

**Southern California Priority Corridor
Showcase Program Evaluation**

Institutional Impacts Cross-Cutting Evaluation Report

FINAL

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Disclaimer

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California, Caltrans or the U.S. Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

Abbreviations & Acronyms

ATIS	Advanced Traveler Information System
ATMIS	Advanced Traffic Management & Information System
ATMS	Advanced Transportation Management System
AVL	Automatic Vehicle Location
Caltrans	California Department of Transportation
CCTV	Closed-circuit Television surveillance camera
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CHP	California Highway Patrol
CM	Configuration Management
CMP	Configuration Management Plan
CMS	Changeable Message Sign
CORBA	Common Object Request Broker Architecture
COTS	Commercial Off-the-Shelf
CTC	California Transportation Commission
CVO	Commercial Vehicle Operations
CW	Corridor-wide
CWATIS	Corridor-wide Advanced Traveler Information System Project
CWATMS	Corridor-wide Advanced Transportation Management System Project
CWCVO	Corridor-wide Commercial Vehicle Operations Project
CWSIP	Corridor-wide Systems Integration Project
CWSPP	Corridor-wide Strategic Planning Project
DOIT	Department of Information Technology
DRI	Caltrans Division of Research & Innovation (formerly NTR)
EAP	Evaluation Activity Plan
EP	Evaluation Plan
FHWA	Federal Highway Administration
FSR	Feasibility Study Report
FTA	Federal Transit Administration
FTE	Full-Time Equivalent (one full-time employee)
GPRA	Government Performance and Results Act
GUI	Graphical User Interface
HP	Hewlett-Packard
HQIT	Headquarters - Information Technology (division of Caltrans)
IDL	Interface Definition Language
IPP	Implementation Phasing Plan
IPR	Intellectual Property Rights
ISP	Information Service Provider
ISSC	Information Systems Service Center (division of Caltrans)
ISTEA	Intermodal Surface Transportation Efficiency Act (of 1991)
ITS	Intelligent Transportation Systems
LACDPW	Los Angeles County Department of Public Works
LADOT	City of Los Angeles Department of Transportation

LAN	Local Area Network
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MTA	Los Angeles County Metropolitan Transportation Authority
MTBF	Mean Time Between Failure
NDA	Non-Disclosure Agreement
NET	National Engineering Technology Corporation
NTCIP	National Transportation Communications for ITS Protocol
NTR	Caltrans Division of New Technology & Research (now DRI)
OCMDI	Orange County Model Deployment Initiative
OCTA	Orange County Transportation Authority
O&M	Operations and Maintenance
OS	Operating system (such as Windows™, Unix, Linux, et. al.)
PC	Personal Computer (Windows™-based)
PoP	Period of Performance
RAMS	Regional Arterial Management System (aka. Traffic Signal Integration)
RAVL	Regional AVL (aka. Transit Management System)
RCTC	Riverside County Transportation Commission
RFP	Request for Proposals
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
RWS	Remote Workstation
SANBAG	San Bernardino Association of Governments
SANDAG	San Diego Association of Governments
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCPCSC	Southern California Priority Corridor Steering Committee
TEA-21	Transportation Equity Act for the 21st Century
TIC	Traveler Information Center
TMC	Transportation Management Center
TOC	Traffic/Transportation Operations Center
USDOT	United States Department of Transportation
VCTC	Ventura County Transportation Commission
VDS	Vehicle Detector Station
VMT	Vehicle Miles Traveled
VOS	Volume/Occupancy/Speed
WAN	Wide Area Network

Executive Summary

This report is one of five cross-cutting evaluation reports prepared under the Southern California Priority Corridor Showcase Evaluation. Each Showcase cross-cutting report addresses one of the Showcase Program's five evaluation goals:

- ✓ System Performance
- ✓ Costs
- ✓ Institutional Impacts
- ✓ Transportation and Traveler Information Management
- ✓ Transportation System Impacts

This cross-cutting report aggregates and summarizes the cumulative knowledge gained from the Showcase Program projects with regards to institutional impacts. More specifically, this report addresses changes to institutional procedures and policies; impacts on staffing and training; the effect of emerging standards; and the impacts of ITS on the local planning process.

Background

As required by federal law, all Intelligent Transportation System (ITS) projects that receive federal funding must undergo an evaluation to help assess the costs and benefits of ITS. This document is one of 23 reports produced as part of the Southern California ITS Priority Corridor Showcase Program Evaluation to help planners and decision-makers at the federal, state and local levels make better-informed decisions regarding future ITS deployments.

In 1993, the U.S. Department of Transportation designated Southern California as one of four Priority Corridors in which Intelligent Transportation System (ITS) could have particular benefit. Southern California suffers from extreme traffic congestion, limited room for expanding transportation facilities, and above-average air pollution levels. The Southern California Priority Corridor is one of the most populated, traveled, and visited regions in the country, and consists of four adjoining regions:

- ▶ Los Angeles/Ventura
- ▶ Orange County
- ▶ San Diego County
- ▶ Inland Empire (San Bernardino and Riverside Counties).

The ITS Showcase Program is one of several programs that have been implemented in Southern California's Priority Corridor to help aid mobility and mitigate traffic congestion and its associated environmental impacts. The Showcase Program consists of 17 ITS projects that collectively form a corridor-wide intermodal transportation management and information network between Los Angeles, Orange County, San Diego, and the Inland Empire. Each Showcase project deploys a piece of this corridor-wide ITS network, including regional Advanced Traveler Information Systems (ATIS), regional Advanced Transportation

Management Systems (ATMS), and regional and interregional communications infrastructure. Eleven of the projects are regional in nature, while the remaining six are Corridor-wide. The projects are listed in the table below.

PROJECT	DESCRIPTION
<i>Corridor-wide Projects (6)</i>	
Scoping & Design (Showcase Kernel)	Designs and implements four “Kernel” servers that help manage the interregional Showcase Network. One Showcase Kernel will be installed in each of the four Southern California Caltrans Districts.
Strategic Planning/System Integration (CWSPP)	Works to ensure that the systems of the Priority Corridor are interoperable and sustainable by developing a Configuration Management process.
CWATIS	Will provide Concept of Operations (ConOps), System Requirements and High Level Design for an Integrated Workstation (IWS).
CWATMS	Intended to build on the high-level planning efforts of the CWATIS project and develop the IWS.
Interregional Rideshare Database	Links San Diego's transit database with the transit database at Southern California Association of Governments (SCAG) in order to make SCAG's transit based Itinerary Planning tool more robust. The change will broaden the system's coverage from the LA/Orange County area to include San Diego as well.
CWCVO	Primarily intended for Commercial Vehicle Operations (CVO), the Showcase portion of CWCVO develops a server that fuses transportation data and provides an interface for partner Information Service Providers (ISPs) to access it for value-added redistribution.
<i>San Diego Regional Projects (5)</i>	
IMTMS/C	Optimizes and coordinates freeway and surface street operations with public and private transportation systems by integration of intermodal transportation information, and intermodal transportation management systems. Creates an ITS network for the San Diego region.
InterCAD	Improves incident management by linking the Computer-Aided Dispatch (CAD) systems of law enforcement and emergency response agencies in San Diego.
Mission Valley ATMIS	Optimizes traffic and transit operations in the vicinity of Qualcomm Stadium. The project coordinates with the IMTMC/S project.
Transit Management System (RAVL)	Installs Automatic Vehicle Locator (AVL) on San Diego Transit buses, as well as provides traffic signal priority at a number of downtown intersections.
Traffic Signal Integration (RAMS)	Integrates remote management of traffic signals across multiple jurisdictions in San Diego County.
<i>Los Angeles/Ventura Regional Projects (3)</i>	
IMAJINE	Creates an integrated network comprising four transportation management systems in Los Angeles County: Caltrans District 7 freeway management system, Los Angeles County Metropolitan Transit Authority (LACMTA) fixed route transit database, Access Services Inc. (ASI) demand-based paratransit services, and the City of South Gate arterial traffic signal control system.
Integrated Mode Shift	Provides transit-related traveler information in the form of trip itineraries. Also provides driving directions for automobile trips.
LA/Ventura ATIS	Implements an ATIS for LA County and some Ventura County commuters. In the future, the system may also bundle public data from various sources and make it available to ISPs.

<i>Orange County Regional Projects (2)</i>	
TravelTIP	Fuses data from multiple jurisdictions throughout Orange County and disseminates it to travelers via a website, a Highway Advisory Telephone (HAT) system, and three kiosks.
OCMDI	Extends the dissemination of traveler information in Orange County by providing data to private sector ISPs through a non-profit data broker. The data broker is called the Traveler Advisory News Network (TANN). TANN's goal is to be the single interface for traveler information in California. TANN establishes connections with public and private data sources, and then acts as a broker to provide data and/or information services to ISPs and other media outlets.
<i>Inland Empire Regional Projects (1)</i>	
Fontana-Ontario ATMIS	Built a Traffic Management Center (TMC) for the City of Fontana and a regional ATIS to help manage traffic from sources such as the Ontario Convention Center, Ontario Mills Mall, Ontario International Airport and the California Speedway in Fontana. Additionally, the project integrates the new TMC with the Showcase Network via the Inland Empire Kernel located at Caltrans District 8.

The Showcase Evaluation studied each of these 17 projects, and a project evaluation report has been prepared for each one.

This cross-cutting report summarizes the cumulative knowledge gained over all of the projects with regards to institutional impacts.

Evaluation Findings, Conclusions, and Recommendations

Impacts to Procedures and Policies

Some projects raise new issues, which require new policies and procedures to be formed. The San Diego Mission Valley ATMIS project, which integrates traffic management functions between the Caltrans District 11 TMC, the City of San Diego TMC, and the Qualcomm Stadium Event Management Center (EMC) during events at the stadium, developed an *Event Transportation Management and Operations Procedure* (ETMOP). This document describes how the ATMIS is to be used by defining the roles and responsibilities of the three partner agencies, including guidance on the shared use of field devices such as cameras and CMS. By adhering to the ETMOP, operators who are new or unfamiliar with the system can be confident that they are using the system as intended and minimizing agency liability and risk.

Impacts to Staffing, Skill Levels and Training

The Showcase projects caused little or no impact to staffing, skill level, or training requirements. The larger agencies that already have fully-staffed TMCs simply added the new systems to the existing management tools and applications that the operators have in front of them. None of the Showcase systems replaced or helped discontinue any legacy systems.

The smaller agencies (typically without full-time staffed TMCs) rely on systems that run autonomously and perform the majority of their functions without much human intervention. With regards to traveler information systems, the smaller agencies tend to post incident advisories only in major cases, and then only when someone is available to do so. In some cases, these agencies assign the duty of entering incident information to student interns, with oversight from a full-time traffic engineer.

Impacts of Emerging Standards and a single, high-level design

One of the Showcase Program's greatest achievements was the development of its own interface standards for the entire Southern California Priority Corridor. The Showcase systems' software is based on an object-oriented design that utilizes a number of standard classes, including a Control Center object, Vehicle Detector Station (VDS) object, CCTV camera object, etc. The Common Object Request Broker Architecture (CORBA) is used to make objects at one center accessible from another center. The Showcase standard describes these objects and their interfaces using class diagrams and CORBA's Interface Definition Language (IDL).

Although the Showcase Architecture has an "open" and non-proprietary system design, there is controversy over the accuracy and completeness of the system documentation. Possession and understanding of the complete object definitions and IDL is necessary, but not necessarily sufficient, to enable the future implementation and addition of new centers to the Showcase Network. Many of these object definitions and IDL are contained in various design documents for the regional projects and the Kernel, but no review has been done by the Priority Corridor to consolidate the information and verify its accuracy and completeness. Some developers contend

that the documentation is not accurate or complete because it does not describe the systems “as built.” There is also concern over the absence of supporting text and “sequence diagrams” to describe how certain objects should interact and the order in which they must be utilized in order to accomplish certain tasks.

Impacts to local planning, policy development, and the mainstreaming of ITS

The Showcase Program provided seed funding for the Traveler Advisory News Network (TANN), a semi-private traveler information provider and data broker. The Southern California Association of Governments (SCAG) helped create TANN to support and streamline the traveler information market in Southern California. TANN has been successful in increasing the distribution of traveler information by providing it to established media outlets such as television stations and local area news websites. TANN reports that “page views” of its maps has tripled to 3 million per month (nationwide, but mostly in Southern California) in the last 18 months. This was aided a great deal by its partnership with the ABC television affiliate in Los Angeles.

Perhaps more importantly, the Showcase Program creates an institutional foundation that helps to mainstream ITS in the Southern California Priority Corridor. The Priority Corridor Steering Committee is a unique body that draws together agencies from across all of Southern California to address transportation issues. No other body in the State of California brings together so many agencies and stakeholders. As the Showcase Program comes to completion, this body will transition from being a Steering Committee and continue to meet as the Southern California ITS Forum.

1 Introduction

1.1 Purpose and Scope of this Report

As required by federal law, all ITS programs that receive federal funding must undergo an evaluation to help assess the costs and benefits of ITS. For the Showcase Program, this includes:

- ▶ 17 individual project evaluation reports that each address:
 - ✓ System Performance
 - ✓ Costs
 - ✓ Institutional Impacts
 - ✓ Transportation and Traveler Information Management
 - ✓ Transportation System Impacts

- ▶ 5 cross-cutting evaluation reports that aggregate data and lessons learned from across the individual projects for each of the five topic areas listed above.

- ▶ 1 Summary Evaluation Report to summarize the cumulative knowledge and lessons learned from the Showcase Program.

The complete collection of reports produced by the Showcase Evaluation is listed below.

Document Type/Title	Date	Document Number
17 Individual Project Evaluation Reports		
Corridor-wide ATIS Project Report	7/16/2003	65A0030/0033
Corridor-wide ATMS Project Report	10/28/2004	65A0030/0049
Corridor-wide CVO Project Report	10/29/2004	65A0030/0051
Corridor-wide Rideshare Project Report	11/1/2004	65A0030/0048
Corridor-wide Strategic Planning Project Report	10/29/2002	65A0030/0028
Fontana-Ontario ATMIS Project Report	11/30/2004	65A0030/0047
IMAJINE Project Report	3/17/2003	65A0030/0029
IMTMC Project Report	11/24/2004	65A0030/0054
InterCAD Project Report	4/2/2003	65A0030/0030
Kernel Project Report	5/30/2003	65A0030/0031
LA-Ventura ATIS Project Report	3/15/2004	65A0030/0038
Mission Valley ATMIS Project Report	11/12/2004	65A0030/0050
Mode Shift Project Report	10/28/2004	65A0030/0052
OCMDI Project Report	2/20/2004	65A0030/0040
Traffic Signal Integration (RAMS) Project Report	11/23/2004	65A0030/0055
Transit Mgt System (RAVL) Project Report	11/30/2004	65A0030/0053
TravelTIP Project Report	2/16/2004	65A0030/0036
5 Cross-Cutting Evaluation Reports		
System Performance Cross-Cutting Report	11/30/2004	65A0030/0056
Costs Cross-Cutting Report	11/30/2004	65A0030/0057
Institutional Impacts Cross-Cutting Report	11/30/2004	65A0030/0058
Information Management Cross-Cutting Report	11/30/2004	65A0030/0059
Transportation System Impacts Cross-Cutting Report	11/30/2004	65A0030/0060
Final Summary Evaluation Report		
Showcase Program Evaluation Summary Report	11/30/2004	65A0030/0061

The Institutional Issues and Impacts Evaluation assesses the extent to which the Showcase Program impacted each agency’s administrative choices, policies and operations. The evaluation looks at changes in staffing, planning, and the region’s ITS market. The Evaluation relies on both quantitative and qualitative data.

The Institutional Issues and Impacts Cross-cutting Evaluation aggregates and summarizes information from the individual Showcase projects that have been completed to-date. More specifically, this evaluation aggregates and summarizes information from across the individual Showcase projects with specific regards to Evaluation Goal 3, which includes the following supporting evaluation objectives:

Objective 3.1 – Identify the impact of Showcase Program on the Operations and Maintenance (O&M) procedures and policies of the participating transportation agencies.

Objective 3.2 – Identify the impact of Showcase Program on staffing/skill levels and training.

Objective 3.3 – Document the impacts of emerging standards and a single high-level design concept on the competitive environment.

Objective 3.4 – Document the participation by the private sector in the management of transportation and traveler information.

Objective 3.5 – Assess the impact of Showcase Program on local planning processes, policy development, and mainstreaming of ITS projects.

These objectives have been refined to the set of evaluation measures and data elements found in Exhibit 1. Although some additional clarifying information may be gathered, this cross-cutting evaluation will otherwise rely on data that has already been collected as part of the individual project evaluations.

Exhibit 1 – Basis of the Institutional Issues and Impacts Evaluation

Objective 3.1 Identify the impact of Showcase Program on the Operations and Maintenance (O&M) procedures and policies of the participating transportation agencies

Measures	Supporting Data
3.1.1 Change in O&M procedures of each agency over the life of the project	<ul style="list-style-type: none"> • Documentation of changes in O&M procedures • Observations

Objective 3.2 Identify the impact of Showcase Program on staffing/skill levels and training

Measures	Supporting Data
3.2.1 Number of O&M Staff Changes Required and/or Requested	<ul style="list-style-type: none"> • Number of new hires • Turnover rate • Changes to individuals' job responsibilities
3.2.2 Estimated and/or Actual System Training Time and Costs	<ul style="list-style-type: none"> • Hours specified for staff training • Actual hours conducting staff training
3.2.3 Number of Additional Job Classifications Created/Deleted	<ul style="list-style-type: none"> • Number of additional job classifications created
3.2.4 Change in Employee Turnover Rate	<ul style="list-style-type: none"> • Number of new hires • Number of people leaving

Objective 3.3 Document the impacts of emerging standards and a single high-level design concept on the competitive environment

Measures	Supporting Data
3.3.1 "Openness of the system design/architecture	<ul style="list-style-type: none"> • Documented proprietary constraints • Adequacy and availability of system documentation
3.3.2 Document number of standards implemented	<ul style="list-style-type: none"> • Number of standards implemented

Objective 3.4 Document the participation by the private sector in the management of transportation and traveler information

Measures	Supporting Data
3.4.1 Number of private companies involved in Showcase transportation and traveler information management	<ul style="list-style-type: none"> • Number of different companies initially involved

Objective 3.5 Assess the impact of Showcase Program on local planning processes, policy development, and mainstreaming of ITS projects

Measures	Supporting Data
3.5.1 Impact of the Showcase program on the local planning process, as perceived by Caltrans, SCAG and LACMTA planners	<ul style="list-style-type: none"> • Documentable changes in local transportation plans
3.5.2 Impact of both agency and private sector policy decisions and institutional issues on Showcase program projects, deployment plans, and mainstreaming of ITS projects	<ul style="list-style-type: none"> • Document policy decisions and institutional issues related to the development and deployment of the Showcase project

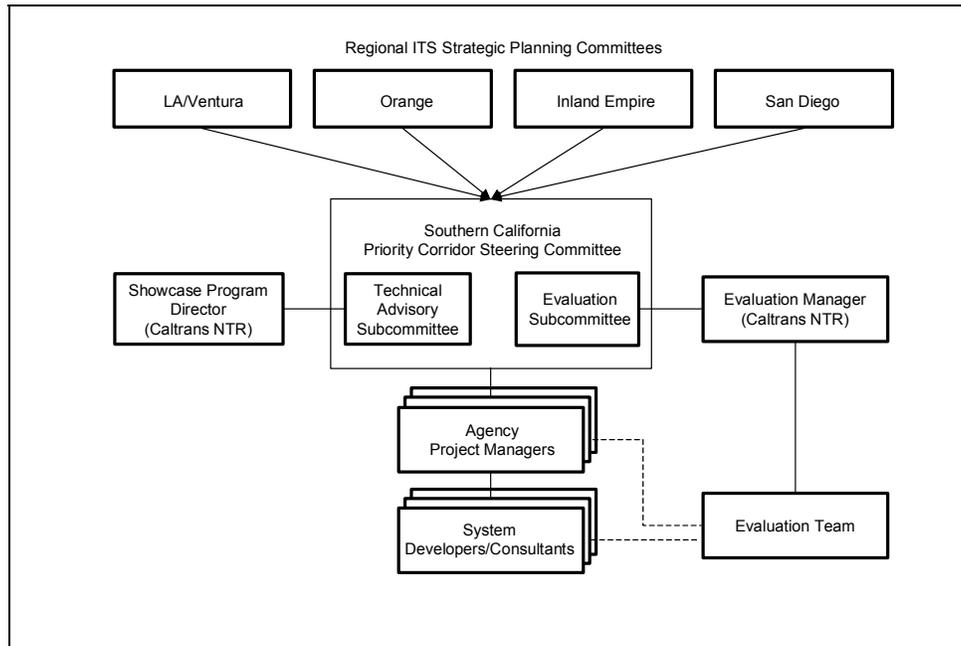
1.2 Evaluation Design and Approach

The Showcase Program’s Evaluation Design is based on a set of evaluation Goals and supporting Objectives and Measures that were developed by the Evaluation Team in partnership with federal, state and local stakeholders (shown in Exhibit 2), and documented in the “Showcase Program Evaluation Approach” in 1998. Each individual Showcase project is evaluated based on an applicable subset of these goals, objectives, and measures in order to help ensure that summary evaluation results can be aggregated from across the multiple Showcase project evaluations. The Showcase Program’s five evaluation Goals include:

- ▶ Evaluate System Performance
- ▶ Evaluate Costs
- ▶ Evaluate Institutional Issues and Impact
- ▶ Evaluate the Use and Management of Transportation/Traveler Information (i.e., Evaluate User Acceptance)
- ▶ Evaluate Transportation System Impacts.

The evaluation is responsive to the needs and suggestions of the Priority Corridor Steering Committee and Evaluation Subcommittee. As shown in Exhibit 2, both groups are comprised of stakeholders from the federal, state, and local levels.

Exhibit 2 – Management Structure and Organization of the Showcase Program



The Steering Committee's member agencies reflect wide representation from the Southern California Priority Corridor in terms of federal and state highway agencies, public safety, cities and counties, transit, air quality and regional planning entities, including:

- ▶ California Highway Patrol (CHP)
- ▶ Caltrans, Division of Traffic Operations (headquarters)*
- ▶ Caltrans, District 7*
- ▶ Caltrans, District 8*
- ▶ Caltrans, District 11*
- ▶ Caltrans, District 12
- ▶ City of Irvine*
- ▶ City of Los Angeles Department of Transportation (LADOT)
- ▶ City of San Diego
- ▶ Federal Highway Administration (FHWA)*
- ▶ Federal Transit Administration (FTA)
- ▶ Los Angeles County Metropolitan Transportation Authority (MTA)
- ▶ Orange County Transportation Authority (OCTA)
- ▶ Riverside County Transportation Commission (RCTC)
- ▶ San Bernardino Association of Governments (SANBAG)
- ▶ San Diego Association of Governments (SANDAG)
- ▶ South Coast Air Quality Management District (SCAQMD)
- ▶ SCAG

* Indicates an Evaluation Subcommittee member

The Evaluation Subcommittee consists of Caltrans' Evaluation Contract Manager and representatives from FHWA, Caltrans headquarters, and each of the four regions of the Priority Corridor. The Evaluation Subcommittee reviews evaluation issues and products. All draft evaluation documents are submitted to the Evaluation Subcommittee for review and comment before being finalized.

1.3 Privacy Considerations

Some of the information acquired in the interview and discussion process could be considered sensitive and has been characterized in this report without attribution. The Evaluation Team has taken precautions to safeguard responses and maintain their confidentiality. Wherever possible, interview responses have been aggregated during analysis such that individual responses have become part of a larger aggregate response. The names of individuals and directly attributable quotes have not been used in this document unless the person has reviewed and expressly consented to its use.

1.4 Constraints & Assumptions

The projects that were used to develop this report include:

- ▶ CWATIS
- ▶ CWATMS
- ▶ CWCVO
- ▶ CW Rideshare
- ▶ CWSPP
- ▶ Fontana-Ontario ATMIS
- ▶ IMAJINE
- ▶ IMTMS/C
- ▶ InterCAD
- ▶ Kernel
- ▶ LA/Ventura ATIS
- ▶ Mission Valley ATMIS
- ▶ Mode Shift
- ▶ OCMDI
- ▶ RAMS
- ▶ RAVL
- ▶ TravelTIP

1.5 Background

1.5.1 The Southern California Priority Corridor

In 1993, the U.S. Department of Transportation designated Southern California as one of four Priority Corridors in which Intelligent Transportation Systems (ITS) could have particular benefit. The Southern California Priority Corridor, illustrated in Exhibit 3, is one of the most populated, traveled, and visited regions in the country. Roughly two-thirds of the state's population – about 20 million people – resides in or around the Southern California Priority Corridor. It suffers from extreme traffic congestion, limited room for expanding transportation facilities, and above-average air pollution levels.

The Southern California Priority Corridor consists of four distinct regions that correspond with the four Southern California Caltrans districts:

- ▶ Los Angeles/Ventura (Caltrans District 7)
- ▶ Orange County (Caltrans District 12)
- ▶ San Diego (Caltrans District 11)
- ▶ Inland Empire (Caltrans District 8)

Exhibit 3 – The Southern California Priority Corridor and Vicinity

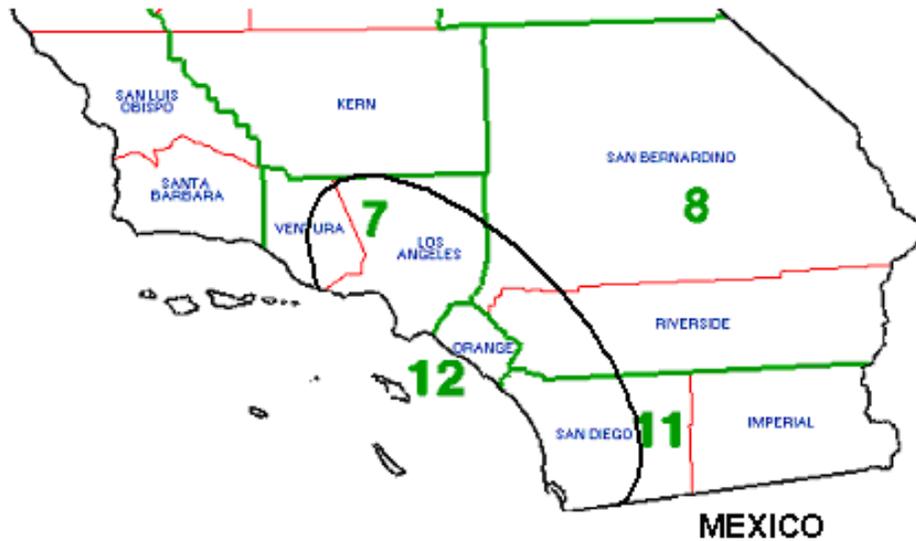


Exhibit 4 – Population and Number of Registered Vehicles by County

County	Population ⁱ (as of 1/1/2003)	Registered Vehicles ^{ii*} (as of 12/31/2002)	Caltrans District
Los Angeles	10 million	6.7 million	7
Orange	3 million	2.2 million	12
San Diego	3 million	2.3 million	11
San Bernardino	1.8 million	1.3 million	8
Riverside	1.7 million	1.2 million	8
Ventura	0.8 million	0.7 million	7
Imperial	0.15 million	0.1 million	11
Total	20.5 million	14.5 million	

*Includes autos, trucks, and motorcycles. Trailers not included.

1.5.2 The Southern California Priority Corridor’s ITS Showcase Program

The ITS Showcase Program is one of several programs that have been implemented in Southern California’s Priority Corridor to help aid mobility and mitigate traffic congestion and its associated environmental impacts.

The Southern California ITS Showcase Program consists of 17 individual ITS projects that collectively form a corridor-wide intermodal transportation management and information network between Los Angeles, Orange County, San Diego, and the Inland Empire. Eleven of the projects are regional in nature, while the remaining six are corridor-wide in scope. The 17 Showcase projects are listed by region in Exhibit 5. Eight of the projects were fast-tracked and

designated "Early Start" projects because of their importance as base infrastructure and potential to act as role models for the rest of the Showcase Program.

Exhibit 5 – The 17 Showcase Projects and their Status as of September 2004

Project	RFP Issued	Contractor Selected	Contract Executed	Project Underway	Project Complete
Corridor-wide					
Scoping & High Level Design (Kernel)*	✓	✓	✓	✓	✓
Strategic Planning/Systems Integration	✓	✓	✓	✓	✓
CVO☞					
ATIS	✓	✓	✓	✓	✓
ATMS☞					
Rideshare	✓	✓	✓	✓	✓
Los Angeles Region					
IMAJINE*	✓	✓	✓	✓	✓
Mode Shift*	✓	✓	✓	✓	✓
LA ATIS	✓	✓	✓	✓	✓
Inland Empire Region					
Fontana-Ontario ATMIS	✓	✓	✓	✓	✓
Orange County Region					
TravelTIP*	✓	✓	✓	✓	✓
OCMDI	✓	✓	✓	✓	✓
San Diego Region					
InterCAD*	✓	✓	✓	✓	✓
Mission Valley ATMIS*	✓	✓	✓	✓	✓
IMTMS/C (ATMSi)*	✓	✓	✓	✓	
Traffic Signal Integration (RAMS)	✓	✓	✓	✓	
Transit Management System*	✓	✓	✓	✓	

* Indicates an "Early Start" project.

☞ CWCVO and CWATMS do not yet have approved workplans.

Exhibit 6 – Projects Contributing to Cross-Cutting Evaluation

ITS Project	Cross-Cutting Evaluation/Objectives																			
	System Performance			Cost		Institutional Impacts & Issues					Transportation & Traveler Info Mgt.			Transportation System Impacts						
	System Development Process	System Reliability	Showcase Program Integration	Estimate Costs Associated w/Program's Philosophy	Estimate O&M Costs	Impact on O&M Procedures & Policies	Impact on Staffing/Skill Levels and Training	Impacts of Emerging Standards	Participation by Private Sector in Mgmt of Trans and Traveler Info	Impact on Local Planning Process, Policy Dev, & Mainstreaming of ITS Projects	Utilization of Regional/Interregional Information Integration	Utilization of Regional/Interregional Information & Traveler Information	Extent of Traveler Information Disseminated and Used by Travelers	Mode Shift & Intermodal Impacts	Safety Related Impacts	Impact on Traffic Congestion	Environmental Impacts	Impact on Transit Operations	Impact on Commercial Vehicle Operations	
1.1	1.2	1.3	2.1	2.2	3.1	3.2	3.3	3.4	3.5	4.1	4.2	4.3	5.1	5.2	5.3	5.4	5.5	5.6		
CWATIS				X																
CWATMS				X																
CWCVO				X																
CW Rideshare	X			X						X	X									
CWSPP				X		X			X											
Fontana-Ontario	X	X	X	X	X	X	X		X		X	X	X							
IMAJINE	X		X	X	X		X	X			X	X								
IMTMC				X							X	X								
InterCAD	X			X	X							X								
Kernel	X		X	X	X			X			X									
LA/Ventura ATIS	X			X	X			X			X		X							
Mission Valley ATIS	X			X	X	X			X	X	X	X								
Mode Shift	X			X	X							X								
OCMDI	X	X		X	X				X	X		X								
RAMS				X																
RAVL				X																
TravelTIP	X		X	X	X	X	X	X			X	X	X	X	X			X		

2 Evaluation Findings

This chapter provides the Showcase Program’s aggregated findings regarding institutional impacts broken out by evaluation objective.

Objective 3.1 – Impacts to O&M Procedures and Agency Policies

The table below highlights the impacts to agency operations and maintenance procedures that were observed during the Showcase Program. Each of these is explained in more detail throughout this section.

Project	Observation	Lesson Learned
Corridor-wide Strategic Planning Project	Corridor-wide Configuration Management (CM) will not work within the Priority Corridor’s regional planning and funding framework.	CM of regional systems shall be handled by the respective regional agencies. CM of inter-regional infrastructure shall be administered by Caltrans.
Fontana-Ontario ATMIS	An assistant traffic engineer was reassigned from making signal adjustments in the field to making them from the TMC.	The TMC provides significant cost savings on signal maintenance contracts.
Mission Valley ATMIS	The project partners realized that they needed operational guidelines for how and when to use the system.	The project developed the Event Traffic Management Operations Procedures (ETMOP).
TravelTIP	Caltrans D12 accepted the responsibility of hosting the TravelTIP servers on behalf of OCTA because it had more resources to handle the technology. OCTA subsidizes ITS O&M costs for smaller agencies in the county that otherwise cannot afford it.	More agencies are willing to participate in ITS projects when someone else pays, but their commitment may not be as high.

There are two ways to conceptualize the integrated Showcase Network of systems: 1) as a centrally-managed, tightly-integrated unit that reaches out to several agency nodes, or 2) as a loose confederation of independent systems working together under a common framework. Within the Showcase Program, each view had its supporters.

The Configuration Management Plan (CMP) developed under the CWSPP approached configuration management activities – archival of software source code and documentation, version control, and the tracking of changes – from the former point of view, so it was unclear how the partner agencies would mainstream and continue to support the CM activities beyond the federally subsidized Showcase Program. Each of the four regions within the Priority Corridor is responsible for its own transportation

planning and funding, and the CMP's recommendation to establish a central body to handle CM for the entire Priority Corridor conflicted with this multi-regional framework.

Since the CMP was developed under the management of Caltrans DRI, the Steering Committee determined that the reach of the plan should be scaled back to include only the Corridor-wide components that currently reside with Caltrans, such as the Kernels and inter-regional network. Systems procured by the regional partners would be managed by the respective agencies under their existing policies, unless some other arrangement is made. In this way, the systems would become mainstreamed into the agencies' existing O&M frameworks.

In response to the efforts of the CWSPP, the Priority Corridor Steering Committee formally requested that Caltrans accept responsibility for O&M of the Kernels and the inter-regional "backbone" network (currently provided by the Caltrans WAN). A whitepaper estimating the O&M costs of the Kernels and network was prepared and submitted to Caltrans management. Although the equipment is currently installed at Caltrans facilities, a formal decision has not yet been made whether Caltrans will accept this responsibility for the long-term.

On a regional level, several specific impacts to O&M procedures and policies were observed during the Showcase Program.

As a result of the construction of the new Fontana TMC, the City of Fontana reassigned one of its Assistant Traffic Engineers from conducting signal and traffic operations work in the field to performing similar duties from the TMC. He is in the TMC daily to monitor traffic conditions and check and post events to the traveler information system.

Traffic management is provided by the Fontana TMC Monday through Friday, 9am-5pm. Outside these hours, traffic management functions are handled remotely from the Fontana Police Dispatch Center by the Fontana Police Department. In an interview, the Fontana PD Dispatch Center indicated that it was still getting accustomed to the new system, but the ability to view incidents on CCTV in order to assess severity and respond more appropriately seemed to be a key benefit.

Another operational benefit of the TMC is that it reduces the labor cost on some of the City's traffic consultant contracts. For example, Fontana has contracts with traffic signal maintenance companies to update timing plans and make other adjustments. Many functions that used to require a call to one of these consultants can now be done from the TMC. Although Fontana reports that it is paying about the same for its signal maintenance consultant, the City is now getting more for its money. The number of signals being maintained has increased from 83 to about 100 (and will rise to 120 by 2004/05), resulting in a near-term reduction in cost per signal being maintained of 17%.

Overall, by having the TMC and reducing the amount of fuel and time necessary to go into the field, the City estimates a 20% cost savings over their previous configuration of centralized master controllers and, perhaps, a savings of 50% over their older

configuration in which traffic signal field masters were more distributed throughout the City.

To help correct any ‘bugs’ that might arise, the City has contracted the system developer, Iteris, to provide ongoing system maintenance support at a cost of roughly \$10,000-\$15,000 per year.

Although existing agency policies are often difficult to change, new systems often raise new issues that require new policies and procedures. A good example is the Mission Valley ATMIS project, which integrates event traffic management functions at Caltrans, City of San Diego, and Qualcomm Stadium, a multi-purpose football and baseball stadium located in Mission Valley approximately 6 miles east of downtown San Diego. As a part of the Mission Valley ATMIS project, the project team developed the Event Traffic Management and Operations Procedure (ETMOP) to provide guidance to the partner agencies on when and how to use the system and its resources. The ETMOP provides a basis for the ongoing, shared operation of the ATMIS and field devices through its *Field Device Sharing Plan* (Appendix A to the ETMOP) and its *Typical Stadium Traffic Management Scenarios and Event Management Interventions* (Appendix B). More specifically, Appendix B of the document describes five typical Qualcomm Stadium event scenarios and provides guidance regarding which agency should initiate a traffic management action, how communication will be established between other area traffic management agencies, and how those agencies will participate in supporting or continuing that traffic management activity.

Another example of an impact to O&M policies involves the Orange County Transportation Authority’s (OCTA) TravelTIP system, which provides traveler information to local commuters. TravelTIP is unique in that it provides roadway conditions for highways and arterials in nearly every jurisdiction in Orange County. Traffic and incident data from local jurisdictions and Caltrans are fused at a central server and made available via the Internet and a Highway Advisory Telephone (HAT) service. Although OCTA sponsored, managed and helped fund the project, the agency does not have the technical resources to host and maintain the central system. As a result, in 2001, OCTA signed an MOU with Caltrans to host the TravelTIP system. Caltrans District 12 already operates and maintains similar equipment in its TMC and has the knowledgeable staff to operate and maintain it.

Under the terms of the MOU, Caltrans District 12 hosts the TravelTIP hardware (application server, web servers, and HAT server) and provides limited maintenance support (re-booting hardware, if necessary). All other responsibilities, including maintenance and providing the funding for operations (electricity, communications, etc.), rest with the OCTA.

Objective 3.2 – Impacts to Staffing, Skill Levels and Training Requirements

The table below highlights the impacts to agency staffing, skill levels, and training that were observed during the Showcase Program. Each of these is explained in more detail throughout this section.

Project	Observation	Lesson Learned
Fontana-Ontario ATMIS	An assistant traffic engineer was reassigned from making signal adjustments in the field to making them from the TMC.	The TMC provides significant cost savings on signal maintenance contracts.
IMAJINE	Due to acknowledged limits on staff resources, the system was designed to run with minimal human intervention.	The system could be run with minimal human intervention.
TravelTIP	Smaller agencies make use of student interns to input advisory data.	Interns are an effective, low-cost way to post advisory information.

The Showcase projects caused little or no impact to staffing, skill level, or training requirements. Most of the systems developed by the Showcase Program – particularly ATISs – run autonomously by pulling loop detector data from local systems, processing it, and then displaying it on a web page or providing it via synthesized voice on the telephone. Smaller agencies (typically without full-time staffed TMCs) tend to input incident advisories only in major cases, and then only when someone is available to do so. In some cases, these agencies assign the duty of entering incident information to student interns, with oversight from a full-time traffic engineer.

Larger agencies that have fully-staffed TMCs add the new systems to the desktops of tools and applications that the operators already have in front of them. None of the Showcase systems replaced any discontinued legacy systems.

Only in the case of the new Fontana TMC were the duties of a full-time staff member significantly changed. As stated in the previous section, the City of Fontana reassigned one of its Assistant Traffic Engineers from conducting signal and traffic operations work in the field to performing similar duties from the new TMC. He is in the TMC daily to monitor traffic conditions and check and post events to the traveler information system.

There were at least a couple of instances in which agency staff turnover threatened the use and acceptance of a Showcase system. Although system training was generally provided to agency staff as part of each Showcase project, a few of the trained operators later changed positions or left their respective agencies. When these changes happen so shortly after a project’s completion, there is little or no time to orient others about the new system, and the system has a harder time becoming “institutionalized.” In these cases, the staff replacements entered the job unaware of the new system’s purpose or

capabilities, and, in fact, were reluctant to even touch the equipment out of fear of “messaging it up.”

Of course, agencies are already working hard to reduce turnover, so only a few recommendations can be made in regards to minimizing such impacts:

- ▶ If at all possible, an agency should provide multiple representatives to a project so as not to be dependent on any one individual.
- ▶ The need to champion a concept or system does not end with the System Acceptance Test. Once the system is installed, the project team must then redirect focus to showcasing it to operators, management, and the general public. Continued participation and oversight by the project sponsor well beyond the project end date may be needed to help encourage the other participating agencies to use the system as it was intended.

Objective 3.3 – The Impacts of Emerging Standards

The table below highlights the impacts of emerging standards that were observed during the Showcase Program. Each of these is explained in more detail throughout this section.

Project	Observation	Lesson Learned
IMAJINE	Contributed additional interface definitions	Helped make the collection of interface definitions more robust, but exemplified the need for a Program-wide system integrator to organize the information in one place.
Kernel	Developed the Showcase Architecture and core interface definitions	The Priority Corridor must support the ongoing maintenance, revision and promulgation of the standard
LA-Ventura ATIS	Built on and extended the IMAJINE system	Development and refinement of a software product is an ongoing process that is not limited to a single project.
TravelTIP	Contributed additional interface definitions	Helped make the collection of interface definitions more robust, but exemplified the need for a Program-wide system integrator to organize the information in one place.

Even though most of the Showcase’s projects began in the late 1990’s before any national ITS standards had been finalized, the Program utilized national standards where possible.

Instead, one of the Showcase Program’s greatest achievements was the development of its own standards for the entire Southern California Priority Corridor. The Showcase systems’ software is based on an object-oriented design that utilizes a number of standard classes, including a Control Center object, Vehicle Detector Station (VDS) object, CCTV camera object, etc. The Common Object Request Broker Architecture (CORBA) is used to make objects at one center accessible from another center. The Showcase standard describes these objects and their interfaces using class diagrams and CORBA’s Interface Definition Language (IDL).

Although CORBA is still a very viable technology, work is currently underway in Southern California to expand the Showcase standard to include Extensible Markup Language (XML).

Through the work being done by the Showcase Program’s contractors in other parts of the country, it is possible that the “Showcase Standard” could evolve into a de facto nationwide standard.

Objective 3.4 – Impacts to the Competitive Environment and Participation by the Private Sector

The table below highlights the impacts to the competitive environment that were observed during the Showcase Program. Each of these is explained in more detail throughout this section.

Project	Observation	Lesson Learned
Fontana-Ontario ATMIS	Provides freeway and arterial-level traveler information for free to the public via Internet and cable TV.	These services need to be marketed in order to gain public acceptance.
OCMDI	Provided seed funding for the Traveler Advisory News Network (TANN)	TANN is better able to adjust to changing market needs, but has yet to make a profit.

Impact of “open” standards and documentation

Although the Showcase Architecture has an “open” and non-proprietary system design, there is controversy over the accuracy and completeness of the system documentation. The Showcase Architecture is based on standard object definitions and interfaces that are both documented and implemented by CORBA Interface Definition Language (IDL). Possession and understanding of the complete object definitions and IDL is necessary, but not necessarily sufficient, to enable the future implementation and addition of new centers to the Showcase Network. Many of these object definitions and IDL are contained in various design documents for the regional projects and the Kernel, but no review has been done by the Priority Corridor to consolidate the information and verify its accuracy and completeness. Some developers contend that the documentation is not accurate or complete because it does not describe the systems “as built.” There is also concern over the absence of supporting text and “sequence diagrams” to describe how certain objects should interact and the order in which they must be utilized in order to accomplish certain tasks.

Competition between private traveler information services and publicly provided traveler information services

At this time, the information collected by the Fontana-Ontario ATMIS is distributed free of charge on a publicly supported website and public access cable TV channel. Although the Caltrans District 8 website has already been providing color-coded traffic flowmaps and camera images for the region free of charge, the Fontana-Ontario ATMIS is the first free public service in the area to provide traveler information down to the level of local arterials. The ATMIS is also the only service in the Inland Empire to provide traveler information via cable TV.

The system competes with at least two commercial traveler information services:

- ▶ Sigalert.com – Provides a traveler information website with color-coded flowmap of local highways. Access to camera images and personalized traffic alerts via email are available only to paying subscribers.
- ▶ Traveler Advisory News Network (TANN) – Provides a traveler information website with color-coded flowmap of local highways. Many of TANN’s flowmaps are shown during local television news programs.

The Showcase Program provided seed funding for the Traveler Advisory News Network (TANN), a semi-private traveler information provider and data broker.

The Southern California Association of Governments (SCAG) helped create TANN to support and streamline the traveler information market in Southern California. TANN’s original purpose was to serve as a one-stop clearinghouse and data broker of transportation data between the various public agencies and the private sector Information Service Providers (ISPs) and Value-Added Resellers (VARs). Up to this point, each agency would have to deal independently with the multitude of ISPs and support several data connections for providing its much-sought-after data. TANN helps the public agencies by eliminating their multiple connections to various ISPs and replacing them with a single connection to TANN, which also negotiates the contractual and financial terms of the data exchange.

TANN utilized a profit-sharing program to aid and help support the traveler information market it served. Its profit-sharing program rewarded ISP affiliates by sharing any profits generated through network advertising based on the number of “audience impressions” each ISP generates. This program encourages the expansion of advertising “impressions,” and served as an incentive for ISPs to carry TANN-generated ads.

However, since the TANN concept was initiated in 1996, a lot of changes have taken place in the marketplace. The advent of the Internet, wireless services, and low cost technology has had a dramatic impact, and many of the ISPs have changed as well. Some of the original companies – Roadirector, Fastline and CUE – went out of business. Maxwell Technology was acquired by SmartRoute Systems, which was subsequently purchased by Westwood One (owned by CBS) and merged with Metro Traffic and Shadow Traffic. Tele Atlas purchased ETAK, and TrafficStation came and went. During that time, TANN has evolved and – nearly eight years later – now focuses more on dealing with mass media affiliates than with start-up ISPs.

With regards to dealing with media affiliates, TANN reports that although the media market is very competitive, it only enters into limited exclusive agreements regarding withholding public data from other affiliates or ISPs. Although TANN may agree to provide its services exclusively to one media affiliate in a particular metropolitan market, this does not prevent it from making a similar deal to provide the service to a different

affiliate in another metropolitan market. For example, TANN may agree to provide its map only to the ABC affiliate in Los Angeles, but the agreement would only apply to that market and TANN would be free to negotiate similar deals with other media companies elsewhere (e.g., NBC, CBS or a cable television provider in San Francisco, Seattle, Chicago, etc.).

Today, a number of other private companies compete with TANN to provide a similar brokering and data/map publishing business. The companies joining TANN in the transportation information, data collection and distribution business are Iteris, Tele Atlas, Traffic.Com (Mobility Technology), SigAlert, Traffic411, MetroCommute, and TrafficCast.

Objective 3.5 – Impacts to Local Planning and the Mainstreaming of ITS

The table below highlights the impacts to local planning and the mainstreaming of ITS that were observed during the Showcase Program. Each of these is explained in more detail throughout this section.

Project	Observation	Lesson Learned
Corridor-wide Strategic Planning Project	Proposed Corridor-wide Configuration Management (CM) of the Showcase systems	Due to Intellectual Property Rights (IPR), each agency must administer its own CM
Mission Valley ATMIS	Developed the Event Traffic Management Operating Procedures (ETMOP) to guide agencies in using the system	Such a document is extremely useful in getting optimum use out of the system and alleviating liability concerns
OCMDI	Provided seed funding for the Traveler Advisory News Network (TANN)	TANN is better able to adjust to changing market needs, but has yet to make a profit

TANN helps bring traveler information into the homes of everyday commuters.

TANN has been successful in increasing the distribution of traveler information by providing it to established media outlets such as television stations and local area news websites. TANN reports that “page views” of its maps has tripled to 3 million per month (nationwide, but mostly in Southern California) in the last 18 months. This was aided a great deal by its partnership with the ABC television affiliate in Los Angeles.

The Showcase Program helped create both a physical and institutional foundation for further ITS development in Southern California.

Physically, one of the greatest accomplishments of the Showcase Program is its development of system interface standards for Southern California. Similar to the national effort on NTCIP, adoption of these standards will help promote interoperable systems that enable greater information sharing, improved agency coordination, and reduced costs over time. Furthermore, the deployment of the regional network and several new agency centers provides a foundation on which functions and services can be tested, analyzed, improved, and added.

Perhaps more importantly, the Showcase Program creates an institutional foundation that helps to mainstream ITS in the Southern California Priority Corridor. For example, the Priority Corridor Steering Committee is a unique body that draws together agencies from across all of Southern California to address transportation issues. No other body does that. As the Showcase Program comes to completion, this body will continue to meet as the Southern California ITS Forum.

Policies defining interagency coordination and shared control of field devices

The Mission Valley ATMIS project in San Diego developed the Event Traffic Management and Operations Procedure (ETMOP) for the ongoing, shared operation of the ATMIS and field devices. The document also describes five typical event scenarios for Qualcomm Stadium and provides guidance regarding which agency should initiate a traffic management action, how communication will be established between other local traffic management agencies, and how those agencies will participate in supporting or continuing that traffic management activity.

Regional Planning within the Priority Corridor

The Southern California Priority Corridor experimented with Corridor-wide configuration management in which system documentation and software source code from the Program would reside in a single, central clearinghouse. However, due to concerns over IPR and the Priority Corridor's region-based planning and funding structure, the Steering Committee determined that configuration management of regional ITS should be mainstreamed and handled by the respective regional partners.

This issue revealed a subtle, but important, perspective about the Priority Corridor. It reminded us all that the Priority Corridor consists of four autonomous regions working together, and that it is not a single unit. All other transportation planning and funding occurs at a regional level. With this in mind, the Showcase architecture had to be designed such that each region could independently plan, implement, operate, and maintain its own ITS, but still work together inter-regionally. The development of the Showcase interface standards allows the regional agencies to make decisions and act locally, while not compromising the goal of eventual Corridor-wide integration.

Public-Public partnerships and delegation of O&M responsibilities

Although OCTA managed and helped fund the TravelTIP project, the agency does not have the technical resources to host and maintain the central system. In 2001, OCTA signed an MOU with Caltrans District 12 for operations of the system.

Under the terms of the MOU, Caltrans District 12 hosts (provides space, electricity and network connection for) the TravelTIP hardware (application server, web servers, and HAT server) and provides only minor maintenance support (re-booting hardware, if necessary). All other responsibilities, including maintenance and providing the funding for operations (electricity, communications, etc.), rest with the OCTA.

Precedents such as these should help clear the way for future ITS advancements throughout Southern California.

Conclusions

This cross-cutting report aggregates and summarizes the cumulative knowledge gained from the Showcase Program projects with regards to institutional impacts. More specifically, this report addresses changes to institutional procedures and policies; impacts on staffing and training; the effect of emerging standards; and the impacts of ITS on the local planning process.

Impacts to Procedures and Policies

Some projects raise new issues, which require new policies and procedures to be formed. The San Diego Mission Valley ATMIS project, which integrates traffic management functions between the Caltrans District 11 TMC, the City of San Diego TMC, and the Qualcomm Stadium Event Management Center (EMC) during events at the stadium, developed an *Event Transportation Management and Operations Procedure (ETMOP)*. This document describes how the ATMIS is to be used by defining the roles and responsibilities of the three partner agencies, including guidance on the shared use of field devices such as cameras and CMS. By adhering to the ETMOP, operators who are new or unfamiliar with the system can be confident that they are using the system as intended and minimizing agency liability and risk.

Impacts to Staffing, Skill Levels and Training

The Showcase projects caused little or no impact to staffing, skill level, or training requirements. The larger agencies that already have fully-staffed TMCs simply added the new systems to the existing management tools and applications that the operators have in front of them. None of the Showcase systems replaced or helped discontinue any legacy systems.

The smaller agencies (typically without full-time staffed TMCs) rely on systems that run autonomously and perform the majority of their functions without much human intervention. With regards to traveler information systems, the smaller agencies tend to post incident advisories only in major cases, and then only when someone is available to do so. In some cases, these agencies assign the duty of entering incident information to student interns, with oversight from a full-time traffic engineer.

Impacts of Emerging Standards and a single, high-level design

One of the Showcase Program's greatest achievements was the development of its own interface standards for the entire Southern California Priority Corridor. The Showcase systems' software is based on an object-oriented design that utilizes a number of standard classes, including a Control Center object, Vehicle Detector Station (VDS) object, CCTV camera object, etc. The Common Object Request Broker Architecture (CORBA) is used to make objects at one center accessible from another center. The Showcase standard

describes these objects and their interfaces using class diagrams and CORBA's Interface Definition Language (IDL).

Although the Showcase Architecture has an "open" and non-proprietary system design, there is controversy over the accuracy and completeness of the system documentation. Possession and understanding of the complete object definitions and IDL is necessary, but not necessarily sufficient, to enable the future implementation and addition of new centers to the Showcase Network. Many of these object definitions and IDL are contained in various design documents for the regional projects and the Kernel, but no review has been done by the Priority Corridor to consolidate the information and verify its accuracy and completeness. Some developers contend that the documentation is not accurate or complete because it does not describe the systems "as built." There is also concern over the absence of supporting text and "sequence diagrams" to describe how certain objects should interact and the order in which they must be utilized in order to accomplish certain tasks.

Impacts to local planning, policy development, and the mainstreaming of ITS

The Showcase Program provided seed funding for the Traveler Advisory News Network (TANN), a semi-private traveler information provider and data broker. The Southern California Association of Governments (SCAG) helped create TANN to support and streamline the traveler information market in Southern California. TANN has been successful in increasing the distribution of traveler information by providing it to established media outlets such as television stations and local area news websites. TANN reports that "page views" of its maps has tripled to 3 million per month (nationwide, but mostly in Southern California) in the last 18 months. This was aided a great deal by its partnership with the ABC television affiliate in Los Angeles.

Perhaps more importantly, the Showcase Program creates an institutional foundation that helps to mainstream ITS in the Southern California Priority Corridor. The Priority Corridor Steering Committee is a unique body that draws together agencies from across all of Southern California to address transportation issues. No other body in the State of California brings together so many agencies and stakeholders. As the Showcase Program comes to completion, this body will transition from being a Steering Committee and continue to meet as the Southern California ITS Forum.

References

ⁱ California Statistical Abstract, Table B-4. California Department of Finance, Sacramento, CA. December 2003.

ⁱⁱ California Statistical Abstract, Table J-4. California Department of Finance, Sacramento, CA. December 2003.