

## STAFF REPORT

**SUBJECT:** South Coast Intelligent Transportation System Projects

**MEETING DATE:** February 3, 2010

**AGENDA ITEM:** 8

**RECOMMENDATION:**

- A. Recommend that the board approve a contract amendment with Kimley-Horn & Associates in the amount of \$575,000 to implement the projects using a design-build strategy
- B. Recommend that the board authorize staff to develop memorandums of understanding with respective local agencies related to funding and responsibilities to implement approved projects

**STAFF CONTACT:** Fred Luna and Scott Spaulding

**SUMMARY**

In April 2009, the SBCAG board approved the South Coast ITS Plan. The South Coast ITS (Intelligent Transportation System) Plan was an effort which began in 2006 in parallel with efforts to complete the regional ITS vision for Central Coast. Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies can relieve congestion, improve safety and enhance productivity.

The approved South Coast ITS Plan recommended list of 9 projects to evaluate and make a determination of the best candidates for implementation. Those 9 projects are shown in Attachment 1. Implementation of (ITS) projects is consistent with the *101 In Motion* effort that was approved in July 2006, which emphasized implementing early action projects as part of the regional strategy for congestion relief strategy on the Highway 101. The ITS projects are being funded through two federal earmarks secured by Congresswoman Lois Capps totaling nearly \$1.6 million and some local matching dollars.

Subsequent to the board approval of the South Coast ITS Plan, staff worked closely with its consultant team (Kimley-Horn & Associates) to evaluate the projects and recommend a short list for implementation. The evaluation included consultation with local agencies, Caltrans, MTD and other stakeholders.

The results of the evaluation showed that the following projects would be implemented as a first tier of projects.

- Web-based Traveler Information System
- Signal Synchronization
- Transit Signal Priority

Since April 2009, the consultant team has prepared some initial documents that are part of the federal funding requirements for ITS projects and conducted environmental analysis for those projects that require field installations.

Staff will provide a presentation on the status to date, requesting confirmation of the projects that are to be implemented and outlining next steps and timelines. Staff is also requesting that a recommendation be provided to the SBCAG board to amend the consultant contract and to work with local partners on MOU's to implement and share in the funding of these projects.

**DISCUSSION:**

As noted above, the 9 projects approved in the South Coast ITS Plan were evaluated and scored based on various criteria, but emphasizing the following two: 1) Congestion relief capabilities, and 2) Ability to reduce SOV trips and promote alternative modes.

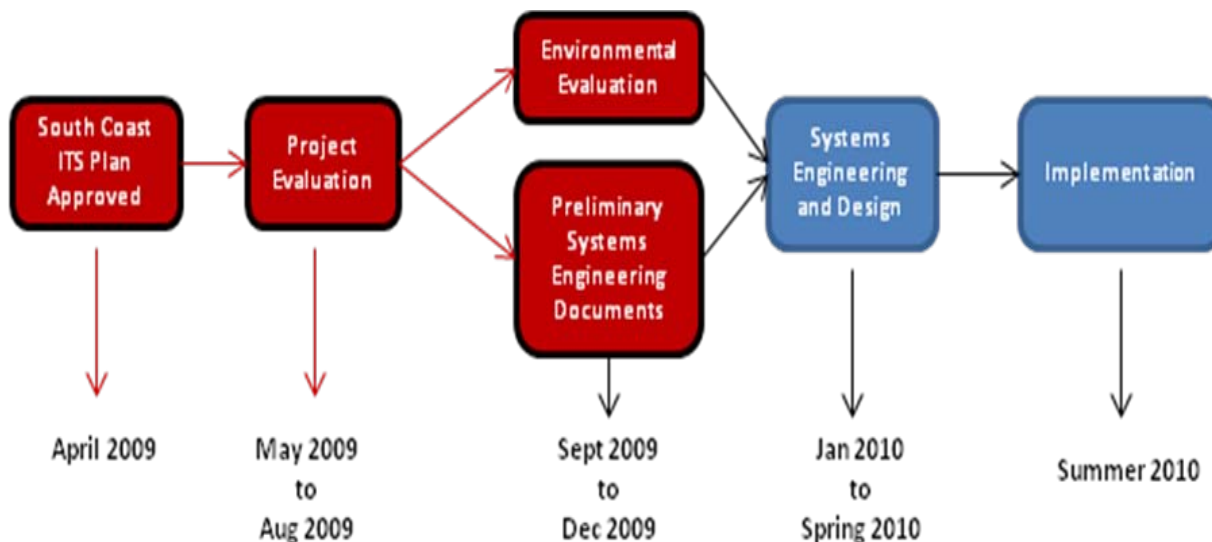
As a result, the following 3 projects were identified for implementation as a first tier of projects.

Web-based Traveler Information System: Development of a regional traveler information website that would provide real time, map-based information on road closures, CHP incident reports, and Highway 101 traffic conditions.

Signal Synchronization: Timing coordination of signals on regional arterials at various locations (Hollister Avenue, Carrillo Street and Los Carneros Ave) to improve traffic flow.

Transit Signal Priority: Equipping a limited number of transit vehicles that serve the Upper State Street corridor and coordinating signals to allow for green time extension to improve transit route timing.

Below is a summary of the next steps for each of these 3 projects over the next few months to get to implementation. Generally, each project will follow the following process:



**Status of Each ITS Project and Next Steps**

In December 2009, staff and its consultant team completed the environmental assessment (required of all federal-aid projects) and preliminary systems engineering (required of all federally funded ITS projects). Caltrans has approved the environmental assessments and FHWA has made a determination of the next steps to complete the systems engineering for each of the individual projects. Below is a summary of the status to date for each project and next steps.

Traveler Information Website: Stakeholder meetings were held in early 2009 to solicit input from local agencies regarding what they would like to see included in a regional traveler information website. Agency input was balanced with available information sources as well as the technical capability the budget allowed for to develop core website features and functionality. There was widespread stakeholder consensus regarding several characteristics considered key to providing a traveler information website that would be useful to the public:

- Real time traffic conditions on Highway 101
- Easily accessible video feeds from traffic/road cameras located on the South Coast
- Estimated trip times for key destinations (i.e., Santa Barbara to Ventura)
- Real time CHP reports of traffic incidents
- Planned and emergency road closures by Caltrans

The consultant team has prepared the federally required “Concept of Operations” and “Project Strategies” documents for the Traveler Information website and will be completing final versions of these documents as part of the Systems Engineering phase of the project. In January, the FHWA determined that a “Systems Engineering Management Plan” is also required for the website, which the consultant will prepare during the next project phase. Following the completion and approval of all federally required documents, website design and implementation will begin.

The website will be located at the existing SBRoads.com domain, which is currently used for program information and updates for the Milpas to Hot Springs Operational Improvements project. The general design and layout of the SBRoads website will be maintained to lower design and development costs, and all of the current Milpas to Hot Springs project information will be included and easily accessible on the Traveler Information site. The most prominent feature of the Traveler Information website will be a regional map with overlays of real-time traffic conditions on Highway 101, Caltrans road closures, CHP-reported traffic incidents, and traffic cameras displaying live video feeds. The feasibility of developing a mobile site and smart phone application are also being evaluated.

Signal Synchronization: During the evaluation phase, several arterial corridors were ranked to determine which specific corridors would be funded in the first phase of implementation. Several corridors were evaluated using criteria such as: Average Daily Traffic, Existing Infrastructure, Intersection Spacing and Number of Signals. Based on the evaluation process, which included input from local agencies, MTD and other stakeholders, the highest scoring corridors were:

- Carrillo Street (Chapala St to US 101)
- Upper State Street (Calle Laureles to SR 154)
- Hollister Avenue (Patterson to Fairview)
- Los Carneros (El Colegio to US 101)

Once the corridors were selected, the consultant team completed some preliminary field reconnaissance work to evaluate any environmental impacts and integration issues. An outline for the Systems Engineering Management Plan was prepared and approved by FHWA. A Preliminary Environmental Study (PES) form was submitted to Caltrans for review and is being finalized as of this meeting. No issues are anticipated to move into the next phase of development: detailed design and integration.

In discussing the signal synchronization corridors with local agencies, there was a preference by the City of Santa Barbara to emphasize signal synchronization on Carrillo and have Upper State Street integrate Transit Signal Priority (see discussion below), based on their recent experience and the fact TSP on Upper State St had long been envisioned. Similarly, when staff and its consultant team met with City of Goleta representatives, they wanted to emphasize Los Carneros over Hollister Ave, though SBCAG staff and its consultant team are recommending

that both projects be integrated since it is most efficient to synchronize signals in both directions as part of the same project.

The intended benefit, and what will be measured as performance criteria are developed for the projects, will be to improve peak hour traffic flow on these corridors which improve travel times, remove local trips from using Highway 101, and improve air quality.

Transit Signal Priority: During the evaluation phase, several arterial corridors were ranked to determine which specific corridors would be funded in the first phase of implementation. Several corridors were evaluated using criteria such as: Number of Transit Service Providers on the Corridor, Peak Hour LOS, Ridership and Routes Served. Based on the evaluation process, which included input from local agencies, MTD and other stakeholders, the highest scoring corridors were:

- Carrillo Street (Chapala St to US 101)
- Upper State Street (Calle Laureles to SR 154)
- Hollister Avenue (Patterson to Fairview)
- Hollister Avenue (Fairview to Storke)

Once the corridors were selected, the consultant team completed some preliminary field reconnaissance work to evaluate any environmental impacts and integration issues. An outline for the Systems Engineering Management Plan was prepared and approved by FHWA. A Preliminary Environmental Study (PES) form was submitted to Caltrans for review and is being finalized as of this meeting. No issues are anticipated to move into the next phase of development: detailed design and integration.

In discussing the Transit Signal Priority projects with MTD and local agencies, there was a preference by the City of Santa Barbara to implement TSP on Upper State Street as it has been a project that has long been envisioned. At this point in time no TSP is envisioned on Hollister Ave, but this could be a project in a second phase.

The intended benefit, and what will be measured as performance criteria are developed for the project, will be to improve reliability for transit arrival times along this corridor.

### **Contract Amendment**

In November 2008, SBCAG approved a contract with Kimley Horn & Associates in the amount of \$200,000. During the course of the 15 months, two specific task orders have been written to fund specific efforts provided by the Kimley Horn team. The first task order culminated in the completion of the ITS South Coast Plan which was approved by the SBCAG board in April 2009. A second task order was written to complete Phase II, which takes us through the environmental evaluation and preliminary systems engineering documentation. These two task orders have exhausted the initial contract budget authority. Staff is now requesting that a recommendation be made to the SBCAG board to approve a contract amendment for implementing the previously identified projects in a design-build approach. This approach will allow SBCAG and the KH team flexibility to work on the design engineering and integration of the projects simultaneously and procure materials without having to undertake a lengthy federal procurement process. The approach has been conceptually approved by Caltrans Local Assistance. Work will continue with Caltrans to confirm this.

The contract amendment being sought is in the amount of \$575,000. Of this total cost, \$120,000 is for engineering and \$455,000 is for construction/integration (including equipment). This contract amount includes a contingency of 20% for both engineering and construction as detailed design will allow the contract team to refine estimates. Table 1 shows the breakdown by each project. With the approval of the contract amendment, SBCAG staff will develop a task order that will include, but not be limited to, the following activities: detailed design, systems engineering, development of a procurement strategy for materials and equipment, installation and testing. As part of the next phase the consultant team will assist SBCAG in the

development of Memorandums of Understanding (MOU's) for implementing, funding and assuming operational and maintenance responsibilities to ensure the sustainability of these projects.

**Table 1  
Project Cost**

Project Description	Project Costs		
	Engineering and Design	Build and Integration	Total
Web Traveler Information Site	\$50,000	\$175,000	\$225,000
Signal Synchronization			
Carrillo Street	\$2,500	\$22,500	\$25,000
Los Carneros Rd	\$2,500	\$62,500	\$65,000
Transit Signal Priority			
Upper State Street	\$45,000	\$120,000	\$165,000
Subtotal	\$100,000	\$380,000	\$480,000
Contingency (~ 20%)	\$20,000	\$75,000	\$95,000
Total Cost	\$120,000	\$455,000	\$575,000

**Funding Strategy and MOU's**

As previously noted in this report, SBCAG has two federal earmarks from which it intends to fund the named projects. The total of the federal earmarks is \$1.587 million. The first earmark is for \$787,143 and requires no local match. The second earmark is in the amount of \$800,000 and requires a 20% local match. Through a previous authorization request in the amount of \$200,000 through Caltrans under this first earmark, SBCAG has completed the South Coast ITS Plan and has completed the project scoping, systems engineering and environmental evaluation. The projects are now at a point where detailed design and systems engineering is required and additional funds are required.

Based on feedback from Caltrans, they have asked that SBCAG prepare an FTIP amendment to program funding for the Web Traveler Information site under the \$787,143 earmark and to use the second earmark in the amount of \$800,000 to fund the signal synchronization and bus signal priority projects, and any Tier 2 projects that may considered should there be residual funding available.

Staff has discussed this funding strategy with its local agency partners (City of Goleta, City of Santa Barbara and MTD) and furthermore indicated that it was SBCAG's recommendation that our partners provide the local match. It is the intent that memorandums of understanding (MOU's) will be developed to document the funding agreement as well as roles and responsibilities during design, implementation and for future maintenance and operations to ensure sustainability of the projects.

**Recommendation**

Staff is requesting that the following recommendations be provided to the SBCAG board:

- C. Recommend that the board approve a contract amendment with Kimley-Horn & Associates in the amount of \$575,000 to implement the projects using a design-build strategy

- D. Recommend that the board authorize staff to develop memorandums of understanding with respective local agencies related to funding and responsibilities to implement approved projects

**ATTACHMENTS**

1. List of Recommended Projects from the South Coast ITS Implementation Plan

## ATTACHMENT 1

### Recommended List of Projects South Coast ITS Plan

Project ID	Project and Description
A	<p><b>South Coast Regional Bus Signal Priority (BSP):</b> Implementation of bus signal priority on high transit utilization routes. Upper State Street is a primary focus.</p>
B	<p><b>Transit Vehicle Tracking (AVL):</b> Implementation of on-board AVL systems and also installation of transit arrival information at key stops</p>
C	<p><b>Smart Call Boxes:</b> Installation of sensors and add-on devices to provide weather data at key locations such as Gaviota (US 101) and San Marcos Pass (SR 154). Use of existing communication</p>
D	<p><b>Web-based Traveler Information:</b> Development of publicly accessible website to act as public interface for traveler information, transit links, rideshare information links, and traffic data.</p>
E	<p><b>Signal Synchronization Program:</b> Develop and implement signal synchronization for regional arterials to include central system, equipment upgrades and infrastructure</p>
F	<p><b>Regional Detection:</b> Implements an expanded data collection approach on regional corridors, both state and local, using vehicle probes.</p>
G	<p><b>Improved Regional Traffic Management:</b> Development of agreements and protocol for sharing data, disseminated traveler information and development of communication links that could be facilitate posting of information on Traveler Information Website during key events.</p>
H	<p><b>Video Surveillance System:</b> Installation of video surveillance on key regional intersections and on Highway 101</p>
I	<p><b>Coordinated Incident Management:</b> Development of incident response "flush plans" to make effective signal coordination on parallel routes to Highway 101 in case of incident</p>