COUNCIL REPORT

CITY OF MOUNTAIN VIEW

AGENDA: November 3, 2009

7.1

CATEGORY: New Business

DEPT.: Public Works

TITLE: Adopt Community-Wide Greenhouse Gas Inventory and Emissions Reduction Targets

RECOMMENDATION

Approve the Council Environmental Sustainability Committee (CESC) recommendation to adopt the following community-wide greenhouse gas (GHG) emissions reduction targets:

- 5 percent below 2005 levels by 2012;
- 10 percent below 2005 levels by 2015;
- 15 percent to 20 percent below 2005 levels by 2020; and
- 80 percent below 2005 levels by 2050.

FISCAL IMPACT

Setting GHG reduction targets has no fiscal impact. There will be future costs as the Council chooses specific emissions-reduction strategies to meet these targets; however, in some instances, these costs may be offset by savings. Staff will conduct financial analyses for specific strategies identified by the City Council.

BACKGROUND

In response to climate change, the State of California passed AB 32 (Global Warming Solutions Act of 2006), requiring California to reduce State-wide GHG emissions over time. The law requires reductions from the heaviest GHG-emitting industries first, such as cement manufacturers and utilities.

In a Study Session on October 30, 2007, the City Council endorsed a sustainability goal of meeting or exceeding California's AB 32 requirements for emissions reduction. In addition, the Council sought public input through its Environmental Sustainability Task Force, which, after seven months of work, recommended specific community-wide reduction targets as outlined later in this report.

The CESC met on October 7, 2009 and, following public input and discussion, recommended the GHG reduction targets shown above. Draft minutes for this meeting are shown in Attachment 1.

ANALYSIS

Setting community reduction targets and reducing emissions on a voluntary basis has several benefits, including:

- Setting the climate change policy foundation and GHG reduction strategies in the General Plan.
- Helping inform the General Plan update's land-use alternative discussion.
- Reducing energy and water consumption in homes and businesses.
- Enabling the City to gain experience with emissions-reduction activities before reductions likely become mandatory at the State or Federal level.
- Demonstrating the City's leadership in environmental protection and a commitment to future generations.
- Potentially reducing the impacts of climate change (e.g., extreme weather) on residents, businesses and the environment.
- Providing community health benefits such as improved air quality.

Community-Wide Greenhouse Gas Inventory

The City completed an inventory of its 2005 community-wide GHG emissions which will serve as the baseline against which to measure emissions-reduction progress in future years. Conducting an inventory involves measuring the amount of energy/fuel/water used and waste generated by the entire community and calculating the number of metric tons of greenhouse gases (CO_2e[1]) that result from those activities.

GHG Inventory Methodology

The inventory was conducted in conjunction with ICLEI—Local Governments for Sustainability, which specializes in climate change and GHG inventories for cities and

[1] CO_2e, or CO_2 equivalent, describes how much global warming a given type and amount of greenhouse gas (e.g., carbon dioxide, methane, nitrous oxide, ozone) may cause, using the functionally equivalent amount or concentration of carbon dioxide (CO_2) as the reference.

counties. ICLEI's inventory methodology: (1) was developed in collaboration with several regional entities (e.g., the City/County Association of Governments, the Metropolitan Transportation Commission (MTC) and PG&E); (2) was certified by the Bay Area Air Quality Management District; and (3) is in use by approximately 70 percent of Bay Area cities.

Deriving the Inventory Numbers

The GHG emissions were derived from PG&E, MTC and California Integrated Waste Management Board (CIWMB) community-wide data:

- PG&E provided ICLEI with the City's 2005 electricity and natural gas usage, broken down by the residential, commercial and industrial sectors.

- MTC assisted ICLEI by providing the estimated vehicle miles traveled (VMT). MTC obtained 2005 traffic count data from the California Department of Transportation (Caltrans) and local agencies to use in a region-wide computer traffic model. The model calculated the vehicle miles traveled per city. Trips through several cities were apportioned to each jurisdiction so that pass-through trips were included in the estimated VMT. ICLEI then used each city's VMT to calculate the emissions by vehicle type as different types produce varying quantities of emissions. Based on the estimated percentage of each vehicle type region-wide, total emissions per jurisdiction were determined.

- Based on waste data reported to the CIWMB by the City, ICLEI calculated emissions from the amount of new solid waste generated community-wide in 2005, as well as for the emissions in 2005 from existing waste in the Shoreline landfill.

GHG Inventory Results

The City's total 2005 emissions, 752,755 metric tons of CO_2e, were broken down by both *Sector* (Commercial, Residential, Industrial, Transportation and Waste) and *Source* (Electricity, Natural Gas, Gasoline and Diesel, Waste Decomposition and Landfill Waste), identifying the biggest emissions areas and target reduction activities accordingly. To put one metric ton of CO_2 in perspective, it would fill a cube 27' x 27' x 27'.

The top three emission areas in each category are shown in Exhibits 1 and 2 below.

- <u>Sector</u>: Transportation (57 percent), Commercial (21 percent) and Residential (13 percent).

- <u>Source</u>: Gasoline and Diesel (56 percent), Electricity (25 percent) and Natural Gas (16 percent).

Exhibit 1—2005 City of Mountain View Greenhouse Gas Emissions

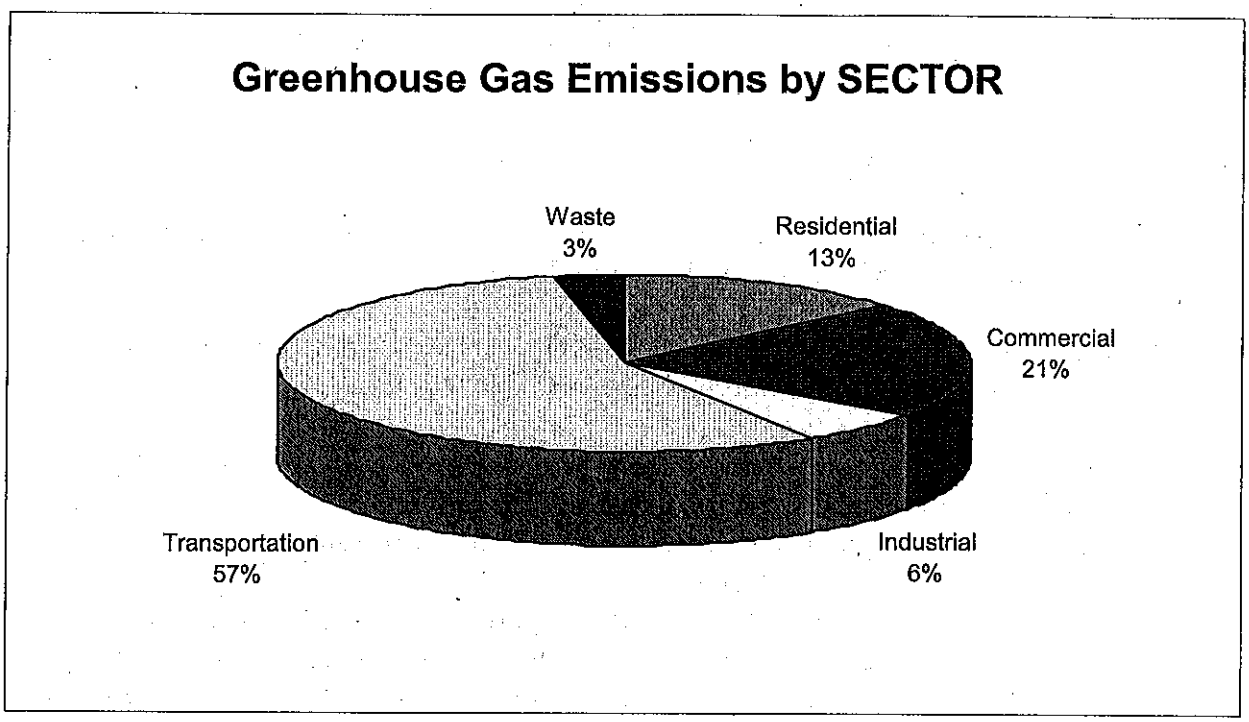
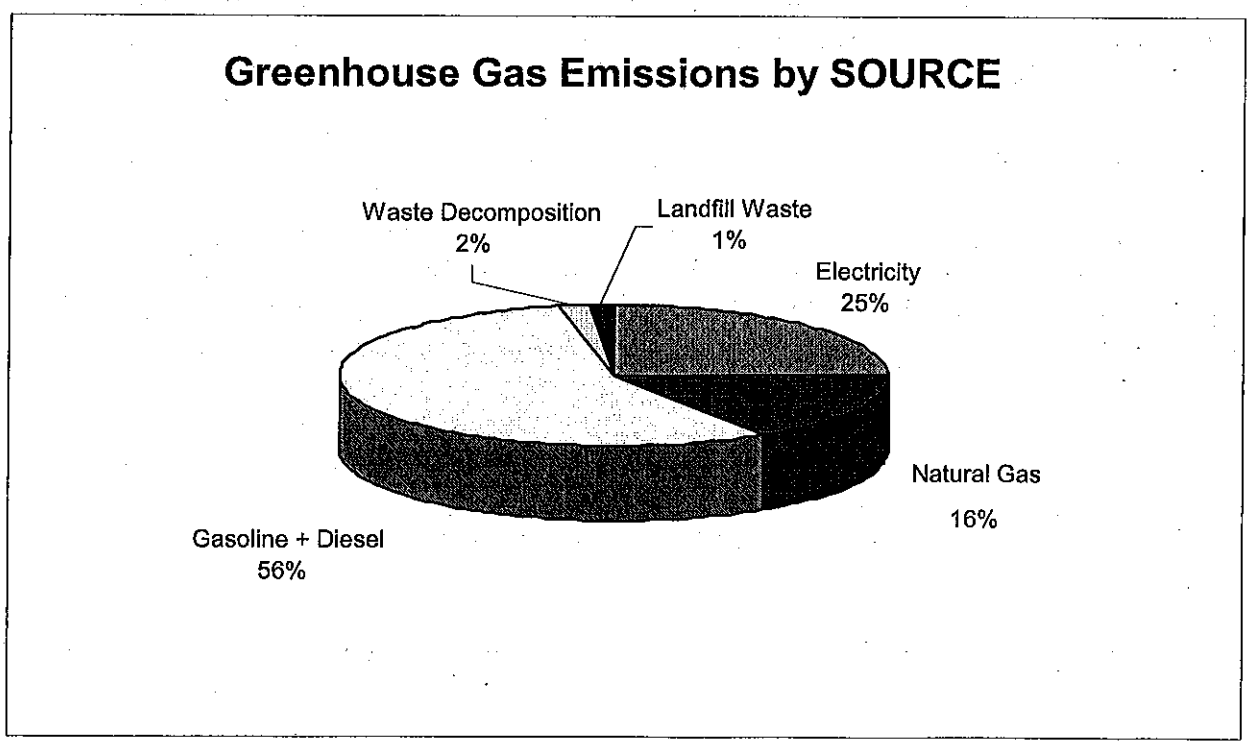


Exhibit 2—2005 City of Mountain View Greenhouse Gas Emissions



Government Operations Greenhouse Gas Inventory

Mountain View also completed an inventory of its 2005 Government Operations emissions, which will be reviewed by the CESC in November and by the City Council in December.

Proposed GHG Reduction Targets

Table 1 below shows the recommended short- and long-term emissions-reduction targets compared with AB 32 State-wide requirements and the Environmental Sustainability Task Force recommendations.

Table 1—Recommended City of Mountain View Greenhouse Gas Reduction Targets

Target Year	**AB 32 State-Wide Reductions***	**Task Force Recommended Reductions *(below 2005 levels)***	**Proposed Reductions *(below 2005 levels)***
2010	5% (down to 2000 levels)		
2012		5%	5% (37,638 metric tons)
2015		10% (in 2016)	10% (75,276 metric tons)
2020	15% (down to 1990 levels)	15%	15% to 20% (112,913 to 150,551 metric tons)
2050	80% (below 1990 levels)	80%	80% (602,204 metric tons)

* While AB 32 uses 1990 emission levels as a baseline, the California Air Resources Board (CARB) acknowledged it is not feasible for most cities to accurately calculate 1990 emissions and should set reduction targets based on "current levels." Therefore, at the recommendation of ICLEI, Mountain View and the majority of other Bay Area cities are using 2005 emissions as "current levels."

Following are the differences among AB 32 requirements, the Task Force recommendations and the proposed reduction targets:

- Where AB 32 calls for a State-wide 5 percent reduction by 2010, staff and the Task Force recommend this same reduction by 2012. With the current recession and resources stretched thin, this recommendation will give the City a little more time to determine and implement the most appropriate reduction strategies.

- AB 32 does not have a reduction target between 2010 and 2020. The CESC and the Task Force recommend an intermediate goal to ensure the City is on track to meet its 2020 reduction target.

- The CESC recommends a target "range" of 15 percent to 20 percent by 2020, providing more flexibility if the City wants to strive to meet a "stretch goal" of 20 percent reductions by 2020.

Setting GHG reduction targets is currently voluntary; however, the CARB anticipates mandatory emissions reductions will eventually apply to all sectors. The City's targets can be modified at any time based on measured results and/or economic and environmental considerations. At least fifty (50) California cities have set, or are setting, reduction targets, a sampling of which appears in Attachment 2.

Meeting the GHG Reduction Targets

Actions at the community, State and Federal levels will be needed to reach the recommended reduction targets. Many of the activities that constitute community emissions are beyond the control of the City (e.g., resident transportation choices and business sector energy-efficiency actions). Some activities, however, such as (1) land use planning and zoning, (2) a community green building ordinance, (3) outreach and education, (4) a zero waste plan, and (5) incentives to encourage more sustainable activities among residents and businesses, should be considered part of the City's overall GHG reduction strategy. For example, the Council-approved home energy audit program, funded through Federal Energy Efficiency and Conservation Block Grant (EECBG) stimulus funds, will begin to address the residential emissions sector, which constitutes 13 percent of community-wide emissions. Additional regional and local strategies will be needed to address the two other largest emission sectors—transportation (57 percent) and commercial (21 percent).

City Government and Community Activities

The City is already planning or implementing various GHG-reducing actions approved in the Environmental Sustainability Action Plan (ESAP) and proposed in the EECBG application. These actions include: (1) redesigning the utility bill to provide customers with information to help them conserve water; (2) adopting the State-mandated landscape water-efficiency ordinance; (3) preparing a Zero Waste Plan; and (4) implementing a residential energy-efficiency audit and upgrade program.

To reduce emissions further, the City is developing a Greenhouse Gas Reduction Program (GGRP) as part of the General Plan update that will identify potential climate change mitigation policies and actions for both the residential and commercial sectors. The GGRP will estimate the GHG reductions associated with proposed policies and actions and may

include measures such as energy-efficiency retrofits, solar energy installations, solar hot water and employer Transportation Demand Programs. However, to develop the GGRP, the City *first* needs to establish GHG reduction targets. GGRP policies and actions will then be customized to reach the City's reduction targets. If needed, adjustments may be made to either the targets or the GGRP based on economic, environmental or social considerations.

State and Federal Activities

Mountain View will also experience a reduction in community emissions from such State-wide initiatives as a Low Carbon Fuel Standard, minimum tire pressure standards, increased efficiency of passenger vehicles and Cap and Trade (establishes a State-wide emissions "cap" and enables organizations to trade "permits to pollute"). At the Federal level, national auto fuel economy standards were recently increased. In addition, climate change legislation is pending in Congress that, if enacted, would "cap" GHG emissions nationwide.

Future GHG Inventories

To track progress toward emission reduction targets, the City will conduct an inventory at least every five years. There is some lag in data availability and, therefore, inventories may not be completed until one to two years after a target year.

NEXT STEPS

In spring 2010, Council will be provided with an update on the status of the General Plan's Greenhouse Gas Reduction Program. In December 2010, the final Greenhouse Gas Reduction Program and updated General Plan will be presented to Council for consideration.

PUBLIC NOTICING—Agenda posting.

Prepared by:

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SPA/7/CAM
916-11-03-09M-E^

Attachments:
1. Draft Minutes from October 7, 2009 CESC Meeting
2. Sample Bay Area City and County GHG Emissions Reduction Targets

UNAPPROVED EXCERPT MINUTES

REGULAR MEETING – WEDNESDAY, OCTOBER 7, 2009
ATRIUM CONFERENCE ROOM AT CITY HALL – 500 CASTRO STREET
6:30 P.M.

5. NEW BUSINESS

5.1 COMMUNITY-WIDE GREENHOUSE GAS INVENTORY AND EMISSIONS REDUCTION TARGETS

Staff presented results of the City's recently completed community-wide greenhouse gas inventory and long-term greenhouse gas reduction targets for consideration by the Council. The City completed an inventory of its 2005 community-wide emissions in conjunction with ICLEI. This 2005 inventory will serve as a baseline year against which the City will measure its future emission reductions.

The next step to meeting AB 32 requirements is setting GHG reduction targets. The City's targets can be modified at any time based on measured results and/or economic and environmental considerations. At least 50 California cities have set or are setting reduction targets.

Staff recommends the following community-wide GHG reduction targets which meet or exceed both AB 32 requirements and ESTF recommendations:

- 5 percent reduction below 2005 levels by 2012.
- 10 percent reduction below 2005 levels by 2015.
- A range of 15 percent to 20 percent reduction below 2005 levels by 2020.
- 80 percent reduction below 2005 levels by 2050.

A GHG reduction program is currently being developed as part of the General Plan update and will include emission reduction policies and actions to help the City reach these targets.

Committee Comments

In response to a question about the City's government operations emissions, staff noted that it will be reviewed by the Committee in November and the reduction targets may be more aggressive than the community targets.

A Committee member questioned how the base emissions were calculated. Staff explained the modeling is based on a number of assumptions—for example, average miles per gallon per passenger vehicle and average miles per gallon for other types of vehicles, gasoline versus diesel, etc. MTC has transportation models that predict—based on actual Caltrans counts—vehicle miles traveled.

A Committee member asked how population growth is considered; are emissions and targets normalized to account for this? Staff explained that the reduction targets are regardless of population growth. If population is growing, that needs to be considered when deciding how to meet the targets.

The Committee discussed how little control the City has over transportation, and staff clarified that every vehicle trip that goes through Mountain View is counted as our emissions, so if the number of vehicles traveling through Mountain View can be reduced, we get credit for that. There are regional efforts under way, such as the Low Carbon Fuel Standard and a State-wide initiative called the Tire Pressure Program that will reduce our emissions community-wide without our having to do anything.

The Committee requested staff provide additional information about the emissions methodology and the important reasons for emissions reductions when the recommendations go forward to Council.

Public Input

William Ware commented on the importance of alternative fuel vehicles.

John Carpenter asked why the AB 32 base emissions is 1990 and the City's is 2005.

Julie Lovins commented on the merits of several of the potential emission reduction programs listed in Attachment 2.

David Paradise said we need to use stronger language to explain why these goals are important. They need to come with a sense of urgency.

Bruce Karney stated that passing environmental problems and climate change to the next generations is particularly unjust, and he recommends aggressive goals. He is pleased the City is within a couple of weeks of having explicit goals and hopes the Council will consider a referendum to find out just how far citizens of Mountain View are willing to go to mitigate our GHG emissions as soon as possible.

Aileen LaBouff expressed support by Green Mountain View toward reduction in GHG emissions. She also urged an aggressive Zero Waste target.

Ellie Casson feels the targets seem somewhat abstract, noting Oakland and San Jose's efforts to try and determine how much they really need to reduce to be sustainable rather than just using the same numbers as everyone else. She also stated the City may not have much direct control over VMTs, but they have far more control than the region or State in reducing emissions through the design of their community, specifically through housing choices.

Committee Discussion

In response to public input, staff clarified that Attachment 2 is simply a sample of strategies that the General Plan consultant working on the Greenhouse Gas Reduction Program suggested—some more specific to Mountain View, some not as specific—and is based on their work with other cities. Nothing is recommended at this point. A full list of reduction programs will be presented to and reviewed by the Council at a later date and will be available for public review at that time.

In response to a question, staff replied that the AB 32 1990 baseline is from the Kyoto Boards, noting it is not possible for Mountain View to calculate emissions this far back, so the Air Board has approved the use of 2005.

A Committee member commented that a lot of technical knowledge went into creating AB 32 emissions targets, so we should accept them and spend our time achieving those levels.

Another Committee member stated the Council may make tradeoffs when evaluating reduction programs and costs due to limited dollars to work with. Mountain View will evaluate what we can do in terms of land use decisions and how to work toward a greater jobs/housing balance.

The Committee members discussed how the absolute value of the emission numbers is not important because we cannot know exactly what they are. The methodology used to calculate them and the assumptions used is what is important and should remain consistent.

Committee member Bryant moved to recommend to the City Council adoption of the following community-wide GHG emission reduction targets to meet or exceed AB 32 requirements:

- 5 percent below 2005 levels by 2012.
- 10 percent below 2005 levels by 2015.
- 15 percent to 20 percent below 2005 levels by 2020.
- 80 percent below 2005 level by 2050.

The motion was seconded by Chair Siegel. The motion passed 2-0; Abe-Koga absent.

LT/2/PWK
944-11-03-09A-E^

Sample Bay Area Greenhouse Gas Emissions Reduction Targets *

** Below 2005 levels unless otherwise stated*

CITY TARGETS

County	City	Community-Wide Target	Notes
Alameda	Alameda	25% by 2020	
	Berkeley	80% by 2050	
	Fremont	25% by 2020	
	Hayward	13-18% by 2020	
	San Leandro	25% by 2020	
Contra Costa	Richmond	15% by 2020	
Marin	Fairfax	20% by 2020	
	Mill Valley	15% by 2020	***Below 2000 levels***
	San Anselmo	10-15% by 2015	***Below 2000 levels***
	San Rafael	15% by 2020	
San Francisco	San Francisco	25% by 2010	*City and County of San Francisco*
San Mateo	Burlingame	15% by 2020, 80% by 2050	
	Hillsborough	15% by 2020, 80% by 2050	*Task Force recommendation; decision pending*
	San Carlos	15% by 2020, 35% by 2030	
	San Mateo	15% by 2020	***Below 2006 levels***
Santa Clara	Los Altos Hills	30% by 2015	
	Palo Alto	5% by 2012, 15% by 2020	
Santa Cruz	Santa Cruz	30% by 2020, 80% by 2050	***Below 1990 levels***
Solano	Benicia	10% by 2020	***Below 2000 levels***
Sonoma	Cotati	30% by 2015	***Below 1990 levels***
	Healdsburg	25% by 2015	***Below 1990 levels***
	Santa Rosa	20% by 2010	***Below 2000 levels***

COUNTY TARGETS

	City	County-Wide Target	Notes
Marin	N/A	15% by 2020	***Below 2000 levels***
an Mateo	N/A	Halt emissions by 2010; 80% by 2050	
Sonoma	N/A	20% by 2012	