Table of Contents

Agenda.....pp 3 - 5

Break-Out Session – Guidelines.....pp 7

Except From Climate Change Draft Scoping Plan Appendices
Local Government Actions And Regional Targets .....pp 9 – 17

Breakout Session Information

Electricity And Natural Gas
Green Building Sector.....pp 18-21

Recycling and Waste Management.....pp 22-23

Water And Wastewater .....pp 24-29

Transportation .....pp 30-34

General Plan and CEQA.....p 35

GHG Emission Tracking .....….. …pp 36-37

Note Pages…….pp 38-40

AGENDA

***8:30* Welcome and Introduction:**

Jim Madaffer- City of San Diego Council President Pro Tem

Hal Snyder- San Diego Gas and Electric Vice President, Customer Programs

***9:00* San Diego Regional 2050 Study-**

Emily Young- The San Diego Foundation

Summary of key findings

***9:20* Electricity/Natural Gas-**

Scott Anders**,** Energy Policy Initiatives Center,
University of San Diego School of Law

Carrie Downey, Coronado Mayor Pro Tem
Chair, SANDAG Energy Working Group

Regional data highlights questions that municipal leaders must ask as they develop long-term strategies to address electricity and natural gas usage. How will this planning strategy integrate with the targets set by AB 32? How might these effect municipal operations? How can cities help each other and promote best in class technologies?

CARB response/ clarification

***9:45* Transportation and Land Use-**

Bob Leiter, San Diego Association of Governments (SANDAG)

What is the framework in which regional planning agencies will be addressing transportation? How does this link with AB 32 and SB 375?

CARB response/ clarification

10:10 BREAK (15 minutes)

***10:25* General Plan and CEQA-**

Bill Higgins, League of CA Cities

What must General Plans include to meet the Attorney General's guidelines and how does this link with municipal requirements for CEQA?

CARB response/ clarification

***11:00* Water/ Wastewater-**

Cheryll Stewart, San Diego County Water Authority

Michael Moore, Orange County Sanitation Districts

How are water agencies planning to reduce GHG emissions? How will these plans impact the municipalities that they serve? What new responsibilities will be added to wastewater treatment plants with the new climate change legislation?

CARB response/ clarification

***11:40* Municipal Landfills-**

Ray Purtee, City of San Diego

Frank Caponi, Sanitation Districts of Los Angeles County

As a component of the *Early Actions and Discrete Early Actions Committee Report*, landfill operations may require changes that have significant economic impacts. How will this be accomplished?

CARB response/ clarification

***12:15* Local Government Protocol/ GHG Emission Tracking-**

Linda Giannelli Pratt, City of San Diego

The question remains as to whether voluntary measures today will become mandatory measures in the near future in order to meet CA's emission reduction goals. What can City's do to prepare for a GHG inventory, and how do the inventories serve to prioritize program design, including outreach and education?

CARB response/clarification

***12:25* Best Practices for Local Governments-**

Yvonne Hunter, Institute for Local Governments

Resources and case studies for CA cities and counties.

***12:35* Review-** City of San Diego Council President Scott Peters

Maintaining an ongoing dialogue between Municipalities and the State is needed to achieve our shared goal to reduce GHG.

* * * * * * * *

12: 50 LUNCH BREAK- 40 minutes

Lunch will be served at the Summit for those who have registered.

* * * * * * * *

1:30- 3:30 **Executive Dialogue (elected officials and their representatives)**

Lead by the League of CA Cities, CA State Association of Counties, and The San Diego Foundation

Review the critical legislation that supports the goals of GHG emission reduction, and considerations for municipalities. Identify recommendations for integrating new requirements into operations, budget and long-term planning. Discuss the results of interviews with municipal leaders.

1:30-3:30 **Break-out Sessions**

The purpose of the breakout sessions is to discuss in more depth the priorities for municipalities in complying with AB 32 and meeting the challenge of climate change mitigation and adaptation. The primary factors to be considered are operational, financial and programmatic issues that municipalities will need to address now and in the future.

- **General Plan and CEQA-**
- **Energy-**
- **Transportation-**
- **Water/ Wastewater-**
- **Municipal Landfills-**
- **Local Government Protocol/ GHG Emission Tracking**

4:00- 5:00 **Summaries from Breakout Sessions and Next Steps**

Panel Discussion—

Summary from each breakout session (5 minutes each)

Summary from Executive Dialogue (10 minutes)

Question and Answer

Recommendations for Next Steps

Things to Know

THERE ARE FOUR PRIMARY OBJECTIVES FOR THE BREAKOUT SESSIONS:

1. INCREASE UNDERSTANDING ABOUT HOW AB 32 AND OTHER STATE LEGISLATION MAY IMPACT MUNICIPALITIES FROM THE PERSPECTIVES OF OPERATIONS, BUDGETING, AND LONG TERM PLANNING;

2. DECIDE WHETHER TO PROVIDE ADDITIONAL WRITTEN COMMENTS TO THE CALIFORNIA AIR RESOURCES BOARD;

3. SHARE "BEST PRACTICES" FOR ADDRESSING THESE ISSUES; and

4. CAPTURE KEY COMMENTS FOR THE 5-MINUTE "REPORT BACK" BEGINNING AT 4:00 pm.

Resources

REVIEW THE COMMENTS and the REFERENCE MATERIAL, PROVIDED FOR EACH TOPIC.

DO YOU CONCUR WITH THE COMMENTS?

ARE THERE KEY ISSUES NOT MENTIONED?

THANK YOU VERY MUCH FOR SHARING YOUR COMMENTS AND EXPERTISE!

Except from

CLIMATE CHANGE DRAFT SCOPING PLAN APPENDICES

http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm

LOCAL GOVERNMENT ACTIONS AND REGIONAL TARGETS

This section includes the following measures:

- Preliminary Recommendations
- Local Government Actions and Regional Targets (T-9)
- Measures Under Evaluation
    - Congestion Pricing
    - Pay-As-You-Drive Insurance Premiums
    - Indirect Source Rules for New Development
    - Programs to Reduce Vehicle Trips

ARB worked closely with the CAT and its sector-specific subgroups in developing the measures included in this Plan. This input was evaluated and analyzed by ARB and is reflected in the measures included in this sector.

Overview

Regional planning agencies and local governments will be essential partners in achieving California's greenhouse gas goals. Many local governments around the state are providing leadership by developing local climate action plans for both municipal and community-wide emissions. Several regional agencies across the state, including councils of governments, metropolitan planning organizations and regional transportation planning agencies, are already participating in blueprint planning efforts that balance regional growth needs while providing affordable housing, resource and habitat protection and provide multiple mobility options while reducing reliance on vehicle travel.

Using these leading efforts as a model, the preliminary recommendation includes a measure calling for local government actions and regional targets. Local governments are encouraged to develop climate action plans and to set 2020 targets to reduce greenhouse gas emission. ARB, along with relevant State agencies, will work with regional and local governments to develop regional targets to reduce transportation related greenhouse emissions. In addition, four other supporting measures to reduce
greenhouse gases from passenger vehicles are under evaluation. These measures will provide multiple benefits to Californians beyond greenhouse gas reduction. They will improve their quality of life by increasing access to a variety of mobility options such as walking, biking and transit, and will provide a diversity of housing options focused on proximity to jobs, recreation, and services. Other important
considerations include agricultural, open space and habitat preservation, improved water quality, positive health effects, and the reduction of smog forming pollutants.

Regional and local governments have primary authority to plan, approve and permit how and where land is developed, how the transportation system is built, and how localities operate on a day-to-day basis. They also adopt planning documents that guide how they will grow and accommodate the changing needs of their jurisdictions. Beyond local governments' influence over community

planning and vehicle use, they also have direct control over emissions resulting from municipal operations, such as energy use in
government buildings and facilities, vehicle fleets, water treatment and landfill operations, parking, as well as other sources.

Many local governments are already taking action to reduce greenhouse emissions resulting from these activities, providing needed leadership and local economic benefits. These local actions have taken the form of building ordinances and codes, Climate Action Plans, green building standards, climate friendly purchasing practices, and green fleets, among others. Future emissions reduction strategies should support and build upon these activities

Transportation Emissions

The number of miles Californians drive and the carbon content and amount of fuel used in their vehicles is responsible for a little over one third of GHG emitted in the state. Increasingly, Californians have been driving greater distances in vehicles that burn more fuel. Based on this trend, future business-as-usual projections show a significant increase in the amount of greenhouse gas emissions from vehicle travel – about 15 percent from 2010-2020 and almost 50 percent from 2010 to 2040. In order to reduce statewide GHG, strategies need to be developed that increase mobility without increasing the amount of miles driven or time spent in traffic. Most of the gains made by introducing cleaner vehicles and fuels will be eroded unless more efficient ways to get from place to place are implemented.

Integrated Land Use and Transportation Strategies

This increase in the amount Californians drive is caused by many factors. A large body of research over the last two decades identifies that many of these factors, including the increasing distances between jobs, housing, schools, services and amenities; the lack of viable transportation alternatives to reach these destinations, the amount of time spent in traffic and the number of vehicles that only carry one person could be addressed through integrated land use and transportation strategies, such as location-efficient development, transit, biking and walking infrastructure, pricing signals and transportation conservation. Land use patterns strongly influence driving behavior. Often referred to as the 4D's of land use, using less open space to house more people (density) closer to more places (destinations) and jobs (diversity), along with buildings and street patterns conducive to transit use, biking and walking (design), provide an optimal mix of land uses to support mobility with fewer driving trips. When land use patterns support alternate modes of travel, the cost-effectiveness of transit, carpool, biking and walking infrastructure improves and the two work together to increase transportation choices and reduce vehicle trips.

The infrastructure necessary for vehicles, the cost of maintaining that infrastructure, and the secondary impacts on air, water and environmental quality are very costly. Sending market-based price signals that reflect the true cost of driving can make the transportation system more efficient, e.g., having drivers pay the market rate of parking, paying to drive on congested routes, and converting the cost of vehicle insurance to a variable cost.

Public education that helps individuals develop strategies to reduce how much time they spend driving by themselves, like telecommuting, employer carpooling coordination and employee transit pass subsidies can also help reduce GHG.

Transportation and land use modeling studies have been conducted to estimate the effect of land use, and alternative transit and pricing strategies on VMT and GHG emissions. Current modeling scenarios indicate that implementation of land use and alternative transit strategies alone can result in at least a two percent reduction in overall VMT and GHG emissions from base case levels in 2020. If pricing strategies are also implemented, overall VMT and GHG emission can be reduced further. Even larger reductions are expected to accrue in the 2030 to 2050 timeframe with implementation of land use and transit strategies. Modeling results show that reductions in the range of up to 25 percent in VMT and GHG emissions from 2050 base case levels are possible.

Many California local governments have already adopted climate action plans, committing to ongoing efforts to tackle the causes of global warming. The areas of influence and authority for climate action by local governments typically include:

- *Community Energy.* Local governments can directly influence the energy used by their buildings, equipment, and infrastructure. In addition, many cities and counties can influence the carbon content of energy provided to their community through municipal utility operations, as well as the amount of energy used by the community businesses and residents through building codes, conservation programs and other mechanisms.
- *Community Waste and Recycling.* Local governments can directly influence the waste and recycling activities in their municipal buildings. Local agencies can also change the carbon footprint of their jurisdiction's waste and recycling operations through collection system adjustments, as well as through promotion of waste reduction and recycling to community businesses and residents.
- *Community Water and Wastewater Systems.* Local governments can work to reduce water use in municipal operations. They can reduce energy use of water, irrigation, and waste water systems operated by their municipal agencies, by upgrading or retrofitting pump systems, and also through community-wide water conservation and reclamation program efforts.
- *Community Transportation.* Local governments can increase the carbon efficiency of vehicles in their fleets. They can directly influence the local transportation planning processes to increase the use of low carbon travel such as transit, carpooling, biking, and walking. They can also partner with regional planning agencies to create a sustainable vision for the future that accommodates population growth in a carbon efficient way.
- *Community Design.* Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces GHG associated with energy, water, waste, and vehicle travel.

Although not quantified at this time, actions taken by local government are expected to provide significant greenhouse gas reductions that ARB will track and account for as the Scoping Plan is implemented. ARB, along with relevant State agencies, will work with California Climate Action Registry, ICLEI-Local Governments for Sustainability, Local Government Commission, and the Institute for Local Government's "California Climate Action Network," to develop measurement and tracking protocols, planning tools and best practices to assist local governments in planning for, quantifying and reporting greenhouse gas emissions reductions. Using these tools, ARB encourages local governments to set municipal and community-wide 2020 greenhouse gas reduction goals and adopt measures and best practices to meet those goals. ARB will work with local governments to reconcile local level accounting with state and regional emissions tracking as this Plan is implemented.

Regional Transportation-Related Greenhouse Gas Targets

Transportation emissions are a function of vehicle technology, the carbon content of fuel,

and how much the vehicles are driven. Comprehensive planning and project implementation at the regional and local level can provide people multiple mobility options and choice while minimizing greenhouse gases. ARB proposes that the State work with regional and local government to develop regional targets for transportation-related greenhouse gas emissions in a process that considers the projected benefits of vehicle and fuel changes and each region's potential for such reductions. The targets will consider appropriate timeframes for implementation and will balance all of the needs of the region including population growth (using per capita metrics, for example), housing, jobs, recreation, and resource protection. The measure is based on current modeling showing how land use strategies and enhanced transit in major urban areas could provide greenhouse gas reductions of at least 2 percent over business as usual in 2020, double the benefits in 2030, and continued benefit increases through 2050.
The measure will focus on implementation of regional plans that meet performance-based regional targets. ARB proposes that regions use a blueprint planning process to map out their preferred land use and transportation scenarios that meet the regional targets and their other regional needs. Subsequent alignment of regional transportation plans (and transportation funding) and local general plans with the blueprints is key to reaching the regional targets. Actions to reach targets would not be prescribed to the regions. Target based performance indicators would be established to measure progress. (Note: The Addendum to the 2007 Regional Transportation Plan Guidelines addressing greenhouse gases, as adopted by the California Transportation Commission in May 2008, includes recommendations for modeling, planning and strategies necessary to set and meet regional targets.)

The net cost of this GHG emission reduction strategy may not include the savings associated with emission control requirements necessary to obtain equivalent reductions of criteria pollutants reduced as a co-benefit, or the additional costs to control increased criteria pollutant emissions as a result of this measure. To the extent feasible, the net cost of emissions controls for criteria pollutants will be evaluated further in measure development. State, regional, and local agencies will work together to create a supporting foundation of policies, programs, incentives, and guidance to assist local actions and to ensure local accountability to help meet regional targets. This must include the following:

- *Exercise State Leadership.* Promote low-impact development and reduce greenhouse gas emissions across all levels of government through the State's building, operation, and planning efforts. The State will work to implement the State's planning priorities as stated in AB 857 (Wiggins) Infrastructure Planning: Priorities and Funding (Chapter 1016, Statutes of 2002). The State will use the Strategic Growth Council as a coordination mechanism for meeting greenhouse gas reduction goals. The State will provide technical, fiscal, and regulatory priority to projects and developments consistent with regional blueprints that meet established targets.
- *Pursue Funding Sources and Allocate Effectively.* Align existing funding sources and help secure new funding to implement blueprints at the local level, support local climate change planning and projects, and incentivize the desired high-quality, low impact projects. State agencies will allocate infrastructure bonds to best promote efficiency, sustainability, and California's environmental and economic goals. All levels of government will include greenhouse gas considerations in their funding decisions. Additional funding for enhanced transit service combined with incentives for land use development that provides a better market for transit is key to implementing blueprints.
- *Improve Measurement through Partnerships.* Develop local government quantification protocols, improve transportation demand estimation tools, and develop better land use and transportation models that reflect the benefits of high quality,

low-impact development. The State will work with regions and local governments to identify existing models and tools for planning and progress measurement that better meet local and regional needs.

- *Promote High-Quality, Low-Impact (Resource-Efficient) Communities.* Establish a variety of mechanisms to recognize and support the building of livable, innovative projects and communities with low-carbon footprints to provide prototypes for future development. State, regional, and local governments will pursue supporting mechanisms including regulatory actions, targeted incentives, and targeted funding.
- *Identify Funding Sources for Local Level GHG Reduction Strategies.* Local governments need financial resources to update their general plans and zoning codes and to develop strategies to comprehensively reduce municipal and community GHG. CARB will pursue and investigate strategies to provide stable funding for sustainable local planning and zoning updates. The State will work with local governments to identify and provide guidance on best practices to reduce GHG from new and existing development.
- *Adopt Proven Measures*. Pursue proven emission reduction strategies, such as indirect source rules that mitigate high carbon footprint development and pricing measures that more accurately reflect the cost of driving and provide people with more transportation choices. All levels of government will adopt and implement feasible strategies, placing a high priority on measures with public health co-benefits.
- *Amend CEQA Guidelines to Account for Greenhouse Gas Emissions*. Provide state guidance for determining significance and mitigating the GHG emissions of new projects. The Office of Planning and Research and the Resources Agency are developing proposed amendments to the CEQA Guidelines to provide guidance on how to address GHG in CEQA documents. As required by Senate Bill 97 (Chapter 185, statutes of 2007) the amended CEQA Guidelines will be adopted by January 1, 2010. These guidelines will support projects that lower the carbon footprint of new development, and encourage programmatic mitigation strategies that may include reliance on adopted regional blueprint plans, Climate Action Plans, and general plans that meet regional and local GHG targets and that have also undergone CEQA review.
- *Conduct Outreach and Engage the Public.* Secure public support for the actions necessary to reduce greenhouse gas emissions from land use and transportation, and provide outreach and public education programs necessary to promote individual actions that help reduce greenhouse gas emissions. All levels of government, the business and development community, and the environmental and public health communities will work together to provide information on models/protocols, training, best practices, and funding sources for these outreach programs. The State will support and coordinate public engagement processes, including supporting public outreach efforts as integral elements in local and regional comprehensive planning efforts.

The timeline for the establishment of performance-based targets and creation of the supporting policies and strategies would run parallel. Setting of targets would be completed by January 1, 2010, while the creation of supporting policies and strategies would continue beyond that timeframe.

Other Measures Under Evaluation

The Land Use Subgroup of the Climate Action Team (LUSCAT) and the Economic and Technology Advancement Advisory Committee (ETAAC), in their reports to ARB,

suggested additional measures to reduce VMT and greenhouse gas emissions from passenger vehicles. These measures would support the implementation of regional transportation-related targets.
_ Congestion Pricing
_ Pay-As-You-Drive Insurance Premiums
_ Indirect Source Rules for New Development
_ Programs to Reduce Vehicle Trips

- *Congestion Pricing and Pay-As-You-Drive Insurance Premiums*

Research has shown that sending market signals that reflect the cost of driving can reduce emissions by making the transportation system more efficient and providing people with the choice of driving less to pay less or paying a little more to save time. This proposed strategy incorporates pricing incentives recommended by both ETAAC and LUSCAT: congestion pricing and Pay-As-You-Drive (PAYD) insurance premiums.
In a congestion pricing program, vehicles are charged a price, or toll, for traveling during peak hours on congested routes. Drivers who continue to travel on these routes during peak periods would pay more, but experience a faster, easier trip. Others would defer trips to off-peak hours, shift travel to less congested roadways, or switch to transit, carpools, or vanpools. Greenhouse gas emission reductions would come directly from the relief of severely congested traffic, some reduction in vehicle travel, and from the investment of funds in transit infrastructure that would provide additional transportation options during congested hours.

Regional planning agencies, as they are confronted with the need to grow even more densely, have expressed the need to manage travel demand and raise funds for needed transit investment through congestion pricing strategies. However, regional planning authorities need legal authority from the State to implement these pricing measures.
Pay-As-You-Drive (PAYD) insurance premiums are set based on driving record and other traditional risk factors, but are broken down into per-mile charges. Motorists would have the opportunity to lower their insurance costs by driving less. Some would. So PAYD insurance offered to a large percentage of California drivers would have the potential to significantly reduce vehicle miles traveled and GHG emissions.
PAYD insurance is currently being offered by insurance companies in Britain, the Netherlands, Israel, and South Africa, and has been piloted in some U.S. states, including Oregon, Texas, and Minnesota. ETAAC estimates that PAYD insurance could be implemented in California quickly by legislative and regulatory actions that allow insurance companies to implement these programs. The California Department of Insurance intends to adopt regulations with the goal of making PAYD insurance widely available in California and to encourage participation.

- *Indirect Source Rules for New Development*

Household transportation surveys and modeling reveal that low-density development far away from employment centers and other destinations has a very high transportation carbon footprint. To help regions meet their GHG targets, regulatory mechanisms to mitigate for these types of high-GHG developments might need to be implemented. One mechanism recommended by LUSCAT is an indirect source rule, in which a new development meets a greenhouse gas threshold through GHG-efficient project design or other mitigation measures. The San Joaquin Valley Air Pollution Control District has adopted an indirect source rule for mitigation of particulate matter pollution from new development. Similar rules could be adopted for greenhouse gas mitigation purposes.

- *Public Education and Programs to Reduce Vehicle Trips*

Land use measures mainly focus on new development. Only about one percent of total dwelling units per year are comprised of new development, so it takes a long time for land use strategies to accumulate into a significant benefit. Therefore it is important that VMT-related reductions from existing households are also pursued, especially in the short-term (2010-2020). Both work trips and non-work trips should be considered. Strategies to mitigate the impact of employee commute trips could include mandatory employer programs like Rule 2202 in the South Coast Air Quality Management District rule that requires employers to mitigate emissions due to employee commute trips, or voluntary programs coordinated by regional or local agencies that quantify results and promote the most cost-effective trip reduction strategies.

Large-scale public education programs in California have been very successful at reducing energy use and waste. Reducing driving trips by one round trip per week would reduce the average driver's trip-making by five percent. The State should explore the possibility of engaging the public to reduce their transportation footprint by making some small adjustments (like combining trips) that could yield big results. Developing primary school climate change curriculum that includes transportation conservation would help raise a generation with a smaller footprint.

Costs

Overall, changes in this sector are anticipated to result in long term cost savings for all levels of government. While some savings may accrue in the 2020 timeframe, current research and practice indicates that much greater cost savings from smarter growth strategies and reduced vehicle travel are likely to accrue in the 2050 timeframe, and most significantly from avoided capital cost expenditures. Recent scenario planning work reveals order of magnitude figures for cost savings on state and region wide bases. At the regional level, the Sacramento region's Blueprint planning process has projected that implementation of their compact regional growth plan will yield a savings of about 12% ($1.8 billion) in transportation system capital spending from a business as usual scenario in 2050 (SACOG Blueprint 2004). In 2000, the statewide Envision Utah scenario planning process estimated that implementation of a statewide compact growth plan would yield a potential 17% ($4.5 billion) infrastructure cost savings from business as usual development (Ewing et al. 2007, Envision Utah 2000).

Total cost of emissions reductions for the recommended measures will ultimately depend on the selection of strategies to be implemented. Recognizing that resource allocation is often a balancing act, local, regional, and state agencies will need to work together to identify, leverage, and use existing funds, resources, and tools to advance GHG efficient land use and transportation efforts, with special attention towards investments that also help forward other economic, health, social, and environmental goals.

Other State Agencies' Supporting Measures

The Land Use Subgroup of the Climate Action Team (LUSCAT) April 2008 submittal to ARB included actions that State agencies have committed to implementing that will help create the supporting foundation for actions by local and regional agencies. The Department of Housing and Community Development, the State Water Resources Control Board, the California Energy Commission, the California Department of Transportation, the Department of Conservation, and the Governor's Office of Planning and Research all submitted strategies to LUSCAT. No greenhouse gas emission reduction estimates were included in most actions; however, in aggregate they may result in substantial assistance for the local actions necessary to reach regional targets.

Technical Assistance

- *Housing Element Technical Assistance.* The State Department of Housing and Community Development will update technical assistance and outreach efforts to include climate change considerations for housing elements.

- *Energy-Aware Planning Guide Update.* The California Energy Commission will update the existing Energy Aware Guide to provide policy and technical assistance to regional and local governments.

- *GHG Mobile Source Technical Guidance.* The California Department of Transportation will set up a framework that ensures that GHG emissions from mobile sources are addressed in the transportation plans and projects. The framework would include development of appropriate mitigation measures, technical guidance and modeling tools, and incorporate analysis of economic and environmental benefits associated with energy efficiency measures and emission reduction strategies into the State Transportation Plan and subsequent Action Plan.

- *2010 State Transportation Improvement Program (STIP) Guidelines.* The California Transportation Commission will update the STIP Guidelines to describe policy, standards, criteria and procedures for the development, adoption and implementation of the STIP. Potential strategy metrics include the number of projects that promote pedestrian, bicycle, transit and rail access.

- *Staff Training and Public Education.* The California Department of Transportation will include the subject of climate change and GHG emissions in the Department's training program, enhance outreach efforts, maintain a website and convene educational forums.

State Guidelines

- *Regional Transportation Plan (RTP) Guidelines Update.* The California Transportation Commission and California Department of Transportation will update the RTP Guidelines to incorporate meeting AB 32 GHG emission reduction targets and to enhance the use of regional blueprint plans.

- *GHG in CEQA Guidelines.* The Governor's Office of Planning and Research will develop CEQA guidelines for mitigation of GHG emissions. Per SB 97, the guidelines must be submitted to the Resources Agency by July 1, 2009 and the Resources Agency shall adopt the guidelines by January 1, 2010.

- *Watershed-Friendly Landscape Guidelines.* The California Integrated Waste Management Board is developing a set of landscape guidelines for use throughout the State. A well-designed and maintained landscape can cost less to maintain in the long run by consuming fewer resources. Although the primary objective is to protect watersheds through the use of sustainable landscaping practices, a secondary motivation is the reduction or avoidance of GHG. These guidelines will be consistent with the provisions of AB 1881, signed by the Governor September 28, 2006. This legislation requires the California Department of Water Resources (DWR) to update the State Model Water Efficient Landscape Ordinance, based on recommendations set forth in the Landscape Task Force report, by January 1, 2009.

Funding, Incentives and Grants

- *Affordable Housing Finance Incentives.* State Department of Housing and Community Development will promote emission reductions and energy conservation in HCD administered funding programs.
- *Climate Change Criteria for State Water Resources Control Board Grants.* The State Water Resources Control Board will incorporate climate change criteria in the new grant programs under the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84) – Clean Beaches, Storm Water, and Agricultural Water Quality grant programs.

Electricity and Natural Gas - comments related to measures or strategies in the electricity and natural gas sector.
Green Buildings - comments related to measures or strategies in the green buildings sector

- Create a system for Community Choice Electricity Aggregation where communities can purchase electricity from clean sources
- Utilize more methods of methane capture from landfills and agriculture.
- Greater levels of our electricity need to come from renewable resources
- Natural gas as an alternative to gasoline and diesel needs to be addressed
- Carbon Capture and storage potential, impacts, and viability (pros and cons, lots of comments on both sides)
- Greater levels of our electricity need to come from renewable resources
- Natural gas as an alternative to gasoline and diesel needs to be addressed
- Carbon Capture and storage potential, impacts, and viability (pros and cons, lots of comments on both sides)
- Hydro- and nuclear should not be included in any output based distribution
- Increase solar PV and solar water heating
- Expand ground source heat pumps

Green Building

1. In order to be effective, CARB must make explicit recommendations to utilize green building opportunities toward achievement of AB32 requirements. CARB's recommendations with relation to green building must be clear, and convey motive intent. The green building section has many ideas prefaced by "Group X *could* take Action Y." This is tepid and noncommittal. The California Air Resources Board has been tasked with recommending - and to a large degree implementing - solutions to the unprecedented challenge of reducing California's greenhouse gas emissions. While CARB's draft scoping plan contains some bold ideas, the language itself, particularly in the green building section, does not rise to the challenge.

2. CARB is correct that the majority of individual measures capable of yielding significant greenhouse gas emissions reductions in the built environment are largely addressed in other issue areas within the Scoping Plan, and should not be double-counted under the heading of Green Building. However, the vast scope necessary to realize AB32 goals is very complex, and potentially unwieldy. Existing and upcoming Green Building ratings and metrics are essential tools to taking an integrated, comprehensive approach at the project level, and to convey the scope of opportunities for greenhouse gas reduction and sustainability. Accessible, intuitively understandable benchmarks, such as the Energy Star label for buildings and increasing levels of LEED certification, are tools that help spur the public, practitioners, and investors to incorporate many sustainability strategies into a given project. While the California Green Building Code and ongoing revisions to Title 24 Part 6 energy standards will be the primary tools for mandatory statewide increases in environmental performance of buildings, any AB32 related public outreach should encourage – and incentivize – green building commitments above and beyond any mandatory standards.

3. While CARB has made substantive proposals for greenhouse gas emissions reduction through alternate fuels and supporting the efforts of CPUC and CEC to minimize emissions from the operation of buildings, the best opportunity to influence the future emissions associated with a

building occur in land use planning and entitlement. Street layout, zoning, and other planning considerations heavily influence the vehicle miles travelled by future residents, long term needs to commute to and from a given site, and the opportunity for effective solar orientation of a building. With 44 million expected additional Californians by 2020, CARB and the state must collaborate with local governments – not supercede them – to co-locate housing, essential services, and jobs in new development and redevelopment, to increase the density of the state's built environment in ways that will structurally reduce the transportation needs of the average Californian. CARB must devote significant resources to direct support of Smart Growth policies among California local governments, including provision of consulting dollars, and should explicitly recommend increased investment in transit in combination with increased density of existing California communities.

Additional significant opportunities not yet addressed in the draft Scoping Plan include:

- Overcome the distinction between capital and operating expenses in public facilities by establishing and applying a life cycle costing methodology for state facilities. State adoption of such a methodology would allow local jurisdictions to employ it as well.
- California should provide a statewide bond pool to minimize financing costs for cities establishing energy financing districts to finance renewable energy systems and energy efficiency improvements on property tax bills. AB811 now allows general law cities to establish such districts on the "Berkeley Model," which had previously been limited to charter cities.
- Work with CEC so that updates to Title 24 Part 6 energy efficiency standards are targeted at absolute greenhouse gas minimization. The Base Case in Title 24 energy efficiency compliance calculations generally utilizes the same systems and building orientation as the proposed design. This can inadvertently penalize some significant design opportunities, including designing for *effective* natural ventilation. Removing an HVAC system entirely from a proposed design also removes the HVAC load from the base case. To cost-effectively move design toward zero-net energy, it will be necessary to instead propose an energy budget based on the building size and use type, and give credit for savings in comparison to a baseline energy budget. The building energy budget should be based on percentage reductions from standard practice, such as the Energy Star Target Finder or its source data, the US Department of Energy's Commercial Buildings Energy Consumption Survey (CBECS.)

DOCUMENTS FOR REVIEW:

Draft Scoping Plan and Appendices
http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm

Economic Technology Advisory Report
http://www.arb.ca.gov/cc/etaac/etaac.htm

GHG Reduction Strategies for 2020

Slowing global warming requires meeting energy needs with zero- or low-carbon energy sources. Two overarching strategies for obtaining GHG reductions from the energy sector are demand-side strategies that reduce energy use, and supply-side strategies that limit the emissions associated with electricity generation.

Reducing energy demand through energy efficiency and conservation will continue to be California's most cost-effective tool for achieving GHG reductions in the energy sector. While

California's past achievements in energy efficiency are impressive, we need to do much more in order to meet the AB 32 greenhouse gas targets. California must take actions that reduce per capita energy demand *significantly faster* than the rate of population growth. Among other things, this will require dramatic improvements in how we build our homes and the appliances we use. Because of the urgent need to reduce as much energy as possible, California must additionally put renewed emphasis on motivating consumers to conserve by using energy wisely. Emission reductions will also come from the supply side, through increased use of renewable energy and other forms of clean, distributed generation, and through measures that limit the use of electricity generated from high GHG sources. Existing programs and policies already lay the groundwork for renewable energy in California. The enhanced Renewables Portfolio Standard (RPS) recommended in the Draft Scoping Plan will require IOUs, ESPs, and CCAs to meet 33 percent of their electricity sales with qualifying renewable power, such as from wind or geothermal resources. Additional savings will come from California incentive programs for rooftop solar photovoltaic and solar water heater systems. By tapping into these existing policies and programs, increasing targets, and addressing key infrastructure barriers, California will achieve significant GHG reductions.

Other GHG savings can be achieved by removing financial barriers and setting targets for combined heat and power and other forms of clean, distributed generation. Finally, there are measures that could specifically target high-emitting sources of energy such as coal, by putting limitations on the emissions associated with electricity that retail providers purchase and/or deliver to California consumers.

GHG Reduction Strategies for 2050

Looking beyond 2020, research and deployment of new technologies will play an essential role in delivering the technologies needed to change the way we generate and use energy. The Economic and Technology Advancement Advisory Committee recognized the importance of pursuing technologies that are transformative in nature.15 Two of the technologies that they highlighted are "smart grids" and carbon capture and sequestration:

- **Smart Grids.** Today's power grid was designed primarily to transmit electricity from central generation source to the point of consumption. A "smart" and interactive grid and communication infrastructure would allow the two-way flow of energy and data needed for widespread deployment of distributed renewable generation resources, plug-in hybrids or electric vehicles, and end-use efficiency devices.16 Smart grids can accommodate increasing amounts of distributed generation resources located near points of consumption, which reduce overall electricity system losses and corresponding GHG emissions. Such a system would allow distributed generation to become mainstream, and would support the use of plug-in electric vehicles as an energy storage device by charging at night and supplying electricity to the grid during peak hours. The two-way flow of energy and data would also allow customers to respond to price signals, and give consumers the ability to lower their electricity bills by reducing demand during peak times. Improved demand response capabilities would in turn allow grid operators more flexibility in responding to fluctuations on the generation side, which can help alleviate the current difficulties with integrating intermittent resources such as wind.
- **Carbon capture and storage (CCS).** CCS is any process that "captures" CO2 emissions and stores or sequesters them away from the atmosphere. Geologic sequestration involves using gas separation technologies to capture CO2 from large point sources, such as power plants, cement factories, or refineries, and injecting it deep underground. While the likely rate of deployment of CCS may not yield substantial reductions before 2020,

CCS within California and the Western Electricity Coordinating Council (WECC) region has the potential to play a significant role in helping to achieve the GHG goals for 2050. To reduce emissions to the level needed by 2050, California needs to promote innovation that produces significant improvement in technology and infrastructure. Furthermore, we must ensure that the policies and technologies deployed over the next few years do not detract from the implementation of even more promising technologies that emerge in the future.

Economic Benefits

California can serve as a model for the nation by demonstrating that dramatic greenhouse gas reductions through energy measures are not only possible, but economically beneficial. Investments in energy efficiency are often highly cost-effective, and many consumers and businesses will find that it is possible to lessen their carbon footprint while simultaneously saving money. Other economic benefits will be gained as new energy technologies are developed to meet the climate change challenge. Investments in energy efficiency and clean energy technologies have been shown to provide numerous benefits on an economy-wide scale, by reducing the need for energy imports, cutting emissions and associated health-related costs, and creating high-paying jobs. As an added benefit of being a leader in clean energy technologies, many California companies will find that their technology innovations can be exported to other states and nations, creating additional jobs and other economic benefits that will ripple through the economy. Thus, there is no need to choose between the environment and the economy. We can create more jobs, reduce societal costs, *and* protect the environment by adopting policies that enhance energy efficiency and clean energy technologies.

Overlap with Other Sectors

The energy sector overlaps and intersects with many of the other GHG sectors discussed in the Draft Scoping Plan. Because buildings use almost 70 percent of all electricity consumed in the state, green building measures hold promise for additional demand side energy reductions. Measures addressed in the Green Buildings and Local Government sections of the Draft Scoping Plan therefore have significant implications for the electricity and natural gas sectors. Transportation is another area of significant crossover. Electricity and natural gas represent two alternative fuels for the transportation sector that are less GHG-intensive than gasoline or diesel, but shift emissions to the electricity and natural gas sectors. The Forest and Agricultural, and Recycling and Waste Sectors also offer GHG reduction measures that affect the Energy Sector. Biomass from forests or agricultural waste can be used as fuel for electricity production. Similarly, electricity can also be generated from landfill gas. In some cases, methane can be captured for direct injection into natural gas pipelines. The Water Sector is important as well. The pumping, treatment, and conveyance of water to consumers in California are extremely energy intensive activities. The State Water Project alone is the single largest electricity consumer in the state. Measures that increase the efficiency with which we use water will reduce the energy required to transport and treat water.

Recycling and Waste Management - comments related to measures or strategies in the recycling and waste management sector.

- Mandate recycling programs for large businesses. Use methane released from landfills to power homes and businesses.
- Local governments must maintain clear land use authority
- A feasibility assessment is needed to determine best land use patterns based on the individual needs to each municipality
- Adopt recommendations of ETAAC
- Mandatory commercial/ multi- family recycling
- Disposal limits for readily recyclable materials (e.g. cardboard)
- Ensure effective/comprehensive implementation of early action measures on landfill gas
- Improve GHG inventory and other emission models through mandatory reporting and be able to quantify fugitive emissions

- The current draft of the Scoping Plan does not attribute any greenhouse gas savings to waste reduction, recycling, and composting even though local governments recognize that recycling and composting cost-effectively and significantly reduce greenhouse gas emissions. This is a significant omission.

- The previous Climate Action Team review of "Strategies Underway in California that Reduce Greenhouse Gas Emissions" concluded with "high-confidence" that "zero waste/high recycling programs" are projected to be saving 7 million tons of CO_2E by 2010 and 10 million tons by 2020 (larger numbers than most of the Scoping Plan's recommended measures), and given the Scoping Plan's stated goal to "Increase waste diversion, composting, and commercial recycling, and move toward zero-waste", we are concerned that only landfill methane capture appears as a recommended measure in the Waste sector.

- On a statewide level, a 25% reduction in disposal would result in a reduction of at least 5 million tons of CO_2 emissions. Waste reduction and recycling reduces emissions across sectors, including mining, forestry, agriculture, transportation, manufacturing, electricity, and disposal.

- The appendices acknowledge the contribution from commercial recycling alone can be as high as 6.5 MMT, which is significantly higher than the potential reductions from landfill methane capture. The appendices also acknowledge a potential reduction of 3.1 MMT from increased composting. Anaerobic digestion also has a potential of 2.2 MMT. While anaerobic digestion is an important and effective way to reduce emissions, we do not believe it should be lumped in with waste-to-energy, since many waste-to-energy programs do not make the best, most efficient use of waste materials.

- While not easily quantified, extended producer responsibility and environmentally preferable purchasing are also valuable mechanisms for increased reductions.

- ARB should, as a minimum, adopt the recommendations of the ETAAC committee (Economic and Technology Advancement Advisory Committee). These recommendations include:

- Mandatory commercial recycling
- Mandatory multi-family recycling
- Disposal limits for readily-recyclable materials like cardboard
- Emission reduction / offset protocols for manufacturing with secondary materials, avoiding methane at landfills, reducing GHG emissions from agriculture, and upstream GHG reductions of recycling.
- Remove barriers to composting by addressing regulatory hurdles, providing financial incentives for composting and use of compost, and increase market demand through local and statewide procurement efforts.
- Eliminate diversion credit for greenwaste used as alternative daily cover.
- Reduce emissions from synthetic fertilizers/pesticides and energy-intensive irrigation by increasing agricultural application of compost, including through financial incentives and demonstration projects.

DOCUMENTS FOR REVIEW:

Draft Scoping Plan and Appendices
http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm

Economic Technology Advisory Report
http://www.arb.ca.gov/cc/etaac/etaac.htm

Early Actions and Discrete Early Actions Committee Report
http://www.arb.ca.gov/cc/ccea/ccea.htm

Water and Wastewater- comments related to measures or strategies in the water and wastewater sector.

Note: Wastewater is not called out separately in the Appendices for the Scoping Plan and as a consequence, there were no specific comments reported.

Water Comments

- Add a Public Goods Charge (PGC) on water. The PGC could be a flat rate that applies equally throughout the State. Alternatively, for residential customers, consider a tiered rate that increases with increased usage. Since water resources flow throughout the state, it would be appropriate to use funds from the water public goods charge on water conservation related local and statewide projects. A percentage (up to 75%) should be used by local jurisdictions to improve water efficiency within its service territory. The remaining [25%] could be deposited into an account that is used to competitively fund water conservation projects anywhere in the state; competitiveness could be based primarily on gallons of water saved per dollar invested; as well as on the following:

  - Energy intensity of water being saved
  - Quality of water being saved
  - Ability to defer or eliminate major Statewide water infrastructure projects
  - Other life cycle issues

  Proposed PGC include Federal water because:
  - Federal climate legislation is in the works
  - Federally subsidized water provided by Bureau of Land Management undercuts the need to reduce CO2 by artificially making projects that are cost effective everywhere else not cost effective where subsidized water and power are provided.
  - PGC on Federal water should only be applied if the Federal water customer is an end - user. If Federal water is provided to a water purveyor, that purveyor will have a PGC of their own.

- Agricultural reductions are not adequately covered by AB32

DOCUMENTS FOR REVIEW:

Draft Scoping Plan and Appendices
http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm

Economic Technology Advisory Report
http://www.arb.ca.gov/cc/etaac/etaac.htm

Overview from *Draft Scoping Plan and Appendices*

The Water sector plays a critical role in California and cuts across almost all other sectors. Approximately 19 percent of electricity and 30 percent of non-power plant natural gas consumed in California are used by the Water sector to grow crops, to supply development, to drive industry, and to produce energy. On top of these many, often competing needs, water is also needed to maintain a healthy environment. Global warming will likely make it even more difficult for California to meet all of these needs. The greenhouse gas reduction measures proposed for the Water sector are largely measures to develop additional supply reliability to meet the growing demands of these multiple, competing needs for water in California. Nevertheless, these measures can have many co-benefits including reducing greenhouse gas emissions below what would otherwise be the case.
Six GHG emission reduction strategies are proposed for the Water sector:
1) Water Use Efficiency
2) Water Recycling
3) Water System Energy Efficiency
4) Reuse Urban Runoff, and
5) Increase Renewable Energy Production.
6) Public Goods Charge for Water

The first and second measures are primarily water supply measures. While efficiency and recycling have many benefits to the sector, the greenhouse gas emission reductions from these measures are accounted for in reduced energy requirements. ARB is currently evaluating methods to distinguish the Water sector emissions and/or reductions from those in the Electricity sector.

The Water System Energy Efficiency measure sets a target of 20 percent improvement in system efficiency for the Water sector resulting in approximately 4,400 GWh of additional electricity savings annually, resulting in a 2 MMTCO2E GHG emission reduction.

Reusing urban runoff has the potential to achieve energy and emission reductions by reducing the need for new water supply. The emission reductions from reusing urban runoff are already captured in reduced per capita electricity use and accounted for in the Electricity sector. Again, ARB is working to quantify Water-specific emissions and reductions.

The purpose of the fifth measure, Increase Renewable Energy Production, is to take advantage of the State's water system-related opportunities to generate additional renewable electricity. Examples of renewable energy existing within water systems include in-conduit hydroelectric, solar, wind, and gases emitted from decomposing organic wastes. The CEC's PIER program estimates statewide generation potential from currently undeveloped in-conduit hydroelectric and wastewater treatment renewable energy resources at a total of 2,100 GWh/yr, or 0.9 MMTCO2E of GHG reductions.

The State will also establish a Public Goods Charge for water to fund investments in water efficiency that will lead to reductions in greenhouse gases. As noted by the Economic and Technology Advancement Advisory Committee, a public goods charge on water can be collected on water bills and then used to fund end-use water efficiency improvements, system-wide efficiency projects and water recycling. Depending on how the fee schedule is developed, a public goods charge could generate $100 million to $500 million annually to invest in further efficiency improvements. These actions would also have the co-benefit of improving water quality and water supply reliability.

The agencies involved in the water sector are working to develop a consistent policy thread for the Water sector to achieve greenhouse gas benefits while meeting the many other demands placed on this sector. The Governor is promoting a comprehensive water proposal which will provide additional opportunity for the water sector to contribute to the goal of reducing the State's emissions. For example, DWR is currently working with the United States Geological Survey on a Sacramento-San Joaquin Delta peat growing project and a Delta rice project, both of which have the potential co-benefit of carbon sequestration.

Preliminary Recommendations

W-1: Water Use Efficiency

Using water more efficiently is one of the key ways to provide water for a growing California. The Governor directed State agencies to develop and implement a plan to achieve a 20 percent reduction in per capita urban water use by 2020. This directive builds on the California Water Plan Update 2005, which identified water use efficiency as a "foundational action" for California water management. California will achieve 1.76 MAF of urban water use efficiency by 2020 to meet the Governor's call.

To implement this 20 percent by 2020 goal, DWR is collaborating with CEC, PUC, SWRCB, and the Department of Public Health (DPH) to develop and implement various strategies and measures to increase water use efficiency and thereby reduce greenhouse gas emissions relative to more energy intensive sources of new supply. This initiative will need to utilize the many Integrated Regional Water Management planning efforts currently underway throughout California. During 2008, the five-agency group will prepare a statewide water use efficiency measure for the Public Review Draft of the California Water Plan Update 2009 and identify additional opportunities to reduce greenhouse gas emissions from the entire water sector.

Measures for achieving the directed water conservation target include:

· Best Management Practices
· Appliance Efficiency Standards
· Landscape Water Conservation
· Analytical Tools
· Regulatory Actions

W-2: Water Recycling

Water recycling can reduce energy use and thereby reduce GHG emissions by providing local water more efficiently than importing new water from nonlocal sources. This measure proposes that National Pollution Discharge Elimination System permits be amended to require preparation and implementation of water recycling plans at wastewater treatment plants in communities that rely on imported water supplies and communities where water recycling would otherwise require less energy than current water supplies.

Modern treatment facilities are capable of producing wastewater that is suitable for recycling. The DWR publication Water Recycling 2030: Recommendations of California's Recycled Water Task Force reports that approximately 10 percent of municipal wastewater in California is being recycled, but as much as 23 percent of the municipal wastewater flow could be recycled. This measure targets the 23 percent recycling goal by 2030. Finding suitable markets and funding treatment and distribution system costs are challenges to increasing the use of recycled water. Substantial energy savings could be realized if recycled wastewater was used to replace potable water in appropriate applications such as irrigation. The amount of energy required to import or recycle water varies widely throughout the State.

The CEC has reported that water supply and conveyance of water from northern to southern California consumes an estimated 3.2 MWh per AF. In sharp contrast, the estimated energy needed to recycle wastewater is approximately 0.7 MWh per AF. As a result, the potential energy savings that could be realized through water recycling is estimated as 2.5 MWh per AF for southern California communities that import water.

W-3: Water System Energy Efficiency

To meet the needs of Californians, the State's water systems include natural and man-made facilities for the capture, storage, conveyance, treatment, distribution and re-use of water, requiring energy at nearly every step. Consistent with the recommendations of the California Water Plan Update 2005 and the 2005 Integrated Energy Policy Report, this measure seeks to reduce the magnitude46 and intensity47 of energy use in California's water systems through further implementation of energy efficiency measures. Setting a target of a 20 percent reduction from 2006 levels would yield a savings of 4,400 GWh per year. A reduction in electricity consumption would in turn reduce the greenhouse emission associated with this amount of electricity generation. An assessment of actual potential is needed to determine if such target is reasonable. Two mechanisms are proposed to assess the potential of increasing pumping efficiency in the water sector: 1) construct tools and protocols to evaluate, measure, and verify the energy impacts of water system and end use efficiency activities and programs, and 2) conduct research and demonstration projects that explore ways to reduce the energy intensity of the water use cycle and better manage the energy demand of the water system. To accurately assess the potential greenhouse gas emission reductions that are possible various tools are needed to evaluate, measure, and verify the amount of energy that could be saved at various stages upstream and downstream of the activity or effort. Use of these tools will assist in program implementation and help with evaluation of program effectiveness. These tools can also help water agencies and regional boards determine the most effective measures to implement as part of their water management strategies under existing requirements. These tools will be beneficial to ensuring the cost-effectiveness of projects and governmental accountability. Research is also needed to deploy advanced technologies in the water system to lower energy intensity; examine opportunities to shift loads off peak; integrate into the grid intermittent renewable generation from water systems; refine understanding of the interaction of water and energy within the State; and identify new and innovative technologies and measures for mutually achieving energy and water efficiency savings.

W-4: Reuse Urban Runoff

Although urban water reuse may have the potential to achieve energy and emission reductions by reducing the use of new water, information is not available at this time to accurately quantify the volume of water that could be captured and reused, or the energy savings that could be realized. A pilot methodology is being evaluated and accordingly results are considered preliminary at this time. A reduction of GHG emissions may be realized by replacing energy-intensive water supplies with sources that require less energy. This measure would increase local surface and groundwater supplies by:

1) adopting stormwater management strategies, such as Low Impact Development (LID), to increase infiltration or storage in urban areas,

2) increasing regional stormwater capture and infiltration, and

3) constructing neighborhood facilities to locally capture and reuse dry weather flows.

Development of impervious surfaces and the reliance on traditional storm drain systems have reduced stormwater infiltration in urban areas. Traditional storm drain systems are designed to capture and convey water away from developed areas as swiftly as possible, typically discharging to streams or water bodies. Nontraditional stormwater management strategies emphasize the use of vegetated channels and natural landscapes to intercept runoff, slowing the discharge rate, increasing infiltration, and ultimately reducing discharge volume.

LID is probably the most recognized approach, but the basic components are shared by other land use and planning techniques. This measure would require capture and infiltration or storage of stormwater to increase local water supplies. Examples of some LID techniques include simple actions such as the addition of rain barrels and the disconnection of downspouts from storm drains to the installation of underground cisterns, construction of surface storage basins, or adoption of water-saving street designs. A methodology is being evaluated to estimate the volume of water that could be obtained through urban stormwater capture, infiltration and/or storage. Applying this preliminary methodology to the urbanized area of southern California yielded estimates of 270,000–333,000 acre-feet of stormwater per year that could be obtained from new and redevelopment residential and commercial projects. Further investigation is warranted to validate these estimates. In addition, this CAT measure promotes development of regional infiltration facilities and neighborhood facilities to augment local water supplies. In the urban environment, water is available from a multitude of sources on a year-round basis. Sources of urban water include stormwater discharge, but also water that becomes available from various urban activities like landscape irrigation, leaking pipes, washing cars, etc. Small neighborhood facilities could capture this water for local use.

W-5: Increase Renewable Energy Production from Water

The purpose of this measure is to identify and implement specific projects that take advantage of the State's water system-related opportunities to generate renewable electricity. Examples of renewable energy existing within water and wastewater systems include water moving through conduits, sunlight, wind, and gases emitted from decomposing organic wastes. The CEC's PIER program estimates statewide generation potential from currently undeveloped in-conduit hydroelectric and wastewater treatment renewable energy resources at a total of 2,100 GWh per year. Further development of renewable generation from solar and wind resources at water system sites would add to this total. Renewable energy generation at water and wastewater facilities will reduce greenhouse gas emissions by reducing the need for the facilities to consume electricity derived from fossil fuels. In addition to greenhouse gas emission reductions, benefits of projects developed under this measure may also include better management of on-site electricity load at water system sites, mitigation of electricity price volatility, contribution to meeting renewable energy standards, and capture and use of gases from wastewater in an environmentally-preferred manner.

Implementation of this measure will involve several mechanisms. DWR is currently evaluating opportunities to increase the use of renewable energy for the State Water Project as a means to reduce the carbon footprint of the project. Local agencies are encouraged to develop their own cost-effective projects. The use of existing financial incentives is also encouraged. Another mechanism is to assess economic potential to better target future incentives and research technologies to lower costs and improve performance.

W-6: Public Goods Charge for Water

A public goods charge applied to water will raise funds for reducing GHG emissions resulting from capturing, storing, conveying, treating and disposing of water. These funds would provide a stable and sustained source of revenue to further develop water use efficiency, water recycling, pumping and treatment efficiency, reuse of urban runoff, and increase renewable energy production from California's water system. These actions would also have the co-benefit of improving water quality and water supply reliability. Depending on how the water fee schedule would be developed, approximately $100 million to $500 million could be raised per year with fees of about $10 to $50 per connection per year or $0.83 to $4.17 per month. There would be no assessment for low-income customers (customers on lifeline billing).

This measure would be implemented via regulation. The regulation will be presented to the Board in the 2010-2011 timeframe and will be in effect in 2012-2013. The charge would be applied to each water connection, be collected by each retail water provider in the State, and include all uses of water. The funds raised by this measure would be distributed among local, regional, and statewide planning efforts to reduce water-related GHG emissions. As part of implementation, ARB would develop protocols for monitoring, tracking, and reporting performance to ensure that GHG reductions are real, permanent, quantifiable, verifiable, and enforceable.

This public goods charge would be a flat rate per connection i.e. not based on the quantity of water use and therefore not likely to directly reduce water use or the associated emissions. Nevertheless, the funds could be invested in water use efficiency, water recycling, pumping and treatment efficiency, reuse of urban runoff, and increase renewable energy production, thereby achieving both GHG and criteria pollutant benefits.

Transportation (includes Goods Movement) **-** comments related to measures or strategies in the transportation sector.

- Promote walking, bicycling, and reduce vehicle miles traveled through alternative land use practices
- Increase funding towards rail and subsidize zero emission vehicles
- Funding for infrastructure development must be provided
- Transportation patterns will take decades to change and AB32 may not
- Rail electrification needs to be addressed by AB32
- Unbundle parking (transit Oriented Development)
- Implement Smart Parking Pricing
- Guaranteed Ride Home Programs
- Mandatory pre-tax transit
- Municipal bicycle fleet
- Public bicycle fleet
- Promotion of parking cash-outs
- Promote Car Free tourism
- More public transportation
- Incentives for green car ownership
- Observe and improve on public transportation systems of foreign countries
  - Public education and programs to reduce vehicle travel are effective and continue to be in demand.. However, there is a limited amount of funding available to local governments to staff public education activities. Additional resources and funding to staff public outreach programs are essential.
  - **Un-bundle parking (Transit Oriented Development TOD):** Pay for parking separately from housing or office space. The cost of parking for residential and commercial units is often passed on to the occupants indirectly through the rent or purchase price ("bundled") rather than directly through a separate charge. Unbundling parking helps reduce vehicle ownership as residents are able to save more by not owning a car and it can complement car - sharing programs. Making it a requirement to un-bundle parking in new developments can contribute to reductions in the use of single occupancy vehicles.

  - **Municipal Bicycle Fleet:** Require cities, large corporations and institutions to implement bicycle programs and/or provide incentives for the implementation of shared bicycle fleet for workers to help reduce the need for vehicle pool or fleet for workers to perform on-job duties. This contributes to reductions in vehicle miles traveled and carbon emissions.

  - **Public Bicycle Fleet:** Require that cities, large corporations and institutions provide a public bicycle fleet and/or provide incentives to establish such a fleet. Implementation of shared bicycle fleet for the general public promotes clean and green transportation option. Paris, France and Amsterdam, Netherlands along with Portland, Oregon serve as a few good examples of shared bicycle fleet programs available to the general public.

  - **Mandatory Pre-Tax Transit:** Commuters who take the bus, train, ferry, or vanpool to work could be saving up to 40 percent on their commuting expenses. Here's how it works: The federal government allows employees to deduct up to $115 per month from their paychecks,

pre-tax, to pay for transit and vanpool expenses. Employees save by using pre-tax dollars for their commute expenses, and employers get the advantage of reduced payroll taxes and a popular benefit program that's easy and inexpensive to administer. Making this program mandatory for employers to offer at their worksite would encourage the use of driving alternatives.

- **Promotion of Parking Cash-Out:** Offers commuter financial incentives for using alternative modes. Free parking is the most common fringe benefit offered to workers in the U.S. A 1992 California law created a program known as "parking cash-out" that eliminates subsidization of parking for solo drivers. According to University of South Florida's National Center for Transit Research, with the cash-out programs implemented, the average share of solo commute drivers decreased from 76 percent to 63 percent, a 13 percent decrease.

- **Car free Tourism:** Encourage car free, carefree transportation to and around California Tourist destinations to promote cleaner air and a healthier planet. There are car free tourism projects that provide tourists with information (guides, brochures, website) on how to best experience a city by walking, on bicycles and using public transit.

- **Guaranteed Ride Home:** Mandate Guaranteed Ride Home (GRH) programs. Also known as Emergency Ride Home (ERH), GRH provides a free or low-cost ride home in cases of emergency for employees who use alternative transportation, such as carpooling, vanpooling, public transit, bicycling, and walking. This program helps promote driving alternatives to commuters who would otherwise drive just to address the possibility of needing their personal automobile in case of an emergency.

- **Implementation of Smart Parking Pricing:** Incentivize local governments to make Smart Parking Pricing mandatory. This would including the following:

    - Charge users directly for parking facility use, often with variable rates. Better parking management yield following benefits:
    - Make parking easier to find and easier to pay for.
    - Reduce frustrating circling for parking, which means less congestion.
    - Reduce transportation-related greenhouse gas emissions.
    - Increase safety for pedestrians, bicyclists, and other drivers by helping drivers be less preoccupied by the search for parking.

- **Freight Transport Management:** Encourage businesses to use more efficient transportation options.

DOCUMENTS FOR REVIEW:

Draft Scoping Plan and Appendices
http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm

Economic Technology Advisory Report
http://www.arb.ca.gov/cc/etaac/etaac.htm

TRANSPORTATION from *Draft Scoping Plan and Appendices*

Overview

The transportation sector is integral to the people and economy of California. California has a long, successful history of improving the environmental footprint of transportation related activities. These efforts have resulted in significant reductions of criteria and toxic air pollutants, improved air quality and public health. In addition, the clean vehicle technologies developed in response to California regulatory efforts have provided benefits across the nation and throughout the world. To achieve our GHG emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants to achieve significant reductions in GHG emissions from transportation and goods movement activities. GHG emission reductions will come from three overarching strategies: more efficient vehicles, lower-carbon fuels, and reduction of vehicle use or vehicle miles traveled (VMT). The GHG emission reductions in this sector will be achieved largely through regulations, market mechanisms, incentives, and land use policy.

Transportation activities are responsible for 38 percent of the greenhouse gas (GHG) emissions in California – or 182 MMTCO2E. Because of its size, it is critical that the transportation sector achieve significant emission reductions toward the State's 2020 goal. If the transportation sector does not provide significant GHG reductions, it would be difficult for another sector to make up the emission reductions. These reductions in GHG emissions can be achieved through the use of currently available and emerging technologies and behavior change.

Vehicles

Passenger vehicles (cars and light trucks) are responsible for 74 percent of the emissions from the transportation sector and are the primary focus of reduction strategies for the transportation sector. The Pavley (AB 1493) regulation, which has already been adopted by ARB, requires GHG emission reductions from passenger cars and light trucks. This regulation will provide about 27 MMTCO2E reductions in 2020—an 18 percent fleet wide reduction. The State of California is currently challenging a U.S. EPA decision that prevents the implementation of this regulation. Although ARB is confident that California will prevail, staff is also pursuing additional strategies to ensure that new California vehicles achieve the maximum feasible and cost-effective reductions in GHG emissions as required by law.

Although the Pavley regulation results in significant GHG reductions, more is needed. ARB is proposing additional strategies to ensure that new California vehicles achieve the maximum feasible and cost-effective reductions in GHG emissions including strengthening GHG tailpipe emission standards from passenger cars and light trucks and improving overall vehicle efficiencies. Medium- and heavy-duty trucks account for about 20 percent of the transportation GHG emissions. ARB is pursuing strategies to increase the efficiency of medium and heavy duty vehicles through both engine specifications and devices that reduce aerodynamic drag and rolling resistance. These strategies will improve vehicle efficiency and reduce GHG emissions.

Fuel

The fuel used in cars and trucks also has a significant impact on emissions. ARB is currently developing a regulatory proposal for the Low Carbon Fuel Standard (LCFS), which the Board will consider in late 2008 or early 2009. It is anticipated that the proposed regulation will provide a 10

percent reduction in carbon intensity by 2020, which translates to approximately 16.5 MMTCO2E of emission reductions.

Jet fuel used in intrastate plane trips accounts for approximately 2 percent of California's GHG emissions. Emissions from the fuel used in planes is an important consideration, however, the State does not have regulatory authority over aviation. ARB has not identified aviation specific measures; however, successful deployment of High Speed Rail could divert some air passengers to rail.

Transportation and Land Use

The other factor in GHG emissions from transportation is the use of the vehicle. In the case of passenger vehicles, the metric for use is most commonly referred to as vehicle miles traveled (VMT). Statewide VMT increased about 35 percent from 1990 to 2007, and with current trends is expected to increase another 20 percent by 2020 and more than double between now and 2040. For California to meet its long term GHG emission reduction goal, this trend must be slowed.

The key to addressing the VMT challenge is providing people with more choices through diversified land use patterns, greater access to alternative forms of transportation including transit, biking and walking, and creating cities and towns where people can live work and play without having to drive great distances. Altering land use patterns to bring people closer to more destinations and enhance transit can result in VMT reduction over the long term. Current regional planning efforts are starting to move in a direction to create the choices that are needed to reverse projected VMT growth. A strategy of coordinated State, regional, and local land use and transportation planning, policies and finance, must be developed to encourage reductions in VMT. Land use strategies that provide for more compact growth not only reduce VMT, but can also reduce the carbon footprint of developments by reducing land consumption, energy use, water use, and waste. While these strategies are unlikely to provide significant reductions in GHG emissions by 2020 because of the time required to change land use patterns, they are a central element in ensuring that California gets on a low-carbon trajectory as we get to and beyond 2020. Land use measures are described in detail in section 3 of this appendix.

Goods Movement

A significant portion of the transportation activities are associated with the movement of freight or goods throughout the State. Reducing GHG emissions from the vehicles and equipment used in goods movement activities through increasing efficiency of the way goods move throughout the State and other measures has the dual benefit of reducing both GHG emissions and emissions of smog precursors and air toxics. With traffic at California ports projected to increase by 250 percent by 2020, reducing GHG emissions from this sector will be necessary to help meet the State's 2020 GHG goal. Proposed measures include implementation of two already adopted regulations for port drayage trucks and the use of shore power for ships at berth, and several new measures designed to improve the overall efficiency of goods movement throughout California, reduce fuel consumption, improve operational efficiencies such as improvements in dock-side container handling procedures, transportation mode shifts, and the application of new technologies and alternative fuels. Proposition 1B funds, as well as clean air plans being implemented by California's ports, will also help reduce greenhouse gases while cutting criteria pollutant and toxic diesel emissions. California's goal for the long-term is to identify and develop programs that will help bring the State closer to the 2050 target.

Bringing the goods movement system to a low- or zero-carbon future will require California to begin work now on fostering the development of cutting edge low carbon technologies, creating partnerships to improve the overall efficiency of the goods movement infrastructure, implementing

programs to leverage the consumer in promoting a greener goods movement system, and identifying and implementing public policies that
promote a low-carbon goods movement system.

Conclusion

California has the opportunity to lead the nation in reducing emissions from the transportation sector. While the further deployment of existing technologies will allow California to achieve the 2020 goal, meeting California's long-term GHG goals will require substantial reductions from all areas including lower GHG vehicle/fuel systems, increased transportation efficiency, changes in the delivery of goods and services, expanded transit, and more efficient land use patterns.

General Plan and CEQA

DOCUMENTS FOR REVIEW:

Technical Advisory for CEQA and Climate Change
http://www.calapa.org/en/art/?186

Draft Scoping Plan and Appendices
http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm

Economic Technology Advisory Report
http://www.arb.ca.gov/cc/etaac/etaac.htm

Pursuant to Senate Bill 97 (Chapter 185, 2007) the Governor's Office of Planning and Research (OPR) is in the process of developing CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." OPR is required to "prepare, develop, and transmit" the guidelines to the Resources Agency on or before July 1, 2009. The Resources Agency must certify and adopt the guidelines on or before January 1, 2010.

This web-page will be periodically updated to include the latest activities that OPR is undertaking in the development of the guidelines.

OPR is looking for input and advice from state agencies, local governments, stakeholder groups and the public. Send your input to: CEQA.GHG@opr.ca.gov

***NEW* OPR Technical Advisory on CEQA and Climate Change:**

The emerging role of the California Environmental Quality Act (CEQA) in addressing climate change and greenhouse gas emissions has been the subject of much discussion and debate in recent months. As part of its continuing service to professional planners, land use officials, and CEQA practitioners, OPR, in collaboration with the California Resources Agency, the California Environmental Protection Agency and the California Air Resources Board, is pleased to provide this new technical advisory containing informal guidance for public agencies as they address the issue of climate change in their CEQA documents. This technical advisory provides OPR's perspective on the issue and precedes the development of draft implementing regulations for CEQA, in accordance with Senate Bill 97 (Chapter 185, Statutes of 2007). View the OPR CEQA and Climate Change Technical Advisory. http://opr.ca.gov/index.php?a=ceqa/index.html

Local Government Protocol and GHG Emission Tracking

The primary consideration for those municipalities that have already completed their initial greenhouse gas emission inventory is that the work previously done will not be accurately converted to the new protocol. While it is stated that the one of the purposes was to create harmonization between the various protocols, that aspect was not made clear in the explanation.

More specifically, what assurances does the City of San Diego have that the 1990, 2004 and 2007 inventories will be accepted by the State under the AB 32 regulations? What effort is underway to develop some type of a conversion tool that can take information developed under previous protocols and reconcile them into the new protocol?

The second consideration is whether the municipalities will be held responsible for reducing the GHG emissions from residential, business, utility or other significant sources of emissions. Until such time that codes and standards are developed and enforced at the State and/or national level, it is an onerous burden for each municipality, and for those who are regulated by them, to develop and adhere to a myriad of standards potentially unique to each jurisdiction.

Tracking N2O, HFCs, PFCs, SF6 will add another level of complexity to the data gathering.

How will the protocol be made available to municipalities? Will it be accessible through the internet?

If so, how will the users be updated on various changes to the model? We have recently been challenged with changes in the defaults and coefficients in our current GHG software program, and that has altered the outcome of our inventory significantly.

Will there be a charge for the software program? Are we required to do third party assessments?

Would the State be able to help offset the cost for compliance with the new mandates?

What level of training will be provided to local government staff? What support will we have from the State to provide an "Executive Summary" designed for an elected official?

DOCUMENTS FOR REVIEW:

Draft Scoping Plan and Appendices
http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.htm

Economic Technology Advisory Report
http://www.arb.ca.gov/cc/etaac/etaac.htm

Local Government Operations Protocol
http://www.arb.ca.gov/cc/protocols/localgov/localgov.htm

The Local Government Operations Protocol was adopted by the California Climate Action Registry Board on August 12, 2008. The Protocol is pending consideration and adoption by the California Air Resources Board, ICLEI and The Climate Registry.

Background

In response to a scientific consensus linking greenhouse gas (GHG) emissions from human activities to global climate change1, many local governments are looking inwards to identify opportunities to reduce GHG emissions not only from their communities, but also within their own operations. Local governments can inventory the emissions from their operations in order to track their performance and ensure that their actions do reduce GHG emissions. This GHG inventory, also referred to as a "carbon footprint", is the foundation of actions to address climate change. Complete, consistent and accurate measurement enables local governments to assess their risks and opportunities, track their progress, and create a strategy to reduce emissions in a quantifiable and transparent way.
The Local Government Operations Protocol (Protocol) is designed to provide a standardized set of guidelines to assist local governments in quantifying and reporting GHG emissions associated with their government operations.

The Protocol was developed in partnership by the California Air Resources Board (ARB), California Climate Action Registry (CCAR), and ICLEI – Local Governments for Sustainability (ICLEI), in collaboration with The Climate Registry and dozens of stakeholders. Through this Protocol, the partners have sought to enable local governments to measure and report GHG emissions associated with government operations in a harmonized fashion. The Protocol facilitates the standardized and rigorous inventorying of GHG emissions, which can help track emissions reduction progress over time and in comparison to GHG reduction targets.

The Protocol provides the principles, approach, methodology, and procedures needed to develop a local government operations GHG emissions inventory. It is designed to support the complete, transparent, and accurate reporting of a local government's GHG emissions. The Protocol guides participants through emissions calculation methodologies and reporting guidance applicable to all U.S. local governments. Guidance on the development of community-scale GHG emissions inventories will be provided in a subsequent document.

Purpose

The purpose of the Local Government Operations Protocol is to:
• Enable local governments to develop emissions inventories following internationally recognized GHG
accounting and reporting principles defined below with attention to the unique context of local government operations;
• Advance the consistent, comparable and relevant quantification of emissions and appropriate, transparent, and policy-relevant reporting of emissions;
• Enable measurement towards climate goals;
• Promote understanding of the role of local government operations in combating climate change; and
• Help to create harmonization between GHG inventories developed and reported to multiple programs.

The Protocol is a tool for accounting and reporting GHG emissions across a local government's operations. Reductions in emissions are calculated by comparing changes in a local government's emissions over time. By tracking emissions over time, local governments should be able to measure the GHG reduction benefits from policies and programs put in place to reduce emissions within their

operations.

The Protocol is not designed for quantifying the reductions from GHG mitigation projects that will be used as offsets. Offsets are discrete GHG reductions used to compensate for (i.e., offset) GHG emissions elsewhere. Offsets are calculated relative to a baseline that represents a hypothetical scenario for what emissions would have been in the absence of the project.

Project based GHG reductions that are to be used as offsets should be quantified using a project quantification method that addresses issues like baseline scenario, additionality, permanence and ownership. This Protocol does not address such issues and is not suitable for calculating reductions to be used as offsets in a voluntary or mandatory GHG reduction system. Furthermore, the Protocol does not include guidance on how to quantify carbon stocks (or “sinks”). Biological stocks of carbon and estimations of project-specific GHG reductions may be reported optionally.