

STAFF REPORT



MEETING DATE:	10/22/13
SUBJECT:	Presentation and Adoption of the Integrated Traffic Data Collection and Management Plan for the Shasta County South Central Urban Region
AGENDA ITEM:	8
STAFF CONTACT:	Sean Tiedgen, Associate Transportation Planner

SUMMARY:

Intelligent Transportation Systems (ITS) is an umbrella term for various technologies used to monitor transportation system usage and performance. Accurate, real-time data is needed to justify grants, manage incidents, and further understand travel behavior to design better projects and meet transportation needs related to new development. SRTA partnered with Caltrans District 2 to carry out a grant-funded ITS plan, focusing on Shasta County's South Central Urbanized Region. The plan estimates \$3.9 million of total capital ITS-related needs at full build-out. It is envisioned that implementation of the full system would be phased in over five or more years as part of new transportation projects and through grants.

STAFF RECOMMENDATION:

It is recommended that the board of directors adopt the Integrated Traffic Data Collection and Management Plan for the Shasta County South Central Urban Region.

DISCUSSION:

Background – ITS technologies are used to collect information about transportation usage (e.g. traffic volumes, truck traffic, local vs. interregional traffic, etc.) and report on its efficiency (e.g. traffic congestion, average vehicle speed, etc.). Examples of applications include vehicle counting devices, electronic message signs that relay upcoming road conditions, and closed-circuit traffic cameras used to monitor traffic flow.

A historic lack of congestion in the region meant that transportation system data needs were minimal and that one to three year data collection intervals were appropriate. In recent years, congestion and resulting traffic bottlenecks on regional roads have increased. Travel demand model forecasts indicate that the number of locations and the severity and duration of congestion will continue to rise without targeted transportation system improvements and/or travel demand reduction strategies. These developments, in conjunction with new federal and state reporting requirements, and increased emphasis on performance-based transportation grant funding, make a strong case for investments in regional ITS technologies.

In order to qualify for federal and state ITS funding, the region must maintain a plan that is consistent with national standards. The Shasta County Regional ITS Architecture Plan, adopted in 2006, serves this purpose. The plan identified a list of regional needs and projects, including an integrated system

for collecting, analyzing, and sharing real-time traffic data generated by various ITS devices located throughout the region.

In March 2012, the SRTA Board of Directors approved a joint project with Caltrans District 2 and a technical services agreement with Kimley-Horn and Associates to further explore these needs. This project is known as the *'Integrated Traffic Data Collection and Management Plan for the Shasta County South Central Urban Region'*. The scope of work included the following elements:

- Stakeholder needs and objectives;
- Inventory of existing data collection system;
- Gap analysis of data collection devices;
- Implementation plan for the expansion of traffic data collection; and
- Potential funding sources.

The study was funded with a \$60,000 State Planning & Research grant and a \$35,000 Proposition 84 grant.

Findings – Caltrans District 2 has deployed ITS technology across Shasta County that meets minimum federal requirements and annually collects information only on average daily traffic (AADT). The current system and staffing does not have the capacity to collect and report data more frequently nor to provide the detailed information necessary to meet new planning requirements related to performance measures.

The cost to expand and develop a robust traffic data collection system for the urban region is estimated at \$3.9 million for initial capital and \$261,000 annually for operation and maintenance at full build-out (see attached Table 1 for details). The list of proposed improvements includes:

- Forty new traffic count stations and five upgraded traffic count stations (\$3.1 million);
- Five new gateway stations for counting vehicles traveling into, out of, or through the region (\$500,000); and
- In the longer term, an Advanced Traffic Management System that can automatically compare real-time and historical data to anticipate and alert when congestion or incidents occur (\$300,000).

If implemented, these improvements would provide more complete, accurate, and timely reports on traffic counts; vehicle speeds; vehicle on/off counts at highway interchanges; hourly/seasonal traffic volumes; and information on where people are coming from and going to within Shasta County. With such data, SRTA, Caltrans, and local jurisdictions could more effectively monitor traffic patterns, develop short- and long-range planning strategies, implement targeted travel demand reduction strategies, provide data needed for grants, help to identify and build the most effective transportation improvements, monitor and report system performance measures, and better support development efforts.

Implementation would be phased in over time through grants intended for ITS purposes or as part of new state highway construction and maintenance projects. The study will be referenced by SRTA and Caltrans District 2 for planning and project prioritization (i.e. the 2015 Regional Transportation Plan) and when seeking funding for ITS improvements. Because projects build upon the existing system,

Caltrans would construct and maintain the equipment. Additionally, upgrading temporary count stations to permanent stations would help offset the cost of ITS improvements by automating data collection, thereby reducing the need for Caltrans staff to manually collect data in the field.

ALTERNATIVES:

The board of directors may delay acceptance of the final report and request specific modifications.

OTHER AGENCY INVOLVEMENT:

This project was developed in partnership with Caltrans District 2. The report was shared with all local jurisdictions. The Technical Advisory Committee (TAC) concurs with the staff recommendation.

FINANCING:

There is no direct fiscal impact associated with accepting the final report. If accepted, SRTA and Caltrans District 2 would reference the study when seeking funds for implementation. Acceptance of the report does not commit any agency to fund or build the recommended improvements.



Daniel S. Little, AICP, Executive Director

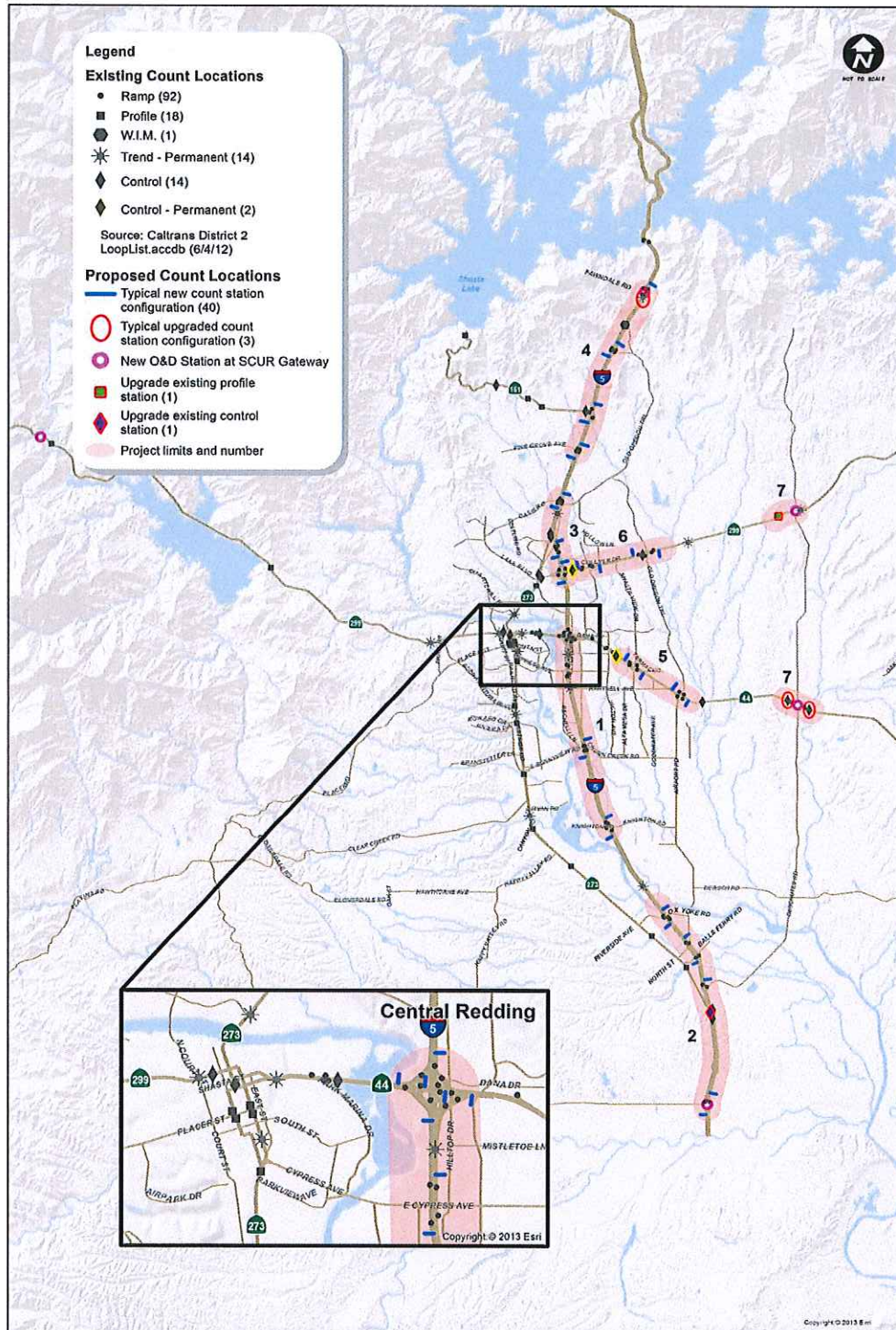
Attachments: Table 1 - Estimated ITS Infrastructure Costs
Appendix E – Proposed Projects
Executive Summary – Integrated Traffic Data Collection and Management Plan for the Shasta County South Central Urban Region (SCUR) is available at:
http://www.srta.ca.gov/RTstudy_current.htm
Final Report – Integrated Traffic Data Collection and Management Plan for the Shasta County South Central Urban Region (SCUR) is available at:
http://www.srta.ca.gov/RTstudy_current.htm

Table 1 - Estimated ITS Infrastructure Costs

Project	Installation Costs	Operation & Maintenance Costs (Annually)
Gateway Origin-Destination Stations	\$510,000	\$58,000
Detector Project 1	\$851,000	\$39,000
Detector Project 2	\$496,000	\$22,000
Detector Project 3	\$562,000	\$25,000
Detector Project 4	\$562,000	\$25,000
Detector Project 5	\$284,000	\$13,000
Detector Project 6	\$142,000	\$6,000
Detector Project 7	\$199,000	\$9,000
Total Installation Costs:	\$3,606,000	-
Total Annual O&M Costs^{1 2}:	-	\$197,000
Future Conditions		
Convert stations from Detector Project 1 to TMS	\$79,000	\$15,000
Convert stations from Detector Project 2 to TMS	\$46,000	\$9,000
Convert stations from Detector Project 3 to TMS	\$53,000	\$11,000
Convert stations from Detector Project 4 to TMS	\$53,000	\$11,000
Convert stations from Detector Project 5 to TMS	\$26,000	\$5,000
Convert stations from Detector Project 6 to TMS	\$13,000	\$9,000
Convert stations from Detector Project 7 to TMS	\$20,000	\$4,000
Total Installation Costs:	\$290,000	-
Net Increase Annual O&M Costs^{1 2}:	-	\$64,000

¹ Net increase in Operation & Maintenance costs reflects the additional costs of Traffic Monitoring Stations due to additional communication and power requirements.

² Costs do not reflect potential cost savings due to reduced Caltrans staff time in the field and automation of data collection to computer servers.



PROPOSED PROJECTS