INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PLAN FOR THE KERN REGION

DELIVERABLE NO. 8

REGIONAL ITS OPERATIONAL ROLES AND RESPONSIBILITIES REPORT

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Kern Council of Governments

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TABLE OF CONTENTS

TABLES

1.0 INTRODUCTION

The Intelligent Transportation Systems (ITS) Plan for the Kern Region is a critical component in addressing the transportation needs of the region. As travel demand on the freeway and arterial system increases, there is an increasing need to improve the system through better management of existing capacity. In recognition of this, the Kern Council of Governments (Kern COG) and the local communities in the region continue to invest in ITS. The ITS Plan will ensure that these investments address the important needs in the region and bring the maximum benefit to travelers. The ITS Plan will include a specific implementation plan that reflects the changes in technology since the 1997 ITS Early Deployment Plan (EDP) was completed.

1.1 PROJECT BACKGROUND

The EDP was developed for the Kern region in 1997, led by Kern COG. The EDP was developed in consultation with local Kern County agencies, and reflected the input and priorities of the local agencies. Subsequently, the San Joaquin Valley ITS Strategic Deployment Plan (SDP) was developed for the eight counties of the San Joaquin Valley: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. The 1997 EDP and the 2001 SDP documents are consistent with one another with regards to the Kern regions' inputs, needs, and plans.

A comprehensive update of the countywide EDP has not been completed since 1997. In the interim, Kern metropolitan area agencies have made significant investments in the planning, design, and implementation of ITS for the surface transportation and transit networks. There is an expectation, documented in the 1997 EDP and Architecture, that investment in ITS strategies will continue with a focus at the local level. At the same time, it's important that investments be made in reliable technologies that deliver proven benefit in a cost effective manner. Toward this end, Kern COG is leading this countywide ITS Plan to direct ITS investments throughout the county over the next twenty years and beyond.

Concurrently, Kern COG is in the process of updating the Regional Transportation Plan (RTP) for 2018, including the development of an updated project list for implementation using local, state, and federal funding. ITS strategies, particularly those related to operational improvements to the arterial street system, and to enhancing transit service are important elements of the RTP and can provide improvements that lend to the Sustainable Community Strategies (SCS). Updating the ITS Plan will provide timely input to the RTP and the SCS, and will improve consistency among the three planning documents.

1.2 ITS PLANNING PROCESS

The ITS planning process is much like any other transportation planning activity, with the primary difference being the focus on technological solutions. One of the primary areas of emphasis of ITS planning is the extensive involvement and participation by the stakeholders of the region. This is especially important to ensure interagency systems integration, address potential institutional issues early, and to provide the necessary education and awareness of advanced technology transportation solutions.

Using the federal ITS planning process as a guideline, the overall approach to achieving the stated project goals will be performance of the following tasks (the **bolded text** indicates the current task and/or deliverable):

Task 1: Project Initiation

Deliverable 1: Project Plan

- The Project Plan incorporates the Stakeholder Engagement Plan, the stakeholder governance structure, and the detailed master project schedule.

Task 2: Data Gathering

Deliverable 2: Existing Data Report

- The report identifies the ITS elements within the Kern region, existing and planned policies/projects combined with an understanding of the region's users to fully recognize the various opportunities and constraints.

Task 3: Assessment of the 1997 ITS Early Deployment Plan (EDP) and the Kern portion of the 2001 San Joaquin Valley ITS Strategic Deployment Plan (SDP)

Deliverable 3: Assessment of 1997 Early Deployment Plan (EDP) Report

- The report documents the findings of the assessment of the 1997 EDP and the 2001 SDP with the lessons learned from those efforts.

Task 4: Update Regional ITS Inventories

Deliverable 4: System Inventory Summary Report

- The report presents a summary of the findings from the Inventory Survey forms from various Stakeholders identifying existing and planned ITS elements within each jurisdiction.

Task 5: Stakeholder Consultation/Identification of ITS Needs, Vision, Goals, and Objectives

Deliverable 5: Vision, Goals, Objectives and Needs Technical Report

- The report identifies an ITS vision for the Kern region, set of goals and objectives, and identifies ITS needs after various exercises with Stakeholders.

Task 6: Develop Key Regional ITS Strategies

Deliverable 6: Regional ITS Strategies Report

- The report refines and presents a range of Intelligent Transportation Systems (ITS) components for inclusion in the ITS Plan.

Task 7: Determine Specific Needs, ITS Service Packages and Elements Based on Strategies

Deliverable 7: Regional Consolidated Needs Assessment Summary Technical Report

- The report will translate generic ITS needs into the National ITS Architecture framework. ITS Elements will also be identified as part of the process of identifying and selecting Service Packages for the region.

Task 8: Define Operational Roles and Responsibilities Consistent with Regional Vision, Goals, Objectives, and Strategies

Deliverable 8: Regional ITS Operational Roles and Responsibilities Report

- **The report identifies Operational Roles and Responsibilities that are consistent with the Vision Statement and the Goals and Objectives identified and developed in Task 5 and are based on Strategies development in Task 6.**

Task 9: Determine the Functional Requirements

Deliverable 9: Functional Requirements Report

- The report will identify Functional Requirements for ITS Architecture for the Kern region based on Federal Highway Administration's (FHWA) guidance

Task 10: Prepare Regional ITS Architecture

Deliverable 10: Draft and Final Electronic Copy of the Turbo Architecture Database

- The electronic Turbo Architecture database will be developed consistent with Version 7.1 of the National ITS Architecture, FHWA Rule 940.9, and Part V of the Federal Transit Administration (FTA) National ITS Architecture Policy for Transit Projects and provided to Kern COG.

Task 11: Develop an Architecture Maintenance Plan

Deliverable 11: Architecture Maintenance Plan

- The report will develop an Architecture Maintenance Plan that will describe how to use the Architecture. The Report will provide project planning, project programming, project design, and maintenance procedures.

Task 12: Develop Kern Region ITS Plan

Deliverable 12: Kern Region ITS Plan

- The Plan will take all of the inputs from Tasks 2 through 11 and meld them together into a cohesive and comprehensive ITS Plan Report and Phasing Plan for Kern County.

Task 13: ITS Website for Regional Stakeholders

Deliverable 13: Draft and Final Website

- The Kern COG website ITS webpage will provide background on the project, the deliverables, and links to meeting agendas and material during Draft ITS Plan development. The Final webpage will include the Final ITS Plan.

1.3 STAKEHOLDER PARTICIPANTS

The success of a regional ITS architecture depends on participation by a diverse set of regional Stakeholders. **Table 1-1** lists the agencies/organizations of approximately 28 key stakeholders that will be engaged to provide input for the ITS Plan. Input from the Stakeholders as well as others, will be instrumental in the development of the information presented in the final ITS Plan. These Stakeholders, and any others that join the project along the way, will be instrumental to the

development of the regional ITS architecture. The stakeholder list will be updated periodically throughout the life of the project.

Table 1-1. ITS Plan for the Kern Region Stakeholder List

Amtrak	City of Taft
Bureau of Land Management	City of Tehachapi
Burlington Northern Santa Fe Railroad	City of Wasco
Caltrans District 6	CommuteKern (Kern COG)
Caltrans District 9	County of Kern
Caltrans Headquarters	Delano Area Rapid Transit
City of Arvin	Federal Highway Administration California Division
City of Bakersfield	Federal Transit Administration Region 9
City of California City	Golden Empire Transit District (GET)
City of Delano	Kern Council of Governments (Kern COG)
City of Maricopa	Kern Motorist Aid Authority (Kern COG)
City of McFarland	Kern Transit
City of Ridgecrest	Tejon Indian Tribe
City of Shafter	Union Pacific Railroad

1.4 RELATIONSHIP TO 1997 EDP

As noted in Section 1.1, the ITS Early Deployment Plan (EDP) was completed for Kern County in 1997. That plan was comprehensive, in terms of both needs assessment and the development of recommendations. For this ITS Plan update, the 1997 EDP will be reviewed and assessed. This assessment will provide some insight and guidance in the project process when considering project and program prioritization, which will also be influenced to varying degrees by the changes in technology since 1997. The assessment will provide a look back at prior ITS planning and implementation efforts and lessons learned from those efforts while moving forward with this most current ITS planning and implementation effort.

1.5 PURPOSE OF REGIONAL ITS OPERATIONAL ROLES AND RESPONSIBILITIES REPORT

The purpose of the Regional ITS Operational Roles and Responsibilities Report is to identify each stakeholder's current and future roles and responsibilities in the operation of regional ITS services in the Kern Region. Also known as the Operational Concept in the terminology of the National ITS Architecture, this deliverable documents these roles and responsibilities for selected transportation service areas relevant to the needs of the region. It provides an "executive summary" view of the way the region's stakeholders will work together to provide ITS services. The Operational Concept is an element of the Regional ITS Architecture that is required by FHWA Rule 940.9(d)3 (the “Architecture Rule”).

2.0 OPERATIONAL ROLES AND RESPONSIBILITIES

This section of the document identifies each operating agency's current and future roles and responsibilities in operating the ITS systems in the Kern Region. The clearly defined operational roles and responsibilities help the Kern Region realize the ITS vision for the region.

The operational roles and responsibilities are categorized in ten transportation service areas. These transportation service areas provide general classifications of what functions the agencies are providing or will provide. The ten service areas and their major functions are described below.

Data Management – Archived data systems provide the functions that collect, process, store and utilize transportation data including traffic data, accident data, maintenance and construction data, public transportation data, commercial vehicle data, emission data, parking data and others.

Commercial Vehicle Operations – Commercial vehicle operations represents the administrative functions that support commercial vehicle credentialing, commercial vehicle tax collection, and commercial vehicle safety records and regulations.

Public Safety – Public Safety represents the functions that provide emergency call taking, public safety dispatch, disaster response and evacuation, securing monitoring and other security and public safety-oriented services.

Maintenance and Construction – Maintenance and construction represents the functions that provide construction management and maintenance of roadways, including snow and ice removal.

Parking Management – Parking Management represents the functions that provide enhanced monitoring and management of parking facilities and coordination between parking facilities.

Traffic Management – Traffic management represents the functions that manage a broad range of transportation facilities including freeway systems, rural and suburban highway systems, and urban and suburban traffic control systems.

Public Transportation – Public Transportation represent the functions that plan, manage, operate and maintain transit services. It also includes the function that provides transit traveler information and collects and processes fare payments.

Traveler Information – Traveler information represents the functions that collect, process, store, and disseminate static and real time transportation information to the traveling public.

Vehicle Safety – Vehicle Safety represents the use of connected vehicle technologies including vehicle-to-vehicle and vehicle-to-infrastructure to enable safety warning applications.

Weather – Weather represents the weather data collection, information processing and distribution.

Table 2-1 presents each operating agencies' current and future roles and responsibilities in operating the ITS systems in the Kern Region.

Table 2-1: Operational Roles and Responsibilities

Stakeholder	Transportation Service Area	Roles and Responsibilities
California Highway Patrol	Commercial Vehicle Operations	• Exchange safety and/or security information with other agencies • Operate roadside inspection equipment for law and regulations enforcement • Participate in roadside vehicle inspection for law and regulations enforcement
California Highway Patrol	Data Management	• Collect incident and emergency data
California Highway Patrol	Public Safety	• Coordinate emergency response with local emergency management agencies, public safety agencies, and/or transportation agencies • Support disaster response and recovery, and disaster evacuation • Operate CHP Los Angeles Dispatch Center. Provide emergency call-taking and dispatching CHP vehicles. Communicate with Caltrans District offices when Caltrans personnel, equipment, or materials are needed to support incident management and response to emergency calls • Provide disaster-related information to the public • Routinely patrol major roadways including interstates, US highways, and state routes, and enforce motor vehicle laws • Coordinate incident response with Caltrans and local emergency management agencies, public safety agencies, and/or transportation agencies, including road closure
California Highway Patrol	Traffic Management	• Jointly operate the Central Valley TMC with Caltrans • Assist with traffic management during incidents and emergency events
California Highway Patrol	Traveler Information	• Provide road conditions and incident information on public accessible website
Caltrans District 6 & 9	Data Management	• Collect traffic and incident data • Collect road weather conditions information

Stakeholder	Transportation Service Area	Roles and Responsibilities
Caltrans District 6 & 9	Maintenance and Construction	• Communicate maintenance and construction schedule and other related information with local agencies • Perform construction management • Operate road weather information system (RWIS) and collect road weather information along major roadways • Monitor road weather conditions and distribute information to local public safety agencies and transportation agencies
Caltrans District 6 & 9	Public Safety	• Share information and personnel with County Emergency Operations Center for emergency response • Support disaster response and recovery, and disaster evacuation • Disseminate disaster-related information to the public • Operate closed-circuit television (CCTV) cameras to detect, verify and monitor traffic incidents • Communicate traffic and incident related information to other agencies
Caltrans District 6	Traffic Management	• Operate the Central Valley TMC
Caltrans District 9	Traffic Management	• Operate TMC/Satellite Operations Center
Caltrans District 6	Traffic Management	• Operate traffic signals on State Highways • Responsible for traffic control on Interstates and State Highways • Communicate traffic related information to other agencies • Manage and control roadside equipment (including traffic signal system, CCTV, changeable message signs (CMS), highway advisory radio (HAR), detection sensors, ramp meters, road weather stations, and others)
Caltrans District 9	Traffic Management	• Operate traffic signals on State Highways • Responsible for traffic control on Interstates and State Highways • Communicate traffic related information to other agencies • Manage and control roadside equipment (including traffic signal system, CCTV, CMS, HAR, detection sensors, road weather stations, and others)

Stakeholder	Transportation Service Area	Roles and Responsibilities
Caltrans District 6 & 9	Traveler Information	• Operate CMS and HAR to disseminate traveler information • Provide traveler information to local media outlets
Caltrans Headquarters	Data Management	• Operate Caltrans Performance Monitoring System (PeMS) • Collect and archive traffic, incident and weigh-in-motion data across all metropolitan areas for the state • Operate Statewide Integrated Traffic Records System (SWITRS)
Caltrans Headquarters	Public Safety	• Provide statewide assistance to districts with managing contaminants and wastes encountered on highway projects and Caltrans properties
Caltrans Headquarters	Traveler Information	• Operate Caltrans QuickMap • Provide travel conditions information to the public, including traffic congestion information, lane closures, incidents, posted CMS messages, and camera images
City of Bakersfield	Maintenance and Construction	• Maintain city streets • Operate and maintain agency vehicle fleet • Provide roadway construction and restriction information on website
City of Bakersfield	Public Transportation	• Operate Transit Signal Priority
City of Bakersfield	Traffic Management	• Operate Bakersfield Traffic Operations Center • Operate traffic signal systems within city jurisdiction • Operate CCTV cameras
City of Bakersfield	Traveler Information	• Provide traffic advisories on city website, including roadway construction and restrictions
City of Bakersfield Police Department	Public Safety	• Manage red light enforcement cameras
City of Delano	Maintenance and Construction	• Maintain city streets, landscape, and hazard removal • Operate and maintain agency vehicle fleet
City of Delano – Delano Area Rapid Transit	Public Transportation	• Operate fixed-route service • Operate demand response service • Manage and maintain bus fleet. Buses are equipped with automatic vehicle location (AVL). • Provide information to the public via internet and email.

Stakeholder	Transportation Service Area	Roles and Responsibilities
City of McFarland	Maintenance and Construction	• Maintain city streets, landscape, and hazard removal • Operate and maintain agency vehicle fleet • Monitor work zone safety including detection of intrusions and crew monitoring
City of McFarland	Traffic Management	• Operate traffic signal system within city jurisdiction • Operate emergency vehicle preemption system
City of McFarland	Public Transportation	• Operate fixed-route service • Operate demand response service • Manage and maintain bus fleet • Operate security monitoring systems • Provide information to the public via changeable displays at transit stops (planned)
City of McFarland	Traveler Information	• Provide traveler information on city website and via email • Provide traveler information on kiosk (planned)
CommuteKern (Kern COG)	Traveler Information	• Maintain commuter ridesharing program • Maintain website with resources
County of Kern	Maintenance and Construction	• Maintain County roads, landscape, and hazard removal • Operate and maintain agency vehicle fleet • Operate changeable message signs
County of Kern	Public Safety	• Operate Kern County Emergency Operations Center – centralized location to support multi-agency and/or multi-jurisdiction disaster response coordination and communication • Operate ReadyKern (Emergency Alert Program) • Operate Emergency Communications Center (ECC) – receives and dispatches all fire, medical and rescue calls within Kern County (ECC receives transferred calls from 21 different law enforcement agencies and gives calls to 7 different private ambulance companies
County of Kern	Traffic Management	• Operate traffic signal systems within county jurisdiction
County of Kern	Traveler Information	• Provide information to the public via internet and social media.
County of Kern – Kern Transit	Data Management	• Collect transit operations data

Stakeholder	Transportation Service Area	Roles and Responsibilities
County of Kern – Kern Transit	Public Transportation	• Operate fixed-route service • Operate demand response service • Manage and maintain bus fleet. Buses are equipped with AVL. • Operate surveillance cameras on-board buses • Provide information to the public via internet and social media.
Golden Empire Transit	Data Management	• Collect transit operations data
Golden Empire Transit	Public Transportation	• Operate fixed-route service • Operate demand response service • Manage and maintain bus fleet. Buses are equipped with AVL. • Operate surveillance cameras on-board buses • Operate a computer-aided dispatch system for fixed-route and paratransit services • Operate electronic fare payment system • Provide transit information via website, printed materials, kiosks, and a telephone information line
Kern Council of Governments	Data Management	• Collect traffic count data countywide
Kern Motorist Aid Authority (Kern COG)	Public Safety	• Operate and maintain motorist aid call box system on state highways in coordination with Caltrans and the California Highway Patrol • Provides funding for state highway litter removal program
Kern Motorist Aid Authority (Kern COG)	Traveler Information	• Maintain the 511 traveler information system in Kern County (telecommunication and website)
Local Jurisdictions	Maintenance and Construction	• Maintain city streets
Local Jurisdictions	Traffic Management	• Operate traffic signal systems within city jurisdictions

3.0 NEXT STEPS

The next step in the overall project is to incorporate the results of this deliverable into the Regional ITS Architecture, as appropriate. The consultant team will continue the more intensive activities in the development of the Regional ITS Architecture, which is being developed and documented. The results of this Regional ITS Architecture development will be reviewed with the stakeholder group for review and input. The list of proposed ITS projects will also continue to be developed and refined. Upon review of the proposed ITS projects and the Regional ITS Architecture, the projects will be prioritized with input from the ITS stakeholder group and subsequently listed in Final ITS Plan.

4.0 REFERENCES

Kern County Fire Department websites

http://www.kerncountyfire.org/operations/operations-center.html

http://www.kerncountyfire.org/operations/divisions/emergency-communication-center.html