



Integrating Transit with Road Pricing Projects

June 2013

Final Report

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Florida Department of Transportation



Integrating Transit with Road Pricing Projects

Prepared for:



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Metric Conversion

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft³	cubic feet	0.028	cubic meters	m ³
yd³	cubic yards	0.765	cubic meters	m ³
NOTE: volumes greater than 1000 L shall be shown in m ³				
MASS				
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")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C

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Washington State Department of Transportation

Executive Summary

As traditional transportation funding sources become less sustainable and the demand for mobility increases during the economic recovery, agencies across the United States (U.S.) are looking to the concept of managing highway demand through congestion pricing and maximizing capacity through the active management of the highway network, or employing “managed lanes.” The Florida Department of Transportation (FDOT) has embarked on an extensive program to implement express lanes on congested corridors across the state. In August 2011, the secretary of transportation articulated the governor’s transportation vision for the future of Florida’s state transportation system. As a means to assist in the financing of the facilities, statutory changes were made in the 2012 session of the Florida legislature to assist FDOT in implementing a managed lane program. The law, with certain limitations, allows FDOT to impose tolls on new lanes and on existing bridges in Florida.

To the extent that transit becomes an integral part of a managed lane project that includes tolls and/or pricing the revised statute provides an opportunity for funding transit operating and capital in a new price-managed facility. Policies associated with the integration of public transportation into the planning, design, construction financing, and ongoing operation and maintenance of new managed lanes stem from the motivation of implementing a new or different road pricing strategy. If the principal motivation of an implementing agency is simply to finance the capacity expansion of an otherwise unfunded congested highway through tolling, then the full consideration of integrating transit may not be a priority. If, on the other hand, the implementation of tolls for the first time or a move to dynamic pricing is part of a long-term strategy of managing congestion in a corridor, the integration of transit into the project and program is essential and needs to be considered from project concept through the operation of the facility.

Florida has demonstrated creativity and managed lane success with the implementation of the first phase of the I-95 Express Lanes project in South Florida. FDOT embarked on an ambitious initiative to study, implement, and operate managed lanes as an approach to efficiently and effectively increase mobility. Express lanes have been successfully implemented on I-95 in Miami-Dade County in conjunction with express bus service, and are currently being extended into Broward County to connect with a project on I-595, creating the beginnings of a regional network.

A review of managed lane projects across the U.S. revealed a wide range of treatments of public transportation and its integration into the planning, design, and operation of a managed lane project. Five specific projects were reviewed in more detail because of the transit treatments employed. For these five projects, no tolls were charged for transit vehicles, even in the case of a bridge project where no high-occupancy toll discount is provided (pure express facility). It is fairly common for park-and-ride lot construction and expansion to be included in the construction cost of a managed lane capital project, and in corridors with high transit demand, station funding along with direct access ramps to and from the stations to the managed lanes is not uncommon. While the purchase of new and/or additional rolling stock was a capital cost included in four of the five projects, transit operating subsidies were not being provided in any of the cases.

The policy motivation for the employment of managed lanes along with the market potential for public transportation are certainly relevant factors in the funding agency's treatment of transit in managed lanes. It also appears that for at least this project set, the level of transit integration into the managed lane project is related to the federal program used to fund a portion of the project. This may be due to the nature of the federal eligibility requirements for programs such as the Urban Partnership Agreement and the Congestion Relief Demonstration. By definition, these programs are targeted at corridors that are in markets with a high transit demand.

Transit treatments for the projects reviewed in this study ranged from exclusive transit access ramps and park-and-ride or bus rapid transit (BRT) stations to express buses using the high-occupancy vehicle (HOV) lane or high-occupancy toll (HOT) lanes. Several managed lane projects included facility design provisions for future rail construction in the corridor. Aggressive public outreach, partnership building, and marketing have been stressed in the success of several of the projects that incorporated transit treatments into a managed lane project. In addition, "off-corridor" design elements have also been implemented as transit components of managed lane projects, including signal prioritization and surface road improvements for easier access to transit stations.

A misconception exists for some that when tolling is implemented, the HOT or express lanes will generate an extraordinary amount of revenue. Depending upon the cost of the project and the plan of finance, it is unlikely that the tolls will cover the capital and operating costs of the physical roadway elements. The use of toll revenue bonds by different entities with different pledges to bondholders can limit the use of funds generated on the facility. While most toll bond trust agreements have strict provisions relating to the toll-free use of facilities, there are typically clauses giving latitude to the rate-maker for exceptions.

When contemplating the incorporation of enhanced public transit into the planning, design, and operation of a managed lane project, arguably the most essential factor for decision-makers and stakeholders to consider is the strategic objective of the project. If the prime motivation for considering managed lanes is to relieve congestion and provide immediate transportation alternatives within a corridor or across a network, the entire spectrum of actions available to enhance public transportation should be part of all planning and design. Early, clear, and transparent articulation of the strategic goal of a managed lane project will help to provide context for the deliberations over project elements and funding decisions.

Funding for the ongoing operation of enhanced transit service along a price-managed facility should become part of a project's plan of finance, commensurate with the contribution to the project's strategic goals. Minor, low-cost actions can make implementation of a managed lane project more conducive to successful transit service. For example, route alignments for existing commuter bus routes should be examined and modified, if necessary, in order to facilitate vehicle ingress and egress from the express lanes.

Revenue sharing between highway agencies and transit organizations is a possibility that could employ price-managed lane projects that include significant public transportation enhancements. MAP-21 (Moving Ahead for Progress in the 21st Century Act) eligibility

definitions for transit capital create new opportunities for the financing of BRT projects and for revenue sharing implemented in conjunction with express lane projects.

If a statewide policy on managed lane projects and transit is promulgated, it should be flexible enough with regard to transit to address: the projected market for public transportation in the corridor or on the network; that financial commitments and project components to enhance transit service are commensurate with the market potential in a particular corridor or region; the accommodation of the various financial constraints and requirements of FDOT, Florida's Turnpike Enterprise, local expressway authorities, regional transportation authorities, and transit agencies; and recognition of public transportation's contribution to choice and congestion reduction in the corridor.

Transit agencies with a service area that includes one of the FDOT managed lane studies or projects should undertake a demand forecast for those corridors, if they have not done so recently. This forecast should be at least a sketch planning study that addresses level of demand for express bus service and passenger volumes, and should include the prospect of the introduction of an express or HOT lane or network. Regional Express Bus and/or BRT plans for urbanized regions of Florida should be considered. Current and future transit markets need to be established not only for a single corridor, but there is also value for assessing the potential ridership implications of a network. This plan could then be overlaid on the express lane plan to see what opportunities emerge. This exercise could assist in finding the answers to the appropriate level of transit integration into these projects.

Transit vehicles should not be required to pay any toll on express lanes and particularly on HOT lanes, as buses are the consummate high-occupancy vehicles.

Investments in integrating transit in a managed lane project should be maximized to a level that is commensurate with public transportation's contribution to choice, level of service, and impact on congestion mitigation in a managed lane corridor. Operating costs need to be included as potential managed lane costs. The contributions that public transportation service will make in the corridor are only sustainable long-term with operating funds to support additional or new service. If transit will be relied upon to make continuous contributions to the corridor, these can only be realized with an ongoing funding commitment.

There should be early and wide agreement on the strategic objective of a particular managed lane proposal. Many detailed decisions on a project can be made easier if there is general consensus on a project's main goal. Consideration should be given to adopting a standard approach to assessing the transit ridership forecasts for service provided in conjunction with a managed lane. If similar modeling and forecasting methods were used, FDOT would be in an enhanced position to evaluate transit investment decisions from project to project and across regions of Florida.

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Acronyms

AET	All Electronic Tolling
AFV	Alternative Fuel Vehicles
ARRA	American Recovery and Reinvestment Act of 2009
ATM	Active Traffic Management
B&T	MTA Bridges & Tunnels
BATA	Bay Area Toll Authority
BCT	Broward County Transit
BRT	Bus Rapid Transit
BTL	Bus Toll Lanes
CRD	Congestion Reduction Demonstration
ELDP	Express Lanes Demonstration Program
ETC	Electronic Toll Collection
ETL	Express Toll Lane
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GDOT	Georgia Department of Transportation
GRTA	Georgia Regional Transportation Authority
HCTRA	Harris County Toll Road Authority
HOT	High-Occupancy Toll
HOV	High-Occupancy Vehicle
MAP-21	Moving Ahead for Progress in the 21st Century Act
MDOT	Maryland Department of Transportation
MDT	Miami-Dade Transit
MdTA	Maryland Transportation Authority
METCO	Metropolitan Transit Authority of Harris County
MPO	Metropolitan Planning Organization
MTA	Metropolitan Transportation Authority
NB	Northbound
NCTR	National Center for Transit Research
NEPA	National Environmental Protection Act
NJDOT	New Jersey Department of Transportation
NJTA	New Jersey Turnpike Authority
NYCDOT	New York City Department of Transportation
NYCT	New York City Transit
NYSBA	New York State Bridge Authority
NYSDOT	New York State Department of Transportation
NYSTA	New York State Thruway Authority
OCTA	Orange County Transportation Authority
PATH	Port Authority Trans-Hudson
PDSL	Priced Dynamic Shoulder Lanes
PPP	Public-Private Partnership
RCTO	Regional Concept of Transportation Operations

RITA	Research and Innovative Technology Administration
RPC	Regional Planning Council
SANDAG	San Diego Association of Governments
SB	Southbound
SRTA	State Road and Tollway Authority
SULEV	Super Ultra Low Emission Vehicle
TDM	Transportation Demand Management
TIFIA	Transportation Infrastructure Finance and Innovation Act
TOT	Truck-Only Toll
TRANSCOM	Transportation Operations Coordinating Committee
U.S.	United States
U.S. DOT	United States Department of Transportation
UPA	Urban Partnership Agreement
VPP	Value Pricing Pilot Program
XBL	Exclusive Bus Lane

Chapter 1

Introduction

Managed/Priced Lanes Background

The Florida Department of Transportation (FDOT) has embarked on an extensive program to implement express lanes on congested corridors across the state. In August 2011, the secretary of transportation articulated the governor's transportation vision for the future of Florida's state transportation system. Under the heading of "Creating Choices," development of a system of "managed lanes" was announced. Included in the list of projects that would be a part of the system that would build on the success of the I-95 express lanes in Miami-Dade County were I-595 in Broward County, I-75 in Broward County, and Palmetto Expressway in Miami-Dade County.

As traditional transportation funding sources become less sustainable and the demand for mobility increases during the economic recovery, agencies across the United States (U.S.) are looking to the concept of managing highway demand through congestion pricing, and maximizing capacity through the active management of the highway network or employing "managed lanes." A subset of managed lanes is the express lane, discussed below, that involves pricing of lanes parallel to non-tolled lanes to provide an alternative to congested traffic lanes, create transportation choice, and generate toll revenue.

In congested urban areas, the cost of additional capacity can be extremely high and is in some cases prohibitive beyond the next widening of a highway or other major capacity project. Managed lanes can provide long-term congestion insurance through the implementation of dynamic pricing techniques that can guarantee a minimum highway level of service.

Highway lanes that are managed to deal with congestion are by definition located in urbanized areas where the provision of high-quality and reliable transit service can contribute to commuter choice and the reduction of single occupant vehicles (hence congestion) in a corridor. Other facilities that are considered managed lanes can be implemented for other reasons; for example, exclusive commercial use, or simply tolled in order to finance a highway improvement.

Managed Lanes Defined

According to the Federal Highway Administration's (FHWA) Office of Operations, a managed lane is defined as "highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing conditions."¹ Operational strategies include pricing, vehicle eligibility, or access control. These strategies can be employed individually or in combinations and permutations.

In its preliminary definitions, FDOT also identifies managed lanes broadly and states that they may include truck lanes, high-occupancy vehicle lanes (HOV), high-occupancy toll

¹ U.S. Department of Transportation, Federal Highway Administration, "Managed Lanes Primer," FHWA-HOP-05-031 EDL 14110: August 2008.

lanes (HOT), bus rapid transit lanes (BRT), reversible lanes, and express lanes. While all priced lanes are managed lanes, not all managed lanes use pricing.

Table 1-1 summarizes the operational strategies deployed for various types of managed lanes. The characterizations of the lane types below are general and not absolute, as exceptions can be cited.

Table 1-1. Typical Characteristics of Managed Lanes

Lane Type	Pricing	Vehicle Eligibility	Access Control
HOV	No	Yes	Situational
HOT	Yes	Yes	Situational
BRT	No	Yes	Yes
Reversible	No	No	Yes
Truck Lanes	Situational	Yes	Yes
Express Lanes	Yes	Situational	Yes

The distinction between *express lanes* and *HOT* lanes seems to have become somewhat blurred, and during the conduct of this study, researchers found them often used interchangeably. A HOT lane can be dynamically priced, but offers free passage to vehicles based on occupancy (usually two or more or three or more occupants). In the purist sense of the definition, an express lane is a facility that is priced to provide a less congested alternative with no accommodation for carpools or vanpools. That said, there are examples of express lanes that include high-capacity transit components that allow toll-free passage for transit vehicles.

Many of the funding, operating, and pricing decisions regarding a particular corridor are made based on the strategic objective of the project. This is of significant importance as one considers the role and integration of transit into a managed lane project. Corridors with a strong demonstrated or forecasted public transportation demand will often incorporate design and construction elements that provide superior transit service.

Status of Managed Lanes in Florida

I-95 Express

Current FDOT policy has evolved to a point where any new capacity on interstate highways is anticipated to be accomplished through the use of tolls and the deployment of express lanes. FDOT materials reviewed as part of this effort indicate that the terms *HOT lanes* and *express lanes* are used interchangeably. These facilities offer an opportunity to provide enhanced transit service in heavily congested urban corridors and, in some cases, without the significant capital investments associated with corridor-wide, high-capacity public transportation systems.

As a means to assist in the financing of the facilities, statutory changes were made in the 2012 session of the Florida legislature in assist FDOT in implementing a managed lane program. The law allows FDOT to impose tolls on new lanes and on existing bridges in Florida with certain limitations. The language is provided below.

338.151 Authority of the department to establish tolls on the State Highway System.—Notwithstanding s. 338.165(8), the department may establish tolls on new limited access facilities on the State Highway System, lanes added to existing limited access facilities on the State Highway System, new major bridges on the State Highway System over waterways, and replacements for existing major bridges on the State Highway System over waterways to pay, fully or partially, for the cost of such projects. Except for high-occupancy vehicle lanes, express lanes, the turnpike system, and as otherwise authorized by law, the department may not establish tolls on lanes of limited access facilities that exist on July 1, 2012, unless tolls were in effect for the lanes prior to that date. The authority provided in this section is in addition to the authority provided under the Florida Turnpike Enterprise Law and s. 338.166. History.—s. 22, ch. 2012-128; s. 41, ch. 2012-174. (Flsenate.gov Archives, <http://www.flsenate.gov/Laws/Statutes/2012/338.151>)

Policies associated with the integration of public transportation into the planning, design, construction financing, and ongoing operation and maintenance of new managed lanes seem to stem from the motivation of implementing a new or different road pricing strategy. If the principal motivation of an implementing agency is simply to finance the capacity expansion of an otherwise unfunded congested highway through tolling, then the full consideration of integrating transit may not be a priority. If, on the other hand, the implementation of tolls for the first time, or a move to dynamic pricing, is part of a long-term strategy of managing congestion in a corridor, the integration of transit into the project and program is essential and needs to be considered from project concept through the operation of the facility.

To the extent that transit becomes an integral part of a managed lane project that includes tolls and/or pricing, the revised statute provides the opportunity for funding transit operating and capital in a new price-managed facility.

Florida has demonstrated creativity and managed lanes success with the implementation of the first phase of the I-95 Express lanes project in South Florida. FDOT embarked on an ambitious initiative to study, implement, and operate managed lanes as an approach to efficiently and effectively increase mobility. Express lanes have been successfully implemented on I-95 in Miami-Dade County in conjunction with express bus service and are currently being extended into Broward County to connect with a project on I-595, creating the beginnings of a regional network.

The I-95 express lane project is a 21-mile managed lane project, funded through an Urban Partnership Agreement (UPA). The UPA program was established in 2007 by the U.S. Department of Transportation (U.S. DOT) to award discretionary federal grants to cities that demonstrated the most aggressive congestion management projects and techniques. Project proposals for UPA funding were evaluated on deploying strategies labeled the “4Ts”:

Tolling, Transit, Telecommuting (and other demand management strategies), and Technology. The Miami area application was one of five cities selected for funding from the program.

The project included increasing the HOV requirement for toll-free travel in the express lanes from the former 2+ occupants in the HOV to 3+ for non-tolled travel, and the tolls in the express lanes for non-HOV traffic vary based on the level of congestion on the facility. In addition to the express bus enhancements and park-and-ride elements, ramp metering was also employed. The two express lanes were accomplished through the re-striping of existing pavement and installation of overhead toll gantries and changeable message signs. Surface mounted delineator posts separate the toll lanes from the general traffic lanes. When completed northward into Broward County, this project will serve as the backbone of a regional BRT system for South Florida.

Sixty-foot, hybrid-electric, articulated buses provide express morning service from Aventura Mall, a Park-and-ride lot at NW 183rd Street and NW 73rd Avenue, and the Golden Glades Park-and-ride Lots to Downtown Miami Employment centers and the Earlington Heights MetroRail Station. Rolling stock for the service was procured with funds provided under the UPA for the express lanes implementation. Travel times and average highway speeds have improved on I-95 for the section operating, and the transit service is experiencing positive ridership response.

Acquisition of state-of-the-art buses is a part of the overall funding of the project, as is a multiyear commitment to the operating cost of providing BRT service to the local transit providers, Miami-Dade Transit (MDT), and Broward County Transit (BCT).

FHWA reports the following results for the operating portion of the facility as of 2010: "Transit Improvements – Some additional peak hour transit service added to existing I-95 corridor routes during Phase 1 implementation. Five hundred extra parking spaces added to Golden Glades Interchange in late 2009. Three new transit routes began operating in late January 2010. Twenty-three new articulated buses are being phased in over the next 2 years. Three new transit routes began operating in late January 2010."²

In addition, the annual report states, "Increased 95 Express Bus ridership by an average of 22 percent between the first three months of 2009 and the first three months of 2010, despite a decrease of 12 percent in overall Miami-Dade Transit ridership. Fifty-three percent of new riders on the 95 Express Bus Service said the express lanes influenced their decision to use transit. Thirty-eight percent of new riders said they used to drive."³

More recently, FDOT reports that weekday transit ridership has gone from 1,800 boardings in 2009 to more than 5,000, with dramatic increases in average peak hour speeds for the tolled and non-tolled lanes.

² U.S. Department of Transportation, Florida Department of Transportation, "UPA/CRD Annual Report, Miami, FL I-95 Express Lanes," FHWA-JPO-11-044, <http://www.upa.dot.gov/docs/fhwajpo11044/armiami1.pdf>

³ Ibid.

I-595 Express Lanes

This 10.5-mile project is currently under construction and encompasses major improvements to the Interstate from the I-75/Sawgrass Expressway interchange to just west of I-95, and includes significant interchange reconfigurations. The express toll lanes are now being constructed in the median of the facility.

Like the express lanes on I-95, free passage will be available to 3+ HOVs, and the “595 Express” bus service will provide service to downtown Ft. Lauderdale and the Ft. Lauderdale–Hollywood International Airport. Unlike I-95, the three express lanes will be reversible, carrying suburban commuter traffic eastbound toward downtown in the morning and then westbound in the evening peak hours. The “non-express” portions of the improvement, including widening, auxiliary lanes, and bridge and interchange improvements, are expected to be completed by the end of 2013.

The I-595 project includes significant enhancements to existing express bus service and can be considered BRT; although an exclusive BRT lane is not currently contemplated. The \$1.2 billion I-595 project is expected to be completed in the summer of 2014 and has been financed and constructed through a public-private partnership (PPP) that employed a design-build-finance arrangement.

FDOT views these two initial projects as the beginnings of a larger regional network and is currently engaged in the development of a Regional Concept of Transportation Operations (RCTO) that will define many of the responsibilities, operating parameters, and policies for a regional implementation of express lanes. The initiative includes Metropolitan Planning Organizations (MPO), transit providers, law enforcement, local transportation authorities, the FDOT districts, and the Regional Planning Council (RPC).

The RCTO effort provides the forum to assure that a multimodal strategy is evaluated for the region with the potential that project design elements and operating practices can enhance public transportation across the network. As stated earlier, articulation of the principal policy motivation for the deployment of managed lanes should be the catalyst for arriving at an inclusive concept of operations. While striving for a consistent set of institutional policies for the implementation and operation of a regional network is a laudable goal, there may in fact be unique traffic characteristics and different transit market potential across the 70-plus mile network included in the RCTO. For example, the demand for commuter bus, long-haul premium service is present along I-95 between Miami-Dade and Broward Counties, and the I-95 Express project includes infrastructure and financial support for the BRT service. It may be that other portions of the network lack this demand and, hence, similar transit project components. Conversely, future plans and forecast transit demand could be cause for public transportation enhancements well beyond those included in the I-95 Express lanes.

Other Florida Express Lane Projects

In addition to the two projects mentioned above, FDOT is actively involved in the pre-construction phases of several other managed lane projects, and Figure 1-1 illustrates the Department’s current view of the future of managed lanes.

- A. Northeast Florida Express Lanes – Interstate 295, three segments
 - Buckman Bridge to I-95
 - SR 9B to J. Turner Butler Boulevard
 - Dames Point Bridge to I-95
 - Targeted implementation first phase – 2017

- B. “Moving-4-Ward” – Interstate 4 from West of Kirkman Road to East of SR 434 – Express Lanes
 - 21-plus miles
 - Approximate cost of \$2 billion
 - In partnership with Florida’s Turnpike Enterprise
 - Current construction start estimate – Fall/Winter 2014
 - Four managed lanes and six general use

- C. I-75 PD&E Study – Miami-Dade and Broward Counties
 - From I-595 to SR 826 Palmetto Expressway
 - Possible special use lanes
 - Transit enhancements
 - Phase II may include transit guideway if warrants are met

- D. Palmetto Expressway Managed Lanes
 - From SR 836/Dolphin Expressway to SR 932/NW 103rd Street
 - Approximately six miles
 - Considering PPP
 - Two managed lanes contemplated
 - Estimated cost \$285 million

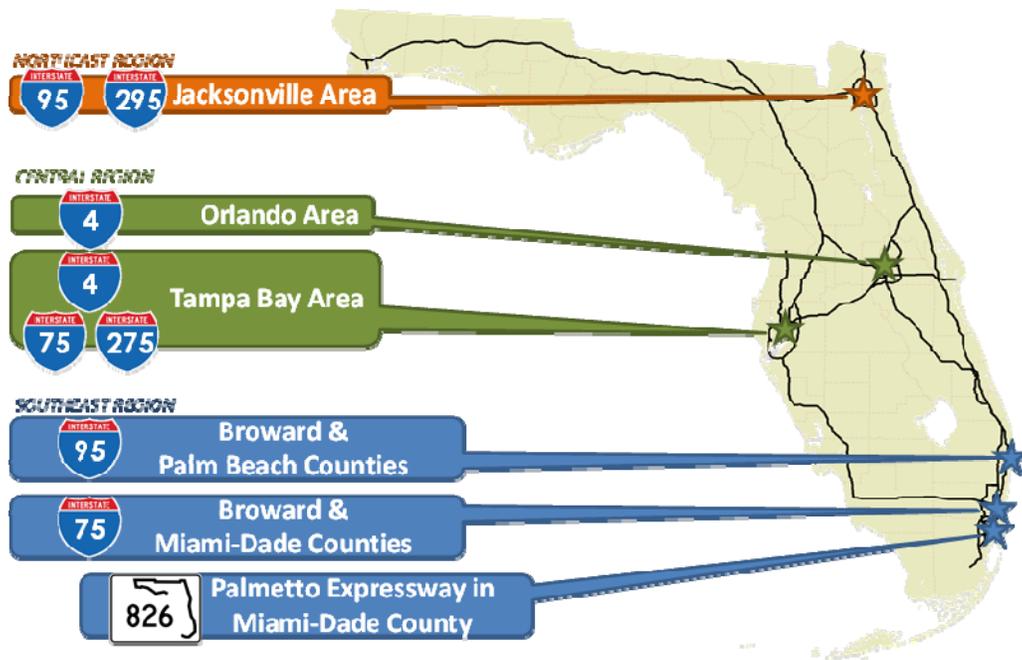


Figure 1-1. The Future of Express Lanes, Source: FDOT

Chapter 2

National Examples of Transit in Exclusive Lanes

The literature review for the research project identified at least 15 managed lane projects with what CUTR researchers considered “significant transit” components. A summary of those projects and their features can be found in Appendix B. The 5 projects detailed below represent a subset of the 15 that were determined to have some unique transit features. These projects/facilities were examined more closely to capture the range of public transportation treatments in conjunction with express lane, HOT lane, and new tolling projects.

I-15 San Diego, California

This 20-mile HOT lane project and facility was the earliest dynamically priced interstate project in the United States,⁴ and is a four-lane variable-priced facility serving customers all day, every day in both directions from the I-15/SR 163 split and Escondido. The project evolved from an early demonstration of price-managed lanes using a decal based entry system in 1996 to an all-electronic HOT “highway within a highway” that has provided over \$7.5 million in commuter bus subsidy since its inception.⁵ Ultimately, this facility will be a part of a new BRT system that will connect North County communities to regional destinations and other transit modes. Currently, four direct access ramps allow users to enter and exit express lanes from convenient transit stations along I-15. A fifth ramp along with a transit center is expected to be completed in 2014.

An interesting aspect of this project is the publicly accessible TransNet Dashboard, an interactive, online reporting tool that displays how TransNet dollars are being spent. TransNet is the moniker for the program funded by a one-half cent regional sales tax that was extended in 2004 for 40 years to fund transportation in the San Diego region. It is administered by the San Diego Association of Governments (SANDAG). Budget and project status are reported through the tool along with a count of completed project phases. Figure 2-1 is taken from the TransNet Dashboard, and Project #4, denoted in red, illustrates the location of the completed I-15 HOT lane project.

The current tolls for single occupant vehicles range from \$0.50 to \$8.00, depending on congestion and distance traveled. Carpools “2-plus” travel with no toll, and direct access ramps are provided for high-frequency BRT service. BRT stations and parking are provided adjacent to the direct access ramps. Ample parking appears to be available for carpoolers, vanpoolers, and transit customers. A major transit center at Mira Mesa is expected to be open next year with direct access to the HOT median facility.

⁴ Janusz Supernak, “HOT Lanes on Interstate 15 in San Diego: Technology, Impacts and Equity Issues,” San Diego State University: 2005.

⁵ U.S. Department of Transportation, Federal Highway Administration, “VPP Projects Involving Tolls, Category: Priced Lanes, Sub-Category: High-Occupancy Toll (HOT) Lanes,” http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/projects/involving_tolls/priced_lanes/ca_hotlanes_i15sd.htm

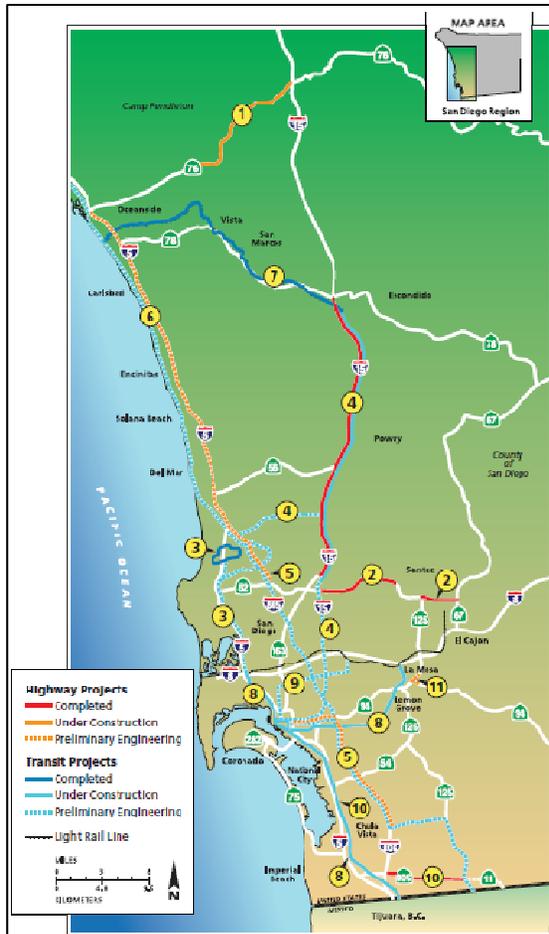


Figure 2-1. TransNet Project Status Map

The ultimate BRT facility will be constructed in three phases with an estimated cost of \$1.3 billion. Portions of the ultimate design are open to traffic in the form of high-occupancy toll lanes with a moveable center barrier to create a reversible lane. When completed, the project will have five BRT stations with direct access ramps to the new lanes.⁶

Currently, five different express bus routes have been deployed on the facility and a local bus route uses a portion of the HOT lane. Over-the-road coaches were procured as a part of the I-15 project and transit vehicles are not required to pay any tolls, including “deadhead” trips.

The I-15 project includes a number of planning and design elements that should be noted. The first is that the corridor and the transit improvements are part of a much larger BRT plan with implementation occurring in stages. Another interesting aspect is the integration of transit stations and park-and-rides with direct access ramps. Travel times for the transit riders are significantly enhanced by buses not having to travel off the main network to gain access and egress from stations or park-and-ride lots.

Another significant feature of this project is the ongoing public information and awareness efforts by SANDAG. In addition to the dashboard tool mentioned above, there are online newsletters for each project, project-by-project status webpages, and animated videos of projects under development. The entire TransNet program, while managed by the regional planning agency, is a partnership with CalTrans and SANDAG.

SR 167 Seattle, Washington

This HOT lane facility covers a 10-mile north/south corridor between the cities of Seattle and Tacoma, Washington. For the majority of its length, the highway is four lanes and expands to six lanes near its northern terminus. One HOT lane in each direction employs dynamic pricing and toll rates currently range from \$0.50 to \$9.00, depending on trip length and congestion.⁷ The HOT lanes were converted from existing HOV lanes. Extensions to the north and south are being planned with the southern connection to I-5 likely to be funded

⁶ SANDAG, “I-15 Express Lanes Fact Sheet,” San Diego, CA: January 2012, http://www.sandag.org/uploads/publicationid/publicationid_6_1065.pdf

⁷ Washington State Department of Transportation, “Eight-Month Performance Summary of SR 167 High Occupancy Toll (HOT) Lanes Pilot Project,” Seattle, WA: January 2008, <http://www.wsdot.wa.gov/NR/rdonlyres/962C3A05-FCF2-483F-884A-1569059A0346/0/SR167HOTLns8MnthFinal.pdf>

first. An extension to the north involves an extensive and expensive interchange reconfiguration and construction project costing over \$100 million. Its funding and schedule are uncertain.

The project is one of those funded in part by the FHWA's Value Pricing Program. FHWA reports that revenue continues to exceed forecasts and the average toll currently fluctuates between \$1.00 and \$1.25.



Figure 2-2. SR 167 Corridor, Washington DOT

Currently, 12 separate regional transit express routes operate on SR 167, parallel SR 167, or cross over SR 167, and 17 local transit routes operate within the corridor and adjacent cities. There are 22 park-and-ride lots in the SR 167 corridor, and Sounder Commuter Rail operates on tracks that run parallel to SR 167 with five station stops.

The multimodal travel market in this region is very strong. Washington DOT reported to researchers that more than one-half of all trips in the Central Puget Sound region are accomplished through means other than a single-occupant vehicle. Nearly 40 percent of all trips (not exclusively commuter trips) in the region were reported as carpools in a Puget Sound Regional Council survey conducted in 2008 (Figure 2-3).

Washington DOT reported a 25 percent increase in transit ridership over the same period after the HOT lane opening, even though travel times for transit riders have not significantly decreased. Two express bus route alignments were slightly "tweaked" in order to optimize bus access to and from the lanes.

Single-occupant users of the facility must have a toll transponder (Good to Go!), while carpools, vanpools, and transit vehicles travel with no toll and do not require transponders. The transponders are switchable to allow account holders to carpool without charge. The HOT lanes are not barrier-separated and employ pavement markings to designate lanes and exit and entry points.

The project opened in 2008 at a capital cost of \$18 million and operates from 5:00 a.m. to 7:00 p.m. every day, with trucks over 10,000 pounds Gross Vehicle Weight prohibited from

use.⁸ For fiscal year (FY) 2012, revenues were reported at \$1,128,915 and expenses at \$787,745.⁹

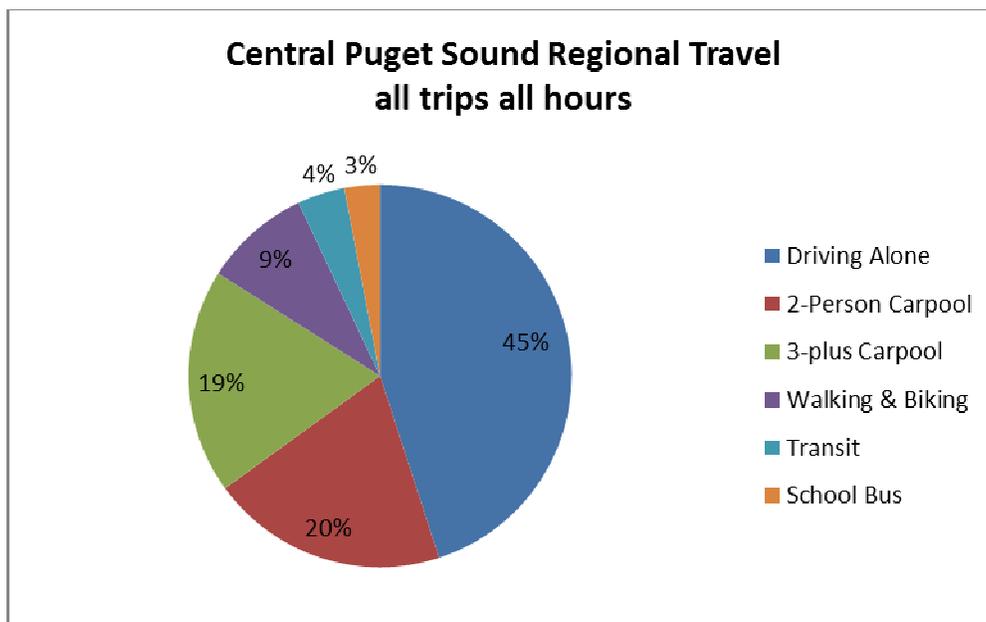


Figure 2-3. Central Puget Sound Regional Travel¹⁰

While the transit component of this managed lane project is strong, funds for public transportation vehicles, transit operating, and maintenance were not part of the financing. Transit vehicles using the facility are not charged a toll. A financing policy issue was identified in the investigation of this project. The state constitution prohibits the use of gasoline tax revenue on any projects other than highway improvements. Toll revenues from the SR 167 project are, theoretically, available to increase transit, vanpool, carpool, and other services in the project corridor. However, these provisions are apparently under discussion and debate.

I-85 Atlanta, Georgia

This project in the Atlanta region is a 15.5-mile HOT lane facility that employs dynamic pricing. The first phase of the project involved a combination of state and federal and highway and transit funding. The project is part of an approximate \$182 million in targeted investments to reduce congestion in the region. The project has been made possible through a Congestion Reduction Demonstration (CRD) grant of \$110 million that was awarded by FHWA in 2008. The CRD program is a follow-on to the Urban Partnership program.

⁸ U.S. Department of Transportation, Federal Highway Administration, "SR 167 HOT Lanes Pilot Project," Version 1, 8/23/10, http://ops.fhwa.dot.gov/freewaymgmt/publications/documents/nrpc0610/workshop_materials/case_studies/seattle.pdf

⁹ Washington State Department of Transportation, "High Occupancy Toll Lanes Operations Account," September 2012, <http://www.wsdot.wa.gov/NR/rdonlyres/76BE5D22-289A-46B3-8912-67CBC1ECF787/0/SR167HOTLanesFSFY12Q4Final.pdf>

¹⁰ Puget Sound Regional Council, "Household Travel Survey, 2006," <http://www.psrc.org/data/surveys/2006-household/>

Of the \$182 million, 67 percent will be targeted at transit investments including new and expanded park-and-rides and new over-the-road passenger coaches. These investments are being made through a partnership of the State Road and Tollway Authority (SRTA), the Georgia Regional Transportation Authority (GRTA), the Georgia Department of Transportation (GDOT), and other federal and local agencies.

The facility currently extends from Old Peachtree Road northeast of Atlanta to Chamblee Tucker Road, just south of I-285, the circumferential interstate around Atlanta, on the eastern section (Phase I). This project is part of a regional network of managed lanes being planned and implemented. There is a 10-mile extension to this facility currently under development that will widen and add HOT lanes on I-85 north of the existing terminus of the express lanes to the area on Figure 2-4 labeled with the Hamilton Mill park-and-ride.



Figure 2-4. I-85 Express Lanes¹¹

The operating segment was a conversion of existing HOV lanes to HOT lanes. Registration is required for toll-exempt vehicles, which include carpools with three or more occupants, motorcycles, transit and emergency vehicles, and alternative fuel vehicles (AFV) with the proper AFV license plate. Currently approximately 25 percent of customers use the HOT lane for free (transit included). A portion of Phase I funds was used to build two new park-and-ride facilities (creating 1,900 additional parking spaces for transit users) and the purchase of 36 new commuter coach buses that support seven routes serving the project corridor. Figure 2-5 illustrates the express bus system currently operating in the region, including the routes on the I-85 planned and existing HOT lanes.

¹¹ <http://www.peachpass.com/peach-pass-toll-facilities/about-i-85-express-lanes>



Figure 2-5. GRTA Express Bus System¹²

A robust public outreach and education program was undertaken and continues as support for the regional express lane plan. As part of the National Environmental Protection Act (NEPA) process, about 600 people attended and had the opportunity to provide feedback at eight public information open houses and a public hearing open house in 2009. Participant feedback included concerns about equity and enforcement, the effects of revised occupancy requirements on two-person carpoolers, and an interest in the technology the project will bring to the region.

In addition, six focus groups were conducted with single-occupant drivers and carpoolers as well as a survey of more than 700 carpoolers in the I-85 region. One-on-one briefings with stakeholders, legislators, and the media took place and a project website for the public was established. The expansion of transit in the I-85 corridor is a major component of this project, and the metro Atlanta Region's Concept 3 Transit Vision includes expanded rail and BRT in the corridor that could potentially be incorporated into a future expanded HOT network.

Funds generated from the HOT lanes will be used to defray the costs of construction, operation, and maintenance of the lanes, and the future allocation of excess revenues is currently being studied. The facility's dynamic pricing results in a toll costing between \$1.55

¹² "Xpress commuting made easy!" Atlanta, GA: 2004-2013, http://www.xpressga.com/index.php?option=com_content&task=view&id=38&Itemid=75#

and \$13.95, and while toll paying was slow to start, traffic has risen since the opening. It is estimated that more than 90 percent of customers will pay less than \$5.00 for their HOT lane trip.

State transportation issues in Georgia are overseen by the State Transportation Board, a 14-member body elected by a majority of the state assembly's caucus from each of the state's congressional districts. Along with other important duties, the Board approves long-range transportation plans and oversees the DOT. In 2007 it passed a resolution relating to managed lanes in the Atlanta region. Major policy points included the following:

- All new capacity lanes within limited access corridor in Metro-Atlanta shall be managed.
- Mobility shall be guaranteed in managed lanes.
- Lane management relies on eligibility, congestion pricing, and/or accessibility.
- Each solution will be tailored to individual corridor needs.¹³

Further, in 2009 the State Transportation Board passed another resolution that adopted the managed lane system plan as a guide to use in developing individual managed lane projects within Metro-Atlanta. Most recently, in May 2012 the Board resolved to direct the GDOT staff to actively "collaborate with transit and multi-use trails initiatives within individual Managed Lane project corridors so as to foster thoughtful utilization of the existing asset on each corridor for both highway and transit modes."¹⁴

Not only does the Greater Atlanta region have a well-defined plan for express lanes and integration of express bus and support facilities, but it also has a well-defined set of policies for their implementation.

SR 520 Seattle, Washington

The State Route 520 project in Seattle, Washington, was one of the more unique projects reviewed. The project manager for this study and researchers agreed that this project could have particular relevance to Florida. The project is being partially funded under a UPA and includes the replacement of a "floating bridge" and the addition of a one HOV lane in each direction for a total of 13 miles. Eventually, the project will extend from the eastern shore of Lake Washington, across the bridge, and connect with Interstate 5 to the west. In 2009 the project cost was estimated at \$4.65 billion, but has been recently revised downward by \$522 million based on selection of preferred alternatives and more refined plans.¹⁵ Most notably, the western approach has been significantly redesigned eliminating an extensive multi-structure interchange with the "floating bridge."

¹³ State of Georgia, County of Fulton, "A Resolution by the State Transportation Board," 2009, http://www.dot.ga.gov/informationcenter/programs/studies/managedlanes/Documents/Signed%20GDOT%20Board%20Resolution%2012_23_09.pdf

¹⁴ Georgia Department of Transportation, "Resolution of the State Transportation Board," 2012, <http://www.dot.ga.gov/aboutGeorgiadot/Board/Documents/Resolutions/2012/May/ManagedLanesResolution.pdf>

¹⁵ Washington State Department of Transportation, "SR 520 Program – Costs, Funding and Tolling," 2013, <http://www.wsdot.wa.gov/Projects/SR520Bridge/financing.htm>

The bridge project is all electronically tolled and variably priced from 5:00 a.m. to 11:00 p.m., seven days per week. Peak hour travel times are reported to have improved by 12 to 15 minutes and tolls are collected either via the “Good to Go” 6C sticker tag transponder or through a pay by plate type of mail system. The existing bridge has been re-tolled and the replacement bridge is under construction.



Figure 2-6. SR 520 Seattle, WA¹⁶

The bridge had originally been tolled when it opened in 1963, and the tolls were lifted in 1979 when the original bonds were retired. There is no high-occupancy vehicle exemption from the toll, but registered vanpools and transit vehicles travel toll-free.

Public transportation enhancements are significant elements of this project, and both Sound Transit and King County Metro provide service in the corridor. One hundred thirty bus trips have been added to routes on SR 520 for a total of 700 trips every weekday. One new route has been added to the corridor, and improvements to bus stops and park-and-rides are completed and underway.

The new SR 520 Bridge is scheduled to open in 2014 with two general-use lanes and one HOV lane in each direction, for a total of six lanes. The bridge spans Lake Washington and links two interstate highways in metropolitan Seattle. Current (FY 2012) Average Weekday Traffic is over 63,000, which is 12 percent above forecasts, and Average Weekend Traffic is running 36 percent ahead of forecasts, at over 38,000. Adjusted gross revenue for FY 2012 is nearly \$26 million, representing 8 percent over forecast revenue.

Other transit considerations for the toll bridge/HOV corridor include integration of potential future light rail and the construction of a regional bicycle and pedestrian path, direct access ramps to the HOV lanes, and median transit stops along the facility. “Twenty 60-foot and twenty-five 40-foot hybrid motor coaches are being purchased, and bus stops will be improved through real-time information signs about bus arrivals (at seven stops) and improved passenger shelters and lighting (at two stops). Park-and-ride facilities are being

¹⁶ <http://www.wsdot.wa.gov/Projects/SR520Bridge/BridgeAndLandings/Maps.htm>

expanded by replacing a 613-space surface parking lot with an 853-space parking garage and also by building a new 386-space parking garage.”¹⁷

An active traffic management system (ATM) was employed in the corridor. The system includes the SR 520 route as well as the parallel I-90 corridor to the south. Transportation Demand Management (TDM) strategies are also being incorporated as a part of the UPA, including continuation of employer-based and community-based trip reduction programs, a robust vanpool program, outreach efforts to more fully implement new telework programs and an aggressive rider sharing network.

The objective of the reintroduction of tolling on the SR 520 bridge was to finance the construction of a new bridge, fund a new HOV program, and alleviate congestion. Federal funds have been used for rolling stock procurement and equipment, and transit ridership began to increase even before bridge tolls were initiated. The transit market is strong in the highly urban and heavily traveled area that serves high-tech employees and employers. Washington DOT reported that transit serves about 20 percent of all trips in the corridor and that ridership experienced a 25 percent increase since the project’s implementation. It was also reported that the reliability for transit travel time has increased dramatically.

As was stated in the SR 167 project profile, the Washington State Constitution restricts the use of motor fuel taxes collected by the state to “highway purposes” and, thus, places some limitations on the funding of transit components in a congestion reduction program. It should be noted that when the state legislature passed the bills needed in order to implement tolls on the bridge and enforce toll violators, it also passed a measure to increase funding for transit in 2008.

The issuance of toll revenue bonds with the provisions that toll revenues must be used as authorized by the legislature for bond payments, operations, and maintenance within the SR 520 corridor seems to present an opportunity for future transit maintenance and operations funding.

I-805 San Diego, California

This multi-phase project covers approximately 27 miles from well north of the City of San Diego to south of the city near Chula Vista along the I-805 corridor. I-805 is a major north/south interstate that parallels I-5 to the east with average daily traffic over 260,000 on the heaviest traveled sections. The corridor has been divided into three sections for project development and construction. Portions of the I-805 “North” and “South” projects have funding programmed, while no funds for the I-805 “Middle” project have been identified (Figure 2-7).¹⁸

¹⁷ U.S. Department of Transportation, Federal Highway Administration, “Seattle (Lake Washington) Urban Partnership Agreement,” <http://www.upa.dot.gov/agreements/seattle.htm>

¹⁸ SANDAG, “Interstate 805 Corridor,” 2012, <http://www.keepsandiegomoving.com/I-805-Corridor/I-805-intro.aspx>



Figure 2-7. I-805 San Diego, CA

SANDAG was awarded \$100 million by the California Transportation Commission to build two HOV lanes on I-805 for access by carpoolers and transit riders along portions of the corridor. The ultimate design will accommodate the South Bay BRT project, a 21-mile rapid, high-frequency transit facility providing service between the Otay and Mesa border crossing and downtown San Diego. The Draft Environmental Impact Report has been completed for the South Bay project and will become an integral part of the managed lane operation on the I-805 South segment. The BRT project is expected to be in service in 2014 and in the long term will operate on HOV lanes on SR 94 and along the I-805 managed lanes with direct access ramps connecting freeway stations/park-and-ride lots. The South Bay BRT is consistent with the regional plan to create an HOV/managed lane network in the region of more than 200 miles along I-5, I-15, and State Routes 52, 78, 94, and 125.

Each of the funded managed lane projects, I-805 South and I-805 North, involves several phases. Phase I of the South portion is under construction and includes adding HOV lanes, one lane in each direction, of the ultimate two in each direction that will include express or HOT lanes. The construction includes elements to facilitate the ultimate BRT system, including direct access ramps, transit station, and sound barriers. Phase II, planned to take place from 2015 to 2020, will complete the widening, add in-line BRT stations, and provide direct connections to other managed lanes in the network. The total I-805 South project cost is currently estimated at \$1.4 billion.

The I-805 North project represents a four-mile portion of the entire project with the first of five phases underway. Total project cost is estimated at \$587 million and will be constructed

over several decades. Phase I, with an estimated cost of \$87 million, includes the first lane of the widening, direct access ramps, a park-and-ride and transit station, and noise barrier improvements. Phase I is scheduled for completion in 2015.

The portion of the I-805 corridor of particular interest is the "South" project. The improvements are beginning with the addition of an HOV lane in each direction and basic amenities to accommodate the South Bay BRT line. As funding becomes available and congestion warrants, the next lane in each direction will be added and then dynamically priced. When fully operational, the new HOT lanes will allow toll free passage for two-plus carpools, transit vehicles, and permitted alternatively fueled vehicles. As no revenue will be collected until Phase II, decisions on funding transit have not been made.

Phase I of the I-805 project is expected to be completed in 2014. Phase II of the project that will include the full express lane facility is tentatively scheduled to begin in 2015 and includes in-line transit stations in Chula Vista and National City. This phase also includes direct connections to other managed lane facilities on the network.

This project appears to be an example of total integration of transit into a managed lane project along with a demonstrated vision of a long-range plan for congestion management. The phasing from HOV to HOT to BRT and connection to a regional system of managed lanes is unique among the projects examined in this study.

Project Review Summary

For the five projects reviewed in this section, no tolls were charged for transit vehicles even in the case of the SR 520 Bridge/HOV project where no high-occupancy toll discount is provided (pure express facility). For the express lane project along I-85 in Atlanta, a carpool of three or more will be required in order to travel the lane toll-free along with other exempt vehicles (transit and vanpools).

Table 2-1. Selected National Examples - Transit Elements of Managed Lanes

	I-15 San Diego CA	I-85 Atlanta GA	SR 167 Seattle WA	SR 520 Seattle WA	I-805 San Diego CA
Toll Charge for Transit	no	no ¹	no	no	no
HOT	2+	3+	2+	no	2+ (ultimate)
Transit Capital	yes	yes	no	yes	yes
Transit Operating	possible	possible	no	possible	possible
Reversible	yes	no	no	no	no
Direct Access Ramps	yes		no	yes	ultimate
Park-and-Rides Funding	yes	yes	no	yes	yes
Transit Station Funding	yes	yes	no	yes	ultimate
Federal Program	Value Pricing	CRD	Value Pricing	UPA/RITA ² /FTA ³	AARA ⁴ /FTA
Implementing Entity	MPO/DOT	State DOT	State DOT	State DOT	MPO/DOT

¹Transit vehicles required to register.

²Research and Innovative Technology Administration.

³Federal Transit Administration.

⁴American Recovery and Reinvestment Act of 2009.

It seems fairly common for park-and-ride lot construction and expansion to be included in the construction cost of a managed lane capital project, and in corridors with high transit demand, station funding along with direct access ramps to and from the stations to the managed lanes are included in the project. While the purchase of new and/or additional rolling stock was a capital cost included in four of the five projects, transit operating subsidies were not being provided in any of the cases.

It appears that for at least this project set, the level of transit integration into the managed lane project is related to the federal program used to fund a portion of the project. This may be due to the nature of the federal eligibility requirements for programs like the Urban Partnership Program and the Congestion Relief Demonstration Program. By definition, these programs are targeted at corridors that are in markets with a high transit demand. In addition, where projects are being developed in conjunction with local governments (which are also typically responsible for providing and funding public transportation services) there may be an added motivation to include more aggressive transit treatments in a managed lane project.

The policy motivation for the employment of managed lanes along with the market potential for public transportation are certainly relevant factors in the funding agency's treatment of transit in managed lanes. This will be explored more in the final section of this report, Findings and Recommendations.

Chapter 3

Findings and Recommendations

Design and Planning Issues

Several issues have emerged as agencies contemplate transit and managed lane projects. Involvement of transit agencies in the development of a project as early as possible in the concept development is vital to having public transportation elements considered as a managed lane project or system evolves toward design and implementation. Existing and future transit demands should be assessed and matched with the appropriate level of service and infrastructure investment before decisions on these issues are finalized. Planning for some of the corridors examined in this report has resulted in right-of-way reservation for future fixed guideway investment.

Transit treatments for the projects reviewed in this study ranged from exclusive transit access ramps and park-and-ride or BRT stations to express buses using the high-occupancy vehicle lane or high-occupancy toll lanes. Several managed lane projects included facility design provisions for future rail construction in the corridor. Aggressive public outreach, partnership building, and marketing have been stressed in the success of several of the projects that incorporated transit treatments into a managed lane project. In addition, “off-corridor” design elements have also been implemented as transit components of managed lane projects, including signal prioritization and surface road improvements for easier access to transit stations.

Figure 3-1 illustrates a range of the intensity of potential transit treatment that can or has been considered for integration into managed priced lane projects. Dedicating an exclusive BRT running way was not found in the research for this project, but incorporation of a BRT line that uses a piece of a managed lane facility is occurring in the I-805 South project and reservation of a light rail right-of-way is a part of the SR 520 improvement in Seattle.



Figure 3-1. Potential Range of Managed Lane Transit Accommodation

Some preliminary transit design would be highly desirable in the engineering of an express lanes project. One lesson learned identified in this study is that an envelope that was reserved for light rail ultimately proved to be too narrow for the efficient design of a BRT facility. As an example, the cross-section was not able to ideally accommodate multi-purpose buses with right-side loading only. Some preliminary engineering to understand more fully the requirements of several transit modes seems prudent in corridors with a potential or existing transit market that warrants this level of transit accommodation.

Similarly, without some preliminary engineering effort, median stations with direct access to “inside” express lanes have been precluded because of insufficient median width even

though there was an intention to do so. The travel time to and from a transit stop that is off the facility results in longer and less predictable transit trip times. The feeder system of local roads and streets should also be examined if high-capacity transit service will be provided along a managed lane corridor. Traffic engineering treatments such as exclusive turn lanes, signal prioritization, and adequate turning radii for larger transit vehicles will assist in improving the off system access to a park-and-ride or transit station.

As the State of Florida moves toward developing policies and procedures for implementing managed lanes statewide, the need for a sketch level planning transit market analysis may be worth considering as a prerequisite to serious discussions on planning, designing, and operating the proposed facility. Appropriate passenger demand including passenger volumes and trip lengths associated with successful commuter bus or express service can then be better matched with managed lane planning and operational decisions. This is particularly important in corridors without existing commuter bus service and where there is no known, established market.

Financial Considerations

For the projects studied, there is a variety of financial arrangements to pay for transit in express or priced lanes. The most common seemed to be the inclusion of capital construction elements of projects to enhance public transportation service or amenities. As mentioned above, park-and-ride lots (new or expanded) are common, as is the purchase of new transit rolling stock to serve the facilities. While transit taxes are used to fund some projects, the sharing of toll revenues does not seem to be widespread.

The changes in Florida statute mentioned in the introduction to this report seem permissive enough to allow the use of tolls from new express lanes to cover transit operating and capital costs. If, for example, BRT was included in a new express lanes project, the civil construction work, vehicle acquisition, and operating costs could be covered, or at least shared, using toll revenue.

The most generous transit financing arrangements that were reviewed are associated with projects implemented under the UPA and the CRD programs sponsored by the Federal Highway Administration. In some states, these projects were managed lane initiatives and have set expectations that all managed lane projects will include use of toll revenue for transit operating and maintenance subsidies, vehicle acquisition, and other public transportation enhancements.

A misconception exists for some that when tolling is implemented, the HOT or express lanes will generate an extraordinary amount of revenue. Depending on the cost of the project and the plan of finance, it is unlikely that the tolls will cover the capital and operating costs of the physical roadway elements. The use of toll revenue bonds by different entities with different pledges to bondholders can limit the use of funds generated on the facility. While most toll bond trust agreements have strict provisions relating to the toll-free use of facilities, there are typically clauses giving latitude to the rate-maker for exceptions. While this may address the ability to allow transit vehicles, vanpools, and other high-occupancy vehicles to use the highway toll-free, the priority for the use of toll revenue is strictly defined and will vary. This may place restrictions on the use of revenue bond proceeds for

the capital and ongoing operating costs of the public transportation components of an integrated managed lane project that is toll-financed.

As in other high-capacity transit facilities, there is potential for revenue generation from non-fare sources such as joint development at stations, naming rights, and advertising. While not unique to transit facilities integrated with a managed lane project, these financing mechanisms should not be overlooked in the project development and financial planning processes.

Given that there are many potential funding and operating partners in Florida (FDOT, Florida's Turnpike Enterprise, local and regional expressway or transportation authorities), hard and fast rules for what will or will not be a part of a project sponsor's cost may not be the best approach.

Revenue Sharing

The concept of Bus Toll Lanes (BTL) is being explored and could be evaluated as a part of future priced lane projects. In a white paper prepared by the National Center for Transit Research (NCTR) for FDOT in 2010, the concept was defined as a new concept that would "move transit forward by making transit agencies a partner in the toll road trade. The idea is to create bus lanes with transit agencies as an equity holder or full-owner of the required highway infrastructure... The transit agency share of 'excess' toll revenue would be based on the equity share provided for construction of the BTL facility in a partnership arrangement."

A significant barrier to BTLs at the time was associated with the eligibility of such a project to be funded with Federal Transit Administration (FTA) capital funds, as these represent the most significant source of capital funds for a transit agency to invest. Since that paper was published, a new federal surface transportation authorization has been enacted that provides an opportunity for transit agencies to use federal capital in a managed lane project and share or retain toll revenues collected.

The Moving Ahead for Progress in the 21st Century Act (P.L. 112-141 MAP-21) was signed into law July 6, 2012, funding highway and transit projects and programs for FYs 2013 and 2014. Perhaps the most significant change for BTL funding is found in the revised Section 5309 language on New and Small Starts and a new "Core Capacity Improvement" category of eligibility.

MAP-21 provides three definitions of BRT projects: (1) BRT System Title 49, Section 5302(a)(2); (2) Small Starts Corridor-based BRT project, Section 5309 (a)(3); and (3) New Starts Fixed Guideway BRT project, Section 5309 (a)(4). BRT definitions in numbers 1 and 3 require that a majority of the BRT line operate in a separated right-of-way dedicated to transit. On the other hand, definition 2 only requires that the project emulate rail-fixed guideway services.

The Small Starts Projects definition has been broadened to include not only new fixed guideway capital projects, but also "corridor-based BRT investments." A corridor-based BRT project is one that "is requesting less than \$75 million in Section 5309 funds and has a total capital cost less than \$250 million. A corridor-based BRT project is defined as a substantial

investment in a defined corridor in which the majority does not operate in a separated right-of-way dedicated for transit use during peak periods...”

The change is significant in the researchers’ view for the potential of transit agencies becoming financial partners with FDOT or other agencies in the inclusion of substantive transit investments in express lane projects.

Policy Considerations

When contemplating the incorporation of enhanced public transit into the planning, design, and operation of a managed lane project, arguably the most essential factor for decision-makers and stakeholders to consider is the strategic objective of the project. If the principal reason for introducing price managed lanes is to finance the highway improvement, then without a strong, demonstrated market for commuter transit, public transportation improvements and financial contributions to capital and operations will likely be considered secondary. That is not to say that this approach is not without merit in getting needed transportation investments accomplished and the resulting ability to provide for future “congestion insurance” and options for users when pricing is implemented.

Conversely, if the prime motivation for considering managed lanes is to relieve congestion and provide immediate transportation alternatives within a corridor or across a network, the entire spectrum of actions available to enhance public transportation should be included in all planning and design. Ideally, in this case, there already exists a market for commuter transit travel. Transit is an integral part of customer choice and considering any design or operating element that boosts the probability of even more successful ridership should be part of the project development discussions.

Clearly and transparently articulating the strategic goal of the managed lane project should provide a clear context for the deliberations over project elements and funding decisions. As mentioned in the section above on Financial Considerations, the statement of purpose of introducing managed lanes can assist in aligning stakeholder expectations with desired project outcomes.

Lastly, on the topic of general policy, is the issue of choice and its relationship to social equity. Researchers observed some relationship between the aggressiveness of a priced lane’s operating rules (toll cost, time of day, occupancy requirement) and the extent of priority that is given to public transportation. The more stringent the rules are on the use of the priced lane, the more express bus service and transit funding commitment there was. This could be a result of the level of congestion and the demand for public transportation service, but it raises a relationship that decision-makers may want to include in their thinking on the extent of their commitments to transit in a managed lane project.

Summary of Findings

There have been scores of managed lane projects implemented around the U.S. and to date a few have included significant commitments to transit beyond running express bus service. Two of Florida’s managed lane projects, I-95 and I-595, include some of the more ambitious transit enhancements.

Transit improvements should be examined in all types of managed lanes—HOVs to express toll lanes—and considered in proportion to the demonstrated or forecast demand for longer distance commuter transit markets, such as those served by commuter or express bus services.

In addition to BRT elements within a corridor being studied for managed lanes, consideration of “off corridor” improvements to facilitate the access to and from the lanes is important.

Funding for the ongoing operation of enhanced transit service along a price-managed facility should become part of a project’s plan of finance commensurate with the contribution to the project’s strategic goals.

Minor, low-cost actions can make implementation of a managed lane project more conducive to successful transit service. For example, route alignments for existing commuter bus routes should be examined and modified, if necessary, in order to facilitate vehicle ingress and egress from the express lanes.

Revenue sharing between highway agencies and transit organizations is a possibility that could employ price-managed lane projects that include significant public transportation enhancements. MAP-21 eligibility definitions for transit capital create new opportunities for the financing of BRT projects and for revenue sharing implemented in conjunction with express lane projects.

Articulation of a managed lane project’s strategic objective and goal early in the project development process can lay a solid foundation for discussions and decisions regarding the appropriate level of public transportation integration into the project. Figure 3-2 provides a framework for making choices and decisions about the extent to which transit considerations can be incorporated into managed lane projects.

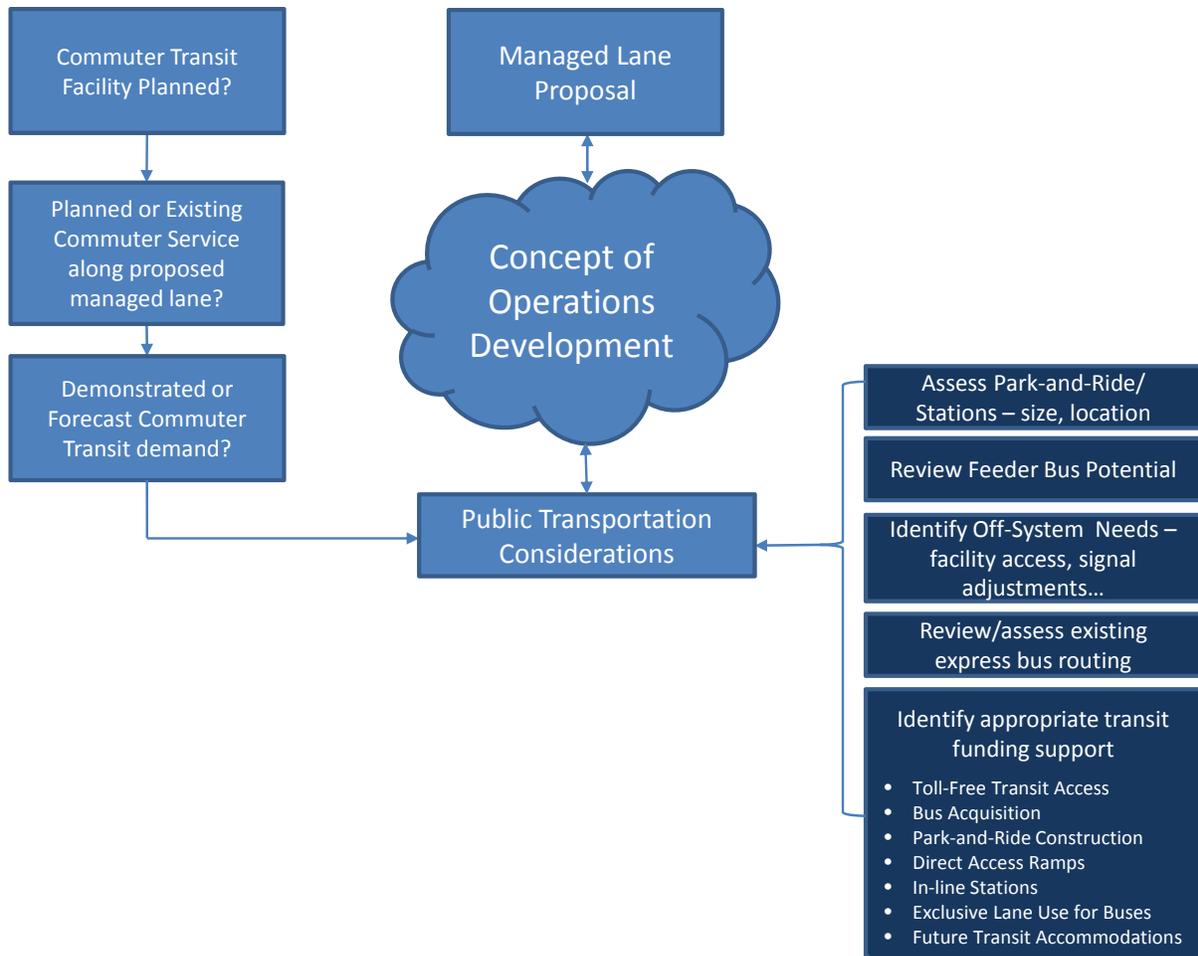


Figure 3-2. A Decision Framework - Transit and Managed Lanes

Recommendations

If a statewide policy on managed lanes and transit is promulgated, it should be flexible enough with regard to transit to address:

1. The projected market for public transportation in the corridor or on the network
2. That financial commitments and project components to enhance transit service are commensurate with the market potential in a particular corridor or region
3. The accommodation of the various financial constraints and requirements of FDOT, its Districts and Florida’s Turnpike Enterprise, local expressway authorities, regional transportation authorities, and transit agencies
4. Recognition of public transportation’s contribution to choice and congestion reduction in the corridor.

The principles of the Metro Atlanta policy seem a good starting point for a statewide approach in Florida. They state that all new capacity lanes within limited access corridors shall be managed; mobility shall be guaranteed in managed lanes; lane management relies on eligibility, congestion pricing, and/or accessibility; and each solution is tailored to individual corridor needs.

Transit agencies with a service area that includes one of the FDOT managed lane studies or projects should undertake a demand forecast for those corridors, if they have not done so recently. This forecast should be at least a sketch planning study that addresses the level of demand for express bus service and passenger volumes, and should include the prospect of the introduction of an express or HOT lane or network. Regional Express Bus and/or BRT plans for urbanized regions of Florida should be considered. Current and future transit markets need to be established not only for a single corridor, but there is also value to assessing the potential ridership implications of a network. This plan could then be overlaid on the express lane plan to see what opportunities emerge. This exercise could assist in finding the answers to the appropriate level of transit integration into these projects.

Transit vehicles should not be required to pay any toll on express lanes and particularly on HOT lanes, as buses are the consummate high-occupancy vehicles.

Investments in integrating transit in a managed lane project should be maximized to a level that is commensurate with public transportation's contribution to choice, level of service, and impact on congestion mitigation in a managed lane corridor. Operating costs need to be included as potential managed lane costs. The contributions that public transportation service will make in the corridor are only sustainable long-term with operating funds to support additional or new service. If transit will be relied upon to make continuous contributions to the corridor, these can only be realized with an ongoing funding commitment.

Consideration should be given to the creation and adoption of guidelines on how to plan, implement, operate, and maintain managed lane projects with substantive transit components. The Decision Framework presented in Figure 3-2 addresses an approach for initial project design elements and a few operational policies; it does not deal with the ongoing financial issues associated with transportation investment. Again, the principle of striking the appropriate balance between project policy motivation and ongoing operating commitments and responsibilities should be core to these guidelines. Another guiding principle to be considered is that agency responsibility should be assigned based on the activity's relationship to an agency's core competency. The assignment of responsibility should be divorced from financial obligation for a specific activity. For example, station maintenance may best be performed by a transit agency because of the skills of its labor force, but could be the financial responsibility of the entity collecting toll revenue.

There should be early and wide agreement on the strategic objective of a particular managed lane proposal. Many detailed decisions on a project can be made easier if there is general consensus on a project's main goal.

At a minimum, a sketch level ridership forecast should be required prior to the development of a facility Concept of Operations if transit integration is contemplated. Consideration should be given to adopting a standard approach to assessing the transit ridership forecasts for service provided in conjunction with managed lanes. If similar modeling and forecasting methods were used, FDOT would be in a better position to evaluate transit investment decisions from project to project and across regions of Florida.

Appendix A

Congestion Pricing Projects Open to Traffic in the United States, 2011

Sources: GAO Report 12-119, Texas Transportation Institute – Managed Lanes

Cape Coral and Midpoint Memorial Bridges – Lee County, FL – FY 2000

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
2 bridges	Bridge	Peak-period	\$1.50 – \$6.00 + charge per axle	Lee County, FL	Managed facility	Priced lanes	ETL/VPP	\$2,410,400
Project	Study priced queue jump (a facility that can be used to bypass points on the transportation network where congestion is particularly severe and occurs in a predictable pattern), variable pricing of heavy vehicles, and variable tolls for heavy vehicles in Lee County, FL, since August 1998							
Status	Study completed and project implemented in December 2003							
Toll Schedule	<ul style="list-style-type: none"> — Tolls vary by time of day — Tolls are levied electronically — Tolls are part of Lee County's ETC system 							

Dulles Greenway – Loudon County, VA

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
14 miles	Highway	Peak-period	\$3.70 – \$4.50	Minnesota Dept. of Transportation, MN	UPA	Priced lanes	PDSL	\$5,000,000
Project	Congestion management toll, since January 2009							
Status	6 lanes in operation							
Toll Schedule	<ul style="list-style-type: none"> — Commuter buses operate for free — Congestion Management Toll: 6:30 a.m. – 9 a.m. and 4 p.m. – 6:30 p.m. — Tolls vary by exit, by weekday and weekend, E-ZPASS versus credit card, cash versus all-electronic tolling (AET) — E-ZPASS Flex (July 2012) will allow free use with 3 or more people in the car 							
Ongoing Transit Operating/Capital	The Greenway donated the median for construction of Metrorail at no cost.							

I-10 and US 290 – Houston, TX – FY 2000

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
I-10: 12 miles US 290: 15 miles	HOT lane	Dynamic peak-period	\$0.30 – \$1.60 \$2.00 for HOV	Houston, TX	Managed lanes	System-wide	HOT	\$2,436,000
Project	Examine Houston's five HOV lane facilities with a goal of developing an implementation plan for those HOT lanes, including expanding current HOT activities on Northwest Freeway and adding tolling to the other four HOV lanes, to develop a network of HOT lanes on three radial corridors in Houston, TX, since January 1998							
Status	Original I-10 study completed and pre-implementation funds awarded in 2004. US 290 study completed. Toll revenues from several hundred vehicles each day pay for all program costs.							
Toll Schedule	<ul style="list-style-type: none"> — Two lanes in each direction between SH 6 and IH 610 replace the single, reversible HOV lane — 12 miles of roadway, separated from the main lanes by flexible “candlestick” barriers — Primarily serves mass transit and HOV needs during peak hours, with any unused lane capacity made available to single drivers for a toll — Serves as an all-electronic tollway for all vehicles (except mass transit) during all other times — Uses dynamic tolling to keep traffic moving — Harris County Constables enforce lawful use of the managed lanes — During rush hours, the minimum requirement raises to 3+ occupants on US 290 — QuickRide is a program that allows vehicles with 2 occupants to continue driving the HOV during these times for just \$2 each way. Times vary per freeway, and registration is required: I-10 W - 24x7 = 2+ / US 290 W - 6:45-8:00 a.m. = 3+ Inbound 							
Ongoing Transit Operating/Capital	The tolls collected from the I-10 Katy Managed Lanes and all Harris County Toll Road Authority (HCTRA) managed toll roads go right back into Harris County, and help manage and maintain the system of roadways, as well as help fund the upkeep of other county roads. Metropolitan Transit Authority of Harris County (METRO) has a 1% sales and use tax imposed within METRO's service area for transit activities.							
Transit Infrastructure	Park & Ride service is for long-distance commuting. METRO's 29 Park & Ride lots provide bus service to key destinations in the service area. One-way fare falls into four zones based on the distance a bus travels.							

I-15 – Salt Lake City, UT

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
40 miles	HOT lane	Dynamic	\$0.25 – \$1.00	Salt Lake City, UT	Express lanes		HOT	
Project	I-15 HOT lanes, since September 2006							
Status	Dynamic pricing in effect							
Toll Schedule	<ul style="list-style-type: none"> — Express lanes are divided into four payment zones with overhead signs that show the price to travel in each zone, using the supply-and-demand concept — An algorithm adjusts the price to drive in each zone based on traffic conditions, with costs highest during peak traffic — Express Pass costs \$8.75 — Carpoolers given first priority (free) — Solo drivers may pay a fee to use remaining capacity — Maintain 55 mph 							
Ongoing Transit Operating/Capital	Tolls must be used to operate and maintain the Express Lanes							

I-15 – San Diego County, CA – FY 2000*

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
20 miles	HOT lane	Variable	\$0.50 – \$8.00	San Diego County, CA	Managed lanes	Priced lanes	HOT	\$2,228,450
Project	Evaluation of extension of I-15 HOT lanes, provision of direct access ramps for high-frequency Bus Rapid Transit (BRT) service, and implementation of a violation enforcement system in San Diego County, CA, since December 1996							
Status	Extension of I-15 HOT lanes implemented; violation enforcement system implemented; and new BRT system to begin operation in 2013							
Toll Schedule	<ul style="list-style-type: none"> — Tolls range from \$0.50 to a maximum of \$8.00 — Tolls are based on the number of miles traveled and congestion in Express Lanes at time of entry — Ridesharing is always free as long as two or more people are in the car 							
Ongoing Transit Operating/Capital	<i>TransNet</i> is a voter approved half-cent sales tax for San Diego region transportation projects. During the 60-year life of the program, more than \$17 billion will be generated and distributed among highway, transit, and local road projects in approximately equal thirds.							
Outreach	<i>TransNet</i> Dashboard, an interactive, online reporting toll that displays how <i>TransNet</i> dollars are being spent. The Dashboard is a key element of KeepSanDiegoMoving.com, the region’s window to in-depth project descriptions, construction schedules, public meeting notices, maps, news releases, and other information.							
Transit Infrastructure	Four direct access ramps allow travelers to enter Express Lanes from surface streets. New and improved transit stations are located at these ramps to support improved public transit options. A fifth ramp, along with a transit center, will be constructed, and is expected to be completed in 2014.							

**Discussed in detail in the report.*

I-25 – Denver, CO – FY 2002

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
7 miles	HOT lane	Variable	\$0.50 – \$4.00	Denver, CO	Managed lanes	Priced lanes	HOT	\$1,721,526
Project	HOT lane on I-25/US 36 in Denver (I-25 Bus/HOV lane), since June 2006							
Status	Implementation complete and project began tolling							
Toll Schedule	<ul style="list-style-type: none"> — Carpoolers, Buses, and Motorcycles: access to HOV lanes remains free — Toll for not having an EXpressToll transponder or new sticker tag is about 25% higher than the posted toll rate at the time of travel — Motorists need to be in the appropriate lane in advance of the toll collection point and may not change lanes when there is a double solid line on the roadway — Prices vary by time of day — Toll rates are higher in peak periods to maintain current travel times in the HOV/Express Lanes — Purpose of the higher tolls is to ensure the HOV/Express Lanes never become congested — HOV/Express Lanes are operated and maintained by the High Performance Transportation Enterprise, a division of the Colorado Department of Transportation 							
Ongoing Transit Operating/Capital	Revenues generated from tolls are used for the operation, maintenance, and enforcement of the HOV/Express Lanes facility, snow removal, law enforcement, day-to-day operations, and eventual reconstruction. Toll revenue covers the maintenance costs that were previously paid by the Regional Transportation District (RTD), thereby saving taxpayer dollars.							
Transit Infrastructure	FASTER Statewide Transit Awards FY10-12: \$600k for North Pueblo Regional Park-and-Ride Parking for 40 vehicles at I-25 Exit 108 at Purcell							

I-35W – Minneapolis-St. Paul, MN – FY 2008

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
16 miles	HOT lane	Dynamic	\$0.25 – \$8.00	Minnesota Dept. of Transportation, MN	UPA	Priced lanes	PDSL	\$5,000,000
Project	UPA to study MN Innovative Choices for Congestion relief, using priced dynamic shoulder lanes (PDSL) on northbound portion of I-35W, since September 2009							
Status	Study completed and project implemented							
Toll Schedule	<ul style="list-style-type: none"> — Transit buses, carpools, and motorcycles can use the MnPASS Express Lanes for free — \$1.50 monthly lease per transponder — Price for one section of road varies: \$0.25 to \$8.00 — Average toll during peak periods is \$1.00 to \$4.00 							
Ongoing Transit Operating/Capital	Fees will pay for operation of the MnPASS Express Lanes. Excess revenues will be used to improve transit and other transportation needs.							

I-85 – Atlanta, GA*

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
15.5 miles	HOT lane	Dynamic	\$1.55 – \$13.95					
Project	Dynamic pricing							
Status	Operational in October 2011							
Toll Schedule	<ul style="list-style-type: none"> — Express lanes are open 24 hours a day — Toll-exempt vehicle (registration required): carpools with 3 or more occupants, motorcycles, transit and emergency vehicles, and alternative fuel vehicles (AFV) with the proper AFV license plate — Price to use the lanes changes to keep traffic moving even during rush hours — As demand increases, the tolls rise to ensure the optimal number of cars is moving through the lanes — Estimated average trip length that ranges between 6 and 7 miles may result in a typical toll price ranging from \$0.60 to \$6.00 per trip depending on congestion — It is estimated that over 90% of customers will pay less than \$5.00 for their HOT lane trip — Approximately 25% of customers will use the HOT lane for free, including passenger vehicles with 3 or more occupants, transit, motorcycles, and other qualified vehicles 							
Ongoing Transit Operating/Capital	A portion of Phase I funds will be used to build 2 new Park-and-Ride facilities, which will create 1,900 additional parking spaces for transit users; to purchase 36 new commuter coach buses that will support 7 routes serving the I-85 project corridor; and will also provide for enhanced Highway Emergency Response Operators (HERO) incident management services in the corridor.							
Outreach	A robust public outreach and education program is ongoing. As part of the National Environmental Protection Act (NEPA) process, about 600 people attended and had the opportunity to provide feedback at 8 public information open houses and a public hearing open house in 2009. Participant feedback included concerns about equity and enforcements, the effects of revised occupancy requirements on 2-person carpools, and an interest in the technology the project will bring to the region. In addition, 6 focus groups were conducted with single-occupant drivers and carpools, as well as a survey of more than 700 carpools in the I-85 region. One-on-one briefings with stakeholders, legislators, and the media also took place—and a project website for the public has been established at www.dot.ga.gov/I85HOTLanes .							
Transit Infrastructure	Expansion of transit in the I-85 corridor is a major component of this project. In addition, the metro Atlanta region's Concept 3 Transit Vision includes expanded rail and BRT in the corridor that could be part of a future expanded HOT network. Funds generated will be used to defray the costs of construction, operations, and maintenance of the lanes. Long-term revenue allocation is being studied, and a decision about future excess revenues will be made later in the project process.							

**Discussed in detail in the report.*

I-95 – Miami-Ft. Lauderdale, FL – FY 2003

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
7 miles	HOT lane	Dynamic	\$0.25 – \$7.00	Miami-Dade County, FL	Managed lanes	Priced lanes	HOT	\$508,000
Project	UPA (Urban Partnership Agreement) to study HOT lanes and express bus service on I-95, since 2008							
Status	Tolling began northbound in 2008 and southbound in 2010							
Toll Schedule	<ul style="list-style-type: none"> — Phase 1 weekday rush hour period is \$1.70 SB and \$2.25 NB — May go as high as \$7.00 under extreme conditions — Free: registered carpools of 3 or more, South Florida vanpools and registered hybrid vehicles; motorcycles (no registration required); transit buses 							
Ongoing Transit Operating/Capital	Nearly \$20 million in capital funds from Federal Transit Administration (FTA) for purchase of new low-emission buses: 95 express bus rapid transit; financial support for operations and maintenance							

I-394 – Minneapolis-St. Paul, MN – FY 2004

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
11 miles	HOT lane	Dynamic	\$0.25 – \$8.00	Minneapolis, MN	Managed lanes	Priced lanes	HOT	\$925,000
Project	I-394 pricing planning, outreach, and education, since May 2005							
Status	Study and implementation completed							
Toll Schedule	<ul style="list-style-type: none"> — Lanes are dynamically priced, free to HOVs and motorcyclists during peak hours, and free to all users in off-peak periods — Mon-Fri: 6 a.m. – 10 a.m. and 2 p.m. – 7 p.m./Reversible lanes: to the east: 6 a.m. – 1 p.m., to the west: 2 p.m. – 5 a.m., Weekends: switched back to the east at 10:30 a.m. on Saturday — Transit buses, carpools (2+), and motorcycles can use the MnPASS Express Lanes for free (no registration required) 							
Transit Infrastructure	Some Park-and-Ride access at I-94 (I-394 to Rogers)							

I-680 – Alameda and Santa Clara Counties, CA – FY 2004

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
14 miles	HOT lane	Dynamic	\$0.30 – \$1.75	Alameda County, CA	Managed lanes	Priced lanes	HOT	\$1,664,000
Project	I-680 SMART carpool lanes, since September 2010							
Status	SMART carpool lanes operational							
Toll Schedule	<ul style="list-style-type: none"> — Regular carpools (2 or more), motorcycles, and transit buses travel free with no toll tag required — Minimum toll during AM commute is \$1.00, with off-peak minimum of \$0.30 — Operation is fully electronic — Toll costs vary based on real-time traffic levels in the express Lane to ensure traffic in the lane continues to flow — Express lane operates Monday to Friday from 5 a.m. to 8 p.m. At nights and on weekends, the lane is open to all drivers 							
Ongoing Transit Operating/Capital	Toll revenue will pay for operating and maintaining the lane, for transit service on the I-680 corridor, and for building other carpool lanes or express lanes in the I-680 corridor, including a future project on northbound I-680.							

Lake of the Ozarks Bridge – Lake Ozark, MO

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Bridge			\$2.00 – \$3.00					
Toll Schedule	— Toll Rates In Season: Passenger car, van, pickup, or motorcycle - \$3.00; Toll Rates Out of Season: Passenger car, van, pickup, or motorcycle - \$2.00							
Ongoing Transit Operating/Capital	Funds generated by tolls are used to repay the nearly \$43 million in bonds needed to finance the planning, development, and construction of the bridge system.							

MD-200 (Inter-County Connector) – Montgomery County, MD

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
18.8 miles	Highway	Peak period	\$0.60 – \$1.45	Montgomery County, MD				
Project	The Inter-county Connector (ICC)/MD 200 is Maryland's first all-electronic toll road where tolls are collected at highway speed as motorists drive under tolling structures.							
Toll Schedule	<ul style="list-style-type: none"> — Tolls vary to help manage traffic volumes, with a higher toll charged during peak hours and a lower toll charged during off-peak and overnight hours — Tolls are higher during peak travel times (Monday – Friday, 6 a.m. – 9 a.m. and 4 p.m. – 7 p.m.) and reduced during off-peak and overnight pricing periods — Peak Period (\$0.25/mile – \$0.35/mile); Off-Peak Period (\$0.20/mile – \$0.30/mile); Overnight Period (\$0.10/mile – \$0.30/mile) 							
Ongoing Transit Operating/Capital	Tolling provides funds for financing, operating, and maintaining a large transportation project like the ICC.							
Transit Infrastructure	The ICC provides access to Metrorail, MARC Train Service, BWI Marshall Airport, local transit services, and MTA's Commuter Bus Service. The Maryland Transit Administration (MTA) operates high-quality, tour-style commuter buses along express routes, linking key employment and activity centers along the I-270 & I-95 corridors.							

New Jersey Turnpike – New Jersey, US – FY 2001

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
148 miles	Highway	Peak-period	\$0.90 – \$9.05	New Jersey statewide	Managed facility	Priced tollway	VPP	\$477,468
Project	Evaluate variable tolls on New Jersey Turnpike, since 2000							
Status	Evaluation completed and variable tolls implemented on the New Jersey Turnpike							
Toll Schedule	<ul style="list-style-type: none"> — Program provided for tolls that were 12 percent higher during peak traffic hours than during off-peak periods for ETC — Price differential is scheduled to increase in a phased manner over several years — Peak periods are 7:00 to 9:00 a.m. and 4:30 to 6:30 p.m., Monday through Friday, and all day Saturday and Sunday — Discount Programs for registered: Senior Citizen, Green Pass (45 mpg + SULEV), Off Peak, Off Peak + Pkwy Truck, Turnpike Truck, Florence Resident, GSP Trailer, and multiple Bus, including New Jersey Turnpike Commuter Bus Discount, New Jersey Transit Bus Discount, Garden State Parkway Commuter Bus Discount, and School Bus Discount 							
Transit Infrastructure	Commuter lots adjacent to the turnpike and in some service areas provide access to express bus service and are identified on the turnpike map to enable trip planning.							

New York Metro Area – New York/New Jersey, US – FY 2001

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
4 bridges 2 tunnels	Bridge & Tunnel	Peak-period	\$4.00 – \$8.00	New Jersey statewide	Managed facility	Priced tollway	XBL/HOT	\$1,680,706
Project	Evaluate variable tolls on river crossings and examine feasibility of pricing a new managed lane intended as an express bus/HOT lane in Lincoln Tunnel, since March 2001							
Status	Evaluation completed and study completed: "Lincoln Tunnel HOT Lane Feasibility Study, The Port Authority of NY & NJ, December 2009, Final Report"							
Toll Schedule	<ul style="list-style-type: none"> — Peak Hours: Weekdays: 6 – 10 a.m., 4 – 8 p.m. / Sat & Sun: 11 a.m. – 9 p.m. — Green Pass customers (45 mpg + SULEV) \$4.00 toll during off-peak hours — Carpool customers \$3.50 per vehicle at all hours — Discounted off-peak toll two axles and single rear wheels = \$7.50 — \$8.7 billion Mass Transit Tunnel (MTT) project (2009) – FTA+ARRA+FHWA funding 							
Ongoing Transit Operating/Capital	The current list of TRANSCOM (regional transportation management) members and their percentage shares of contributions toward TRANSCOM's budget are as follows: 15.69%-Port Authority, NJDOT, NYSDOT; 7.84%-MTA, B&T, NYCDOT, NJTA; 3.93%-NJT, PATH, NYCT, Connecticut DOT, NYSTA; 1.96%-NYSBA							

Pocahontas Parkway – Richmond, VA

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
8.8 miles	Highway	Peak-period	\$2.75 – \$3.00					
Project	Peak-period pricing							
Status	Operational in January 2011							
Toll Schedule	<ul style="list-style-type: none"> — In 2006, VDOT initiated a 99-year lease with Transurban to manage and maintain the road — Commuting hours: 6 – 9 a.m. and 3 – 6 p.m. weekdays = \$3.00 — All other weekday times and weekends = \$2.75 							

San Francisco-Oakland Bay Bridge – San Francisco Bay Area, CA

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
8 miles	Bridge	Peak period	\$2.50 – \$6.00					
Project	Congestion management toll, since January 2009							
Status	Peak-period pricing operational July 2010							
Toll Schedule	<ul style="list-style-type: none"> — Tolls are collected manually or electronically in one direction on each of the state-owned bridges, according to a toll schedule established by Bay Area Toll Authority (BATA) and the California legislature — For the typical automobile, a \$5 toll is collected — a \$1 base toll, \$1 for Regional Measure 2, and a \$3 seismic retrofit surcharge — Toll schedule for the San Francisco-Oakland Bay Bridge is different during weekdays when congestion pricing is in effect — Multi-axle vehicles pay a higher base toll, with the toll determined by the total number of axles on the roadway in a vehicle combination — Commuter bus or a vanpool vehicle may cross toll-free at any time in designated lane(s), in accordance with Authority operational procedures — Passage through staffed lanes requires a toll-free commute bus ticket or non-revenue FasTrak® toll tag issued by the Authority — A 50% discount applies to HOV (3 or more) and registered hybrid vehicles during designated times and through designated lanes 							
Ongoing Transit Operating/Capital	Approximately 18% of the base toll collected from the bridges has been statutorily set aside for transit improvement purposes. This toll revenue is transferred from BATA into three separate Metropolitan Transportation Commission (MTC) reserve accounts: (A) AB 664 Net Toll Revenue Reserves, (B) Five Percent Reserves, and (C) Regional Measure 1 Rail Extension Reserves.							

SR 73, San Joaquin Foothill Toll Roads, SR 261, SR 241, and SR 133 – Orange County, CA – FY 1999

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
SR 73: 15 miles SJHTC: 12 miles SR 261: 6.6 miles SR 241: 22.2 miles SR 133: 4.1 miles	Highway	Peak-period	\$3.95 – \$5.75 \$1.30 – \$2.25 \$2.10 – \$3.00 \$1.60 – \$2.25	Orange County, CA	Managed facility/lanes	Priced tollway	VPP	\$535,200
Project	Implementation of peak pricing and variable tolls on the San Joaquin Hills Transportation Corridor (SJHTC) and SR 73, since February 2002							
Status	Study completed and project implemented							
Toll Schedule	<ul style="list-style-type: none"> — A small peak period premium that was implemented at the mainline plaza in February 2002 was increased to \$0.50 in July 2005 and to \$0.75 in July 2006 — Premium was designed to reduce congestion and spread peak demand to shoulder and off-peak periods, while maintaining revenues at required levels — No discount tolls for carpools, commuters, energy efficient vehicles, or transit 							
Ongoing Transit Operating/Capital	The San Joaquin Hills (SR 73), Foothill (SR 241), and Eastern (SRs 241/261/133) Toll Roads were the first public highways to be constructed in Orange County since 1987. The Toll Roads, owned and maintained by the State of California, were built with virtually no taxpayer dollars. The Transportation Corridor Agency (TCA) is funded by the sale of bonds to both private individuals and institutional investors. The bonds can be repaid only by future tolls and development fees. Since the bonds are not backed by the government, taxpayers are not responsible for repaying the debt if future toll revenues fall short. Today, toll and development impact fee revenue go toward retiring the construction debt, funding additional improvements, and covering costs of operating.							

SR 91 – Orange County, CA – FY 1999

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
10 miles	HOT lane	Variable	\$1.30 – \$9.75	Orange County, CA	Managed lanes	Priced lanes	ETL	\$314,762
Project	Evaluation of value-priced express lanes in median of Riverside Freeway (SR 91) in Orange County, CA, since December 27, 1995							
Status	Study completed: "Continuation Study to Evaluate the Impacts of the SR 91 Value Prices Express Lanes," Final Report, December 2000							
Toll Schedule	<ul style="list-style-type: none"> — Routinely spend less than \$7 in tolls per month per transponder — No monthly toll requirements — One-time refundable \$75 per transponder enrollment fee — \$75 one-time, 2–25 one-way trips per month — Pay a minimum of \$7 in tolls each calendar month for each transponder — \$7 min/mo. – more than 20 one-way trips per month — \$20 per transponder monthly membership fee — Receive a \$1 per trip discount for all tolled trips — \$20/mo. + \$1 discount per trip — Special access accounts: three or more people in one vehicle; drive a motorcycle; drive a pure zero-emission vehicle; have a disabled veteran or disabled person license plate issued by the DMV – These do not apply on weekdays on eastbound lanes between 4 and 6 p.m. when a 50% discount is applied/Free or 50% discount 							
Ongoing Transit Operating/Capital	In 2006, Orange County Transportation Authority (OCTA) introduced comfortable, work-ready OC Express buses on SR 91 express lanes and freeway HOV lanes.							
Outreach	OCTA Connections is OCTA's e-newsletter: 91 Express Lanes, Metrolink rail service, freeway improvement projects, local street improvements. There are two full-service walk-in customer service centers: to update 91 Express Lanes account information, replace or add transponders, make payments, or open a new account. OCTA bus transit information and passes are available at the Orange Store location.							

SR 167 – Seattle, WA – FY 2005*

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
20 miles	HOT lane	Dynamic	\$0.50 – \$9.00	Seattle, WA	Managed lanes	Priced lanes	HOT	\$2,060,000
Project	SR 167 HOT lane pilot project, since May 2008							
Status	Project implemented							
Toll Schedule	— Fast, toll-free trips for HOV users, transit, vanpools, carpools, and motorcycles							
Ongoing Transit Operating/Capital	A portion of the revenue may be dedicated to increase transit, vanpool, carpool, and other services for the SR 167 corridor.							
Transit Infrastructure	Twelve separate regional transit express routes operate on SR 167, parallel SR 167, or cross over SR 167. Seventeen local transit routes operate within the SR 167 Corridor and adjacent cities. There are 22 park-and-ride lots in the SR 167 Corridor. Sounder Commuter Rail operates on tracks that run parallel to SR 167 with 5 station stops.							

**Discussed in detail in the report.*

SR 520 – Seattle, WA – FY 2008*

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Bridge	Bridge	Variable	\$0.00 – \$5.00	Washington State Dept. of Transportation /King County/ Puget Sound, WA	UPA	High-performance highway	VPP	\$10,000,000
Project	Seattle/Lake Washington Corridor Tolling and Transit UPA; introduction of tolling to SR 520; and toll rates based on demand to avoid congestion and loss of capacity							
Status	Study was completed and project was implemented in 2011							
Toll Schedule	<ul style="list-style-type: none"> — Registered vanpools and transit are exempt from tolls on the SR 520 bridge, along with emergency response vehicles such as police, fire, and ambulances on bona-fide emergencies — Washington State Patrol vehicles assigned to the bridge, tow trucks authorized by the Washington State Patrol to clear a blocking incident, and bridge maintenance vehicles — Carpools and motorcycles are not exempt — Variable toll rates 7 days a week from 5 a.m. to 11 p.m. — Good to Go discount pass (SR 520, Tacoma Narrows Bridge, and SR 167) or Pay by Mail — Weekday: \$1.64-\$3.59 Pass vs. \$3.18-\$5.13 Mail / Weekend: \$1.13-\$2.26 Pass vs. \$2.67-\$3.79 Mail 							
Ongoing Transit Operating/Capital	Added 130 bus trips to routes on SR 520 for a total of 700 every weekday, plus a new route on SR 522. Improvements to bus stops and park-and-rides. Revenue from tolling the bridge will be used only as authorized by the legislature for bond payments, operations, and maintenance within the SR 520 corridor.							
Outreach	Coordinate with local jurisdictions to monitor key routes on highway and local streets. Closely monitor all of the Lake Washington corridors to determine how tolling affects traffic. Monitoring work will compare traffic conditions after tolling to pre-toll conditions. Also track travel times, coordinate signals, and collect traffic count data on highways and local roads. Regularly report on traffic conditions to the legislature, local governments, and the transportation commission.							
Transit Infrastructure	Will accommodate light rail in the future.							

**Discussed in detail in the report.*

Tappan Zee Bridge – New York, NY

No. Facilities/ Miles	Project Type	Pricing Type	Toll Rates	Funding Recipient	Project Type	Value Pricing Pilot Program	Pricing Type	Grant
			\$1.55 – \$13.95					

Toll Schedule	<ul style="list-style-type: none"> — On weekends E-ZPass customers with toll class 3L-7H vehicles are charged the 12:00 a.m. (midnight) – 6:14 a.m. rate — Customers who do not use E-ZPass tags pay the 7:00 a.m. – 8:59 a.m. rate at all times — Toll for Class 2L vehicles at the Tappan Zee Bridge is \$5.00 (cash) or \$4.75 (E-ZPass) at all times, except for those customers that have an individual E-ZPass account with a bridge commuter or carpool plan — E-ZPass discount = 5% — Carpool Commuter Plan: 3 or more occupants in the vehicle and monthly minimum bridge usage charge of \$10.00 (20 trips at \$0.50 per trip) vs. the full toll of \$5.00 per trip — \$0.50 toll applies only at staffed lanes; \$3.00 per trip is charged in unstaffed lanes
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Appendix B

DOT's Managed Facility Value Pricing Pilot Program Grants, Fiscal Years 2000 – 2011

*Sources: GAO Report 12-119, Federal Highway Administration
Express Lane Demonstration Project (ELDP)*

Miami-Dade County, FL – FY 2000			
Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced tollway	VPP	\$696,320
Project	Study feasibility of implementing value pricing on a 21-mile section of the Homestead Extension of Florida's Turnpike (HEFT)		
Status	Study completed. Elimination of cash payments for tolls was the largest obstacle.		
Philadelphia, PA – FY 2001			
Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced tollway	VPP	\$776,000
Project	Study potential for value pricing strategies to alleviate congestion, facilitate movement of commercial vehicles to industrial and commercial destinations, and to improve the movement of daily commuter vehicles to and from the workplace. Concurrent with the value pricing study, the Pennsylvania Turnpike Commission (PTC) implemented ETC (E-ZPass) for travel between ticket interchanges on its mainline system.		
Status	Study completed.		
Philadelphia, PA – FY 2002			
Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced tollway	VPP	\$800,000
Project	Explore variable tolls on PA turnpike.		
Status	Implementation.		
Chicago, IL – FY 2003			
Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced tollway	VPP	\$360,000
Project	Study variable tolls on Northwest Tollway. Phase 1 was designed as a basic feasibility study and evaluation of possible pricing options.		
Status	Study completed. Illinois Tollway approved a comprehensive Congestion-Relief Plan in September 2004 that included value pricing concepts.		

Atlanta, GA – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced lanes	TOT/HOT	\$242,388
Project	Study feasibility of implementing HOT/Truck-Only Toll (TOT) lanes on I-75 South.		
Status	Feasibility study completed: "Study of Potential Managed Lanes on I-75 South Corridor, November 2008, FINAL," but not pursuing implementation.		

Savannah, GA – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced lanes	TOT	\$472,000
Project	Examined a truck-only toll facility extending from Georgia State Route 21 near I-95 to I-16 at the intersection of I-516 (Savannah).		
Status	Study completed, but not pursuing implementation.		

NE Illinois, IL – FY 2006

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	System-wide pricing	VPP comprehensive pricing	\$750,000
Project	Study comprehensive pricing in NE Illinois: feasibility of variable tolls on tolled routes; feasibility of using congestion pricing to manage peak period traffic congestion in the Chicago region; increase use of alternate travel modes; and enhance system capacity.		
Status	Study completed and considering pricing in 2 corridors.		

Port Authority of New York and New Jersey, NJ – FY 2007

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility		VPP	\$988,000
Project	Upgrade electronic toll collection technology.		
Status	Study was withdrawn.		

Twin Cities Area, MN – FY 2009

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced lanes	ETL	\$540,000
Project	Study feasibility of pricing innovative lane additions on Trunk Highway 77.		
Status	Analysis completed and final recommendations anticipated as early as 2011. Study was withdrawn.		

Connecticut Department of Transportation, CT – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced lanes	ETL	\$1,120,000
Project	Study application of full facility pricing to the I-95 Corridor (includes two expressways and a major commuter rail line) from New York to New Haven, CT, and identify how toll revenues would be applied to provide strong support for transit.		
Status	Approved for funding. FHWA awarded and allocated funds on February 6, 2012.		

Florida Turnpike Enterprise, FL – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	System-wide pricing	VPP/Integrated congestion pricing	\$600,000
Project	Evaluate two-tiered pricing on an existing toll facility and develop performance measures to track the changes in congestion, air quality, safety, livability, and other factors that would result.		
Status	Approved for funding with a completion date of 2013.		

Illinois State Highway Tollway Authority – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed facility	Priced tollway	Integrating and financing transit with managed lanes	\$528,840
Project	Study will look at the application of pricing on an existing toll road, and will evaluate steps to mitigate equity concerns for potential low-income users. The project will also evaluate how transit could be integrated and financed through priced managed lanes.		
Status	Approved for funding with feasibility funds awarded 2011. Anticipated completion date is 2013.		

Appendix C

DOT's Managed Lane Value Pricing Pilot Program Grants, Fiscal Years 2000 – 2010

*Sources: GAO Report 12-119, Federal Highway Administration
Express Lane Demonstration Project (ELDP)*

Santa Cruz, CA – FY 2000			
Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	HOT	\$264,000
Project	5 HOT lanes as alternatives for Route 1 were studied.		
Status	Results of the study indicated that HOT lanes in the study corridor would be subject to a number of design and operation constraints due to the short study corridor, multiple interchanges on the adjacent main lines, and anticipated high levels of HOV traffic. A carpool lane was selected as an alternative.		
C-470 – Denver, CO – FY 2001			
Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	ETL	\$500,000
Project	Study the design, operational and financial feasibility, and expected public acceptance of express lanes on the 26-mile C-470 beltway in the southwest part of the Denver metro area.		
Status	Study completed: "C-470 Corridor Express Lanes Feasibility Study Final Report, June 2005." Project is on hold until further notification is given by the Colorado Department of Transportation.		
Broward County, FL – FY 2002			
Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced tollway	VPP/ORT	\$320,000
Project	Pilot project to combine Open Road Tolling (ORT) and Value Pricing (VPP) on Sawgrass Expressway.		
Status	Study was completed. Elimination of cash payments for tolls was the largest obstacle faced.		

I-30 – Dallas-Fort Worth, TX – FY 2002

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	ETL	\$152,000
Project	Project opened in August 2007 as an interim "Managed HOV Lane." The project is operating in HOV-only mode. It will transition to "Express Lanes" with pricing in later phases as the tolling infrastructure is constructed.		
Status	Study completed: "I-30 Value Pricing Pilot Program for Dallas District, August 2010."		

Highway 217 – Portland, OR – FY 2002

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	ETL	\$400,000
Project	Develop and evaluate several rush-hour toll and ramp meter bypass alternatives in the Highway 217 corridor, including consideration of Fast and Intertwined Regular (FAIR) lanes among other value pricing approaches at ramp meters.		
Status	Study completed: "Highway 217 Corridor Study Phase II Overview Report - Study Findings and Recommendation, October 7, 2005." Further study is on hold, pending funding for an environmental impact study.		

I-40 – Raleigh/Piedmont, NC – FY 2002

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	HOT	\$402,400
Project	Study HOT lanes and other potential value pricing options on I-40 in North Carolina's Piedmont (Greensboro, High Point, and Winston-Salem) and Research Triangle (Raleigh and Durham) areas.		
Status	Study was completed. The environmental assessment has not been completed.		

I-35 – San Antonio, TX – FY 2003

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	ETL	\$160,000
Project	Evaluate managed lane options for a 15-mile section of the Northeast Corridor (I-35). This project is San Antonio's first VPPP grant.		
Status	Study was completed and referred to the Regional Mobility Authority.		

I-75 – Atlanta, GA – FY 2004

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	ETL	\$400,000
Project	Examined I-75 travel corridor in Atlanta to determine if value pricing in combination with Bus Rapid Transit (BRT) could reduce the existing high levels of congestion.		
Status	Study completed: "Interstate 75 Stated Preference Survey Final Report, November 2005," and pursuing implementation. Based on the combined assessment of traffic and toll revenue, A-3 Express Toll Lanes (Cars Only) was selected as the preferred alternative for the corridor due to revenue potential versus estimated costs. It was considered to be the alternative that provides the most efficient use of public funds.		

GA-400 – Atlanta, GA – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced tollway	VPP	\$444,000
Project	Study the institutional challenges and feasibility of moving from a fixed-price toll to a variably priced toll system using GA-400 as a case study.		
Status	Study was completed and project was implemented.		

MoPac Expressway – Austin, TX – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	HOT	\$172,000
Project	Study Loop 1 (MoPac Expressway) HOT Lane Enforcement and Operations in Austin. HOT lane will be actively managed according to an operational plan that triggers changes in price in order to maintain free flow conditions for express bus/BRT.		
Status	Completed 4 technical memoranda in December 2009. The Texas Department of Transportation, in partnership with the Central Texas Regional Mobility Authority, the City of Austin, and Capital Metro, has studied the problem and completed a Draft Environmental Assessment, which recommends that one express lane be constructed in each direction. The express lane alternative includes the construction of ramps, bicycle and pedestrian improvements, and noise barriers. FHWA is expected to issue a final decision regarding the proposal by fall 2012.		

Austin, TX – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced tollway	VPP	\$148,000
Project	Examine the use of value pricing to encourage truck traffic to divert from I-35 to a newly constructed, parallel toll facility, and methods to encourage route and time-of-travel shifting.		
Status	Study was withdrawn.		

Baltimore, MD – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	ETL	\$0
Project	In July 2005, FHWA/MDOT/MdTA signed a VPP toll agreement authorizing collection of tolls on new ETLs on: I-95/JFK Expressway in Baltimore (Section 100) and Section 200, a 10-mile stretch north of Section 100.		
Status	Section 100 is to be completed in 2014. No funds are programmed for Section 200.		

I-10 – San Antonio, TX – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	ETL	\$129,600
Project	Examine use of value pricing on a 19-mile segment on I-10. Considered use of tolling for demand management and public acceptance.		
Status	Study completed: "San Antonio IH 10E and IH 10W Corridors: Value Priced Express Lanes Final Report, September 2009," but not pursuing implementation.		

Waco, TX – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes			\$440,000
Project	Study value priced express lanes on I-35.		
Status	Study was complete. ELDP toll agreement and pursuing funding.		

Washington, DC – FY 2005

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes			\$240,000
Project	Regional network of value-priced lanes.		
Status	Section 100 to be completed in 2014; no funds are programmed for Section 200.		

Riverside County, CA – FY 2006

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	TOT	\$118,311
Project	Analyze environmental effects of PierPass, which provides off-peak truck discounts from the normal charges for accessing the Ports of Los Angeles and Long Beach.		
Status	Study was completed.		

Twin Cities, MN – FY 2007

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	System-wide pricing	FAST miles	\$60,000
Project	Explore political feasibility of an innovative pricing concept called "FAST Miles," where each motorist is provided a number of dollar credits per month, analogous to the "free minutes" given by cell phone providers. Motorist can apply those credits to use priced lanes, but once credits are exhausted, motorist is charged the going rate to use the priced lanes. FAST Miles encourages carpooling for motorists who pool credits.		
Status	Study was completed and project was implemented.		

I-495 Capital Beltway – Fairfax County, VA – FY 2008

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes			
Project	Federal, state, and local leaders broke ground on July 22, 2008, on a \$1.4 billion public-private transportation project on the I-495 Capital Beltway in Fairfax County. The project will establish the Beltway's first-ever HOV network for carpools and vanpools, and provide opportunities for new bus services. Vehicles carrying 3 or more people and motorcycles will travel for free, while other motorists can opt to pay a toll to use the HOT lanes or continue to ride in the regular lanes for free. Construction will last 5 years.		
Status	Project was approved for funding. FHWA awarded and allocated funds on February 6, 2012.		

SR 237 – Caltrans/Santa Clara Valley Transportation (VTA), CA – FY 2009

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	System-wide pricing	Express connectors	\$3,200,000
Project	Implement roadway pricing on SR 237 Express Connectors based on the following system-wide pricing: carpools with 2 or more occupants, motorcycles, transit buses, and eligible hybrids will use the Express Connectors free of charge; solo drivers must pay a toll during commute hours; and tolls will vary based on level of congestion, and will be adjusted to maintain a free-flowing ride.		
Status	Tolling operations were scheduled to begin on March 15, 2012.		

I-595 – Florida Department of Transportation, FL – FY 2009

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Express lanes	ELDP	\$940,000,000
Project	ELDP application was approved on July 1, 2009, and ELDP toll agreement was signed on September 30, 2009. ELDP federal funds include a \$603 million TIFIA direct loan, plus \$904 million in federal aid (to be paid out over a 30-year concession).		
Status	I-595 project will include the construction of approximately 10.5 miles of 3 new, tolled express lanes as part of the widening and reconstruction of portions of I-595, in the Ft. Lauderdale area. Express bus service will operate during peak hours Monday through Friday, and is anticipated to start in 2011, providing premium transit service with wi-fi and high-back seating.		

North Tarrant Express – Texas Department of Transportation, TX – FY 2009

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Express lanes	ELDP	\$454,000,000
Project	ELDP application was approved on July 16, 2008, and ELDP toll agreement was signed on March 12, 2009. ELDP federal funds include a \$650 million TIFIA direct loan, plus approximately \$454 million from other federal sources.		
Status	The North Tarrant Express project would consist of the construction of approximately 36 miles of new managed (tolled) lanes as part of the reconstruction of portions of I-820, I-35W, and State Highway 183 in the area of Fort Worth.		

I-35E – Texas Department of Transportation, TX – FY 2009

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Express lanes	ELDP	\$91,430,000
Project	The ELDP application was approved on July 1, 2009, and ELDP toll agreement was signed on September 30, 2009. ELDP federal funds identified from various federal sources total \$91.43 million.		
Status	The I-35E project would consist of the construction of 28 miles of new managed (tolled) lanes and access ramps in the Dallas area.		

I-635 – Texas Department of Transportation, TX – FY 2009

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Express lanes	ELDP	\$261,000,000
Project	The ELDP application was approved on March 19, 2008, and ELDP toll agreement was signed on March 12, 2009. ELDP federal funds include an \$850 million TIFIA direct loan, plus approximately \$261 million in federal grant funds.		
Status	The I-635 project would consist of the construction of 28 miles of new managed (tolled) lanes as part of the reconstruction of portions of I-635 and I-35E in the Dallas area.		

Twin Cities Area, MN – FY 2009

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes			\$400,000
Project	Pre-implementation study of a priced managed lane on I-94.		
Status	Study just started.		

Florida Department of Transportation, FL – FY 2010

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes			\$900,000
Project	Initiative for a regional priced managed lane network that can serve as a model for other regions.		
Status	Feasibility study is underway.		

North Carolina Department of Transportation & Charlotte MPO, NC – FY 2010

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	HOT	\$400,000
Project	Explore and advance pricing in the Charlotte region by evaluating the impacts of tolling an interstate prior to and during construction of new infrastructure, and explore public acceptance of multiple funding sources.		
Status	Feasibility study is underway (early 2012).		

Tampa-Hillsborough Expressway Authority, FL – FY 2010

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	BTL	\$800,000
Project	Advance first regional network of bus toll lanes in the Tampa area.		
Status	Feasibility study is underway.		

California Department of Transportation, CA – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Zone-based pricing	Cordon/area pricing	\$3,200,000
Project	Evaluate the application of cordon and area pricing within major activity centers in the downtown Los Angeles core, and build out a network of HOT lanes.		
Status	Project was approved for funding.		

I-84 Viaduct – Connecticut Department of Transportation, CT – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Priced lanes	ETL	\$644,000
Project	Study the application of pricing on the I-84 Viaduct, Hartford, CT, including an assessment of the impacts of environmental justice issues that resulted from original construction of the viaduct.		
Status	Project was approved for funding. FHWA awarded and allocated funds on February 6, 2012.		

Dallas Area Rapid Transit, TX – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes			\$160,000
Project	Study will look at a transit credit program designed to provide occasional free use of the HOT lane for regular transit users when they need to drive, and a parking pricing program at a park-and-ride lot with free parking and shuttle services added from a more distant lot.		
Status	Approved for funding.		

I-30 – Texas Dept. of Transportation & North Central Texas Council of Governments – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	Express lanes	ELDP	\$588,301
Project	The ELDP application was approved on July 1, 2009, and ELDP toll agreement was signed on September 30, 2009. The project, "Influencing Travel Behavior and Considering Environmental Justice," will examine important environmental justice issues related to pricing I-30, through the use of innovative Intelligent Transportation Systems (ITS) technology. Since there is little experience with strategies designed to address environmental justice issues related to the introduction of pricing, the project will provide important data on environmental justice and pricing.		
Status	I-30 project would consist of the construction of 17 miles of new managed (toll) lanes and access ramps in the Dallas area. Funding was approved.		

Texas Dept. Transportation & Central Texas Regional Mobility Authority, TX – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes			\$1,220,424
Project	183A Turnpike Pilot implements a peak period toll in conjunction with dynamic ridesharing on an existing congested toll road. Project explores dynamic ridesharing as an equity mitigation strategy; a field trial is included as part of project. The road opens in 2012. Local agencies are contributing funds to support the project; therefore, this project meets the evaluation criteria for innovation, livability, sustainability, equity, congestion reduction, safety, and state of good repair.		
Status	Project was approved for funding.		

Virginia Department of Transportation & Washington COG – FY 2011

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes	System-wide pricing	VPP regional network	\$320,000
Project	Advance regional pricing in DC, including pricing existing facilities.		
Status	Feasibility study is underway.		

I-805, San Diego, CA – FY 2012*

Project Type	Value Pricing Pilot Program	Pricing Type	Grant
Managed lanes		HOV	
Project	SANDAG was awarded \$100 million by the California Transportation Commission (CTC) to build two HOV lanes—one in each direction—on I-805 between Palomar Street and SR 94. Lanes will provide choices for drivers in South County, allowing carpoolers and transit riders to access the HOV lanes and quickly travel back and forth to downtown San Diego. The South Bay BRT project, a 21-mile rapid, reliable, and high-frequency transit service, is expected to be in service in early 2014. In the long-term, the BRT will operate on HOV lanes on SR 94 and along I-805 managed lanes, with direct access ramps connecting freeway stations and park-and-ride lots.		
Status	Project was approved for funding. FHWA awarded and allocated funds on February 6, 2012.		

**Discussed in detail in the report.*