



## Efficient Transportation – Six Case Stories

These case stories were compiled in July 2009 in partnership with the California Air Resources Board. Additional climate change information is available at [www.ca-ilg.org/climatechange](http://www.ca-ilg.org/climatechange).

---

### 1) Community: La Mirada (Los Angeles County)

**Population: 50,447**

#### Summary

La Mirada's Transit service provides a flexible route Dial-a-Ride program, offering "curb-to-curb" service within the city. Passengers share rides in the city's fleet of small buses. The service is available to all residents and visitors. Passengers may call when they are ready to be picked up, schedule pick-up in advance, or subscribe to regular service. Reservations are based on time and space availability. The service also connects riders with adjacent transit agencies.

#### Program Highlights

- Program available to anyone.
- Passengers share small busses.
- Funded through county sales tax, fares, and other sources.

#### Lessons Learned

- Need to educate the public on how to use the system and to connect with other regional transit providers.
- Computerized scheduling increases route efficiency with GPS tracking.

#### Resources to Learn More

- [La Mirada Transit](#)

#### Climate Action Connection

Transportation is the largest generator of greenhouse gas emissions. Thus, reducing vehicle miles travelled (VMT) and idling times are key components in addressing climate change.

La Mirada's flexible route service encourages transit use for local travel, and makes it easier for commuters to connect with regional service, reducing the number of vehicles on the road and thus greenhouse gas emissions.

## **The Rest of the Story...**

La Mirada established its Dial-a-Ride program in 1973. One of the first flexible route “paratransit” type services in California, La Mirada’s program is one of only a few that serve the general public (Arcadia and Claremont are two others). Like fixed-route transit service, riders share rides in the city’s fleet of small buses. By providing flexible service, La Mirada is able to supplement fixed-route service provided by several regional transit agencies that passes through or near the city. Service is available Monday through Saturday.

To use the service, riders simply call and request a pick-up. A computerized scheduling system uses GPS tracking to identify the closest bus and most efficient route. The system then transmits the request to a routing computer on the bus, which informs the driver of the new pickup and route changes. La Mirada installed the computerized system (called Trapeze) in early 2009, as part of an effort to increase efficiency. In addition to increasing route efficiency, the computerized system also helps relieve dispatchers from the need to communicate scheduling information to drivers. This allows the dispatchers to focus on customer service and creative trip planning.

### **The Fleet**

La Mirada contracts with a private firm to manage the Dial-a-Ride program. The city owns 12 small buses that can carry between 16 and 24 passengers each, and is in the process of replacing a portion of the fleet with low-emission compressed natural gas vehicles. Generally, between four to eight vehicles are in operation at any given time, and 4 are held in reserve or for maintenance. Nine of the 12 vehicles are ADA compliant, with lifts to accommodate wheelchairs. La Mirada also uses its fleet to provide residents non-emergency medical transport services up to one mile outside the City limits by appointment.

### **Program Outreach**

The program’s outreach activities include its Web site, brochures, and system maps and schedules (which include information about regional connecting services) to provide information for the public and potential riders. The program also participates in regional transportation planning processes.

### **Program Effectiveness**

La Mirada measures the Dial-a-Ride program’s effectiveness in several ways. Objective measurements include the number of bus-hours of operation and the average number of riders per hour. The program has averaged between 40,000 and 50,000 riders per year, and averages about four riders per hour. La Mirada’s current goal is to raise that to five

riders per hour. Additionally, the program tracks public comments, and is preparing a ridership survey.

### **Program Funding**

La Mirada funds the Dial-a-Ride Program with revenue from a county sales tax that provides funding for transportation improvements and congestion relief, as well as passenger fares (\$1.00 reflects full fare). Like most transit agencies, La Mirada uses state and federal transportation funds to cover capital costs. The total budget for La Mirada's Dial-a-Ride is approximately \$850,000 per year.

## 2) Community: Petaluma (Sonoma County)

**Population: 56,996**

### Summary

Nearly 60 percent of Petaluma's greenhouse gas emissions are from transportation – almost twice the statewide average. The Central Petaluma Specific Plan concentrates development downtown in order to improve residents' ability to use transit and link to regional transportation networks.

### Program Highlights

- 400-acre downtown focus area zoned for twice the density of rest of city.
- Main city transit terminal moved adjacent to regional rail station in the city.
- Decreased parking requirements in plan area.
- Focus on pedestrian access.

### Lessons Learned

- City can't dictate behavior changes, but improving safety and convenience increases likelihood people will use alternatives to auto travel.
- Take comprehensive approach – improves project evaluation and increases grant competitiveness.

### Climate Action Connection

Transportation is the largest generator of greenhouse gas emissions. Thus, reducing vehicle miles travelled (VMT) and idling times are key components in addressing climate change.

Focusing development to increase density and to reduce barriers to the use of alternative modes of transportation increases the use of alternative modes of transportation and, consequently, reduces VMT and the resulting greenhouse gas emissions.

### Resources to Learn More

- [Central Petaluma Specific Plan](#)
- [Petaluma General Plan 2025](#)
- [Petaluma General Plan 2025 Revised Draft Environmental Impact Report, Air Quality – Greenhouse Gas Emissions Section](#) (see Appendix A, Applicable Policies from the General Plan that Reduce Greenhouse Gas Emissions, Table 1A, section 5 Mobility)
- [Petaluma Bicycle and Pedestrian Plan](#) (Appendix to General Plan 2025)

## The Rest of the Story...

The City of Petaluma is focusing much of its greenhouse gas reduction efforts on the link between land use planning and transportation to reduce the amount of vehicle-miles travelled. The city adopted a major piece of this strategy, the Central Petaluma Specific Plan, in 2003 to revitalize the downtown core and improve the overall transportation system. The plan focuses new growth in the geographic heart of the city to allow future development to occur with increased emphasis on pedestrian, bicycle, and transit circulation. Supporting this focus, the priorities of the General Plan Mobility element, updated in 2008, include:

- Improving the transportation system to increase mobility for all modes of travel;
- Creating a pedestrian environment that is safe, attractive, encourages walking and is accessible to all;
- Implementing a bicycle network free of gaps that permits easy bicycle travel; and
- Determining level of service ratings that include a multi-modal emphasis.

The plan area includes about 400 acres adjacent to downtown that had been vacant or underused. Petaluma designed the plan to take advantage of the opportunity redevelopment presented to increase pedestrian and bicycle accessibility and decreasing automobile use.

The city moved its main bus terminal to a location in the plan area that is adjacent to the site of the central Petaluma station of the planned Sonoma-Marín Area Rail Transit (SMART Rail) system. The SMART Rail system is expected to be operational in 2014, providing 70 miles of regional rail service paralleling Highway 101, the main commuter thoroughfare for the region.

Zoning in the plan area is for mixed use with up to 60 residential units per acre, twice the density allowed in the rest of the city. The higher density supports, and is supported in turn, by proximity to regional rail, and local and regional bus service, along with the pedestrian and bicycle focus of the plan.

The city's Bicycle and Pedestrian Plan, which adds additional implementation guidelines, also support the goals of the Central Petaluma Specific Plan, and the new General Plan. The Pedestrian and Bicycle Advisory Committee monitors implementation and reviews and comments on development proposals as a formal part of the city's entitlements process.

Read the Petaluma climate leadership case story on [Land Use & Community Design](#).

### 3) Community: Riverbank (Stanislaus County)

**Population: 21,492**

#### Summary

The City of Riverbank's 2009 general plan update focuses on increasing transportation choices available to residents through closer integration of land use and transportation planning. This includes increasing street "connectivity" (the frequency with which streets or roads intersect) and other strategies supporting non-automobile travel. The city works closely with developers to implement these goals.

#### Highlights

- New developments required to meet the general plan standard for street "connectivity" (*using a "connectivity index" based how well the streets connect with each other*).
- Street improvement standards to treat all locally available forms of travel equally.

#### Lessons Learned

- Efficient transportation depends on land use policies that provide supportive patterns of land use and infrastructure development.
- Early communication with developers improves projects' compliance.

#### Climate Action Connection

Transportation is the largest generator of greenhouse gas (GHG) emissions. Thus, reducing vehicle miles travelled (VMT) and idling times are key components in addressing climate change.

General plan policies that recognize the link between land use and transportation, and encourage land uses that increase transportation choices, reduce the need for automobile travel, and its associated GHG emissions.

#### Resources to Learn More

- [Riverbank Planning Division](#)
- [Riverbank General Plan](#)
- [Roadway Connectivity article – Online Transportation Demand Management Encyclopedia](#)

## **The Rest of the Story...**

Riverbank's updated general plan includes several specific strategies for supporting pedestrian, bicycle and other non-automobile modes of travel. Examples include requiring bike racks and pedestrian improvements in commercial development projects; pushing buildings toward the front of lots, with parking on the side or in back; and requiring street trees, to improve comfort and appearance of sidewalks and streets.

## **The Challenge of Preserving Community Character**

Like many smaller cities, Riverbank is working to address the challenge of preserving its small-town character as it updates its general plan in an era of anticipated growth, shrinking financial resources, and mounting pressure to reduce greenhouse gas emissions. The general plan's Land Use Element includes the goal of achieving "development patterns that encourage alternatives to vehicular travel," supported by policies encouraging "compact development" and concentrating development around "neighborhood centers."

## **Early Outreach to Developers**

As early as possible, the city reviews proposed projects for accessibility and street connectivity (the frequency with which streets and roads intersect), including how the project area connects with existing streets and future planned development. Increasing connectivity increases the options available for travel through the plan area. Projects are required to meet standards for connectivity using a "connectivity index" outlined in the general plan's circulation element. The connectivity index is calculated by dividing the number of road segments (between intersections) by the number of intersections.

## **Complete Streets Build on Land Use Policies**

The first goal of the Riverbank General Plan's Circulation Element's is that "Riverbank's circulation network provides convenience and choice among all modes of transportation." The goal is supported by policies and implementation strategies to place all travel modes on an equal footing in the city's review and approval of projects. In particular, one measure requires the City to "revise street improvement standards to be consistent with this Circulation Element, including consideration on equal footing of all locally available forms of travel."

Examples include requirements for the street improvement standards include "a complete and comprehensive pedestrian and bicycle system," sidewalks that are "wide and shaded by trees" separating pedestrians and auto traffic, lower speed limits on "roads cyclists will share with motorists" and automatic traffic signal actuators where cyclists can reach them from the road.

## 4) Community: San Mateo County

**Population: 712,690**

### Summary

San Mateo County's Commute Alternatives Program offers county employees transit pass, vanpool, carpool, bike, and walk to work subsidies, along with a Guaranteed Ride Home Program, carpool-only parking facilities, and bike lockers. Over 1700 of the county's 5800 (about 30 percent) employees are enrolled in the program.

### Program Highlights

- Program available to all county employees.
- Up to \$75/month subsidy for transit tickets or vanpool expenses.
- \$20 per month subsidy for walking, biking or carpooling at least 8 days per month.
- Funded through county sales tax.

### Lessons Learned

- Financial incentives are a big plus – most effective method to get people out of their cars.
- Need to make participation convenient as possible, like ordering tickets online.
- Guaranteed Ride Home important to include with commute alternative options, but rarely used.

### Climate Action Connection

Transportation is the largest generator of greenhouse gas emissions. Thus, reducing vehicle miles travelled (VMT) and idling times are key components in addressing climate change.

Transportation Demand Management (TDM) programs, like this one, reduce VMT by offering incentives for people to change their commute behavior, reducing the number of vehicles on the road.

### Resources to Learn More

- [Commute Alternatives Program](#)

### The Rest of the Story...

San Mateo County established its Commute Alternatives Program (CAP) in 1992 with an initial enrollment of 300 employees. The program provides county employees with a full range of "Transportation Demand Management" (TDM) services, including financial incentives for county employees to use alternate modes of transportation to commute to work. The program also helps connect employees with carpools and vanpools, and provides information about other commute options.



## **Financial Incentives**

The CAP offers subsidies of up to \$75 per month for purchase of transit tickets or vanpool expenses. Participating employees order tickets online through the program's Web site, paying only the amount over the subsidy level. The program offers transit tickets for a wide range of local and regional transit providers.

The program also provides subsidies of \$20 per month for employees who walk, bike or carpool to work at least 8 days per month. Employees establish their eligibility for the subsidy on the program's Web site by filling out an online form and verifying that they carpooled, biked, or walked a minimum of eight days during that particular month. The program sends a monthly report to the county Controller, who adds the subsidies to the paychecks of participating employees. Additionally, daily carpoolers get preferred parking in a dedicated lot.

## **Guaranteed Ride Home**

The program provides a Guaranteed Ride Home in the event of a personal or work-related emergency. Participating employees can get a voucher that covers the costs of a taxi or rental car, or can access cars from the county's fleet if available. Many similar programs have found that participants rarely use Guaranteed Ride Home benefits, so the cost is low. Such benefits are critical, though, in reassuring potential participants that they will not lose flexibility by changing their commute behavior.

## **Outreach and Effectiveness**

The program communicates with participants and potential participants through a variety of outreach strategies. These include its' Web site, email blasts, presentations at new employees orientations, and information tables at health & wellness fairs and other events attended by county employees.

The Commute Alternatives Program measures effectiveness by the number of employees that participate. From the 300 original participants, the program now helps over 1700 of approximately 5800 county employees, a participation rate of about 30 percent. The program does not collect detailed information about where participating employees live, and consequently does not track actual reductions in VMT.

## **Funding**

San Mateo County funds the Commute Alternatives Program with revenue from a county sales tax that provides funding for transportation improvements and congestion relief. The cost of the program averages between \$80,000 to \$85,000 per month, or about \$1 million a year. This translates to about \$65 a month (\$580 a year) per participating employee.

Read San Mateo County climate leadership stories on [Green Building](#) and [Civic Participation](#).

## 5) Community: Santa Clarita (Los Angeles County)

**Population: 177,158**

### Summary

The City of Santa Clarita is using a variety of technologies to increase the efficiency, and reduce costs associated with, its' roadways and transportation systems. The city uses Intelligent Transportation Systems (ITS) technologies to monitor and control all of its 176 traffic signals. The city is also in the process of replacing signals and streetlights with high efficiency LED lights that will decrease energy use by as much as fifty percent.

### Program Highlights

- Centralized control of all traffic signals from traffic operations center.
- Closed circuit TV cameras on 40 intersections.
- Web-based traffic information site under development.

### Lessons Learned

- ITS investments increase road efficiency by allowing higher traffic volume.
- Keeping signal timing up to date with traffic data maintains efficiency.
- ITS investments are less expensive than widening roads.
- ITS gathers important information for analysis.
- ITS systems improve ability to share information with the public, which also improves efficiency.

### Climate Action Connection

Transportation is the largest generator of greenhouse gas emissions. Thus, reducing vehicle miles travelled (VMT) and idling times are key components in addressing climate change.

Using signal synchronization and remote monitoring and control allows the traffic system to adapt to changing circumstances. This reduces idling, as well as overall travel times, thus reducing emissions.

### Resources to Learn More

- For more information, contact the Santa Clarita Traffic and Transportation Planning Department at (661) 255-4942.

### The Rest of the Story...

The City of Santa Clarita uses its' Intelligent Transportation System (ITS) to accomplish two goals at once: reduce greenhouse gas emissions and save money. By synchronizing traffic signals, the city is able to minimize both travel and idling times, which reduces emissions of greenhouse gases and other pollutants. The city also has the ability to monitor and remotely control all of its 176 traffic signals. This allows it to change timing or reroute traffic in response to changing conditions or unexpected incidents, such as a major accident or fire, which can significantly affect the city's transportation system.

Increasing the efficiency of its roadways has another benefit for the city. Like many cities, Santa Clarita has experienced a significant amount of growth over the past decade. By increasing the efficiency of its existing transportation system, Santa Clarita has avoided, or at least postponed, the need for expensive capital projects to widen its roads.

### **How ITS Works**

The City of Santa Clarita has installed a network of sensors and communication cables to connect its traffic signals to a central traffic operations center. The network allows traffic managers to monitor traffic levels, along with signal status. Additionally, the city has installed closed-circuit television cameras to visually monitor about forty intersections.

The traffic operations center can reprogram signals as needed to adapt to specific circumstances. In an emergency, it can also provide emergency responders with information that helps them find the fastest route, and can provide advance notice of conditions they will encounter.

To protect the ITS network, and to ensure continuity in the event of problems, the city has installed a battery back-up system that provides up to three hours of power in the event of a power failure. The city can run the system longer than that, if necessary, using portable generators.

The city keeps the system's timing up to date through traffic studies and re-timing the signal synchronization about every three years. Santa Clarita is developing a Web-based traffic information site that will allow residents, and others, to see congestion levels and travel times, based on the information gathered through the ITS network.

### **Funding**

Santa Clarita installed the ITS network in three phases, over several years, using a variety of funding sources. Funding sources included federal Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds, state gas tax funds, and Los Angeles County sales tax funds. The city also used funds from its general fund, along with funds from local special districts.

### **Related Efficient Transportation Activities**

The City of Santa Clarita is in the process of converting its streetlights to energy efficient LED's and has also been converting its vehicles to alternative fuels. Its street-sweepers run on propane, while the residential waste-haulers and some of its busses use compressed natural gas (CNG). The city has a CNG facility that is open to the public, and an environmentally preferable purchasing policy requiring transportation contractors to use alternative-fuel vehicles.

## 6) Community: Tehama County

**Population: 62,836**

### Summary

Lacking the resources of many larger counties in California, Tehama County focuses its efforts to improve transportation efficiency and reduce greenhouse gases on collaboration with other local government agencies, and leveraging the resources it has to provide multiple benefits, including those not related directly to these goals.

### Highlights

- Working with a multi-agency partnership to improve highway congestion management.
- Participating in 9-county pilot program with Google Transit for online transit information.
- Sharing resources between county agencies.
- Collaborative development of GIS data in support of planning and grant applications.

### Lessons Learned

- Interagency collaboration reduces costs and increases return on investments.
- Leveraging resources improves competitiveness for grant funding.

### Resources to Learn More

- For more information, contact the [Tehama County Public Works Department](#)  
Phone: (530) 385-1462
- [Fix 5 Partnership](#)
- [Google Transit Pilot Program information at Shasta County RTPA](#)  
(scroll to bottom of page)

### The Rest of the Story...

Though geographically large, the bulk of Tehama County's population lives in the narrow northern stretch of the Sacramento Valley, with nearly two-thirds of that

#### Climate Action Connection

Transportation is the largest generator of greenhouse gas (GHG) emissions. Thus, reducing vehicle miles travelled (VMT) and idling times are key components in addressing climate change.

Congestion management reduces idling times, and trip times overall, which reduces fuel use and emissions.

population in unincorporated areas. The Sacramento River splits this stretch down the middle, paralleled by the county's two main north-south transportation arteries. Only two bridges cross the river to link the two highways, other than where they meet at the northern tip of the valley.

### **What if I-5 Is Closed?**

Interstate-5 is the main backbone for both local and regional traffic, as well as being the primary transportation corridor along the West Coast. Incidents affecting traffic on I-5, whether an accident in Sacramento, or heavy snow in the Cascade Mountains to the north, can have a dramatic effects traffic and mobility in Tehama County. Periodic closures of I-5, for example, can flood the county with idling trucks, creating a major increase in air pollution, greenhouse gases, and use of fossil fuels. Such an event also creates obstacles to local traffic, both on and off the highway, further increasing congestion and magnifying the impact on air quality and greenhouse gas emissions.

The county is working with Caltrans to share information about traffic conditions through message signs. It is also developing its Geographic Information Systems (GIS) capability to improve contingency planning as well as its ability to share information with the community. Improving congestion management on the highway is a central part of the county's efforts to reduce greenhouse gases, especially in light of expected increases in traffic along I-5.

As a member of the multi-agency Fix 5 Partnership (with Caltrans, Shasta County, and several cities in both counties), Tehama County is working to collaboratively manage increasing congestion along the highway. One major goal of the partnership is to identify funding strategies for expansion of I-5 to handle projected increases in traffic.

### **GIS Supports ITS**

Tehama County is laying a foundation for developing its Intelligent Transportation Systems (ITS) capabilities through investments in GIS. Developing GIS data is supporting the county's regional Blueprint efforts by improving its modeling capability, along with other county activities. In developing a broad GIS capability, the county works to take advantage of leveraging opportunities. GIS software can be used collaboratively to support several departments, such as to fulfill the county's needs for demographic mapping, as well as transportation planning. Building infrastructure through such interagency collaboration improves the county's competitiveness for future grants.

### **Google Transit Pilot**

The county is participating in a multi-county pilot program, lead by Shasta County, to provide public transit information over the internet through Google Transit. Google Transit is a mapping program that integrates transit routing and scheduling information with the popular Google Maps Web service. The Google Transit pilot program allows

residents to see transit information presented as an alternative to driving. One purpose of the pilot program is to assess how well the program works for rural areas.

### **Other Efficient Transportation Activities**

Tehama County works with its cities and schools, as well as appropriate non-profits, on Safe Routes to School programs, including partnering on grant applications. The county has programmed funding, and is developing plans, for a multi-use facility to support its public transit system, dial-a-ride program, and volunteer drivers program. Keeping with the county's strategy of leveraging investments, the facility will also house the county's emergency interoperability communications center. The county is also replacing older vehicles, including dial-a-ride vans, with more efficient "clean-fuel" vehicles.