)
  - One-way mileage from home to work and/or school
  - One-way travel time from home to work and/or school
  
2. Poll: How many of you listed a typical one-way drive time of—
  - Less than 15 minutes one way
  - 15-30 minutes
  - 31-45 minutes
  - 46-60 minutes
  - More than 1 hour (please jot down time on your card)

**Now, let's talk a bit more about your commuter experience.**

1. Very briefly, what are the one or two words that immediately come to mind when asked to describe your commute—especially driving during peak travel period(s), which we will refer to as rush hour?

2. What do you think a “reasonable commute” is in terms of:
  - a) 1-way travel time to/from work or school?
  - b) 1-way travel distance to/from work or school?
  
3. What changes, if any, have you made in your work life due to your commute? This could include, for example, changing your work schedule, moving closer to work, carpooling, and so on.  
*<Moderator note: also includes, public transportation, moving closer to work, changing jobs. Allow unaided response>*
  
4. Now I’d like to know how much of a problem you believe rush hour traffic congestion is in the Phoenix metro area.  
**Poll:** By a show of hands, how many of you think that traffic congestion during rush hour is ...
  - a) A major problem
  - b) A moderate problem
  - c) A minor problem
  - d) Not a problem at all
  
5. Using the map in front of you, please circle those areas where you believe rush hour traffic congestion is a **major** problem. We will then go around the table and have you very briefly *identify the areas* that you think are problematic (broad description of area) and tell us the *factors* that have contributed to these areas being heavily congested.  
*<Moderator note: Prompt to better understand what they feel are the contributing factors. Listen for: Capacity-related issues (reached capacity); design issues; highway improvements and/or new construction not keeping pace with population growth?>*

6. By a show of hands, how many of you think that rush hour traffic congestion in the Phoenix metro area has reached intolerable levels?

How do you define intolerable?

Why do you think it is intolerable?

#### Section 4

(5 minutes)

#### Impact of Congestion During Rush Hour

Now, let's talk about the impacts of traffic congestion.

1. What impact, if any, do you believe traffic congestion has had on your overall quality of life?
2. What other impacts do you associate with traffic congestion?

*<Moderator note: impact to community/neighborhoods; safety, environment (pollution), economic impact—personal expenditures such as wasted fuel, wear and tear—and economic impact to communities/state>*

#### Section 5

(50 minutes)

#### Priced Managed Lanes and Toll Roads

Now let's talk about tolling. Our purpose here is simply to learn more about your opinions and your experiences regarding tolling, which is being used in other states throughout the country, including nearby states like Utah, California, and Texas.

1. When you hear the term "tolling" what comes to mind?
2. When you hear the term "toll road" what comes to mind? How would you describe a toll road to someone unfamiliar with the term?

3. When you hear the term “toll lanes” or “tolled lane” what comes to mind? How would you describe a tolled lane to someone unfamiliar with the term?
  
4. Do you believe there is a distinction between a toll road and tolled lanes? <Probe for “total toll road” (24/7 charge for use) vs. toll lanes, etc.>

For our discussion this evening, we will be using the term *toll road* to mean charging a toll to use a highway where there is a 24 hour/7 day per week charge for use (all lanes). We will be using the term *tolled lane* to refer to charging a toll or fee to those who elect to use a specific lane, on a highway that has non-tolled or general purpose lanes.

Let’s first focus on your use of a **toll road—all lanes on the road are toll lanes.**

1. How many of you have used toll roads? (count)
2. How many of you last used a toll road . . .
  - a. Less than one year ago (count)
  - b. 1-5 years ago
  - c. More than 5 years ago
3. Why did **you** elect to use a toll road?
4. What type of toll collection methods are you most familiar with?
  - a. Manual-stop to pay toll or Electronic tolling? What type of electronic tolling? (*probe for use of a transponder, drive through designated toll booth lane, open road tolling*)

Now let’s focus on your use of **tolled lanes**. Again, this refers to using a **highway that has specific lanes where drivers are charged a fee to use the lane (such as an Express lane) and also has non-tolled (or general use) lanes.**

1. How many of you have used tolled lanes? (count)
2. How many of you last used a tolled lane . . .
  - a. Less than one year ago (count)
  - b. 1-5 years ago
  - c. More than 5 years ago

3. Why did **you** elect to use a tolled lane?
4. What type of toll collection method was used?
  - b. Manual-stop to pay toll or Electronic tolling? What type of electronic tolling? *probe for use of a transponder, drive through designated toll booth lane, open road tolling*
5. Do you recall if the tolled lane was priced differently for use during peak traffic periods and non-peak periods? *<Moderator: If different price for peak periods, what did you think of that? Did you think it right to charge a higher fee to use the lane during peak travel/rush hour?>*

## Overall advantages/disadvantages

### Real benefit: Measured by Time Savings

#### From your perspective:

##### Driver: advantages and disadvantages

- a. What are the primary advantages or benefits of tolling for drivers?
- b. What are the disadvantages for drivers?

##### Agencies charged with overseeing and managing transportation systems

- a. What are the primary advantages or benefits of tolling to these agencies?
- b. What are the disadvantages of tolling to these agencies?

##### Tolling option in Arizona

1. If tolling was an option for Arizona drivers (such as the use of tolled lanes on heavily congested highways), what would you expect or what assurances would need to be put into place to prompt you to consider using a tolled lane or toll road in Arizona?

*<Moderator note: road conditions, use of tolls, safety, access/egress points>*

2. When talking about shorter travel or commute times, at what point would you consider the use of a tolled lane (similar to travel on an Express lane) to be a real benefit? Would you view shaving 5 minutes off of your 1-way commute time as a real benefit? Would it be 10 minutes? What is the realistic time-savings number that would prompt you to use a tolled lane?

*<Instruct participants to look at the **card** they filled out listing their typical 1-way commute time—turn the card over and on the flip side—write their time-savings number>*

3. Now, I'd like you to write on your **card** how much you would be willing to pay to shorten or shave that much time off of your 1-way commute? Is that amount the rate per one-way trip or round trip? Rate per mile?

## Section 6

(5 minutes)

### Highway Transportation Funding

In closing our discussion, let's talk a little bit about the current state of highway funding in Arizona. This includes ADOT funding for maintaining and improving existing highways and construction of new highways.

1. How would you rate your own knowledge and the knowledge of the general public regarding how highway transportation projects are funded in Arizona?
2. How are highway projects funded in Arizona and/or in other states?
3. Do you think funding for highway infrastructure in Arizona is adequate?

4. How do you think we should be paying for highway construction and maintenance?
5. What are your thoughts regarding the use of public-private partnerships to help finance, build, operate, and maintain new construction projects?

Section

(10 minutes)

Closing

1. What suggestions do you have for ADOT regarding what it can do to help inform and engage the public in serious discussion about the current state of Arizona’s highway infrastructure and the current state of transportation funding?
2. What information do you think the public needs?
3. Did this discussion have any impact on your perception regarding tolling? If so, how?
4. Is there anything else you would like to add related to the topics we discussed today?
5. In closing out our discussion on tolling, I’d like you to complete this handout—5 brief questions regarding your views on tolling.

ADOT’s number for questions from the public: 602-712-7355

Those wanting to know more about study, obtain name, phone number, email or instruct them to call number.



## Arizona Public Opinion Influencers

### Interview Guide – Key Questions

The following questions will form the basis for our discussion. Please take a moment to review these questions prior to your scheduled interview.

1. How would you describe the current state of the highway infrastructure in your area?
2. What are the one or two transportation-related issues that are of most interest and concern to you and/or your constituency or the group you represent?
3. How would you describe your level of knowledge – and that of the general public – about the transportation funding sources that finance Arizona’s highway system?
4. What is the best way(s) to pay for highway improvements and repairs to keep pace with population growth and mobility needs in your area?
5. In your opinion, how problematic or intolerable do drivers consider traffic congestion in your area during peak commute times?

#### ***Priced managed lanes and toll roads***

Priced managed lanes are an example of a congestion management strategy that has been used by a number of other state DOTs to help mitigate traffic congestion, while toll roads provide the opportunity to expand capacity and accessibility by generating revenues to help offset operating costs. Common sense dictates that, for a user to be willing to pay for a service, he or she must benefit from it in some way. For priced lane users, this benefit is most likely travel time savings or reliability. Often, a priced lane will offer a more reliable trip than adjacent general purpose lanes—non-tolled lanes—or a different route. Drivers can choose to use the priced lane if they judge the travel time savings or reliability to be worth paying the toll.

HOT (high-occupancy toll) lanes are one type of priced managed lanes. HOT lanes are HOV (high-occupancy vehicle) lanes that allow vehicles that don’t meet occupancy requirements to pay a toll to use the lane. Variable pricing is often used to maintain reliable performance at all times.

6. From your perspective, why hasn’t Arizona followed other states and implemented priced managed lanes and/or toll roads?
7. What do you believe are your constituents’ current perceptions about priced managed lanes and/or toll roads in Arizona?

8. In general, what factors—that is, what conditions, circumstances, and/or demonstrated benefits—do you think would influence or would be likely to motivate public receptivity to and acceptance of priced managed lanes and/or toll roads in Arizona?
9. In closing, the next phase of this study is a survey of the public. What questions would be helpful to you for us to ask your constituents regarding issues related to highway financing, traffic congestion, and/or tolling? What is it that you would like to know? (What questions would you like to ask?)



