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**SUSTAINABILITY TASK FORCE WORKSHOP
SEPTEMBER 26, 2007**

**SUBJECT: STAFF OVERVIEW OF SUSTAINABILITY AND CLIMATE CHANGE
ISSUES IN TRANSPORTATION**

ACTION: RECEIVE AND FILE

RECOMMENDATION

Receive and file a summary of sustainability and climate change issues affecting Los Angeles County's multi-modal transportation system.

ISSUE

In June 2007, the Board of Directors adopted the Energy and Sustainability Policy, which made an agency commitment to sustainability. Further, at the July 2007 meeting of the Metro Board of Directors, Chair O'Connor announced the creation of the Ad-Hoc Sustainability and Climate Change Committee. This report was prepared to provide the following:

- Update of Metro staff's sustainability development and implementation efforts;
- Background on Metro's sustainability projects and programs accomplished to date;
- Discussion of sustainability and climate change regulatory issues which will directly affect Metro;
- Update on actions of Metro's Clean Air Task Force;
- Overview of the next steps that staff is proposing to address climate change and sustainability impacts on transportation in Los Angeles County; and
- Discussion of proposed goals and objectives for implementation.

DISCUSSION

Background

Metro is recognized as the central transportation provider for Los Angeles County. One of our primary functions is to improve transportation corridors within the County, remove vehicles from the road, and improve mobility in the region. Metro is also in the forefront of environmental responsibility, and prides itself in running the largest compressed natural gas bus fleet in North America (second only to Beijing). Recently, Metro has also incorporated

sustainability design elements in the construction and upgrades of various divisions, the Division 9 Transportation building, and the Gateway Headquarters, as well as at the Metro Orange Line dedicated busway.

However, sustainability is a much broader subject, and its impacts to the public transportation system are numerous and extend into all business functions at Metro. In its most basic definition, sustainability is achieved if the actions of an entity meet the needs of the present without compromising the ability of future generations to meet their own needs. In order to apply sustainability principles in its core operations, Metro has to look into all of its business units and departments and understand how they interact with one another to create an agency-wide effort of sustainability. If properly implemented, each business unit and department's functions would be put into focus to collectively provide leadership in sustainability implementation throughout Los Angeles without compromising, but enhancing, Metro's ability to fulfill its core mission.

The adoption of the Sustainability and Energy Policy in June 2007 was an attempt to capture the essence of "sustainability", as the term applies to Metro. The creation of the Ad-Hoc Sustainability and Climate Change Committee in July 2007 provides the basis to develop an agency-wide plan of sustainability implementation.

Organizational Chart

Sustainability elements are already present and are being implemented within Metro. However, there is currently no coordinated effort to account for such efforts, nor is there an agency-wide system to formally measure and report the costs and benefits of implementing these elements.

Metro management has recently developed an organizational structure to understand the responsibilities and functions of Metro's various components as these relate to the mission of the Ad-Hoc Sustainability and Climate Change Committee. This structure aims to ensure involvement, cooperation and collaboration of all of Metro's primary business units: Planning, Construction, and Operations and Maintenance and auxiliary units.

As shown in Attachment A, a group of Executive Sponsors and Advisers consisting of Metro's top executives will provide oversight of the overall sustainability effort. Project Managers from both Construction and Operations were selected to provide day-to-day management of the program. Metro Technical Experts comprise the Internal Advisory Committee on whom rest the effort for developing and applying sustainability principles within each of their respective units. The specific sustainability principle applicable for any single business unit or department is unique to that unit. Grassroots input from each of Metro's business units and departments is necessary if Metro is to adopt a more comprehensive Sustainability Policy that will supersede the May 2007 policy.

Sustainability Accomplishments to Date

The business case for embracing sustainability and energy efficiency at Metro is very strong, and there are many opportunities to make capital improvements that lower Metro's utility

bills, as well as decrease our reliance on non-renewable energy sources. In an effort to make our operations more sustainable, to control energy and utility costs, and comply with the Energy and Sustainability Policy, Metro has already completed or is in the process of completing numerous energy efficiency and sustainability projects, such as:

- Division Lighting Upgrades (Divs. 1, 2, 3, 5, 8, 10, 15, 18, and RRC);
- Retrofitted all escalators with Power Controllers;
- HVAC Replacements (Divisions 5, 7, and 18);
- USG Parking Structure Lighting and Ventilation Modifications;
- USG Building Motion Sensors and Lighting Controls;
- USG 3rd and 15th Floor Restroom and Water Conservation Retrofits;
- Division 18 Water Conservation Retrofits;
- Divisions 8 & 15 Solar project;
- Division 18 Solar Project (to be complete by October 2007);
- Division 9 Transportation Building (LEED Silver Certified);
- RRC Public/Private Partnership for Solar Panels and Efficiency Upgrades (to be considered by the Metro Board in October 2007); and
- Developing RFP for Facility-Wide Solar Power Purchase Agreements (RFP December 2007).

Additional sustainability elements have also been recently implemented at the Metro Orange Line. Examples include:

- Preparing landscape irrigation for future conversion to reclaimed water in lieu of potable water;
- Use of mostly drought-tolerant landscaping to decrease long-term water use;
- Use of rubberized asphalt pavement in some areas;
- Use of crushed miscellaneous base (made from crushed concrete and asphalt pavement rubble) under the busway pavement in lieu of crushed aggregate base that is newly mined and crushed;
- Use of drainage swales rather than curb and gutter draining directly to a storm drain. This allows for a significant amount of groundwater recharge, particularly for light and medium rainfall events; and
- Use of light emitting diode type light sources in traffic signals rather than older incandescent lamps.

Similar sustainability elements are being adopted in the Metro Gold Line Eastside Extension and Exposition Light Rail projects.

Long-range and short-range planning efforts are also at the core of sustainability. Metro has planned, designed and implemented one of the largest transit systems in the nation. This transit infrastructure is becoming a substantive mobility option for thousands of residents in the County. Every transit rider is a pedestrian; as such, Metro's funding for pedestrian and bikeway paths throughout the county encourages people to use these non-energy intensive forms of transportation. This effort is in line with growing adoption of sustainable

transportation programs throughout the nation that increasingly give attention to the importance of reducing the number of vehicles in circulation. Metro has increased resources allocated to Transportation Demand Management (TDM) measures. Metro's TDM program is directed to reducing demand of auto trips (i.e. Vanpools, HOV lanes and telecommuting) and/or enhancing access to transit (e.g., electronic media to inform commuters and signage to facilitate pedestrian mobility).

Metro is also currently working on several Transit Oriented Development (TOD) projects, which are projects that link land use with transit. This linkage is a very significant step in developing a more sustainable city. So far the areas that have experienced the most significant influence of Metro's transit infrastructure are: Greater Downtown Los Angeles, Downtown Long Beach, Pasadena and South Pasadena, Hollywood, North Hollywood, Mid-Wilshire and Boyle Heights in East Los Angeles. In all of these areas, Metro has developed or is currently working on approved Transit Oriented Development projects.

It is important to note that the development of the current Transit System in Los Angeles County is perhaps the most significant step in creating and sustaining a more livable urban environment. The transit infrastructure in Los Angeles County is a tremendous asset to sustain land use development like infill-housing, mixed-use developments, compact designs, support and development of pedestrian-oriented commercial districts. All of these land use strategies are key components of creating sustainable urban environments.

Metro is already using clean fuels and vehicles, and operates the largest clean air bus fleet in the nation. Further, Metro is a nation-wide leader in the development of alternative vehicle technology for transit purposes. As a part of its daily mission, the Vehicle Technology Division will continue to look for more efficient and sustainable ways to reduce dependence on fossil fuels.

State of California Sustainability and Climate Change Actions

The State of California has historically been a national and international leader when it comes to the environment. Since the Kyoto Protocol was not ratified by the federal government in 1997, California has taken the leadership in Global Warming Reduction programs. These actions have a significant impact for the transportation sector including Metro.

In October 2001, the California Climate Action Registry was established to help companies and organizations with operations in the state to establish Greenhouse Gas (GHG) Emissions baselines and credits against which any future reduction requirements may be applied. Since then more than 300 organizations representing the public, private and community sectors have registered their baseline emissions and are developing programs to monitor and reduce their emissions. The registry is now in the process of developing a national program based on the California model with more than 31 states already joined.

In March 2005, the Governor's *GoCalifornia* initiative identified the linkages between Smart Growth and Vehicle Miles Traveled reduction strategies as key elements to sustainable transportation infrastructure development.

Executive Order S-3-05

In June 2005, the State of California officially recognized Global Warming at the United Nations World Environment Day in San Francisco. The Executive Order S-03-05 established greenhouse gas targets for the state. These levels were considered necessary by the Intergovernmental Panel on Climate Change to mitigate the most catastrophic scenarios of global warming:

- By 2010, Reduce to 2000 Emission Levels,
- By 2020, Reduce to 1990 Emission Levels, and
- By 2050, Reduce to 80 percent Below 1990 Levels.

The order established the Climate Action Team made up of the state's business units to develop the California Climate Change Action Report. The Report was released in March 2006 and set emission reduction targets for each business unit into programmable actions. The report identified the transportation sector as most significant contributor (41%) of carbon dioxide emissions. These actions were incorporated into the 2006 California Transportation Plan building upon the 2005 *GoCalifornia* and 2006 Climate Change Report strategies.

AB 32: California Global Warming Solutions Act of 2006

AB 32 was approved by the legislature and enacted in January 2007 as an overarching law to protect the state from catastrophic economic, environmental and social consequences of Global Climate Change. The Act establishes a first-in-the-world comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of GHG emissions beyond the Kyoto Protocol. The Act requires the California Air Resources Board (CARB) to develop regulations and market mechanisms to reduce California's GHG emissions by 25% by 2020. In addition, it places mandatory caps on sectors that will begin in 2012 for significant sources to meet the 2020 goals.

The Act requires CARB to:

- Establish a statewide GHG emission cap for 2020, based on 1990 emissions by January 1, 2008.
- Adopt mandatory reporting rules for significant sources of GHG by January 1, 2009.
- Adopt a plan by January 1, 2009 indicating how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms and other actions.
- Adopt regulations by January 1, 2011 to achieve the maximum technologically feasible and cost-effective reductions in GHG Emissions, including provisions for using both market mechanisms and alternative compliance mechanisms.

Post AB 32 Related Actions

Since the enactment of AB 32, subsequent executive orders have been set to ensure that the Act is fully complied with and that the recommendations are fully implemented. Executive Order S-20-06 requires the Cal Environmental Protection Agency to lead the implementation of AB 32 with the Climate Action Team & CARB. The order sets a June 1, 2008 deadline for the agency to develop a program that will demonstrate GHGE reduction technologies. In addition the Executive Order S-01-07 sets a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020.

On February 2007, Senator Perata sent a letter to the California Transportation Commission (CTC) urging AB 32 related strategies be incorporated into the state's transportation planning & programming guidelines and funding criteria. The letter urged that regional plans utilize models that accurately measure the benefits of the land-use and planning strategies that reduce vehicular trips. Since then the CTC has convened a Regional Transportation Plan Guidelines Update program which Metro Planning has been participating in. The guidelines are expected to be released for adoption in early 2008.

SB 375 (Steinberg), if approved would require Regional Transportation Plans to establish vehicle miles traveled reduction strategy and other GHG emission reduction targets in their plans. The Metro Board took a "work with Author" position at its June 28, 2007 meeting and the bill has now been turned into a two year bill. There are significant impacts to Metro as a regional transportation planning agency including that the bill could authorize the Southern California Association of Governments to approve or reject projects that it deemed not suitable to meet the regional emission targets.

California Attorney General Actions on Regional Transportation Plans & Programs

Since AB 32 was adopted by the state legislature, the California Attorney General (AG) has placed regional agencies that are updating their plans on notice to incorporate carbon emissions reduction/climate change adaptation strategies in their Regional Plans or risk potential legal challenges. The AG has interpreted the California Environmental Quality Act (CEQA) section 21000 of the Public Resource Code to require entities to consider actual and cumulative global warming impacts of the Regional Plan's Environmental Impact Report (EIR) and/or projects requiring an EIR. Based on the reaction of the AG, it appears that high profile projects with potentially significant levels of emissions should consider cumulative global warming impacts for both construction and Vehicle Miles Traveled (VMT) in the EIR process. Also, Greenhouse Gas emissions from expected increases in VMT should be estimated using CARB's "Proposed Methodology to Model Carbon Dioxide and Estimate Fuel Economy".

AB 32 Related Policy Issues for Metro

AB 32 requires the reduction of the state's Greenhouse Gas Emissions (GHG) to 1990 levels by 2020 that is within the 2030 time horizon of regional and local plans. The Act encourages entities to voluntarily reduce their GHG emissions prior to 2012 by establishing baselines and offering credits to lead agencies for their early voluntary reduction strategies. While

Metro is not the federally designated Metropolitan Planning Organization (MPO), it is required under Section 130303 State Public Utilities Code to prepare a Transportation Improvement Program (TIP) for Los Angeles County that the AG and other groups have indicated is potentially subject to AB 32 requirements. This has potentially significant impacts for the Long Range Transportation Plan, the Call for Projects and other funding programs. Currently, the Metro Board has not adopted any greenhouse gas emission reduction goals for the Long Range Transportation Plan. In addition, while there is no established threshold in law or regulation yet, the AG has stated to other agencies that CEQA requires lead agencies to determine significance for their projects. CEQA also requires lead agencies to thoroughly consider feasible alternatives and mitigation that would reduce GHG emissions.

Senate Bill 97 (Dutton) was signed into law to protect the Proposition 1B infrastructure projects from the current uncertainty as to what type of analysis of greenhouse gas emissions is required under the California Environmental Quality Act (CEQA). The bill advances a coordinated policy for reducing greenhouse gas emissions by directing the Office of Planning and Research (OPR) and CARB to develop CEQA guidelines on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions. The OPR is required to "prepare, develop, and transmit" the guidelines to the Resources Agency on or before July 1, 2009. CARB must certify and adopt the guidelines on or before January 1, 2010.

The California Climate Action Registry does not yet have protocols to acknowledge the carbon dioxide offsets attributed to mode shifting from single occupant vehicle trips to transit, bicycle or walking or transit oriented development. This is significant for Metro and other transportation agencies in that the current protocols just measure actual energy usage. For example if Metro was to expand transit services or build new transit corridor infrastructure, the current protocols would show an increase in greenhouse gas emissions due to our physical energy consumption even though there would be a significant emission reduction by commuters switching to other modes. Metro Planning has approached other transportation authorities and the American Public Transportation Association is developing a task force to work with the CCAR to develop protocols that can show the benefits of Metro's transportation programs.

AB 32 related actions, regulations and outcomes are continuing to evolve and will be impacting Metro's operations, planning and construction programs. Metro Planning will continue to monitor these issues very closely.

Clean Air Task Force

In 2006, the Board directed staff to form a "Clean Air Task Force" which comprises representatives from Metro Operations, Planning, Facilities and Government Relations. The task force is responsible for identifying opportunities for reducing Metro's greenhouse gas emissions. In addition to identifying opportunities to maximize Metro's clean air efforts, the task force has begun compiling a comprehensive baseline documenting Metro's total emissions output, and has been in early discussions regarding the registration of this "Emissions Footprint" with the California Climate Registry. Although the Clean Air Task

Force is in the final stages of compiling the “Emissions Footprint”, there are still issues Metro must resolve prior to registering with the California Climate Exchange, such as protocols for measuring the effects of removing automobiles from the road. These issues are further described above in the AB32 Policy discussion, but will require a coordinated effort with Metro, municipal operators, the American Public Transportation Association (APTA), and the California Climate Exchange.

Environmental Management System

The use of an Environmental Management System (EMS) within Metro would form the core of an agency-wide sustainability infrastructure. Generally, an EMS is designed to develop a systematic management approach to the environmental concerns of an organization.

EMS is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. Organizations with an EMS report being able to more effectively manage their environmental obligations. Additionally, organizations report enhanced ability to analyze, control and reduce environmental impacts, and to operate with greater efficiency and control.

Additional program benefits include cost savings over time, improved bond ratings, reduced insurance premiums, and better community relations. Overall, an EMS integrates the environmental ethic into business operations, and environmental stewardship becomes part of the daily organizational responsibility.

If designed and implemented correctly, this system can be used to plan, implement, monitor, and review any sustainability effort or initiative within Metro. “Plan” includes identifying environmental aspects and establishing sustainable goals. “Implement” includes completion of training and adoption of operational controls. “Monitor” includes maintenance and development of a corrective action. “Review” includes progress reviews and acting to make needed changes to the effort.

On August 31, 2007, Metro completed an application for a training and assistance grant from the Federal Transit Administration (FTA) to commence the implementation of an EMS. FTA will provide technical assistance in the form of training workshops, on-site technical advice and consultation, including follow-up.

Ten agencies have already received assistance from the FTA in 2003, the biggest of which include the Bay Area Rapid Transit, Community Transit, Massachusetts Bay Transportation Authority and the Washington Metropolitan Area Transit Authority. If selected, Metro will become part of the second generation of public transportation agencies that will receive this type of grant from the FTA.

Metro’s participation in the FTA EMS Training and Assistance Program reinforces our ability to structure mitigation measures and compliance to accomplish desired results. Due to the diversity of Metro’s operations, an EMS is an essential infrastructure within our agency for capturing our environmental compliance and mitigation best practices so as to

provide an improved framework for proactively developing sustainable solutions to environmental issues.

NEXT STEPS

Based on the discussion above, staff proposes to focus on the following next steps as we move forward with the Ad Hoc Sustainability and Climate Change Committee:

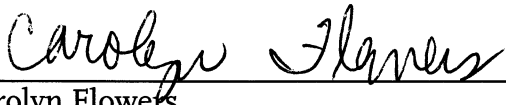
- Expand the current Sustainability Policy to better include all the elements of the Sustainability Principle. A more comprehensive sustainable policy should include elements relating to programming, site and alignment use, ambient environment, materials usage, and operational footprint. Staff will further discuss these sustainable concepts during the development of the more comprehensive policy.
- Incorporate AB 32, Energy Efficiency & Sustainability Goals, Programs & Processes to reduce Metro's Carbon footprint.
- Work with Partners to reduce their carbon footprints in Los Angeles County, Southern California and beyond.
- Advocate for legislative changes to state and federal funding policies and programs that are favorable to Metro's sustainability objectives.
- Identify Public-Private Partnerships to fund sustainability projects, programs and services.
- Partner with the Southern California Association of Governments and the South Coast Air Quality Management District to develop a Regional Climate Change Action Plan.
- Develop Goals and Objectives to incorporate Climate Change & Greenhouse Gas Emissions Reductions in the Long-Range Transportation Plan and develop reporting indicators for the Short-Range Transportation Plan consistent with RTP guidelines.
- Review Call for Projects Evaluation Criteria and other funding programs for possible revisions to meet GHG emissions reduction goals.
- Work with COGs and cities to discuss potential local sustainability action plans.
- Work with US Green Building Council to establish LEED Certification for Transportation Infrastructure projects.
- Establish Metro Sustainability Annual Report Card to measure progress.
- Establish Metro GHG emissions webpage and links to Climate Action Programs.
- Develop marketing programs around Metro's efforts to reduce greenhouse gas emissions/promote green transportation programs.
- Complete the inventory of emission-generating equipment and quantify Metro's "environmental footprint". The Clean Air Task Force has a separate Receive and File report on the specific progress of this effort.
- Work with the California Climate Registry in an effort to register Metro's emissions and develop protocols that capture the benefits of mode-shifting (transit/bike/pedestrian);
- Convene working session with APTA, the California Climate Exchange, Metro, and other participating agencies to develop protocols for reporting and registering emissions in a transit environment;

- Work with Municipal Operators to register with the Climate Action Registry and develop similar programs;
- Capture Intra and Inter-agency Best Practices through the implementation of an EMS. Other agencies throughout the nation have already begun the implementation of environmental management systems and their experiences will be very valuable to Metro as our agency ventures into this new effort. It will be most appropriate for Metro staff to learn from other forward thinking agencies and implement an EMS as soon as feasible.
- Develop reporting mechanism and metrics to understand budget impacts of sustainability implementation, both in the short and long term.
- Organize a working group in Construction, Planning, and Operations to revise design criteria for facilities and corridor construction projects to include sustainable design elements;
- Continue to implement renewable energy projects, such as the Metro Support Services Center (MSSC) Solar Panel and Energy Efficiency project, which the Sustainability Committee and Board will consider for approval in October 2007; and
- Organize Training Sessions for Metro departments that will play an active role in sustainability efforts.

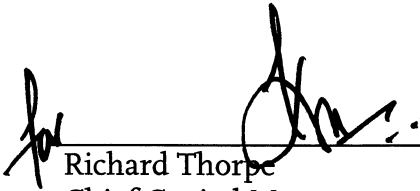
ATTACHMENT

A. Proposed Organizational Chart

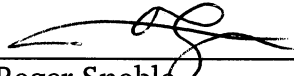
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Ad Hoc Sustainability and Climate Change Committee: Support Structure

