

## STAFF REPORT

**SUBJECT:** Highway 101: Traffic Congestion Sensors

**MEETING DATE:** February 21, 2008

**AGENDA ITEM:** 6H

**STAFF CONTACT:** Fred Luna

### RECOMMENDATION:

Authorize the Executive Director to sign a Memorandum of Understanding (MOU) with the Ventura County Transportation Commission (VCTC) to partner on the installation of traffic congestion sensors along Highway 101 on the South Coast for the purpose of communicating travel information to Caltrans' Traffic Management Centers and publicly accessible websites.

### SUMMARY:

SBCAG has an opportunity to partner with the Ventura County Transportation Commission (VCTC) to have traffic congestion sensors installed along the Highway 101 South Coast corridor. The sensors would gather data on traffic density and speed which would be used to determine congestion levels. Sensors have already been installed by VCTC on Highway 101 in Ventura County, so this would extend coverage to the South Coast. The information gathered by the sensors could be displayed on maps on publicly accessible websites. It would be opportune to disseminate information such as this as the US 101/Milpas-Hot Springs project begins construction in the Summer of 2008 and SBCAG launches a website on the project in the next few months at [www.SBROADS.com](http://www.SBROADS.com). With information about congestion on 101 in the Milpas area, commuters could use alternate routes or plan trips during less congested times. Traffic congestion information could also be transmitted to Caltrans' Traffic Management Centers in Districts 5 and 7 and be used to notify motorists of travel times to and through the South Coast via changeable message signs. The information gathered will also be helpful in providing data for traffic studies for the 101 Widening projects that are currently underway. Finally, the information could be made available to radio and TV traffic reporters for live reporting of traffic conditions.

Staff is recommending that SBCAG enter into an MOU with VCTC, whereby SBCAG would pay VCTC an annual fee of \$10,000 from SAFE revenues. The investment by SBCAG represents about 40% of the cost VCTC will be paying to its vendor SpeedInfo to install, maintain and process the data gathered from up to 24 sensors beginning at the Ventura County line and heading north. SBCAG would be responsible for obtaining permits from local agencies and from Caltrans.

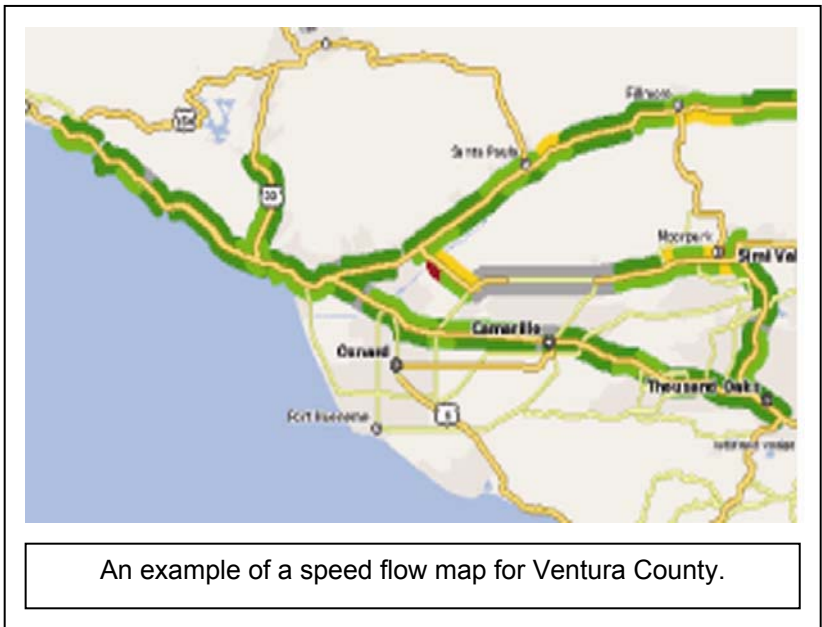
### DISCUSSION:

SBCAG has been presented with an opportunity to partner with the Ventura County Transportation Commission (VCTC) to have traffic congestion sensors installed along the Highway 101 South Coast corridor. VCTC has entered into a contract for the installation of such

Member Agencies

Buellton ■ Carpinteria ■ Goleta ■ Guadalupe ■ Lompoc ■ Santa Barbara ■ Santa Maria ■ Solvang ■ Santa Barbara County

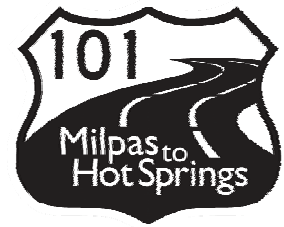
sensors with SpeedInfo, a company that has developed a proprietary device that is able to detect speed of vehicles moving through the highway corridor using Doppler radar technology. VCTC has just completed installation of nearly 100 sensors along the northern part of Highway 101 in Ventura County up to the Santa Barbara county line. VCTC currently has up to 24 additional sensors available that can be installed at approximately one-mile spacing in Santa Barbara County.



The data derived from the sensors would be transmitted via a wireless communication network to SpeedInfo who would tailor the data to meet the particular needs of SBCAG, VCTC and Caltrans for this corridor. The data would be primarily used to develop speed flow maps similar to what VCTC currently has generated through its sensors.

The speed flow maps are generated by the Caltrans District 7 Traffic Management Center and can be posted on publicly accessible websites. Based on the speed of traffic, an algorithm is used to determine traffic congestion levels and color the map's road links green, yellow or red for free flowing, congested, or stop-and-go traffic.

It is anticipated that these sensors can be installed, tested, and maps generated and posted on the [www.SBROADS.com](http://www.SBROADS.com) website that SBCAG and Caltrans are developing for the US 101 Milpas to Cabrillo Hot Springs project. The website will be available when the project construction starts this Summer. This website will also include links to closed-circuit traffic cameras being installed as part of the project after the first year of construction.



Under the MOU, VCTC would be the lead agency for administering the contract in Santa Barbara County. The MOU would require SBCAG to pay VCTC \$10,000 annually, which represents 40% of the cost to VCTC to lease the 24 sensors from SpeedInfo that would be installed on the South Coast. VCTC is willing to partner with SBCAG, and pay 60% of the lease costs, because it believes (and SBCAG staff concurs) that Ventura County residents commuting to the South Coast would benefit from the availability of travel data on the VCTC or other publicly accessible websites. VCTC would also like the Caltrans District 7 Traffic Management Center in Eagle Rock to have access to the data. District 7 could use the data to issue travel advisories and post notices on changeable message signs in Ventura County about travel times to and through the South Coast corridor. District 5 would also have access to the data through an internal network or "intra-web" at Caltrans.

### Installation and Spacing

The traffic sensors are configured to be mounted on existing infrastructure such as light poles, signs, bridges, etc. It is recommended by SpeedInfo that installation spacing for the sensors not exceed one-mile in order to obtain reliable speed data for mapping purposes. The devices are solar-powered and small. (See photo below).



It is anticipated that the sensors in Santa Barbara County would be installed on existing poles and roadside callboxes, which is the approach VCTC took on Highway 101 in their county. SBCAG as a first order of work with SpeedInfo and VCTC would coordinate a field-siting meeting to determine best possible locations for installation on existing infrastructure. Working with the parameters of up to 24 sensors available and one-mile spacing, it is anticipated that coverage can be provided on Highway 101 from the Ventura County line north up to at least Santa Barbara. Though a single sensor is equipped to accurately gather data for up to six lanes of traffic, due to grade differences between northbound and southbound lanes, two sensors may be required at certain locations.

### **Permits**

VCTC has already entered into a separate MOU with Caltrans District 5 to have the sensors installed. SBCAG would be required to obtain any local permits for installation within coastal zones and an encroachment permit from Caltrans. Once the siting determination has been made, SBCAG will begin working with local agencies to obtain permits. It is anticipated that the work would be a categorically exempt CEQA project; however, SBCAG will work closely with local agencies on the permitting process and CEQA determination. SBCAG will also be responsible for obtaining an encroachment permit from Caltrans District 5.

### **Funding**

SBCAG's \$10,000 contribution would come from vehicle registration fees the agency receives as the county's Service Authority for Freeway Emergency (SAFE). SAFE funding can be used by State law only for "motorist aid purposes". SBCAG currently uses SAFE funding to operate and maintain the countywide highway call box system and the Freeway Service Patrol on the South Coast. There is sufficient budget capacity in the SAFE program to expend \$10,000 annually on traffic congestion sensors.

### **Coordination with Other Projects**

It is anticipated that this project will fill a gap for information needed for the US 101 Milpas to Cabrillo Hot Springs but also be able to provide information for the South Coast 101 HOV and Highway 101 CMIA Widening projects that are currently under development. Beyond being able to display speed data to the public via speed flow maps, the raw data will be helpful to traffic studies currently underway for those two widening projects on US 101. Caltrans is also moving forward with a Traffic Monitoring System project between the Ventura County line and Garden Street to install sensors on new infrastructure that will gather both traffic count data and speed data, but this project is not likely to be implemented until early 2009 at the earliest. Once the Caltrans project is installed, the SpeedInfo traffic sensors would be a redundant system that could be removed at the expense of SpeedInfo. The Caltrans project would also be able to support future installation of closed-circuit cameras for traffic monitoring.

### **Application to Other Parts of the County**

Since VCTC's interests in congestion data end at Winchester Canyon, the congestion sensors would not be installed any farther north than that point. But SBCAG staff believes this is a great opportunity to run what is, with the VCTC subsidy, a low-budget pilot program to collect and

disseminate travel data that if successful could be applied to the 101 corridor in Orcutt and Santa Maria and perhaps even extend as far north as Nipomo through a partnership with SLOCOG. This is an idea that SBCAG staff can evaluate and discuss with TTAC after the congestion sensors go on-line and are put to the test over the next year.

**RECOMMENDATION:** Authorize the Executive Director to enter into MOU with VCTC for implementation of this project.

**COMMITTEE REVIEW:**

At its February 7, 2008 meeting, TTAC recommended that SBCAG enter into the MOU with VCTC to initiate this pilot-project.