

## SUMMARY OF RESOLUTION OF ISSUES WITH I-80 ICM PROJECT

### RESOURCES

- ♦ West County does not have to pay for any additional operations & maintenance costs in perpetuity.
- ♦ West County may contract with Contra Costa County to maintain new equipment.
- ♦ Caltrans will monitor the system, including the arterials, on a 24/7 basis. Under normal conditions, each agency will operate traffic control devices within their jurisdiction as they see fit. In the event of a freeway incident, Caltrans will take control of the devices and execute traffic management plans that will have been pre-approved by the local agencies.

### EQUITY

- ♦ Local agencies will be able to continue participating in decision-making at the technical, executive, and political levels.
- ♦ The intent of the project is to promote the orderly movement of traffic within the corridor during peak periods and in the event of a freeway incident in an equitable manner: between the freeway and the arterials; across local, regional, and inter-regional users; and across different modes of travel. The project will provide the tools necessary to enable this, but achieving the balance will require additional and ongoing work on the part of the project partners.
- ♦ Ramp metering in Solano County is proceeding on a parallel schedule with the project. The project partners need to pursue a metering strategy for I-580 west of I-80.

### ADVERSE IMPACTS

- ♦ Ramp metering will be 'on' only during peak periods and, if appropriate, in the event of freeway incidents. Ramp metering rates will vary so as not to cause excessive delay or back-ups onto local streets. Buses will be able to speed up ramp metering rates, so as to avoid being delayed by the ramp meters.
- ♦ The project will not actively divert traffic onto San Pablo Avenue in the event of a freeway incident. The MOU contains provisions for monitoring the impacts of the traffic management plans, and for making a broad range of adjustments as necessary, should unintended consequences arise.
- ♦ A toll-free phone number will be provided for complaints, which will be addressed as expeditiously as possible.

### PRIORITY

- ♦ The intent of the project is to improve safety and efficiency, not to encourage auto-use. The project will expand transit signal priority to all of San Pablo Avenue and the crossing arterials that lead to I-80. The project will also enhance traveler information, which will affect travel choices, including mode.
- ♦ The project is one of many ongoing efforts to improve the corridor, including transit expansion and enhancement, transportation demand management, and smart growth through the Sustainable Communities Strategy.

### LEGAL

- ♦ The MOU clarifies equipment ownership, maintenance, and funding responsibilities.
- ♦ The MOU is not legally binding, but it does contain provisions for entering into formal agreements as appropriate for liability, indemnification, and other legal considerations.

**SUMMARY OF RESOLUTION OF ISSUES WITH I-80 ICM PROJECT**  
(continued)

**SUSTAINABILITY**

- ♦ The project will develop and implement traffic management plans that are optimal for traffic conditions at the time of implementation. As traffic conditions change, the project partners will need to work in collaboration to update those plans.
- ♦ A study will be conducted to measure performance before and after project implementation. This will provide the baseline for measuring benefits.
- ♦ Future, non-project-related modifications to roadways and/or traffic control equipment may degrade the performance of the I-80 ICM system. Protocols will be developed for configuration and change management to maintain the integrity of the system.

**OTHER**

- ♦ Resolutions of Support for the project from all project partners were provided in 2008. Several public meetings have been held. Two construction contracts, including the procurement and installation of equipment in the local agencies' rights-of-way, are now underway.
- ♦ West County will receive as part of the project a number of new devices and equipment that have utility independent of the project, and for which west County would have had to secure alternative funding, if not for the project. The inventory of new devices and equipment is shown in the table below.

	El Cerrito	Richmond	San Pablo	County	Pinole	Hercules	AC Transit	WestCAT
CCTV Camera	1	9	4	3	6	2	-	-
Video Detection System	-	2	-	2	3	1	-	-
TSP/EVP Receivers	3	24	9	5	18	7	-	-
TSP Emitters	-	-	-	-	-	-	40	40
Signal Controller Upgrade	14	33	5	1	15	5	-	-
Traffic Signal	-	2	-	-	-	-	-	-
Speed Feedback Sign	-	-	-	-	2	-	-	-

The following provides detailed information on the issues and specific MOU provisions that address those issues.

**ISSUES**      **RESOURCES**    EQUITY    ADVERSE IMPACTS    PRIORITY    LEGAL    SUSTAINABILITY    OTHER

- ♦ Local agencies have no funding available for additional operations & maintenance costs
- ♦ Local agencies have no staff available for additional operations & maintenance

**RELEVANT PROVISIONS IN THE MOU**

- ♦ Caltrans shall be responsible for 24/7 monitoring of ICM devices on the arterials and freeway, and during incidents, selecting and executing the appropriate pre-determined plans, protocols, and parameters in accordance with the IRP. Such activities will be undertaken from the Transportation Management Center (TMC) jointly operated by Caltrans and the California Highway Patrol (available via telephone at 510-286-6915), located at 111 Grand Avenue, Oakland, and staffed on a 24/7 basis. (pp. 17 & 25)
- ♦ Within Contra Costa County outside of State right-of-way, local jurisdictions will be responsible for operations and maintenance of ICM equipment, and may choose to contract with Contra Costa County for maintenance. Local jurisdictions will not be responsible for funding the operations and maintenance of ICM equipment in perpetuity. CCTA will secure \$2,000,000 in funding for operating and maintaining ICM equipment. This amount is estimated to fund about 15 years of operations and maintenance. CCTA will seek additional funding beyond the \$2 million from regional and other sources. (p. 26)

**OTHER CONSIDERATIONS**

- ♦ Local agencies still need to commit staff for ongoing project development
- ♦ If the project does not proceed due to lack of consensus on the MOU, it may impair the corridor jurisdictions' ability to successfully obtain funding in the future for other major transportation projects

**ISSUES**      **RESOURCES**      **EQUITY**      **ADVERSE IMPACTS**      **PRIORITY**      **LEGAL**      **SUSTAINABILITY**      **OTHER**

- ♦ The project must not delay traffic on San Pablo Av at the expense of moving traffic on the freeway
- ♦ The project must not encourage longer trips from the north or west of the corridor
- ♦ Ramp metering must not unduly delay traffic on the local streets
- ♦ The project must ensure continued local participation in decision-making

**RELEVANT PROVISIONS IN THE MOU**

- ♦ System integration provides for coordinated operations between all of the above project components and sharing of corridor traffic and transit information among various agencies relative to I-80, San Pablo Avenue and other key local arterials. (pp. 10-11)
- ♦ The I-80 TCC will directly interact, communicate, and exchange information and cooperatively assist in resolving issues. In the course of these activities, operational protocols will be developed to best serve ramp metering, incident management, signal operations, and transit service. (p. 11, 4th paragraph)
- ♦ The I-80 CSC will be comprised of executive staff or designees from all member agencies. The I-80 CSC will meet as needed, to address issues unresolved by the I-80 TCC. (p. 12, 2nd paragraph)
- ♦ A Policy Advisory Committee (I-80 PAC) will provide guidance and direction on any issues that may arise that require additional input from communities within the corridor. The I-80 PAC will be comprised of three members: the Caltrans District 4 Director, one elected official from an Alameda County jurisdiction within the corridor appointed by the Alameda CTC, and one elected official appointed by WCCTAC. (p. 12, 3rd paragraph)
- ♦ Project Goal No. 1: Provide traffic operation on the corridor that is equitable and balanced for both the freeway and arterials. (p. 14)
- ♦ Project Goal No. 8: Cooperatively develop, implement, evaluate and revise strategies to ensure balanced benefits to local, regional, and inter-regional travelers. (p. 14)
- ♦ Under normal conditions, ramp metering will function under adaptive control. This means that traffic conditions along the entire corridor (freeway, ramps, and local streets) will be considered when determining metering rates at each ramp. (p. 15)
- ♦ During normal conditions, each local agency shall have primary control and will be responsible for operating all the project devices within their jurisdiction. (p. 18)
- ♦ Ramp meters will be operating at the freeway on-ramps in both directions, during weekday and weekend peak periods. In addition, ramp meters may be activated during non-peak conditions, as needed, in response to prevailing traffic demand for special events or major incidents. (p. 18)
- ♦ Several documents remain to be developed that would govern the implementation of the project. The I-80 TCC will provide input into the development of such documents. (pp. 21 & 24)

**ISSUES**RESOURCES EQUITY **ADVERSE IMPACTS** PRIORITY LEGAL SUSTAINABILITY OTHER

- ♦ Ramp metering must not result in back-ups to local streets
- ♦ The project must not introduce additional traffic diversion onto San Pablo Av
- ♦ Ramp metering must not delay transit

**RELEVANT PROVISIONS IN THE MOU**

- ♦ The ARM algorithm can adjust metering rates at each on-ramp based on the prevailing or real-time corridor traffic conditions, both on the freeway and the adjacent local arterial. (p. 9, last paragraph)
- ♦ Project Goal No. 5: Avoid impacts on local arterials while managing access at on-ramps during peak periods on weekdays and weekends. (p. 14)
- ♦ Project Goal No. 6: Efficiently guide traffic naturally diverted to local arterials during major freeway incidents back to the freeway. (p. 14)
- ♦ Project Goal No. 9: Cooperatively identify and address any adverse impacts in a timely fashion. (p. 14)
- ♦ Each ramp will have an end-of-queue detector to monitor the queue length of vehicles waiting on the on-ramp using either occupancy or volume differential between end-of-queue detector and ramp output loop. If the end of queue approaches the cross street, the ramp meter controller will increase the metering rate up to the maximum rate in order to reduce the queue. If the queue is not dissipating, the ramp meter controller will change the meter to rest on green until the queue is dissipated. (p. 15)
- ♦ At ramp HOV bypass lanes, TSP will allow equipped buses to obtain priority by expediting or flushing out any queue ahead of the bus. (p. 15)
- ♦ Under incident conditions, ramp metering will continue to operate under an adaptive control as described above. Ramp metering at on-ramps will still be operated such that spillbacks onto the crossing arterials are avoided. (p. 16)
- ♦ The project will not actively divert freeway traffic on to local streets in the event of an incident on the freeway. (pp. 16 & 17)
- ♦ Trailblazer signs placed on San Pablo Avenue and local arterials will advise drivers where to return back to the freeway after passing the incident location. These signs are meant to discourage the use of other local streets that could lead to more severe congestion on the local network. (pp. 16-17, p. 20)
- ♦ Caltrans and local agencies will develop the Incident Response Plan to help formulate acceptable timing plans that increases the throughput without adverse delays to local traffic including bicycles, pedestrians and transit. The timing plans will be preapproved so activation of them during incidents will be efficient. TSP and emergency vehicle preemption will still be operational during an incident. (p. 17)
- ♦ Ramp metering will be operated in adaptive fashion, considering traffic demands and capacity on both the freeway and local arterials. During the metering periods, the implemented system will automatically adjust metering rates to ensure that queues at on-ramps do not extend beyond local agency-specified maximum end-of-queue locations, or shall rest on green for as long a time as necessary. (p. 18)
- ♦ End of queue detection will be used to monitor and contain the queues within the on-ramps, and when absolutely needed on the appropriate turn-lanes, as approved by local jurisdictions, on the local arterials specifically dedicated for freeway entry. Once queues

extend beyond the end of queue detector, the ramp meter rate will increase or rest on green to avoid queuing that obstructs local traffic flow. (p. 18)

- ♦ If the ramp metering implementation or ramp metering plan modification does not perform as expected so that there would be excessive delays and queues impacting traffic operations on the local arterial, or results in excessive complaints, Caltrans will consider other options, such as, changing ramp metering rates or operating on-ramps on temporary "rest on green". (p. 19)
- ♦ Caltrans shall promptly respond to requests to modify ramp metering rates from local agencies for initial diagnosis of the issue. If the response times are not met or the operational issue results in significant or adverse impacts, the matter shall be referred to the I-80 TCC for immediate resolution. (p. 19)
- ♦ The metering rates will be developed to avoid delays to buses either at on-ramps or crossing arterials. For buses that are bound for the freeway, transit signal priority will be provided for the HOV by-pass lane ramp metering signal. (p. 19)
- ♦ The system will then be monitored extensively and minor fine tuning of signal timing and ramp metering algorithms will be performed as appropriate. The monitoring activities will include evaluating impacts of the project on transit operations and the magnitude of traffic diversion to local streets. Strategic transit enhancements, such as relocation of bus stops, etc., changes to the signal flush plans, and use of the trailblazer signs may be implemented to address such impacts. (p. 24)

**ISSUES**RESOURCES EQUITY ADVERSE IMPACTS **PRIORITY** LEGAL SUSTAINABILITY OTHER

- ♦ The project should not encourage auto-use, and should instead encourage transit

**RELEVANT PROVISIONS IN THE MOU**

- ♦ Real-time information for the transportation network, including travel speeds, travel time and transit options, will be provided to motorists and transit passengers via IDBs, CMS, HAR, and 511. This will assist motorists to make timely, informed, and personal decisions earlier in their journey through the corridor, thus, enhancing motorists' trip quality and convenience. This can also at times reduce traffic demand within the corridor by encouraging travelers to use available transit options or to postpone their travel to times when congestion is lower. (p. 10)
- ♦ Improvements include: extended transit signal priority along San Pablo Avenue Corridor and crossing arterials; extended emergency vehicle preemption; and installation of pedestrian push buttons and countdown signal heads at traffic signals in Pinole, minor traffic signal modification in El Cerrito, intersection striping improvements for transit near El Cerrito del Norte BART Station... (p. 10)
- ♦ Project Goal No. 3: Enhance overall transit travel time along corridor routes during normal operations. (p. 14)
- ♦ Table 2, Operational Strategies, shows that transit signal priority will be in operation under all conditions (p. 15)

**OTHER CONSIDERATIONS**

- ♦ The project should not be viewed in isolation, but in concert with other initiatives that are in progress or under development, including but not limited to: the West Contra Costa Transportation Investment Study, the Sustainable Communities Strategy, and the existing Transportation Demand Management Program.

**ISSUES**RESOURCES EQUITY ADVERSE IMPACTS PRIORITY **LEGAL** SUSTAINABILITY OTHER

- ♦ The project should be clear about ownership, maintenance, and management responsibilities
- ♦ The project should be clear about division of liability and indemnification

**RELEVANT PROVISIONS IN THE MOU**

- ♦ Under normal conditions, local agencies will have, within their jurisdictions, control of the ICM devices and traffic signals which will be coordinated upon project implementation. (p. 19)
- ♦ Under incident conditions, pre-approved Incident Response Plans (IRPs) will be implemented by Caltrans. Caltrans will assume control of the ICM devices until the incident is cleared. Typical daily signal operations will be resumed immediately upon incident clearance and stabilization of traffic conditions. (p. 19)
- ♦ This MOU is a legally non-binding document. (p. 29)
- ♦ New maintenance agreements or amendments to existing maintenance agreements between Caltrans and affected jurisdictions will be developed and executed as necessary to address maintenance arrangements, liabilities, or any other legal issues. (p. 29)
- ♦ The parties to this MOU specifically repudiate the division of liability and indemnification outlined in Government Code section 895.2, and will address these topics in future agreements as necessary. (p. 29)
- ♦ Appendices B and C of the MOU clearly define ownership, maintenance, and funding responsibilities

**ISSUES**

RESOURCES

EQUITY

ADVERSE IMPACTS

PRIORITY

LEGAL

**SUSTAINABILITY**

OTHER

- ♦ The project should ensure that benefits from the project are sustainable

**RELEVANT PROVISIONS IN THE MOU**

- ♦ Project Goal No. 13: Facilitate cooperative activities that ensure the sustainability of benefits from the project. (p. 14)
- ♦ The I-80 ICM project will provide an update to the signal timing along the corridor for normal operating conditions. In the future, signal timing updates will be achieved through other programs, such as those administered by MTC. (p. 16)
- ♦ The IRPs will be evaluated periodically to assess their effectiveness and need for adjustments. Any adjustments to the IRPs will be subject to approval by the TCC. (p. 19)
- ♦ A study will be done to document conditions before and after the project is implemented, recommend changes, if necessary, and report on the project benefits. (p. 24)
- ♦ The configuration and change management will be in accordance with the Project Configuration Management Plan developed for the project with input provided by the I-80 TCC. The Configuration Management Plan details the process to establish and maintain the integrity and control of software and hardware products. (p. 24)

**ISSUES**RESOURCES EQUITY ADVERSE IMPACTS PRIORITY LEGAL SUSTAINABILITY **OTHER**

- ♦ The public should be well-informed about the project
- ♦ The project should provide opportunities for local job creation

**RELEVANT PROVISIONS IN THE MOU**

- ♦ While local business preference is not allowed for State-funded construction contracts, such as these, outreach will be conducted to encourage local participation. (p. 22)

**OTHER CONSIDERATIONS**

- ♦ Resolutions of support for the project from all of the project partners were obtained at the beginning of the project as part of regular public meetings
- ♦ Two public meetings were conducted for the Environmental Impact Report
- ♦ A special public meeting was recently conducted to inform the public about the project