

Alameda County Express Lanes Work Plan for the I-680 Sunol Express Lanes

Introduction

Project Background & Purpose

The I-680 Express Lane opened to traffic in September 2010, as Northern California’s first high occupancy toll (HOT) facility, and as one of the first in the nation to deploy a toll rate that varies as the level of congestion varies within the hours of operation (fully dynamic pricing algorithm). The I-680 Express Lane is the first of two Alameda County Express Lane corridors authorized under California Assembly Bill 2032, signed into law in 2004. The new Express Lane is located on a 14-mile stretch of southbound (SB) I-680 from Highway 84 south of Pleasanton to Highway 237 in Milpitas; a major commute artery for Silicon Valley commuters. Designed to deliver a reliable trip for all commuters who choose to use it, the I-680 Express Lane allows solo drivers to use available capacity in the HOV lane. This effectively reduces congestion on the general purpose lanes of the corridor as hundreds of solo drivers elect to use the Express Lane each hour during the morning commute.

Southbound I-680 Express Lane



The main project objectives are:

- To provide an additional choice for users on occasions when saving time is of value to them;
- To create an alternative mechanism for financing transportation projects;
- To establish an equitable means of assessing a fee that is directly related to the burden placed on the transportation system;
- To increase the efficiency of the transportation system by taking advantage of existing capacity without forfeiting the congestion mitigation and air quality benefits provided by HOV lanes; and
- To generate revenues allocated pursuant to an expenditure plan adopted biennially by the JPA that may include funding for the construction of high-occupancy vehicle facilities, including, but not limited to, the design, preconstruction, construction, and operation, as well as transit improvements within the northbound (NB) I-680 Express Lane.

The SB I-680 Express Lane project is the only segment that is currently in operations. Its project development and construction was funded with State, Federal, and local funds, and its operations are governed by an independent joint powers authority, the I-680 Sunol Smart Carpool Lane Joint Powers Authority. The NB I-680 Express Lane is currently in preliminary engineering and environmental document phase. This project is not fully funded and the construction dates are yet to be determined.

More information about the I-680 Express Lanes is available at www.680expresslane.org.

Work Plan

The current operation of the SB I-680 Express Lane is transitioning from a demonstration project to a permanent traffic management and revenue services administration. This work plan establishes a roadmap to guide the I-680 Sunol Smart Carpool Lane Joint Powers Authority (JPA) Governing Board and the managing agency, the Alameda County Transportation Commission (Alameda CTC) through this transition from the current demonstration project to an improved traffic operations, maintenance and revenue management enterprise.

The work plan (hereafter referred to as “the Plan”) focuses on identifying areas for improving operations, reducing costs, delivering value to the public, and reinforcing the project’s original purpose and objectives, outlined above. The Plan focuses on the following key goals and expected results:

| | |
|--|---|
| <p>Goal 1: Improve System Efficiencies</p> <p><i>Expected Results:</i></p> <ul style="list-style-type: none"> • Reduced number of equipment failures prevents interruption of toll revenue collection. • Reduced toll violations and increased revenue assurance. | <p>Goal 4: Improve Fiscal Management</p> <p><i>Expected Results:</i></p> <ul style="list-style-type: none"> • Verified balance sheet and cash flow statement. • Healthy operating reserves on hand for contingent expenses and system replacement costs. • Unified regional approach to Express lane implementation |
| <p>Goal 2: Improve Traffic Operations</p> <p><i>Expected Results:</i></p> <ul style="list-style-type: none"> • Improved traffic operations • Improved driver behavior • Reduced customer complaints | <p>Goal 5: Performance Monitoring and Reporting</p> <p><i>Expected Results:</i></p> <ul style="list-style-type: none"> • Agency and contractor staffs are focused on performance. |
| <p>Goal 3: Improve Customer Experience</p> <p><i>Expected Results:</i></p> <ul style="list-style-type: none"> • Improved visibility of the Express Lane, and increased usage • Informed customers and regional partners (about the purpose and benefits of Express Lanes) • Satisfied Express Lane customers | |

The Plan will be implemented in three stages to achieve these goals, as identified below:

- Short-range: ≤ 9 months (First, Second and Third Quarters);
- Mid-range: 10 - 24 months (Fourth through Eighth Quarter);
- Long-range: 25+ months (Ninth Quarter & Beyond).

The detailed work and a companion implementation schedule are included as Attachments A and B, respectively.

A snapshot of the short-range activities for the next nine months is provided below:

| Project Title: I-680 Sunol Smart Carpool Express Lanes Project Work Plan | | | 2012 | | |
|--|---|--|-------------|----|----|
| | | | Q1 | Q2 | Q3 |
| Task Number | Task Description | | short-range | | |
| 1 | IMPROVE SYSTEM EFFICIENCY | | | | |
| | Fiber Optic Communications Design | | ■ | ■ | ■ |
| | Violation Enforcement System Design | | | ■ | ■ |
| | Fiber Optic Communications Construction | | | | ■ |
| | CHP Coordination | | ■ | ■ | ■ |
| 2 | IMPROVE TRAFFIC OPERATIONS | | | | |
| | Traffic Operational Assessment (TOAR) | | | ■ | ■ |
| 3 | IMPROVE CUSTOMER EXPERIENCE | | | | |
| | Resume Marketing Programs | | ■ | ■ | ■ |
| | Semi-annual Newsletters | | | ■ | ■ |
| | Regional Express Lanes JPA Board, Steering, and TAC Participation | | ■ | ■ | ■ |
| 4 | IMPROVE FISCAL MANAGEMENT | | | | |
| | Prepare FY 2012/13 budget | | ■ | ■ | |
| | Renegotiate and extend operator agreements (BATA, Caltrans, CHP) | | | ■ | ■ |
| | Regional Express Lanes JPA Board, Steering, and TAC Coordination | | ■ | ■ | ■ |
| | Complete FY 2011/2012 Financial Audit | | | | ■ |
| 5 | PERFORMANCE MONITORING AND REPORTING | | | | |
| | Performance Monitoring | | ■ | ■ | ■ |
| | Dashboard Reporting enhancements | | ■ | ■ | ■ |



Goal 1: Improve System Efficiencies

Key Strategies:

Short-Range (next 0-9 months)

- 1.1 Design improved communications network that utilizes fiber optic backbone with multiple redundant pathways to reduce the risk of missed transactions and delayed delivery of traffic and toll data due to equipment failure in the field.
- 1.2 Complete design of photo-enforcement system that would reduce illegal lane changes across the double white line that separates the Express Lane from the general purpose lanes.
- 1.3 Construct the first phase of fiber optic backbone communications network improvements between the North and Central Toll Zones in the I-680 corridor and vehicle violation (photo) enforcement system (relates to Strategies 1.1& 1.2).

Mid-Range (next 10-24 months)

- 1.4 Continue construction of fiber optic backbone communications network improvements within rest of the project corridor.
- 1.5 Complete construction of vehicle violation (photo) enforcement system to reduce illegal lane changes across the double white line and develop automated violation detection and/or mechanism by using the images (such as license plate) obtained from the enforcement cameras.
- 1.6 Work with the California Highway Patrol (CHP) to focus enforcement resources on repeat violators who fail to pay the toll when driving solo in the Express Lane, or cross the buffer strip when it is illegal to do so.

Long-Range (next 25 or more months)

- 1.7 Complete construction of fiber optic backbone communications network improvements within rest of the project corridor.
- 1.8 Analyze effectiveness of the violation enforcement and determine whether a local ordinance is necessary that would permit the automation of violation enforcement including the ability to issue violation notices and collect fines and forfeitures from those violating the rules of the Express Lane.

Goal 2: Improve Traffic Operations

Key Strategies:

Short-Range (next 0-9 months)

- 2.1 Initiate a traffic study comparing pre-project traffic conditions with current levels, define the ingress/egress problem near the Auto Mall Parkway exit, and prepare a project benefit statement based on traffic studies to be used in the final report to the Legislature.

Mid-Range (next 9-24 months)

- 2.2 Complete traffic study (related to Strategy 2.1)
- 2.3 Work with Caltrans to identify operational improvements, including resolving the weave problems near the Auto Mall Parkway exit (relates to Strategy 2.1 & 2.2).

- 2.4 Update the initial I-680 Express Lane traffic and revenue forecasting for 2015, 2020, and 2030 including exogenous factors such as the influence of other Express Lane openings on I-580, I-880, I-80, and I-680 in the northbound direction.

Long-Range (next 25 or more months)

- 2.5 Implement geometric revisions to the ingress/egress or other operational improvements in construction, as recommended in the traffic study

Goal 3: Improve the Customer Experience

Key Strategies:

Short-Range (next 0-9 months)

- 3.1 Continue public education and marketing efforts for the I-680 Express Lane, including the use of social media sites and regular updates to the Alameda County Express Lanes web site concerning recent project news and announcements.
- 3.2 Resume semi-annual newsletter to provide regular updates to I-680 Express Lane customers.
- 3.3 Share project information, benefits, issues to find common ground and educate project benefits with the Technical Advisory Committee (TAC), a sub-committee of Regional Express Lanes JPA formed recently to jointly advance the implementation of express lane network in the Bay Area.

Mid-Range (next 10-24 months)

- 3.4 Conduct market research to better define our Alameda County Express Lanes market and to identify unfulfilled needs and expectations for products and services.
- 3.5 Continue to work with the TAC (relates to Strategy 3.3) to improve mobility in the region and implement customer service goals.

Long-Range (next 25 or more months)

- 3.6 Implement recommendations from market research study (Strategy 3.4), and conduct before-after study to determine effectiveness of marketing measures implemented (towards targeted audience) and build on the most successful strategies.

Goal 4: Improve Fiscal Management

Key Strategies:

Short-Range (next 0-9 months)

- 4.1 Prepare annual budget for the I-680 Express Lane operation for Fiscal Year 2012-2013.
- 4.2 Renegotiate incumbent operator agreements and memoranda of understanding with project partners BATA (customer service); Caltrans (lane maintenance); and CHP (enforcement).
- 4.3 Work closely with the Bay Area Regional Express Lane JPA members to revise/adopt policies for efficient management of I-680 NB/SB Express Lane projects.
- 4.4 Complete audit and accept audited financial statements for Fiscal Year 2011-2012.

Mid-Range (next 9-24 months)

- 4.5 Identify I-680 lane improvements and prioritize for available funding, including appropriate reserve balance for future system replacement and project contingencies.
- 4.6 Continue to work with the Bay Area Regional Express Lane JPA members to revise/adopt policies for efficient management of Sunol Express Lane projects.

Long-Range (next 25 or more months)

- 4.7 Work with the Bay Area Regional Express Lane JPA members, the California Toll Operators Committee (CTOC), and other regional transportation planning agencies (RTPA) to implement other portions of the Bay Area Express Lane Network and California FasTrak® enhancements, thus increasing economies of scale and cost-effective performance.

Goal 5: Performance Monitoring and Reporting

Key Strategies:

Short-Range (next 0-9 months)

- 5.1 Monitor performance measures (Attachment C) against benchmarks and adjust operations accordingly.
- 5.2 Revamp quarterly "Dashboard" report on financial and technical performance of project.

Mid-Range (next 9-24 months)

- 5.3 Complete statutory reporting to the California Legislature on the findings, conclusions, and recommendations from an analysis of the effect of the I-680 Express Lanes on the adjacent mixed-flow lanes (Due by September 2013).

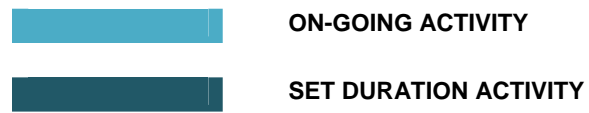
Long-Range (next 25 or more months)

- 5.4 Develop Annual Reporting framework that includes consolidated balance sheet and cash flow statements for the Alameda County Express Lanes

Attachment B. Work Plan Timeline

Project Title: I-680 Sunol Smart Carpool Express Lanes Project Work Plan

| Task Number | Task Description | 2012 | | | 2013 | | | | 2014 | | |
|-------------|--|-------------|----|----|-----------|----|----|----|------------|-----|---|
| | | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9+ | |
| | | short-range | | | mid-range | | | | long-range | | |
| 1 | IMPROVE SYSTEM EFFICIENCY | | | | | | | | | | |
| 1.1 | Fiber Optic Communications Design | ■ | ■ | ■ | | | | | | | |
| 1.2 | Violation Enforcement System Design | | ■ | ■ | ■ | | | | | | |
| 1.3,1.4,1.7 | Fiber Optic Communications Construction | | | ■ | ■ | ■ | | | ■ | ■ | ■ |
| 1.5a | Violation Enforcement System Camera Installation | | | | ■ | ■ | ■ | | | | |
| 1.5b | Violation Enforcement System Software Development | | | | | | ■ | ■ | ■ | ■ | ■ |
| 1.6 | CHP Coordination | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 1.8 | Violation Enforcement System Legislative Process | | | | | | | | | ■ | ■ |
| 2 | IMPROVE TRAFFIC OPERATIONS | | | | | | | | | | |
| 2.1-2.2 | Traffic Operational Assessment (TOAR) | | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| 2.3 | Identify Operational Improvements near Auto Mall Parkway | | | | | ■ | ■ | ■ | ■ | | |
| 2.4 | Updated Traffic and Revenue Forecast | | | | | | ■ | ■ | ■ | ■ | ■ |
| 2.5 | Design & Construct Operational Improvements near Auto Mall Parkway | | | | | | | | | ■ | ■ |
| 3 | IMPROVE CUSTOMER EXPERIENCE | | | | | | | | | | |
| 3.1 | Resume Marketing Programs | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 3.2 | Semi-annual Newsletters | | ■ | | ■ | | ■ | | ■ | | ■ |
| 3.3,3.5 | Regional Express Lanes JPA Board, Steering, and TAC Participation | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 3.4 | Conduct Market Research | | | | | ■ | ■ | ■ | ■ | | |
| 3.6a | Implement Market Research Findings | | | | | | | | | ■ | ■ |
| 3.6b | Measure effectiveness of marketing programs | | | | | | | | | ■ | ■ |
| 4 | IMPROVE FISCAL MANAGEMENT | | | | | | | | | | |
| 4.1 | Prepare FY 2012/2013 budget | ■ | ■ | | | | | | | | |
| 4.2 | Renegotiate and extend operator agreements (BATA, Caltrans, CHP) | | ■ | ■ | ■ | | | | | | |
| 4.3,4.5 | Regional Express Lanes JPA Board, Steering, and TAC Coordination | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 4.4 | Complete FY 2011/2012 Financial Audit | | | ■ | ■ | | | | | | |
| 4.6 | Prioritize funding for capital improvements (i.e., update CIP) | | | | | | ■ | ■ | ■ | | |
| 4.7 | Implement Expanded Regional Express Lane Network | | | | | | | | | ■ | ■ |
| 5 | PERFORMANCE MONITORING AND REPORTING | | | | | | | | | | |
| 5.1 | Performance Monitoring | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 5.2 | Dashboard Reporting enhancements | ■ | ■ | ■ | ■ | | | | | | |
| 5.3 | Legislative Report | | | | | | ■ | ■ | ■ | | |
| 5.4 | Annual Report | | | | | ■ | ■ | | ■ | ■ | |



Attachment C. Key Performance Measures

| Criteria | Measure | Standard | Data |
|--|---|--|---|
| <p>Travel Times and Average Speeds. Improve travel time and average travel speeds on both the general purpose and high occupancy lanes.</p> | Actual and % change in average travel speeds in general purpose and HOT lanes during peak and off- peak periods | Average speeds in HOT lane >55mph Same or better general purpose lane speeds | <ul style="list-style-type: none"> Segment travel times Average link speeds Free-flow speed Link length |
| <p>Level of Service (LOS). Ensure that LOS "C" or better is maintained at all times in the HOT lane, and no negative effect on LOS in the mixed-flow lanes. (Note: LOS "D" shall be permitted on the HOT lane subject to written agreement between Caltrans and SSCLJPA. Continuance of LOS "D" operating conditions is subject to written agreement between Caltrans and SSCLJPA.)</p> | As per most recent issue of the Highway Capacity Manual (HCM) procedures, as adopted by the Transportation Research Board | LOS "C" or better in HOT lane Existing or improved LOS in general purpose lanes | <ul style="list-style-type: none"> LOS in HOT lane LOS in general purpose lanes |
| <p>Person Throughput. A measure of the productivity of the system; the product of the average number of persons in each vehicle times the number of vehicles present at the start plus those attempting to enter and successfully entering the system during the analysis period. Throughput on HOT lane should exceed throughput on general purpose lanes</p> | Change in person throughput on the HOT lane relative to the general purpose lanes | HOT lane throughput greater than general purpose lane throughput | <ul style="list-style-type: none"> Traffic volumes by time- of-day, location/segment, and lane type HOT lane average vehicle occupancy General purpose lane average vehicle occupancy |
| <p>FasTrak® Toll Revenues. Primarily, how much will travelers utilize the I-680 HOT lane when driving alone (requires payment of electronic toll)</p> | Actual and % change in growth of registered Alameda Co. FasTrak accounts and number of toll transactions | FasTrak usage will increase gradually with the expansion of Express Lanes in Alameda Co. | <ul style="list-style-type: none"> Number of toll accounts Number of toll transactions by account type, toll status, and location Gross revenue from tolls Net revenue after expenses |
| <p>Dynamic Pricing/Price Elasticity. Variable pricing the HOT lanes will regulate vehicular access so as to improve the operation of the lanes.</p> | Price elasticity of demand (change in transactions in response to change in toll charged) | Maintain free flow (i.e., LOS "C" or better) on HOT lane at all times | <ul style="list-style-type: none"> Toll transactions by time of day Toll price by time of day |
| <p>Violation Rates. Includes carpool violation, toll evasion and unauthorized entry or exit to HOT lane (i.e., crossing solid double white line at non-gantry locations). Reimbursable services agreement with CHP will enhance enforcement and reduce the rate and type of violators in the corridor.</p> | Enforcement rate (number of citations per hour patrolled) | Violation rate less than 5% of all traffic using the HOT lane | <ul style="list-style-type: none"> Number of citation by type Total # of trips in HOT lane Warnings issued Hours patrolled |
| <p>Transit Trip Reliability. The use of pricing will enhance transit performance in the I-680 corridor for buses utilizing the HOT lane.</p> | Actual and % change in on-time performance/schedule adherence | Transit on-time % will improve for routes using HOT lane | <ul style="list-style-type: none"> Transit travel speed Transit travel times Transit travel time reliability/schedule adherence data |

Attachment C. Key Performance Measures

| | | | |
|--|--|---|--|
| <p>Customer Inquiries. The information provided on the Alameda Express Lanes and Bay Area Toll Authority (BATA) web sites are sufficient to inform customers about the Express Lanes, and the SSCLJPA agency is responsive to requests for information and customer complaints.</p> | <p>Number of customer contacts, including complaints, as well as the time the agency takes to respond</p> <p>Overall customer satisfaction</p> | <p>Stable number of customer inquiries</p> <p>Respond to customer inquiries within 48 hours</p> | <ul style="list-style-type: none"> • Number of customer contacts (phone, email, web) • Number of complaints and % versus total number of inquiries • Agency time to respond to customer inquiries • Periodic customer satisfaction surveys |
|--|--|---|--|
