

# Public Transportation



APRIL 2008

## VTA Combating Climate Change



Global warming is one of the most significant issues affecting countries and individuals worldwide. Greenhouse gases, produced by burning fossil (carbon-based) fuels, are a significant contributor to global warming. Global warming has already been linked to extreme weather events including rising sea levels, heat waves, wildfires, droughts, and floods. Climate change, both now and in the future, impacts quality of life, the health of the planet, economic vitality, and how individuals live and travel.



Depending upon the amount of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases released into the atmosphere over the next 40 years, the California Climate Change Center (CCCC) predicts that temperatures in California will increase from 3.6° to 10.8° F. This could reduce the Sierra Nevada snow pack and negatively impact the state's water used for drinking, flood control, hydroelectric power, agriculture, and recreation.

The United States is responsible for 22% of the world's total greenhouse gas emissions with transportation producing one-third of it, primarily in the form of CO<sub>2</sub> emissions. Each Californian produces an average of 34 tons of greenhouse gases per year, with a major component being private automobile use. A person, solo commuting by car 20 miles round-trip daily, produces approximately 2.4 tons of CO<sub>2</sub> emissions annually. With 873,000 employees working in Santa Clara County, this amounts to over 2,000,000 tons of CO<sub>2</sub> released into the atmosphere from the daily work commute alone.

Major public policy changes are necessary to address behavior and choices that contribute to climate change. Equally important is the need to increase investment in public transportation to provide the public with convenient and affordable mobility alternatives to driving.





## Climate Change Legislation

*In the U.S., several legislative efforts aimed at reducing greenhouse gas emissions have recently been enacted or are being considered at the federal, state or local levels. In addition, the State of California and local communities in Santa Clara County have also been implementing environmental best practices to combat climate change.*

### Federal Efforts

Congress is considering the so-called "Climate Security Act," which utilizes a "cap-and-trade" approach to achieve greenhouse gas emissions reductions. This bill would provide that certain emitters could purchase allowances in the marketplace to permit them to exceed their prescribed emission limits. Emitters would purchase these allowances from designated recipient organizations including public transit agencies, state governments and green technology sector companies. Revenue generated by the trade would then be used to fund sustainability efforts. A proposed amendment to this bill would dedicate 1% of emissions allowances, estimated to be worth between \$800 million and \$1.5 billion per year, to fund

public transit capacity, technology and operational improvements.

To achieve national emissions reductions goals, total emissions allowances would decline each year starting in 2012 and continue through 2050. The bill's aim is to return U.S. greenhouse gas emissions to 1990 levels by 2020, and by 2050 reduce emissions further to 65% below 1990 levels.

Public transit agencies would not be required to submit emissions allowances, in recognition of the significant contributions they make toward reducing greenhouse gas emissions.

### State Efforts

#### Global Warming Solutions Act of 2006

AB 32 (Nuñez), known as the Global Warming Solutions Act of 2006, was enacted in 2006. This law requires California's aggregate greenhouse gas emissions to return to 1990 levels by 2020, a reduction of 100 million metric tons in just 12 years. It also requires the California Air Resources Board (CARB) to adopt regulations requiring the reporting and verification of statewide greenhouse gas emissions, and to monitor and enforce compliance with the program. The regulations that will be enacted by AB 32 will most likely affect virtually every sector of the California economy, from how electricity is generated to how new communities are planned.

Since its enactment, California has begun to implement policies to reduce greenhouse gas emissions. The AB 32 Scoping Plan, being developed by the



CARB, will contain the main strategies for reducing greenhouse gas emissions that cause climate change. The draft Scoping Plan will be released for public review and comment in June 2008, and the final plan is scheduled to be released in October of this year. The plan would then go to the CARB Board for adoption in November 2008.



#### High Speed Passenger Rail Service in California

In November 2008, California voters will have the opportunity to vote on funding to support a bullet-train system. Known as the Safe, Reliable, High-Speed Passenger Train Bond Act for the 21st Century, this bill will fund construction of a high-speed passenger train system connecting northern and southern California. It would allow issuance of \$9.95 billion of general obligation bonds for planning and construction. Of that, \$950 million would fund safety and capacity enhancements on other passenger rail lines to provide connectivity to the high-speed train system.

The bullet train would travel at up to 220 miles per hour from San Francisco via San Jose, to Los Angeles in

less than 2.5 hours, offering a travel option that is comparable to airline service and much quicker than driving. In addition to relieving air traffic and highway congestion, high-speed passenger rail would significantly reduce greenhouse emissions by removing hundreds of private cars daily from Interstate 5, the main connector between the Bay Area and the Los Angeles Area.

In an effort to further reduce climate change, the California High-Speed Rail Authority Board recently undertook studying the feasibility of achieving zero greenhouse gas emissions for the power needs of the high-speed rail system. The study, projected to be completed by June 2008, will focus on costs, potential location of facilities and partnerships with utilities for on-site production of clean energy sources. Since the proposed main route goes through many of California's best locations for wind, solar and geothermal power generation, utilizing these clean energy technologies to power the system would help California meet its goals in reducing greenhouse gas emissions.

### Local Efforts

Local governments within Santa Clara County are doing their part as well, implementing measures to reduce greenhouse gas emissions and utilize environmental best practices. Examples include:

- Incorporating Transit-Oriented Design (TOD) into land-use decisions by requiring higher densities for development projects located near existing or planned transit systems.
- Incorporating urban-friendly design for new development to encourage public transit use, walking and biking as alternatives to the private automobile.
- Replacing gasoline-fueled vehicles in their non-public safety fleet with hybrid or alternative fueled vehicles, such as CNG or plug-in electric.

- Incorporating enhanced signal timing and other Intelligent Transportation System (ITS) features into local roadways and expressways to reduce congestion and vehicle emissions.

- Encouraging installation of residential solar systems by significantly reducing the cost of the required permits and inspections.



- Investigating installation of photo voltaic solar panels on municipal-owned facilities and replacing 100% of street lights with smart, zero-emission lighting.
- Promoting tree planting to maintain the urban canopy, which reduces cooling costs.



## VTA is Committed *to Protecting the Environment*

VTA is committed to proactively reducing the consumption of natural resources, minimizing the creation of greenhouse gases to help protect the environment for future generations, and reducing the generation of pollution in delivering transportation solutions that meet the evolving mobility needs of Santa Clara County. Strategies implemented to achieve these goals include:

- Promoting the environmental benefits of public transit as the most effective solution for protecting the environment.
- Promoting TOD with local jurisdiction so that high-density housing is located near existing transit systems and actively pursuing TOD development on certain VTA-owned properties.
- Promoting the extensive network of bicycle and pedestrians facilities throughout the county, including 23 current and planned cross-county bicycle corridors.
- Replacing high-emission gas vehicles with hybrids. VTA has placed 60 Prius hybrid sedans into paratransit service and 10 Ford Escape hybrids into non-revenue service. Replacing 75 older gas-powered vehicles with hybrids results in an estimated annual reduction of 385 tons of greenhouse gases per year.
- Evaluating the feasibility and technological challenges of using zero-emission, hydrogen fuel-cell technology buses in transit service.



- Investigating using bio-diesel in its 500 bus fleet.
- Adoption of the VTA Sustainability Program to strengthen VTA's commitment to the environment through the conservation of natural resources, the reduction of greenhouse gases, the prevention of pollution, and the use of renewable energy and materials.
- Installing solar panels to light 29 bus shelters and investigating the installation of solar power at VTA's facilities.
- Demonstrating the feasibility and advantages of congestion management-pricing on local highways to manage congestion, reduce emissions, and enhance public transportation systems.



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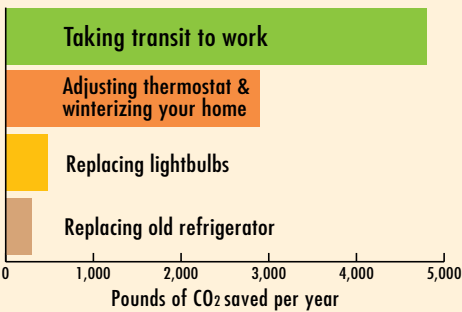
3331 North First Street  
San Jose, CA 95134-1927  
408.321.2300  
TDD only 408.321.2330  
[www.vta.org](http://www.vta.org)



## What You Can Do to Help

*Taking public transportation instead of your car is one of the most effective actions an individual can take to reduce their carbon footprint and energy consumption without reducing mobility.*

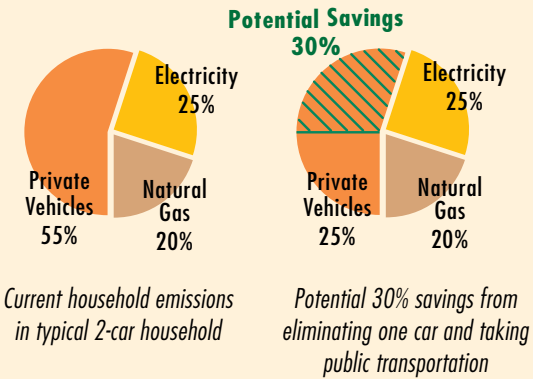
*The benefits of switching to public transportation greatly exceed those from other household energy saving measures, such as switching to energy efficient light bulbs, replacing inefficient appliances, or adjusting thermostats. A solo driver, commuting by car 20 miles round-trip daily that switches to public transportation, can reduce his/her annual CO<sub>2</sub> emissions by 2.4 tons per year. This is equivalent to a 10% reduction in all greenhouse gases produced by a typical two-adult, two-car family.*



*By taking existing public transportation instead of driving a car, a single person saves 2.4 tons (4,800 pounds) of CO<sub>2</sub> per year.*

*By eliminating one car and taking public transportation for all trips instead of driving, a savings of up to 30% of CO<sub>2</sub> emissions can be realized. It is estimated that the same two-adult, two-car household could save an average of \$6,251 annually by using public transportation instead of one of their automobiles.*

***The private vehicle is the largest contributor to a household's carbon footprint—using public transportation reduces household carbon emissions.\****



\*Source: "Public Transportation's Contribution to U.S. Greenhouse Gas Reduction", Science Applications International Corporation, Sept. 2007.

## **Give Public Transit a Try!**



*Next time you're going to the ballpark, the airport, or to work, wouldn't it be nice to sit back and*

*enjoy the ride! Or ride a bike! Or walk! Any of these will help save the planet by reducing climate change, conserve scarce natural resources, and save you money!*