

Los Angeles Congestion Reduction Demonstration (Metro ExpressLanes) Program

National Evaluation: Exogenous Factors Test Plan

www.its.dot.gov/index.htm

Final Report — April 16, 2012

Publication Number FHWA-JPO-12-049



U.S. Department of Transportation

Produced by the Urban Partnership Agreement Demonstration Evaluation
U.S. Department of Transportation
Research and Innovative Technology Administration
Federal Highway Administration
Federal Transit Administration

Notice

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

The U.S. Government is not endorsing any manufacturers, products, or services cited herein and any trade name that may appear in the work has been included only because it is essential to the contents of the work.

Technical Report Documentation Page

1. Report No. FHWA-JPO-12-049		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Los Angeles Congestion Reduction Demonstration (Metro ExpressLanes) Program: Exogenous Factors Test Plan – FINAL				5. Report Date April 16, 2012	
				6. Performing Organization Code	
7. Author(s) Jeremy Schroeder, Battelle				8. Performing Organization Report No.	
9. Performing Organization Name and Address Battelle 505 King Avenue Columbus, OH 43201				10. Work Unit No. (TRAVIS)	
				11. Contract or Grant No. DTFH61-06-D-00007/ORDER 07-T-08002/WO BA07-041	
12. Sponsoring Agency Name and Address U.S. Department of Transportation Research and Innovative Technology Administration Federal Highway Administration Federal Transit Administration 1200 New Jersey Avenue, S.E. Washington, DC 20590				13. Type of Report and Period Covered	
				14. Sponsoring Agency Code	
15. Supplementary Notes					
16. Abstract This report presents the Exogenous Factors Test Plan for the national evaluation of the Los Angeles County Congestion Reduction Demonstration (LAC CRD) under the United States Department of Transportation (U.S. DOT) Congestion Reduction Demonstration (CRD) Program. The LAC CRD projects focus on reducing traffic congestion by employing strategies consisting of combinations of tolling, transit, telecommuting/travel demand management (TDM), and technology, also known as the 4Ts. Tolling (pricing) strategies include converting high occupancy vehicle (HOV) lanes on the two freeway corridors to variably-priced high occupancy toll (HOT) lanes, adding a second HOT lane to portions of one corridor, and implementation of a downtown LA intelligent parking management system featuring demand-based pricing and real-time parking availability information. Transit improvements include increased bus service, transit station security improvements, expansion of two transit stations, creation of an El Monte Busway/Union Station bus service connection, and the expansion of downtown LA transit signal priority. TDM strategies aim to establish 100 new registered vanpools. This Exogenous Factors Test Plan is one of ten test plans being developed. The other nine test plans consist of the following: traffic; tolling; transit systems; surveys, interviews and workshops; ridesharing; safety; environmental; content; and cost-benefit. Each test plan is based on the LAC CRD National Evaluation Plan. This test plan describes exogenous factors data sources, data availability, and data analysis. The schedule and responsibilities for collecting, analyzing, and reporting exogenous factors are also presented.					
17. Key Word Congestion Reduction Demonstration, congestion pricing, tolling, HOT, congestion reduction, transit, bus rapid transit, telecommuting, evaluation, transit signal priority			18. Distribution Statement		
19. Security Classif. (of this report)		20. Security Classif. (of this page)		21. No. of Pages 42	22. Price

This page intentionally left blank

ACKNOWLEDGEMENTS

A number of representatives from the Los Angeles partnership agencies provided information critical to the development of this test plan. In particular, the assistance of Stephanie Wiggins from Los Angeles County Metropolitan Transportation Authority (Metro) and Marco Ruano from Caltrans in the development of the Exogenous Factors Test Plan is both recognized and appreciated.

TABLE OF CONTENTS

	<u>Page</u>
ACKNOWLEDGEMENTS	i
LIST OF ABBREVIATIONS	iii
1.0 INTRODUCTION	1-1
1.1 The LA CRD (Metro ExpressLanes) Program Projects	1-2
1.2 Los Angeles County CRD National Evaluation Plan and Exogenous Factors	1-9
2.0 DATA SOURCES, AVAILABILITY, AND RISKS	2-1
2.1 Data Sources	2-1
2.2 Data Availability.....	2-6
2.3 Potential Risks	2-6
3.0 DATA ANALYSIS	3-1
4.0 DATA COLLECTION SCHEDULE AND RESPONSIBILITIES	4-1

List of Appendices

APPENDIX A – Hypothesis/Questions from the L.A. County CRD National Evaluation Plan	A-1
APPENDIX B – Sample Data Logs Available from Caltrans	B-1

List of Tables

Table 1-1. U.S. DOT National Evaluation “Objective Questions”	1-1
Table 1-2. Relationship Among Test Plans and Evaluation Analyses	1-10
Table 2-1. Sample of L.A. Historic Unemployment Data	2-2
Table 2-2. Exogenous Factors Data Summary	2-5
Table 2-3. Historical, Pre-Deployment, and Post-Deployment Exogenous Factors Data Availability	2-6

List of Figures

Figure 1-1. LA CRD (Metro ExpressLanes) Program Project Locations	1-3
Figure 1-2. LA CRD (Metro ExpressLanes) Program Project Descriptions	1-4
Figure 1-3. ExpressPark Project Area.....	1-7
Figure 1-4. LA CRD (Metro ExpressLanes) Program Project Completion (“Go Live”) Schedule	1-8
Figure 2-1. Los Angeles Historic Unemployment Rate – 2001 through 2011	2-2
Figure 2-2. Los Angeles Historic Average Gas Price Chart – 2000 to 2010.....	2-3
Figure B-1. Sample of Caltrans Special Event Log.....	B-1
Figure B-2. Sample of Caltrans Lane Closure Log	B-3
Figure B-3. Sample of Caltrans Major Incident Log.....	B-5

LIST OF ABBREVIATIONS

4Ts	Tolling, Transit, Telecommuting and Technology
ATMS	Advanced Transportation Management System
Caltrans	California Department of Transportation
CAD	Computer-Aided Dispatch
CHP	California Highway Patrol
CMS	Changeable Message Sign
CRD	Congestion Reduction Demonstration
DMS	Dynamic Message Sign
ExpressLanes	High Occupancy Toll Lanes
ExpressPark	Intelligent Parking Management
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HOV	High Occupancy Vehicle
HOT	High Occupancy Toll
I-10	Interstate 10 (El Monte Busway between Alameda St and I-605)
I-110	Interstate 110 (Harbor Transitway between Adams Blvd and Harbor Gateway Transit Center)
IPM	Intelligent Parking Management
L.A.	Los Angeles
LAC CRD	Los Angeles County Congestion Reduction Demonstration
LADOT	Los Angeles Department of Transportation
Metro	Los Angeles County Metropolitan Transportation Authority
Metrolink	Southern California Regional Rail Authority
MOE	Measure of Effectiveness
SBCCOG	South Bay Cities Council of Governments
SCAG	Southern California Association of Governments
SGVCOG	San Gabriel Valley Council of Governments
TDM	Travel Demand Management
TMC	Transportation Management Center
U.S. DOT	U.S. Department of Transportation

This page intentionally left blank

1.0 INTRODUCTION

This report presents the test plan for collecting and analyzing information that will be used in the “exogenous factors” portion of the United States Department of Transportation (U.S. DOT) evaluation of the Los Angeles Congestion Reduction Demonstration (CRD) (Metro ExpressLanes) Program. The LA CRD (Metro ExpressLanes) Program is one of several large field deployments around the United States that are receiving U.S. DOT funding and which are intended to demonstrate congestion pricing and supporting strategies. The LA CRD (Metro ExpressLanes) Program national evaluation will address the four primary U.S. DOT evaluation questions shown in Table 1-1.

Table 1-1. U.S. DOT National Evaluation “Objective Questions”

Objective Question #1	<p>How much was congestion reduced in the area impacted by the implementation of the tolling, transit, technology, and telecommuting strategies? It is anticipated that congestion reduction could be measured by one of the following measures, and will vary by site and implementation strategy:</p> <ul style="list-style-type: none"> • reductions in vehicle trips made during peak/congested periods; • reductions in travel times during peak/congested periods; • reductions in congestion delay during peak/congested periods; and • reductions in the duration of congested periods.
Objective Question #2	<p>What are the associated impacts of implementing the congestion reduction strategies? It is anticipated that impacts will vary by site and that the following measures may be used:</p> <ul style="list-style-type: none"> • increases in facility throughput during peak/congested periods; • increases in transit ridership during peak/congested periods; • modal shifts to transit and carpools/vanpools; • traveler behavior change (e.g., shifts in time of travel, mode, route, destination, or forgoing trips); • operational impacts on parallel systems/routes; • equity impacts; • environmental impacts; • impacts on goods movement; and • effects on businesses.
Objective Question #3	<p>What are the non-technical success factors with respect to the impacts of outreach, political and community support, and institutional arrangements implemented to manage and guide the implementation?</p>
Objective Question #4	<p>What are the overall costs and benefits of the deployed set of strategies?</p>

Source: “Urban Partnership Agreement Demonstration Evaluation – Statement of Work,” United States Department of Transportation, Federal Highway Administration, November 2007.

The questions shown in Table 1-1 will be addressed by carrying out the following 11 “evaluation analyses” described in the LA CRD (Metro ExpressLanes) Program National Evaluation Plan¹: tolling, technology, transit, travel demand management (TDM), congestion, safety, equity,

¹ Los Angeles County Congestion Reduction Demonstration National Evaluation Plan, January 13, 2010, U.S. DOT.

environment, business impacts, non-technical success factors, and cost benefit. Each of these 11 analyses relies upon various evaluation measures of effectiveness.

“Test plans” are the evaluation planning documents that describe how specific data will be collected and processed to yield the evaluation measures of effectiveness required for the various analyses. Whereas evaluation analyses are categorized according to related evaluation questions or types of impacts, for example all equity-related impacts are addressed in the equity analysis, test plans are categorized according to common data types or sources. For example, the “Traffic System Data Test Plan” collects and processes all of the traffic data required for the national evaluation. There are a total of ten test plans for the LA CRD (Metro ExpressLanes) Program national evaluation. In addition to this Exogenous Factors Test Plan, there are test plans focusing on the following types of data: traffic; transit systems; tolling; ridesharing; safety; environmental; content analysis; surveys, interviews, and workshops; and cost benefit.

The relationship between test plans and evaluation analyses is discussed in Section 1.2. In short, analyses describe the evaluation questions and hypotheses to be investigated and the test plans describe how the data and measures of effectiveness needed to support the evaluation will be collected and processed. Most test plans collect data and provide measures of effectiveness that will be used in multiple analyses and most analyses rely upon data and measures developed through several different test plans.

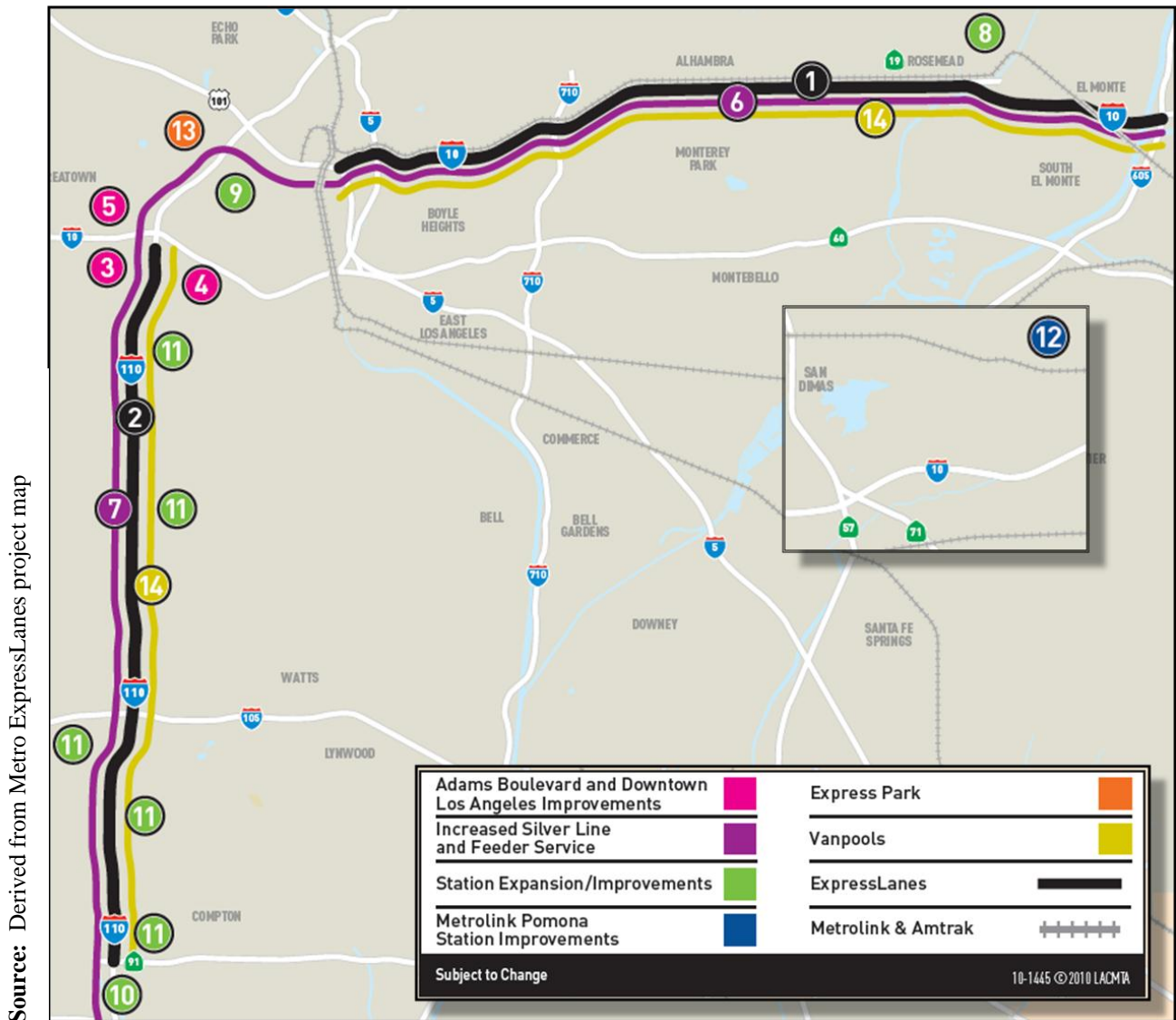
The remainder of this introduction chapter identifies the LA CRD (Metro ExpressLanes) Program deployments and elaborates on the relationship between test plans and evaluation analyses. The remainder of the report is divided into four sections. Chapter 2.0 presents the data sources, data availability, and risks associated with the data collected through this Exogenous Factors Test Plan. Chapter 3.0 discusses how the data collected through this test plan will be analyzed and used in the national evaluation. Chapter 4.0 presents the schedule and responsibilities for completing the collection and analysis of exogenous factors.

1.1 The LA CRD (Metro ExpressLanes) Program Projects

The LA CRD (Metro ExpressLanes) Program was selected by the U.S. DOT as an Urban Partner to implement projects aimed at reducing congestion based on four complementary strategies known as the 4Ts: Tolling, Transit, Telecommuting/TDM, and Technology. Under contract to the U.S. DOT, a national evaluation team led by Battelle is assessing the impacts of the projects in a comprehensive and systematic manner in Los Angeles (L.A.) County and other sites. The national evaluation will generate information and produce technology transfer materials to support deployment of the strategies in other metropolitan areas. The national evaluation will also generate findings for use in future Federal policy and program development related to mobility, congestion, and facility pricing.

The LA CRD (Metro ExpressLanes) Program effort is led by the Los Angeles County Metropolitan Transportation Authority (Metro). The CRD projects are being implemented with the assistance of a number of supporting agencies especially the California Department of Transportation (Caltrans); and the Los Angeles Department of Transportation (LADOT). Other participating agencies include the Southern California Association of Governments (SCAG); the San Gabriel Valley Council of Governments (SGVCOG); the South Bay Cities Council of

Governments (SBCCOG); the Southern California Regional Rail Authority (Metrolink); Foothill Transit; the California Highway Patrol (CHP); and the Los Angeles County Sheriff’s Department. The LA CRD (Metro ExpressLanes) Program projects are intended to reduce congestion, promote throughput, and enhance mobility in the Interstate-10 (I-10) and Interstate-110 (I-110) corridors, and in downtown Los Angeles. Figure 1-1 shows the location of the LA CRD (Metro ExpressLanes) Program projects and Figure 1-2 provides short summaries of the numbered projects on Figure 1-1.



Note: See Figure 1-2 for the explanation of each numbered project on this map.

Figure 1-1. LA CRD (Metro ExpressLanes) Program Project Locations

Source: Derived from Metro ExpressLanes project map.

- 1 EXPRESSLANES ON I-10**
This project will convert existing HOV lanes on the I-10 from Alameda Street/Union Station to I-605 into ExpressLanes (44 lane miles). The budget will cover the toll technology, toll infrastructure and operational improvements required to complete the conversion. This project will also provide additional ExpressLanes capacity on the El Monte Busway between I-710 and I-605 through re-striping and buffer changes. No general purpose lanes are taken away to create the second ExpressLane between I-710 and I-605.
 - 2 EXPRESSLANES ON I-110**
This project will convert existing HOV lanes on the I-110 from 182nd Street/Artesia Transit Center to Adams Boulevard into ExpressLanes (38 lane miles). The budget will cover the toll technology, toll infrastructure and operational improvements required to complete the conversion.

ExpressLanes is a one-year demonstration project. Buses, motorcycles, vanpools, and carpools that currently use HOV lanes will not be charged a toll. General purpose lanes will continue to remain toll-free. The following projects will provide additional access and capacity to the I-10 and I-110 ExpressLanes, to encourage movement of more people rather than more vehicles.
- ADAMS BOULEVARD AND DOWNTOWN LOS ANGELES IMPROVEMENTS**
- 3 I-110 ADAMS/FIGUEROA FLYOVER STUDY**
The Adams/Figueroa Flyover Study will investigate how the construction of a new structure – connecting the I-110 northbound HOV lane off-ramp directly to Figueroa Street – could improve traffic flow at the end of the I-110 HOV lane.
 - 4 ADAMS BOULEVARD STREET WIDENING**
Adams Boulevard will be widened between the Harbor Freeway off-ramp and Flower Street – adding an additional westbound right-turn-only lane to the HOV bypass connecting to Figueroa Street. Re-striping will also add one extra lane to the HOV off-ramp approaching Adams Boulevard to increase capacity.
 - 5 TRANSIT SIGNAL PRIORITY IN LOS ANGELES**
This project will install bus-signal priority technology on Figueroa Street between Wilshire Boulevard and Adams Boulevard (15 signals), and Flower Street between Wilshire Boulevard and Olympic Boulevard (5 signals) to enhance transit operations. It will also extend the existing AM peak-period northbound bus-only lane on Figueroa Street between 23rd Street and 4th Street to cover the PM peak-period.
- INCREASED SILVER LINE AND FEEDER SERVICE**
- 6 NEW BUSES FOR THE I-10 EL MONTE BUSWAY CORRIDOR**
Before adding ExpressLanes to the corridor, Metro and its transit partner – Foothill Transit – will purchase 30 new buses and increase Silver Line and feeder service on the I-10 El Monte Busway, with a goal of providing service every three to seven minutes during rush hour.
 - 7 NEW BUSES FOR I-110 HARBOR TRANSITWAY CORRIDOR**
Before adding ExpressLanes to the corridor, Metro and its transit partners – Torrance Transit and Gardena Transit – will purchase 29 new buses to improve Silver Line and feeder service on the I-110 Transitway, with a goal of providing service every three to seven minutes during rush hour.

STATION EXPANSION/IMPROVEMENTS

- 8 EL MONTE TRANSIT STATION EXPANSION**
The El Monte Station is the eastern terminus of the El Monte Busway, and is currently the busiest bus terminal west of Chicago. Given that the El Monte Station will now also be the eastern terminus of the ExpressLanes, expansion of the terminal will be required to accommodate additional high-capacity buses, passenger parking and bike lockers.
- 9 PATSAOURAS PLAZA/UNION STATION CONNECTION**
A new Union Station stop will be created for the El Monte Busway, allowing direct access to the station's Patsaouras Transit Plaza. This will eliminate the long walks, operational delays and insufficient lighting and information displays passengers currently have to contend with when transferring at Alameda Street to Metro's Red and Gold lines, Metrolink and Amtrak.
- 10 IMPROVED ARTESIA TRANSIT CENTER SECURITY**
Improvements at the largest transit center on the I-110 Harbor Transitway include bike lockers to promote non-motorized access and a law enforcement substation to assist with station security.
- 11 I-110 HARBOR TRANSITWAY PARK & RIDE AND TRANSIT STATION IMPROVEMENTS**
Improvements to these facilities will include enhanced signage, lighting and security. Other benefits to customers include new bus stops under Slauson and Manchester stations for Lines 108/115, and improved signage and security for existing Harbor Transitway Park and Ride lots at Slauson, Manchester, Harbor Green Line, Rosecrans, Artesia, Carson, PCH and Harbor/Beacon in San Pedro.

METROLINK POMONA STATION IMPROVEMENTS

- 12 ADDITIONAL COMMUTER RAIL CAPACITY**
This station on Metrolink's San Bernardino Line will undergo several improvements, including the addition of 143 new parking spaces and the expansion of platforms to accommodate longer eight-car trains.

EXPRESS PARK

- 13 DOWNTOWN PARKING MANAGEMENT**
This project will use new parking technology to provide motorists alternative payment options and real-time parking availability information for nearly 13,000 on-street and off-street parking spaces in Downtown Los Angeles. The information will aid motorists in understanding their parking options and will guide them to available parking spaces – eliminating the need to search for parking and reducing traffic congestion.

New parking meters will be installed at approximately 5,500 on-street metered parking spaces in the downtown area. These meters will be capable of charging motorists demand-based parking rates – which change depending on the time of day and traffic congestion levels. They will also provide alternative payment options, allowing motorists to pay for parking using their credit card or cell phone and to receive a text message when their paid parking time is about to expire.

VANPOOLS

- 14 I-10/I-110 COMMUNITY-BASED VANPOOL FORMATION**
This program will provide vanpool formation services to any community where Express Lanes are implemented. This includes a dedicated vanpool representative that will actively train community groups to form vanpools and provide support to ensure that vanpools are created and retained.

In addition to receiving the incentive of free access to the new ExpressLanes, vanpoolers along those corridors will also be eligible for vanpool start-up assistance, which may cover the cost of driver and back-up driver training and exams, as well as special training on how best to keep existing vanpools together.

Figure 1-2. LA CRD (Metro ExpressLanes) Program Project Descriptions

The U.S. DOT is allocating \$210.6 million in Federal grant funding for the LAC CRD projects, drawn from the Federal Transit Administration (FTA) 5309 Bus and Bus Facilities Program. The LAC CRD projects consist of the following:

- **Transit Improvements** to increase the frequency of Metro bus rapid transit service through the acquisition of 59 new clean fuel expansion buses (30 buses in the I-10 El Monte Busway corridor and 29 buses in the I-110 Harbor Transitway corridor) and increased service: to one bus every seven minutes along the I-10 corridor and to one bus every ten minutes along the I-110 corridor. Various security upgrades will be made to the Harbor Gateway Transit Center (better lighting, new security cameras, bicycle lockers and a new L.A. County Sheriff's substation). Expansion of the El Monte Transit Center includes reconstruction of the existing transit passenger terminal, additional surface parking, and a new administration facility. A new El Monte Busway stop will be created at Union Station that will allow for direct pedestrian access to Union Station's Patsaouras Transit Plaza and thus promote transfers to/from the El Monte Busway and other transit services. Expansion of the Pomona (North) Metrolink station includes 143 new parking spaces and extended platforms to accommodate additional rail cars for the San Bernadino Line. Improvements to Harbor Transitway Park-and-Ride lots and Transit Stations include enhanced signage, lighting, and closed-circuit television cameras for existing lots at Slauson, Manchester, Harbor Green Line, Rosecrans, and Harbor Gateway as well as the relocation of bus stops for Lines 108 and 115 to the Slauson and Manchester Transitway stations. The 37th Street Station will also be fitted with translucent and architectural sound attenuation panels to reduce noise levels for waiting customers on the Harbor Transitway. Implementation of transit signal priority technology on Figueroa Street (15 signals between Wilshire Boulevard and Adams Boulevard) and Flower Street (5 signals between Wilshire Boulevard and Olympic Boulevard) in downtown Los Angeles. Lastly, to facilitate HOT traffic movement where the I-110 freeway enters downtown Los Angeles, Adams Boulevard will be widened and the Adams Boulevard off ramp will be restriped, both providing an additional lane of high occupancy vehicle (HOV) capacity.
- **High Occupancy Toll (HOT) Lanes** ("ExpressLanes") to expand freeway capacity by permitting toll-paying, single occupancy vehicles or those that do not meet the carpool occupancy requirement to use slack, HOT lane capacity on the I-10 and I-110 freeways. ExpressLanes will be created by converting existing HOV lanes into HOT lanes along the I-10 (from I-605 to Alameda Street) and along the I-110 (from 182nd Street to Adams Boulevard). In addition, a second HOT lane will be created (via restriping; no loss of general purpose lanes will occur) on I-10 from I-605 to I-710 where there is no slack HOV lane capacity during peak periods. All vehicles will pay to use the HOT lanes with the exception of transit vehicles, motorcycles and multiple-occupant private vehicles (three or more occupants on I-10 during peak hours, two or more all other times; two or more occupants on I-110). All tolls will be collected electronically, requiring all vehicles entering HOT lanes to be equipped with a transponder. Vehicles satisfying the ExpressLane occupancy requirements and therefore eligible to use the lane free of charge will "self declare" by setting a switch on their transponders. ExpressLane enforcement will be carried out manually through on-site law enforcement observation. Tolls will range from a minimum \$0.25 per mile to a maximum \$1.40 per mile depending on

congestion levels. When travel speeds in the HOT lanes fall below 45 mph for more than ten minutes, the ExpressLanes have reached capacity. At this point, the lanes will revert to HOV lanes and vehicles that do not meet the carpool occupancy requirements will not be permitted to “buy” their way into the lanes. Low income commuters² will receive cost reductions through the Equity Account Discount, consisting of a \$25 discount for toll account set-up and waiver of the \$3 non-usage maintenance fee.

- **Intelligent Parking Management (IPM)** (“ExpressPark”) consists of a variable, demand-based parking pricing system coupled with a parking guidance system that will include real-time parking availability information. The IPM is intended to reduce traffic congestion, reduce air pollution, and improve transit efficiency by reducing parking search times by achieving 10 to 30 percent parking availability for on-street parking. The ExpressPark system will cover approximately 13,500 City of Los Angeles-owned or operated parking spaces (about 6,000 on-street, metered spaces and about 7,500 off-street spaces in an area of downtown Los Angeles bounded by the I-10 and I-110 freeways, Alameda Street and Adams Boulevard. The project area is shown in Figure 1-3. ExpressPark meter capabilities include demand-based parking rates based on time of day and length of stay; alternate payment options (coins, credit card, smart phone, cell phone); and increased convenience (text messages when paid parking time is about to expire). Vehicle sensors placed in the on-street metered parking spaces provide real-time occupancy and parking duration information. Parking conditions and availability in off-street parking locations will be determined using vehicle sensors, cordon counting systems and/or advanced revenue control systems. The parking guidance component of the IPM will provide information via a limited number of on-street dynamic message signs when not in use for active traffic management, an Internet web site, mobile phones using Metro’s 511 interactive voice response system, smart phones and, pending industry support, in-vehicle navigation systems.
- **Ridesharing Promotion (travel demand management)** to increase the number of registered vanpools (with a goal of 100 new vanpools on the I-10 and I-110 corridors), and major employer-based ridesharing through the use of promotional methods including subsidies to travelers and vanpool operators and promotional outreach to major employers.

² The Equity Account Discount defines low income commuters as Los Angeles residents with an annual household income (family of 3) of \$35,000 or less.

Source: Derived from "ExpressPark Intelligent Parking Management: Downtown" Los Angeles Department of Transportation Pamphlet <http://ladot.lacity.org/pdf/PDF217.pdf>

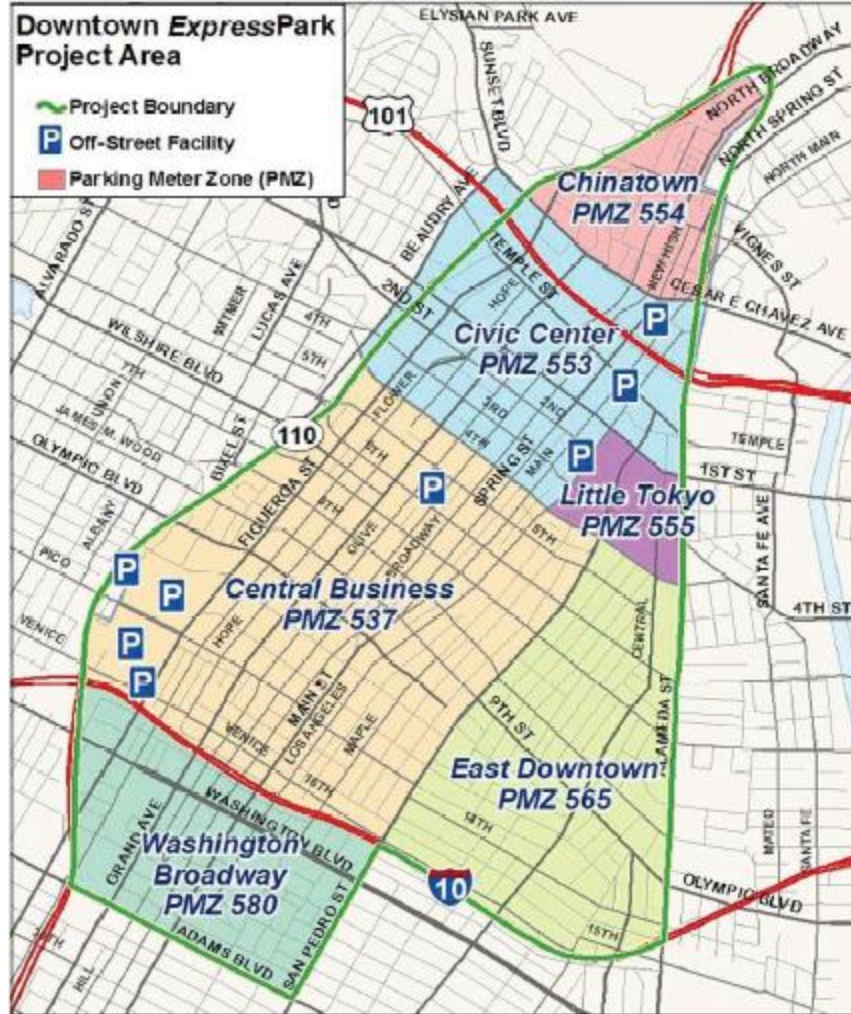
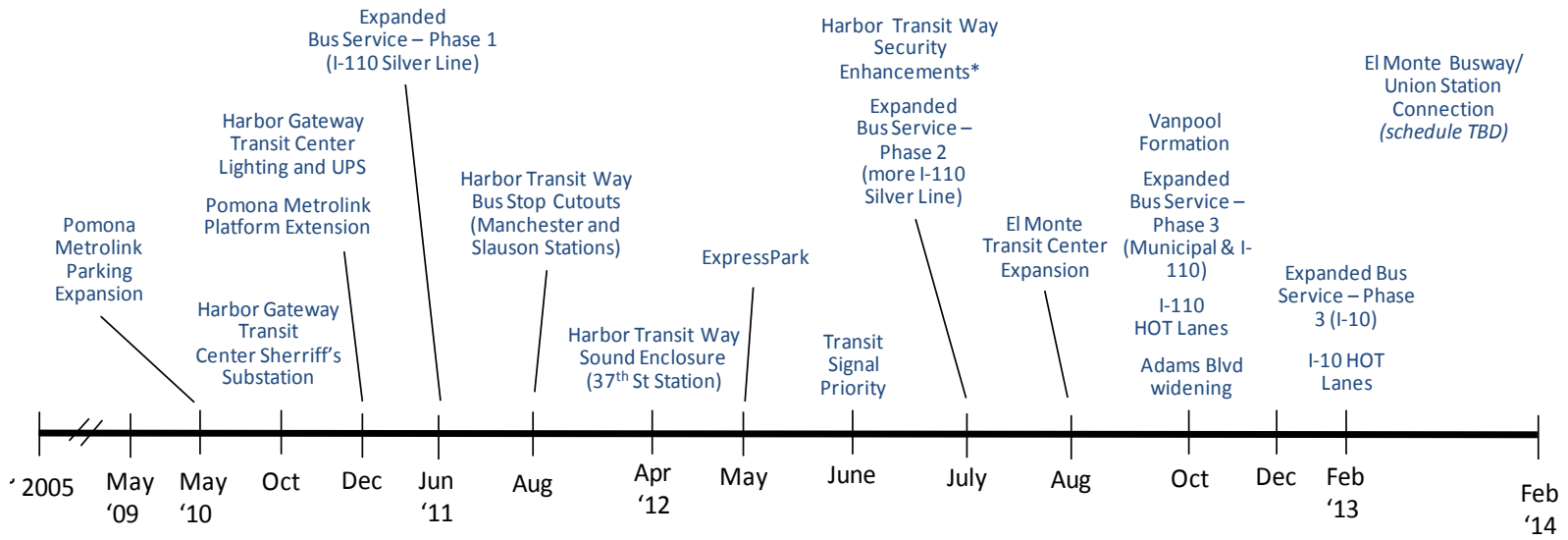


Figure 1-3. ExpressPark Project Area

Schedule for the LA CRD (Metro ExpressLanes) Program Projects. As shown in Figure 1-4, the LA CRD (Metro ExpressLanes) Program projects will become operational in a phased manner. Tolling on I-110 is scheduled to begin in October 2012, and tolling on I-10—the last project to be completed—is scheduled to begin in February 2013. Most of the LA CRD (Metro ExpressLanes) Program projects will be coming on line in advance of I-110 and I-10 tolling. One project will come on line after tolling begins on the I-10.

Source: Based on information provided by Metro; March 2012.



*Stations: Slauson, Manchester, Harbor Green Line, Rosecrans, Harbor Gateway

Figure 1-4. LA CRD (Metro ExpressLanes) Program Project Completion (“Go Live”) Schedule

1.2 Los Angeles County CRD National Evaluation Plan and Exogenous Factors

Table 1-2 shows which of the various LA CRD (Metro ExpressLanes) Program test plans will contribute data to each of the evaluation analyses. The “flow” between test plans is “one way” in the sense that test plans feed data and measures to the analyses rather than the reverse. The solid circles show where data from a given test plan constitutes a major input to an analysis; the open circles show where data from a given test plan constitutes a supporting input to an analysis. As shown in Table 1-2, the Exogenous Factors Test Plan provides input to all of the evaluation analyses except for the cost-benefit analysis. There are no specific measures of effectiveness associated with the exogenous factors, but the information gathered in the test plan may be of benefit in completing the evaluation by shedding light on external factors that may influence the performance of the LA CRD (Metro ExpressLanes) Program projects.

The Exogenous Factors Test Plan will be used to monitor elements unrelated to the CRD projects that may influence travel in the I-10 and I-110 corridors, use of the various project elements, and changes in travel modes.

Table 1-2. Relationship Among Test Plans and Evaluation Analyses

LA CRD (Metro ExpressLanes) Program Test Plans	Evaluation Analyses										
	Tolling	Technology	Transit	Travel Demand Management (TDM)*	Congestion	Safety	Environmental	Equity	Business Impact	Non-Technical Factors	Cost-Benefit
Traffic System Data Test Plan	●		○		●	●	●	○			●
Tolling Test Plan	●	●			○			○	○		●
Transit System Data Test Plan			●		○						○
Ridesharing Test Plan				●				○			○
Safety Test Plan					○	●		○			●
Environmental Data Test Plan							●	○			○
Surveys, Interviews, Workshops Test Plan	●	●	●	●	○	○	○	●	●	●	○
Content Test Plan										●	
Cost Benefit Test Plan											●
Exogenous Factors Test Plan	○	○	○	○	○	○	○	○	○	○	

Source: Battelle, April 2012.

● — Test Plan Data Constitutes a Major Input to the Evaluation Analysis

○ — Test Plan Data Constitutes a Supporting Input to the Evaluation Analysis

* The only Travel Demand Management (TDM) element included in the LA CRD are those related to ridesharing and therefore what is called the TDM Analysis in the evaluation plan documents for some of the other UPA and CRD sites is referred to as the Ridesharing Analysis in the LA CRD evaluation documents.

2.0 DATA SOURCES, AVAILABILITY, AND RISKS

This section provides specific information on the exogenous factors data including sources and collection frequency, the schedule and responsibility for collecting the data, and potential risk associated with obtaining this data. Several types of data that will be used to understand and potentially control for exogenous factors will be collected through other test plans. For example, survey data will be collected through the Surveys, Interviews, and Workshops Test Plan and collision data will be collected through the Safety Data Test Plan. Likewise, although no specific control corridors are specified for L.A., the entire L.A. metropolitan area or selected areas throughout this region will be used as needed for analysis, e.g., transit and congestion analyses.

This chapter focuses on those exogenous factors data not collected through any other test plan.

2.1 Data Sources

Data included in the Exogenous Factors Test Plan include:

- Unemployment rates;
- Gasoline prices;
- Atypical travel conditions; and
- Non-CRD transportation system changes.

The L.A. area experiences more than 3,000 special events per year including major sports and entertainment events, police actions, film shootings, etc. Of course, only a fraction of these will affect either of the treatment corridors or downtown L.A. Thus, frequently recurring events, such as L.A. Dodgers baseball games, will not be included as special events.

U.S. Bureau of Labor Statistics Unemployment Rates. The U.S. Bureau of Labor Statistics of the U.S. Department of Labor maintains a monthly log of employment data from 2001 nationally, by state, and by select metropolitan areas, including L.A. This data has a one to two month lag before becoming available. Unemployment data will be manually downloaded on a quarterly basis by the evaluation team to encompass a time period beginning in 2001 through the post-deployment period. Figure 2-1 shows the historic unemployment rate from L.A. from 2001 through April 2011, while Table 2-1 shows a sample of available unemployment data statistics for L.A.

Source: U.S. Bureau of Labor Statistics,
http://www.bls.gov/eag/eag.ca_losangeles_msa.htm

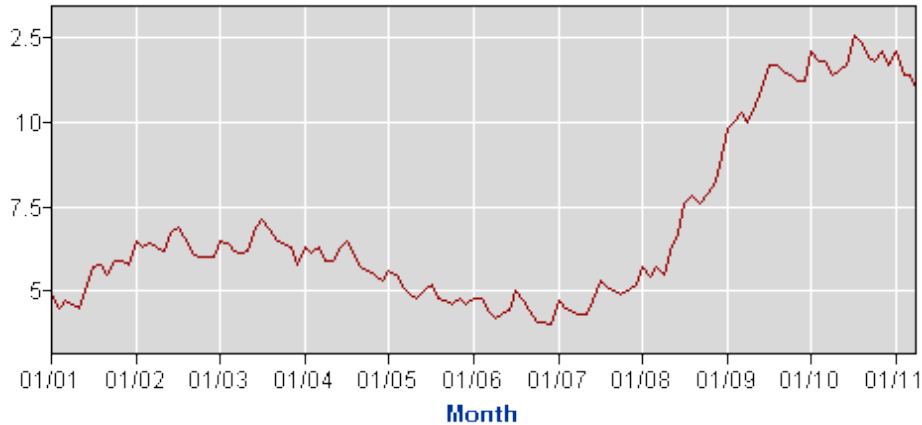


Figure 2-1. Los Angeles Historic Unemployment Rate – 2001 through 2011

Table 2-1. Sample of L.A. Historic Unemployment Data

Year	Period	Labor Force	Employment	Unemployment	Unemployment Rate
2001	Jan	6238664	5934950	303714	4.9
2001	Feb	6263706	5979939	283767	4.5
2001	Mar	6276131	5982621	293510	4.7
2001	Apr	6250133	5964233	285900	4.6
...

Source: U.S. Bureau of Labor Statistics, http://www.bls.gov/eag/eag.ca_losangeles_msa.htm

U.S. Energy Information Administration Gasoline Prices. The U.S. Energy Information Administration of the U.S. Department of Energy monitors gasoline prices nationally, by state, and by region, including L.A. Historical data on the weekly price of retail gasoline for various grades is available online dating back to 2000, as shown in Figure 2-2. This data has less than a 2-week lag and will be manually downloaded by the evaluation team for use in the analysis.

Source: U.S. Energy Information Administration
http://www.eia.gov/oil_gas/petroleum/data_publications/wrpg/mogas_history.html

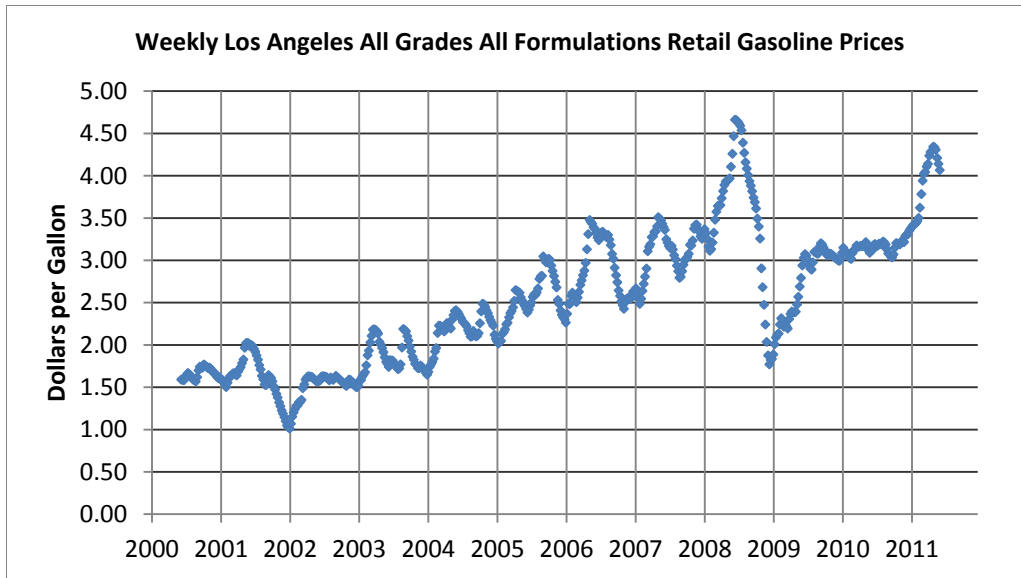


Figure 2-2. Los Angeles Historic Average Gas Price Chart – 2000 to 2010

Atypical Travel Conditions. The evaluation plans to utilize a data log maintained by the local partners for Section 166 compliance requirements within the HOT lane agreement. Section 166 stipulates an average minimum operating speed of 45 miles per hour for HOT lanes at least 90 percent of the time for a 180-day period during morning or evening weekday peak hour periods (or both), minus exclusions for significant exogenous events and other factors beyond the reasonable control of the ExpressLane operators. The exogenous events and other factors that are expected to be logged by the partner agencies include:

1. Incidents and accidents in both the Metro ExpressLanes and general purpose lanes in the corridor, in both directions. This should include all incidents, including crashes, vehicle stalls, debris on roadway, or law enforcement, emergency services, roadway maintenance or planned construction activities, that results in the closure of one or more lanes for any time period, as reported by California Highway Patrol and/or Caltrans.
2. Unusual incidents adjacent to and/or visible from the facility, including but not limited to, crashes, fires, public disturbances (such as political or industrial protests), or law enforcement, emergency services, roadway maintenance or construction activities that are creating a distraction for drivers on the facility. Such incidents would also include traffic control system failures, such as traffic signal failure on the direct access ramps at Adams Blvd and 39th Street on I-110, and Del Mar Avenue and Alameda Street on I-10.
3. Extreme weather conditions, including events generating measurable precipitation, wind gusts in excess of 45 mph or tornadoes in the preceding 24 hour period, fog creating visibility of less than ½ mile in the preceding 2 hour period, or any event involving frozen precipitation (snow, sleet, hail).
4. Any major event at a facility located within either corridor, including: a) Major conference, convention and trade shows occurring at locations such as Staples Center, LA Live or the Los Angeles Convention Center; b) Major sporting, concert or entertainment

events occurring at the locations such as Staples Center, Dodger Stadium or Los Angeles Coliseum; c) Movie or television shoots within either corridor; and, d) Other similar major events.

5. Labor disputes resulting in work stoppage primarily affecting the provision of transit services or law enforcement within the corridors.
6. Any event that leads to the declaration of a state of emergency by the elected leader of a governing body with jurisdiction over a community within either study corridor (City, County, State or Federal), including but not limited to: 1) earthquake, flood, landslide, hurricane, tornado, wild fire or other such natural disaster; and, 2) Terrorist attack, riot, war, or other such political or social disturbance.
7. Instances where the Metro Express Lanes toll operation requires restriction of access to tolled traffic resulting in converting the Express Lanes to a “HOV Only” status. This is required in order to maintain compliance with Metro toll policy and traffic flow based upon demand from HOV patrons. The Metro Express Lanes business rule requires that a toll credit be granted to SOV patrons that do not receive the speed guarantee of at least an average of 45 mph in the Express Lanes.

This “Section 166 Exclusions Log” will be compiled by local partners from a numerous databases and sources including Metro Operations, California Highway Patrol, Caltrans, National Weather Service, National Oceanic and Atmospheric Administration, and others still to be identified.

Additionally, L.A. Metro is logging lane closures or incidents that affect bus schedules or routes (e.g., bus travels in general purpose lanes versus express lanes) and submitting this information via Monthly Program Status Reports.

Non-CRD Transportation System Changes. Local partners will identify changes that may influence travel patterns, bus routes, and other factors for the study corridors over the course of the evaluation. This includes a wide variety of potential transportation system changes that are not CRD projects but which could impact national evaluation data such as roadway improvements, transit facilities enhancements, and transit fare changes. Likewise, changes in transportation policy at the federal, state, or local level could affect project performance, including such things as mandated changes in tolling policies, HOV requirements for hybrids, or occupancy requirements will also be captured. The presence of non-CRD construction in the corridors may influence baseline and post-deployment data collection. Additionally, completed and planned improvements in and around the corridor may change travel patterns, and demand on the corridor. L.A. Metro will record activities for a Non-CRD Transportation System Changes Log beginning in December 2009, and will be available in their Monthly Project Status Reports starting in December 2010. Caltrans will periodically report this information to the evaluation team during the post-deployment analysis period.

Additionally, the Section 166 Exclusions Log, discussed above, will also include information pertaining to non-CRD transportation changes. Specifically, it will log mandated traffic operations and freeway management policy changes instituted by Federal, State, regional or local

governing bodies, other than Metro or Caltrans (i.e., Congress, USDOT, State Legislature CTC) affecting management parameters for traffic in either corridor, including, but not limited to, reductions in HOV vehicle occupancy requirements, toll rate restrictions, reductions or time period limitations beyond the existing adopted toll business rules, inclusion of certain user classes as non-toll users of Express Lanes (such as low emission vehicles, hybrids, taxis, etc.), and inclusion of additional vehicle classes in Metro Express Lanes whether tolled or non-tolled (such as heavy trucks).

Table 2-2 summarizes the individual data elements that will be collected in the Exogenous Factors Test Plan.

Table 2-2. Exogenous Factors Data Summary

Data Element	Location/ Coverage	Data Reporting Frequency	Data Collection Start	Data Collection End	Data Source
Unemployment Rates	L.A. Region	Quarterly	2001	2014	U.S. Bureau of Labor Statistics
Gasoline Prices	L.A. Region	Quarterly	2000	2014	U.S. Energy Information Administration
Atypical Travel Conditions	I-10, I-110 Corridors	Quarterly	2011	2014	Section 166 Exclusion Log (CalTrans, L.A. Metro, CHP)
Non-CRD Transportation System Changes	CRD evaluation area	Quarterly	2011	2014	CalTrans, L.A. Metro
	CRD evaluation area	Quarterly	2011	2014	Section 166 Exclusion Log (CalTrans, L.A. Metro, CHP)

Source: Battelle, April 2012.

2.2 Data Availability

Historical, pre-deployment, and post-deployment data is or will be available for unemployment rates and gasoline prices. Some pre-deployment data on other exogenous factors may not be as complete, but post-deployment data should be available on all of the elements in the test plan.

Table 2-3. Historical, Pre-Deployment, and Post-Deployment Exogenous Factors Data Availability

Data Source	Historical Data	Pre-Deployment Data	Post-Deployment Data
U.S. Bureau of Labor Statistics	✓	✓	✓
U.S. Energy Information Administration	✓	✓	✓
Atypical Travel Conditions	Not Needed	✓	✓
Non-CRD Transportation System Changes	Not Needed	✓	✓

Source: Battelle, April 2012.

2.3 Potential Risks

There do not appear to be any significant risks associated with obtaining information from the sources outlined previously. Potential issues may arise during the data collection process, however. Examples of possible concerns include delays in gathering data, inconsistency, and errors in the data. To address these potential problems, national evaluation team members will work with partnership agency staff to initiate the data request early and follow up with any specific questions.

3.0 DATA ANALYSIS

The factors included in this test plan will be used as comparison checks in all of the analysis areas. The information on the exogenous factors will assist in identifying elements that may influence and explain changes in travel patterns, traffic conditions, mode changes, and use of the freeways and arteries in the treatment corridors.

Data on exogenous factors will be consulted in the various evaluation analyses to aid in differentiating the impact of the CRD projects from other influences. The overall approach to addressing exogenous factors in the national evaluation consists of the following six strategies:

1. **Control Group.** Utilizing the corridors or specific areas in the L.A. metropolitan area as a “control group,” where CRD treatments, such as pricing, will not be applied during the evaluation period, and, therefore, assumed to be mostly or entirely unaffected by the CRD projects. Caltrans has identified I-210, I-405 and I-605 for use as control corridors.
2. **Traveler Surveys.** Surveying travelers to learn how they perceive the relative influence of the CRD projects and exogenous factors on their pre- vs. post-deployment travel behavior.
3. **Isolation of Atypical Travel Condition Data.** Identifying the specific time periods and locations within the evaluation area where construction, traffic incidents, and/or special events may have significantly influenced evaluation measures of effectiveness (MOEs) (e.g., traffic volumes, transit ridership) and eliminating and/or statistically controlling for data associated with those locations and periods.
4. **Non-CRD Transportation System Changes.** Documenting non-CRD related transportation projects or policies such as other construction or regional transit fare increases throughout the evaluation period.
5. **Economic Conditions.** Document changes in employment and gasoline prices throughout the evaluation period.
6. **Historic Transportation Data.** Document the long-term trends (three to five years before the CRD deployment) in key evaluation MOEs, such as traffic volumes and transit ridership, within the expected CRD impact area.

Within each of the ten evaluation analysis areas identified earlier in Table 1-1, examination of the potential role that exogenous factors play on the observed data will be integrated into the analysis. Exogenous factor data are collected in this test plan and in other test plans (e.g., Control Corridor crash data in the Safety Data Test Plan; Traveler Surveys in the Surveys and Interviews Data Test Plan; Historic Transportation Data in the Traffic System Data and Transit System Data Test Plans;), and may reveal non-CRD related transportation system changes that can help explain the observed MOEs. For example, transit fare increases or a traveler’s change in employment location that are unrelated to tolling on I-10 or I-110 may explain some changes in transit ridership or traffic volumes on those corridors. Thus, information on the exogenous factors will assist in identifying elements that may influence and explain changes in travel patterns, traffic conditions, and modal changes that are not due to the CRD strategies by themselves. Examples of the types of questions which may be examined are listed below.

- Were there significant changes in unemployment rates and how might these changes have influenced performance of the L.A. CRD projects?
- Were there significant changes in gasoline prices and how might these changes have influenced performance of the L.A. CRD projects?
- Were there significant impacts due to construction and how might these changes have influenced performance of the L.A. CRD projects?
- Were there any major transportation system changes in the region, such as major transit price increases, and how might these changes have influenced performance of the L.A. CRD projects?

Standard analysis techniques, such as trend lines, will be used to compare exogenous factors with data from other analyses. As needed, statistical models, such as structural equations and time series, will be used to control for the effects of one or more exogenous factors in the planned analyses.

4.0 DATA COLLECTION SCHEDULE AND RESPONSIBILITIES

The anticipated data collection schedule for the Exogenous Factors Test Plan centers on the deployment schedule for the LA CRD (Metro ExpressLanes) Program. Historical data and pre-deployment data are readily available for unemployment rates and fuel prices. Pre-deployment data through 2013 is being provided by the L.A. partners. Post-deployment data will be available for all needed factors beginning in 2013. Historical data are not essential to the evaluation but help to strengthen confidence in any adjustments to findings that are based on exogenous factor data.

Regarding construction, incident and special event data that the evaluation is seeking from its L.A. partners, the evaluation will be able to adjust its methods to utilize whatever data are currently being archived, in most cases, but anticipates utilizing data compiled for a “Section 166 Exclusion Log.”

This page intentionally left blank

APPENDIX A – HYPOTHESIS/QUESTIONS FROM THE L.A. COUNTY CRD NATIONAL EVALUATION PLAN

Evaluation Analysis	Hypothesis/ Question Number	Hypothesis/Question
Congestion	LACong-1	Deployment of the CRD improvements will reduce the travel time of users in the I-10 and I-110 corridors.
	LACong-2	Deployment of the CRD improvements will improve the reliability of user trips in the I-10 and I-110 corridors.
	LACong-3	Deployment of the Downtown L.A. Intelligent Parking Management Project will reduce congestion in the downtown.
	LACong-4	Deploying the CRD improvements will result in more vehicles and persons served in the I-10 and I-110 corridors during peak periods.
	LACong-5	Will surveyed travelers perceive a noticeable reduction in travel times in the treatment corridors?
	LACong-6	Will surveyed travelers perceive a noticeable improvement in trip-time reliability in the treatment corridors?
	LACong-7	Will surveyed travelers perceive a noticeable reduction in the duration of congested periods in the treatment corridors?
	LACong-8	Will surveyed travelers perceive a noticeable reduction in the length of peak congestion periods in the treatment corridors?
	LACong-9	Relative travel times for HOV/HOT lanes vs. general purpose lanes will either remain the same or (more likely) improve for HOV/HOT travelers as a result of the CRD deployments.
	LACong-10	The introduction of tolled SOV traffic into the HOT lanes in the deployment corridors will not negatively impact HOV or transit traffic in terms of average travel times or travel reliability.
	LACong-11	The CRD deployment will not cause traffic congestion to increase in the HOV/HOT lanes.
	LACong-12	Because of latent demand in the deployment corridors, the CRD deployments are not likely to impact in traffic congestion on the general purpose lanes.
	LACong-13	Because of the CRD deployments, congestion on the arterials streets paralleling the corridors will be reduced.

Evaluation Analysis	Hypothesis/ Question Number	Hypothesis/Question
Tolling	LATolling-1	The HOT lanes will regulate vehicular access to the I-10 and I-110 and improve their operation.
	LATolling-2	Some general-purpose lane travelers will shift to the HOT lanes, while HOV lane travelers will continue to use them after they are converted to HOT.
	LATolling-3	After ramp-up, the HOT lanes on I-10 and I-110 pricing maintains operating improvements on I-10 and I-110 after the initial ramp-up period.
	LATolling-4	The downtown IPM project will result in 70-90% of the parking spaces on each block occupied throughout the day.
	LATolling-5	The downtown IPM project may increase parking revenues that can be used to fund system expansion in other high-demand areas.
	LA Tolling-6	Implementing the HOT lanes will reduce the HOV violation rate.
	LA Tolling-7	Will CRD HOT and transit improvements lead to unintended breakups of current carpools/vanpools?
Transit	LATransit-1	CRD projects will enhance transit performance within CRD corridors through reduced travel times, increased service reliability, and increased service capacity.
	LATransit-2	User perceptions of security at transit stations/park-and-ride lots will be improved by CRD projects.
	LATransit-3	CRD projects will increase ridership and facilitate a mode shift to transit within CRD corridors.
	LATransit-4	Increased ridership and mode shift to transit will contribute to increased person throughput, congestion mitigation, and transit cost-effectiveness within CRD corridors.
	LATransit-5	What was the relative contribution of each CRD project element to increased ridership/transit mode share/person throughput?
Ridesharing	LARideshare-1	CRD vanpool promotion will result in at least 100 new Metro-registered vanpools.
	LARideshare-2	Which factors were most effective in stimulating new vanpool formation?

Evaluation Analysis	Hypothesis/ Question Number	Hypothesis/Question
Technology	LATech-1	Travelers will access the IPM website and telephone information system.
	LATech-2	IPM will improve L.A.DOT's ability to reconfigure parking restrictions and rates.
	LATech-3	IPM will improve L.A.DOT's ability to enforce parking regulations.
Safety	LASafety-1	The collective impacts of CRD improvements ³ will be safety neutral or safety positive.
	LASafety-2	The addition of transition zones will not increase incidents.
	LASafety-3	Will boundary jumping cause incidents?
	LASafety-4	Will the additional law enforcement presence (associated with speed and toll enforcement) coupled with enhancement of the dedicated tow truck vehicle removal services associated with the CRD impact incident response and/or clearance time?
	LASafety-5	Will adjusted enforcement procedures affect the number of incidents?
Equity	LAEquity-1	What is the socio-economic and spatial distribution of the direct social effects of the CRD projects?
	LAEquity-2	Are there any differential environmental impacts on certain socio-economic groups?
	LAEquity-3	Will the potential HOT and IPM net revenues be reinvested in an equitable manner?
Environmental	LAEnvironmental-1	Vehicle-related air emissions will decrease in the treatment corridors.
	LAEnvironmental-2	Users of the two corridors will perceive improvements in air quality as a result of the CRD projects.
	LAEnvironmental-3	Vehicle-related fuel consumption will decrease in the treatment corridors.
Business Impacts	LABus-Imp-1	How will the downtown IPM project affect retailers and similar businesses that rely on customers' ability to access their stores?

³ Relevant UPA changes include narrower lanes on portions of the I-10 freeway, new signage, new HOT procedures, new enforcement procedures, and reduced congestion (i.e., faster flowing traffic).

Evaluation Analysis	Hypothesis/ Question Number	Hypothesis/Question
Non-Technical Success	LANon-Tech-1	What role did factors related to these five areas play in the success of the deployment? 1. People: Sponsors, champions, policy entrepreneurs, neutral conveners, legislators 2. Process: Forums (including stakeholder outreach), meetings, alignment of policy ideas with favorable politics and agreement on nature of the problem), legislative and Congressional engagements 3. Structures: Networks, connections and partnerships, concentration of power & decision making authority, conflict mgt. mechanisms, communications strategies, supportive rules and procedures 4. Media: Media coverage, public education 5. Competencies: Cutting across the preceding areas: persuasion, getting grants, doing research, technical/technological competencies; ability to be policy entrepreneurs; knowing how to use markets
	LANon-Tech-2	Does the public support the CRD strategies as effective and appropriate ways to reduce congestion?
Cost Benefit	LACostBenefit-1	Will the LA CRD (Metro ExpressLanes) Program projects have a net societal benefit?

Source: Battelle, April 2012.

APPENDIX B – SAMPLE DATA LOGS AVAILABLE FROM CALTRANS

Runtime: 06-27-2011. 14:28

SPECIAL APPLICATION REPORT	
CMS Message Approval History	
FROM: 06-25-2011 14:00:00	TO: 06-25-2011 18:00:00

Message Type: OPERATOR ONLY

Page: 1/1

CMS ID	DATE	ACTIVATION TIME	DEACTIVATION TIME	MESSAGE DURATION	MESSAGE APPROVED	DISPLAY TIME PER PHASE	EVENT ID	OPERATOR ID
57	06-25-2011	14:05:49	18:26:50	04:21:01	LINE 1 ROSE BOWL LINE 2 USE NORTH 2 LINE 3 TO EAST 210 LINE 4 LINE 5 LINE 6			shollo
106	06-25-2011	14:05:49	16:52:05	02:46:16	LINE 1 ROSE BOWL LINE 2 USE NORTH 2 LINE 3 TO EAST 210 LINE 4 LINE 5 LINE 6			shollo
81	06-25-2011	14:06:52	18:26:50	04:19:58	LINE 1 ROSE BOWL LINE 2 USE WEST 210 LINE 3 LINE 4 LINCOLN OR LINE 5 ARROYO EXITS LINE 6	2 2		shollo
82	06-25-2011	15:17:48	17:45:50	02:28:02	LINE 1 ROSE BOWL USE LINE 2 BERKSHIRE EXIT LINE 3 LINE 4 LINE 5 LINE 6			shollo

Gold Cup
SOCCER GAME
AT ROSE BOWL

California Department of Transportation - District 7

Figure B-1. Sample of Caltrans Special Event Log

Runtime:06-27-2011. 14:28

SPECIAL APPLICATION REPORT	
CMS Message Approval History	
FROM: 06-25-2011 14:00:00	TO: 06-25-2011 18:00:00

Message Type: OPERATOR ONLY

Page:

CMS ID	DATE	ACTIVATION TIME	DEACTIVATION TIME	MESSAGE DURATION	MESSAGE APPROVED	DISPLAY TIME PER PHASE	EVENT ID	OPERATOR ID
106	06-25-2011	16:52:05	18:26:50	01:34:45	LINE 1 ROSE BOWL LINE 2 USE NORTH 2 LINE 3 LINE 4 TO EAST 210 LINE 5 E 134 JAMMED LINE 6	2 2		shollo

Total Number of Minutes: 931

Figure B-1. Sample of Caltrans Special Event Log (Continued)

Closure Detail

<-- Back to Search Results

[Save as Template](#)

Closure ID: C10QA	Request Date: 06/07/2011 11:02	RE Approval:	By:	1097 Date:
Log #: 1	Request Status: Approved	DTM Approval: 06/07/2011 11:16	By: wsmith	1098 Date:
Route/Direction: 10 EB	Cost Center:	DTM Rejection:	By:	1022 Date:
Proj #/EA: 07-2411U4	Permit #:	Canceled:	By:	
Submitted By: rsamy	DTM Area: B			

Exclude from Internet Emergency Closure TMT Assigned CHIN Reportable

	Direction	County	Location	PM	Date/Time
Begin->	EB	LA	Santa Monica Frwy	14.84	06/26/2011 23:01
End->	NB	LA	Harbor Frwy, Rte 110	14.84	06/27/2011 05:01

Facility: Connector **Type of Closure:** Full **Duration:** Standard **Type of Work:** Bridge Work **Lanes:** 2 **Delay:** min

Closure Details

All

TMP Details

Hz Vt Clearance Impact Near District Boundary

Detour Map Available

COZEEP MAZEEP / CHP Outside Chart/Permit Hours

Chart/Table Number: 6

Meeting Place / CHP Contact: **State Reason:**

Inspector/Supervisor: Michael Huck (Cons)
Inspector/Field Rep: Stephen Tang
Inspector/Field Rep:
Inspector/Field Rep:

Additional Remarks (500 chars max):
Reviewer Comments/Field Stater/Phone:
//

Figure B-2. Sample of Caltrans Lane Closure Log

Runtime:06-27-2011. 13:54

SPECIAL APPLICATION REPORT	
CMS Message Approval History	
FROM: 06-26-2011 23:00:00	TO: 06-27-2011 00:00:00

Message Type: ALL

Page:

CMS ID	DATE	ACTIVATION TIME	DEACTIVATION TIME	MESSAGE DURATION	MESSAGE APPROVED	DISPLAY TIME PER PHASE	EVENT ID	OPERATOR ID
18	06-26-2011	23:42:32	05:37:37	05:55:05	LINE 1 NORTH 110 EXIT LINE 2 CLOSED LINE 3 LINE 4 LINE 5 LINE 6			ajakov

Total Number of Minutes: 356

Figure B-2. Sample of Caltrans Lane Closure Log (Continued)

SPECIAL APPLICATION REPORT	
Event Details	
EVENT ID: 118389	DATE: 06/24/2011

Event ID: 118389
 Event Type: INCIDENT
 Route: 10 E
 From Postmile: 31.579
 From Cross Street: BESS/FRAZIER
 Road Type: Mainline
 Confirmed By: shollo
 CCTV 1: 31.76 WO RTE 605
 CCTV 2: None
 Occurred At: 06/24/2011 06:45
 Detected At: 06/24/2011 06:50
 Confirmed At: 06/24/2011 06:50
 Estimated Duration: Unknown hours
 Estimated Clearance Time: Unknown
 Actual Clearance Time: 06/24/2011 08:44

BACKGROUND INFORMATION

Source: CHP DISPATCH/CAD
 Weather Conditions: No Factor
 CAD #: 0521
 CAD Code: 1179

ATTRIBUTES

Incident Types: OVERTURN - BIG RIG
 Vehicles: 1: BIG RIG -
 Injuries: None
 Fatalities: None
 Caltrans Property Damage: None
 Other Attributes: None

BLOCKAGE PATTERN

	LS1	1	2	3	4	RS1
06/24/2011 06:51	N	N	Y	Y	Y	N
06/24/2011 08:31	N	N	N	N	Y	Y

COMMENTS

06/24/2011 08:26 UPDATE SIGALERT: PER 81-S11 #1,2,#3 LNS ARE NOW OPEN ON THE MAIN PORTION OF THE FWY, THE TRANS ROAD IS NOW OPEN, #4 AND #5 LNS REMAIN BLKD
 06/24/2011 07:32 81-S11 FOR INFO TRANS ROAD FROM NB 605 TO EB 10 WILL BE CLOSED FOR A COUPLE TO TURN BIG RIG BACK UP
 06/24/2011 07:04 ISSUE SIGALER PER 81-605 FOR NB 605 TO EB 10 CON FOR APPROX 1HR DUE TO THE TC
 06/24/2011 07:02 TMC COPIES SIGALERT, 10-39 MEDIA AND CHIEFS
 06/24/2011 06:52 PLS ROLL CT TO ASSIST IN LN CLOSURES
 06/24/2011 06:52 UPDATE SIGALERT #4 LN BLKD AS WELL

Figure B-3. Sample of Caltrans Major Incident Log

SPECIAL APPLICATION REPORT
Event Details

EVENT ID: 118389 DATE: 06/24/2011

COMMENTS

```

06/24/2011 06:49      ISSUE SIGALERT FOR APPROX 1 HR DUE TO TC EB 10 JEO 605 FOR #2 AND #3
                       LNS PER 81-P3
06/24/2011 06:48      3 VEHS AND A TRK BLKG THE #2 AND #3 LN PER 81-P3
06/24/2011 06:48      1039 HADLEY TOW COPIES HD ROTATOR ETA 30 O/L
06/24/2011 06:46      PLS ROLL HD 1185 ROTATOR PER 81-103
06/24/2011 06:46      PER 82-M4 PSRBY WILL BE EB 10 JEO 605 & SHOULD START A HD ROTATOR
                       BLOCKING #2,3,4 LNS - THIS IS A CONTAINER TRACTOR TRAILER
06/24/2011 06:43      PER DUP - SB 605 TO EB 10 CON - O/TURNED SEMI
06/24/2011 06:43      1039 LACO FD #36
06/24/2011 06:43      .K/0522D0624.D/O/TURNED SEMI, BLKNG TRANS RD
06/24/2011 06:42      O/TURNED BIG RIG BLOCKING #2 3 AND 4 LANES
06/24/2011 06:57      CHP Unit On Scene
06/24/2011 07:05      CHP Unit Enroute
06/24/2011 07:13      CHP Unit On Scene
06/24/2011 07:15      CHP Unit On Scene
06/24/2011 08:19      CHP Unit On Scene
06/24/2011 08:32      CHP Unit On Scene
06/24/2011 08:44      Roadway cleared at 0842 hrs. -TMC
06/24/2011 08:32      TMC COPIES SIGALERT UPDATE
    
```

RESPONSE PLAN

```

Source:                G2 Expert System
Time of Day:           PEAK
Traffic Impact:       High
    
```

OPERATOR ACTIONS

```

Request Sigalert:     Not Completed
Issue Traffic Advisory: Not Completed
Advise TMT Team Leader: Not Completed
    
```

ATIS RESPONSE PLAN

```

Accident EB 10 JWO Frazier St.                Sent: 08:31   Removed:08:44
1 Right lane blocked.
Est. clearance time: Unknown

Accident EB 10 JWO Frazier St.                Sent: 06:52   Removed:08:31
3 Right lanes blocked.
Est. clearance time: Unknown
    
```

CMS RESPONSE PLAN

CMS ID	Location	Active Time	Deactive Time	Message Duration	Message	Operator ID
17	710 N PM 22.53 WASHINGTON BLVD	07:04	08:44	1:40	ACCIDENT E 10 AT FRAZIER 3 RT LANES BLKD	shollo

Figure B-3. Sample of Caltrans Major Incident Log (Continued)

SPECIAL APPLICATION REPORT	
Event Details	

EVENT ID: 118389	DATE: 06/24/2011
------------------	------------------

CMS RESPONSE PLAN

CMS ID	Location	Active Time	Deactive Time	Message Duration	Message	Operator ID
30	10 E PM 19.81 W/O CITY TERRACE DR	07:02	08:03	1:01	ACCIDENT AT FRAZIER ST SINGLE LANE ONLY	anuno
30	10 E PM 19.81 W/O CITY TERRACE DR	08:06	08:18	0:13	ACCIDENT AT FRAZIER ST SINGLE LANE ONLY	anuno
30	10 E PM 19.81 W/O CITY TERRACE DR	08:21	08:24	0:04	ACCIDENT AT FRAZIER ST SINGLE LANE ONLY	anuno
30	10 E PM 19.81 W/O CITY TERRACE DR	08:27	08:30	0:03	ACCIDENT AT FRAZIER ST SINGLE LANE ONLY	anuno
30	10 E PM 19.81 W/O CITY TERRACE DR	08:30	08:33	0:04	ACCIDENT AT FRAZIER ST RT LANE BLOCKED	anuno
30	10 E PM 19.81 W/O CITY TERRACE DR	08:36	08:39	0:04	ACCIDENT AT FRAZIER ST RT LANE BLOCKED	anuno
30	10 E PM 19.81 W/O CITY TERRACE DR	08:42	08:44	0:02	ACCIDENT AT FRAZIER ST RT LANE BLOCKED	anuno
67	10 E PM 28.59 SANTA ANITA AVE	07:02	08:30	1:28	ACCIDENT AT FRAZIER ST SINGLE LANE ONLY	anuno
67	10 E PM 28.59 SANTA ANITA AVE	08:30	08:44	0:14	ACCIDENT AT FRAZIER ST RT LANE BLOCKED	anuno
79	605 N PM R N/O BEVERLY BLVD	14.89 07:08	08:44	1:37	ACCIDENT EAST 10 EXIT CLOSED	anuno

California Department of Transportation - District 7

Figure B-3. Sample of Caltrans Major Incident Log (Continued)

This page intentionally left blank

U.S. Department of Transportation
ITS Joint Program Office-HOIT
1200 New Jersey Avenue, SE
Washington, DC 20590

Toll-Free "Help Line" 866-367-7487
www.its.dot.gov

Publication Number FHWA-JPO-12-049



U.S. Department of Transportation