



E.0 Executive Summary

E.1 ITS Overview

Intelligent Transportation Systems (ITS) can be defined as the application of technology to make smarter use of our transportation infrastructure. ITS deployments focus on providing enhanced management and information capabilities for transportation managers and the traveling public. Overall, ITS represents a viable and effective option in the “toolbox” of solutions to transportation problems in the San Joaquin Valley Region.

This document identifies and prioritizes ITS Projects for the San Joaquin Valley Intelligent Transportation System (ITS) Strategic Deployment Plan. These projects were prioritized through a development process that mapped the region’s needs to ITS market packages. Market Packages define ITS building blocks for meeting user needs within the guidelines defined by the National ITS Architecture. The selection of Market Packages was the first of two steps in the development of a full ITS system architecture for the San Joaquin Valley. A technical depiction of existing and planned ITS elements and the relationships between them, both technical and institutional, is the subject of specific sections of the SDP.

The process to develop a system architecture begins with identification of local transportation needs/problems (identification of needs/problems is documented in Section 3.0). Next, those local needs/problems are translated into the common (i.e., National ITS Architecture) vocabulary of User Services. User Services describe the services that will be provided to transportation system users and which will address the specific needs/problems (the selection of San Joaquin Valley ITS User Services is also addressed in Section 3.0).

After identifying User Services, Market Packages are selected that provide the various technical functions required to implement the selected User Services. The relationship between User Services and Market Packages defined in the National ITS Architecture is an important, but not the sole consideration in Market Package selection for a specific region. Other factors have been considered in the selection, and in the relative prioritization, of Market Packages for the San Joaquin Valley.

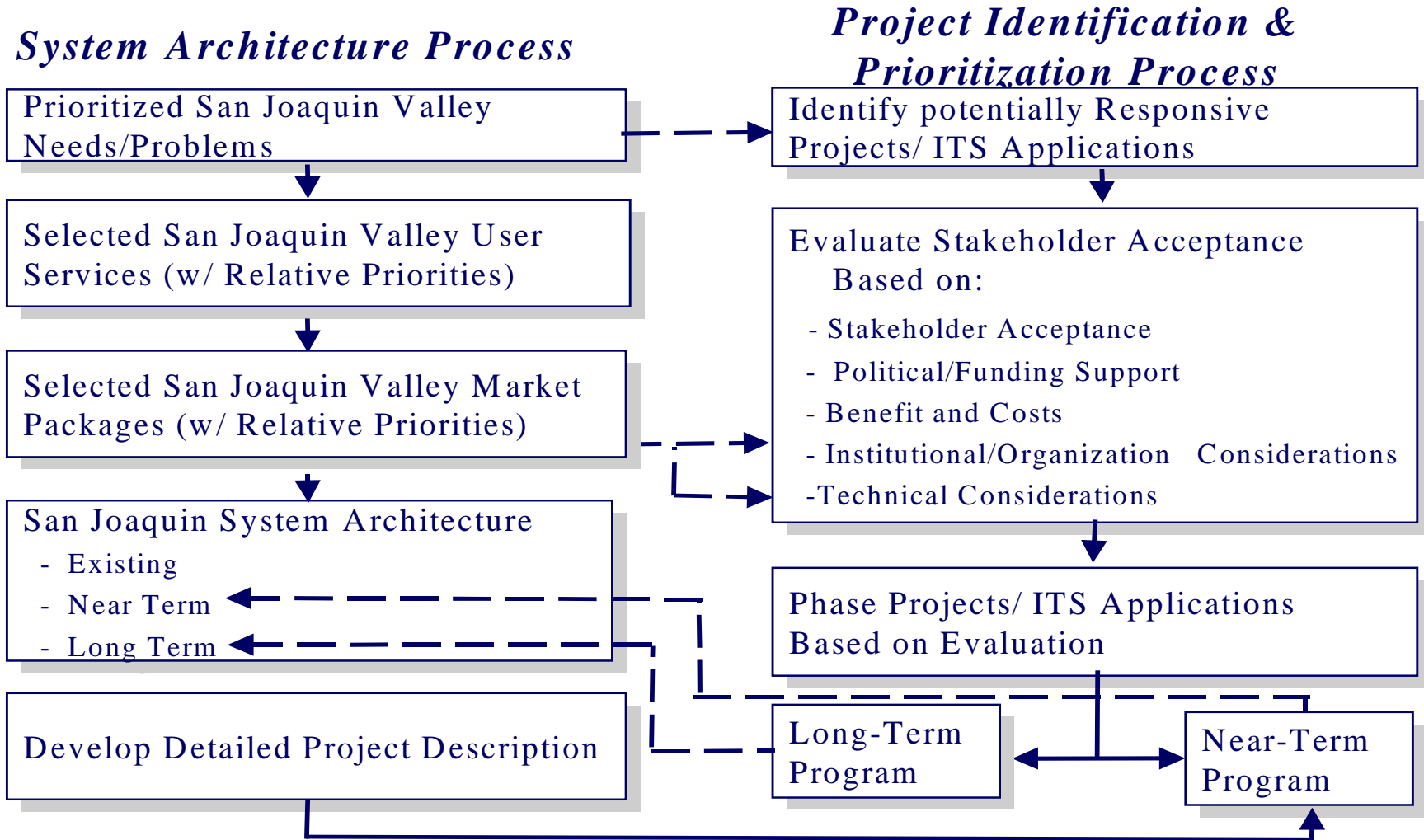
Using the identified San Joaquin Valley ITS User Services and Market Packages, the ITS system architecture itself will be developed for the region. Although the list of San Joaquin Valley User Services and Market Packages themselves do not constitute the ITS system architecture, they are critical building blocks upon which the architecture can be further articulated, as will be documented in Section 4.0.



As portrayed in Figure E.1, the relative priority of the San Joaquin Valley Market Packages is but one consideration in the identification and ultimate phasing of specific ITS projects. Many additional considerations, including benefits and costs, public and political acceptance, funding potential, institutional issues, and other technical considerations, will be considered as specific projects are identified and detailed phasing recommendations are made (i.e., projects for Year 1, Year 2, etc.). Whereas the final project implementation phasing recommendations will be quite specific, and will reflect a wide range of factors in addition to the priority of Market Packages, the system architecture, which is fundamentally a “big picture”, long-range depiction, will not include fine distinctions in phasing.



Figure E.1: Relationship between System Architecture and Project Identification and Prioritization





The eight counties of the San Joaquin Valley: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare oversaw the preparation of a “blueprint” to guide the implementation of Intelligent Transportation Systems (ITS). The Intelligent Transportation System (ITS) Strategic Deployment Plan (SDP) for the San Joaquin Valley Region is a 20-month study jointly funded by California Department of Transportation (Caltrans) and the individual counties with San Joaquin Council of Governments (SJCOC) serving as project administrator. The San Joaquin Valley region represents one of the last geographic areas in California to develop an ITS Plan. Two ITS Strategic Plans have been completed for portions of the San Joaquin Valley: Fresno County (1999) and Kern County (1997). The San Joaquin Valley ITS Strategic Deployment Plan will reference and build upon these plans. The San Joaquin Valley plan will also reference, and as appropriate coordinate with, several other plans, including: Central Coast ITS Strategic Deployment Plan, Sacramento Area EDP, San Francisco Bay Area EDP, Sierra Nevada SDP, and the LA/Ventura SDP.

ITS technologies refer to a wide variety of tools and techniques that focus on addressing transportation problems by improving the efficiency and safety of the existing transportation infrastructure through the application of communications, computing, information and other “high level technologies.” They include more immediately recognizable features such as: emergency call boxes, changeable message signs, signal synchronization and preemption, and Highway Advisory Radio; and also more advanced technologies including Traffic Operations Centers, Automatic Vehicle Location devices, information kiosks, and electronic payment services for transit and tolls.

The Strategic Plan is a road map to implement an integrated system of technology based transportation strategies.

While ITS incorporates many new and emerging technologies, such systems are not completely new to the San Joaquin Valley. Transportation agencies in the region have already implemented technology-based solutions such as:

- Interconnected traffic signal control systems to improve traffic flow in larger downtown areas like Stockton, Fresno and Bakersfield, as well as in smaller cities such as Modesto, Visalia and Ceres.
- Roadside motorist aid call boxes along highways in Kern and San Joaquin Counties to help in providing emergency and roadside assistance to motorists.
- Closed circuit TV (CCTV) cameras on State Route (SR) 99 and I-5 in Stockton, and at the I-5/SR-4 interchange in San Joaquin County to help monitor congestion and respond to incidents and blockages more quickly.



- Weather and changeable message signs (CMS) on SR 99, I-5, SR 198, and SR 41 that provide motorists with roadway condition information to aid in their travel decisions.
- The implementation of Yosemite Area Traveler Information System (YATI) by Merced CAG to provide tourist with area information.

These activities are a partial foundation for a more complete set of integrated ITS applications that will help keep people and goods moving more safely and efficiently within and through the Valley in the coming decades. The expectation is that strategic use of technologies will benefit a broad cross-section of interests, such as tourism, movement of agricultural and other products, transit travelers, and auto drivers. It will also help local agencies with their jobs of managing congestion, providing mobility improvements, and improving air quality. To be most effective, the systems need to be integrated, sharing information that can be used within and outside the Region to improve travel mobility and safety.

Although the San Joaquin Valley has seen the implementation of some basic technology-based strategies or intelligent transportation systems applications, there has not been a comprehensive, systematic look at ITS opportunities until now. The San Joaquin Valley ITS Strategic Deployment Plan identifies a 20-year strategy, but will also include a detailed, short-term component identifying specific projects for implementation in the first few years after adoption.

Caltrans envisions these TOS elements as part of a comprehensive system. Implementation is somewhat fragmented due to sporadic funding. Funding is a critical concern. One approach utilized by Caltrans, is to include ITS elements in construction projects as they come on line. The construction schedule does not necessarily follow the same sequence as our long-range TMS plan. So implementation of ITS elements as a comprehensive system, requires extra coordination efforts.

The Plan includes recommendations for Valley-wide and interjurisdictional initiatives to address problems that affect the entire region, as well as recommendations for projects that will address specific local problems throughout the Valley.

The SDP is intended to provide a starting point for regional ITS coordination, programming, and implementation efforts over the next twenty years. Over the past decade, ITS has become a recognized tool for improving the operation and efficiency of the transportation system. Several agencies in the San Joaquin Valley have already undertaken various ITS deployment efforts ranging from traffic signal system improvements to transit management systems and from enhanced



emergency service Computer Aided Dispatch to freeway surveillance projects.

The development of this Plan represents a new level of effort in the coordinated deployment of ITS projects. The objectives of the study are to:

1. Gain the participation of transportation stakeholders and community members;
2. Identify transportation needs that have the potential to be addressed by ITS technologies;
3. Evaluate which ITS elements would be beneficial, cost-effective and implementable to meet the identified needs; and
4. Develop a plan outlining the short-, medium-, and long-range application of ITS technology including specific operations and maintenance plans and financing.

Technical oversight for the San Joaquin Valley ITS SDP was provided by the ITS Technical Advisory Committee (TAC), composed of representatives of federal, state and local transportation organizations representing the Valley's transportation interests. The ITS Technical Advisory Committee consists of the following members:

- California Highway Patrol (CHP)
- California Trucking Association
- California Department of Transportation – District 10
- California Department of Transportation – District 6
- California Department of Transportation, New Technology and Research Program
- Council of Fresno County Governments (COFCG)
- Federal Highway Administration (FHWA)
- Kern Council of Governments (Kern COG)
- Kings County Association of Governments (KCAG)
- Madera County Transportation Commission (MCTC)
- Merced County Association of Governments (MCAG)
- San Joaquin Council of Governments (SJCOG)



- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- Stanislaus Council of Governments (StanCOG)
- Tulare County Association of Governments (TCAG)

The San Joaquin Valley COG Directors are providing Policy Level oversight in the role of a Steering Committee for this Plan.

The San Joaquin Valley ITS SDP is intended to establish the need for ITS investments in the Valley, identify relative priorities to direct ITS investment in the region, and to identify specific projects to be deployed to address identified needs. The phasing of the recommended projects reflects the relative priorities identified in the development of the plan.

In concept, the SDP is intended to guide all ITS investment in the region, in so much as every attempt has been made in the development of the plan to involve all interested agencies and to reflect their needs and priorities in the recommended ITS investment program. The Strategic Deployment Plan is expected to play a particularly significant role in directing ITS investments planned and programmed by the Regional Transportation Plan (RTP) and Transportation Improvement Plan (TIP) processes administered by the Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Authorities (RTPA's) within the region.

However, there will be some ITS investments made in the Valley based on priorities established at the state level, utilizing state funds (as opposed to utilizing funds dedicated to regionally prioritized investments). It should also be noted that despite the expressed priorities of the Strategic Deployment Plan, private companies will invest or withhold investment based on their own priorities, and therefore private sector involvement or lack of involvement may significantly influence the actual phasing of specific ITS investments in the Valley.

The Strategic Plan is a starting point for bringing these technological approaches together into an integrated plan.

E.2 Vision for ITS Deployment

The SDP is a starting point for bringing these technological approaches together into an integrated plan. We do not expect that this system will be built right away, nor do we expect that government will achieve it alone. It will require a partnership of institutions, and a lot of it will occur without government involvement at all. The remainder of this Executive Summary describes how the Strategic Plan is structured, identifies some of the highlights, and indicates some of the probable keys to success. The body of the report tells the story in more detail.

ITS has begun to permeate virtually every dimension of transportation, just as computers are permeating so many facets of everyday life. This



is partly why the dimensions of ITS are somewhat difficult to grasp. Not only are there many possible applications of ITS, but these applications and opportunities are changing on almost a daily basis. What may have looked like a good strategy a year ago becomes superseded by the next major innovation. How then does one plan in such a dynamic environment? The situation cries out for a “blueprint”, a framework within which public agencies can make decisions about the ITS strategies to invest in and when may be the right time to invest.

A vision is simply a guide for where we want to go and, to an extent, how we want to get there.

We can think of the ITS strategy for the Valley in terms of a progression from an overall vision to priorities for specific projects. A vision is simply a guide for where we want to go and, to an extent, how we want to get there. A strategic direction has been defined to support and provide additional detail to the vision. The strategic direction consists of general principles that apply as we seek to achieve the vision. The vision and related strategic direction for the Valley are defined in the body of the report.

ITS project concepts have been defined that are appropriate to the Valley, both for short and long term. ITS concepts can be thought of as types of recommended ITS projects that are not specific to a location or agency.

The ITS Technical Advisory Committee developed a vision for the SDP and ITS deployment in the San Joaquin Valley. This vision states:

“The ITS vision for San Joaquin Valley is to enhance the quality of life, mobility and the environment through coordination, communication and the integration of ITS technologies into the Valley’s transportation systems.”

The vision and goals for regional ITS deployment are discussed in detail in Section 2.0.

In order to assess the types of ITS projects best suited to the San Joaquin Valley Region, the ITS Subcommittee identified the priority transportation problems and ITS user needs. This identification occurred through responses to surveys and a series of workshops and meetings.

Table E.1 displays the priority problems identified by the TAC. Problems were ranked based on scoring criteria applied by transportation stakeholders in a series of exercises conducted in the early phases of the project.



Table E.1: Summary List of Problem Priorities

Priority Level	Problem
Priority 1	* Traffic congestion, especially due to incidents
	* Incidents and delay due to weather conditions (including fog, blowing sand and flooding)
	* Conflicts between trucks and other traffic, including congestion and accidents
	* Truck routing, including failure to specify routes, enforcement, and the impact of trucks on roadway surfaces
	* Traffic signal coordination, especially across jurisdictions
	* Speeding and red-light running
	* Connections between transit services, including between local and inter-city or regional, and between fixed-route and demand-responsive service.
	Interjurisdictional coordination of traffic strategies, including construction and maintenance, traffic management and compatibility of equipment
	Information for travelers, including traffic and weather/pavement, and including both local and long-distance travelers
	Air quality impacts of travel
	Delays and congestion at railroad crossings, especially to emergency vehicles
	Funding for transportation, including maintenance, road-building and ITS
	Inadequate planning data and analysis tools (e.g., GIS), especially across agencies
Under-appreciation of the need for and benefits of ITS	
Priority 2	Mechanisms and structures to promote long-term agency coordination (i.e., beyond the strategic planning stage)
	Managing traffic at incident scenes, especially interjurisdictional coordination of incident-related traffic diversions
	Lack of truck parking
	Insufficient fixed-route transit service, including no service or excessively long travel times
	Safety and security on fixed-route transit vehicles and at facilities
	Substandard roadway design
	Accidents and delay associated with agricultural vehicles
	Gaps in the roadway system



Table E.1: Summary List of Problem Priorities

Priority Level	Problem
	Coordination among emergency responders, including getting the right equipment on site quickly
	Specific traveler information for truckers, including traffic, weather, truck routes and parking and services
	Inadequate transit schedule and route information
	Inadequate parking for motorists, including park ‘n rides
	Improved operation of existing public traveler information systems, including more responsiveness and greater consistency
	Locating accident scenes, especially in rural areas
Priority 3	Accidents involving pedestrians or bicycles
	Delays at commercial vehicle facilities
	Finding help in highway emergencies
	Inadequate pedestrian or bicycle facilities
	Transit schedule adherence
	Lack of transit amenities to attract riders who have other options
	Land use policies in conflict with transportation objectives
	Insufficient demand-responsive transit service, including no service or excessively long travel times
	Emergency vehicle delays at railroad crossings
	Safety and security on demand-responsive transit vehicles and facilities
Notes:	
* = Especially high priority problem, based on triangulation of deficiency assessment results	
Source: BRW, Inc.	June 2000

Due to the leadership role played by the TAC (which is composed primarily of regional transportation agency representatives who should be relatively aware of the range of problems in their jurisdiction), the development of the final problems list began with the TAC problems rankings shown in Table E.1. That list was then adjusted as follows:

- Some related problems, or problems that logically would be addressed together, were combined, in order to simplify and focus the listing.



- Priorities were checked against the results of the operations analysis.
- Some of consulting team's higher priority problems was moved up relative to their place on the TAC list, in cases where the stakeholder input supported it.
- Some of the higher priority problems identified through the survey, interviews and outreach workshops were moved up relative to their place on the original TAC list.

User needs for the purposes of ITS planning are defined as a series of ITS user services. Simply put, a user service represents a type of ITS functionality. For example, the user service known as Pre-Trip Travel Information focuses on deployment of ITS functions which provide travelers with transportation conditions information before they leave home or initiate their trip. User services were defined as part of the ITS National Architecture effort in order to promote the development of standards and common ITS descriptions across the nation.

User Services were selected and prioritized based on two criteria: (1) their relationship with the priority problems identified for the Region; and (2) their relationship with the preliminary project concepts developed by the ITS TAC. In general, the Region indicated the highest priority for Travel and Traffic Management, as well as Public Transportation Management, user services. Initial gaps between priority problems and user needs were identified as a part of this process. This gap analysis resulted in the addition of projects from the Pre-Trip Traveler Information and Traveler Services Information user services. The ITS TAC determined that Commercial Vehicle Operations user services were best dealt with at the national, state, and valleywide levels. The Region determined that the most effective benefits to be provided by the Region to commercial vehicle operators would stem from enhancing transportation management and information dissemination functions within the Region. User services are discussed in greater detail in Section 3.0 of the Report.

Table E.2 presents the San Joaquin Valley ITS Market Packages. The relative priorities reflect the adjustments made based on the screening level evaluation. As noted in previous technical documents, consistent with the approach taken to date in the National ITS Architecture, separate rural User Services or Market Packages are not being developed for the San Joaquin Valley. However, some Market Packages are particularly relevant to the rural environment and it is useful to identify them, as has been done in Table E.2. This identification is not definitive, but represents a basis for possible future delineation of urban/rural distinctions in the San Joaquin Valley ITS system architecture and/or in program and project recommendations.



One particular ITS element that is very recognizable is Freeway Service Patrol (FSP). Several of the regions have contracted FSP services in urban highway areas. FSP is part of the ATMS 8 – Incident Management System Market Package.



Table E.2: Final San Joaquin Valley ITS Market Packages

Priority 1 Market Packages		Priority 2 Market Packages	
ATMS1	Network Surveillance	ATMS10	Electronic Toll Collection
ATMS2	Probe Surveillance	ATMS11	Emissions Monitoring and Management
ATMS3	Surface Street Control	ATMS13	Standard Railroad Grade Crossing
ATMS4	Freeway Control	ATMS14	Advanced Railroad Grade Crossing
ATMS5	HOV Lane Management	ATMS15	Railroad Operations Coordination
ATMS6	Traffic Information Dissemination	ATMS16	Parking Facility Management
ATMS7	Regional Traffic Control	ATMS19	Regional Parking Management
ATMS8	Incident Management System	APTS5	Transit Security
ATMS9	Traffic Forecast and Demand Management	APTS6	Transit Maintenance
ATMS12	Virtual TMC and Smart Probe Data	CVO2	Freight Administration
ATMS18	Road Weather Information System	CVO3	Electronic Clearance
APTS1	Transit Vehicle Tracking	CVO4	CV Administrative Processes
APTS2	Transit Fixed-Route Operations	CVO5	International Border Electronic Clearance
APTS3	Demand Response Transit Operations	CVO6	Weigh-In-Motion
APTS4	Transit Passenger and Fare Management	CVO7	Roadside CVO Safety
APTS7	Multi-modal Coordination	CVO9	CVO Fleet Maintenance
APTS8	Transit Traveler Information	CVO10	HAZMAT Management
ATIS1	Broadcast Traveler Information	New	Mobile Traffic Management/Enforcement
ATIS2	Interactive Traveler Information	Priority 3 Market Packages	
ATIS3	Autonomous Route Guidance	CVO8	On-board CVO Safety
ATIS4	Dynamic Route Guidance	New	Animal-vehicle Collision Countermeasures
ATIS5	ISP Based Route Guidance	ATMS17	Reversible Lane Management
ATIS7	Yellow Pages and Reservation	ATIS6	Integrated Transportation Management/Route Guidance
ATIS8	Dynamic Ridesharing	ATIS9	In Vehicle Signing
AVSS1	Vehicle Safety Monitoring	AVSS2	Driver Safety Monitoring
AVSS7	Driver Visibility Improvement	AVSS3	Longitudinal Safety Warning
CVO1	Fleet Administration	AVSS4	Lateral Safety Warning
EM1	Emergency Response	AVSS5	Intersection Safety Warning
EM2	Emergency Routing	AVSS6	Pre-Crash Restraint Deployment
EM3	Mayday Support	AVSS8	Advanced Vehicle Longitudinal Control
AD1	ITS Data Mart	AVSS9	Advanced Vehicle Lateral Control
AD2	ITS Data Warehouse	AVSS10	Intersection Collision Avoidance
AD3	ITS Virtual Data Warehouse	AVSS11	Automated Highway System
New	Emergency Vehicle Maintenance		
New	Dynamic Warning System		
New	Safe Speed Advisory		

= Particularly applicable to rural/intercity areas identified as “highly applicable to rural needs and suitable for the rural environment in the National ITS Architecture)



E.3 Highlights of the ITS Strategic Plan for the San Joaquin Valley

One can think of the ITS strategic direction in the Valley in terms of both regional and county-level concepts. It is important to have a regional system to provide benefits to longer distance travel. More localized systems are needed to address needs and challenges at a more targeted level. Often, problems are common among local geographic areas, and agencies can benefit by addressing those issues in a consistent manner. Therefore, integration of regional and local systems through an effective communications network will help derive the maximum benefit from these investments, both regionally and locally. The Regional ITS Architecture shows how this integration can occur.

E.3.1 Valleywide Strategic Direction

A cornerstone of the ITS SDP for the Region is the continued development of two regional Transportation Management Center's (TMC). TMC's will involve a variety of elements typically associated with a situation where conditions in the field are monitored and decisions are made concerning traffic management, traveler information, incident response, and public safety. The two regional Caltrans TMC's involve a partnership of Caltrans and the California Highway Patrol (CHP). Up to this point, planning for the Valley has focused on the development of a Regional TMC at District 6 (Fresno) with a "satellite" TMC for District 10 (Stockton). The recommendation in the Strategic Plan is to move forward with a more fully functional TMC for both districts that has many of the elements of a TMC in a more urban setting, but that is tailored to the urban and rural character of the Valley. Personnel in charge of the TMC will:

- Monitor traffic flow through roadway sensors and CCTV cameras at strategic locations
- Control ramp meters installed in congested freeway sections to help traffic flow more smoothly
- Serve as a focal point for regional traveler information that would include, for example, sending messages to strategically placed roadside changeable message signs (CMS) or highway advisory radio (HAR) systems and providing traveler information to kiosks located at rest areas, truck stops, etc. to allow long-distance traffic to avoid major incidents and road closures.
- Coordinate communications with the CHP to more rapidly respond to traffic incidents and better perform incident management activities



Other ITS projects recommended in the Plan include:

- Curve Warning Systems
- Alternate Route Plans Database/Website
- Regional Traveler Information System
- CMS at Key Decision Points
- Expansion of Caltrans Traffic Operations Center and TMC's
- Weather/ATMS Integration and Automation
- Data Exchange Network (DEN)/Communications Interties
- Dynamic Speed Signing System for weather conditions
- Remote ATIS workstations
- Integration of Communication Channels
- Commercial Vehicle Parking Management System
- Smart Call Box Systems
- CVO Traveller Information System
- CADD Integration System
- Integrated Smart Corridors in selected urban areas
- 511 System
- Truck Stop Information Demo
- Completion of Valleywide GIS Mapping
- Regional ITS Design Guidelines
- Portable CMS Pool
- EVP Deployment
- Advanced Railroad Highway Interface Deployment
- Dynamic Alternate Route signing system
- Regional Transit Information Systems



- National Park ATIS (Combining Yosemite, Kings Canyon and Sequoia NPS)

The key to making this ITS strategic plan work at a regional level is integration. This integration is in the form of the Valley Agencies working together, sharing information, and coordinating activities. Integration in the form of one Agency coordinating dispatching activities for an entire County, one Agency notifying its neighbors that there's been an incident and alternate routing should be considered, or one Agency installing a vehicle location system and having others use the same technology for both scale-of-economy and interoperability. This SDP provides the opportunity and the roadmap for the San Joaquin Valley Agencies to jointly follow so that ITS integration is achieved from the beginning.

E.3.2 Priority Projects in Fresno County:

- Fresno/Clovis Regional ATMS Completion Project, Phase 3
- Fresno/Clovis area Signal Coordination
- FAX Fare Equipment Deployment and Transit Management System Expansion

E.3.3 Priority Projects in Kern County:

- Smart Call Box System Deployment
- Smart Studs Demo Project
- Incident Management Procedures
- Communication Network, Phase II
- Kern County Regional Communication Links
- RWIS with CCTV System
- Bakersfield TOC Expansion
- GET Fare Equipment Deployment



E.3.4 Priority Projects in Kings County:

- Hanford Central Traffic Signal Control System
- KART AVL Demo
- Hanford Traffic Signal Coordination
- Portable Changeable Message Signs
- Railroad Grade Crossing Treatments

E.3.5 Priority Projects in Madera County:

- Curve Warning System on County Roads
- AVL/Silent Alarm System
- Next Bus System for County Transit
- TOS Expansion in County along State Highways
- Transit Information System

E.3.6 Priority Projects in Merced County:

- Advanced Railroad Grade Crossing projects
- Central Traffic Signals Control for Merced and Atwater
- Next Bus Arrival Sign System for Transit
- Yosemite.com System Deployment

E.3.7 Priority Projects in San Joaquin County:

- San Joaquin Transit Electronic Fare Payment (coordinate with MTC's regional system)
- Vanpool Vehicle Traffic Probes Project
- Stockton area signal coordination
- Fare Equipment Deployment at SMART
- Stockton ATMS Expansion, Phase 2
- Curve Warning System on County Roads

E.3.8 Priority Projects in Stanislaus County:

- MAX AVL System
- Modesto/Ceres Signal Coordination



- MAX Fare Equipment Deployment
- Modesto/Ceres ATMS Expansion

E.3.9 Priority Projects in Tulare County:

- Fast Pass Electronic Fare Collection System
- City of Visalia Transit AVL/silent alarm system
- Visalia/Tulare traffic signal system Central Control
- Visalia/Tulare Arterial Signal Coordination
- Visalia EVP Signal Project
- Porterville EVP Signal Project
- Porterville Red Light Enforcement Project

E.4 Deployment Initiatives

Implementation of ITS raises challenges that are not typically in other types of more traditional strategies. An ITS Deployment Element is presented in Section 7.0 of the SDP that highlights some keys to successful deployment of an ITS Project. Some of the key factors to remember include the following:

- Coordinate with partner agencies and integrate your systems with others (as appropriate) – think of the possible regional benefits of what you are doing, not just the local benefits
- Use proven technology – this will reduce the risk of failure and usually help to minimize maintenance costs
- Take advantage of as many private sector initiatives as possible – use of the Internet, wireless communications, and information services already offered by the private sector can help to contain costs
- Make sure the technological applications address specific needs – some of the monuments to failure have been systems installed mainly because the technology was impressive, but the need was lacking
- Keep the applications as simple and straightforward as possible – greater complexity means greater costs for both installation and maintenance
- Consult individuals who know the intricacies of designing and procuring ITS – there is considerable expertise available



through Caltrans, FHWA, and local agencies in larger metropolitan areas who can provide advice

- Make sure that you have thought through how you will operate and maintain the systems – resources usually need to be devoted to keeping systems going once they are built

E.5 Benefits of the ITS Strategic Plan

There are a number of important reasons why you should pay attention to the Strategic Plan:

- It represents a coordinated effort between agencies that have responsibility for planning and programming projects throughout the San Joaquin Valley and includes individual ITS Projects that should be implemented in the Valley as building blocks to this integrated system
- It contains information that will be helpful in implementing useful ITS Projects
- It contains ITS Projects for deployment that provide certain benefits that help meet regional and local air quality requirements/mandates
- It improves the transportation environment by reducing congestion, improving efficiency and resolving transportation related problems
- It contains the San Joaquin Valley Regional ITS Architecture which will provide the following:
 - Conformance with the Regional ITS Architecture ensures that ITS Projects in the Valley are eligible for Federal funding
 - Added role of the Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPA) to determine conformance at acceptable level to FHWA/FTA
 - Provide interconnectivity to other regions such as the Central Coast and Sierra Nevada
- It contains ITS Projects for which Regional and Local agencies will need to determine funding priorities
 - ITS Projects are qualified for Federal and State funding/programs



- ITS Projects will compete against more “traditional” transportation projects
- Need to “mainstream” ITS Projects into the San Joaquin Valley’s traditional transportation planning processes:
 - Regional Transportation Plans (RTPs)
 - Federal and Statewide Transportation Improvement Plans (STIP)
 - Short and Long Range Transit Plans (SRTPs and LRTPs)
 - Congestion Management Programs (CMPs)
 - Congestion Mitigation and Air Quality (CMAQ) funds

E.6 A Focus on Implementation

The next steps in the SDP involve its implementation. Lead agencies have been defined in the Plan, and these lead agencies will need to take the initiative to move ITS Projects forward by identifying funding, developing a design, and taking it through procurement. A plan of action to implement the Regional ITS Architecture has been provided in the SDP to identify specific activities for which individual agencies should be accountable. It is recommended that the ITS Technical Advisory Committee remain active, meeting on a periodic basis and evolving into an ITS Deployment Committee, to guide the implementation of the Plan. The Committee has served as an excellent forum for the exchange of information and resolution of issues, and can be a continuing vehicle for ensuring that ITS is integrated at the regional level.

The SJV Regional ITS Architecture provides a framework for the deployment of ITS applications. The Regional ITS Architecture incorporates the existing and planned ITS projects and provides a roadmap for future deployment. Additional planning efforts will be required in the future as highway and transit applications within and around the SJV are considered. While the SJV Regional ITS Architecture is contained as a document, it must be considered a process which will be maintained, revised, and validated as needed. A coordinated effort among the stakeholders involved now will ensure that this effort continues and ITS is mainstreamed into future projects.



Table E.3: ITS Deployment Action Plan

Action	Responsible Agency					
	Caltrans New Tech & Research	Caltrans District 6 and 10	CA Highway Patrol	MPO/RPTA	County/Local	FHWA/FTA
Project Continuance and Outreach						
Continue Stakeholder Outreach	•	•	•	•		
Develop Marketing Strategy	•					
Provide Updates on National ITS Developments	•	•				•
Demonstrate the Benefits to RTPAs, MPOs and COGs	•	•	•	•		
Expand Architecture Development and Education	•	•				•
Maintain ITS Inventory		•			•	
Strategy for Implementation						
Increase Regional Support	•	•				
Mainstream ITS into Program and Project Prioritization		•		•	•	
Modify Project Organization		•		•		
Emphasize Traveler and CVO Information	•	•				
Maintain and Update Regional Architecture	•	•	•	•	•	•
Secure Demonstration and non-Traditional Funding	•	•	•	•	•	•
Public Private Partnership Task Force	•	•	•	•	•	•

