AGREEMENT TYPE:	Memorandum of Understanding
DESCRIPTION:	**Ramp Metering** Memorandum of Understanding between Caltrans and a city.
SOURCE:	No source agreement used in the development of this Agreement Template. Source material used to develop the Template include: • Caltrans' Deputy Directive DD-35 (defines CALTRANS policy on Ramp Metering) • Ramp Metering Policy Procedures, dated August 1997 (guidelines for implementing the Department's Ramp Metering Policy (DD-35)) • "Ramp Meter Design Guidelines" Though there were no source agreements available for the development of this Agreement Template some material was obtained that discusses the development of corridor management policies and procedures in the I-880 Corridor in Contra Costa County, including ramp metering. That document is an agreement to agree in the future, but does not itself define the policies and procedures, nor does it constitute an agreement between / among the parties. It is included with this Agreement Template as source material, though it is not necessarily an "Agreement" per se.
INTENT OF THE SOURCE AGREEMENT:	N/A
PARTIES TO THE SOURCE AGREEMENT:	N/A
CONTACTS:	N/A
OTHER NOTES:	Caltrans has traditionally been adamant about NOT entering into any type of operational agreement with any local agencies regarding Ramp Metering. It has been Caltrans' position that they operate the freeways (and freeway system) – including freeway ramps and ramp meters – and that they would not be open to local agencies dictating policies with regards to Ramp Metering; nor would they be open to development of formal policies or procedures related to freeway operations – including Ramp Metering.
POTENTIAL USES IN THE CENTRAL COAST REGION:	• An agreement between Caltrans and a city / county to formalize Ramp Metering policies within a given jurisdiction.

AGREEMENT TEMPLATE AS PRESENTED TO
THE CENTRAL COAST REGION

(revised based on comments received at June 16, 2006 project stakeholder meeting)

CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND
THE CITY OF SANTA CRUZ

MEMORADUM OF UNDERSTANDING

This Memorandum of Understanding (MOU), between the State of California, Department of Transportation (CALTRANS) and the city of Santa Cruz (CITY), outlines the areas of general responsibility for various project development and implementation activities for proposed State-funded improvements in support of freeway management activities to be carried out by CALTRANS. It constitutes solely a guide to the intentions and policies of the parties involved. It is not intended to authorize funding or project effort nor is it a legally binding contract.

GENERAL

1. CALTRANS is committed to using ramp metering as an effective traffic management strategy to maintain an efficient freeway system and protect the investment made in constructing freeways by keeping them operating at or near capacity. Ramp Metering is an integral part of the system management concept, which focuses first on implementing operational strategies to reduce congestion and increase safety on California's State highway system.
2. Ramp meters are traffic signals placed on freeway entrance ramps or freeway connectors to control the flow of vehicles entering the freeway or moving from one freeway to another. They are designed to decrease congestion and improve the average speed of vehicles traveling on the freeway, by controlling vehicular flow at most inputs onto the mainline. By installing a traffic signal at the on-ramp, CALTRANS can control the rate at which vehicles enter the freeway. Vehicles entering at short intervals are less likely to slow down flowing traffic and can merge onto the freeway without causing the traditional bottlenecks, associated with heavy on-ramp traffic volumes. In addition, metering has been proven to reduce rear end and sideswipe traffic collisions, especially during congestion periods. Additionally, ramp meters are used to discourage short distance travelers from using the freeway.
3. The following documents were prepared by CALTRANS to guide in implementing ramp metering policy throughout the State:
    a. Deputy Directive DD-35 – defines CALTRANS policy on Ramp Metering
    b. Ramp Metering Policy Procedures, dated August 1997 – provides guidelines for implementing the Department's Ramp Metering Policy (DD-35)
    c. "Ramp Meter Design Guidelines" – governs design of ramp metering facilities

CALTRANS RESPONSIBILITIES

1. CALTRANS has proposed the deployment of ramp meters along State Route 17 (SR-17), in the County of Santa Cruz, and also traversing CITY**.**
2. CALTRANS will own, operate, monitor and maintain the proposed ramp metering central system and all field equipment associated with the proposed ramp metering deployment, as well as any communications equipment related to the ramp metering deployment.
3. CALTRANS will follow policy and technical guidance contained in the reference documents cited in paragraph 3 of the GENERAL Section above, as well as all other pertinent project

development and design guidelines associated with the design and construction of improvements on the state highway system.

4. CALTRANS shall work cooperatively with the local agencies in the proposed project area, including CITY, to minimize disruptions to local circulation due to construction activities in the construction phase of the proposed ramp meters.
5. CALTRANS shall secure all appropriate encroachment / construction permits for construction (or temporary construction staging) that may take place outside of the State right-of-way.
6. Once construction is complete and the ramp meters have been activated, CALTRANS shall work cooperatively with the local agencies in the proposed project area, including CITY, to minimize disruptions to local circulation due to the operation of the proposed ramp meters.
    a. Metering rates (the rate at which vehicles are allowed to enter the freeway mainline) will be monitored to eliminate adverse impacts to local roads due to ramp meter queues.
    b. If adverse impacts are occurring on the local roadway network, CALTRANS will work with the appropriate staff at the local agencies on a location by location basis to eliminate or reduce the impacts.
7. CALTRANS shall consider on a location by location basis, as roadway geometrics and right-of-way conditions allow, the installation of high occupancy vehicle (HOV) bypass lanes.
8. CALTRANS shall conduct and prepare all required monitoring programs and reports as appropriate; including but not limited to: routine surveillance and monitoring of ramp operations, development of the Ramp Metering Annual Report, performing ramp meter counts ("Queue and Demand Counts" and "HOV Occupancy counts"), maintaining appropriate ramp metering inventories (electrical equipment, lane and geometric configurations, metering hours and rates, etc.), development and / or updating the District Ramp Meter Development Plan.
9. CALTRANS shall make monitoring reports and back-up data available to the local agencies in the project area, including CITY.
10. CALTRANS shall work with the Metropolitan Planning Organization (MPO) and / or Regional Transportation Planning Agency (RTPA) as appropriate to program funding for ramp meting improvements in the proposed project area.

CITY RESPONSIBILITIES

1. CITY shall approve all appropriate encroachment permits for construction (or temporary construction staging) that may take place outside of the State right-of-way.
2. CITY shall provide a point of contact with whom CALTRANS will work to monitor ramp meter operations to minimize disruptions to local circulation due to the operation of the proposed ramp meters.

JOINT RESPONSIBILITIES

1. CITY and CALTRANS shall work cooperatively to implement the ramp metering program while minimizing adverse impacts to local circulation.
2. If applicable, for the traffic signal(s) at the freeway interchange ramp ends, the CITY and CALTRANS shall work cooperatively to implement traffic signal timing strategies that are compatible with the ramp metering program while minimizing adverse impacts to local circulation.

Figures depicting the project area and other pertinent elements of the project proposal are provided on the following pages.

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by the CITY OF SANTA CRUZ on_____, 200_, and by CALTRANS on_____, 200_.

Deputy District Director Traffic Operations CALTRANS, DISTRICT 5	Director of Public Works City of Santa Cruz
Date	Date:

Figure 1

[insert figures such as block diagrams, maps, etc. as appropriate]

Figure 2

[insert figures such as block diagrams, maps, etc. as appropriate]

SOURCE AGREEMENT
FROM WHICH THE TEMPLATE AGREEMENT WAS DERIVED
(See “Other Notes” on the cover page of this Agreement Template.)

Governance

1) **Institutions**:

   a) The CMA Board will be the policy body for the Cooperative Corridor Management Strategy (CCMS) The Corridor Management Plan shall be consistent with the Countywide Long Range Transportation Plan adopted by the Alameda County Congestion Management Agency.

   b) The I-880 Steering Committee, which consists of elected officials from each city, county and transit agency in the corridor and representative from Caltrans, shall be the policy steering committee for the Corridor Management Plan. The Steering Committee shall guide the work of the technical working group, review recommendations from the technical working group, adopt guidelines for corridor management consistent with CMA and regional policy, and forward plans and policy recommendations to the CMA Board for approval.

   c) A Technical Working Group shall meet to develop consensus on guidelines and operational plans for the corridor, consistent with the responsibilities defined below. Membership shall include a staff representative from each agency on the Steering Committee, MTC, CMA, CHP, RIDES, Port of Oakland, Economic Development Advisory Board and the freight industry.

2) **Responsibilities of the Technical Working Group** will include:

   a) Define initial metering plan consistent with adopted goals and guidelines.

   b) Define operating procedures and protocols for Caltrans TOS (CMS, HAR, CCTV, etc.)

   c) Periodically review system performance of the freeway, arterial and transit systems

   d) Define and prioritize capital improvement projects to improve operations within the corridor; forward to Steering Committee and/or ACTAC.

   e) Develop policy recommendations for Steering Committee consideration.

   f) Develop performance measures consistent with the adopted goals and policies.

   g) Coordinate strategies with local law enforcement agencies.

3) The **Conflict Resolution Process** established by the CMA Board will be used to resolve disagreements on the implementation or interpretation of the Cooperative Corridor Management Strategy, Whenever possible, disagreements should be resolved prior to the implementation of operating programs and policies.

Policy for Cooperative Management of the I-880 Corridor

The Basic Goal of system management is the cooperative and complementary management and operation of highways, arterials and transit to provide efficient and effective transportation of people and goods. An efficient and effective transportation system provides safe, convenient and reliable transportation at monetary, social, and environmental costs that are acceptable to the region and the communities in the corridor.

The transportation facilities of the I-880 Corridor provide mobility for the almost one million corridor residents, 450,000 employees, and the many other people who travel into or through the corridor. In addition, I-880 is the region's most heavily trafficked freight corridor and plays a critically important role in the region's economy.

To maximize efficiency, the objectives of effective corridor management must vary by time of day. Specifically,

1) During peak commute periods, the most important performance objective for the transportation system is safe and reliable job access while conserving time, money and natural resources, while also recognizing the need for certain critical, time-sensitive freight movement.

2) During non-commute times, the most important performance objective is reliable and economical movement of freight and delivery of goods for overall economic development, while also recognizing the need to maintain a high level of service for the movement of people.

Principles for Cooperative Management of Freeway, Arterial, and Transit Systems

1) The Goals of cooperatively managing the freeway, arterials, and transit in the I-880 corridor are:

   a) To coordinate the operations and management of the various transportation systems with each other to improve mobility.

   b) To reduce overall delay and ensure that delays that do occur do not impose an excessive or inequitable burden on any community or group of trip-makers.

   c) To provide predictable travel time and negligible delays for HOVs and transit on the freeway and at on-ramps during peak periods to encourage HOV and transit use.

   d) To provide consistent speed and predictable travel times for freeway travel by managing access at freeway-to-freeway connectors and local on-ramps during peak periods.

   e) To provide for stable freeway flows and predictable travel times during those hours most critical to efficient freight movement.

   f) To coordinate freeway and arterial operations to ensure efficient operation of both facilities.

   g) To ameliorate the effects of major accidents and incidents by reducing detection, response and clearance time, and maximizing information available to travelers.

h) To increase emphasis on the transit and HOV systems to maintain access to large employment centers.

i) To anticipate and secure the funding for the transportation capital, operating and maintenance investments necessary to accommodate the continuing growth of population and employment.

j) To identify the most congested segments and nodes in the transportation system and explore means to reduce these "hot spots."

k) To incorporate HOV to HOV direct connections where feasible during the design of new and reconstructed facilities.

l) To encourage cities to work with businesses to arrange for off-peak deliveries when possible.

m) To encourage cities to work with businesses to provide off-street delivery areas when possible.

2) I-880 should be metered in a manner that effectively facilitates corridor movement and fairly accommodates the need for local access to the freeway. This plan shall

a) Ensure that no communities are burdened with ramp delays that are disproportionate or excessive.

b) Ensure that each community shall have at least as much access as it had prior to ramp metering.

c) Ensure system management and capital improvements are coordinated so that planned growth can be accommodated.

d) Accommodate increased demand for freeway access by HOVs and transit wherever possible.

e) Ensure that queues from metered ramps do not impede operation of intersecting streets or block access to private property.

f) Ensure that local trip makers are not burdened with delays that are excessive or disproportionate by implementing metering or other forms of access management at gateways.

g) If queues at metered on-ramps can not be accommodated within the constraints defined above, allow congestion to build on the freeway mixed flow lanes during peak periods.

h) Ensure that as demand grows, long distance trips do not diminish local access to the freeway system.

3) An essential component of the management strategy is a system for monitoring changes in specified performance measures, both immediately after a major change such as the initiation of metering or widening a freeway, and over time as growth occurs in the corridor and region.

4) Complementary capital improvements will be needed for efficient operation of the system. Low cost projects, such as storage lanes at metered on-ramps, re-timing signals near on ramps and along corridor arterials, and intersection channelization should be defined as appropriate to

maximize the benefits of system management.

5) Incident Management: Caltrans Highway Advisory Radio, Changeable Message Signs, and other components of the TOS have the ability to significantly affect diversion of trips from the freeway to arterials, transit, and other freeways. Caltrans will not divert traffic to specific facilities without the prior approval of the facility's owner/operator. The Technical Working Group will define policies to govern the type of messages disseminated by the TOS. The incident management guidelines shall not supersede existing statutes.

I-880 Technical Working Group
ACTION PLAN

Technical Working Group (TWG) shall meet to develop consensus on guidelines and operational plans for the corridor, consistent with the responsibilities, policies, and principles described earlier. Membership shall include a staff representative from each agency on the I-880 Steering Committee, Caltrans, MTC, CMA, CHP, RIDES, Port of Oakland, and the freight industry.

This Action Plan identifies a series of tasks intend to advance development of the Cooperative Corridor Management Strategy for cooperative management of freeways, arterials and transit. The Action Plan identifies the agencies with primary responsibility for each task and a schedule for its completion.

1. Caltrans will provide the TWG with analyses of ramp metering rates, queue lengths, and diversion to arterials.

2. Prior to implementation, the TWG will approve Caltrans proposal for initial metering rates (e.g., meter at demand rate during peak period) for Mini-Cornerstone Project.

3. The TWG will develop performance measures consistent with the Policies and Principles for Cooperative Management described herein to assess the effectiveness of the corridor management efforts.

4. The TWG will define a Monitoring Plan to periodically measure and calculate performance measures, such as volume, speed, travel time, and delay on the freeway, on-ramps and adjacent streets, and critical locations on the arterial network.

   * Cities/County: identify intersection(s) critical for monitoring, and document existing monitoring equipment (i.e., loops, type of controller and software, etc) at each critical intersection.

   * MTC: report on the Traffic Engineering Technical Assistance Program and its applicability to Monitoring Program.

   * CMA - identify resources available for monitoring program (floating car runs, funds for consultants, etc.).

   * Caltrans - define resources available for monitoring program (i.e., locations where CCTV can see ramp and adjacent streets, locations of loops on ramps and freeway, Caltrans staff, etc.); propose monitoring program.

   * TWG: adopt fundable Monitoring Program, and identify elements that would require supplemental funding.

5. The TWG will define an Arterial Improvement Program to improve flows.

   * Cities/County: present existing plans for new segment construction, resurfacing, intersection channelization, widenings, traffic signal installation, and signal equipment upgrade.

   * Transit Agencies: Define critical problems on arterials ***and issues with and transit-Local jurisdiction coordination*** (approaches to ***existing and new*** BART Stations, access to metered ramps, ***left hand turn problems, excessive signal delays***, etc.).

   * TWG: define critical locations, system deficiencies and priorities for investment including arterial signal system upgrades and multi-jurisdiction coordination programs and; scope-out additional analysis needed to define problem and solution(s), seek funding (Caltrans, TETAP, etc.).

   * TWG: work with CMA to define priorities for funding (TSM, AB 434, etc.).

6. Caltrans, CHP, Transit Operators and Local Jurisdictions and Law Enforcement will develop Incident Management Agreements and Procedures.

7. Caltrans and the TWG will produce a report of on-ramp access volumes that establishes how the baseline conditions will be determined.

8. The TWG will define Cornerstone Project Ramp Metering Strategy. Analytical work will be done by Caltrans, MTC, and consultant assistance. The TWG will produce a report that documents the TOS protocol for day-to-day operating procedures and long-term decisions.

9. Caltrans, CMA, MTC and RIDES will define HOV Productivity/TDM Program.

   * Short term program should be keyed to increasing utilization of the HOV lane.

   * Long term program should be keyed to those complementary facilities (park-and-ride lots) and services (express bus and ride matching) necessary to contain commute-related congestion in a relatively narrow peak period.

   * Caltrans, MTC, and the Freight Advisory committee will explore the use of HOV lanes and HOV ramp meter bypasses for commercial vehicles.

   ***** Caltrans, CMA, CHP and MTC will explore how to improve compliance and public perception of HOV lane enforcement

10. The TWG will develop Transit and Rideshare Action Plan for I-880 Corridor.

11. The TWG will define I-880 Corridor Gateways and Gateway Operating Plans.

12. The TWG will define how the Caltrans TOS and other traffic systems will address traffic safety issues in the corridor.

13. The TWG will document and assess the impacts of the Management Strategy activities as part of the implementation process.

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Alameda County CMA
I-880 Steering Committee

Elected Officials Representing:

Cities -	Oakland
	Alameda
	San Leandro
	Hayward
	Union City
	Newark
	Fremont
County -	Alameda County
Transit -	BART
	AC Transit
Ex-Officio -	Caltrans

I-880 Technical Working Group (TWG)

Staff Representing -

Cities -	Oakland
	Alameda
	San Leandro
	Hayward
	Union City
	Newark
	Fremont
County -	Alameda County
	Alameda County CMA
Transit -	BART
	AC Transit
Other -	Caltrans
	MTC
	CHP
	RIDES
	Port of Oakland
	Economic Development Advisory Board
	Freight Industry Representative