EXECUTIVE SUMMARY

The Changing Planscape of Shasta County

Shasta County's predominantly rural transportation environment is characterized by dramatic topographical diversity, and by significant impacts of seasonal, local weather conditions. In many areas, long distances between cities and communities, rugged terrain, rockslide hazards, open range and abundant wildlife add to the driving challenges. Main transportation routes pass directly through small towns and communities, affecting quality of life and local economies. Long-distance trucking and transiting of tourists through the region account for a significant portion of the traffic on the major North-South, I-5 Corridor, and the East—West SR299 and SR44 Corridors. Communities close to the County's abundant recreational areas also experience seasonal substantial congestion challenges. Recent, continual population surges in the Redding Metro Area (or "South Central Region" of the County as it is known) also challenge the County as it has transitioned to Metropolitan Planning Organization (MPO) status. Forecasts put the County's population at close to 250,000 by 2025, with the bulk of that population concentrated along a 30-mile stretch of the I-5 Corridor through Shasta Lake City, Redding, Anderson, and the community of Cottonwood.

What is the purpose of this Plan?

The primary purpose of this Plan is to identify and facilitate deployments of ITS technologies across Shasta County in order to maximize safety and efficiency of its regional transportation system. Strategic deployment of ITS solutions in Shasta County should result in capital and operating cost efficiencies in the District, along with performance improvements in existing and planned highway infrastructure. This Plan also identifies areas where there should be coordination with other regional ITS Architectures/ Plans, adjoining Districts, neighboring states, and other affected, public and private entities.

Benefits of the Plan?

Consistent with the State's recently inaugurated, **"Go California" Initiative**, this Plan focuses on ITS Deployment Strategies to:

♦ Provide improved Traveler Information;
♦ Improve Traffic Control (especially in the burgeoning population center along Redding's I-5 Corridor);
♦ Improve Incident Management and Response Times (including Freeway Service Patrols as traffic levels dictate);
♦ Improve En-Route Driver Information and Safe Driving Behaviors with more accessible roadway and driving condition information;
♦ Improve Transit Operating Efficiency and Service Quality through electronic and telecommunications technology deployments.
♦ Improve Land Use and Transportation System Planning through increased access to traffic activity, incident, and demographic information.

The benefits to Shasta County of ITS deployments resulting from this ITS Strategic Deployment Plan (SDP), will derive mainly from enhanced travel safety and efficiency, facilitation of tourism, quality of community life, and protection of the natural environment. As such, it provides a framework to:

♦ Identify service needs and priorities of County stakeholders;
♦ Support deployment of ITS technology appropriate to the County;
♦ Promote and facilitate regional and local ITS planning and incorporation in Regional Transportation Plans for Shasta County and municipalities within;
♦ Support development and pursuit of ITS project funding strategies.

What does the Plan contain and how is it used?

This Plan and associated ITS architecture exhibits also assure Shasta County compliance with the provisions of 23 CFR §940.9, governing the creation and formatting of Regional ITS architectures. Accordingly, it incorporates eight key elements:

♦ Description of the characteristics and transportation environment in the region [23 CFR 940.9 ¶ d (1)];
♦ Identification of affected and/or contributing agencies and stakeholders [23 CFR 940.9 ¶ d (2)];
♦ Identification of roles and responsibilities for operational concepts developed [23 CFR 940.9 ¶ d (3)];
♦ Partnerships and institutional agreements for deployment and operations [23 CFR 940.9 ¶ d (4)];
♦ High-level functional requirements of candidate ITS solutions [23 CFR 940.9 ¶ d (5)];
♦ System interfaces and information flow [23 CFR 940.9 ¶ d (6)];
♦ Applicable ITS standards [23 CFR 940.9 ¶ d (7)];
♦ Project Timing / Implementation Sequence [23 CFR 940.9 ¶ d (8)].

The Shasta County ITS Plan can be easily used and updated by Caltrans District 2 ("District 2"), Shasta County MPO, and local transportation authorities -- the custodians of the plan and regional ITS architecture. Shasta County's Metropolitan Planning Organization (MPO) can supplement its Regional Transportation Plan (RTP) with ITS addenda by extracting and inserting ITS project descriptions directly into the RTP.

The Shasta County plan will be updated at regular intervals as new ITS solutions or projects emerge, or existing ones are amended. This process is described in the section on the Caltrans District 2 ITS Architecture Maintenance Plan, and it applies to Shasta County as well as the other six counties in District 2. District 2 is tasked with supporting maintenance of the District-wide, as well as county architectures. The architecture database is hosted in Microsoft Access and Turbo Architecture software, while District/regional and County/project architecture "interconnect" diagrams and project descriptions are hosted in Microsoft Visio and PowerPoint.

This "living" ITS architecture/plan will afford an ongoing ability to document progress of ITS deployments and integration in the region, and provide a platform to justify needs for more ITS resources in other planning documents. As such, **the regional ITS architecture must be continually maintained and updated as new projects emerge or existing projects are altered. This maintenance role is a jointly-owned responsibility between District 2, Shasta County MPO, and RTPA's of adjoining counties.**

Identifying and Meeting Stakeholder Needs

♦ The Shasta County ITS Architecture is based on transportation needs and concerns articulated by principal public and private stakeholders, as well as Shasta County's MPO and various State and Federal agencies having jurisdiction in the region. This plan also recognizes, and seeks to address the needs for linkages with adjoining (or affected) Counties, Districts, States, and ITS Planning Regions,

as well as Caltrans' Statewide ITS Architecture. Following is a brief listing of major Stakeholders in the ITS planning process:

Principal transportation planning authorities:
♦ Shasta County Regional Transportation Planning Agency (MPO)
♦ City of Redding Planning Department
♦ City of Shasta Lake Planning Department
♦ City of Anderson Planning Department
♦ Caltrans District 2, Division of Planning

Federal agencies with operational or regulatory jurisdiction in the region:

♦ U.S. Federal Highway Administration (FHWA)
♦ Federal Transit Administration (FTA)
♦ Bureau of Land Management (BLM)*, U.S. Department of Interior
♦ National Weather Service*, National Oceanic and Atmospheric Administration (NOAA)
♦ National Park Service (NPS) Lassen Volcanic National Park and Whiskeytown-Shasta-Trinity National Recreation Area, U.S. Department of Interior
♦ U.S. Forest Service (USFS) Shasta-Trinity National Forest, U.S. Department of Agriculture*
♦ U.S. Department of Justice (DOJ)
♦ Federal Emergency Management Agency (FEMA)
♦ Bureau of Indian Affairs, U.S. Department of Interior
♦ U.S. Fish and Wildlife Service, U.S. Department of Interior
♦ Other

California State agencies with jurisdiction in the region:
♦ California Department of Transportation (Caltrans), District 2
♦ Caltrans, Division of Research & Innovation
♦ Caltrans, Division of Traffic Management
♦ Caltrans, Division of Information Technology
♦ California Highway Patrol
♦ Governors Office of Emergency Services
♦ California Office of Traffic Safety
♦ California State Parks
♦ California Department of Fish and Game
♦ California Division of Tourism
♦ California Division of Forestry

Local Municipalities and County Government Agencies:
♦ City of Redding, Fire Department
♦ City of Redding, Police Department
♦ City of Anderson, Fire Department
♦ City of Anderson, Police Department
♦ City of Shasta Lake, Fire Department
♦ City of Shasta Lake, Police Department
♦ Shasta Senior Nutrition Programs (SSNP)
♦ County of Shasta, Department of Public Works
♦ County of Shasta, Public Health Department (Disaster Response)
♦ Shasta County Sheriff's Department
♦ SHASCOM, Emergency Response Center

♦ Shasta County schools transportation service providers (SUHSD, AUHSD, GUSD, County Office of Education, Elementary School Districts, etc.)

Other stakeholder organizations:
♦ Shasta-Cascade Wonderland Association*
♦ California Trucking Association*
♦ American Association of Retired Persons (AARP)*
♦ California State Automobile Association (AAA)
♦ Chambers of Commerce (Redding, Anderson, City of Shasta Lake, Shingletown, Burney, Fall River Mills)
♦ Other

Relevant Strategic Deployment Plans and Statewide Planning Initiatives

It is important that this Plan identify the ITS solutions and specific "points" where the County's ITS Architecture should have "connectivity" with adjacent ITS strategic deployment plans, and/or be complementary with Caltrans', broader Statewide ITS Architecture. These connectivities will support California statewide ITS integration, and will require inter-agency cooperation and various memoranda of agreement and understanding

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Goals and Approach of this Strategic Deployment Plan

Simply stated, the Shasta County ITS Architecture/SDP adheres to the following goals in its approach:

♦ **Region-Specific Needs Assessment –** Develop and Prioritize Understood and Accepted ITS Needs and Service Objectives which support Local and County-level Transportation Systems.

♦ **Relevance of ITS Solutions** - Base the plan on ITS solutions that recognize the unique transportation environment in the region.

♦ **Usefulness of the Plan** - Provide useful planning information and technical guidance to support local and regional transportation planning and ITS deployment activities.

♦ **Regulatory Compliance** - Conform to the requirements and guidance of the National ITS Architecture and associated regulations (23 CFR 940).

♦ **Ease of Plan Maintenance** - Organize the plan so that it may be updated as needs, deployments, and technologies evolve.

♦ **Conformance with the Regional Transportation Plan Vision, Goals and Objectives** - Enable the stakeholders to

achieve their planned ITS goals and expectations as expressed in the Shasta County Regional Transportation Plan (RTP).

ITS Solutions—A Framework for the Plan

Conceptual Candidate ITS solutions and Project Plans were developed for planning purposes. These candidate solutions focus on the specific stakeholder needs and the unique transportation environment of Shasta County. Together, the ITS solutions address Needs and User Service Objectives (USO's) adopted by the Shasta County RTPA. Most of the USO's are served by two or more of the candidate ITS solutions.

The Project Plans incorporate one or more Candidate ITS Solutions, and follow a standard template outline:

- Solution Description
- Key Stakeholders*
- Background Discussion
- Description Need(s) Driving the Solution(s)
- Identification of Specific Stakeholder Needs Addressed
- Identification of Specific User Service Objectives Addressed
- Solution Description, including ITS Devices employed, Locations of deployments, etc.
- Physical Investments – Existing and To-Be-Purchased
- National ITS Architecture Components Addressed: User Service(s); Subsystem(s); Market Package(s); Equipment Package(s).
- System Connectivity(s)*
- Political/Regulatory Jurisdictions Involved
- Other ITS Architectures / Plans that are Impacted
- Interface Requirements and Information Exchanges Involved in Solution(s)*
- ITS Standards (Communications, Human Factor, Hardware/Software Specifications)*
- System Functional Requirements (i.e. description of what each ITS application is supposed to deliver)*
- Operational Concept, identifying roles and responsibilities of participating agencies and stakeholders*
- Funding Sources
- Formal Agreements Required between Agencies and/or Private Entities*
- Timeline (i.e. Short-term, Mid-term, Long-term) and Rationale
- Risks and Mitigation Strategies
- Project Priority and Rationale
- Sequence of ITS Deployments/Installations*
- Expected Benefits (Qualitative and Quantitative
- Measures of Effectiveness of ITS Deployments (i.e. Performance Standards / Success Criteria)

This "candidate-ITS-solutions" framework should provide regional transportation planning authorities with specific information for use in regional transportation planning and in specific ITS projects.

The Statewide, District (Regional) and County-level (Local) ITS Architectures

Network architectures are presented/diagrammed for the selected ITS solutions, identifying communications and functional links between:

- Actual ITS hardware devices;
- Stakeholders with immediate functional responsibilities; and,
- Data Platforms (e.g. websites, phone-based information access sites) and/or Communications Systems.

County-level architectural diagrams were developed according to the communication linkages of, and between local stakeholders.

How is this SDP Organized?

Section 1: Description of the Region –- Shasta County. This section describes the region's physical and economic characteristics, and provides the reader an idea of the transportation environment in which the SDP will be implemented.

Section 2: Shasta County ITS Inventory, Needs Assessment, and User Service Objectives. The roadway transportation infrastructure and identified stakeholder needs are summarized in this section to give a basis for the Plan's practicality. User Service Objectives (USO's) are also included to identify alternative, potential solutions to address identified Stakeholder Needs vis-à-vis current and proposed inventories.

Section 3: Solutions / Project Plans - ITS solutions selected for the County are presented in ITS Project Plan format(s). The reader can take from this section the general nature and implementation time frame of each solution..

Section 4: Architecture Maintenance Plan.
Shasta County's ITS Plan is integrally linked with the broader, Caltrans District 2 ITS Architecture and Plan. Its updates and maintenance are described in the Caltrans District 2 Architecture Maintenance Plan (most recent Draft version dated 2/06/06).