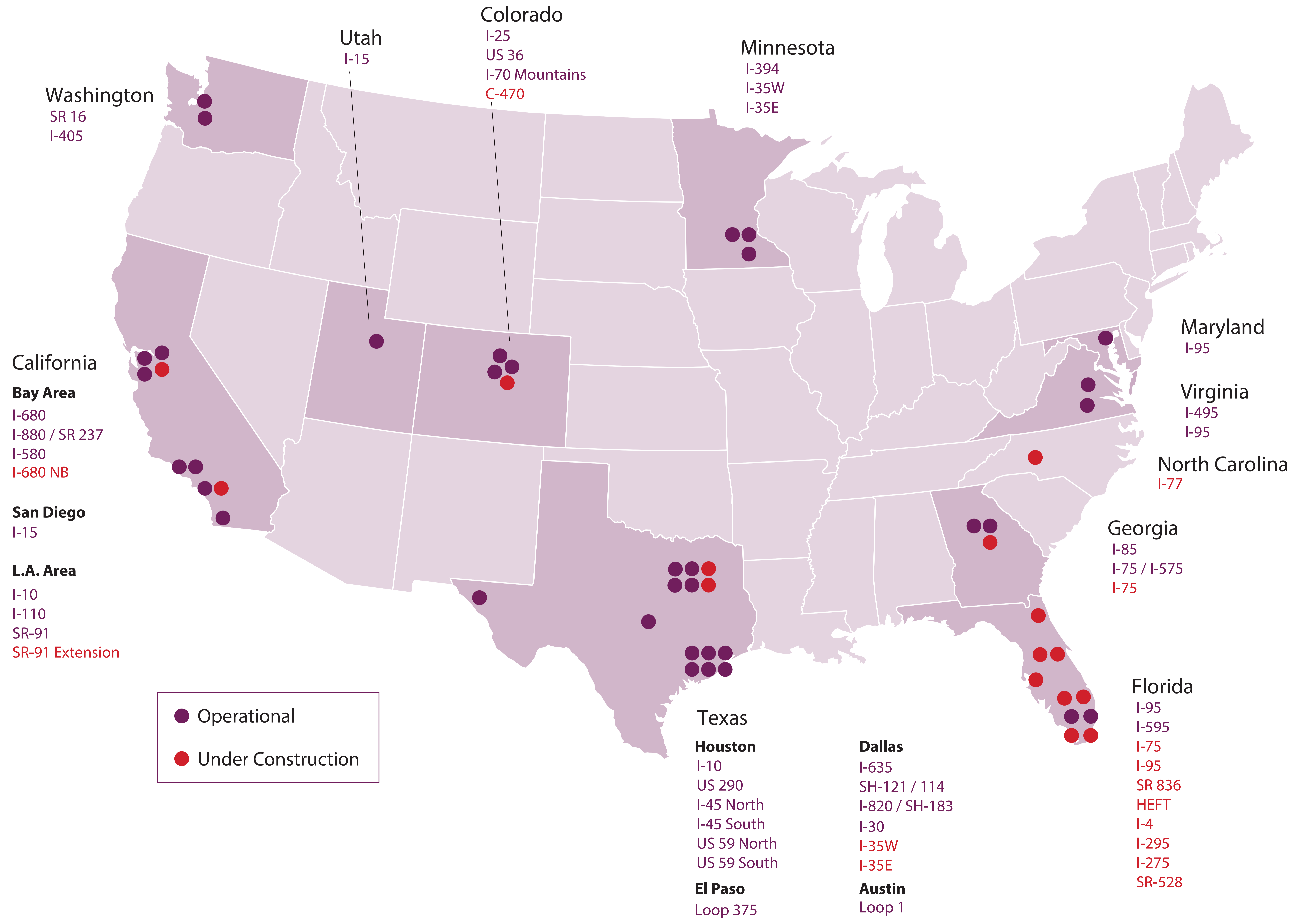




Priced Managed Lanes Operating or in Construction, February 2017



Part 1 – Facility Description, Hours, Access and Occupancy

(1) ID	(2) State ID (YearOpen)	(3) Facility	(4) Length (C/L) (Lane)	(5) Type	(6) Hours of Operation	(7) Separation Treatment (Type) (Lanes)	(8) Separation Treatment (Detail) (Width)	(9) Access Control (No.) (Dir) (Type)	(10) Hours of Operation Policy	(11) Occupancy Rules (Initial)	(12) Occupancy Rules (Current)
1	CA1	SR 91 Express Lanes	10 40	New	24/7	Pylon (2-2)	PPP 4-0	2 EB/1 WB; Ends	Formal	SOV and 2+ tolled; 3+ free	SOV and 2+ tolled; 3+ free some of the time; 3+ discount some of the time
2	CA2	I-15 Express Lanes	20 80	Conv. New	24/7	Paint 2-2; Barrier 2-2 & 3-1R	PBP 4-0 and varies; PSBSP 22-0 and varies	Limited; 7G&7S NB; 7G&6S SB	Formal	2+ free	Same
3	CA3	I-110 Express Lanes		HOV Conv	24/7	Paint (1-1)		Limited	Implicit		
4	CA4	I-10 Express Lanes		Bus Conv	24/7	Paint (1-1)		Limited	Implicit		
5	CA5	I-680 Express Lanes		HOV Conv	SB 5AM-8PM weekdays	Paint (1D)		Limited	Implicit		
6	CA6	SR 237/I-880 Express Lanes		HOV Conv	WB 5-10 AM, 3-7 PM EB 5-9 AM, 3-7 PM weekdays	Paint (1-1)		Limited Access	Implicit		
7	CO1 - HOV 2000 / HOT 2006	I-25 Central Express Lanes	10	HOT	SB 5-10AM NB 12-3AM	Barrier (2R)		Limited	Formal - P3	HOV 2+	HOV 3+ Effective 01/01/2017
8	CO2- Phase I Federal to Interlocken Opened 07/22/2015; Phase II Interlocken to Table Mesa Opened 04/206	US 36, Federal to Table Mesa	38	Conv / New	24/7	Paint (1-1)		Limited	Formal-P3	HOV 2+	HOV 3+ Effective 01/01/2017
9	CO3- under construction - toll commencement 2020	C-470, I-25 to Wadsworth	28	Under Construction	24/7	Paint		Limited	Formal	All Pay	
10	CO4- Opened 07/12/16	I-25 North Segment 2, US 36 to 120th	12	HOT	24/7	Paint		Limited	Formal	HOV 2+	HOV 3+ Effective 01/01/2017
11	CO5- Opened 12/12/2015	I-70 Mountain Express Lane, EB only, HSR operation, Empire to US 6 Exit	13	New	Predominately Weekend - Open 90 days per Calendar Year; +/- 10 days	Paint (1D)		Limited	Formal	All Pay	
12	FL1 (Jan2010)	I-95 Express Lanes Phase 1	7.1	Conv New	24/7	Pylons (2-2)		Limited	Formal	HOV 2+	HOV 3+
13	FL3 (Oct 2016)	I-95 Express Lanes Phase 2	14.3	Conv New	24/7	Pylons (2-2)		Limited	Formal	HOV 2+	HOV 3+

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14	FL2 (Mar 2014)	I-595 Express Lanes	11	New	24/7	Barrier (3R)		Limited	Formal	N/A	All Pay (multi-axle vehicles allowed)
15	GA1 (Sep 2015)	I-85 Express Lanes	15.5	HOV Conv	24/7	Paint (1-1)	Standard HOV buffer 2-0	Limited	Implicit	HOV 2+	HOV 3+
16	GA2 (Jan 2017)	I-75 S Express Lanes	11.5	New	24/7	Barrier (2R)		Limited	Formal	N/A	All Pay
17	MD1 (Dec 2014)	I-95 Express Toll Lanes	8.5 33	New	24/7	Barrier (2-2)	PSBSP 23-9	Ends	Formal	All Pay	All Pay
18	MN1	I-394 Managed Lanes Penn Avenue) (At		HOV Conv	6-10 AM 2-7 PM	Paint/25% Barrier (1-1)		Continue	Formal	2+ Free	Same
19	MN2	I-35W Managed Lanes (At Blackdog Rd)		Conv New	6-10 AM 2-7 PM	Paint (1-1)		Continue	Formal	2+ Free	Same
20	MN2	I-35E Managed Lanes (Arlington SB; Co Rd. 8 NB)		New	6-10 AM 2-7 PM	Paint (1-1)		Limited	Formal	2+ Free	Same

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21	TX1	I-10 Katy Freeway Managed Lanes	12 (48)	New	24/7 HOV 5-11 AM HOV 2-8 PM	Pylons (2-2)		Limited	Formal	Buses and Vanpools Only	HOV 2+
22	TX2	I-45 North (North Freeway) HOT Lanes ** Feed by I-45 HOV Lanes (TX16)	19.9 (19.9)	HOV Conv	5-11 AM in 2-8 PM out	Barrier (1R)		Limited	Formal	Buses and Vanpools Only	HOV 2+
23	TX3	I-45 South (Gulf Freeway) HOT Lanes	15.5 (15.5)	HOV Conv	5-11 AM in 7-8 AM No \$ 1-8 PM Out 4-6 PM No \$	Barrier (1R)		Limited	Formal	HOV 2+	HOV 2+
24	TX4	US-59 North (Eastex Freeway) HOT Lanes	20.2 (20.2)	HOV Conv	5-11 AM in 2-8 PM out	Barrier (1R)		Limited	Formal	HOV 2+	HOV 2+
25	TX5	US-59 South (Southwest Freeway) HOT Lanes	15.5 (15.5)	HOV Conv	5-11 AM in 2-8 PM out	Barrier (1R)		Limited	Formal	HOV 2+	HOV 2+

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26	TX6	US-290 (Northwest Freeway) HOT Lanes	13.5 (13.5)	HOV Conv	5-11 AM in 2-8 PM out	Barrier		Limited	Formal	HOV 2+	HOV 2+ (HOV 3+ from 6:30 - 8:00 a.m.)
27	TX7 (Sep 2015)	LBJ TEXpress Lanes	13.25 miles CL / 191.83 miles total	New	24/7	Barrier (2-2 & 3-3)	PSBSP Segments underneath the GP lanes & others elevated	Limited	Formal P3	2+ HOV 50% discount peak periods; trucks allowed	2+ HOV 50% discount peak periods; trucks allowed
28	TX8 (June 2014)	Loop 375 (Cesar Chavez Express) Toll Lanes		New	24/7	Pylons (1-1)		Limited	Formal		
29	TX9 (June 2014)	DFW Connector TEXpress Lanes	3.63 miles CL / 14.5 miles total	New	24/7	Barrier (2-2)	PSBSB	Ends (2)	Formal	HOV 2+	HOV 2+
30	TX10 (Oct 2014)	North Tarrant TEXpress Lanes	13.26 miles CL / 200 miles total	New	24/7	Barrier (2-2)	PSBSP	Limited (16*) Verify *	Formal P3	2+ HOV 50% discount peak periods; trucks allowed	2+ HOV 50% discount peak periods; trucks allowed
31	TX11 (Aug 2016)	I-30 West (3 Phases) (Construction Interruption at SH 360)	9	New	Directional East of SH 161 and 24/7 West of SH 161	Barrier (1R East) (1-1 West)	Offset to CTB & Sldr	5-EB, 5-WB Slip and WB	Formal	HOV 2+	HOV 2+
32	TX12	Loop 375 Toll Lanes (More under constr.)		New	24/7	Barrier (2-2)		Limited	Formal	All Pay	All Pay
33	TX13	I-635 (LBJ) East Express		HOV Conv	24/7	Pylons (1-1)	PPP	4-EB, 4-WB	Formal	HOV 2+	HOV 2+ No Charge
34	TX14	MoPac Loop 1 Express Toll (Phase I)	11 miles Ult. (11)	New	24/7	Pylons (1-1)		3-NB, 3-SB	Formal	All Pay	All Pay
35	TX15	SH 71 Toll Express (Under Construction)	3.9 (13.7)	New	24/7						

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36	TX16	** I-45 HOV Lanes (Feeder Facility)	20	New		Pylons (1-1)		Limited	Formal	HOV 2+	HOV 2+
37	UT1	I-15 Express Lanes	72 miles	HOV Conv	24/7	Paint (1-1)	PPP, 4ft buffer in the north sectioni (Utah and Davis County)	Limited	Implicit	HOV 2+	HOV 2+
38	VA1 (Dec 2012)	I-495 Express Lanes	14	New	24/7	Pylon (2-2)	PPP 2-0	Limited	Formal P3	N/A	HOV 3+
39	VA2 (Dec 2014)	I-95 Express Lanes	29	Conversion	24/7 (minus 2X 1-hour lane reversal timeframes)	Barrier (2-2)		Limited	Formal P3	2+Free	HOV 3+
40	WA1	SR 167 HOT Lanes	11	HOV Conv	5 AM to 7 PM	Paint (1-1)	PBP	Continue (A)	Formal	HOV 2+	HOV 2+
41	WA2	I-405	17	HOV Conv	5 AM to 7 PM	Paint (1-1,2-2)	PBP , PBPOPBP	Limited (10NB,11SB, A)	Formal	HOV 2+	HOV 3+



U.S. Department of Transportation
Federal Highway Administration

PRICED MANAGED LANE GUIDE 2012



1.6 Priced Managed Lane Requisites

The most common requisite for priced managed lane projects is recurring congestion. Highway congestion occurs when average speeds operate below 35 miles per hour (mph) for prolonged periods of 2 to 3 hours or more during each peak commute period. Priced managed lanes can be part of a broader strategy to manage congestion. Today's priced managed lane projects benefit from a variety of complementary strategies that improve their performance, including the following:

- **Active Traffic Management (ATM):** Techniques that use intelligent transportation system (ITS) strategies together with innovative operational approaches to manage traffic congestion and increase traffic flows, improve travel-time reliability, and optimize the use of roadway capacity.
- **Transportation Demand Management (TDM):** Strategies to manage and provide new choices on the location of the workplaces, the timing of the work day, shared and alternate travel modes, and routes used for work trips.
- **Integrated Corridor Management (ICM):** Multimodal strategies developed in a coordinated manner by partnering agencies to manage highways, arterial streets, and rail and bus transit in heavily traveled corridors as a system-rather than individual assets.

There are a number of conditions that may indicate that priced managed lanes could be effective:

- **Lack of Free-Flowing Parallel Routes:** Priced managed lanes work best in metropolitan areas with high-density corridors where there are limited travel options. When there are limited travel options other than the highway corridor itself, priced managed lanes offer motorists and transit riders a new choice.
- **Lack of Planned Future Improvements:** The corridor or region does not have enough future capacity planned to meet demand looking forward, given consideration for all modes and likely travel patterns affected.
- **Congested HOV Facilities:** Priced managed lanes can also be effective when the demand for an HOV lane exceeds the capacity of a single lane, but cannot justify the addition of a second HOV lane. The introduction of pricing coupled with raising occupancy requirements on carpools may make optimal use of congested HOV lanes.
- **Underutilized HOV Facilities:** Priced managed lanes are effective in locations where demand for an existing HOV lane is below its operational capacity and there is congestion on the parallel general-purpose lanes.

These precursor conditions lead to two distinctly different types of priced managed lane projects: those that convert existing HOV lanes to priced operation, and those that add new priced capacity to existing highways.

1.6.1 HOV-to-HOT Conversions and Extensions of Existing Facilities

One common motivation behind the conversion of an HOV lane to HOT operation is the desire to manage demand on the corridor more effectively, thereby improving the overall efficiency of the HOV lane and the general-purpose lanes. While the conversion of existing HOV lanes to tolled operation is relatively simple

and inexpensive compared to projects adding new highway capacity, there are a number of challenges. These often involve the location and installation of electronic toll collection equipment and signage. In some cases, local traffic mitigation is needed at exit points due to increased traffic volumes as a result of the conversion.

HOV-to-HOT conversions should also be considered when HOV lanes are congested and operating at or in excess of their capacity. When this is the case, project sponsors often consider increasing occupancy requirements, normally from HOV-2 to HOV-3. The sponsors may also consider revoking occupancy requirement exemptions for ILEVs. These changes can markedly reduce the number of vehicles in the HOV lane. However, a simultaneous HOT conversion provides the opportunity to use the newly opened capacity with variably priced tolls used as a tool to meter the flow of paying vehicles so that acceptable traffic services levels are maintained.

HOT conversions can also work well in situations where existing HOV facilities operate at capacity during peak travel periods, but have excess capacity to accommodate additional traffic during fringes of the peak or off-peak periods and in the nonpeak direction. In this case, the feasibility of a HOT conversion is enhanced if the parallel general-purpose lanes experience congestion at those times. This is the case with the I-10 HOV lanes in Los Angeles, where the facility has an HOV-3+ occupancy requirement from 6:00 to 9:00 a.m. and 3:00 to 7:00 p.m. on weekdays, and an HOV-2+ requirement at all other times. A similar approach is being taken in Houston on I-45 South. Requiring carpools to register may have the same potential benefit of metering flow, particularly if the registration process is coupled with transponder requirements for toll-paying customers.

In some situations an HOV-to-HOT conversion may also involve new construction to extend the existing HOV lane or fill in missing sections so that the converted facility has greater coverage and improved connectivity. Conversions may also involve reconfiguring the existing roadway. Several HOV-to-HOT conversion projects, notably I-95 in Miami and I-10 in Los Angeles, added a design change that accommodated a second managed lane without roadway widening next to the original HOV lane, thus adding capacity and better management to both directional lanes at the same time.

1.6.2 New Capacity Managed Lane Opportunities

A growing number of regions—including Seattle, Austin, Salt Lake City, San Diego, Houston, Dallas-Fort Worth, Miami, and Northern Virginia—are incorporating priced managed lanes as major highway expansion projects. This is an appropriate strategy in congested highway corridors where there is a lack of parallel routes that can offset demand. Invariably these types of projects are expensive, but under the right conditions can generate revenues to fund a modest to significant portion of the project cost. This approach is particularly viable in regions with funding gaps and an extensive backlog of unbuilt projects.

The possibility of operating new highway capacity on a priced managed lane basis should be considered during the environmental approval process. Environmental impact statements (EIS) and environmental assessments (EA) that contain priced alternatives provide an excellent opportunity to assess the mobility benefits enabled by pricing and regional public opinion on the use of tolling. The extensive public outreach efforts associated with environmental approval documents also provide project sponsors with the opportunity to engage stakeholders in a dialog about pricing and the ability of tolls to make projects affordable in regions that might not be able to undertake them on an un-tolled basis. Public consensus is essential to move large highway projects forward and is even more important on projects involving pricing.

Selected new capacity managed lane projects under construction or recently opened include the following:

- **I-15 FasTrak®, San Diego, CA:** This 20-mile, \$1.2 billion project sponsored by the San Diego Association of Governments (SANDAG) and the California Department of Transportation (Caltrans) added 4 express lanes and was constructed in three phases over 7 years. The project was completed in January 2012, and also involves the provision of four park-and-ride lots and associated transit centers. The four priced managed lanes are equipped with a moveable center barrier, allowing the flexibility to provide three priced lanes in the peak travel direction. The project was cleared with a Finding of No Significance (FONSI) in 2004 and construction began in 2006. The project has been funded by the TransNet (half-cent sales tax) program, as well as other state and federal funds. It replaced the initial 8-mile, two-lane, reversible-flow HOV lane facility that was the first HOV-to-HOT conversion project in the United States in 1996.
- **495 Express, Northern Virginia:** This \$2.1 billion public-private partnership (P3) is adding two new priced managed lanes in each direction on an 11-mile segment of the Capital Beltway between I-95 and Tysons Corner in Northern Virginia. The project also involves the reconstruction of the eight general-purpose lanes, 11 interchanges, and the replacement of more than \$260 million of aging infrastructure, including 53 bridges. The project will also provide dedicated HOV ramps connecting the managed lanes on the Capital Beltway and I-95. This project was environmentally cleared in 2006; construction began in 2008 and will be completed in 2013. The project is being delivered as a 75-year design-build-finance-operate-maintain (DBFOM) concession, with toll proceeds covering approximately 74 percent of the cost of constructing the project. The Virginia Department of Transportation (VDOT) has provided a public subsidy of \$500 million to make the P3 approach financially feasible.
- **North Tarrant Express, Fort Worth, Texas:** This \$2.1 billion P3 project involves the reconstruction, widening, and addition of priced managed lanes along 13.3 miles of existing highway. Initially, two priced managed lanes will be added in each direction together with new frontage roads on I-820 and SH 121/SH183 extending east from Fort Worth toward Dallas-Fort Worth International Airport. By 2030, a third priced managed lane along SH121/SH183 and a third general-purpose lane along I-820 will also be constructed. The project is being delivered as a 52-year DBFOM agreement. The project was environmentally cleared in 2008 and 2009. Construction began in 2010 and will be complete in 2015. Toll proceeds are being used to finance 72 percent of the implementation costs. The Texas Department of Transportation (TxDOT) is providing a \$575 million public subsidy to support the remaining 28 percent of the capital cost.

Implementation Highlights



The succeeding implementation highlights illustrate the vision and direction of the CTP 2040:

- ❖ **Improve transit** by completing the entire California High-Speed Rail Authority Business Plan Phase 1 High-Speed Rail System by 2029, and making it the backbone of an integrated statewide transit system linking all transit operators with one-stop ticketing and well-coordinated transfers.
- ❖ **Reduce long-run repair and maintenance costs** by using “fix-it first”, smart asset management, and life-cycle costing, to maintain our transportation infrastructure in good condition—this should include developing a comprehensive assessment of climate-related vulnerabilities, and actions to ensure system resiliency and adaptation to extreme events.
- ❖ **Improve highways and roads** by using management systems and technologies to maximize system efficiency through integrated multimodal corridor management (intelligent transportation system, high-occupancy toll lanes, and bus rapid transit lanes, which are managed in coordination with active transportation and rail lines), and through new technologies and services including autonomous and connected vehicles, smart parking, vehicle-to-vehicle communications, infrastructure-to-vehicle communication, and vehicle sharing and ride-sharing services.
- ❖ **Improve freight efficiency and the economy** by completing the California Sustainable Freight Action Plan outlined in Executive Order B-32-15, and through creation of dedicated federal and State freight funding programs to invest in California’s primary trade corridor, including multimodal last mile connections to major freight facilities including ports and hubs.
- ❖ **Improve communities** through the region-led Sustainable Communities Strategies, which will be updated as the State moves toward 2030 and 2050 greenhouse gas reduction targets—the State can continue to partner with regions through the investment of Greenhouse Gas Reduction Funds and other measures such as better use of highway corridors for recreation and to reconnect communities.
- ❖ **Reduce transportation-system deaths and injuries** through multi-agency coordination that implements the Toward Zero Deaths vision, and public engagement to reduce distracted driving, impaired driving, and unsafe work-zone driving.
- ❖ **Expand the use and safety of bike and pedestrian facilities** by utilizing the Active Transportation Program to support a broad range of investments that go beyond individual projects to encourage corridor-wide and citywide strategies, and also through improved State and local implementation of Complete Streets strategies that will increase active transportation for short trips, first/last mile transit trips, and school trips.
- ❖ **Make our vehicles and transportation fuels cleaner** through incentives and regulations to increase zero-emission vehicles and other methods outlined in the California Air Resources Board’s Assembly Bill 32 Scoping Plan.
- ❖ **Improve public health and achieve climate and other environmental goals** through the strategies above and through implementation of robust advanced mitigation to streamline transportation projects and maximize the biological benefit.
- ❖ **Secure permanent, stable, and sufficient transportation revenue** from transportation users to achieve the state of good repair, freight efficiency, and other investments outlined in this plan.

Deputy Directive

<i>Number:</i>	DD-43-R1
<i>Refer to Director's Policy:</i>	DP-08, Freeway System Management; DP-23-R1, Energy Efficiency, Conservation, and Climate Change; DP-26, Intelligent Transportation Systems; DP-27-R1, Bus Rapid Transit Implementation Support
<i>Effective Date:</i>	05/29/2015
<i>Supersedes:</i>	DD-43 (07/01/1995)
<i>Responsible Program:</i>	Traffic Operations

TITLE *MANAGED LANE FACILITIES*

POLICY

The California Department of Transportation (Caltrans) uses managed lanes on the State Highway System (SHS) as a sustainable transportation system management strategy. Managed lanes are used to promote carpooling and transit usage, improve travel-time reliability, reduce greenhouse gas emissions, and maximize the efficiency of a freeway by increasing person and vehicle throughput while reducing congestion and delay.

Each district that currently operates, or expects to operate, managed lanes within the next twenty years shall prepare, in cooperation with regional transportation agencies and other stakeholders, a Managed Lanes System Plan (MLSP). The MLSP shall contain a list of each managed lane facility that is currently in operation or planned for operation within the next twenty years. Each district shall review and update its MLSP biennially and ensure that future managed lanes are included in regional transportation plans and other system planning documents.

Managed lanes are designed and operated in a manner that will not degrade the overall mobility and safety performance of the freeway. All appropriate guidelines, policies, procedures, and standards, including Caltrans' *Highway Design Manual* design criteria, shall be applied when planning, designing, and operating managed lanes. Design features and operational strategies for managed lanes, and any changes to those features or strategies, shall be

determined by Caltrans in cooperation with regional transportation agencies, the California Highway Patrol (CHP), and other affected stakeholders.

Tolling may be used as an operational strategy on managed lanes. Caltrans, or a regional transportation agency in cooperation with Caltrans, may seek tolling authority pursuant to applicable laws. The following provisions shall apply for any tolled managed lane on the SHS:

- Tolls shall be collected electronically and use congestion pricing to manage demand.
- Toll revenues shall be used to pay for debt service related to development of the managed lanes project, the costs of administering, operating, and maintaining the managed lanes, including CHP enforcement activities, capital expenses, and reserves for these purposes.
- Unless financing requirements or State laws dictate otherwise, excess toll revenues shall be used for projects or programs that improve or preserve safety, operations, or travel reliability for any transportation mode or provide new or enhanced travel options in the corridor in which the tolls were collected. Excess toll revenues may also be used to augment, but not replace, State resources used for maintenance and operation of adjacent general-purpose lanes.
- A toll revenue expenditure plan shall be developed by Caltrans and the regional transportation agency. This plan shall be updated annually. In some instances, State laws may dictate the process for development of the expenditure plan.
- An agreement shall be made with the CHP regarding enforcement and an Enforcement Plan shall be developed.
- If Caltrans will not be operating the managed lanes, the regional transportation agency shall develop, in cooperation with the CHP and Caltrans, an Incident Management Plan. The Incident Management Plan shall be updated through the life of the project as needed.
- A Concept of Operations shall be developed. This document shall, at a minimum, describe the design and operational characteristics of the managed lanes, enforcement, incident management, and agency and stakeholder coordination. The Concept of Operations shall be prepared during the Project Initiation Document phase and finalized in the Project Approval and Environmental Document phase. It shall be updated through the life of the project as needed.
- Caltrans, the regional transportation agency, and other stakeholders, as appropriate, shall enter into agreements that define overall roles, responsibilities, and requirements related to maintenance and operation of the managed lanes, use of toll revenues, risk management, data sharing, performance monitoring, and annual audits and reports. If the regional transportation agency will have tolling authority, the agreements will include reimbursement to Caltrans for costs incurred relative to the

development, operation, maintenance, or improvement of the managed lanes.

DEFINITION/BACKGROUND

A managed lane is an exclusive- or preferential-use lane that is managed proactively in response to changing conditions in order to achieve improved efficiency and performance. Managed lanes use operational strategies such as access control, vehicle eligibility, and tolling, or a combination thereof. These strategies are determined based on factors such as safety, regional and interregional consistency, impacts on freeway performance, enforcement needs, environmental considerations, and community support. Strategies may be adjusted to meet required performance standards or to address other managed lane or freeway performance issues. For the purposes of this policy, a managed lane is defined as one of the following:

- A high-occupancy vehicle (HOV) lane.
- A high-occupancy/toll (HOT) lane. This HOV lane may also be accessed by tolled vehicles.
- An express toll lane (ETL). All vehicles must pay a toll to access this lane.

A tolled managed lane, such as a HOT lane or an ETL, is also referred to as an “express lane” and signed as such.

Title 23 United States Code sections 129 and 166 authorize public authorities to operate managed lanes on federal-aid highways and provide required performance standards for the lanes. Related California legislation includes the following:

- Vehicle Code section 21655.5 and Streets and Highways Code section 149 authorize Caltrans to operate exclusive- or preferential-use lanes on the SHS for buses and other HOVs.
- Vehicle Code section 21655.6 requires Caltrans to obtain the approval of the appropriate transportation planning agency or county transportation commission prior to establishing exclusive- or preferential-use lanes on the SHS.
- Vehicle Code sections 21655.9 and 5205.5 authorize zero-emission vehicles and certain classes of low-emission vehicles to use HOV lanes without meeting occupancy requirements and to use HOT lanes without paying a toll or by paying a discounted rate.
- Streets and Highways Code sections 149.1 and 149.4 through 149.10 and Public Utilities Code sections 130240 and 130244 authorize various regional transportation agencies to operate, in cooperation with Caltrans, a limited number of tolled managed lanes on the SHS.

- Government Code section 64112 authorizes the California Transportation Financing Authority to grant authority to Caltrans or regional transportation agencies to operate toll facilities such as a tolled managed lane on the SHS.

RESPONSIBILITIES

Deputy Director, Finance

Ensures revenues from tolled managed lanes are appropriated in accordance with State and federal laws and with the plan and agreements outlined in the Policy section herein.

Chief, Division of Traffic Operations

- Develops, implements, and maintains statewide policies, procedures, standards, and guidance concerning managed lanes.
- Provides direction, training, and assistance with the development and operation of managed lanes, including necessary agreements, to divisions, districts, and other stakeholders.
- Ensures consistent implementation and operation of managed lanes throughout the districts.
- Provides direction, training, and assistance with the development of MLSPs, in partnership with the Division of Transportation Planning, to district Traffic Operations staff.
- Maintains a statewide inventory of planned, programmed, and constructed managed lanes.
- Ensures managed lanes are monitored for compliance with State and federal performance requirements. Reviews managed lanes performance reports and shares trends and findings with the districts, the Federal Highway Administration, the CHP, and regional transportation agencies.
- Coordinates and evaluates research studies and best practices pertaining to managed lane systems operational methods, strategies, enforcement, and equipment.
- Collaborates with the districts, other divisions, regional transportation agencies, the CHP, and other external stakeholders, as appropriate, to develop proposals for tolled managed lanes.

Chief, Division of Transportation Planning

- Provides direction, training, and assistance with the development of MLSPs, in partnership with the Division of Traffic Operations, to district Planning staff.
- Ensures consistent development of MLSPs throughout the districts.
- Integrates MLSPs into applicable statewide system planning documents.
- Collaborates with the Division of Traffic Operations developing, implementing, and revising statewide policies, procedures, standards, and guidance concerning managed lanes.

Chief, Division of Maintenance

Develops, implements, and revises statewide policies, procedures, standards, and guidance concerning the maintenance of managed lanes.

Chief, Division of Design

- Develops, implements, and revises statewide policies, procedures, standards, and guidance concerning the design of managed lanes.
- Provides direction, training, and assistance with the design of managed lanes to divisions, districts, and other stakeholders.

District Directors

- Ensure the use of managed lanes where appropriate on the SHS is considered and encouraged.
- Ensure selected managed lane strategies are appropriate for each SHS corridor.
- Collaborate with regional transportation agencies to implement managed lanes where appropriate.
- Collaborate with regional transportation agencies and other project stakeholders to develop and update toll revenue expenditure plans for tolled managed lanes.

Deputy District Directors, Traffic Operations

- Implement managed lane strategies in cooperation with regional transportation agencies, the CHP, and other stakeholders, as appropriate.
- Review performance of managed lanes and identify and implement operational changes on managed lanes in cooperation with regional transportation agencies, the CHP, and other stakeholders, as appropriate.
- Ensure consistent managed lane operations between neighboring jurisdictions and districts to the greatest extent possible.
- Ensure Incident Management Plans and Concepts of Operations are developed for tolled managed lanes, in cooperation with the Federal Highway Administration and the CHP.
- Ensure annual performance monitoring reports of managed lanes are developed and submit this information to headquarters, regional transportation agencies, the CHP, and other stakeholders, as appropriate.
- Provide cost estimates of division activities associated with tolled managed lanes for tracking and reimbursement purposes.

Deputy District Directors, Planning and Modal Programs

- Collaborate with district Traffic Operations staff and regional transportation agencies to develop and maintain the district MLSP.
- Incorporate managed lanes projects into system and corridor planning documents developed by regional transportation agencies or Caltrans.

- Ensure consistency of the district MLSP with neighboring districts' MLSPs.
- Provide traffic forecasting for development of the district MLSP, in coordination with district Traffic Operations staff.

Deputy District Directors, Maintenance

- Ensure managed lane facility operations are considered when maintaining the SHS.
- Provide cost estimates of division activities associated with tolled managed lanes for tracking and reimbursement purposes.

Deputy District Directors, Design and Construction

Ensure managed lane facility operations are considered when designing and constructing improvements to the SHS.

Deputy District Directors, Program/Project Management

Work with Headquarters divisions and regional transportation agencies to develop and execute any necessary agreements for tolled managed lanes.

Employees

- Adhere to statewide policies, procedures, standards, and guidance concerning planning, designing, operating, and maintaining managed lanes.
- Collaborate with stakeholders to implement managed lane strategies or adjustments to existing managed lane operations.
- Identify and report impediments to implementing managed lane strategies or adjusting existing managed lane operations and seek expeditious resolution.
- Identify and report opportunities to include appropriate managed lane strategies in capital projects.

APPLICABILITY

All Caltrans employees involved in the planning, design, construction, maintenance, and operation of managed lane facilities on the SHS.

Original signed by:

 KOMÉ AJISE
 Chief Deputy Director

05/29/2015

 Date Signed

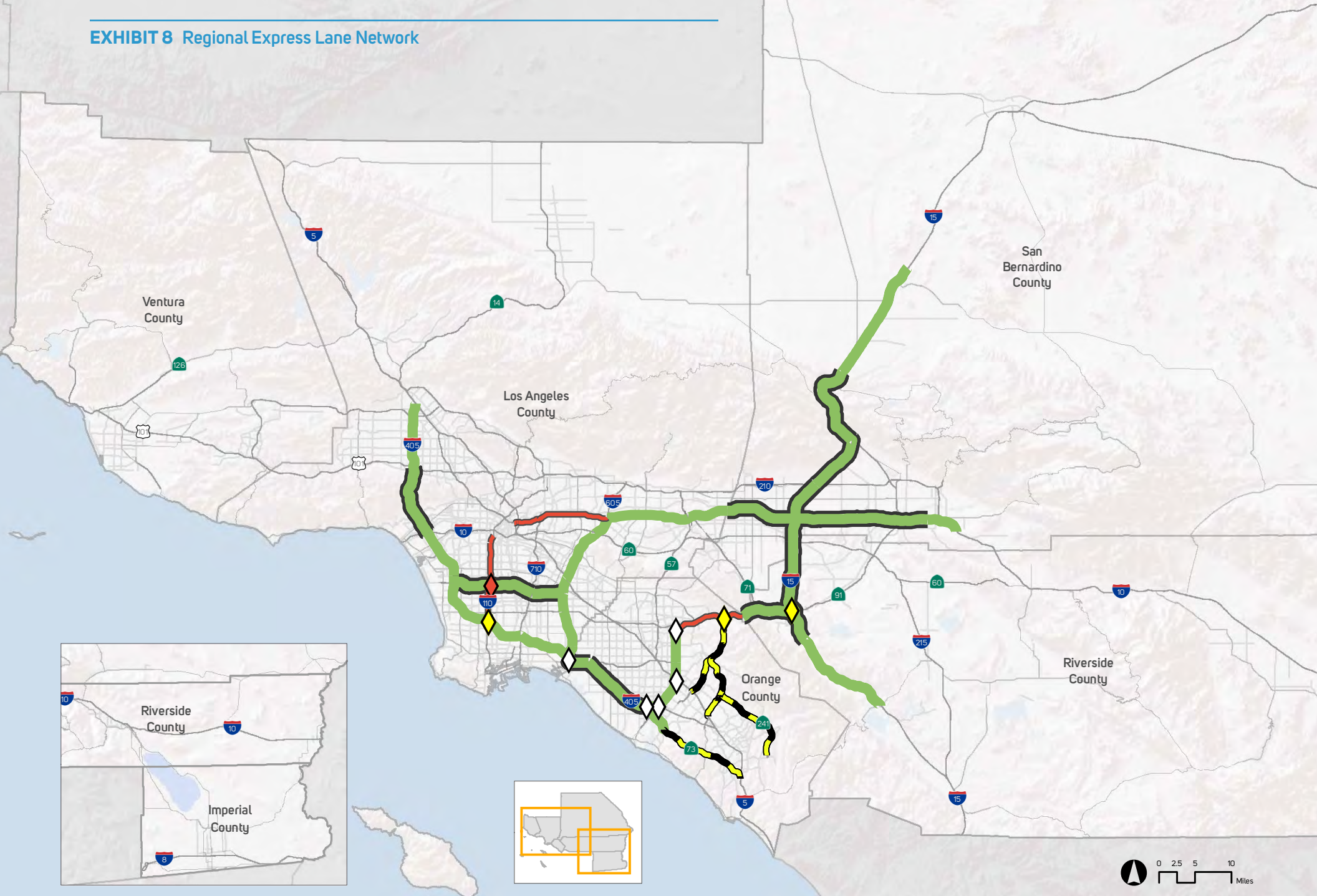









2016 2040 RTPSCS

THE **2016-2040** REGIONAL TRANSPORTATION PLAN/
SUSTAINABLE COMMUNITIES STRATEGY
A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life

ADOPTED
APRIL 2016

EXHIBIT 8 Regional Express Lane Network



-  Existing Express Lanes
-  Existing Toll Road
-  Planned Express Lane Network
-  Planned Dual-Lane Segment
-  Existing Express Lane Direct Connector
-  Planned Express Lane Direct Connector
-  Planned HOV-to-Express Lane Direct Connector Conversion

(Source: SCAG)

TABLE 2 Regional Express Lane Network

	County	Route	From	To
EXPRESS LANE ADDITIONS	Los Angeles	I-10	I-605	San Bernardino County Line
	Los Angeles	I-105	I-405	I-605
	Los Angeles	I-405	I-5	Orange County Line
	Los Angeles	I-605	I-10	Orange County Line
	Orange	SR-55	SR-91	I-405
	Orange	SR-73	I-405	MacArthur Boulevard
	Orange	I-405**	Los Angeles County Line	SR-55
	Orange	I-605	Los Angeles County Line	I-405
	Riverside	I-15*	San Bernardino County Line	Cajalco Road
	Riverside	SR-91*	Orange County Line	I-15
	San Bernardino	I-10**	Los Angeles County Line	Ford Street
	San Bernardino	I-15*	US-395	Riverside County Line
EXPRESS LANE DIRECT CONNECTORS	Los Angeles	I-405/I-110	I-405 NB to I-110 NB and I-110 SB to I-405 SB	
	Orange	I-5/SR-55	Existing HOV to proposed express lane direct connector	
	Orange	SR-91/SR-55	Existing HOV to proposed express lane direct connector	
	Orange	SR-91/SR-241	SR-241 NB to SR-91 EB and SR-91 WB to SR-241 SB	
	Orange	I-405/SR-55	Existing HOV to proposed express lane direct connector	
	Orange	I-405/SR-73	Planned HOV to proposed express lane direct connector	
	Orange	I-405/I-605	Existing HOV to proposed express lane direct connector	
	Riverside	SR-91/I-15	SR-91 EB to I-15 SB and I-15 NB to SR-91 WB	

Notes: * Dual Express lanes for entire length ** Dual Express lanes for a section



Los Angeles County
Metropolitan Transportation Authority
Countywide ExpressLanes
Strategic Plan
Executive Summary

PREPARED FOR:



ONE GATEWAY PLAZA
LOS ANGELES, CA 90012

Prepared by:



444 SOUTH FLOWER STREET, SUITE 800
LOS ANGELES, CA 90071

January 6, 2017

EXECUTIVE SUMMARY

This Countywide ExpressLanes Strategic Plan builds on the success of the I-110 and I-10 Congestion Reduction Demonstration pilot program (also known as ExpressLanes) by establishing a vision for Metro to deliver a system of Express Lanes for Los Angeles County using a network approach to maximize regional benefits. A countywide ExpressLanes network will create a more reliable, faster travel option that makes better use of existing vehicle capacity in carpool lanes - also known as high occupancy vehicle (HOV) lanes. The plan also aims to address the degradation in HOV lane performance already experienced on many freeway corridors in the county, and provide Express Lanes users with a seamless customer experience.

The Strategic Plan identifies the most promising Express Lane corridors and potential funding sources needed to implement the plan. The Metro Countywide ExpressLanes Strategic Plan was prepared as an extension of *Southern California Association of Governments (SCAG's) Express Travel Choices Phase II Study - Regional Express/HOT Lanes Implementation Plan and Concept of Operations*. The Metro Strategic Plan is consistent with the analysis methodology used in the SCAG study to estimate the potential mobility benefits and revenue generated by Express Lane projects. This approach ensured that the Metro Countywide ExpressLanes Strategic Plan is consistent with the SCAG regional study and minimized duplication of effort.

The Strategic Plan is intended to be updated periodically to reflect changes in project costs, revenues, economic conditions, and project priorities that will undoubtedly occur over the next 30+ years.

The primary objectives of Metro's Countywide ExpressLanes Strategic Plan are to:

- Identify and recommend potential corridors that can benefit from HOV to High Occupancy Toll (HOT) or Express Lane conversion;
- Develop a resource plan for existing and future Express Lane corridors;
- Respond to degraded HOV facilities across Los Angeles County as well as transportation needs which have outpaced traditional revenue sources;
- Provide recommendations regarding tiers of projects, phasing, planning-level costs and revenue forecasts, and a timetable for implementation;
- Provide a high-level assessment of vehicle occupancy requirements on existing and planned HOV/Express Lane facilities.

The Countywide ExpressLanes Strategic Plan screened all planned, in construction, and existing carpool lanes in Los Angeles to assess the potential benefits and costs of conversion to ExpressLanes operation. The individual corridors included in the Strategic Plan were evaluated using a two-phased screening process assessing their mobility benefits and financial feasibility.

The screening process utilized the SCAG Regional Travel Demand model and the Rapid Toll Optimization Model (RapidTOM) to quantify the mobility benefits of potential ExpressLanes based on available capacity in the HOT lanes, congestion in the general purpose lanes (GPLs),

and the value of time savings by using the HOT lanes. This analysis also provided a general indication of the financial feasibility of an Express Lane.

The corridors were ranked according to their mobility and financial feasibility score and then qualitative factors were applied including connectivity with other Express Lane corridors, transit benefits, funding availability, and the potential ability to accommodate two Express Lanes in each direction. Project segments in Tier 1 had the highest combined mobility and financial screening scores and tended to exhibit the most robust forecasts of traffic and revenue. Segments in Tiers 2 and 3 exhibited comparatively lower screening results and, as such, tended to have less robust traffic and revenue performance.

Recognizing that the implementation of a Countywide ExpressLanes network would require substantial investment and time to plan and construct, it was assumed that the individual segments comprising the network would be implemented in tiers approximately ten-years apart as follows:

- Tier 1 — near-term (within 5-10 years)
- Tier 2 — mid-term (within 15 years)
- Tier 3 — longer-term (within 25 years)

Following the identification of the three project tiers, a preliminary, high level ExpressLanes Resource Plan was prepared to estimate the cost of the strategic plan projects and identify existing and potential funding sources.

The analysis led to the recommendation to develop a 621 lane-mile Express Lane network, mostly comprised of single lane facilities but dual lane facilities are preferred where right-of-way allows. The proposed Express Lane network is shown in **Figure 1** and is made up of the existing I-110 and I-10 ExpressLanes and the Tier 1, 2, and 3 projects.

Some of the proposed ExpressLanes projects are funded through Measure M (**Table 1**). For projects without identified funding, staff will attempt to secure other sources of funding including bonds, Transportation Infrastructure Financing and Innovation Act (TIFIA) loans, grants, and net toll revenue loans from other ExpressLanes within the County if permitted.

In order to move forward with a system of Express Lanes in Los Angeles County, Metro will submit Tier 1 projects as a network to the California Transportation Commission to request tolling authority for those corridors; begin planning studies for Tier 1 projects to analyze the mobility benefits, cost, and right-of-way requirements of single and dual ExpressLanes, prepare traffic and revenue studies, develop preliminary concept of operations reports, and prepare a comprehensive financial plan. In addition, Metro will conduct a detailed analysis to identify locations and configurations of HOV direct connectors.

Table 1: Express Lane Projects Funded through Measure M

Tier 1	Measure M Funding
I-10 between I-605 & LA/SB county line	None identified*
I-105 between I-405 and I-605	\$175,000,000
I-110 ExpressLane extension south to I-405/I-110 interchange	\$51,500,000
I-405/I-110 Int. HOV Connect Ramps and Interchange Improvements	\$250,000,000
I-405 between US-101 & I-10	\$260,000,000
I-405 between I-10 and LA/OC county line	None identified*
I-605 between I-10 & LA/OC county line	None identified*
I-605/SR-60 Interchange HOV Direct Connectors	\$130,000,000
Tier 2	
I-5 between I-605 & LA/OC county line	None identified*
I-5 between SR-170 & SR-134	None identified*
SR-57 between SR-60 & LA/OC county line	None identified*
SR-91 between I-110 and LA/OC county line	None identified*
SR-134 between I-210 & SR-170	None identified*
I-405 between US-101 and I-5	None identified*
Tier 3	
I-5 between SR-170 and Parker Road	None identified*
SR-14 between Avenue P8 & I-5	None identified*
SR-60 between I-605 & LA/SB county line	None identified*
SR-118 between I-5 & LA/Ventura county line	None identified*
SR-170 between I-5 & SR-134	None identified*

* May be eligible for Measure M Highway Funds

TIER 1 PROJECTS

Metro Express Lanes Program 5-10 Year Implementation Phasing Plan (Tier 1)

Corridor	From	To	Lane Miles	Scope	Non-Standard Cost	Full-Standard Cost
Existing Network						
I-10	Alameda St.	I-605	39.1	In operation	N/A	N/A
I-110	Harbor Gateway Transit Center	Adams Blvd.	35.3	In operation	N/A	N/A
Tier 1 Baseline Network						
I-10	I-605	LA/SB CL	34.2	Convert existing and future HOV to Single HOT in each direction	\$43M	\$196.8M
I-105	I-405	I-605	32.0	Convert existing HOV to single HOT in each direction*	\$37.4M	\$73.2M
I-110	182 nd Street	I-405	2.2	Add new HOT lanes by extending existing single HOT lanes in each direction south to I-405; construct new HOV/HOT Direct Connector at I-110/I-405	N/A	\$280.4M +\$250M (Connector)
I-405	US 101	LA/OC CL	77.6	Convert existing HOV to single HOT in each direction**	\$94.5M	\$305M
I-605	I-10	LA/OC CL	41.2	Convert existing HOV to single HOT in each direction	\$50.3M	\$249.6M
I-605/SR-60 Interchange Direct Connectors			HOV 0.1	Construct HOV direct connectors at I-605/SR-60 interchange	N/A	\$490.6
Tier 1 Total			187.3		\$225.2M	\$1,845.6M

Source: Conceptual-Level Cost Estimate Report, SCAG Express Travel Choices Phase II Study - Regional Express Lane Network, April 8, 2015

*Metro expects that dual Express Lanes can be implemented on the I-105 (I-405 to I-605); final configuration to be determined through the Project Approval/Environmental Document (PA/ED). Caltrans I-105 PSR-PDS estimated cost for dual-lanes is \$125M to \$200M.

** Metro expects that dual Express Lanes can be implemented on the I-405 (US 101 to I-10); final configuration to be determined through the Project Approval/Environmental Document (PA/ED). Prior Sepulveda Pass Corridor Systems Planning Study Supplemental Traffic and Revenue Study estimated cost for dual-lanes at \$188M.

Tier 1 Express Lanes 10-Year Plan (2017-2027)



TIER 2 PROJECTS

Metro Express Lanes Program 15-Year Implementation Phasing Plan (Tier 2)

Corridor	From	To	Lane Miles	Scope	Non-Standard Cost	Full-Standard Cost
Tier 2 Baseline Network						
I-5	I-605	LA/OC CL	12.9	Convert future HOV to single HOT in each direction	\$15.4M	\$40.5M
I-5	SR-170	SR-134	20.0	Convert future HOV to single HOT in each direction	\$23.8M	\$52.9M
SR-57	LA/OC CL	SR-60	9.6	Convert existing HOV to single HOT in each direction	\$12.1M	\$44M
SR-91	I-110	LA/OC CL	29.0	Convert existing HOV to single HOT in each direction	\$34.8M	\$475M
SR-134	SR-170	I-210	26.2	Convert existing HOV to single HOT in each direction	\$33.6M	\$1,205M
I-210	SR-134	LA/SB CL	56.2	Convert existing HOV to single HOT in each direction	\$68.7M	\$2,251.4M
I-405	I-5	US 101	17.4	Convert existing HOV to single HOT in each direction	\$22.4M	\$73.9M
Tier 2 Total			171.3		\$210.8M	\$4,142.7M

Source: Conceptual-Level Cost Estimate Report, SCAG Region Value Pricing Project—Regional Express Lane Network, April 8, 2015

TIER 3 PROJECTS

Metro Express Lanes Program 25-Year Implementation Phasing Plan (Tier 3)

Corridor	From	To	Lane Miles	Scope	Non-Standard Cost	Full-Standard Cost
Tier 3 Baseline Network						
I-5	SR-14	SR-170	17.2	Convert existing HOV to single HOT in each direction	\$17.7M	\$80.8M
SR-60	I-605	LA/SB CL	36.2	Convert existing HOV to single HOT in each direction	\$48.3M	\$217.3M
SR-170	SR-134	I-5	13.3	Convert existing HOV to single HOT in each direction	\$17M	\$57.7M
Tier 3 Expanded Network (included as sensitivity tests for possible inclusion to Tier 3 Baseline)						
I-5	SR-14	Parker Rd.	26.8	Convert future HOV to single HOT in each direction	\$95.3M	\$370.7M
SR-14	I-5	Avenue P8	71.8	Convert existing HOV to single HOT in each direction	\$37.3M	\$336.5M
SR-118	LA/VEN CL	I-5	22.8	Convert existing HOV to single HOT in each direction plus I-110/I-405 direct connectors	\$26.8M	\$92.6M
Tier 3 Total*			190.3		\$242.4M	\$1,686M

Sources: Conceptual-Level Cost Estimate Report, SCAG Region Value Pricing Project—Regional Express Lane Network, April 8, 2015

Countywide ExpressLanes Strategic Plan

Ad Hoc Congestion, Highway, and Roads Committee
January 18, 2017



Metro

Background and Study Assumptions

- In November 2014, the Metro Board directed staff to prepare an ExpressLanes Strategic Plan
- Key Features:
 - Consistent with SCAG Regional ExpressLanes Study
 - Developed in conjunction with Caltrans District 7
 - Freeways with existing, in construction, or planned HOV (High Occupancy Vehicle) lanes were considered for conversion into ExpressLanes

Methodology

- Corridor Screening
- Financial Screening
- Refinement

Corridor Screening

- Two step process –
 - SCAG regional travel demand model used to forecast traffic volume in 2020 and 2035
 - RapidTOM (Toll Optimization Model) takes SCAG model output and calculates the number of vehicles and amount they are willing to pay to use the ExpressLanes
 - Evaluation Metrics :
 - 1) Value of travel time savings
 - 2) HOT lane person throughput
 - 3) Average peak period vehicle speeds in the general purpose lanes

Financial Screening

Two step process:

- 1) Estimate gross revenue generation for each corridor
- 2) Estimate Net revenue, calculated by subtracting projected gross revenue from construction and operations costs based on actual costs incurred on the I-10 and I-110 ExpressLanes

Composite Score

- Each corridor was ranked into quintiles (top 20%, second 20%, third 20%, fourth 20%, and fifth 20%) for the three corridor screening metrics and financial screening
- The ranks were averaged to get a composite score. For example, if a project scored in the top 20% in each criteria then the composite ranking would be in the first quintile.

Refinement

Four qualitative criteria were used to refine the results of the corridor and financial screening:

- Connectivity with other existing and potential express lane corridors;
- Transit benefits;
- Funding availability;
- Ability to provide two ExpressLanes in each direction.

Project Tiers

- Based on the corridor financial screening metrics and the refinement criteria, projects were placed into three tiers:
 - Tier 1 – near-term (within 5-10 years)
 - Tier 2 – mid-term (within 15 years)
 - Tier 3 – longer-term (within 25 years)

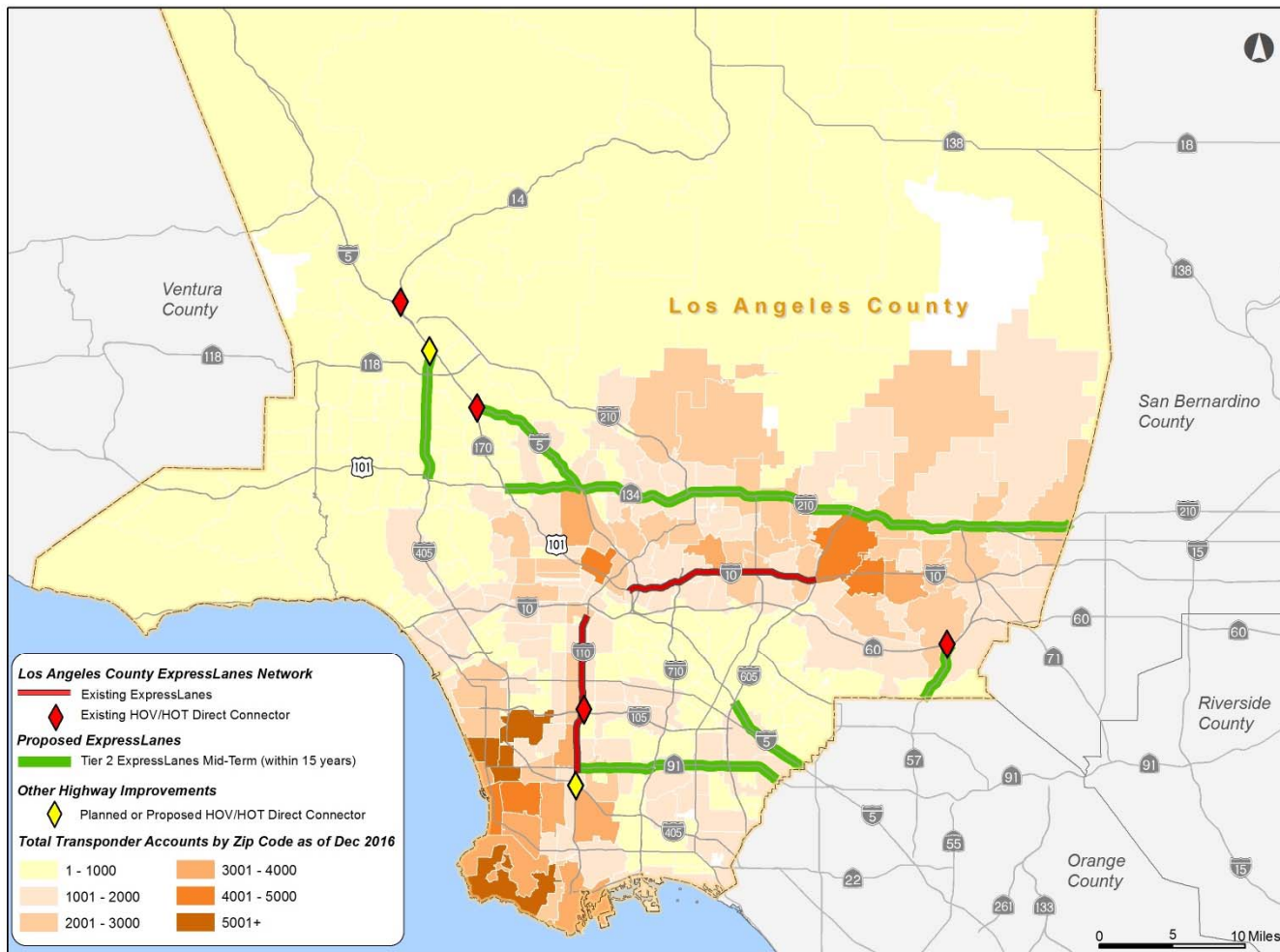
Recommended Tier 1 Projects (5 to 10 Years)

Project	Measure M Funding	Funding Availability
I-405 from I-10 to US-101	\$260,000,000	2024
I-105 ExpressLanes from I-405 to I-605	\$175,000,000	2027
I-405/I-110 Int. HOV Connect Ramps and Interchange Improvements	\$250,000,000	2042
I-605/SR-60 Interchange HOV Direct Connectors	\$130,000,000	2043
I-110 ExpressLane extension south to I-405/I-110 interchange	\$51,500,000	2044
I-605 from I-10 to I-405	None	N/A
I-405 from I-10 to LA/Orange County line	None	N/A
I-10 from I-605 to LA/San Bernardino County line	None	N/A

Recommended Tier 2 Projects (15 Years)

Project	Measure M Funding	Funding Availability
I-5 from I-605 to LA/Orange County line	None	N/A
I-5 from SR-134 to SR-170	None	N/A
SR-57 from SR-60 to LA/Orange County line	None	N/A
SR-91 from I-110 to LA/Orange County line	None	N/A
SR-134 from SR-170 to I-210	None	N/A
I-210 from SR-134 to LA/San Bernardino County line	None	N/A
I-405 from I-101 to I-5	None	N/A

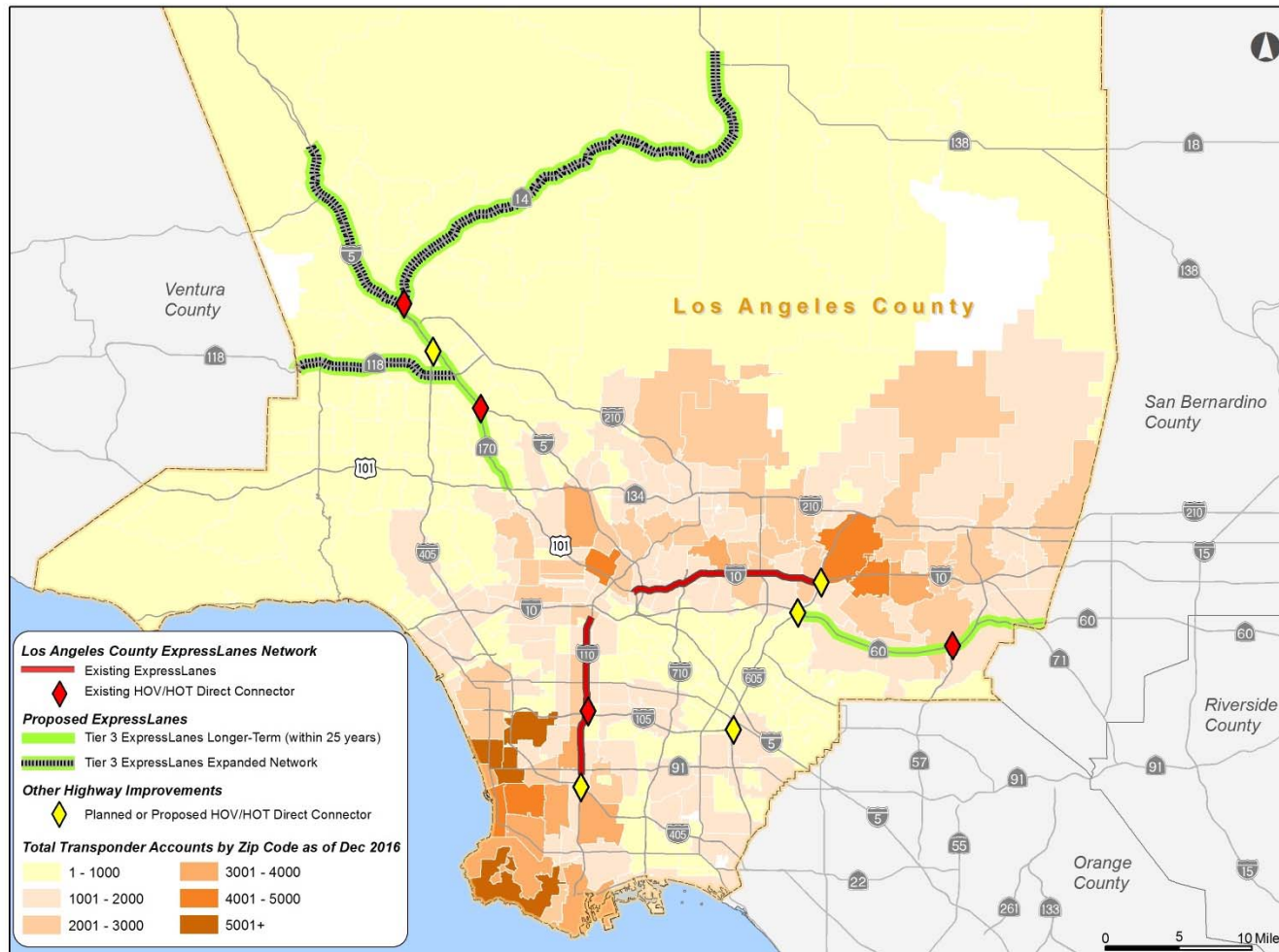
Recommended Tier 2 Projects (15 Years)



Recommended Tier 3 Projects (25+ Years)

Project	Measure M Funding	Funding Availability
I-5 from SR-170 to SR-14	None	N/A
SR-60 from I-605 to LA/San Bernardino County line	None	N/A
SR-170 from I-5 to SR-134	None	N/A
I-5 from SR-14 to Parker Road	None	N/A
SR-14 from I-5 to Avenue P8	None	N/A
SR-118 from I-5 to LA/Ventura County line	None	N/A

Recommended Tier 3 Projects (25+ Years)



Funding Options

- Measure M
- Bonding
- TIFIA loans
- Grants
- Net toll revenue loans from other ExpressLanes

Recommendations/Board Actions

Request the Board to:

- Receive and file the report; and,
- Authorize the CEO to:
 - Initiate planning studies including a comprehensive financial plan for Tier 1 projects and submit those projects as a network to the California Transportation Commission to request tolling authority



71

15

91

FAST FORWARD

RIVERSIDE COUNTY TRANSPORTATION COMMISSION



91 Project Overview

Afternoon traffic congestion on State Route 91 between Orange County and Riverside County is among the top trouble spots in the nation. Traveling the 91 is a challenge in either direction, any day of the week, including weekends.

The Riverside County Transportation Commission (RCTC) and its project partners are moving **"Fast Forward"** with the 91 Project. Extending from the Riverside County/ Orange County line in Corona to Pierce Street in Riverside, the 91 Project will add regular lanes, tolled express lanes and connectors and improve interchanges, bridges, ramps and local streets. New connections between the 91 and Interstate 15 also will be made.

These improvements are designed to reduce delays, offer a choice between regular lanes and express lanes, allow faster emergency response, relieve local street congestion and provide better access to public transit and trails.

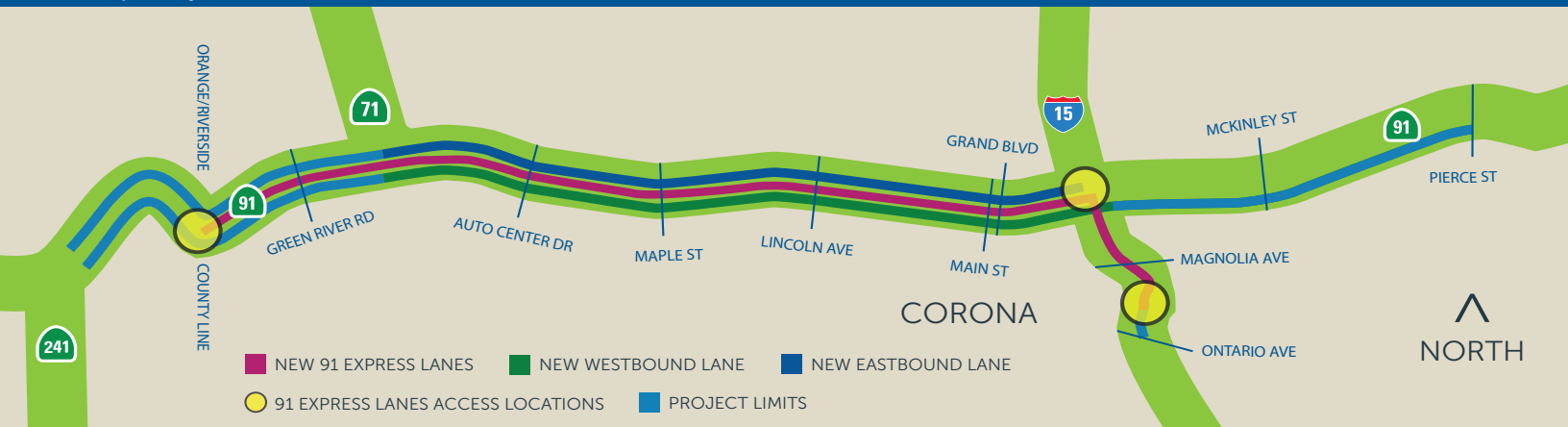
The 91 is approaching 50 years old, and the traffic demands now placed on it far exceed its original design from the early 1960s. Close to 280,000 vehicles travel this section of the 91 each day, and that number is expected to grow by another 140,000 vehicles daily by 2035. The 91 is the

only major east-west route between Orange County and Riverside County and is used heavily for commuting, commercial transport and local travel.

Environmental approvals for this \$1.4 billion project were received in late 2012. A design-build approach is allowing the same firm to finalize the design and construct the project, speeding up delivery by three to four years. Construction began in early 2014, with new lanes anticipated to open by 2017.



91 Project Improvements



Para solicitar esta información en español, llame al 877-770-9191 o visite el sitio de internet del proyecto en sr91project.info

Project Milestones

By the Numbers

- > **1980s** Congestion increases as western Riverside County grows
- > **1995** 91 Express Lanes open, operated by private company
- > **2002** Orange County Transportation Authority (OCTA) makes agreement to buy 91 Express Lanes
RCTC passes renewal of Measure A with improvement project in sales tax measure
- > **2003** OCTA takes possession of toll lanes
- > **2004** Immediate improvement projects for auxiliary lanes and restriping begin
- > **2005** Major Investment Study completed
- > **2006** Project Study Report completed by Caltrans
Toll Lane Feasibility Study and 10-Year Measure A Delivery Plan prepared by RCTC
Westbound auxiliary lane project complete, SR-241 to SR-71
- > **2008** State Tolling Authority received
- > **2009** Federal Tolling Authority received
- > **2012** Environmental approvals received
Invitation to submit TIFIA federal loan application
- > **2013** Design-build contract awarded
Financing completed
- > **2014** Construction began
- > **2017** New lanes anticipated to open

90: Number of minutes that express lane users can expect to reduce their round-trip commute during peak hours.

16,200: Number of jobs the 91 Project is forecast to create, with about 4,600 related to project construction.

\$1.4 billion: Total project cost, provided by a combination of federal, state and local sources, as well as toll revenue bonds.

\$664 million: Design-build contract amount.

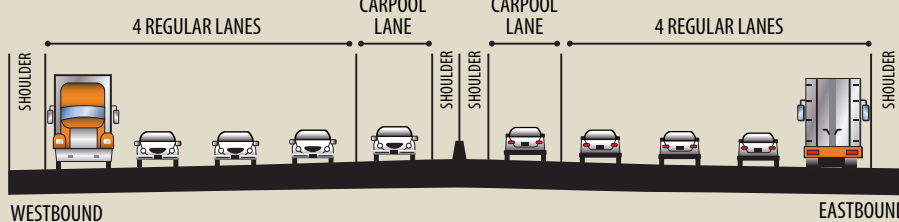
3-4: Number of years saved by using a design-build approach, compared to a traditional design-bid-build approach

280,000: Average number of vehicles that travel the 91 each day. This number is expected to grow by another 140,000 by 2035.

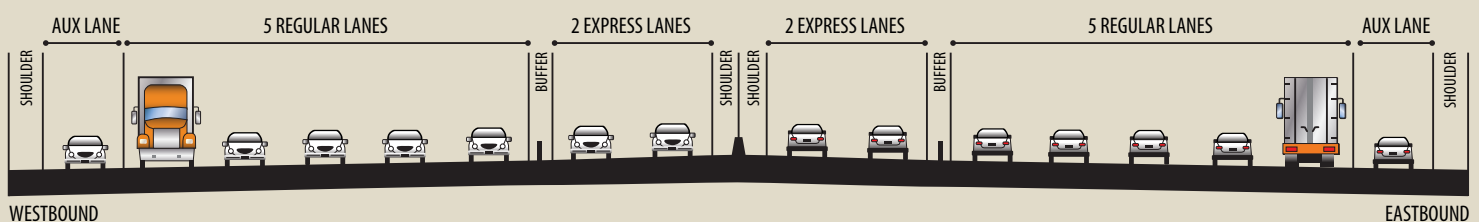
80: Percent of Orange County 91 Express Lane users who said they plan to use the new RCTC tolled express lanes.

877-770-9191: The 91 Project's helpline for questions and comments. Calls will be returned by the next business day.

CURRENT CONDITION



FUTURE CONDITION



Project Partners:



Project Helpline: 877-770-9191

Website: sr91project.info

May 2015



I-15 EXPRESS LANES PROJECT

A project of the Riverside County Transportation Commission

PROJECT OVERVIEW

The Riverside County Transportation Commission (RCTC), in partnership with Caltrans, is investing \$455 million to improve I-15 between Cajalco Road and State Route 60 (SR-60). The project will add two tolled express lanes in each direction on I-15 between Cajalco Road and SR-60, a distance of approximately 15 miles. An enhanced feature of this project is that drivers will be able to access and exit the tolled facility at multiple locations, and the project continues RCTC's ongoing commitment to expand the express lanes network.

PROJECT BENEFITS

- ✓ Improve existing and future mobility along the I-15 corridor
- ✓ Reduce congestion and improve traffic operations
- ✓ Provide a time-saving travel choice with multiple entry / exit points
- ✓ Expand the tolled express lane network
- ✓ Increase travel time reliability

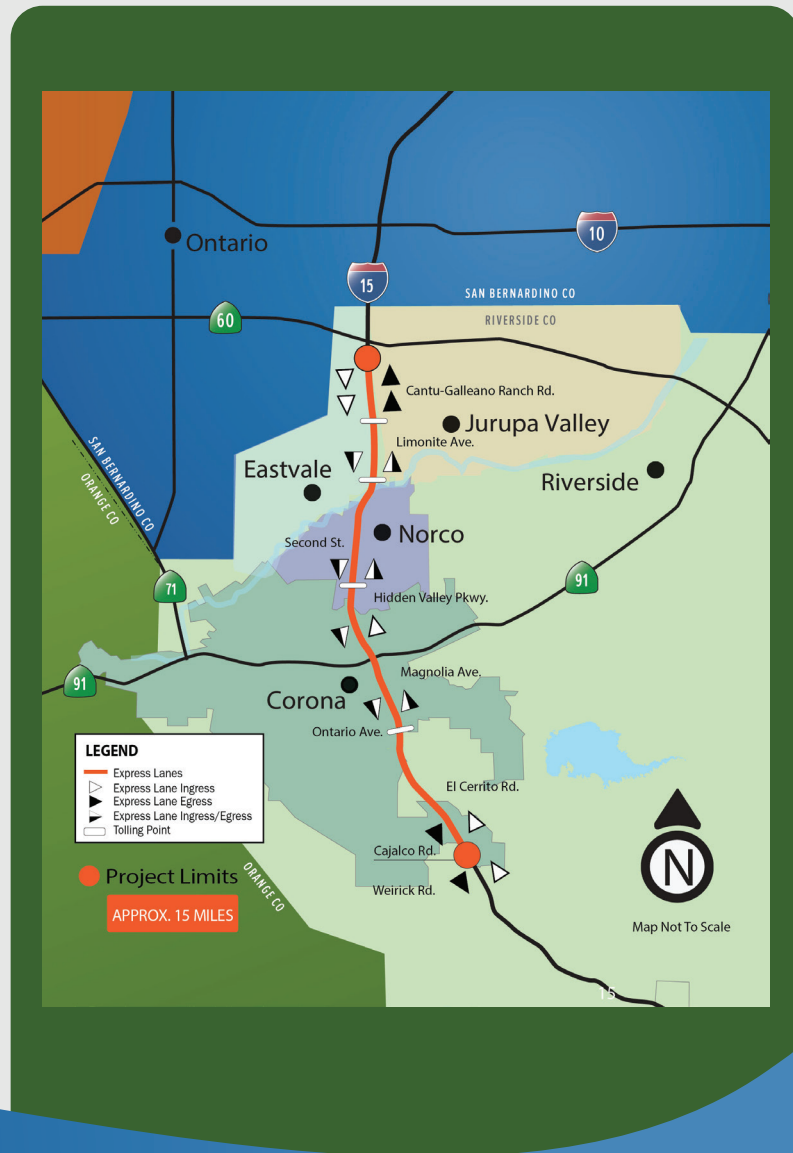
PROJECT TIMELINE

RCTC is proceeding with a design-build process to expedite delivery of the project, minimize construction costs, and take advantage of the existing 91 Express Lanes project experience.

Design-Build Contract Awarded	April 2017
Construction Begins	2018
Express Lanes Open to Cars	2020

STAY CONNECTED!

For more project information, call the project helpline (844) 415-9777 or send an email to I-15expresslanesinfo@rctc.org.



Improving the I-15 For All Who Use It



The I-15 Corridor is an economic lifeline connecting San Bernardino County and the nation.

The I-15 Corridor, which includes the segment between SR 60 and US 395 in the High Desert, is an economic lifeline connecting San Bernardino County and the nation. It is a key freeway used by travelers visiting mountain and desert communities, in addition to people heading on vacation to neighboring states. Furthermore, it is a key trucking route for moving goods throughout California and beyond.

As a result of I-15 being the primary and often only choice for motorists to reach their destination, there is a tremendous amount of traffic along the corridor. Daily vehicle traffic averages about 223,000 and this number is expected to increase significantly during the coming decades as the population and economic standing of the High Desert will continue to grow.

In addition, goods movement growth will also create heavier traffic conditions on I-15. Approximately 10 to 15% of total traffic consists of trucks, with up to 20,000 traveling on the corridor each day. Truck traffic is projected to continue growing by 2 to 2.5% per year.

The solutions being studied are designed to provide motorists a choice when traveling along I-15 and to encourage economic growth, a sustainable environment, and a high quality of life for everyone who lives, works and travels in and through San Bernardino County.

15 I-15 Timeline

**FORMAL PUBLIC COMMENT PERIOD
EARLY 2018**

**ENVIRONMENTAL APPROVAL
SPRING 2018**

**PHASE I
OPENING 2024**

**IDENTIFY AND STUDY
PROJECT ALTERNATIVES**

**DESIGN & BUILD
SELECTED ALTERNATIVE**

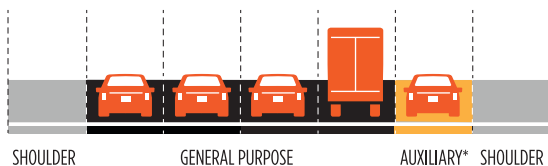
2012 2014 2016 2018 2020 2022 2024

This timeline represents the study of adding two Express Lanes in each direction from SR 60 to SR 210. Final phases for SR 210 to I-215 and I-215 to US 395 will be selected at a later date.

The I-15 Project Alternatives

There are two alternatives that are being studied by San Bernardino County Transportation Authority (SBCTA) as part of the I-15 Corridor Improvement Project:

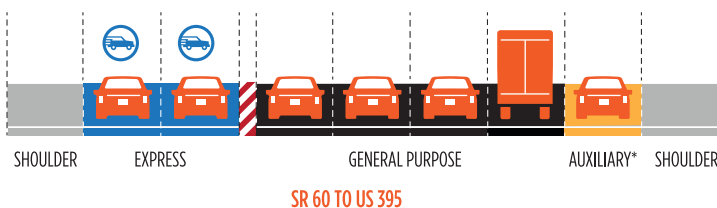
ALTERNATIVE ONE: NO BUILD



This alternative looks at what might happen if nothing is changed – no additional travel lanes or ramp improvements would be built.

**Auxiliary lanes are on the far right-side of the freeway that help ease the transition on and off the freeway between an on- and off-ramp.*

ALTERNATIVE TWO: EXPRESS LANES



The addition of 33-mile Express Lanes in each direction between SR 60 and US 395. Single-occupant motorists may choose to pay a toll to travel faster on the Express Lanes, with carpools enjoying free or reduced travel depending on congestion. The number of General Purpose Lanes would not be changed.

Progress So Far

The I-15 Corridor Project is currently in the environmental review phase. Public input throughout the environmental process will play an important role.



2012: SBCTA began preliminary technical studies and public outreach.



October 2014: SBCTA started the final technical studies.



PROJECT COSTS AND FUNDING

The estimated construction cost is approximately \$1.3 billion. Funding comes from toll-revenue bonds and a federal loan that would be repaid by toll revenue, complemented by traditional Federal, State and Measure I funding resources since the system allows for HOV use.

**Refer to FAQs on our website for additional information at www.1015projects.com.*

Why is there no HOV/Carpool alternative on I-15?

Limited funding only allows for one High Occupancy Vehicle (HOV)/ and two Carpool alternative to be considered on one corridor. Traffic studies on the I-10 and I-15 demonstrated a greater need for a HOV/Carpool alternative on the I-10.

UPDATED APRIL 26, 2017



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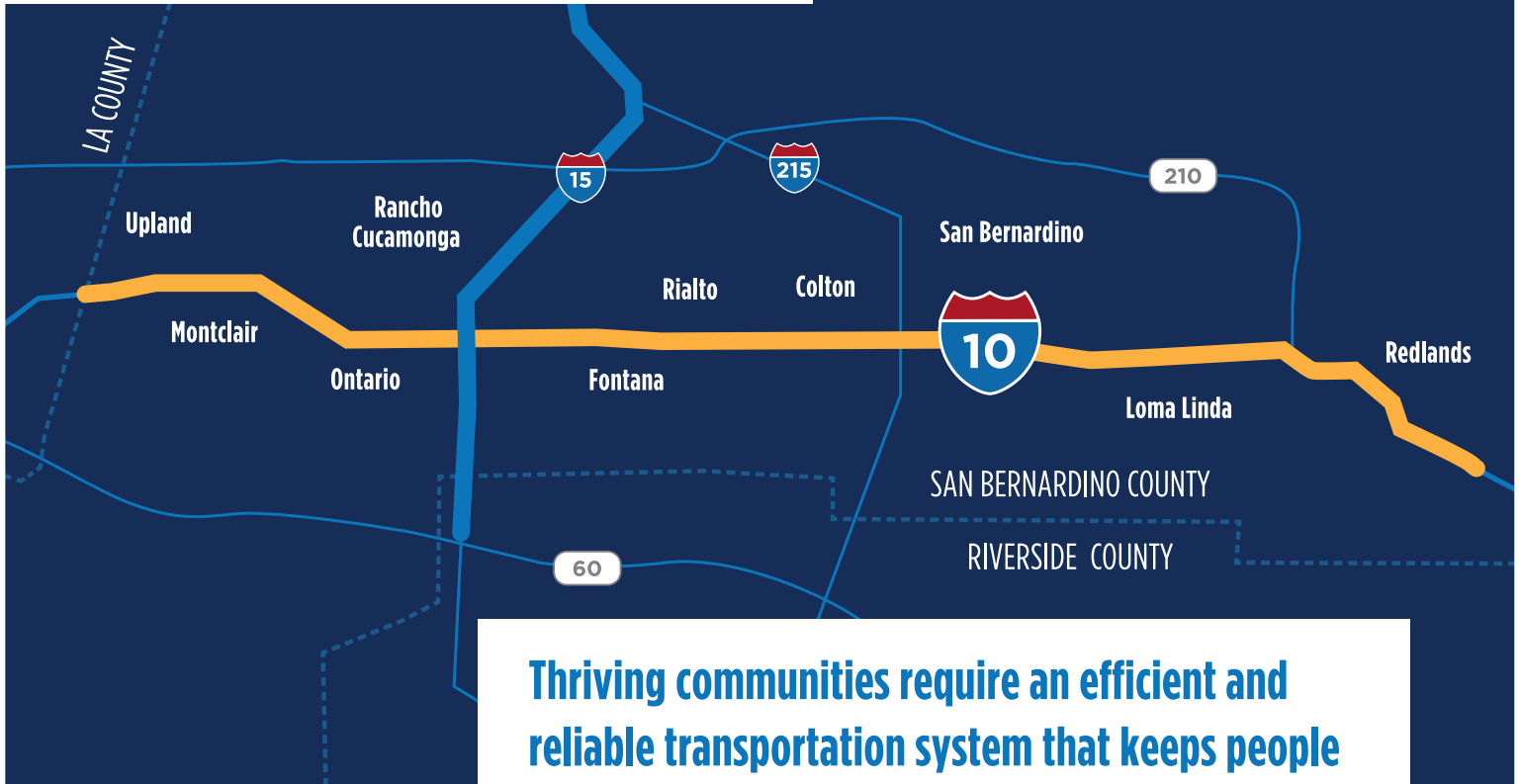
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Improving the I-10 For All Who Use It



Thriving communities require an efficient and reliable transportation system that keeps people and goods moving.

The I-10 freeway is a critical transportation corridor through San Bernardino County used by residents, businesses and visitors. It's also a major trucking route between Southern California and the rest of the country as goods movement is vitally important for the local and national economies. Up to 263,000 vehicles and more than 20,000 trucks travel through this corridor each day.

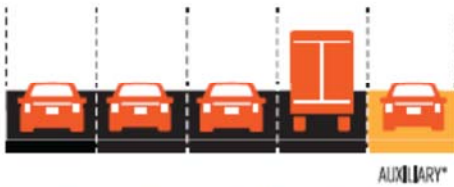
As our region grows, travel will also increase. As a result, we will continue to see congestion grow during many hours of the day. This reduces time people can spend at home with family, friends, or engaging in activities of their choice.

To address these challenges, San Bernardino Associated Governments (SANBAG), the council of governments and transportation planning agency for San Bernardino County, is studying alternatives now as part of the I-10 Corridor Project to keep traffic moving.

The solutions being studied are designed to provide choices to motorists when driving along I-10 and to encourage economic growth, a sustainable environment and a high quality of life for everyone who lives, works and travels in and through San Bernardino County.

Understanding Lane Designations

GENERAL PURPOSE LANES



General Purpose Lanes are for all types of vehicles at any time. These will not be removed, repurposed, or replaced as part of any alternative.

MANAGED LANES



High Occupancy Vehicle (HOV) Lanes, also called carpool or diamond lanes, are limited to vehicles with multiple occupants. They have a diamond symbol and are available on many freeways in Southern California.



Express Lanes can be used by motorists choosing to pay a toll. Toll rates are determined by traffic conditions and how many people are in the car. 3+ occupants on I-10 will receive free or discounted rates.

The Challenge: We're Growing

Over the past 40 years, San Bernardino County's population has tripled to 2.1 million people. This is expected to increase by more than 30% in 2035, and more than 60% by 2060; increasing the population to nearly 3.4 million people. That's like adding the entire population of Phoenix, Arizona into the county. This trend is continuing with neighboring counties as well with Riverside County growing at a similar pace.

With this population growth, daily traffic on the I-10 is expected to increase to 350,000 vehicles by 2045. Increasing goods movement will also create heavier traffic conditions. For example, between 2003 and 2030, there will be a 75% increase in truck traffic on I-10 resulting in 23,000 trucks on the I-10 everyday.

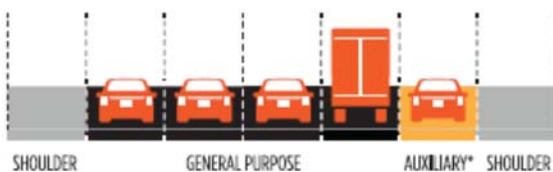
Clearly, there is a need for viable, tested solutions to manage that anticipated traffic demand.



The I-10 Project Alternatives

There are three alternatives that are being studied by SANBAG as part of the I-10 Corridor Improvement Project:

ALTERNATIVE ONE: NO BUILD



This alternative looks at what might happen if nothing is changed – no additional travel lanes or ramp improvements would be built.

ALTERNATIVE TWO: HOV LANE



The addition of an HOV/Carpool Only Lane in each direction of I-10 between Haven Avenue in Ontario and Ford Street in Redlands (25 miles). The number of General Purpose Lanes would not be changed.

*Auxiliary lanes are on the far right-side of the freeway that help ease the transition on and off the freeway between an on- and off-ramp.

Adding Managed Lanes Benefit Everyone*

The addition of one HOV/Carpool Lane or two Express Lanes benefits all motorists, the local community and the environment:

- There will be less traffic in General Purpose Lanes because of managed lane users; if Express Lanes are chosen, there will be a time savings of 50%+ and if HOV/Carpool Lanes are chosen, the time savings will be 25%+ compared to a No-Build alternative (during peak drive times when traveling the entire corridor).
- Overall emissions are lowered and air quality is improved because there is less traffic congestion.
- If Express Lanes are selected, toll revenues stay local and help fund local transportation improvements.



General Purpose Lanes Time Savings



HOV/Carpool Lanes
Alternative

*Compared to a No-Build alternative.



Express Lanes
Alternative

A Solution: Provide Travel Choices

SANBAG started the I-10 Corridor Project in 2007 to explore the best solutions to relieve congestion now and in the future. With limited funding and land available for expansion, we must be creative in our decisions to best manage traffic on I-10. We can no longer build our way out of congestion by simply adding more General Purpose Lanes.

Managed Lanes can improve traffic flow and give drivers a choice in how they travel on the freeway. Adding a HOV/Carpool Lane to reduce the number of cars on the road will help some, but traffic is most likely to become congested again within a decade. Traffic studies show adding Express Lanes are a long-term solution to relieve congestion in all lanes.

Regardless of drivers' choices to travel via General Purpose, HOV/Carpool or Express Lanes, time will be saved on the drive. All travelers benefit because reduced congestion results in faster driving time and better air quality. Plus, for those choosing to pay a toll, those revenues stay local and help fund various types of transportation and public transit improvements.

What are Express Lanes?

Express Lanes use innovative technology that measures the congestion level on the freeway and sets a toll based on volume. Pricing is highest during peak commute hours or if there is a special event causing significant traffic delays. Motorists may choose to pay a toll to travel faster on the Express Lanes, with carpools enjoying free or reduced tolls depending on congestion. The cost is always displayed so motorists can choose whether to pay and use the Express Lanes or remain in the free General Purpose Lanes.

ALTERNATIVE THREE: EXPRESS LANES



The addition of 33-mile Express Lanes in each direction between the Los Angeles/San Bernardino County line and Ford Street in Redlands. The number of General Purpose Lanes would not be changed.

PROJECT COSTS AND FUNDING



The estimated construction cost is approximately \$650 million for the HOV alternative and approximately \$1.8 billion for Express Lanes. The HOV project funding comes from the traditional Federal, State and Measure I resources. Express Lanes project funding, however, uses those same traditional resources since the system allows for HOV use, as well as toll-revenue bonds and a federal loan. The bonds and loan will be repaid by future revenues generated from use of the Express Lanes.

*Refer to FAQs on our website for additional information at www.I05projects.com.



Community Input is Always Needed

You have a voice for choice in this process. SANBAG is committed to ongoing, meaningful community input to ensure the I-10 Corridor Project reflects the values and priorities of the people who live and travel in San Bernardino County. Your comments, questions and suggestions are welcome any time via email, phone, social media, or the website.

The I-10 Corridor Project has three established Community Advisory Groups (West Valley, East Valley and High Desert) that meet quarterly. Members review project status updates and provide critical feedback to the project team. New members can be added as space is available. Applications are available on the website.

The public also has various opportunities to provide comment throughout the environmental process, which includes the public review period of the draft environmental document from April 25, 2016 to June 8, 2016.

Progress So Far

The I-10 Corridor Project is currently in the environmental review phase. While the SANBAG Board has selected Express Lanes as the locally preferred alternative, that does not mean it's the final decision. Public input throughout the environmental process will play an important role.

-  **2007:** SANBAG initiated study of the I-10 Project.
-  **August 2011:** SANBAG started the study of Express Lanes.
-  **January 2012:** SANBAG began final technical studies and extensive public outreach.
-  **October 2012:** SANBAG conducted public scoping meetings.
-  **July 2014:** SANBAG Board selected Express Lanes as the locally preferred alternative.
-  **November 2015:** SANBAG Board reconfirmed the selection of Express Lanes as the locally preferred alternative.

UPDATED APRIL 22, 2016



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Minute Action

AGENDA ITEM: 12

Date: April 1, 2015

Subject:

Express Lanes Tolling Policy and Toll Revenue Policy

Recommendation:

That the Board, acting in its capacity as the San Bernardino County Transportation Commission:
 Approve the Express Lane tolling policies included in Table 1, and approve the toll revenue policies included in Table 2.

Background:

At the July 2014 Board Meeting, the SANBAG Board approved the Express Lanes Alternative as the Locally Preferred Alternative for the I-10 Corridor Project, subject to the completion of the California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) review. SANBAG is also evaluating an Express Lanes Alternative as the sole build alternative for the I-15 corridor. In order to continue the development of these two corridor projects, several activities need to advance concurrently with the environmental process, one of which is completion of the Investment Grade Traffic and Revenue Forecast.

A Preliminary Traffic and Revenue Forecast was completed in 2011, which confirmed the potential for Express Lanes on the I-10 and I-15 corridors. The Intermediate Traffic and Revenue Study, presented to the Board in October 2013, confirmed financial feasibility for the two corridor projects. The next financial analysis step is to develop an Investment Grade Traffic and Revenue Forecast, which will serve as a key component of the updated financial plan for the two corridors, and is required to be completed prior to submission of a Transportation Infrastructure Finance and Innovation Act (TIFIA) Application.

In order to advance the I-10 and I-15 project most effectively, the Investment Grade Traffic and Revenue studies should be completed in 2016, which would enable the TIFIA process to move forward in 2017. To complete this high level traffic and revenue study requires the approval of key tolling policies that would impact the results of the study. The tolling policies recommended by the I-10 and I-15 Corridor Sub-Committee are included in Table 1. Additional background information on these tolling policies is included in Attachment 1.

Table 1: Key Tolling Policies

1. Provide free or discounted travel for HOV 3+ vehicles
2. Maintain 24-hour tolling with a minimum toll rate
3. Utilize both switchable transponders and License Plate Recognition (LPR) for toll collection

Entity: CTC

Board of Directors Agenda Item

April 1, 2015

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4. Implement dynamic pricing with pricing by segment
5. Maintain normal toll pricing for Clean Air Vehicles
6. Create a Low Income Equity Program for San Bernardino County residents
7. Enable California Highway Patrol (CHP) to reroute General Purpose lane traffic into the Express Lanes in the event of a severe incident
8. Evaluate tolling HOV 3+ at a discounted rate (as opposed to free) during super-peak events

Toll revenue generated by an Express Lanes project must first be used to cover operations, maintenance, debt service and major maintenance and rehabilitation reserves for the toll facility. Toll revenue may also be dedicated to complete the Express Lanes system, or to pay back any local contributions. Remaining “excess” revenue is typically allocated to corridor improvements including transit. Toll revenue use is typically broadly defined within legislation, and is then more specifically defined within Board-approved expenditure plans and project financing documents.

In order to allocate toll revenue in the Investment Grade Traffic and Revenue Forecast for the I-10 and I-15 corridors, it is necessary to establish a toll revenue policy. After discussion with the I-10 and I-15 Joint Sub-Committee on January 15, 2015 and February 12, 2015, the sequential toll revenue policy shown in Table 2 is recommended for inclusion in the updated financial plans.

Table 2: Toll Revenue Policy

1. Operate the Express Lanes System
2. Maintain the Express Lanes System
3. Pay Express Lanes Debt Service
4. Complete the Express Lanes System
5. Pay back the Measure I Contributions
6. Implement Transit and Corridor Improvements within I-10 and I-15 Corridors

The policy will allow toll revenue to be reflected appropriately in the updated financial plan, while preserving flexibility to further define projects for completion within the Express Lanes system, projects to be completed using funds paid back to Measure I and additional transit and corridor improvements within the I-10 and I-15 corridors. Potential projects for inclusion in the Express Lanes System include the I-10/I-15 Direct Connectors and the extension of the I-15 Express Lanes from US-395 to the potential High Desert Corridor. Payback of the Measure I contributions would need to return to the source of the funds, i.e. the Valley Freeway Program. If toll revenue is used to complete the Express Lanes System and pay back the Measure I contributions, it is anticipated that any “excess” revenue would not be available until 2045.

Approval of the tolling policies is needed to develop an accurate Investment Grade Traffic and Revenue Forecast. Similarly, approval of the toll revenue policies is needed in order to allocate estimated toll revenue properly in the updated financial plan. Staff recommends approval of the Express Lanes policies listed in Tables 1 and 2.

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Financial Impact:

This item imposes no impact on the Fiscal Year 2014/2015 budget.

Reviewed By:

This item was reviewed and recommended for approval (15-0-0) with a quorum of the Board present at the Board of Directors Metro Valley Study Session on March 12, 2015. This item was reviewed and unanimously recommended for approval by the Mountain/Desert Policy Committee on March 20, 2015.

Responsible Staff:

John Meier, Project Manager

Approved
Board of Directors
Date: April 1, 2015

Witnessed By:

Express Lanes Tolling Policy

<u>Item One:</u>	High Occupancy Vehicle (HOV) Policy
<u>Description:</u>	Establishes HOV requirements for free travel within the Express Lanes.
<u>2013 Traffic and Revenue (T&R) Assumption:</u>	HOV 2+ travel free until 2024; HOV 3+ travel free 2024 and beyond.
<u>Discussion:</u>	<p>Traffic and Revenue (T&R) modeling indicates that HOV 2+ free would not be financially viable. From a capacity standpoint, two Express Lanes in each direction could support HOV 2+ free, but there would be little excess capacity to sell to Single Occupant Vehicles (SOVs). Therefore, funds would not be available to construct the second lane.</p> <p>Under the assumed HOV 3+ policy, approximately 15 to 20% of the vehicles would be traveling free in 2030. Shifting from HOV 3+ to HOV 2+ free during off-peak hours would reduce toll revenue by 20 to 25%, possibly more in the early years. Off-peak is defined as 9:30 a.m. to 3:30 p.m. and 7:30 p.m. to 6:30 a.m.</p> <p>Note I: A single-lane HOV 2+ addition would be degraded within 10 years of opening, and would provide no relief for existing HOV 2+ congestion between the Los Angeles County line and Haven Avenue.</p> <p>Note II: The 2013 Traffic and Revenue (T&R) assumed HOV 2+ would travel free during the initial I-10 segment opening from Los Angeles County Line to I-15 in 2022 and 2023, which includes the portion of existing HOV lanes from LA County Line to Haven that would be converted to Express Lanes. This segment would be converted to HOV 3+ in 2024, which is when the remaining I-10 segments are scheduled to be completed. On 12/11/14, the Express Lanes Ad Hoc Committee recommended that this HOV2+ to HOV3+ transition be eliminated, and that all Express Lanes segments open as HOV3+.</p> <p>Note III: Vehicles would be required to have a transponder in order to obtain the HOV 3+ credit, as the geometric design does not contain HOV 3+ declaration lanes.</p> <p>Note IV: For the time period from July through October 2014, OCTA data from the 91 Express Lanes indicates approximately 21% of trips were HOV 3+.</p>
<u>Recommendation:</u>	Implement free travel for HOV 3+ for all Express Lanes segments, including the initial I-10 segment opening in 2022.

Attachment: 20150312 Express Lanes Tolling Policy (1825 : Express Lanes Toll Policy)

Express Lanes Tolling Policy

<u>Item Two:</u>	Minimum Toll Rate / Hours of Operation
<u>Description:</u>	Establishes minimum toll for entry into the Express Lanes.
<u>2013 T&R Assumption:</u>	24-hour tolling, with a minimum toll for entry into the Express Lanes of \$0.05 per mile from point of entry to the end of a segment or \$0.50 per segment, whichever is greater.
<u>Discussion:</u>	<p>Tolls in an Express Lanes Facility can be collected either during peak-hours only, or 24 hours a day.</p> <p>Peak-hour only tolling would allow access to all passenger vehicles during off-peak hours, which is defined as volumes in the Express Lanes below 1,200 vehicles per hour per lane. Under 24 hour tolling, a minimum toll rate would be charged during off-peak hours.</p> <p>Traffic and Revenue models indicate that the off-peak hours would run from approximately 9:30 a.m. to 3:30 p.m. and 7:30 p.m. to 6:30 a.m. for the I-10 corridor in 2030. Eliminating minimum toll during off-peak hours would reduce toll revenue by at least 15 to 25% prior to 2030; 15% in 2030; and 2-5% in 2046, based on the off-peak hours specified above.</p> <p>Establishing a minimum toll rate minimizes weaving in and out of Express Lanes, which can caused congestion and reduce throughput in both the Express Lanes and General Purpose lanes.</p> <p>24-hour tolling is consistent with neighboring Riverside, Orange and Los Angeles counties. Off-peak only tolling could create confusion at county lines as well additional complexity for users as to when to expect free travel.</p> <p>Note I: For the I-10 project, the minimum toll rate is estimated at \$2.15 for the 33-mile trip in 2030 (expressed in 2012 dollars). For the I-15 project, the minimum toll rate is estimated at \$2.30 for the 33-mile trip in 2030 (expressed in 2012 dollars).</p> <p>Note II: For comparison, the minimum toll rate for the 10-mile trip on the OCTA 91 Express Lanes is currently \$1.45, which would be even higher if based on 2030 volumes.</p>
<u>Recommendation:</u>	Maintain 24-hour tolling with a minimum toll rate of \$0.50 per zone in order to maximize efficient and safe operation of Express Lanes and General Purpose lanes, and to maintain financial feasibility of the Express Lanes project.

Express Lanes Tolling Policy

<u>Item Three:</u>	Toll Collection Methodology
<u>Description:</u>	Establishes toll collection methodology for the Express Lanes Facility
<u>2013 T&R Assumption:</u>	Switchable RFID Transponders and License Plate Recognition
<u>Discussion:</u>	<p>Toll collection methodology varies across the country, and includes cash collection, Radio-Frequency Identification (RFID) transponders, switchable RFID transponders and license plate recognition (LPR).</p> <p>Cash collection introduces additional operations cost, traveler delay and requires a larger geometric footprint, and is largely being phased out across the country.</p> <p>All-Electronic Tolling, which includes the use of transponders and LPR, allows tolling without the need to stop at a cash collection booth.</p> <p>Transponder-only facilities provide the lowest administrative cost of the toll collection methods, but restricts use of the Express Lanes to those with a transponder. Switchable transponders provide the added benefit of declaring vehicle occupancy, thereby eliminating the need for declaration lanes for qualifying HOV vehicles.</p> <p>LPR has a higher administrative cost than transponder-only, but allows access to a much broader range of users than transponder-only facilities. For example, visitors or infrequent users can still use the facility and pay the toll via the web. LPR users would be charged a surcharge to offset the higher administrative cost.</p> <p>Note I: Transponders issued in California are required by law to be interoperable, e.g. an OCTA transponder works on a Metro Express Lanes facility, and this requirement will soon be in effect nationwide.</p> <p>Note II: As tolling technology continues to evolve, there is the potential that transponders would no longer be required by the time of construction. This issue will be monitored further during future Concept of Operations development.</p>
<u>Recommendation:</u>	Utilize switchable RFID Transponders and License Plate Recognition for toll collection.

Express Lanes Tolling Policy

<u>Item Four:</u>	Toll Pricing Process
<u>Description:</u>	Establishes the tolling concept for the Express Lanes
<u>2013 T&R Assumption:</u>	Dynamic Pricing with Pricing by Segment
<u>Discussion:</u>	<p>The I-10 and I-15 Express Lanes would utilize dynamic pricing, which maximizes the ability to manage traffic demand by adjusting pricing based on real-time traffic demand. Actual pricing can be based on a per-mile basis or a per-segment basis.</p> <p>Per-mile pricing would charge users based on the distance covered within the Express Lane facility, with the per-mile rate varying based on demand.</p> <p>Under segment pricing, per-mile toll rates are converted into toll charges for each segment by multiplying the per-mile rate by the longest distance covered by each tolling segment.</p> <p>Segment-based pricing tends to increase the share of long-distance trips, i.e. minimizes weaving, due to a relatively higher price for trips using only a short portion of a tolling segment. Shorter trips lead to increased weaving in and out of the Express Lanes, which may cause operational issues leading to increased congestion and reduced corridor throughput.</p> <p>Utilizing per-mile pricing on a long corridor with multiple ingress-egress points introduces signage complexity, with a wide range of total trip distance scenarios available upon entry into the facility. Segment pricing simplifies signage by indicating cost for using the initial segment, followed by cost to the end of the facility.</p> <p>Note I: Tolls that are displayed on signage are guaranteed upon entry.</p>
<u>Recommendation:</u>	Utilize Dynamic Pricing with Pricing by Segment

Express Lanes Tolling Policy

<u>Item Five:</u>	Clean Air Vehicle Policy
<u>Description:</u>	Establishes policy for free or discounted travel for Clean Air Vehicles in the Express Lanes facility.
<u>2013 T&R Assumption:</u>	No discount or free travel for Clean Air Vehicles
<u>Discussion:</u>	<p>Current State policy, which expires in 2019, provides free travel for qualifying Clean Air vehicles in many managed lanes facilities.</p> <p>Tolling Clean Air Vehicles has a positive financial impact; however, actual impact has not been quantified as it was a core assumption in the 2013 Traffic and Revenue Forecast.</p> <p>Tolling Clean Air Vehicles reduces incentive for Clean Air Vehicle use, which is a potential air quality issue.</p> <p>SCAG is moving towards a blanket exemption for Clean Air Vehicles priority usage of managed lanes, i.e. no discount or free travel for Clean Vehicles.</p>
<u>Recommendation:</u>	Consistent with law anticipated at the start of tolling in 2022, maintain normal toll pricing for Clean Air Vehicles

Express Lanes Tolling Policy

<u>Item Six:</u>	Low-Income Equity Program
<u>Description:</u>	Policy would establish a program to attract and facilitate usage of the Express Lanes facility by low-income users.
<u>2013 T&R Assumption:</u>	Not modeled
<u>Discussion:</u>	<p>Policy would be modeled after Metro Express Lanes Equity Program, which provides \$25 credit for account set-up and waives the monthly account fee</p> <p>Primary recommendation from the Equity Study Report; financial impact to be quantified.</p> <p>Note I: Metro annual cost is approximately \$54,000 in toll credits.</p> <p>Note II: Participation in the Low Income Equity Program requires registration and issuance of a transponder. The requirement of a transponder will be further reviewed during Concept of Operations development, as toll collection technology is evolving rapidly.</p>
<u>Recommendation:</u>	Recommend including Equity Program for San Bernardino County residents; financial impact to be verified during Investment Grade Traffic and Revenue analysis.

Express Lanes Tolling Policy

<u>Item Seven:</u>	Incident Management
<u>Description:</u>	Establish policy to allow or not allow General Purpose lane traffic to be rerouted into Express Lanes toll-free in event of traffic incident in General Purpose lanes
<u>2013 T&R Assumption:</u>	Not modeled
<u>Discussion:</u>	<p>In the event of a significant incident in the General Purpose lanes, the flexibility to reroute General Purpose lane traffic into the Express Lanes could serve to alleviate congestion associated with the incident, benefitting the General Purpose lane users of the Corridor.</p> <p>The drawbacks include the lack of choice for a “guaranteed” travel time in the Express Lanes facility during severe General Purpose lane incidents, and the drop in Express Lane throughput due to congestion resulting from the influx of General Purpose Lane traffic.</p> <p>Note I: If General Purpose lane traffic is rerouted into the Express Lanes due to an incident, a tolling reversal (credit) would be issued to the Express Lane users. Similarly, if the Express Lanes become congested due to an incident in the Express Lanes, traffic would be rerouted into the General Purpose lanes and a tolling reversal (credit) would be issued.</p> <p>Note II: Specific language would need to be drafted specifying the conditions under which CHP could reroute traffic into the Express Lanes facility.</p>
<u>Recommendation:</u>	Develop specific language, coordinated with CHP, to enable CHP to reroute General Purpose lane traffic into the Express Lanes in the event of a severe incident in the General Purpose lanes. Financial impact would need to be reflected during development of the Investment Grade Traffic and Revenue Forecast.

Express Lanes Tolling Policy

<u>Item Eight:</u>	Tolling during Super-Peak Traffic Hours
<u>Description:</u>	Policy would charge 3+ vehicles at a full or discounted rate rather than free during weekend and Holiday Super-Peak periods.
<u>2013 T&R Assumption:</u>	HOV 3+ vehicles travel free 24 hours a day, 365 days per year.
<u>Discussion:</u>	<p>Peak hours are defined as the hours during which traffic volumes reach a point near which the traffic flow become unstable. Since the capacity of the Express Lanes facility is limited, pricing is used to manage the demand to keep traffic flowing at optimal levels during peak hours.</p> <p>“Super-Peak” hours are defined as the hours during which demand greatly outstrips capacity (supply), resulting in high toll prices to manage the demand. Super-Peak demand is typically directional in nature. For example, the demand on the I-15 northbound is typically highest on a Friday night, particularly in the Cajon Pass area, and I-15 southbound is typically highest on a Sunday night.</p> <p>For the I-10 and the I-15 corridors, the super-peak events typically coincide with the weekends and holidays, i.e. recreational traffic. Much of the recreational traffic is HOV 3+, meaning it takes a higher percentage of the Express Lanes capacity without paying a toll. Additionally, much of the recreational traffic is coming from outside San Bernardino County.</p> <p>Charging HOV 3+ a partial toll during super-peak events provide an overall positive financial impact. Additionally, it captures revenue from HOV 3+ traffic emanating from outside San Bernardino County.</p> <p>Note: The OCTA 91 Express Lanes charge HOV 3+ one half of the posted toll rate Monday through Friday from 4:00 p.m. to 6:00 p.m in the eastbound direction only.</p>
<u>Recommendation:</u>	Evaluate tolling HOV 3+ at a discounted rate (as opposed to free) during super-peak events in the next phase of Traffic and Revenue forecasting.