

# Appendix C6

## Safety and Security

### Background

---

The *Safe, Accountable, Flexible, Efficient Transportation Equity Act for the 21<sup>st</sup> Century* (SAFETEA-LU) includes two new planning factors related to safety & security that must be addressed:

- Increase the safety of the transportation system for motorized and non-motorized users
- Increase the security of the transportation system for motorized and non-motorized users

The two planning factors are required in the planning process of Metropolitan Planning Organizations (MPOs) through the development of their long-range transportation plans. SAFETEA-LU calls for the long-range plan (Metropolitan Transportation Plan, or MTP in the SACOG region) to have a safety element comprised of the State Strategic Highway Safety Plan (SSHSP) and appropriate elements of security planning to be included as well. The security planning areas include emergency relief, disaster preparedness plans, strategies and policies that support homeland security when appropriate.

SAFTEA-LU provides a flexible frame for the MTP to build its safety and security programs. This flexibility allows the MPO to address specific regional needs through prioritization of appropriate efforts. SACOG is focusing its efforts on education and disaster preparedness for the road system and transit providers and using the SSHSP for guidance on roadway improvements.

### Transportation System Redundancy and Evacuation Planning

---

Recent FHWA [*Using Highways for No-Notice Evacuations*, "Routes to Effective Evacuation Planning Primer Series," U.S. DOT, FHWA, December 2007] guidance identifies transportation system redundancy for both roads and transit as an important element of planning our investments to improve safety and security in the event of a natural or human associated disaster. The report suggests evacuation planning efforts should identify critical corridors to move people and goods out an area impacted by disaster. In the Sacramento region, improved transportation infrastructure is important to facilitate evacuation planning and provide redundant evacuation routes.

Examples of transportation infrastructure that are at risk in the Sacramento Region and the entities responsible for assessment planning to manage that risk are included in the following table:

<b>Transportation Infrastructure</b>	<b>Responsible Planning Entities</b>
Rail Lines	UP, Sierra Northern, Amtrak, Regional Transit, California Northern, Sacramento River Train
Pipelines	Local Utilities
Electrical and Telecommunications Grids	AT&T, SMUD, PG&E
Cellular Technology Communication Systems	AT&T and Verizon
Local Roadways	Local Cities, Counties and Caltrans
Limited Access Freeways	Caltrans
Bridges	Local Cities, Counties and Caltrans
Aviation Facilities	Counties, Federal Aviation Administration, US Air Force, US Coast Guard, and Private Operators
Navigable Waterways	US Army Corps of Engineers, Port of Sacramento
Levee Roadways	US Army Corps of Engineers, Counties, Local Cities, and Caltrans
Bicycle and Pedestrian Trails along Levees	US Army Corps of Engineers, Counties, and Local Cities
Waterborne Transportation Resources	Private Operators, US Army Corps of Engineers, US Coast Guard, and Port of Sacramento

An all-hazard risk assessment for the Sacramento Region’s transportation assets can guide the transportation agencies towards their future resource investments. Part of the all-hazard assessment is identifying performance of transportation assets during modeled evacuations. Many system failures are likely to be identified during the assessment. This assessment is planned under future development of SACOG’s safety and security coordination efforts.

Among the active efforts in the region, Sacramento County and the City of Sacramento are currently developing advanced evacuation plans for the population and employment centers of our region. In terms of regional transportation needs, FHWA calls for anticipating risks to a region’s transportation system through placing hazards risks on transportation infrastructure locations. This all-hazard approach to analysis of the transportation infrastructure can outline the vulnerable locations to human and non-human induced events.

## FLOODING & EVACUATIONS

The 2005 Hurricane Katrina flood disaster brought to light Sacramento’s vulnerable levees and ranked our region as a national concern for serious flooding. Thirty five percent of our region’s population, over 720,000 people, lived inside on state agency’s estimated 200 year floodplain in 2005. The ensuing years have resulted in increased safety and security efforts at the state level and SAFECA, along with local governments developing evacuation plans. Funding has also been increased, such as local property assessments, to improve the region’s levees in many of our at risk areas. Even with these important efforts towards improved flood safety, the region remains the most at-risk large metropolitan area in the US for a major flood event.

The confluence of two rivers with significant flood risk – the American and Sacramento - is of particular concern because these rivers surround two perimeters of Sacramento’s central business district (CBD), West Sacramento and Natomas. In the context of federal guidance on transportation safety & security planning needs, SACOG conducted a comparative analysis of river crossings in peer river city CBDs.

The study examined the number of CBD river crossings as a measure of transportation system redundancies that could serve as potential evacuation routes. Eight river cities were selected as peers to Sacramento on the basis of their CBD size and metropolitan area population. The number of freeway and street bridges were counted for each peer city CBD and then compared to the linear miles of river frontage in the study area. These results suggest that Sacramento has fewer river crossings than any of the peer river cities. The reported measure of this deficit is the “riverfront miles per bridge” in the table.

Peer River Cities	Riverfront Miles per Bridge (Freeway & Street)	Freeway Bridges	Street Bridges	Linear Miles of River*	Square Miles*	Transit % of Commute Trips*
Denver	0.30	2	9	3.3	7.2	21%
Portland, OR	0.39	2	6	3.1	7.3	30%
Minneapolis	0.44	2	7	4.0	7.2	30%
Pittsburgh**	0.50	3	9	6.0	7.6	33%
Kansas City**	0.55	4	4	4.4	6.2	6%
Columbus, OH	0.71	5	3	5.7	6.9	8%
Austin	0.79	2	3	3.9	7.3	4%
Cincinnati	0.91	2	5	4.5	7.2	17%
<b>Sacramento**</b>	<b>0.94</b>	<b>3</b>	<b>3</b>	<b>5.7</b>	<b>7.4</b>	<b>12%</b>
* Central Business Districts (CBD) are the study areas						
** Kansas City, Pittsburgh & Sacramento are the only peer cities at the confluence of two rivers and perimeters of their CBDs surrounded						

The river crossings analysis also suggests a possible correlation between peer river cities and transit commute mode share - the cities with fewer river crossings typically had smaller transit mode shares. The safety implication being that evacuation via transit during a flood event may be a larger logistical challenge for Sacramento’s CBD. Our region’s evacuation plans will need to address the challenge in

order to plan for transit options with redundant evacuation routes that can move large numbers of people out of a disaster area quickly. Transit's role in evacuation efforts and the need for redundancy evacuation routes were raised during an October 2007 SACOG transit workshop held to simulate a flood disaster with our region's transit operators. This simulation was the first planning effort in the region to look at how transit resources could be reallocated during an emergency and deal with collateral problems including power supply disruptions that would stop light rail operations and create increased demand for bus and shuttle systems.

## **OTHER EMERGENCY EVACUATION CONCERNS**

Although federal, state and local attention has been focused on risks related to flooding, there are additional risks and issues that are important for the SACOG region to address in providing improved evacuation planning:

- Human associated risks in the SACOG Region are more difficult to prevent. Coordination efforts through the Transit Coordination Committee have helped prepare the transit agencies to respond to risks from criminal and terrorism threats. Similar planning exercises caused by human associated activities are planned if future grants are received by this program.
- Many difficulties during emergencies are encountered when real time information is not accurate for use by first responders, emergency planners and incident commanders. SACOG is working with partner agencies to implement an Intelligent Transportation System (ITS) project called the STARNET System.
- Wild Fires also pose a major danger in the Sierra Nevada Foothills of our region during the summer and fall months. The danger could be significantly increased under many of the impacts envisioned under global climate change. Similar to the flooding threat, there is a level of predictability that can be used to prepare the transportation network.

## **Road Safety**

---

Safety issues in the Sacramento region involve all modes of travel, however, data reporting is limited and planning efforts have only recently been increasing. The 2006 approval of California's Strategic Highway Safety Implementation Plan (SHSIP) was an important step in guiding Caltrans' implementation of strategies statewide.

Highway safety is a challenge in both rural and urban areas of the Sacramento region. In rural areas, shoulders are limited along many highways and guardrails are lacking along many high-accident locations. Key safety challenges along urban highways include narrow shoulders; roadside obstacles; short, tight ramps; and poor lighting and signage along older sections of urban freeways and highways.

Improving interchange and intersection safety for roadway users is a significant area of safety need. Caltrans maintains a list of uncontrolled highway and rail intersections, but very little federal or state money has been available to fund these types of improvements. Federal reauthorization legislation funding a new Safety Program starting in 2007 will improve the situation, promising funding for

such neglected needs as safer rail grade crossings and urban interchanges. The table below provides and inventory of street access control devices at rail intersections in our region.

County	Flashers		Gates		Passive		Other						Grand Total
	At Grade		At Grade		At Grade		Above Grade		At Grade		Below Grade		
	HR*	LR**	HR	LR	HR	LR	HR	LR	HR	LR	HR	LR	
<b>El Dorado</b>	6				8		3		1				<b>18</b>
<b>Placer</b>	1		47		11		27		2		21		<b>109</b>
<b>Sacramento</b>	21	4	116	68	21	39	26	1	12	25	19	7	<b>359</b>
<b>Sutter</b>	2		16		5		1		2		2		<b>28</b>
<b>Yolo</b>	11		62		21		14		1		9		<b>118</b>
<b>Yuba</b>	1		17		8		4		1		15		<b>46</b>
<b>Region</b>	<b>42</b>	<b>4</b>	<b>258</b>	<b>68</b>	<b>74</b>	<b>39</b>	<b>75</b>	<b>1</b>	<b>19</b>	<b>25</b>	<b>66</b>	<b>7</b>	<b>678</b>

Source: California Public Utilities Commission, Rail Crossings Engineering Section, 2007.

\*HR signifies Heavy Rail Crossings

\*\*LR signifies Light Rail Crossings

Of the 678 crossings in our region, 113 are protected in a passive approach. For example, a rural crossing with railroad warning signs and no active link to approaching trains. This type of crossing places a greater responsibility on the vehicle operator, pedestrian or bicyclist to yield to an approaching train. Many of the passive crossings are also located along Sacramento Regional Transit's Light Rail lines. Three hundred and seventy two crossings are protected by warning flashers or a combination of flashers and gates activated by approaching trains.

Several programs exist to improve railroad grade crossing protection. The California Public Utilities Commission administers Section 190 Grade Separation funds throughout the state. There are also federal funds available through SAFTEA-LU to eliminate or improve grade crossings. The funding levels for grade crossings improvements have remained relatively unchanged since TEA-21. Most of the federal funding is passed directly to states, such as, the CPUC to administer in California.

Safety concerns for local roads largely center on intersection crashes and run-off-the-road accidents. Although drivers are often at fault, unforgiving roadway conditions can turn a simple crash into a fatality. Public agencies avoid identifying safety hazards, to reduce lawsuit risk, which hampers safety programs. Regardless, the public wants safer roads, and safety-related costs are high, for fatalities, injuries, lost work time, and higher insurance premiums.

- Local studies and the SHSIP reveal that safety gaps are also significant for bicyclists and pedestrians:
- California's pedestrian fatalities as a portion of total fatalities are much higher than the nations' 11 percent, exceeding 17 percent of total fatalities in the State. In other words, the rate for pedestrian fatalities is 50 percent higher in California than the national average. Half of all pedestrian fatalities in the State were seniors over the age of 65 or youth under the age of 20.
- The NHTSA publication, *Designing for Pedestrian Safety*, notes that crashes involving pedestrians have the highest crash risk of fatalities.

- For 2004, California 3.06 bicyclist fatalities per million of population were 23 percent above the national rate of 2.49.
- Efficient roadway designs for vehicles often work to the disadvantage of cyclists and pedestrians, especially at freeway interchanges and arterials with timed signals and shortened walk times.

Other human risks involve the sixteen items of the SHSIP that include pedestrians and bicyclists and transit system safety plans. The sixteen items are outlined below:

1. Reduce Impaired Driving Related Fatalities
2. Reduce the Occurrence and Consequence of Leaving the Roadway and Head-on Collisions
3. Ensure Drivers are Licensed and Competent
4. Increase Use of Safety Belts and Child Safety Seats
5. Improve Driver Decisions about Rights of Way and Turning
6. Reduce Young Driver Fatalities
7. Improve Intersection and Interchange Safety for Roadway Users
8. Make Walking and Street Crossing Safer
9. Improve Safety for Older Roadway Users
10. Reduce Speeding and Aggressive Driving
11. Improve Commercial Vehicle Safety
12. Improve Motorcycle Safety
13. Improve Bicycling Safety
14. Enhance Work Zone Safety
15. Improve Post Crash Survivability
16. Improve Safety Data Collection, Access, and Analysis

The California Department of Transportation has recently established working groups for each of the sixteen goals. SACOG will work with our agency partners to address each of the sixteen goals through coordinated efforts with the California Department of Transportation.

## SACOG Active or Planned Efforts Related to Safety & Security

To support the active or planned efforts by SACOG, the MTP2035 includes four policy statements that will guide safety & security planning efforts for the future:

- SACOG supports efforts with its transportation providers to provide for a secure transportation system for all users. (Pedestrian, Bicycle, Private Auto and Public Transportation)
- SACOG will continue to champion agency coordination, training, and information sharing efforts to promote security preparedness throughout the region.
- SACOG will continue to seek funding sources to strengthen the security of the region's transportation system.
- SACOG will continue to consider increased transportation system security when evaluating funding requests for transportation projects in the region.

Security initiatives will continue to help protect the region from natural and human events that pose a risk to public safety. Efforts will include information sharing and testing of the regions transportation assets. The sixteen elements of the Strategic Highway Safety Plan will be pursued in coordination with the California Department of Transportation and SACOG member agencies, leading to the funding of transportation projects that improve the regions transportation security, multi agency coordination, preparedness, and continuity.

### **CALL BOXES AND SAFE**

SACOG manages the Sacramento region's highway call box program, a cooperative effort that has put more than 1,400 call boxes on about 750 miles of highway in a six-county area. The boxes provide motorists in need with a direct link to the California Highway Patrol. Location information is displayed on a computer (at the private call answering service) when a motorist uses the call box phone/TTY to request help.

Call boxes on Class I Bike trails function in much the same way. Signage information reflects County, Bike trail, and box number. These call boxes are directly connected to local law enforcement offices not CVRS's private call answering service. When a biker/pedestrian uses a bike trail call box they speak directly to police or sheriff.

The program is a joint venture of Sacramento, San Joaquin, Sutter, Yolo, Yuba, and El Dorado Counties, which together operate the Capitol Valley Regional Service Authority for Freeways and Expressways (SAFE). It is financed by an annual \$1 charge on all registered vehicles in the participating counties. SACOG provides staffing and management for SAFE.

Capitol Valley Regional SAFE (CVRS) is currently upgrading its call boxes to digital technology (from analog) and upgrading the call boxes to include TTY capability. Project completion date is February 2008. CVRS is looking into implementing the Mobile Call Box Program in cooperation with the 511 Road information system. The Mobile Call Box Program allows motorists in distress to access Call box services by using their cell phones to call 511, instead of the fixed call boxes along the roadways. Stranded motorists could stay in their car while requesting motorist aid (non 911

calls). CVRS continues to explore various other Motorist Aid ideas. SAFE is planning to upgrade the 511 Road information system through the STARNET capabilities.

## **S T A R N E T**

The Sacramento Transportation Area Network (STARNET) is an information exchange network and operations coordination framework that will be used by the operators of transportation facilities and emergency responders in the Sacramento region of California. STARNET will enable the real-time sharing of data and live video, and refinement of joint procedures pertaining to the operation of roadways and public transit, and public safety activities. It will also provide more information for travelers via the region's 511 web site and interactive telephone service (dial 511).

SACOG intends to bring emergency-coordination efforts to Committees for review and implementation. There is currently a lack of coordination with emergency response and evacuation scenarios. The goals of STARNET are the following:

- Make travel easier and safer
- Gather and disseminate more and better real-time travel information
- Better travel decisions – time, mode, route
- Provide transportation system managers and emergency responders with more and better real-time information
- Including information from other agencies
- Better operational decisions and actions
- Allow shared use of field devices when appropriate
- Better use of resources and better operation

STARNET will build upon the previous Intelligent Transportation System (ITS) investments by using, with little to no modifications, the existing field infrastructure (cameras, changeable message signs, traffic signals, vehicle location systems, etc) and central systems (freeway management systems, traffic signal systems, transit management systems, computer aided dispatch systems, etc) already operated by each agency. As part of the STARNET implementation, interfaces will be developed to these existing systems to enable them to share data and video with each other, provide data and video to the public via the 511 regional travel information systems, and provide operations and emergency response personnel with a map-based regional transportation management display.

## **I N C I D E N T M A N A G E M E N T A C T I O N S F O R B O T H S A F E T Y A N D C O N G E S T I O N R E L I E F**

Incidents on highways and freeways are both a safety issue and a significant cause of congestion. Contrary to common belief, up to 50 percent of traffic congestion on freeways is not caused by lack of capacity, but due to incidents including weather, accidents, spilled loads, and stalled vehicles. Through improving the response time in dealing with these traffic problems – and ideally avoiding them altogether – the MTP could make immediate progress in increasing safety and reducing roadway congestion.

Incident management strategies can work on faster identification, quicker response and cleanup, and redirection of motorists to avoid the incident scene. Examples include freeway service patrols that

quickly restore freeway lanes to traffic, implementation of Intelligent Transportation System (ITS) investments to monitor and track incidents, and enhanced 511 phone and Internet traveler information so drivers and transit riders can make smarter choices based on real-time information.

## **SECURITY TRAINING TO PREPARE FOR DISASTERS IMPACTING THE TRANSPORTATION SYSTEM**

The Sacramento region has a number of existing organizations, plans, and infrastructure in place to provide for the security of the regional transportation system. Over the past few years, security programs have been sponsored by Caltrans, SACOG's Transit Coordinating Committee, and federal agencies in the Sacramento area. Additionally, there are a number of current or pending efforts to plan for and respond to large-scale natural or manmade disasters and improve public safety communications systems. These efforts are especially important given the region's risk for major flooding events.

The Transit Security Program is one key element to this work and is coordinated by the Transit Coordinating Committee (TCC). The TCC's role in the development of the SACOG OWP Work Element 08-002-11 Transit Emergency and Safety Planning Coordination and 08-007-10 Managing Transit Emergencies Education, is to provide a forum for discussion on transit safety and security related topics. The TCC currently guides SACOG Staff in the role of providing support for exercise, research and training opportunities. Recently, several agencies participated in a Sacramento Area Flood Planning Transit Exercise.<sup>1</sup> SACOG co-sponsored the flood exercise with the California Department of Homeland Security and coordinated participating agencies and public outreach efforts. SACOG is currently awaiting the Exercise After Action Report. The report will provide a foundation to build upon for the transit operators. The TCC will use this document to design and implement a regional strategy to address the coordination between the transit operators and the emergency response community.

SACOG and the Yolo County Transportation District sponsored a *Transportation Safety Institute Course* in January 2008 through a Caltrans planning Grant. The class included a functional exercise between class peers on the last day of class.

A future efforts for SACOG is as one of ten sponsors for the *California Department of Transportation Response and Recovery Conference*, which will be held March 8-10, 2008. The course is taught to strengthen inter agency coordination on a regional level. SACOG is actively coordinating agency participation for this meeting. The conference concludes with a table top exercise and an after action report is produced for the participants.

---

<sup>1</sup> Sacramento Regional Transit District, Yolo County Transportation District, Roseville Transit, South County Transit, El Dorado Transit, Placer County Transit, Federal Emergency Management Agency, Paratransit Inc., Federal Transit Administration, Folsom Stage Line, Booze Allen Hamilton (BAH), US Department of Homeland Security, Sacramento County Office of Emergency Services, California Department of Transportation, Natomas Unified School District

## SAFE ROUTES TO TRANSIT

Bicycling and light rail are complementary modes that together can provide transportation for a significant number of commuters, students, shoppers and other travelers. Since transit providers in the United States have generally focused on passengers arriving at stations by motor vehicle, the full potential of attracting customers who arrive by bike has not yet been realized. Improving and promoting bike access to light rail stations would dramatically increase the pool of transit customers and provide a variety of important community benefits.

In order to study this issue, SACOG led the development of a study to evaluate existing bicycling conditions near Sacramento Regional Transit District (RT) light rail stations and to recommend ways to improve the safety and convenience of bicycling to light rail stations.

A team of evaluators analyzed bicycling access to twelve light rail stations during May and June of 2006. Evaluators surveyed the stations and the areas within a one-mile radius of the stations. They recorded observations of the existing conditions encountered by current and prospective bicyclists wishing to access light rail stations, including roads, intersection, station accessibility and bicycle parking.

Working under the direction of a Technical Advisory Committee made up of representatives from local governments, Caltrans, RT, SACOG and the bicycling community, the report team drafted findings and recommendations regarding the twelve surveyed stations and Model Station Guidelines that can be applied to future light rail stations or existing stations when they are upgraded. The guidelines apply to station design, information and communications, and bikes on board trains, as well as to streets and areas around the station not under RT control.

The Key Findings from the study are as follows:

- Some stations are quite accessible by bicycle via quiet neighborhood streets, while bicycling to others is hampered by roads or intersections not designed with bicyclists in mind, or by awkward or dangerous street-to-station transitions. At some stations, barriers such as wide surface streets, freeways, railroad tracks, or canals limit safe and convenient access from one or more directions.
- Inadequate long-term bicycle parking facilities deter bike use at stations.
- Boarding a light rail car with a bicycle (or storing it while on-board) is difficult for many users.
- Bicyclists constitute a significant percentage of light rail users, and informal interviews with bicyclists using light rail confirmed that many of them are dependent upon both their bicycles and public transit for accessing jobs or services.

The following are some of the key recommendations for implementation by RT and the jurisdictions surrounding the light rail stations:

- Adopt Model Guidelines for future and upgraded light rail stations.
- Implement low-cost spot improvements.
- Improve facilities, maintenance and signage on routes to and from stations.
- Improve bicycle parking at stations.
- Improve boarding by bicyclists and storage of bicycles on light rail cars.
- Promote bicycling to light rail.

## **SAFE ROUTES TO SCHOOL (SRTS)**

SACOG plans to do the following:

- Adopt a SRTS policy to promote the practice of safe bicycling and walking to and from schools throughout the MTP Plan Area in order to reduce traffic congestion, improve air quality, and enhance neighborhood safety.
- Obtain federal funds from the Federal Highway Administration through Caltrans to implement at least one SRTS pilot program within the MTP Plan Area.
- Conduct workshops with cities, counties, school districts and transit operators within the region to identify other potential opportunities for collaboration that would reduce greenhouse gas impacts. At a minimum, the issues discussed will include the findings from the SRTS activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school sitting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services.

SACOG shall also encourage its member agencies to apply for funds available through the State Highway Safety Improvement fund for eligible infrastructure projects in order to improve bicycle and pedestrian safety for school children.

## **CALIFORNIA SAFE ROUTES TO SCHOOL PROGRAM**

Established in 1999, the State Safe Routes to School (SR2S) program came into effect from the passage and signing of Assembly Bill 1475 (AB 1475). In 2001, Senate Bill 10 (SB 10) was enacted which extended the program for three additional years. In 2004, SB 1087 was enacted to extend the program three more years. A new bill, AB 57, was introduced in December 2006 to extend the program until January 1, 2013. AB 57 was signed by the governor on October 15, 2007 pushing the sunset date from January 2008 to January 2013.

The California Safe Routes to School is a state grant program intended to improve conditions for children in kindergarten through twelfth grade, to safely walk and bicycle to school. Physical improvements must be located within a two-mile radius of a school (such as, improved sidewalks, pedestrian crossings, lighting and signage). Program goals include:

- Increased bicycle, pedestrian, and traffic safety around schools
- More children walking and bicycling to and from schools
- Decreased traffic congestion around schools
- Reduced childhood obesity
- Improved air quality, community safety and security, community involvements
- Improved partnerships among schools, local agencies, parents, community groups, non-profit organizations

## **FEDERAL SAFE ROUTES TO SCHOOL PROGRAM**

In addition to the California program, the Federal Safe Routes to School Program was passed into law with the passing of SAFETEA-LU in August of 2005. The federal program provides funding to

the states to administer and award grants for their safe routes to school program. California was one of several states that had a Safe Routes to School Program prior to the federal program. SRTS is available to state, local, regional agencies; cities and counties; non-profit organizations; schools/school districts; and Native American Tribes. The funds can be applied to project benefiting kindergarten through eighth grade students. In FY2008 there is slightly more than \$18 million available to California applicants. In September 2009, the SRTS program expires and will have to be revisited by the federal government.

## Regional Data Monitoring

---

SACOG started coordination with our member's information technology departments in 2000. Since the Office of Homeland Security was created in 2001, SACOG has participated in several geo-spatial information development efforts through our Regional GIS Coordination Committee. A grant from Sacramento County's Office of Emergency Services funded a nationally-recognized address maintenance system to keep our public safety dispatch system up to date. In 2006, our regional Office of Homeland Security funded over 1,000 square miles of high-resolution ortho and oblique imagery. Coordination efforts will continue to identify valuable information development projects and match them with funding sources to improve our response capabilities

## **MAPPING AND GEOGRAPHIC INFORMATION**

SACOG's Mapping and Geographic Information Systems (GIS) coordinates the base street and address map used by local, regional, state and federal government agencies in our region. SACOG regularly provides data to both the United States Geological Survey's (USGS) National Map program and the National Geospatial Intelligence Agency (NGA) data collection efforts. The data provided to the organizations are collected from SACOG Member agencies through our Regional GIS Cooperatives project and consolidated and standardized into a single regional set of information.

## **REGIONAL GIS COOPERATIVES**

SACOG started the GIS Cooperatives project in 2000 to facilitate the development of common property and transportation base maps in each of our six counties. During 2001 and 2002, SACOG staff worked our member's GIS staff to improve and develop GIS street maps that contain the address ranges follow along each county's tax assessor parcel maps. Many of the staff level working groups formed through this process went on to use this information to support E911 systems in each of the counties.

The staff-level GIS working groups in Sacramento and Yolo Counties developed formal agreements to continue data development and information sharing. In 2004, the Sacramento County GIS Cooperative was awarded \$80,000 in Homeland Security grants from the Sacramento County Office of Emergency Operations to develop an online tool to maintain the GIS Street file. The tool, known as the Street Address Portal, now allows for local government data maintainers and public safety data reviewers to collaborate on monthly updates of the street address file for all public safety dispatch agencies in Sacramento County. This project won an international award for local government collaboration from the software firm ESRI in 2006.

Future plans for the GIS Cooperatives Project include replicating the successes of the Street Address Portal project with our other cooperative groups. SACOG will also continue to promote data sharing and cooperative data maintenance projects to improve and enhance our local GIS programs.

## **REGIONAL IMAGERY COLLECTION**

In 2005, members of the Regional GIS Collaborative project asked SACOG to coordinate a Regional Imagery Collection of six-inch ortho-photography and oblique imagery for the urbanized portions of our region. With the assistance of our local members, SACOG was able to receive \$550,000 in Urban Area Security Initiative Funds and over \$65,000 in USGS Partnership funds to develop two high resolution imagery sets for our region. Six other local governments and the University of California joined this project to expand the total area to over 1,100 square miles of our region.