

# TRANSPORTATION COMMITTEE

January 19, 2007

AGENDA ITEM NO.: **8**

**Action Requested: INFORMATION**

2007 REGIONAL TRANSPORTATION PLAN WHITE PAPER: ENERGY

File Number 3003000

## **Introduction**

SANDAG has identified several key components to be developed for the draft 2007 Regional Transportation Plan (RTP) for which staff prepared white papers and gathered input from SANDAG working groups. The Energy White Paper was discussed at the Regional Planning Committee, the Stakeholders Working Group, the Energy Working Group and the Technical Working Group. The paper addresses energy and climate change impacts associated with transportation, alternative fuel and vehicle considerations, and potential energy-saving and emission-reducing measures. Energy issues identified in the 2007 RTP will be addressed further through an update of the Regional Energy Strategy, which was adopted by the SANDAG Board of Directors in 2003.

## **Discussion**

This white paper (Attachment 1) identifies energy issues related to the use of transportation fuels and transportation activities. Focal areas include alternative fuel and vehicle program options, ways to reduce fuel demand and associated emissions through integrated land use and transportation planning, and recognition of climate change effects from transportation and mitigation options. The paper recommends that the 2007 RTP showcase plan components that inherently save energy and reduce emissions, such as congestion reduction measures, demand reduction measures, and smart growth. It further recommends that the plan identify existing alternative fuel and alternative vehicle measures, and propose suitable programs for the San Diego region.

Subsequent to the adoption of MOBILITY 2030, California has undergone significant changes in law and mandate regarding climate change. The white paper recommends that the 2007 RTP include greenhouse gas emission impacts and reductions from various travel choices and from smart growth efforts, enhance the energy component of the plan's Environmental Impact Report to recognize and explain the projected effects of greenhouse gases, and identify an action plan and possible funding sources to further address climate change effects of transportation activities.

Potential barriers such as infrastructure needs and implementation costs will be addressed for each energy issue area. These challenges can lead to opportunities to work with policy makers to advance transportation projects with the goal of making more efficient use of our transportation system and reducing pollutants that degrade the quality of life in the region.

BOB LEITER

Director of Land Use and Transportation Planning

Attachment: 1. Energy White Paper for the 2007 Regional Transportation Plan

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## ENERGY WHITE PAPER FOR THE 2007 REGIONAL TRANSPORTATION PLAN

### Introduction

The update of the Regional Transportation Plan (RTP) should recognize energy affects of the transportation system, identify appropriate measures to reduce the rate of fuel consumption, and highlight plan components that yield energy-saving results. RTP aspects that inherently save energy and reduce emissions include smart growth, congestion management, and demand management through added travel choices like mass-transit and carpooling.

Subsequent to the adoption of MOBILITY 2030, California has undergone significant changes in law and mandate regarding climate change. In 2005, Governor Schwarzenegger established Executive Order S-3-05 calling for statewide greenhouse gas (GHG) emission reductions. In September 2006, the *California Global Warming Solutions Act of 2006* was signed into law, which creates a statewide GHG emission limit that will reduce emissions by 25 percent by 2020. The law will first require mandatory GHG emission reporting and reductions from the electricity sector. It also requires all state agencies to consider and implement GHG emission reporting and reduction strategies.

Energy implications of the transportation sector are receiving greater scrutiny. Transportation is the largest source of climate change emissions in California. The California legislature has recognized that "passenger vehicles and light-duty trucks are responsible for 40 percent of the total GHG pollution in the state." In March 2006, the California Attorney General filed comments on the Orange County Transportation Authority (OCTA) Draft Environmental Impact Report (EIR) for its long range transportation plan. The draft EIR was considered inadequate because it did not recognize or address GHG emissions. The Attorney General's Office called for improvements in the OCTA final EIR to avoid legal challenges; OCTA complied and made these changes.

The 2007 RTP can meet state mandates and regional needs through the inclusion of measures like an alternative fuel vehicles program, enhanced linkages among smart growth, energy and sustainability, and a strategy for the region to address climate change. These aspects identified in the RTP can be further realized through an update of the *Regional Energy Strategy* (adopted by SANDAG in 2003).

### Objectives for 2007 RTP

- Identify existing alternative fuel and alternative vehicle programs at state and national levels and propose suitable program(s) for the San Diego region.
- Include energy and GHG emissions impacts and reductions from various travel choices and from smart growth efforts.
- Enhance the energy component of the plan's EIR to recognize and explain the importance of climate change.

- o Recognize and explain the projected impacts of GHGs. Include reference to these emissions in both the air quality and energy sections of the EIR.
- o Identify an action plan and possible funding sources for SANDAG to inventory GHG emissions, develop a course of action, and implement measures to address climate change in the RTP.

## **Background**

### ***Alternative Transportation Fuels and Vehicles***

The use of alternative fuels can reduce dependence on foreign oil, provide economic development opportunities, and reduce emissions of GHGs, criteria pollutants, and toxic air contaminants. Moving toward a more diversified approach to fuels and supporting the advancement of higher efficiency vehicles is one of the state's goals. The California Energy Commission (CEC) and California Air Resources Board (CARB) set a goal that 20 percent of all transportation energy used in 2020 comes from alternative fuels (current alternative fuel use in 2005 is six percent). If California successfully meets this goal, about 4.8 billion gallons of gasoline and diesel will be displaced annually by alternative fuels.

According to a 2005 CEC report, the state's demand for transportation fuels has increased 53 percent in the last 20 years and in the next 20 years gasoline and diesel demand will increase another 36 percent. California refineries rely increasingly on imported petroleum products to meet this demand. This growing demand and the increasing challenge faced by refineries in meeting this demand will lead to more frequent price volatility and potential economic dislocation. In 2003, the CEC and CARB adopted a two-pronged strategy to reduce petroleum demand: promoting improved vehicle efficiency, and increasing the use of alternative fuels.

California law defines alternative fuel as "...a nonpetroleum fuel, including electricity, ethanol, biodiesel, hydrogen, methanol, or natural gas that, when used in vehicles, has demonstrated, to the satisfaction of the air resources board, to have the ability to meet applicable vehicular emission standards." Alternative fuel also may include petroleum fuel blended with nonpetroleum constituents, such as E85 or B20.

In September 2005, Governor Schwarzenegger signed into law Assembly Bill (AB) 1007 requiring the CEC to prepare a state plan no later than June 30, 2007, to increase the use of alternative fuels in California. This plan is underway along with other alternative transportation efforts. San Diego Gas & Electric (SDG&E) has restarted an electric vehicle program, Miramar College has a hydrogen highway program, and the CEC has a truck-stop electrification program as well as a heavy-duty advanced technology development program.

### ***Climate Change***

The state has declared that global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse effects of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snow-pack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems, and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

- On June 15, 2005, Governor Schwarzenegger established Executive Order S-3-05. Executive Order S-3-05 established the following GHG emission reduction targets for California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.
- On March 30, 2006, the California Attorney General filed comments on the OCTA Draft EIR for its long range transportation plan. The comments collectively stated that the OCTA RTP and Draft Plan EIR were not acceptable because they did not adequately address climate change impacts.
- *California Global Warming Solutions Act of 2006 (AB 32)* was signed into law on September 27, 2006. This law calls for statewide GHG emissions limits equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. It requires all state agencies to consider and implement GHG emission reduction strategies.

### **Current Conditions**

The current RTP, MOBILITY 2030, does not address energy impacts directly: energy is addressed in the EIR. The 2030 RTP EIR acknowledges the potential benefit of alternative fuels program on the region. In general terms, the EIR makes the correlation between optimized public transportation and reduced energy consumption. These more generalized impacts could be addressed in greater detail for the 2007 RTP update.

MOBILITY 2030 states how the region can grow smarter, including an air quality assessment. There is no mention of climate change and the regional impacts of GHGs resulting from the plan. The 2007 RTP could enhance the air quality sections to address GHG emissions, or provide reference to the energy section for GHG impacts. SANDAG air quality and energy staff could collaborate to identify additional ways to address climate change in the update.

### **Identification of Problems**

#### ***Alternative Transportation Fuels and Alternative Vehicles***

The identification and status of a variety of transportation efficiency, alternative fuel, and alternative vehicle programs is unclear. The state is to complete an alternative transportation fuels plan of action in June 2007. Many existing alternative vehicle programs at the CEC are unstaffed. Regarding the availability of alternative fuels in the region, there is only one alternative fueling station in San Diego (located on El Cajon Boulevard, in the mid-city area of the City of San Diego) that sells ethanol, compressed natural gas (CNG), and liquefied natural gas (LNG). It is difficult for drivers in the region to switch to alternative fuels when only one station can accommodate their needs in Southern California.

Although the use of alternative fuels can reduce dependence on foreign oil, provide economic development opportunities, and reduce emissions of GHGs, criteria pollutants, and toxic air contaminants, these same fuels may result in an overall increase of certain criteria pollutants that raise public health concerns and constrain the state's ability to meet its State Implementation Plan requirements. The AB 1007 process is to address potential air quality conflicts to ensure a harmonizing of transportation energy and air quality policies and objectives.

## ***Climate Change***

After the Attorney General's Office filed comments with OCTA regarding its 2006 Long-Range Transportation Plan Draft Program EIR, OCTA took the following steps to avoid possible legal challenges to its RTP EIR on this issue.

OCTA expressed a commitment to develop a plan, through a public process, which consists of:

- Inventory of GHG emissions from RTP activities, both direct and indirect, and including nontransportation sources
- Broad GHG reduction goals targeted to the Governor's Climate Action Team goals
- Specific actions to meet specific reduction goals
- Identification of public and private funding sources to implement actions
- A monitoring and public information plan

Anticipated problems for SANDAG in this regard will include determining the appropriate scope of a GHG plan, securing adequate resources to develop and implement such a plan, as well as developing an educational component to inform local stakeholders and securing their participation.

## **Discussion**

### ***Potential Solutions/Alternatives***

#### *Reducing Fuel Demand through Integrated Land Use and Transportation Planning*

The 2007 RTP could showcase aspects of the plan that inherently save energy and reduce emissions. These components include: smart growth, congestion management, and other systems management measures, and demand management through added travel choices like mass transit and carpooling. If finalized by the CEC in time for the RTP, the PLACE3S model can be used to further identify energy affects of various land use and transportation scenarios.

#### *Alternative Transportation Fuels and Vehicles*

SANDAG could research and identify existing alternative fuel and alternative vehicle programs in the region and nationally. The RTP could include possible programs to identify barriers and solutions for additional alternative fueling stations to be located in the region. SANDAG also could participate in the CEC development of an alternative transportation fuels plan to ensure it meets the needs of the region. Regarding public transit, significant shift to alternative fuel vehicles is already underway. The Metropolitan Transit System has already replaced 360 of its 725 revenue vehicles with alternative fuel buses. Their proposed FY 2008 budget calls for purchase of up to another 73 new alternative fuel buses. North County Transit District has replaced 79 of its 155 urban buses with CNG buses and has another 12 CNG buses on order.

The 2007 RTP can provide an outline of available and possible alternative fuel and vehicle activities for the region, with the intention that implementation measures be identified in the update of the **Regional Energy Strategy (RES)**. The RES will include transportation, land use planning, and climate change in its update.

### ***Climate Change***

The RTP can identify current measures in existence or under development to address climate change. Organizations can include the California Climate Action Registry and ICLEI (Local Governments for Sustainability). A regional action plan can be further developed through the update of the **Regional Energy Strategy**.

SANDAG also could encourage member governments to develop local climate action plans. ICLEI has developed a local climate action plan template and tools that governments around the world have adopted. More than 159 United States local governments participate in the ICLEI Cities for Climate Protection Campaign. Locally, the Cities of Chula Vista and San Diego have developed city action plans. Future government protocols will be developed by the state to complement existing plans. A Local Climate Action Plan Includes:

1. A jurisdiction's GHG emissions data (baseline emissions inventory, emissions forecast, and emissions reduction target).
2. GHG reduction measures (existing measures that will continue, new or proposed measures, quantified emissions reductions resulting from each measure).
3. Implementation strategies (costs, responsibilities, schedules, and funding sources for implementing each measure and procedures for monitoring the progress of all reduction measures).

The California Climate Action Registry, in cooperation with the California Energy Commission, ICLEI and California Climate Action Team, are to develop protocols for local governments to address climate change. This activity is underway at the state level.

Additionally, AB 32 states that on or before June 30, 2007, the state air resources board shall publish and make available to the public, a list of discrete early action GHG emission reduction measures that can be implemented prior to the measures and limits adopted pursuant to Section 38562.

### **RECOMMENDATIONS**

The RTP should include acknowledgement of inherent energy-saving measures in the plan.

#### ***For the RTP Update***

- Identify existing alternative fuel and alternative vehicle measures at state and national levels and propose suitable program(s) for the San Diego region.
- Include energy and GHG emissions impacts and reductions from various travel choices and from smart growth efforts.

- Enhance the energy component of the plan's EIR to recognize and explain the importance of climate change.
  - Recognize and explain the projected effects of GHGs. Include reference to these emissions in both the air quality and energy sections of the EIR.
  - Identify an action plan and possible funding sources for SANDAG to inventory GHG emissions, develop a course of action, and implement climate change mitigation measures in its transportation plan.
- Recommend that the *RES* be updated so as to integrate transportation, land use, and climate change in the long term energy plan for the San Diego region.

***For Future Analysis***

SANDAG should participate in the state's implementation planning activities for AB 32 as they relate to local government initiatives and requirements.

SANDAG could engage the Climate Action Team in the development of local government GHG protocol to ensure that the needs of local governments are best served.

SANDAG should continue work with the CEC on the PLACE3S model so that land use, transportation, and energy modeling are integrated into a robust regional planning model.

## BIBLIOGRAPHY

- July 2006 California Energy Commission report: CEC-500-2006-077, *Our Changing Climate: Assessing the Risks to California*
- March 2006 California Climate Action Team Report to Governor Schwarzenegger and the California Legislature
- June 2005 Executive Order S-3-05
- September 27, 2006 California Assembly Bill 32, California Global Warming Solutions Act of 2006. Chapter 488.
- May 2005 California Energy Commission report: CEC-600-2005-020, *Alternative Fuels Commercialization*
- November 2005 California Energy Commission report: CEC-100-2005-007CMF, *Integrated Energy Policy Report*