




Office of the City Manager

CONSENT CALENDAR  
December 11, 2007

To:  Honorable Mayor and Members of the City Council

From:  Phil Kamlarz, City Manager

Submitted by: Claudette Ford, Director, Public Works Department

Subject: Interstate 80 Integrated Corridor Mobility Project

RECOMMENDATION

Adopt a Resolution supporting the Interstate-80 (I-80) Integrated Corridor Mobility (ICM) Project, the Project Concept and the Funding Plan.

FISCAL IMPACT

There may be a fair-share maintenance cost impact for the City in future. The level of local funding required has not been assessed. However, based on very preliminary estimates by the Alameda County Congestion Management Agency (ACCMA), it could be in the range \$30,000-\$40,000 per year, and may require 20% of a full-time equivalent traffic engineer for coordination work between ACCMA and Caltrans. All sponsoring agencies and participating municipalities are being requested to approve and process the attached resolution prepared by the ACCMA.

CURRENT SITUATION AND ITS EFFECTS

The I-80 corridor, between the Bay Bridge Toll Plaza in Oakland to the Carquinez Bridge in Crockett, is one of the key traffic corridors in the Bay Area. It is also the most congested freeway, according to a MTC Monitoring Report, which has ranked the corridor as the worst congested corridor for the last consecutive six years.

Freeway congestion along the 21-mile corridor causes heavy commuter backup onto local roads. Morning and afternoon peak hour conditions in both directions carry the longest commute duration in the Bay Area, lasting up to four and a half hours. These commuter delays contribute to major social, economic and environmental problems: idling cars pollute the environment; clogged freeway lanes hinder goods and services transportation from the Port of Oakland and industrial areas in the East Bay; and, emergency response times are dramatically increased in heavily congested areas. Further, varying traffic speeds and travel times contribute to a higher incident rate and are contributing to the global greenhouse impacts.

In order to create a balanced, stable traffic flow throughout the I-80 corridor, the Alameda County Congestion Management Agency (ACCMA), is implementing an Integrated Corridor Mobility (ICM) solution. The ICM project will integrate several key operational strategies along

the freeway, ramps and local roads to better manage the flow of traffic throughout the I-80 corridor. This project is being conducted in collaboration with West Contra Costa Transportation Advisory Committee (WCCTAC), Contra Costa Transportation Authority (CCTA), Caltrans, MTC, local agencies and transit agencies in Alameda and Contra Costa Counties.

The I-80 ICM Project will create an integrated, comprehensive and multi-modal systems management system along the I-80 corridor, including parallel arterials and the connecting roadways in Alameda and Contra Costa Counties. The project will create an integrated solution to freeway and arterial management, providing rapid incident management and real-time traveler information to the public.

The elements of the project include closed-circuit television cameras, highway and local changeable message signs, variable speed limit signs and lane control signs on the freeway, vehicle detection systems, corridor-wide adaptive ramp metering system, freeway management system, traveler information system, enhanced incident management system, emergency vehicle preemption systems, and integration of arterial traffic signals, and communication network links along the project corridor.

The project includes integration with the Alameda County Smart Corridors Program, Caltrans Transportation Management Center and MTC's 511 system. The corridor management elements are used to manage the efficiency of the transportation system along the I-80 corridor, including providing enhanced incident detection, encouraging mode shifts to other public transportation models, and providing the public with real-time traffic conditions and construction alerts.

The project limits are along the Interstate 80 corridor from Highway 4 (Contra Costa County) to San Francisco Bay Bridge Toll Plaza (Alameda County). The limits of this project include locations in both Contra Costa County and Alameda County.

### BACKGROUND

In January 2007, the ACCMA submitted an application to the California Transportation Commission (CTC) in the amount of \$87.7 million for full funding of the I-80 ICM project through the 2007 Bond Measure Act. The complete project comprises three components: \$55.3 million for the freeway component; \$8.1 million for project development local match, being provided by ACCMA and the Contra Costa Transportation Authority; and \$24.3 million in local arterial and transit component, which is being requested through the Local Arterial Synchronization Account of the bond measure program.

In March 2007, the CTC approved \$ 55.3 million in funding from the Corridor Mobility Improvement Account (CMIA) of the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act. This source of funding was approved by the voters of California as Proposition 1B in November 2006.

Given the level of traffic congestion along the I-80 Corridor, the CTC ranked the I-80 ICM Project as one with the highest cost-benefit ratio submitted for the Bond Act consideration, with a Return-On-Investment of less than one year in transportation costs. The project is expected to be listed for construction bids by early 2009 and completed by early 2012.

#### ALTERNATIVE ACTIONS CONSIDERED

The high levels of traffic congestion along the study segment of the I-80 Corridor generate several problems that if not carefully monitored, would lead the system into a complete gridlock. The Corridor presents a high degree of unreliability, vulnerability to incidents and breakdowns, lack of clearly defined alternate routes, lack of a proactive and responsive system, and a total system imbalance.

Traditional solutions to problems such as those present on the I-80 corridor include widening of the facility. However, this is not an option for I-80 in part, because widening is not a sustainable measure, as studies show that adding more lanes to an existing facility encourages more traffic in the near term, and because I-80 is bounded by the Bay on the west, and fully developed areas on the East.

#### CONTACT PERSON

Hamid Mostowfi, Supervising Traffic Engineer, Public Works Transportation, 981-6403

#### Attachments:

1: Resolution

Ex. A. Executive Summary

RESOLUTION NO. ##,###-N.S.

SUPPORTING THE I-80 INTEGRATED CORRIDOR MOBILITY (ICM) PROJECT  
PROJECT CONCEPT AND FUNDING PLAN

WHEREAS, Interstate 80 ("I-80") is an integrated freeway, arterial and principal transportation corridor from the Carquinez Bridge to the Bay Bridge Toll Plaza, a distance of approximately 20.5 miles, for the movement of people, goods, and services within Contra Costa and Alameda counties; and

WHEREAS, Alameda County Congestion Management Agency ("ACCMA"), West Contra Costa Transportation Advisory Committee ("WCCTAC"), Contra Costa Transportation Authority ("CCTA"), California Department of Transportation District 4 ("Caltrans"), and Metropolitan Transportation Commission ("MTC") (collectively the "Sponsoring Agencies"), in partnership with Contra Costa County, the cities of Hercules, Pinole, San Pablo, Richmond, El Cerrito, Albany, Berkeley, Emeryville, and Oakland, Alameda-Contra Costa Transit District ("AC Transit") and Western Contra Costa Transit Authority ("WestCAT") (collectively the "the Participating Agencies"), jointly participated in the development of a Systems Engineering Management Plan ("SEMP") and a Project Study Report ("PSR") defining the I-80 Integrated Corridor Mobility Project ("I-80 ICM Project"); and

WHEREAS, the I-80 ICM Project was ranked by the California Transportation Commission ("CTC") as one of the highest cost-benefit ratio projects submitted for the Bond Act consideration, with a Return-On-Investment ("ROI") of less than one year in transportation costs; and

WHEREAS, the Participating Agencies have identified the overall goals of the I-80 Project to include improvement of mobility, enhancement of safety and increase in efficiency for all modes of travel along the corridor; and

WHEREAS, due to physical and environmental constraints along the Corridor there are no other viable, short term roadway widening projects that can address congestion and mobility in the Corridor; and

WHEREAS, other transportation and commute programs and projects are in place or are planned in the Corridor; and

WHEREAS, with the support of the other Sponsoring Agencies, the ACCMA submitted an application to the CTC for full funding of the estimated project cost of \$87.7 million, consisting of three components: a) a \$55.3 million freeway component, that focuses primarily on I-80; b) a \$8.1 million project development component local match; and c) \$24.3 million local arterial and transit component, that focuses on major arterials and crossing surface streets through the Corridor Mobility Improvement Account ("CMIA") of the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, approved by California voters as Proposition 1B on November 7, 2006 ("Bond Act"); and

WHEREAS, on March 15, 2007 the CTC approved \$55.3 million in funding for the Freeway components of the I-80 ICM Project; and

WHEREAS, the CTC also recommended that the Participating Agencies should collectively apply for the \$24.3 million local arterial and transit component of the I-80 ICM Project from the Traffic Light Synchronization Program ("TLSP"), which is another component of the Bond Act; and

WHEREAS, the City of Berkeley has received, reviewed, and accepted the project description regarding the proposed design, construction, implementation, and operations of the I-80 ICM Project, as set forth in "Exhibit A, I-80 Executive Summary," which is attached hereto and made a part hereof.

NOW, THEREFORE, BE IT RESOLVED THAT THE CITY OF BERKELEY hereby:

1. Supports implementation of the I-80 ICM Project as described in "Exhibit A, I-80 Executive Summary" with the understanding that the freeway component of the I-80 ICM Project will not be implemented separately without the local arterial and transit components; and
2. Supports the primary goal of the I-80 ICM Project to deploy a comprehensive systems management strategy in order to create a balanced, responsive, and equitable system that will monitor and control traffic and improve the safety and mobility of all users, including transit customers; and
3. Will participate in the Technical and Policy Steering Committee meetings to finalize the requirements of the I-80 ICM Project; and
4. Will participate in the development of a Corridor System Management Plan (CSMP), one of the technical requirements of the Bond Act.
5. Agrees and understands that the Technical Committee (comprised of staff representatives from Participating Agencies and Caltrans) will determine the policies for the overall system operation, including the adaptive ramp metering system. The cities and counties will remain continually involved with system operation and monitoring, including evaluation and modification of such policies to ensure that local roadway networks are not adversely affected.
6. Supports ACCMA, CCTA, and WCCTAC, on behalf of all the Participating Agencies, to jointly pursue \$24.3 million in funding for the local arterial and transit components of the I-80 ICM Project from the Traffic Light Synchronization Program ("TLSP") of the Bond Act.

IN WITNESS WHEREOF, the \_\_\_\_\_, hereby approves this Resolution of Support, by order caused to be subscribed by the binding authority of such party.

AGENCY

By: \_\_\_\_\_  
Mayor

## I-80 CORRIDOR—EXECUTIVE SUMMARY

### The Problem

The Interstate-80 (I-80) corridor from the Bay Bridge to the Carquinez Bridge is the worst congested corridor in the Bay Area. This corridor has ranked as the most congested corridor in the entire San Francisco Bay Area during the last six years, with traffic volumes reaching 312,000 vehicles per day, with an average of 20,000 hours of delay daily. Currently, the demand on the freeway far exceeds the roadway capacity, causing unreliable travel times, erratic operating speeds, breakdowns, as well as diversion to the local arterials. The congestion on the roadway network contributes to an increase in incident rates, including rear-end accidents on both freeway and local arterials. These contribute to delays for transit services operating along the corridors. The combined effect of the incidents and the congestion hinders efficient incident response times and creates additional secondary incidents.

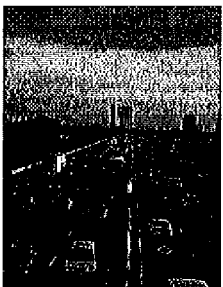
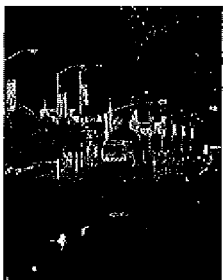
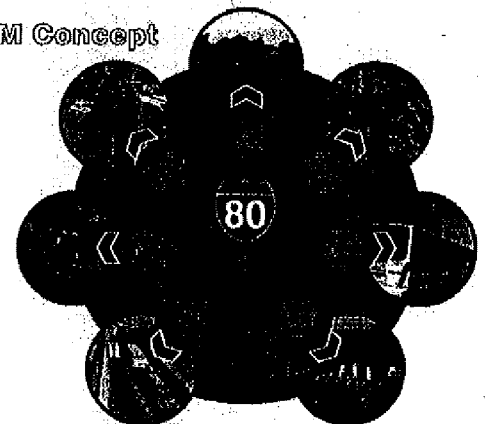
### I-80 Integrated Corridor Mobility (I-80 ICM) Project

The primary goal of the I-80 ICM Project is to enhance the current Transportation Management System along the I-80 corridor to build a balanced, responsive, and equitable integrated system that will monitor and maintain optimum traffic flow along the network to improve the safety and mobility for all users, including transit customers. The project will utilize State-of-the-Practice ITS technologies to enhance the effectiveness of the existing transportation network in both freeway and parallel arterials in Alameda and Contra Costa Counties. At a cost of \$87.7 million, the project will create a balanced network with an emphasis on system reliability and efficiency through a multi-modal solution. Proposed project elements include:

- Freeway Management System
  - Corridor-wide adaptive ramp metering including ramp metering HOV bypass lanes for transit access
  - Speed harmonization through advisory variable speed signs
- Transit Management System
- Traveler Information System
- Commercial Vehicle Operations (CVO)
- Traffic Surveillance and Control System
- Incident Management System
- Arterial Management System

The project also includes integration with the East Bay SMART Corridor Program, a joint Alameda and Contra Costa County Intelligent Transportation (ITS) program, and the Caltrans Transportation Management Center (TMC). The I-80 ICM project consists of multiple systems and strategies, working collectively, to address the challenges of the imbalanced flow of traffic in the corridor. Since this corridor is constrained on both sides, the best feasible alternative for congestion management is to improve and streamline the efficiency of the total transportation system.

ICM Concept



The strategies proposed to improve the corridor are a multi-pronged approach to manage the different challenges along the corridor, including incidents, variable speeds, and arterial/freeway integration. The system components of the I-80 ICM project are listed in the table below.

System Component	Element	Purpose
Freeway Management System	Adaptive Ramp Metering Advisory Variable Speed Signs Variable Message Signs	Speed harmonization, optimize flow of traffic, reduce delay, decrease incidents, merge control, decrease arterial spillover, and improve safety.
Transit Management System	Ramp meters with HOV bypass, for transit access only Transit Signal Priority (TSP) Transit traffic traveler information at BART stations	Improve travel time reliability, reduce travel time, encourage mode shift
Arterial Management System	Coordinated traffic signal systems, TMC for local jurisdictions	Optimize traffic flow on local arterials, maximize coordination
Incident Management System	Vehicle detection system, incident response plan, diversions management	Decrease number of incidents, decrease incident response time, and decrease incident recovery time
Traveler Information System	511 enhancement, SMART Corridor ATIS enhancement, variable message signs, Highway Advisory Radio (HAR)	Enhanced traveler information for all users
Traffic Surveillance and Monitoring System	CCTV camera, vehicle detection system	Traffic Monitoring
Commercial Vehicle Operations (CVO)	Future preferential treatment of CVO, value pricing	Best time use of freeway by commercial vehicle users

### Strong Support for the I-80 ICM Project

The I-80 ICM project is the result of many hours of stakeholder meetings which produced a comprehensive needs assessment by the stakeholders, including five years of cooperative work through the East Bay SMART Corridors partnership. The goals and objectives are agreed upon by all of the agencies, and there is a full commitment by Caltrans, the cities, counties, regional agencies, CHP, and transit agencies. The Systems Engineering Management Plan (SEMP) and Project Study Report (PSR) have been completed. The final project was approved by the California Transportation Commission (CTC).

### The Benefits

The expected benefits are: Improved travel time reliability; balanced and stable traffic flow; speed harmonization; mode shift to transit and HOV lanes; better utilization of existing capacity and throughput maximization; reduced incidents and number of accidents; reduced size and severity of bottlenecks; and reduced emissions.

The I-80 ICM Project is a unique project from a benefit-cost standpoint. This project ranked number one among the list of CMIA projects selected by the CTC. Other benefits include reduction in mobile pollutants, fuel consumption, driver frustration, and more travelers shifting to transit alternatives. The improvements along the I-80 corridor will reduce congestion, increase safety and improve the operation of the freeway, and will benefit the entire network in the area.

These benefits have been quantified using extensive research of similar projects and micro simulation techniques. The average benefits for similar systems management projects include safety improvements in the range of 15% to 50% reduction in accidents, and improvement in mobility in the range of 10% to 25% increase in peak hour speeds.

