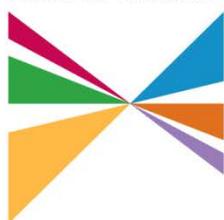


SOUTHERN CALIFORNIA



**ASSOCIATION of
GOVERNMENTS**

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Associated Governments

MEETING OF THE

ENERGY AND ENVIRONMENT COMMITTEE

***Thursday, June 5, 2014
10:00 a.m. – 12:00 p.m.***

**SCAG Main Office
818 W. 7th Street, 12th Floor
Policy Committee Room A
Los Angeles, CA 90017
(213) 236-1800**

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Lillian Harris-Neal at (213) 236-1858 or via email harris-neal@scag.ca.gov

Agendas & Minutes for the Energy and Environment Committee are also available at: <http://www.scag.ca.gov/committees/Pages/default.aspx>

SCAG, in accordance with the Americans with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. SCAG is also committed to helping people with limited proficiency in the English language access the agency's essential public information and services. You can request such assistance by calling (213) 236-1858. We require at least 72 hours (three days) notice to provide reasonable accommodations. We prefer more notice if possible. We will make every effort to arrange for assistance as soon as possible.

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Energy and Environment Committee

Members – June 2014

<u>Members</u>	<u>Representing</u>
Chair* 1. Hon. Deborah Robertson	<i>Rialto</i> District 8
Vice-Chair* 2. Hon. Lisa Bartlett	<i>Dana Point</i> TCA
3. Hon. Denis Bertone	<i>San Dimas</i> SGVCOG
* 4. Hon. Margaret Clark	<i>Rosemead</i> District 32
5. Hon. Jordan Ehrenkranz	<i>Canyon Lake</i> WRCOG
* 6. Hon. Mitchell Englander	<i>Los Angeles</i> District 59
7. Hon. Larry Forester	<i>Signal Hill</i> Gateway Cities
8. Hon. Laura Friedman	<i>Glendale</i> Arroyo Verdugo Cities
9. Hon. Sandra Genis	<i>Costa Mesa</i> OCCOG
* 10. Hon. Ed Graham	<i>Chino Hills</i> District 10
11. Hon. Steven Hernandez	<i>Coachella</i> CVAG
12. Hon. James A. Johnson	<i>Long Beach</i> District 30
13. Hon. Linda Krupa	<i>Hemet</i> WRCOG
14. Hon. Thomas Martin	<i>Maywood</i> Gateway Cities
* 15. Hon. Judy Mitchell	<i>Rolling Hills Estates</i> District 40
16. Hon. Geneva Mojado	Soboba Band of Luiseño Indians
* 17. Hon. Mike Munzing	<i>Aliso Viejo</i> District 12
18. Hon. Sam Pedroza	<i>Claremont</i> SGVCOG
19. Hon. David Pollock	<i>Moorpark</i> VCOG
* 20. Hon. Carmen Ramirez	<i>Oxnard</i> District 45
21. Hon. Meghan Sahli-Wells	<i>Culver City</i> WCCOG
22. Hon. Stephen Sammarco	<i>Redondo Beach</i> SBCCOG
23. Hon. Eric Schmidt	<i>Hesperia</i> SANBAG
24. Mr. Steve Schuyler	<i>Building Industry Association of Southern California (BIASC)</i> (Ex-Officio)
* 25. Hon. Jack Terrazas	Imperial County
* 26. Hon. Cheryl Viegas-Walker	<i>El Centro</i> District 1
27. Hon. Diane Williams	<i>Rancho Cucamonga</i> SANBAG
28. Hon. Edward Wilson	<i>Signal Hill</i> Gateway Cities

* Regional Council Member

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ENERGY & ENVIRONMENT COMMITTEE

AGENDA

JUNE 5, 2014

The Energy & Environment Committee may consider and act upon any of the items listed on the agenda regardless of whether they are listed as Information or Action Items.

CALL TO ORDER & PLEDGE OF ALLEGIANCE

(Hon. Deborah Robertson, Chair)

PUBLIC COMMENT PERIOD – Members of the public desiring to speak on items on the agenda, or items not on the agenda, but within the purview of the Committee, must fill out and present a speaker’s card to the Assistant prior to speaking. Comments will be limited to three (3) minutes. The Chair may limit the total time for all comments to twenty (20) minutes.

REVIEW AND PRIORITIZE AGENDA ITEMS

<u>INFORMATION ITEMS</u>	<u>Time</u>	<u>Page No.</u>
1. <u>Annual Household Costs Water, Flood Control, Storm Water & Wastewater Survey</u> <i>(Hon. Mary Ann Lutz, Mayor, City of Monrovia)</i>	Attachment 30 mins.	1
2. <u>Natural Gas Pathways: Towards a Clean and Renewable Energy Future</u> <i>(George Minter, Senior Director, Policy and Environment, Southern California Gas Company)</i>	Attachment 30 mins.	12
3. <u>Public Release of Draft Conformity Analysis for 2015 Federal Transportation Improvement Program (FTIP) and Amendment No. 2 to the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2012 RTP/SCS)</u> <i>(Rongsheng Luo, SCAG Staff)</i>	Attachment 10 mins.	26
4. <u>California Environmental Quality Act (CEQA) Documentation for Draft Amendment No. 2 to the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2012 RTP/SCS)</u> <i>(Lijin Sun, SCAG Staff)</i>	Attachment 10 mins.	28
5. <u>California Environmental Protection Agency (Cal/EPA) California Communities Environmental Health Screening (CalEnviroScreen Tool Draft Version 2.0)</u> <i>(Ping Chang, SCAG Staff)</i>	Attachment 15 mins	30

ENERGY & ENVIRONMENT COMMITTEE

AGENDA

JUNE 5, 2014

<u>CONSENT CALENDAR</u>		<u>Time</u>	<u>Page No.</u>
6. <u>2014 State and Federal Legislative Priorities Update</u> <i>(Darin Chidsey, Director of Strategy, Policy & Public Affairs)</i>	Attachment	15 mins.	43
<u>Approval Item</u>			
7. <u>Minutes of the April 3, 2014 Meeting</u>	Attachment		50
<u>Receive and File</u>			
8. <u>2014 Regional Council and Policy Committees Meeting Schedule</u>	Attachment		56
9. <u>SCAG Sustainability Planning Grants Program – Monthly Update</u>	Attachment		57
10. <u>Greenhouse Gas (GHG) Emission Standards for Light-Duty Vehicles: Manufacturer Performance Report for the 2012 Model Year</u>	Attachment		64
11. <u>U.S. and California Greenhouse Gas Emissions Reports</u>	Attachment		76
12. <u>Proposed Rule Defining the Scope of Waters Protected Under the Federal Clean Water Act</u>	Attachment		105
13. <u>Progress of One-on-One Meetings with Local Jurisdictions to Provide Assistance for a Bottom-up Local Input Process</u>	Attachment		106

CHAIR'S REPORT

(Hon. Deborah Robertson, Chair)

STAFF REPORT

(Jonathan Nadler, SCAG Staff)

FUTURE AGENDA ITEMS

ANNOUNCEMENTS

ADJOURNMENT

There is no EEC meeting in July (dark).

The next EEC meeting will be held on Thursday, August 7, 2014 at the SCAG Los Angeles Office.

DATE: June 5, 2014

TO: Energy and Environment Committee (EEC)

FROM: Sarah Jepson, Manager, Active Transportation & Special Programs, jepson@scag.ca.gov, 213-236-1955

SUBJECT: Annual Household Costs Water, Flood Control, Storm Water & Wastewater Survey

EXECUTIVE DIRECTOR'S APPROVAL: _____



RECOMMENDED ACTION:

For Information Only - No Action Required.

EXECUTIVE SUMMARY:

The San Gabriel Valley Council of Governments (SGVCOG) has requested that SCAG disseminate the information on an Annual Household Costs Water Survey being conducted by the U.S. Conference of Mayors to inform members of Congress on the real costs to our cities of operating and maintaining the nation's critical utility systems. The presenter is Mayor Mary Ann Lutz, City of Monrovia and First Vice President of the San Gabriel Valley Council of Governments (SGVCOG) Governing Board.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective 1: Create and facilitate a collaborative and cooperative environment to produce forward thinking regional plans.

BACKGROUND:

In November 2012, the Los Angeles Regional Water Quality Control Board adopted a new National Pollutant Discharge Elimination System Municipal Separate Sanitary Storm Sewer (MS4 NPDES Permit). The permit establishes regulations related to storm water discharge and requires implementation of the following programs:

- ✓ Public Information and Participation Program
- ✓ Industrial/Commercial Facilities Control Program
- ✓ Development of Planning Program
- ✓ Development of Construction Program
- ✓ Public Agency Activities Program
- ✓ Illicit Connections and Illicit Discharges Elimination Program

In the state of California, regional storm water permits are developed and enforced under the Regional Water Quality Control Boards. Since 1996, the cities in Los Angeles County (with the exception of the City of Long Beach), unincorporated areas in Los Angeles County, and Los Angeles County Flood Control District have been covered under a county-wide Phase 1 MS4 NPDES permit with Los Angeles County serving as the principal permittee. Under the newly approved permit, all parties are co-permittees and there is no designated principal permittee. The new structure requires each co-permittee to meet the permit standards rather the onus for compliance being on the principal permittee.

REPORT

The potential costs and the legal implications of the new permit are high, so the municipalities in Los Angeles County formed the LA Permit Group. The LA Permit Group developed a unified voice as part of a collaborative negotiating process. Their efforts were successful in providing the cities with flexible compliance alternatives, and these municipalities continue to work together to develop strategies to fund and implement the permit. However, the costs of implementation still remain high and many cities continue to struggle to identify the necessary funding for compliance.

Annual Household Costs Water, Flood Control, Storm Water & Wastewater Survey

The U.S. Conference of Mayors is conducting a critical affordability survey of the average annual household costs of providing drinking water, sanitary sewers, combined storm and sanitary sewers and flood control systems in our communities. The U.S. Conference of Mayors will be using this information to inform members of Congress about the real costs to our cities of operating and maintaining the nation's critical utility systems. The U.S. Conference of Mayors is currently working with members of Congress on potential legislation, including guidance on the affordability of federal mandates and providing additional funding to communities.

FISCAL IMPACT:

No fiscal impact to SCAG; however, significant to the cities.

ATTACHMENT:

PowerPoint Presentation: Stormwater / MS4

 Stormwater / MS4

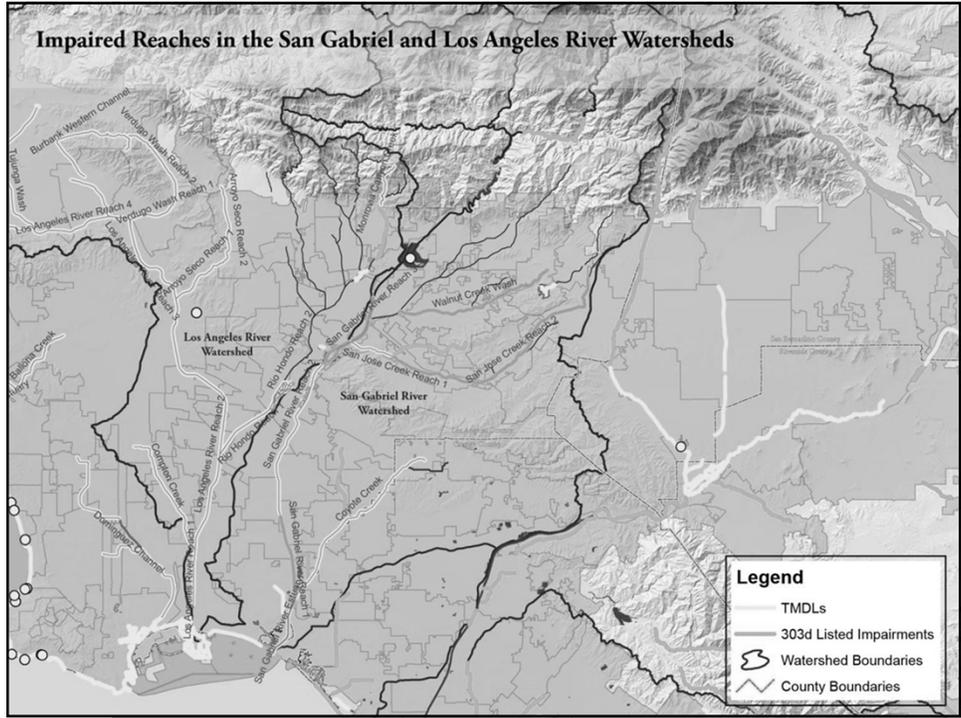
Mary Ann Lutz
Mayor, City of Monrovia

April 29, 2014

 Background

- **National Pollutant Discharge Elimination Program (NPDES)**
 - Required under the Federal Clean Water Act
 - Subject to State's Porter-Cologne Act
- **Cities regulated under a Municipal Separate Storm Sewer System (MS4) NPDES Permit**
 - New Los Angeles County MS4 NPDES Permit - effective December 28, 2012
- **Total Maximum Daily Loads (TMDLs)**
 - Expired permit 3 TMDLs - New Permit 33 TMDLs
 - Enforceable under new MS4 NPDES Permit





Flexible Compliance Alternatives

Compliance Option	Early Actions	Enhanced Projects	Interim Compliance	Final Compliance
Baseline	No	No	Numeric	Numeric
Watershed Management Plan (WMP) - 12 month	No	No	Action-based	Numeric
Watershed Management Plan (WMP) – 18 month	LID Ordinance Green Street Policy	No	Action-based	Numeric
Enhanced Watershed Management Plan (EWMP)	LID Ordinance Green Street Policy	Yes	Action-based	<ul style="list-style-type: none"> • Action-based for Enhanced Projects • Numeric for other projects



- New planning, building, and post-development Requirements



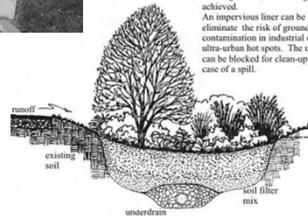
- Low Impact Development Ordinance
- Green Streets Policy

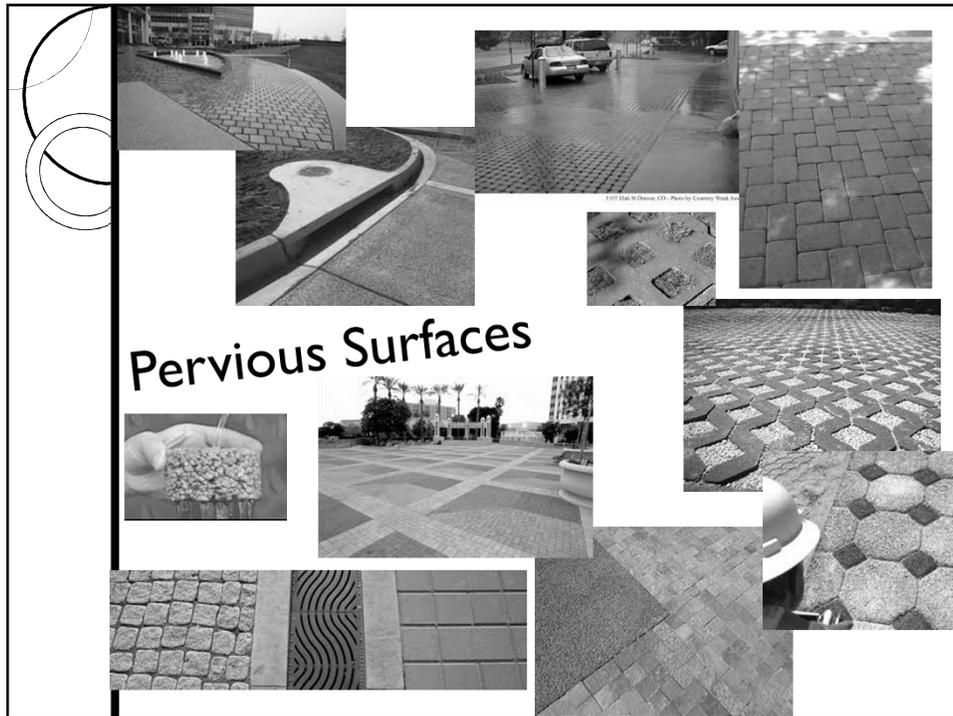
Low Impact Development



HIGH FILTRATION FACILITY

The use of an underdrain ensures that the facility will drain at the desired rate. Partial groundwater recharge is also achieved. An impervious liner can be used to eliminate the risk of groundwater contamination in industrial or ultra-urban hot spots. The underdrain can be blocked for clean-up in the case of a spill.





The big question...

- How on earth are we going to pay for this?





US Conference of Mayors Mayors Water Council

- EPA
 - Negotiated the Integrated Planning Document
 - Negotiating right now the Affordability Document
- Resolutions 2013
 - USCM
 - CA League
- Water Quality Improvement Act
 - Potential Co-Authors
 - Congressman Gibb (R) Ohio
 - Congresswomen Napolitano (D) CA



Water Quality Improvement Act

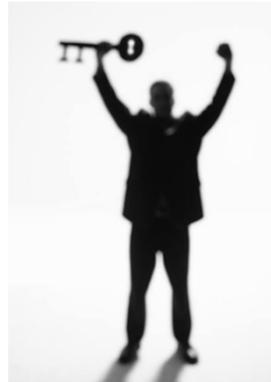
- US Conference of Mayors – Mayors Water Council
 - Resolutions
 - Mayor David Becker, Lima, Ohio
- Draft Legislation
 - Addresses the Clean Water Act (CWA)
 - Builds on EPA's Integrated Planning Framework
 - Addresses Federal-Local Government Partnership, Affordability and Flexibility

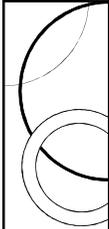
Water Quality Improvement Act (Cont.)

- Key Elements
 - Address Affordability of permits and mandatory infrastructure projects
 - Addresses fines versus investment in solutions
 - Allow for priorities and schedules based on affordability and community's ability to bear the cost
 - Compliance standards based on meeting plans and schedules
 - Ensures flexibility in permits and standards
 - Authorizes \$2 Billion a year for five years for capitalization grants for State Revolving Fund

Affordability Survey

- Conference of Mayors developed survey to show legislators and EPA the true costs of our water programs to our residences
- California is key
- Survey Monkey





Affordability Study, Page 1

Affordability Survey for the U.S. Conference of Mayors

Annual Household Costs
Water/Flood Control/Stormwater & Wastewater

The U.S. Conference of Mayors is conducting a critical affordability survey of the average annual household costs of providing drinking water, sanitary sewers, combined storm and sanitary sewers and flood control systems in our communities. The U.S. Conference of Mayors will be using this information to inform members of Congress on the real costs to our cities of operating and maintaining the nation's critical utility systems. The U.S. Conference of Mayors is currently working with members of Congress on potential legislation, including guidance on the affordability of federal mandates and providing additional funding to communities.

I. Baseline Information

City _____
Average Property Value for Single-Family Residence: _____
Population _____
Median Household Income _____

Please indicate the appropriate water system operator for your community:

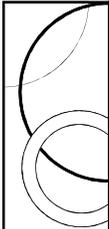
___ Municipal Water Utility
___ Other _____

Water Treatment Plant (gallons per day) _____

Number of Residential Services _____

___ Municipal Wastewater
___ Municipal Stormwater Treatment Plant
___ Regional Wastewater Treatment

Daily sewer flows (gallons per day) _____



Affordability Study, Page 2

II. Annual Water Costs

Annual Average Water Bill – Single-Family Residence _____
MWD Charges (Standby, etc.) _____
Other Charges _____
Water Total _____

III. Annual Flood Control Assessment/Stormwater

LACFCD Maintenance/Improvement District _____
Stormwater Assessment _____
Other Assessment _____
Flood Control Total _____

IV. Annual Wastewater Costs

Municipal Sewer Fees _____
LA County Sanitation District Charges _____
Other Wastewater Fees _____
Total Wastewater Costs _____

V. Total Water, Flood Control and Wastewater _____

Other Information and Notes

The Results Matrix

ADJUSTED DOLLARS Total households	Signal Hill, CA			2% Of Median Household Income 1,314.82	Current Annual Water and Sewer Bill 796.69 as % of Household Income	Current Annual Water and Sewer Bill Plus 2% of MHI 1,314.82 Plus 796.69 \$2,111.51
	Household Income	Estimate	Percent			
		4,106		%	%	As % of Income
Less than \$10,000	10,000	241	5.9	13.15	7.97	21.12
\$10,000 to \$14,999	12,500	228	5.6	10.52	6.37	16.89
\$15,000 to \$24,999	20,000	455	11.1	6.57	3.98	10.56
\$25,000 to \$34,999	30,000	153	3.7	4.38	2.66	7.04
\$35,000 to \$49,999	42,500	415	10.1	3.09	1.87	4.97
\$50,000 to \$74,999	62,500	782	19	2.10	1.27	3.38
\$75,000 to \$99,999	87,500	692	16.9	1.50	0.91	2.41
\$100,000 to \$149,999	125,000	529	12.9	1.05	0.64	1.69
\$150,000 to \$199,999	175,000	363	8.8	0.75	0.46	1.21
\$200,000 or more	200,000	248	6	0.66	0.40	1.06
			Poverty Rate	Population Age 2012	65+ 8.30%	Projected Water and Sewer Bill
MHI	2% MHI	Rate	2012	65+	Water and Sewer Bill	Projected Water and Sewer Bill
65,741	1,314.82	14.00	11,185	8.30%	796.69	

26% of households currently spend more than 2% of their annual income on water services



What is next?

**LA County Initiative??
- MAYBE**

**US Conference of Mayors
Legislation
EPA Affordability
Document**

**Each City Affordability
Survey Completed**



Questions?

Mary Ann Lutz
Mayor, City of Monrovia
415 S. Ivy
Monrovia, CA 91016

Direct: 626-303-1113
Cell: 626-695-6222

MaryAnn@Lutz-Co.com

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DATE: June 5, 2014
TO: Energy and Environment Committee (EEC)
FROM: Jacob Lieb, Manager, Sustainability, (213) 236-1921, lieb@scag.ca.gov
SUBJECT: Natural Gas Pathways: Towards a Clean and Renewable Energy Future

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:
For Information Only - No Action Required

EXECUTIVE SUMMARY:
George Minter, Senior Director, Policy and Environment, Southern California Gas Company, will discuss the market drivers and challenges to producing low carbon and renewable gas supply, and the Gas Company's proposed strategy for clean energy and clean air for California.

STRATEGIC PLAN:
This item supports SCAG's Strategic Plan Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective a: Create and facilitate a collaboration and cooperative environment to produce forward thinking regional plans.

BACKGROUND
Mr. Minter's presentation will identify the potential for natural gas use in the transportation sector and in stationary end-use sector, charting the long term pathways for increasingly decarbonized gas supply to help California meet long term greenhouse gas (GHG) reduction goals. Per the presentation, strategic use of gaseous fuels can support California's near- and long-term goals. In the nearer term reductions may come from opportunities for efficiency, "near zero" technology and new uses for natural gas (transportation). In the medium to long term, new low-carbon sources of gas will need development and introduction. Mr. Minter will describe how pipeline decarbonization can address some basic issues facing achieving targets through end-use electrification alone. Feasible technology pathways demonstrate possibility for pipeline decarbonization and continued use of the state's existing gas pipeline infrastructure through 2050 to balance electric generation, transmission and distribution infrastructure.

As described in the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2102 RTP/SCS), SCAG supports a technology-neutral, multiple option approach to achieving the region's air quality goals.

FISCAL IMPACT:
None

ATTACHMENT:
PowerPoint Presentation: "Natural Gas Pathways: Towards a Clean and Renewable Energy Future"

Natural Gas Pathways:

Towards a Clean and Renewable Energy Future

Presented by

**Policy & Environmental Solutions
Southern California Gas Company**

2014

California's Dual Emissions Challenge



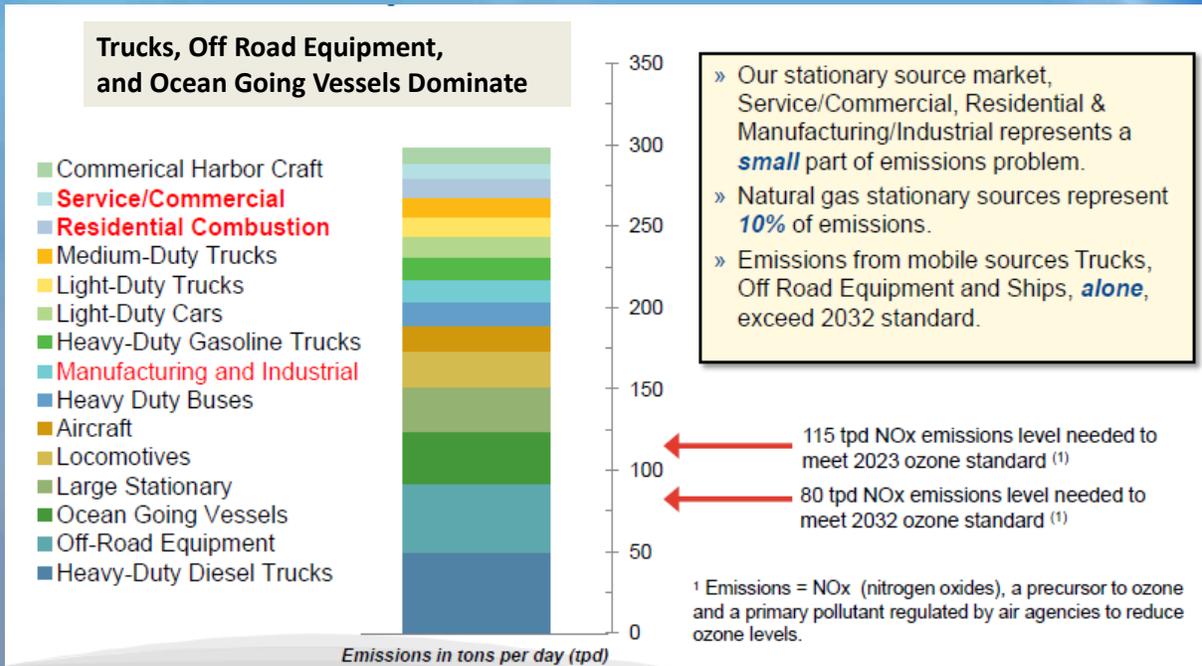
Federal Clean Air Act (CAA) - requirements to meet ozone standards in Central and Southern California air basins will require a 75% to 90% reduction in combustion emissions over the next 20 years.



California Climate Change Initiatives - Assembly Bill 32 "Global Warming Solutions Act" (AB32) and Governor's Executive Order 2050 – set goals of reducing greenhouse gas emission by over 80% by 2050.

- Both of these challenges have California regulators & other stakeholders pushing for a transformation to "near zero" and "zero" emissions technologies.

Major Ozone (Nox) Emission Sources in South Coast Air Basin

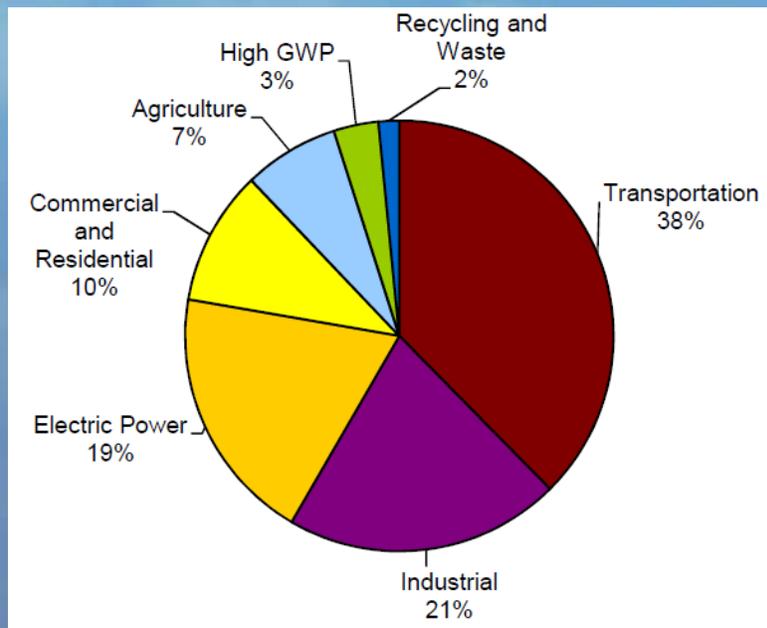


Source: 2012 Air Quality Management Plan (Air Quality Management District)

California's GHG Challenge

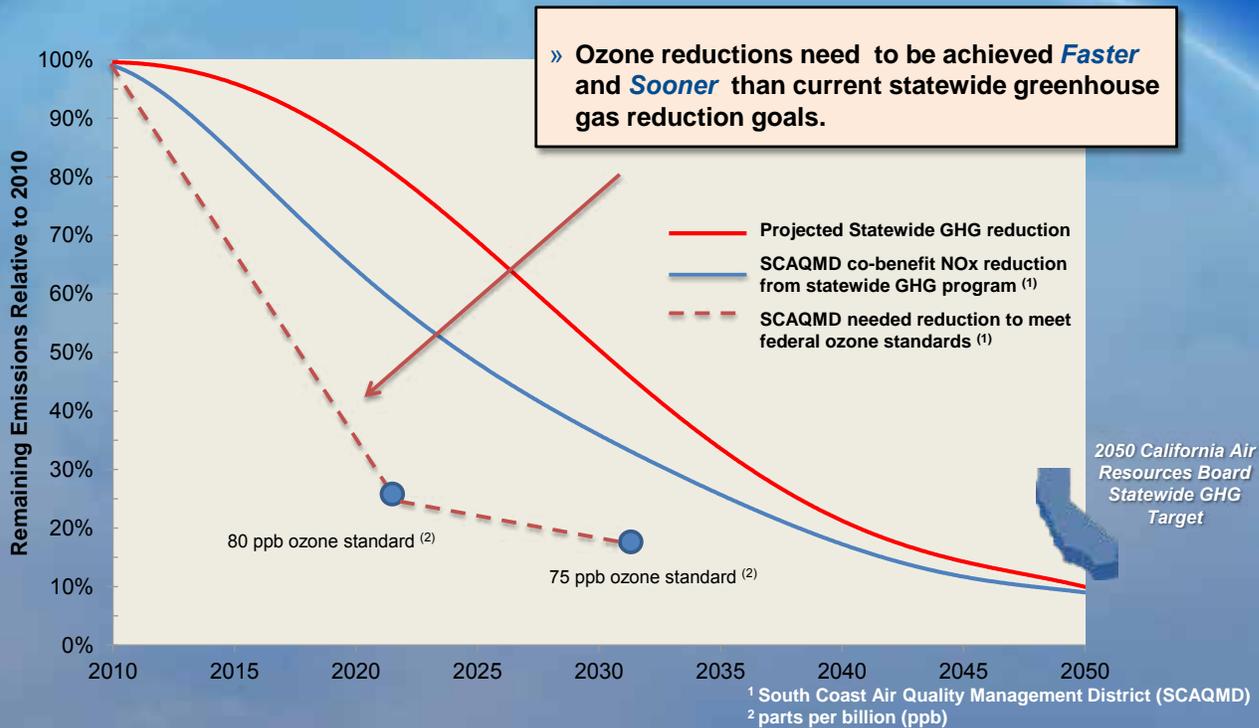
Statewide 2011 GHG Emissions by Sector

Transportation Sector is Major GHG Emitter



Source: Oct 1, 2013 Discussion Draft AB32 Scoping Plan Update, Figure 4, p. 21

Current State GHG Pathway Misses Ozone Deadlines

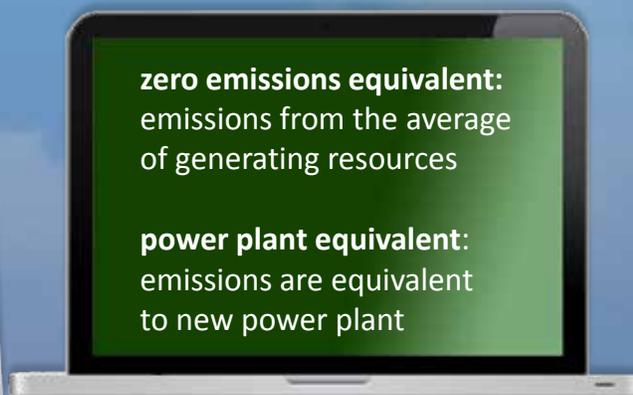
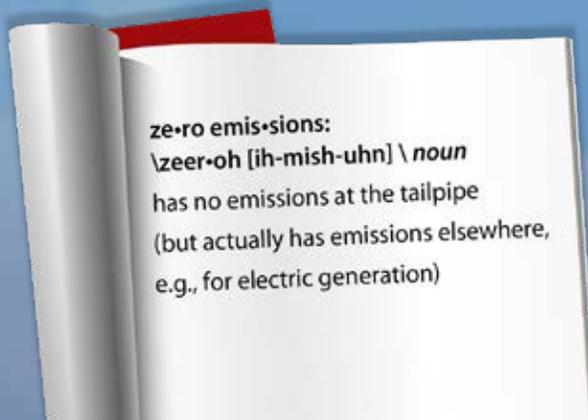


Regulators Look Towards Electrification

Natural Gas Pathways Move Towards Near-Zero & Zero-Equivalent Emissions

Today's thinking ignores upstream emissions:

New thinking accounts for upstream emissions:

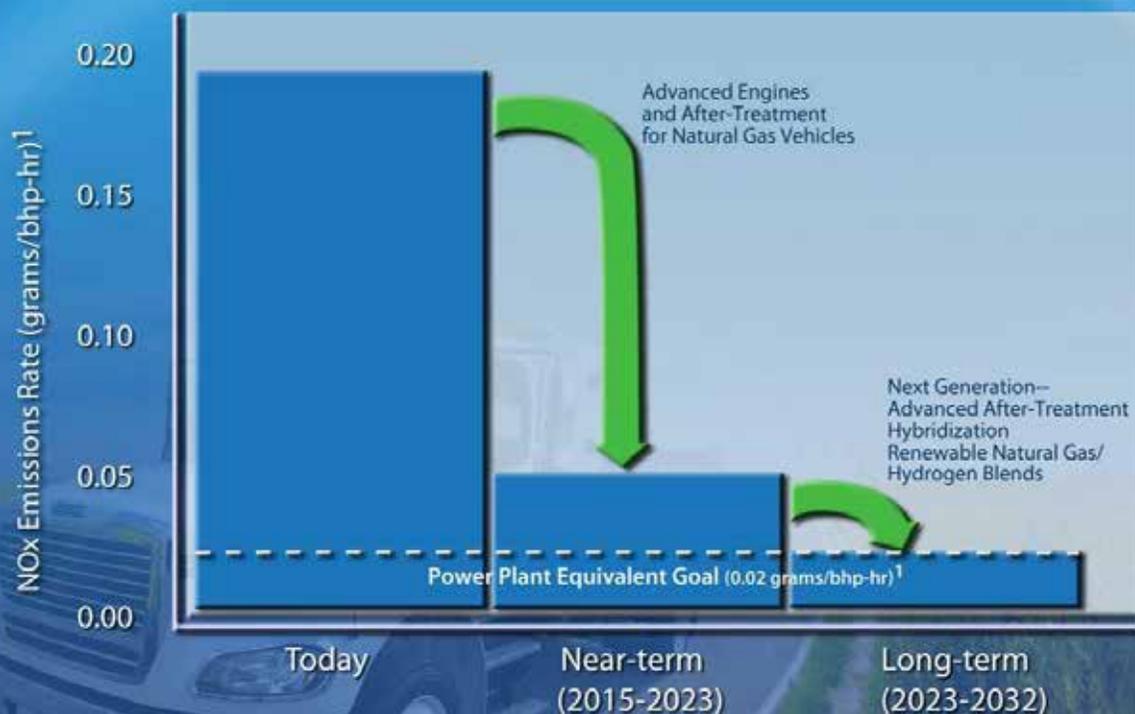


Natural Gas Transportation Pathways Can Improve the Environment Today



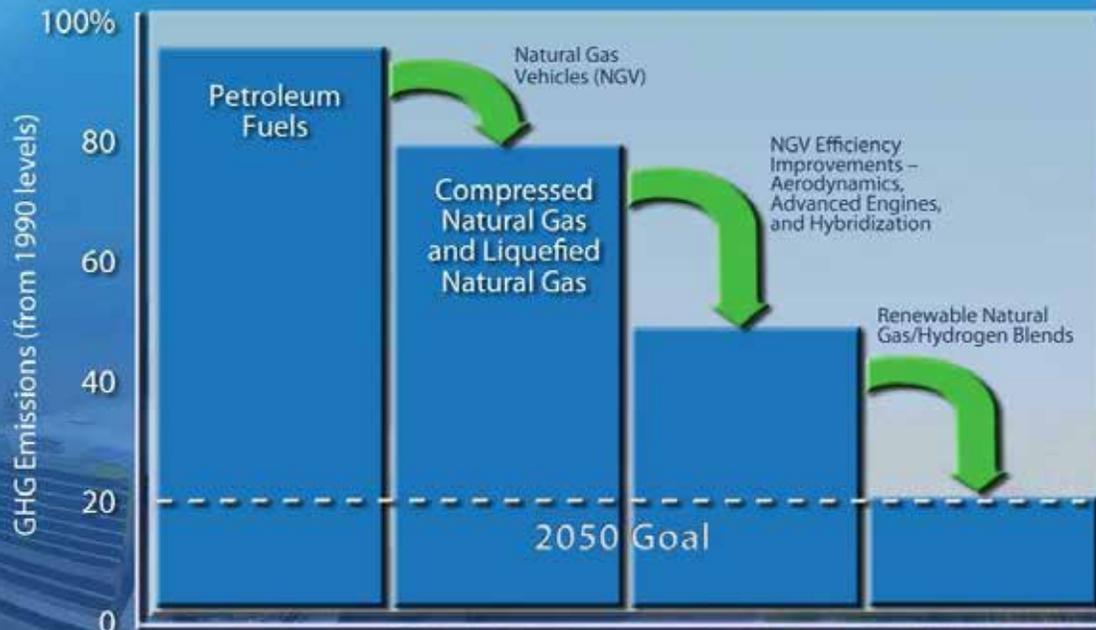
Transportation Sector Key to Reach Ozone and GHG Goals

Five Technology Strategies Address Ozone Goals



Five Technology Strategies Also Address GHG Goals

Efficiency Improvements & Renewables Availability Increase Over Time



Technology Strategies Create New Transportation Pathways

- **Natural Gas Transportation Pathway** focuses on natural gas vehicles in heavy duty sectors, which represent the largest share of both ozone/greenhouse gas problem. Technology transferrable to other sectors:



Transit/Fleet Vehicles



Heavy Duty Trucks Short/Long Haul



Cargo Handling Equipment



Locomotives Short/Long Haul



Marine Vessels

Emission Reductions Accelerated through Fuel Conversion

Siting Natural Gas Infrastructure in Proximity to Other Fleets Can Speed Up Conversion to Lower Emission Vehicles: Ports Example



Facilitating Natural Gas Stationary Source Pathways For Tomorrow

- The Move Toward "Near Zero" Emission Technology Focuses on:
 - Energy Efficiency
 - Combustion After Treatment
 - Multi Use Technology – Space and Water Heating
 - Hybrid Technology – Natural Gas/Solar Thermal
 - Distributed Generation
 - Combined Heat and Power (CHP) systems, and Fuel Cells and Micro-turbines



Micro-turbines



Fuel Cells

CA Climate Change Policy: Make Room for "Near-Zero" End Uses and Low Carbon Gas



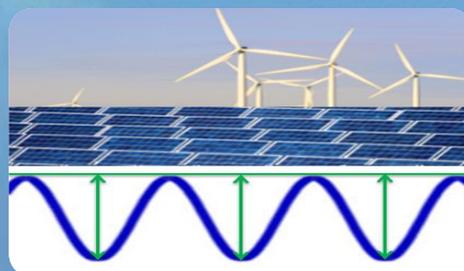
- California focused on electrifying end uses and "de-carbonizing" electricity
 - Electrify transportation
 - Electrify energy end uses
 - Decarbonize generation
- SCG focused on "near zero" end use technology and exploring "de-carbonizing" the pipeline
 - Near zero NGV's
 - Near zero gas technology
 - New methane feedstocks/blends

Natural Gas: De-Carbonizing Electricity

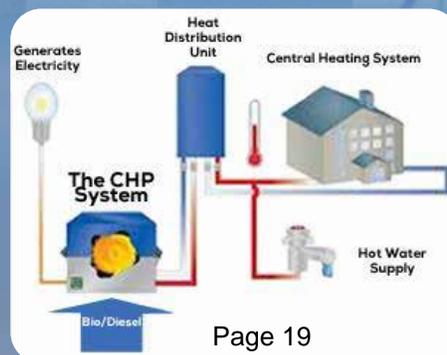
Power Generation with Carbon Capture



Small-scale Generation Matched with Renewables



Distributed Generation

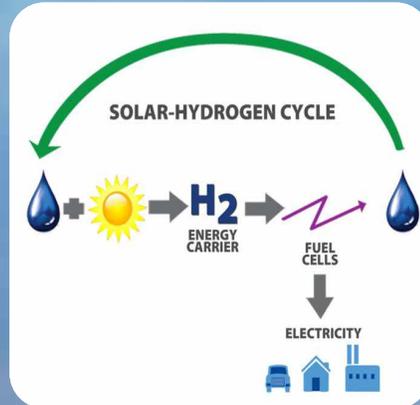


- Combined Heat and Power
- Fuel Cells
- Microturbines

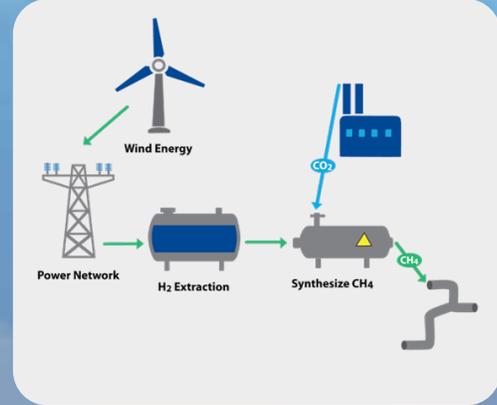
Natural Gas: De-Carbonizing the Pipeline



Biomethane



Hydrogen



Power to Gas

SoCalGas Facilitating Cleaner Energy Options for our Customers

- **RD&D** of cleaner, more efficient **natural gas technologies**.
- Offering **Compression Services** to facilitate development of NGV market.
- Offering **Biogas Conditioning Services** to facilitate development of renewable natural gas market.
- Evaluating **CHP Services** tariff to facilitate more efficient use of heat and power.
- In the future, may provide **LNG and/or hydrogen production services** as energy economy moves to cleaner fuels.



Natural Gas: A Foundational Fuel for California



- ✓ Abundant
- ✓ Affordable
- ✓ Domestic
- ✓ Clean

Background Slides
(More on “Decarbonizing the Pipeline”)

Pipeline Decarbonization (*E-3 Study*)

- Strategic use of gaseous fuels can support California's near- and long-term CO2 goals
 - In *nearer term*, opportunities for efficiency, "near zero" technology and new uses for natural gas (transportation)
 - In *medium to long term*, new low-carbon sources of gas need development and introduction

A fully electrified end-use economy results in:

- *Increased challenge to decarbonize electric generation sector*
- *Vastly expanded electricity grid*
- *New stranded costs and gas ratepayer risks*

Pipeline decarbonization solves basic electrification issues:

- *Biomethane currently in development for short to mid term*
- *Hydrogen production from electrolysis -- power-to-gas -- can effectively provide for energy storage and use in the mid to long term*

- Feasible technology pathways demonstrate possibility for pipeline decarbonization and continued use of state's existing gas pipeline infrastructure through 2050 to balance electric generation, transmission and distribution infrastructure

Renewable Transportation Fuels: Key to 2050 Goal

- CARB Vision assumes all traditional trucks use renewable fuels in 2050, primarily biodiesel.
- RNG (or Biomethane) as Future Biofuel
 - In a multi-technology de-carbonization approach, blending natural and renewable gas is an important part of the NGV Pathway. (~60% by vol)
- Increasing RNG use can reduce costs and improve chances for 2050 goal.
 - RNG pre-stage to bio diesel, more economic than bio diesel.
 - Conversion of organic waste can meet up to 20% of current SCG throughput.
 - In the long term, algae/crops/grasses can provide additional RNG fuel.
- As transportation sources move from liquid to gaseous fuels (CNG and LNG); RNG becomes "Drop in" Biofuel

Methane as a Storage Medium

SoCalGas' storage fields are the largest energy storage resource in the region



Goleta



Aliso Canyon

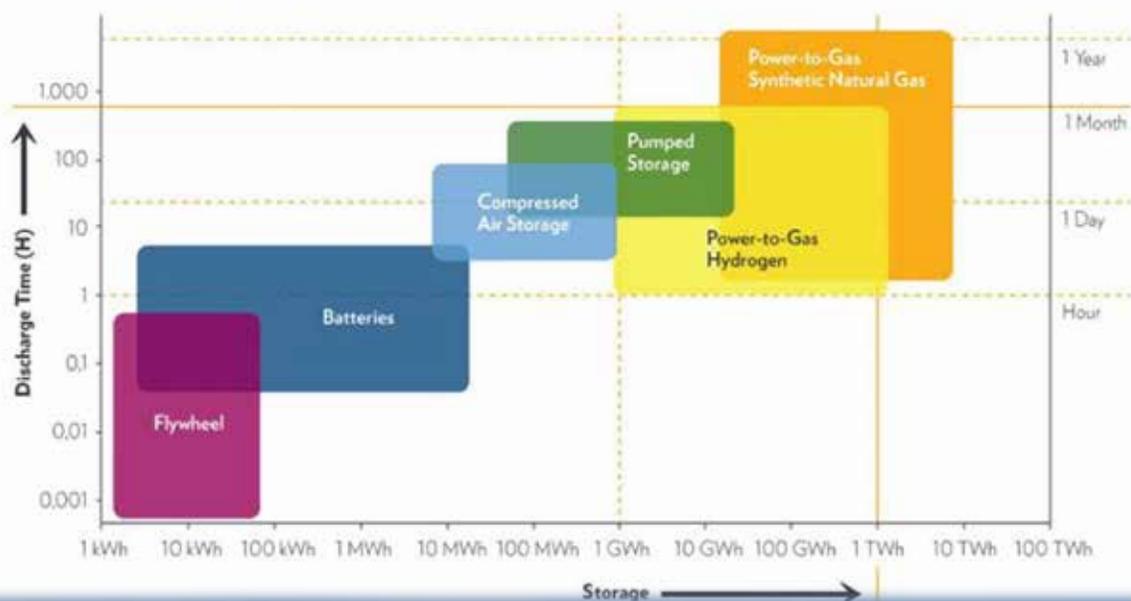


Playa Del Rey

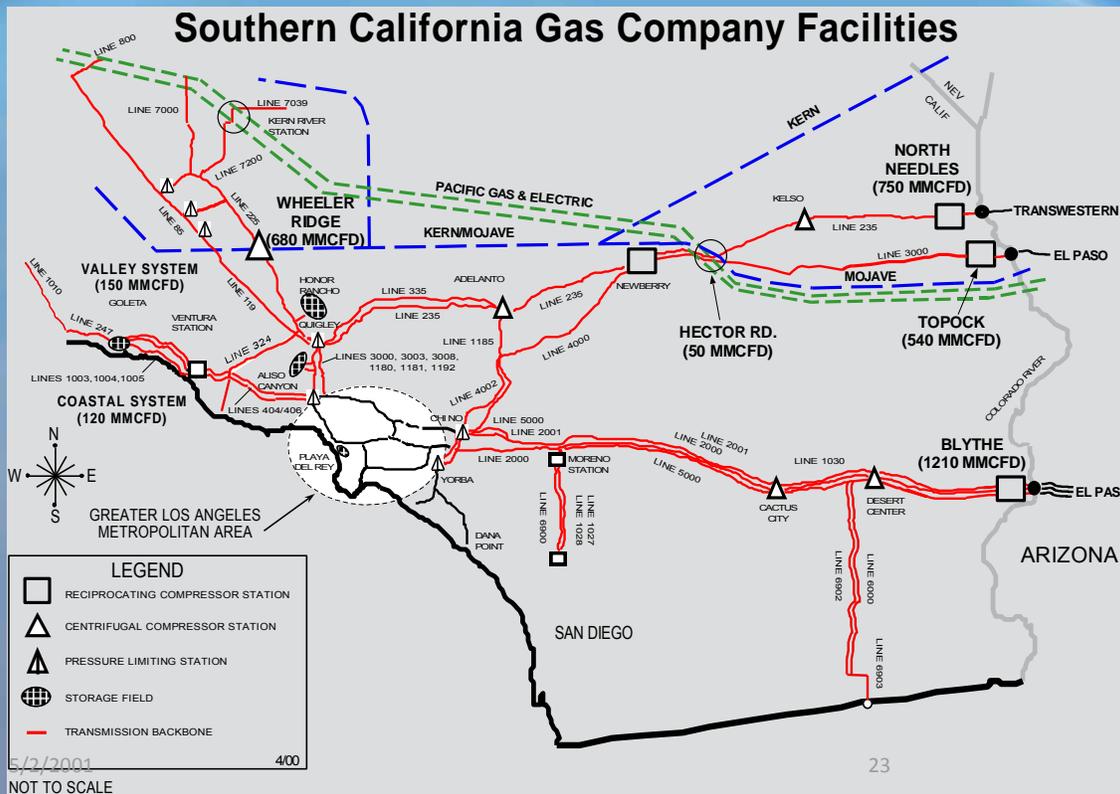


Honor Rancho

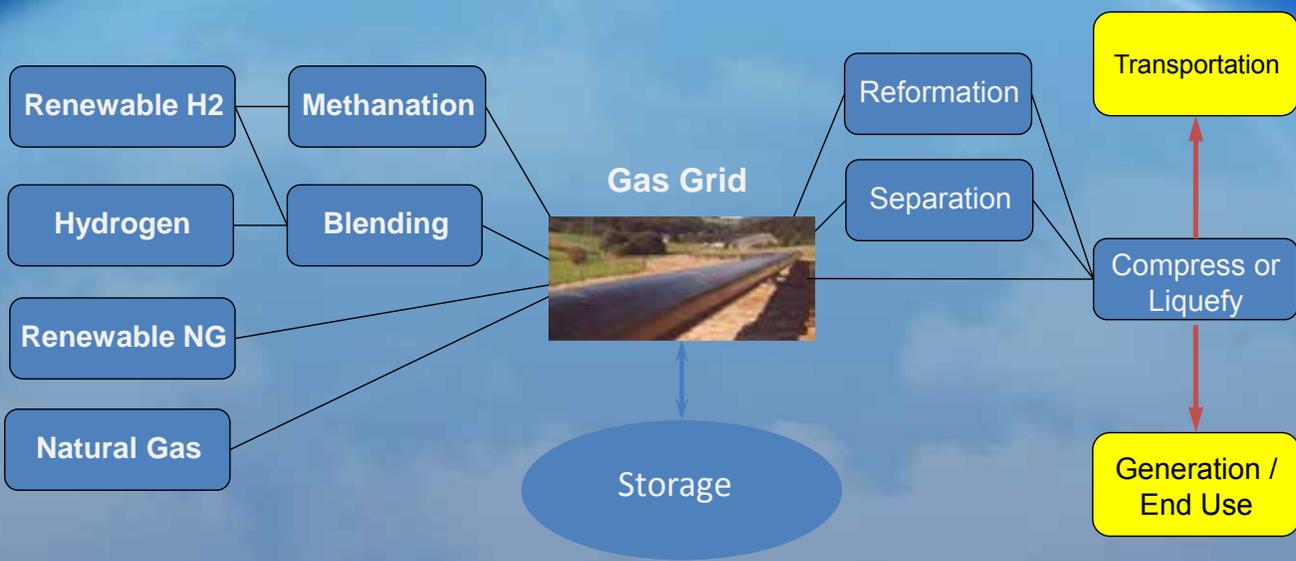
Gaseous Fuels Provide Unique Storage Functionality



Fully Built Delivery System



Existing Infrastructure Can Serve Multiple Pathways



30 Power-to-Gas Projects Launched in Europe to Date



“... In certain parts of Europe we have the situation already where the generation of 'renewable' electricity from wind and solar energy has led, from time to time, to production plants being shut down because the electricity generated exceeds local requirements and the transportation or storage capacities are inadequate. It's a problem that will become even more severe in the future because construction of new electricity lines and high-capacity pumped storage power plants is a costly and very lengthy process. Projects are therefore being discussed in which the surplus electricity is used to power electrolyzers that will split water into its component parts, with the hydrogen being directly injected into natural gas pipelines for both storage and transportation. The concept has become known as "Power to Gas" or P2G.

It is becoming more widely accepted that hydrogen could become an important energy carrier in the energy mix in the quest for sustainability, because it offers several benefits related particularly to the potential for energy storage. Indeed it's possible that, with the existing infrastructure, hydrogen/natural gas mixtures could be transported, stored and converted into electricity where required...”

Reprint: gas for energy 03 / 2013
 ISSN 2192-158X
 DIV Deutscher Industrieverlag GmbH
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Power-to-Gas

2MW Power-to-Gas Demonstration Plant (Falkenhagen, Germany)

- First power-to-gas plant to inject hydrogen into natural gas grid (August 2013)



Hydrogenics Plant (Stuttgart, Germany)

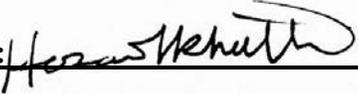
- Uses a PEM electrolyzer to produce H₂ from water. Uses CO₂ from biogas plant
- Produces Methane which is injected into pipeline

DATE: June 5, 2014

TO: Energy and Environment Committee (EEC)

FROM: Rongsheng Luo, Program Manager, (213) 236-1994, luo@scag.ca.gov

SUBJECT: Public Release of Draft Conformity Analysis for 2015 Federal Transportation Improvement Program (FTIP) and Amendment No. 2 to the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2012 RTP/SCS)

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

Information Only – No Action Required.

EXECUTIVE SUMMARY:

SCAG is developing the Draft 2015 FTIP and Draft Amendment No. 2 to the 2012-2035 RTP/SCS concurrently. Since the Draft 2015 FTIP needs to be submitted to Caltrans no later than October 1, 2014 and because SCAG's Policy Committees and Regional Council meetings are dark in July 2014, staff is seeking the authority from the Transportation Committee (TC) at its meeting today to release both the Draft 2015 FTIP and Draft Amendment No. 2 to the 2012-2035 RTP/SCS for a 30-day public review and comment period beginning July 1, 2014. Pending approval by the TC at its meeting today, the Draft 2015 FTIP and Draft Amendment No. 2 to the 2012-2035 RTP/SCS including the associated conformity analysis will be released for a 30-day public review by July 1, 2014. After public review of the Draft 2015 FTIP and Amendment No. 2 to the 2012-2035 RTP/SCS documents, the final conformity analysis will be presented to the EEC for recommendation to the Regional Council (RC) for approval on September 11, 2014.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective a: Create and facilitate a collaboration and cooperative environment to produce forward thinking regional plans.

BACKGROUND:

SCAG is the six (6)-county region's designated metropolitan planning organization pursuant to federal law, and the region's designated transportation planning agency pursuant to state law. As such, SCAG is responsible for developing and maintaining the FTIP and RTP/SCS in cooperation with the State (Caltrans), the county transportation commissions (CTCs), and public transit operators.

Over the past several months, staff has worked in consultation and continuous communication with the CTCs throughout the region to develop the 2015 FTIP. The 2015 FTIP is a programming document totaling over \$31 billion dollars in programming and containing close to 2,200 projects covering a six year period.

Meanwhile, staff has also received requests from several CTCs to amend the 2012-2035 RTP/SCS to reflect additions or changes to project scopes, costs, and/or schedule for a number of critical transportation projects that are ready to move forward toward the implementation phase. As a result, staff has also developed Draft Amendment No. 2 to the 2012-2035 RTP/SCS along with the 2015 FTIP.

REPORT

Although the 2015 FTIP and Amendment No. 2 to the 2012–2035 RTP/SCS are being developed for different reasons, they are being jointly developed with a single air quality conformity finding in order to allow for the earliest approval possible of both documents, thereby allowing critical projects in our region to move forward without delay.

Under the U.S. Department of Transportation’s metropolitan planning regulations and U.S. Environmental Protection Agency’s transportation conformity regulations, the Draft 2015 FTIP and Amendment No. 2 to the 2012-2035 RTP/SCS need to pass five conformity tests: consistency with the adopted 2012-2035 RTP/SCS, regional emissions analysis, timely implementation of transportation control measures, financial constraint, and interagency consultation and public involvement. Once approved by the federal agencies, the 2015 FTIP and RTP/SCS Amendment would allow the projects to receive the necessary federal approvals and move forward towards implementation. Staff is performing the required transportation conformity analysis for the Draft 2015 FTIP and 2012 RTP/SCS amendment.

In order to allow for the September 11, 2014 adoption of the 2015 FTIP as required to meet the State’s deadline, the Draft 2015 FTIP would need to be released by July of 2014. Staff expects that the Draft 2015 FTIP document would be ready for release by July 1, 2014. Since the TC is dark in July, at its meeting today, the TC is considering the public release of Draft 2015 FTIP and Amendment No. 2 to the 2012-2035 RTP/SCS for a 30-day public review and comment period by July 1, 2014. On September 11, 2014, after the public comment period closes, the Draft 2015 FTIP and Amendment No. 2 to the 2012-2035 RTP/SCS will be scheduled for recommended approval by the TC and final approval by the Regional Council. On the same day, the transportation conformity determination will be scheduled for recommended approval by the EEC and RC.

The Draft 2015 FTIP will be accessible at: <http://ftip.scag.ca.gov/Pages/2015/draft.aspx> and on www.scag.ca.gov. The Draft Amendment No. 2 to the 2012–2035 RTP/SCS would be accessible at: <http://www.scagrtip.net>.

FISCAL IMPACT:

Work associated with this item is included in the current Fiscal Year 2013-14 Overall Work Program (14-025.SCG00164: Air Quality Planning and Conformity).

ATTACHMENT:

None

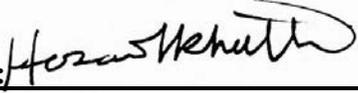
REPORT

DATE: June 5, 2014

TO: Energy and Environment Committee (EEC)

FROM: Lijin Sun, Senior Regional Planner, (213) 236-1882, sunl@scag.ca.gov

SUBJECT: California Environmental Quality Act (CEQA) Documentation for Draft Amendment No. 2 to the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2012 RTP/SCS)

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:
Information Only – No Action Required.

EXECUTIVE SUMMARY:
Since the approval of Addendum No. 1 to the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2012 RTP/SCS) Program Environmental Impact Report (PEIR) and the adoption of the associated Amendment No. 1 to the 2012-2035 RTP/SCS by the Regional Council at its June 6, 2013 meeting, SCAG has received requests from several county transportation commissions (CTCs) to amend the 2012 RTP/SCS to reflect additions or changes to project scopes, costs, and/or schedule for a number of transportation projects, as well as the addition of some new projects. To address these requests, Amendment No. 2 to the 2012-2035 RTP/SCS (“Amendment No. 2”) is being proposed. SCAG staff is conducting a programmatic environmental assessment of the changes to the 2012-2035 RTP/SCS Project List documented in the proposed Amendment No. 2 pursuant to the California Environmental Quality Act (CEQA). On September 11, 2014, Amendment No. 2 will be recommended for approval by the Transportation Committee (TC) and final approval by the Regional Council (RC). The associated CEQA documentation will be presented to the EEC for recommendation to the RC for approval on the same day.

STRATEGIC PLAN:
This item supports SCAG’s Strategic Plan Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective a: Create and facilitate a collaboration and cooperative environment to produce forward thinking regional plans.

BACKGROUND:
SCAG is the six (6)-county region’s designated metropolitan planning organization pursuant to federal law, and the region’s designated transportation planning agency pursuant to state law. As such, SCAG is responsible for developing and maintaining the RTP/SCS in cooperation with the State (Caltrans), the CTCs, and public transit operators.

At its April 4, 2012 meeting, the RC adopted the 2012-2035 RTP/SCS and certified the associated PEIR. Subsequently, on June 6, 2013, the RC approved the Addendum No. 1 to the 2012-2035 RTP/SCS PEIR associated with Amendment No. 1 to the 2012-2035 RTP/SCS, which was adopted by the RC on the same day.

REPORT

Since that time, staff has received requests from several CTCs to amend the 2012–2035 RTP/SCS to reflect additions or changes to project scopes, costs, and/or schedule for a number of transportation projects, as well as the addition of some new projects. To address these requests, 2012–2035 RTP/SCS Amendment No. 2 is being proposed.

ENVIRONMENTAL ASSESSMENT:

When an EIR has been certified and the project is modified or otherwise changed after certification, additional review may be necessary pursuant to CEQA. The key considerations is determining the need and appropriate type of additional CEQA review are outlined in Section 21166 of the Public Resources Code and CEQA Guidelines Sections 15162, 15163 and 15164. Generally, an Addendum is allowed when there are no substantial changes to the project or new information that would require major revisions to the EIR. Substantial changes are defined as those which “will require major revisions of the previous EIR...due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.” An Addendum is not required to be circulated for public review.

SCAG staff is conducting a programmatic environmental assessment of the proposed changes to the 2012-2035 RTP/SCS Project List documented in proposed Amendment No. 2 pursuant to CEQA. If SCAG finds that the projects identified in 2012-2035 RTP/SCS Amendment No. 2 are programmatically consistent with the analysis, mitigation measures, and Findings of Fact contained in the 2012-2035 RTP/SCS PEIR and that adoption of the proposed modifications would not result in either new significant environmental impacts or substantial increase in the severity of previously identified significant impacts in the 2012-2035 RTP/SCS PEIR, SCAG staff will prepare an Addendum No. 2 to the 2012-2035 RTP/SCS PEIR, in accordance with the CEQA provisions.

SCHEDULE:

In order to meet required deadlines, the draft of Amendment No. 2 will need to be released in early July 2014. Because the RC and Policy Committees meetings are dark in July, staff is requesting that the TC authorize the release of Draft Amendment No. 2 to the 2012-2035 RTP/SCS for a 30-day public review and comment period on or around July 1, 2014 (accessible once available at <http://www.scagntp.net>). On September 11, 2014, the proposed final Amendment No. 2 to the 2012-2035 RTP/SCS will be scheduled for recommended approval by the TC and final approval by the RC. The associated CEQA documentation will be presented to the EEC for recommendation to the RC for approval.

FISCAL IMPACT:

Work associated with this item is included in the current Fiscal Year 2013/14 Overall Work Program (14-020.SCG00161.04: Regulatory Compliance).

ATTACHMENT:

None

DATE: June 5, 2014

TO: Community, Economic and Human Development (CEHD) Committee
Energy and Environment Committee (EEC)

FROM: Ping Chang, Program Manager, chang@scag.ca.gov, 213-236-1839

SUBJECT: California Environmental Protection Agency (Cal/EPA) California Communities Environmental Health Screening (CalEnviroScreen Tool Draft Version 2.0)

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

For Information Only – No Action Required.

EXECUTIVE SUMMARY:

The California Communities Environmental Health Screening (CalEnviroScreen), developed by the Cal/EPA, is a screening tool to identify California communities that are disproportionately burdened by multiple sources of pollution. Pursuant to SB 535, CalEnviroScreen is expected to be used to focus a portion of the state's Cap-and-Trade auction proceeds to the most impacted communities. CalEnviroScreen Tool Version 1.0 was first released in April 2013 with a minor update (Version 1.1) in September 2013. On April 21, 2014, Cal/EPA released for public comments the Draft CalEnviroScreen Version 2.0, which included the additional indicators of drinking water quality and unemployment rate, and used census tracts instead of zip codes as the basic geographic unit. As with the previous versions, CalEnviroScreen is not intended to be a substitute for focused risk assessment for a specific area or site, nor will the results of the tool be used for California Environmental Quality Act (CEQA) purposes.

STRATEGIC PLAN:

This item supports Strategic Plan Goal 2. Obtain Regional Transportation Infrastructure Funding and Promote Legislative Solutions for Regional Planning Priorities. a. Develop, monitor, or support state legislation that promotes increased investment in transportation programs in Southern California.

BACKGROUND:

CalEnviroScreen presents a screening methodology to identify California communities that are disproportionately burdened by multiple sources of pollution and presents the statewide results of the analysis using the screening tool. CalEnviroScreen uses existing environmental, health, and socioeconomic data to consider the extent to which communities across the state are burdened by and vulnerable to pollution. The results generated by CalEnviroScreen represent the confluence of numerous environmental, economic, social, and health related factors.

Cal/EPA expects the tool to enable state decision makers to focus their time, resources, and programs on those portions of the state that are in greater need of assistance due to their higher environmental burdens and greater vulnerability to, or reduced ability to withstand, these burdens as compared to other areas. Specifically, CalEnviroScreen will inform Cal/EPA's

implementation of the mandate to identify communities per SB 535 for the purposes of targeted investment of a portion of California Cap-and-Trade auction proceeds. Specifically, SB 535 requires that at least 25% of the Cap-and-Trade auction proceeds will benefit the “disadvantaged communities”, while at least 10% of Cap-and-Trade auction proceeds will be used for investment within the “disadvantaged communities”. As set forth in a guidance document prepared by Cal/EPA and discussed in stakeholder meetings, the tool is not intended to be a substitute for focused risk assessment for a specific area or site, nor will the results of the tool be used for CEQA purposes.

SCAG held a Cal/EPA workshop on December 12, 2012 in cooperation with other interested stakeholders intended to offer businesses, local governments and other stakeholders the opportunity to receive relevant information and provide input to Cal/EPA on the draft CalEnviroScreen tool. As follow up a Cal/EPA workshop was held at SCAG on February 5, 2013 to provide an overview of the second draft of CalEnviroScreen. CalEnviroScreen Tool Version 1.0 was released in April 2013 with a minor update (Version 1.1) released in September 2013 to remove the race/ethnicity factor. On April 21, 2014, Draft CalEnviroScreen Tool Version 2.0 (“Draft Version 2.0”) was released by Cal/EPA.

Overall Methodology and Draft Version 2.0 Enhancement

The overall methodology of the CalEnviroScreen includes the following:

1. Identify indicators for the pollution burden component (including exposure and environmental effects indicators) and population characteristics component (including sensitive population and socioeconomic indicators).
2. Find sources of data to support indicator development.
3. Select and develop indicators, assigning a value for each geographic unit.
4. Assign a percentile for each indicator for each geographic unit, based on the rank-order of the value.
5. Generate maps to visualize data.
6. Derive scores for pollution burden and population characteristics components.
7. Derive the overall CalEnviroScreen score by combining the component scores.
8. Generate maps to visualize overall results.

Draft Version 2.0 uses the same overall methodology outlined above as Version 1.1 except for adding the indicators of drinking water quality and unemployment rate, and use of census tracts rather than ZIP codes as the geographic unit. Drinking water is an important potential pathway for exposure to chemical and bacterial contaminants. Unemployment has been associated with poor health outcomes and psychosocial stress in communities. The use of census tracts may allow for a more precise screening of pollution burdens and vulnerabilities in communities. In addition, Draft Version 2.0 includes scoring refinements such as emphasizing hazards that are closer to where people live. Finally, many data sets have been updated with more recent data. Attachment 1 includes a summary of major changes in Draft Version 2.0 from version 1.1.

Overall, with the improved methodology, Draft Version 2.0 will be able to better reflect the combined environmental impacts from multiple sources for California’s communities at the census tract level. In addition, the updated data for environmental and socioeconomic indicators at the census tract level will also be valuable for various planning efforts.

Regional and County Results based on Draft Version 2.0

The Table below compares the population in the most impacted communities, or “disadvantaged communities” under CalEnviroScreen Versions 1.1 and 2.0.

County	*CalEnviroScreen 1.1 Scores Highest 10% Zip Codes Population	*CalEnviroScreen 2.0 Scores Highest 20% Census Tracts Population
Imperial	76,590	38,789
Los Angeles	3,624,533	3,724,776
Orange	271,217	269,189
Riverside	335,365	329,420
San Bernardino	640,344	679,260
Ventura	165,741	16,859
SCAG Region	5,113,790	5,058,293
California	7,695,915	7,457,988
SCAG Region Share of the State	66.4%	67.8%

*For the CalEnviroScreen Version 1.1, the “disadvantaged communities” were defined as the top 10% of the zip codes with the highest scores. Since Draft Version 2.0 uses the much smaller census tract as the geographical unit, the definition of “disadvantaged communities” is expected to be represented by the top 20% census tracts with the highest scores, as they include the similar level of population as the top 10% of zip codes with the highest scores under Version 1.1.

For the SCAG region as a whole, the *share* of state’s population in the most impacted communities increased slightly from 66.4% using Version 1.1, to 67.8% using Draft Version 2.0. However, within the region, population in the most impacted communities in Los Angeles County increased by just over 100,000, and by almost 40,000 in San Bernardino County; while the impacted population decreased in the other four counties. Specifically, in Ventura County, population in the most impacted communities decreased significantly from 165,741 using Version 1.1, to 16,859 using Draft Version 2.0.

In collaboration with Cal/EPA, SCAG hosted a CalEnviroScreen Workshop on May 12, 2014 at SCAG main office with videoconference available from SCAG Regional Offices. At the workshop, Cal/EPA’s Assistant Secretary and Director of the Office of Environmental Health Hazard Assessment presented the CalEnviroScreen Tool 2.0 update, received input, and responded to questions.

REPORT

Further information about the Draft CalEnviroScreen Tool 2.0 including the Draft Report and an interactive mapping tool can be viewed at <http://oehha.ca.gov/ej/ces2.html>. Comments on the Draft CalEnviroScreen 2.0 were due June 1, 2014. Staff plans to apprise the CEHD Committee and EEC regarding the status of Version 2.0 in a future report.

FISCAL IMPACT:

Work associated with this item is included in the current FY 2013/14 Overall Work Program (080.SCG00153.04).

ATTACHMENTS:

1. Summary of Major Changes between CalEnviroScreen Versions 1.1 and 2.0
2. Regional and County Maps Showing Areas of the Most Impacted Communities using CalEnviroScreen Versions 1.1 and 2.0

Major Changes of CalEnviroScreen 2.0

CalEnviroScreen 2.0 updates the Version 1.1 screening tool in a number of important ways. The major changes in this proposed version are described briefly below. Additional detail is available in the Method description for each individual indicator in the revised draft report for CalEnviroScreen 2.0.

Census Tract Scale Analysis

CalEnviroScreen 2.0 results have been analyzed at the census tract scale. The previous Version 1.1 was analyzed at the ZIP code scale. California is comprised of approximately 8,000 census tracts, compared to approximately 1,800 ZIP codes. This scale of analysis represents a finer level of resolution for many parts of the state. The Method section for each indicator has been updated to reflect how each indicator's score is calculated at this scale.

New Indicator: Drinking Water Quality

Drinking water is an important potential pathway for exposure to chemical and bacterial contaminants. Here, a measure of drinking water quality across California has been added to the screening tool which takes into account the number, concentration, and relative toxicity of contaminants.

New Indicator: Unemployment Rate

Unemployment has been associated with poor health outcomes and psychosocial stress in communities. An indicator using the 5-year estimate of the unemployment rate (2008-2012) has been included as a Socioeconomic Factor in CalEnviroScreen 2.0.

Proximity Adjustment for Environmental Effects Indicators

The scoring for many of the Environmental Effects indicators in CalEnviroScreen has been adjusted to emphasize hazards that are closer to where people live. Census tracts are made up of numerous census blocks, some of which are populated and others that are unpopulated. Hazards that are located further than certain specific distances from any populated census block within a tract were either reduced in scoring weight based on the distance or eliminated from the scoring for that census tract. How these adjustments were applied for each Environmental Effects indicator is described in the indicator's Method section.

Groundwater Threats: Revised Weighting

Different types of sites that are included in the Groundwater Threats indicator are weighted differently based on site type and status. The weighting scheme has been revised in CalEnviroScreen 2.0 to reflect the relative levels of hazard that are potentially present at the site.

Rate of Low Birth Weight Infants: Data Modeling

Many estimates of the rate of low birth weight infants for census tracts can be unreliable because of the relatively low number of births that occur in an area that size. Spatial modeling was used for the estimation of the low birth weight rates in CalEnviroScreen 2.0 to calculate more reliable estimates, especially in census tracts with fewer people.

Hazardous Waste Facilities and Generators

Additional weight has been applied to permitted hazardous waste facilities with older permits reflecting concerns that these may not reflect current conditions.

Hazardous waste generator data have also been limited to large-volume generators with some hazardous waste in Version 2.0.

Increased Use of Data on Hazards on Tribal Land

Additional data on certain types of environmental hazards that are present on tribal land but not included in CalEnviroScreen 1.1 were obtained from the US Environmental Protection Agency. The data for these sites/facilities was integrated into the appropriate indicator for the CalEnviroScreen 2.0.

Ozone: Data Modeling

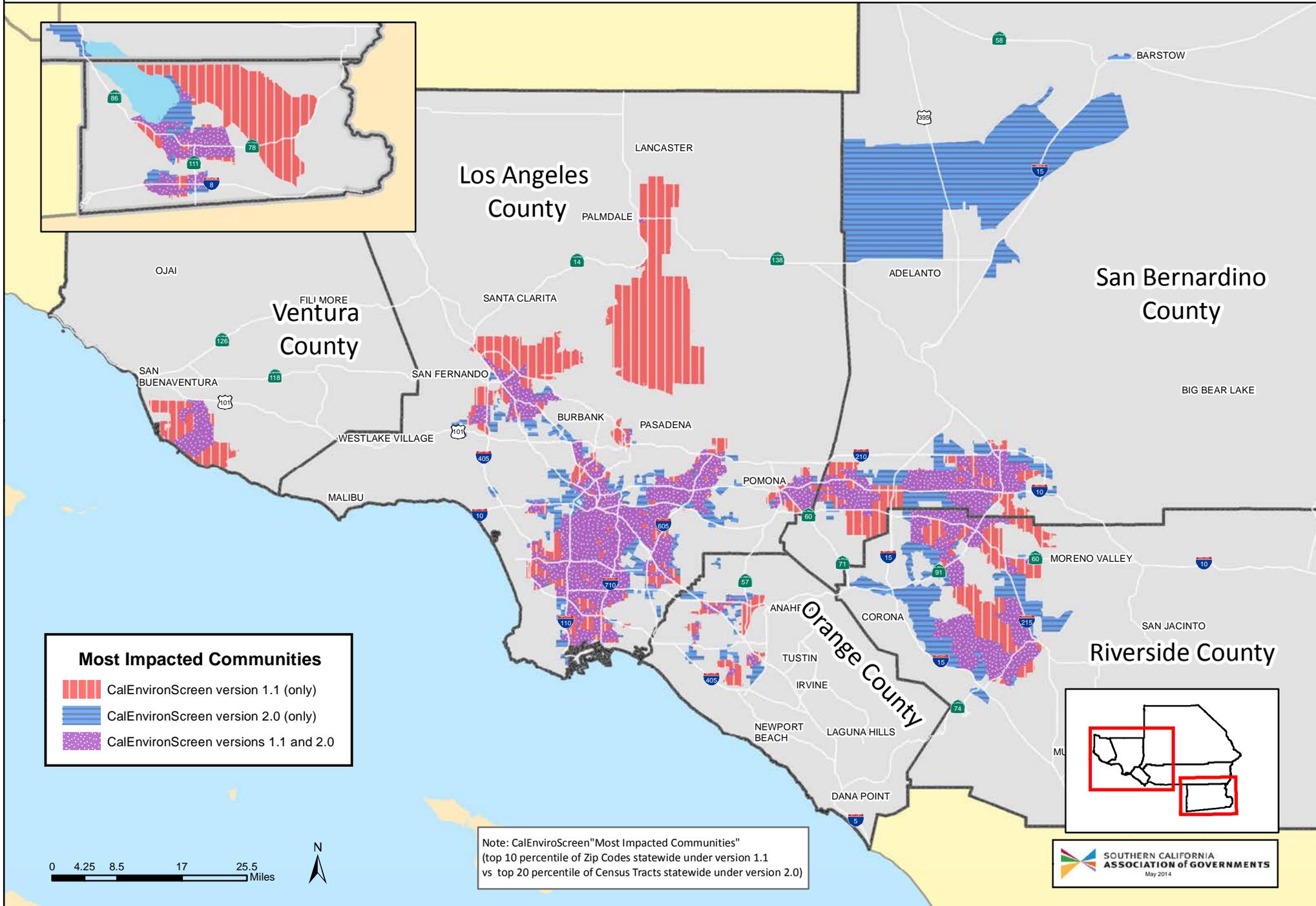
CalEnviroScreen 2.0 uses the portion of the daily maximum 8-hour ozone concentration over the state 8-hour standard (0.070 ppm), averaged over three years, 2009 to 2011. Version 1.1 used the federal 8-hour standard (0.075 ppm) for this calculation.

Updated Datasets

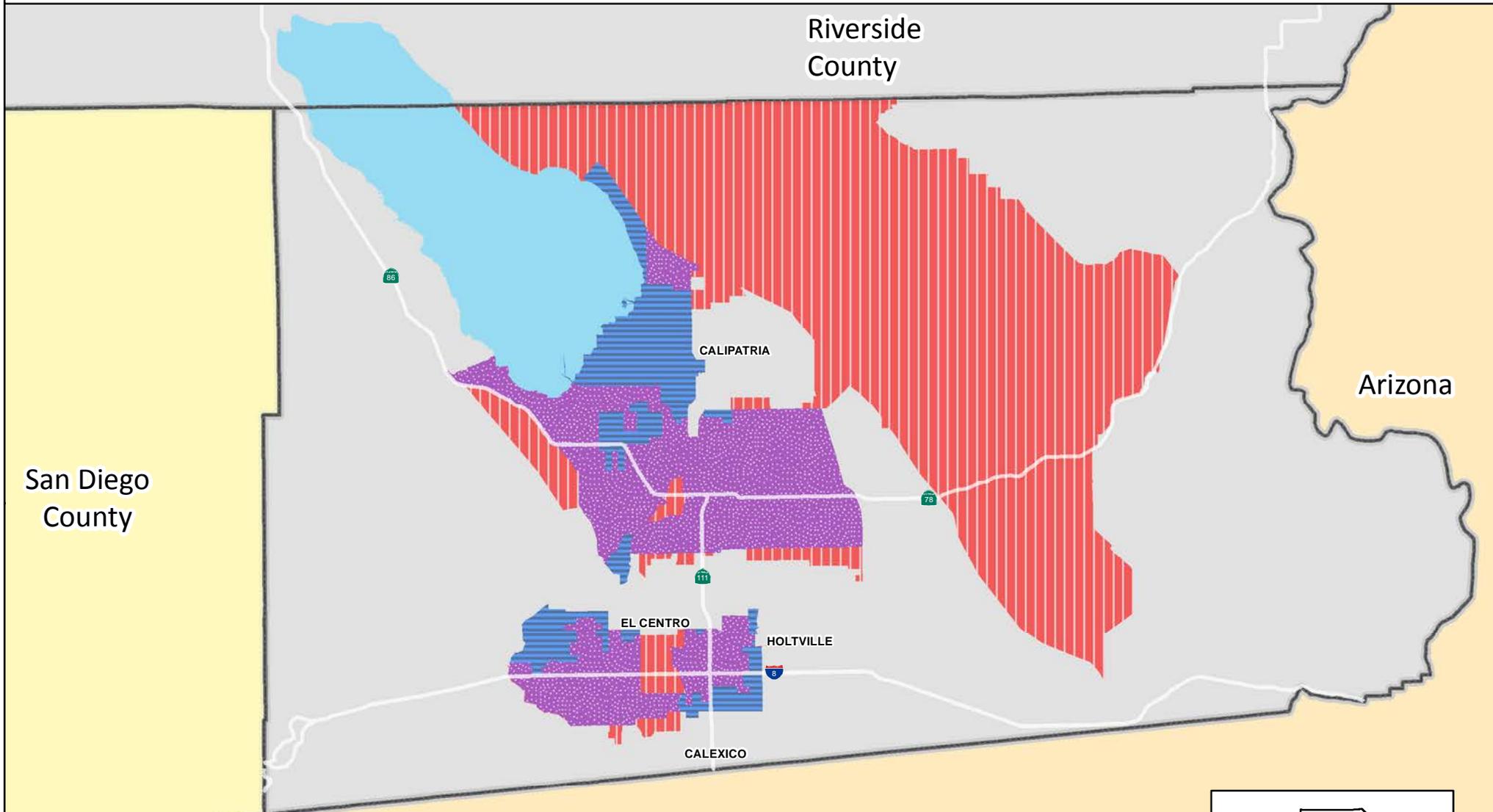
Many data sets in the CalEnviroScreen 2.0 have been updated with more recent data. These include the indicators for Ozone, PM2.5, Pesticide Use, Cleanup Sites, Hazardous Waste, Solid Waste, Groundwater Threats, Impaired Water Bodies, Linguistic Isolation, Educational Attainment, and Poverty.

Source: Cal/EPA

CalEnviroScreen Most Impacted Communities in the SCAG Region

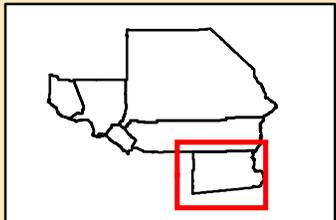


CalEnviroScreen Most Impacted Communities in Imperial County



Most Impacted Communities

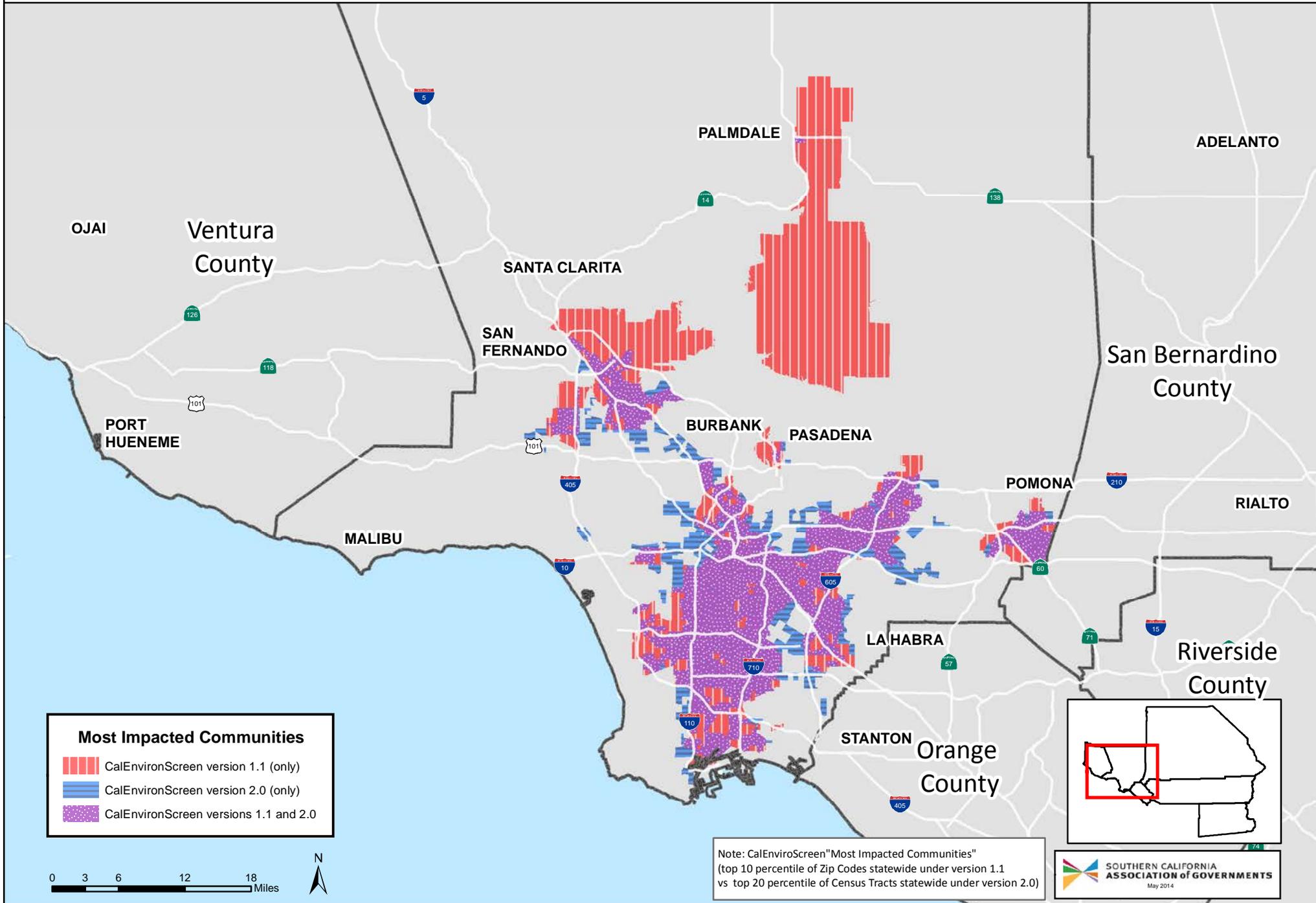
-  CalEnvironScreen version 1.1 (only)
-  CalEnvironScreen version 2.0 (only)
-  CalEnvironScreen versions 1.1 and 2.0



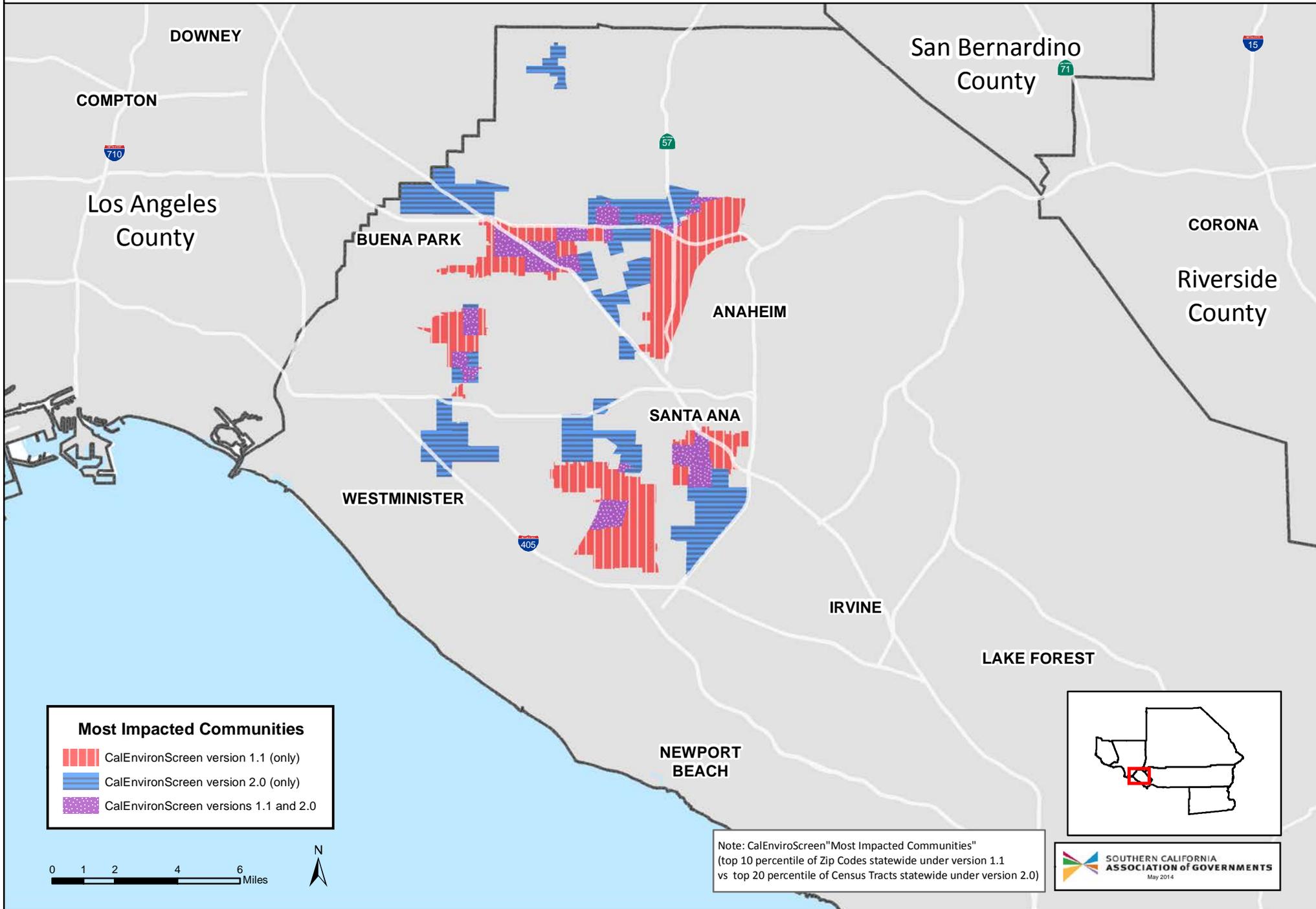
Note: CalEnviroScreen "Most Impacted Communities" (top 10 percentile of Zip Codes statewide under version 1.1 vs top 20 percentile of Census Tracts statewide under version 2.0)



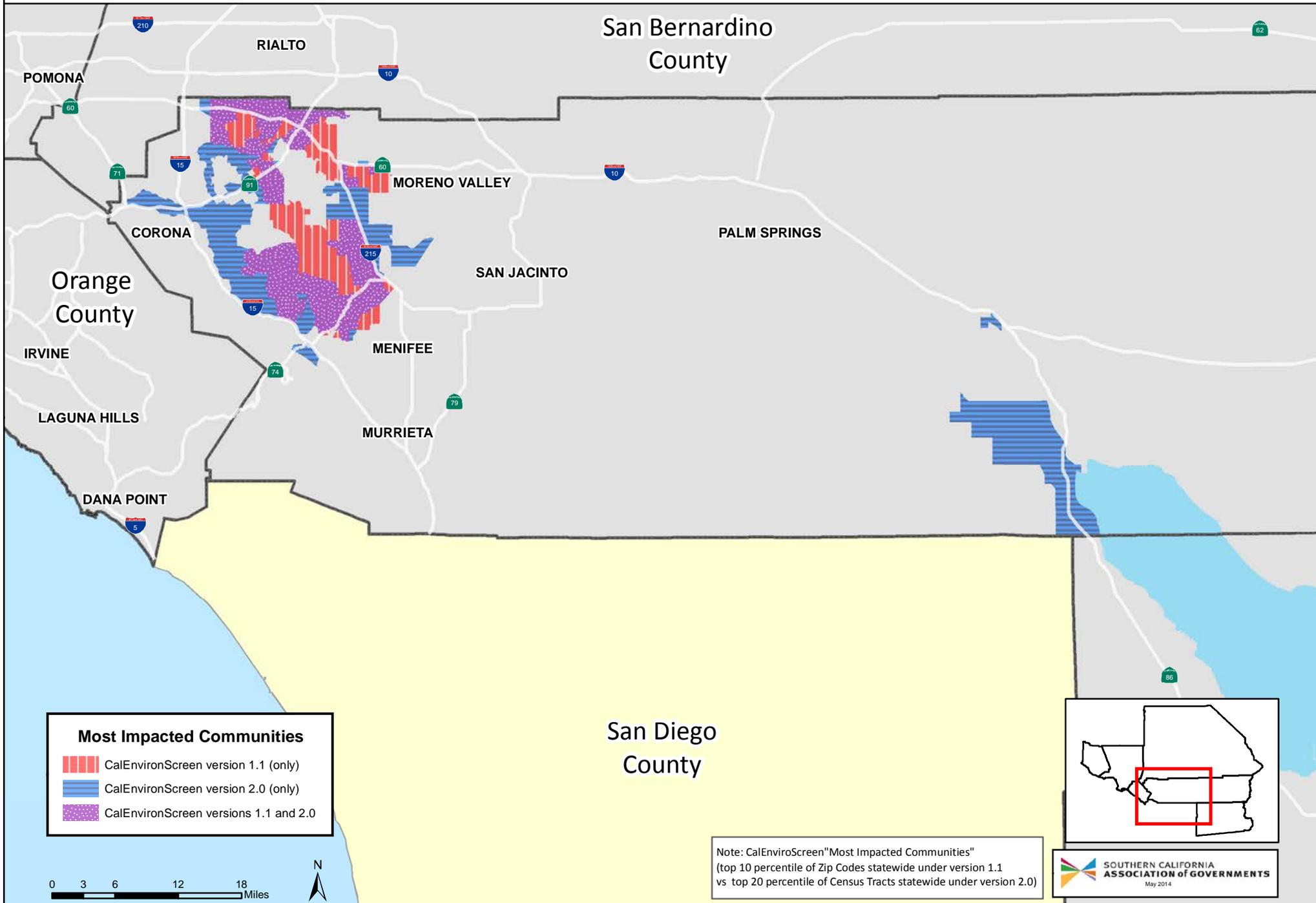
CalEnviroScreen Most Impacted Communities in Los Angeles County



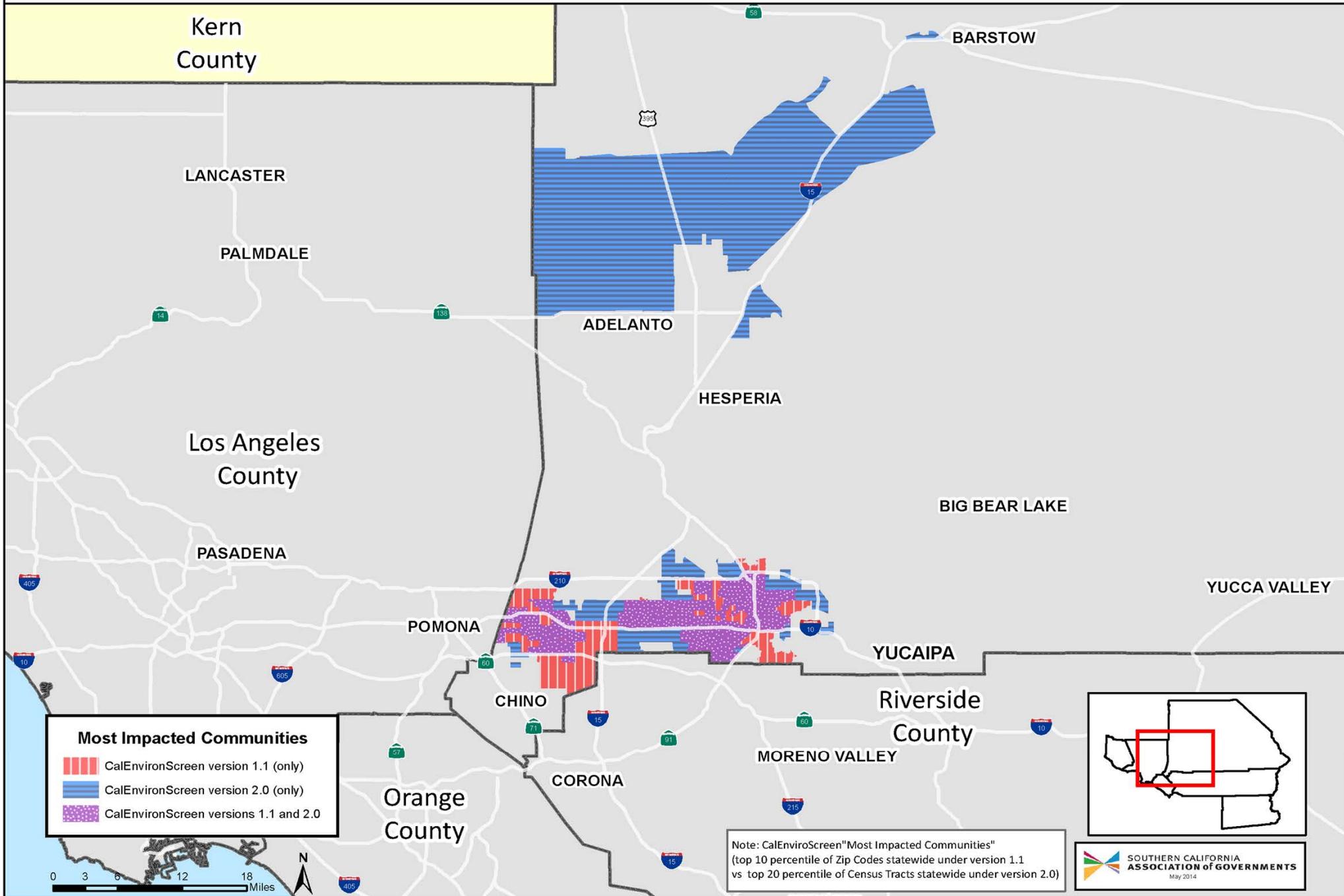
CalEnviroScreen Most Impacted Communities in Orange County



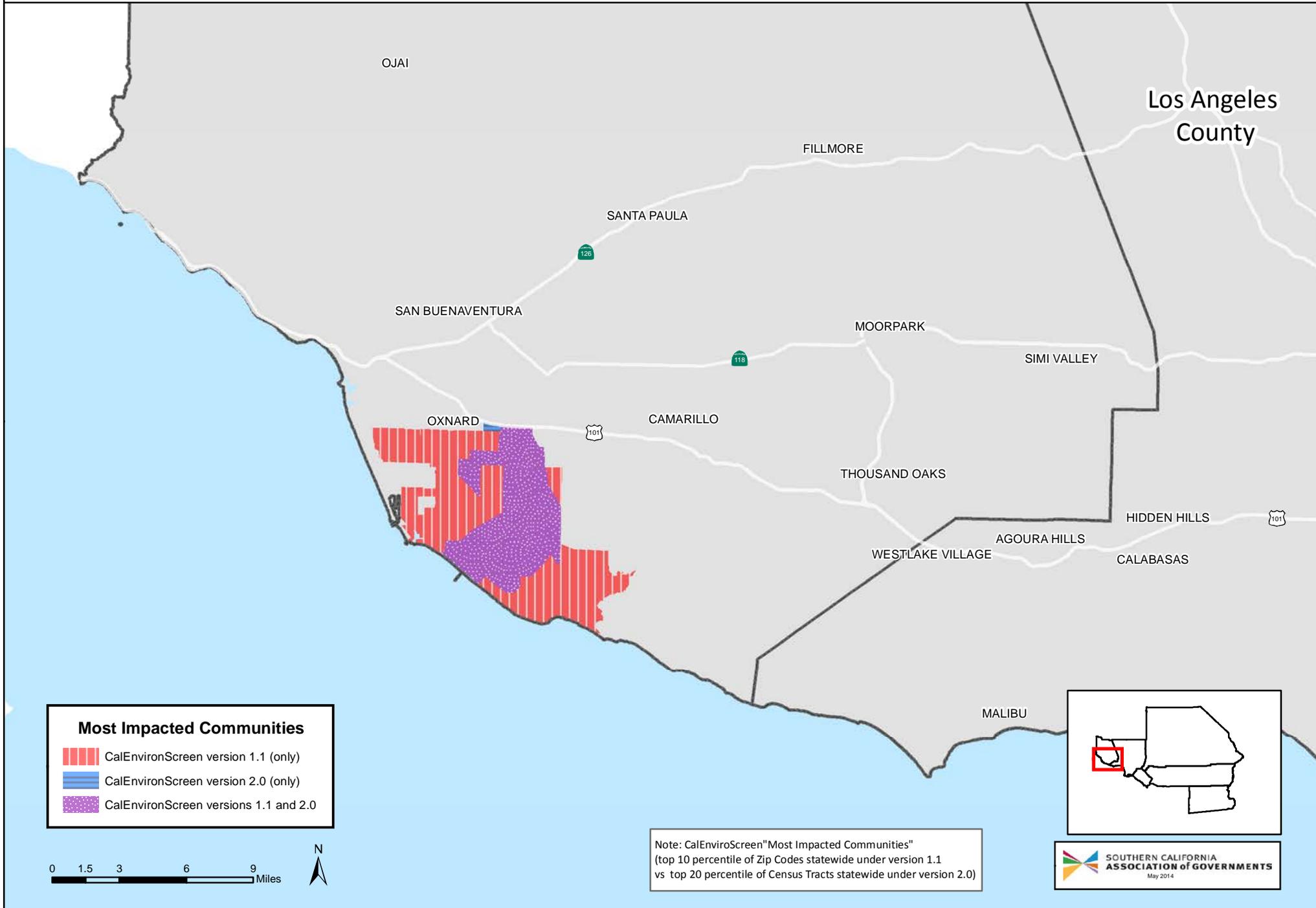
CalEnviroScreen Most Impacted Communities in Riverside County



CalEnviroScreen Most Impacted Communities in San Bernardino County



CalEnviroScreen Most Impacted Communities in Ventura County



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DATE: June 5, 2014

TO: Energy and Environment Committee (EEC)

FROM: Darin Chidsey; Director, Strategy, Policy & Public Affairs; (213) 236-1836;
chidsey@scag.ca.gov

SUBJECT: 2014 State and Federal Legislative Priorities Update

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDATION:

For Information Only – No Action Required

EXECUTIVE SUMMARY:

At the request of the incoming Chair of the Energy and Environment Committee (EEC), staff is bringing forward this item to update EEC on SCAG's adopted 2014 legislative priorities. At its February 6, 2014 meeting, the Regional Council, with prior input from the business community at SCAG's 4th Annual Economic Recovery and Job Creation Summit on December 5, 2013, and from the Legislative/Communications and Membership Committee (LCMC), at its January 21, 2014 meeting adopted with minor amendments the recommendations of the LCMC for SCAG's 2014 State & Federal Legislative Priorities. These adopted priorities are included within this report. Additionally a link is provided to SCAG's legislative matrix which lists all state bills SCAG is currently monitoring, including bills that are related to SCAG's adopted legislative priorities as well as other bills of importance to SCAG's regional partners. Staff will provide an update and answer any questions from the Committee related to legislative process and SCAG's adopted priorities.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan, Goal 2: Obtain Regional Transportation Infrastructure Funding and Promote Legislative Solutions for Regional Planning Priorities; Objective b) Identify and support legislative initiatives.

BACKGROUND:

The Regional Council at its February 6, 2014 adopted recommendations of the LCMC, with amendments, of the 2014 State and Federal Legislative priorities.

STATE LEGISLATIVE PRIORITIES

1. Project Streamlining & Expediting: Support legislation directed at California Environmental Quality Act (CEQA) modernization and process reform that expedite project delivery and promote the creation of jobs. Examples include legislation promoting concurrent rather than consecutive environmental review, expedited judicial review of challenges to environmental rulings, and other such acceleration measures. A top legislative priority for 2013, there was much activity through the year for significant CEQA reform, with numerous proposed CEQA reform bills introduced but, the only significant bill passing was SB 743 (Steinberg) dealing principally with expedited development of the new Sacramento Kings arena and entertainment complex, with some statewide provisions to make easier development around Transit Priority Areas consistent with provisions of SB 375.

Continued efforts to enact CEQA modernization legislation to enhance project acceleration are expected in 2014, and these outcomes consistently have been policy objectives approved by the Regional Council through the years and have been part of SCAG's legislative program for several years. SCAG has worked successfully with its partner organizations at the local and national levels to include similar, consistent provisions regarding federal environmental review processes contained within the "Breaking Down Barriers" provisions developed by the Orange County Transportation Authority (OCTA) within the surface transportation authorization law, MAP-21 (Moving Ahead for Progress in the 21st Century), passed by Congress in 2012. At SCAG's December 2012 Economic Summit, prominent economists from throughout the SCAG region analyzed the impacts of accelerating project delivery, moving a 5-year tranche of the 2012–2035 RTP/SCS forward 5 years. This analysis concluded that approximately 300,000 jobs per year would be created or brought forward. Advancing five years of projects would result in a decrease in construction cost by \$1.25–1.95B (or 5–9% of construction cost). Staff recommends pursuing this legislative priority in 2014 through partnership with affected local and statewide transportation, business, labor, and environmental stakeholders to more quickly develop projects that will reduce harmful emissions and promote creation of jobs to effectuate continued economic turnaround throughout the region.

2. Financing, Economic Development & Community Reinvestment: Support legislation to expand use of innovative finance structures to create new opportunities for economic development, community reinvestment, and the development of transportation projects and infrastructure investment, including Public-Private Partnerships (P3s), Private Equity finance, and flexibility of local government to adopt alternate financing structures such as Infrastructure Financing Districts and local, targeted finance authorities.

In the wake of the elimination of Redevelopment Agencies (RDAs) in the 2011-12 session, a large number of post-RDA succession, alternative and clean-up bills were introduced in 2013 to assist the process of winding down former RDAs and to provide alternate structures and tools for local government to continue with some form of community economic investment. Senate President pro tempore Darrell Steinberg introduced SB 1 in 2013, which is substantially the same as his SB 1156 from the prior year (vetoed by the Governor), which provides an alternate mechanism to use tax increment finance by local government to fund development according to a plan incorporating land use strategies that help implement sustainable communities strategies. Speaker Perez, too, introduced AB 32, a bill that would increase the amount of a tax credit allowed under existing law of a qualified investment made into a community development financial institution for local economic development.

The Governor, at the end of the 2013 legislative year, requested that the legislative leadership not send 'son-of-RDA' bills to him for signature this year and, with very few exceptions, no such bills passed in 2013. However these bills and others are now two-year bills and it is likely that post-RDA economic development legislation will continue to occupy the attention of the legislature in 2014. Examples of such bills introduced in 2013 that are carried over into 2014 include AB 1080 (Alejo), which would authorize certain public entities of a community revitalization and investment area to form a community revitalization plan within a community revitalization and investment authority to carry out the Community Redevelopment Law; and SB 33 (Wolk), which would eliminate the requirement of voter approval for creation of infrastructure finance districts and for bond issuance, and would authorize the local legislative body to form a newly created public financing authority, consisting of 5 members, 3 of whom are members of the city council or board of supervisors that established the district, and 2 of whom are members of the public, to adopt the infrastructure financing plan and issue bonds by majority vote of the authority.

Additionally, there continues to be significant support expressed by local elected officials and business leaders for legislation promoting enhanced local, community economic development and flexible finance structures to aid economic recovery at the local and regional level. Senator Steinberg, in his keynote address at SCAG's 4th Annual Economic Growth and Job Creation Summit, emphasized the importance of providing local government with tools to grow in a sustainable manner in the post-RDA environment and indicated passage of his SB 1 allowing local government to do that through their creation of Sustainable Communities Investment Authorities as a viable alternative to RDAs.

3. Cap-and-Trade Funding: Support legislation that ensures an equitable portion of revenues generated from the implementation of the Cap-and-Trade program are allocated to transportation improvements that result in the reduction of pollution and GHG emissions commensurate with the transportation sector's impact in causing these emissions.

The Regional Council, following the recommendations of the LCMC, at its October 2012 meeting, adopted support of principles developed by a statewide transportation coalition of which SCAG is an active, participating member, for the use of cap-and-trade auction revenues. The coalition principles are consistent with long-standing SCAG objectives to seek enhanced financing sources for transportation purposes throughout the region, and to seek and support funding to implement sustainable communities strategies mandated by SB 375. The principles also provide for flexibility at the regional and local levels to develop the most cost effective ways to meet GHG reduction goals through transportation and land use investment; and specify that project-funding determinations be made at the regional level under established statewide criteria to encourage local innovation and flexibility.

SCAG, working with the statewide Transportation Coalition of Livable Communities, authored SB 574 (Lowenthal), a bill that would achieve the principles set forth by the Coalition and would, among numerous other provisions, direct cap-and-trade revenues from the Greenhouse Gas (GHG) Reduction Fund to projects that:

- Provide cost effective and feasible reductions in GHG emissions;
- Combine transportation investments with local land use modifications and other local policy changes to provide GHG emissions reductions and, where feasible, to achieve other public benefits;
- Implement an approved SCS within existing urbanized or developed areas in regions with an MPO, or for regions that do not have an MPO, projects that reduce GHG emissions consistent with the regional transportation or other regional plan;
- Comply with existing requirements to benefit economically disadvantaged communities.

SB 574, along with all other bills impacting the allocation of cap-and-trade revenues, was made into a two-year bill by legislative leadership. The Governor, as part of the fiscal year 2013-14 budget process, borrowed \$500 million of revenues from cap-and-trade emissions revenues from auctions held in 2012-13 for general fund purposes, to be repaid to the GHG Reduction Fund and used for purposes set forth in existing law for cap-and-trade revenues. The Administration cited as justification for borrowing these funds the fact that the scoping plan under preparation by the California Air Resources Board is not yet completed and, thus, the full range of potential uses for cap-and-trade monies will not be known until the plan is finalized. It is anticipated that the Department of Finance will commence development of the expenditure plan for cap-and-trade monies, with affected agencies and stakeholder input, in early 2014

for passage by the legislature and adoption in conjunction with passage of the 2014-15 state budget. SCAG, working with and through the Coalition, will continue to advocate for policies and expenditure priorities adopted by the Regional Council and embodied within the principles of the Coalition. Cap-and-trade revenue remains the only significant new source of funding during this time of severe budgetary and fiscal constraint at the state level to finance these important projects.

4. Maintenance Funding for Streets and Roads and Transit Systems: Support state legislation to provide dedicated, secure funding to state highways, streets and roads to support the maintenance and rehabilitation of the state and local road and transit system.

5. ‘MAP-21’ Implementing Legislation: Support state legislation that ensures funding under the new federal surface transportation reauthorization law, MAP-21 (Moving Ahead for Progress in the 21st Century), is invested in transportation projects that improve air quality and expand the capacity of the entire transportation system from state highways to intercity rail. In 2013, two state legislative bills that were supported by SCAG were signed into law implementing portions of the MAP-21 surface transportation implementation bill. AB 14 (Lowenthal) requires the state transportation agency to establish the state freight plan containing specified elements to govern the immediate and long-range planning activities and capital investments of the state with respect to the movement of freight, consistent with the goals and objectives of MAP-21.

Additionally, SB 99 was enacted, and consolidates various active transportation programs into one, called the Active Transportation Program (ATP), a \$124 million program which, among many provisions consolidates various federal funds into the ATP including: Federal Transportation alternatives Program (except that allocated to MPOs); Recreational Trails Program (except that allocated to Parks and Recreation); and Highway Safety Improvement Funds (HSIP). It also requires that no less than 25% of overall funds benefit disadvantaged communities during each program cycle. Subsequently, the California Transportation Commission (CTC) has held numerous ATP Workgroup meetings, of which SCAG is a participant, to provide expertise and recommendations to the CTC to develop program guidelines and subsequent revisions, project selection criteria, performance measures, and other guidance.

Staff recommends continuing to support 2014 state legislation that promotes implementation of the MAP-21 surface transportation law.

6. International Trade and Ports: Support legislation that will increase exports congruent with President Barack Obama’s National Export Initiative (NEI) to double exports and creates two million jobs over five years. In addition, prevent the loss of international trade-related jobs in the Southern California region that are at jeopardy from the expanded investments by East and Gulf Coast Ports and the Panama Canal. Suggested/recommended ideas include providing tax credit certificates to exporters and importers and establishing a successor agency to the former California Export Finance Office (CEFO) to assist businesses throughout the state expand their business, revenues, and employment.

SB 592 (Price), introduced in 2013, calls for promotion of trade at California ports by requiring the Governor’s Office of Business and Economic Development to provide to the Legislature, a strategy for promoting trade for California airports, land ports and seaports, and to require that the strategy be submitted to various legislative offices, and would also require the Governor’s Office of Business and Economic Development to convene a statewide business partnership for promotion of trade for California ports and to explore greater utilization of California ports. Staff recommends continued

support of legislation such as SB 592, and SB 810 (Price), supported by SCAG, that would authorize tax credit certificates to any qualifying exporters and importers that demonstrate that they have increased their cargo tonnage or value through California ports and airports by specified amounts, had a net increase in qualified full-time employees hired in the state, or have incurred capital costs for a cargo facility in the state; and any other legislative bills that promote trade at California ports.

7. Entertainment Tax Credit: Support legislation that will extend the entertainment tax credit long term (i.e., five years or more) in order to stop the loss of entertainment jobs, investment and support industries unique to one of Southern California's touchstone industries. California's \$100 million annual Film/TV Tax Credit program, in place since 2009, was extended to 2017 pursuant to legislation signed by Governor Brown in 2012. The program provides for a 20% tax credit for a qualified motion picture which includes feature films, movie of the weeks, mini-series, as well as new television series licensed for original distribution on basic cable with specified exclusions. It also includes a 25% tax credit for qualified TV series that filmed all of its prior season or seasons outside of California, and for qualified independent films. This successful program is deemed by the industry to be insufficient compared to the demonstrated need to keep more of California's large, vibrant film and entertainment industry from going to other jurisdictions with very favorable tax incentives to produce projects that might otherwise be produced in California: jurisdictions such as New York, which recently tripled its post-production tax credit, Louisiana, Michigan, Georgia, and locations throughout Canada such as Vancouver. Currently, California projects are selected by 'lottery' with many more qualifying projects competing than are selected for available credits. L.A. Mayor Eric Garcetti has signaled, as a priority this year, his intent to vigorously advocate for a more robust film/entertainment tax credit program, citing its importance in particular to the Southern California economy and to the state as a whole.

8. Water Bond: Support legislation that invests in water infrastructure that establishes a sufficient and reliable source of water and provides a funding source for storm water quality regulations to all of California. Additionally, support of legislation that provides for the relevant and required data for the Municipal Separate Storm Sewer Systems (MS4s) Program. The 2014 water bond is the product of a comprehensive legislative package crafted in 2009 by Governor Schwarzenegger and state lawmakers to meet California's growing water challenges, and was composed of four policy bills and an \$11.14 billion bond. The water bond measure was originally set to be on the state's 2010 ballot, was later moved to the 2012 ballot and, on July 5, 2012, the legislature took the measure off the 2012 ballot and put it on the 2014 ballot to provide a public cost share for elements of the package that benefit the public. Since then, there have been a number of bills introduced, none of which have passed, that would in various ways reduce the overall size of the bond, generally reduce 'earmarked' projects of the bond, and protect various priority areas. Given the state's overall severe budget constraints and the program cuts that have occurred in recent state budgets, staff plans a more comprehensive update at the March meeting. During the interim, staff is compiling Southern California - Water Board positions on the proposed bond. Staff recognizes the extreme need for California to invest in its water infrastructure, and to support equitable distribution of state funded water resources to all of California, including as allocated by legislation that may pass in 2014 amending the current water bond.

FEDERAL LEGISLATIVE PRIORITIES

9. Surface Transportation Authorization Legislation: The federal surface transportation authorization, MAP-21, is set to expire on September 30, 2014. The authorizing Committees of the Senate and House have expressed intent to write and move the successor authorizing bill to MAP-21. The House Transportation and Infrastructure Committee convened a Special Panel on 21st Century

REPORT

Freight Transportation, comprised of nationwide transportation stakeholders from the public and private sectors, to make recommendations to the Committee for inclusion into the next authorization bill. SCAG, through its membership in the Coalition for America's Gateways and Trade Corridors and working with California members on the Panel supported its efforts, and staff recommends among its legislative principles the support of Panel recommendations to Congress that it:

- Authorize dedicated, sustainable funding for multimodal freight Projects of National and Regional Significance (PNRS): Authorize dedicated, sustainable funding for multimodal freight PNRS through a competitive grant process and establish clear benchmarks for project selection;
- Establish a national, multimodal freight policy and network: As called for in Panel Member Rep. Sires' (D-NJ) MOVE Freight Act of 2013 (H.R. 974), freight policy and planning should incorporate the many modes of transportation that move goods;
- Ensure robust public investment in all modes: Freight does not move on highways alone – where public benefit is derived, public investment must be made. Further, private investment should be encouraged when possible and appropriate; and
- Explore additional funding mechanisms: Sustainable freight revenue sources should be identified and evaluated by the U.S. Department of Transportation and Congress prior to the next surface transportation authorization.

SCAG concurs with the panel's conclusion that a broad, multimodal perspective is required for the freight transportation system. As such, the National Freight Network should be expanded to comprise roadways, freight rail, navigable waterways, inland ports, seaports, land ports of entry, freight intermodal connectors, and airports. Further, it is in the nation's economic interest that the Primary Freight Network (PFN) should be increased beyond the maximum of 27,000 centerline miles to accommodate a multimodal network. MAP-21 provides that the PFN be updated and submitted to Congress every 10 years. However SCAG supports renewal of the network every 5 years to appropriately support an expanded multimodal freight network.

In addition to the recommendations of the Panel, it is recommended to support full restoration into the successor surface transportation authorization bill, the \$2 billion per year funding of the National Freight Program, which was established by MAP-21 to distribute these funds to states for the purpose of improving the flow of goods throughout the nation. This vital funding authorization was removed from MAP-21 in conference committee; restoring it into the next authorization bill should remain a top priority for the next authorization bill.

In addition to freight related issues, the federal Highway Trust Fund is not sustainable under the present financing mechanism. Consistent with the SCAG Board adopted RTP/SCS financial plans, SCAG supports all reasonable and fiscally prudent financing options to address the pending insolvency of the federal Highway Trust Fund (HTF), which the Congressional Budget Office (CBO) has concluded that, beginning in fiscal year 2015, will have insufficient resources to meet all of its obligations which will result in steadily accumulating shortfalls. According to CBO, since 2008 the Congress has transferred over \$41 billion from the general fund to the HTF to keep it solvent.

Staff recommends SCAG support all reasonable solutions to provide stable, sufficient funding to address HTF solvency. SCAG's 2012-2035 Regional Transportation Plan/Sustainable Committees Strategy assumes that additional 15 cents-per-gallon gasoline tax imposed by the state and federal government

starting in 2017 through 2024 and an estimated \$0.05 per mile (in 2011 dollars) is assumed starting in 2025 as enacted by Congress to replace existing gas tax revenues.

10. Project Streamlining & Expediting: Support legislation to build upon the provisions of MAP-21 to continue to improve efficiency of environmental reviews, advance pre-construction activities, promote integrated planning and programming, and clarify environmental roles to eliminate duplication to further accelerate project delivery without compromising environmental review. Support America Fast Forward and policies allowing for the use of “design-build” where appropriate, combining projects to accelerate construction, expanded use of private funding partners, and allowing greater flexibility to purchase right of way ahead of the final NEPA decision, and to design at risk ahead of the NEPA decision.

Additionally, SCAG continues to support enhancement of existing programs to expedite the funding and delivery of projects throughout the region. This includes but is not limited to the America Fast Forward program championed by MTA, which allows communities to issue America Fast Forward bonds for local initiatives with a tax credit in order to secure favorable financing terms so that a large percentage of public resources are supporting immediate private sector job creation at the local level to deliver needed projects in an accelerated manner. Another example is support of an expanded Transportation Infrastructure Finance and Innovation Act (TIFIA) program, administered by FHWA, which provides credit assistance for qualified projects of regional and national significance. Eligible projects come from state and local governments, transit agencies, railroad companies, special authorities, special districts, and private entities. The TIFIA credit program offers secured (direct) loans, loan guarantees, and/or standby lines of credit for qualifying projects, providing supplemental and subordinate capital throughout their life-cycle. Innovative leveraging of funds such as those provided by AFF and the TIFIA program are an important component of the overall strategy to accelerate project delivery, relieve congestion, move people and goods, and create jobs.

STATE LEGISLATIVE MATRIX

SCAG maintains a state legislative bill matrix which is regularly updated throughout the legislative session that summarizes, tracks, and provides status of bills moving through the state legislature that are related to SCAG’s board adopted legislative priorities, as well as other bills sponsored by or of particular importance to SCAG’s regional partners. Legislative bills in the state bill matrix are sorted by bill number and by topic. The legislative bill matrix is posted to SCAG’s website and may be accessed at the following link: <http://www.scag.ca.gov/programs/Pages/LegislativeMatrix.aspx>

FISCAL IMPACT:

Work associated with this item is included in the current FY2013-14 Overall Work Program (14-10.0120.10).

ATTACHMENT:

None

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Energy and Environment Committee
of the
Southern California Association of Governments
April 3, 2014

Minutes

THE FOLLOWING MINUTES ARE A SUMMARY OF ACTIONS TAKEN BY THE ENERGY AND ENVIRONMENT COMMITTEE. A DIGITAL RECORDING OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.

The Energy and Environment Committee (EEC) held its meeting at the SCAG Los Angeles Office. The meeting was called to order by the Hon. James Johnson, Chair. There was a quorum.

Members Present

Hon. Lisa Bartlett, Dana Point (Vice-Chair)	TCA
Hon. Denis Bertone, San Dimas	SGVCOG
Hon. Margaret Clark, Rosemead	District 32
Hon. Larry Forester, Signal Hill	GCCOG
Hon. Laura Friedman, Glendale	Arroyo Verdugo Cities
Hon. Sandra Genis, Costa Mesa	OCCOG
Hon. Ed Graham, Chino Hills	District 10
Hon. James Johnson, Long Beach (Chair)	District 30
Hon. Linda Krupa, Hemet	WRCOG
Hon. Judy Mitchell, Rolling Hills Estates	District 40
Hon. Geneva Mojado, Soboba Band of Luiseno Indians	Tribal COG
Hon. Mike Munzing, Aliso Viejo	District 12
Hon. Carmen Ramirez, Oxnard	District 45
Hon. Lupe Ramos Watson, Indio	District 66
Hon. Deborah Robertson, Rialto	District 8
Hon. Jack Terrazas	Imperial County
Hon. Cheryl Viegas-Walker, El Centro	District 1
Hon. Diane Williams, Rancho Cucamonga	SANBAG
Hon. Edward Wilson, Signal Hill	Gateway Cities

Members Not Present

Hon. Jordan Ehrenkranz, Canyon Lake	WRCOG
Hon. Mitchell Englander, Los Angeles	District 59
Hon. Steve Hernandez, Coachella	CVAG
Hon. Thomas Martin, Maywood	GCCOG
Hon. Sam Pedroza, Claremont	SGVCOG
Hon. David Pollock, Moorpark	VCOG
Hon. Stephen Sammarco, Redondo Beach	SBCCOG
Mr. Steve Schuyler, ExOfficio	Building Industry Association

CALL TO ORDER & PLEDGE OF ALLEGIANCE

Hon. James Johnson, Chair, called the meeting to order at 10:09 a.m. Hon. Larry Forester, Signal Hill, led the Committee in the Pledge of Allegiance.

ELECTION OF CHAIR AND VICE-CHAIR

The Chair James Johnson, opened the election for Chair and Vice-Chair and noted that he will not seek the Chair position for a second term. Justine Block, Deputy Legal Counsel, stated that an advance call for nominations was made, and no one expressed interest in running for the positions. Ms. Block stated that the current Vice Chair is eligible to be elected to her position for a second consecutive year and opened nominations from the floor for either Chair or Vice-Chair. Hon. Bartlett expressed interest in serving a second term as Vice Chair and noted that her City Council term ends in November 2014.

A MOTION was made (Forester) to re-elect Hon. Bartlett as Vice Chair of the EEC Committee. The MOTION was SECONDED (Wilson) and UNANIMOUSLY APPROVED by the following vote:

AYES: Bartlett, Bertone, Clark, Forester, Friedman, Genis, Graham, Johnson, Krupa, Mitchell, Mojado, Munzing, Ramirez, Ramos-Watson, Robertson, Terrazas, Viegas-Walker, Williams, Wilson
NOES: None
ABSTAIN: None

A MOTION was made (Clark) to nominate Hon. Mike Munzing, Aliso Viejo, as Chair. The MOTION was SECONDED (Forester). A second MOTION was made (Viegas-Walker) to nominate Hon. Deborah Robertson, Rialto as Chair. The MOTION was SECONDED (Graham).

After statements were presented by the candidates the Committee used paper ballots for the election of Chair. Hon. Deborah Robertson had the majority of votes and was elected as Chair by the following vote:

AYES: Bartlett, Bertone, Friedman, Genis, Graham, Johnson, Krupa, Mitchell, Ramirez, Ramos-Watson, Robertson, Terrazas, Viegas-Walker, Williams, Wilson
NOES: Mojado, Clark, Forester, Munzing,
ABSTAIN: None

PUBLIC COMMENT PERIOD

James Enstrom, PhD, University of California Los Angeles (UCLA) and Scientific Integrity Institute, stated that there are various ways to look at the evidence of health effects of air pollution in California that is different than the way it is normally presented by the California Air Resources Board (ARB) and the South Coast Air Quality Management District (SCAQMD), and the US Environmental Protection Agency (EPA), and which has led him to question the way that EPA has established the federal air quality standards for PM2.5 and ozone. This was a focus of discussion at a Sustainable Goods Movement Symposium held in November 2013 in Palm Desert. Dr. Enstrom also alerted the Committee to a bill introduced to the US House of Representatives (H.R. 4012) intended to “prohibit the Environmental Protection Agency from proposing, finalizing, or disseminating regulations or assessments based upon science that is not transparent or reproducible.”

Matt Malkan, PhD, UCLA Department of Physics, stated his belief that there is a lack of a balanced approach to air quality regulations promulgated by ARB and SCAQMD with regard to whether there is in actuality a significant correlation between fine particles and negative health effects. His contention is that the economic costs are larger than the questionable benefits of the new regulations.

Tyson Eckerle, Zero Emission Infrastructure Project Manager, Governor's Office of Business & Economic Development, announced that the Governor's Office of Business and Economic Development is hosting a workshop on April 14, 2014, 8:30 a.m. – 1:30 p.m., at Toyota's Automobile Museum in Torrance focusing on hydrogen fuel and infrastructure. Details and registration is available at GoBizworkshop.eventbrite.com.

Leeor Alpern, SCAQMD, announced that the SCAQMD was having its annual Electric Lawn Mower Exchange Program. The first event will be held in Long Beach on May 3, 2014, and then continue on to Pasadena, Riverside, and Anaheim in the months of May through June. Additionally, the SCAQMD's Annual Clean Air Awards will be held in early October 2014. Nominations are now being accepted, the deadline will be in early June 2014. SCAQMD now has its "connected to clean air" app available. Download the free app at www.aqmd.gov.

REVIEW AND PRIORITIZE AGENDA ITEMS

INFORMATION ITEM

1. AB 32 Scoping Plan Update

Terry Roberts, Manager, Sustainable Communities Policy and Planning, ARB, reported that AB 32 required the ARB to adopt a Scoping Plan that would provide a guide for the entire state on how to meet its 2020 Greenhouse Gas (GHG) reduction goals. The initial Scoping Plan that was adopted in December 2008 focused on the 2020 goals and contained a balanced mix of strategies that looked at all the major sectors of the economy where greenhouse gas emissions were a major concern. The initial Scoping Plan prescribed specific measures and programs to achieve the 1910 GHG emission levels by 2020. Some of those measures were voluntary and some were regulatory. The law also requires that the ARB do an update to the Plan every five years, this process is currently underway.

Over the last five (5) years since the first Scoping Plan was adopted, the ARB has implemented a set of actions that are decreasing GHG emissions; cleaning the air; diversifying the energy; and fueling that power our society and spurring innovation in a range of advanced technologies. Some of the measures include the CAP and Trade and the Advanced Clean Cars and Low Carbon Fuel Standard.

Ms. Roberts emphasized that the Scoping Plan update is not an ARB plan or document but a state plan that involves the cooperation and collaboration of many different state departments and stakeholders. On March 14, 2014, ARB released the Environmental Assessment that goes with the February 10, 2014 update to the plan. Public comment deadline is April 28, 2014. Responses to comments will be posted on ARB's Scoping Plan comments website <http://www.arb.ca.gov/cc/scopignplan/2013comments.htm>. The ARB will hold a public hearing on May 22, 2014 to consider final action and adoption of the Scoping Plan Update.

2. San Bernardino Associated Governments (SANBAG) Regional Greenhouse Gas Reduction Plan Presentation

Steve Smith, SANBAG Planning Director, stated that on March 5, 2014 the San Bernardino Associated Governments (SANBAG) approved the San Bernardino County Regional Greenhouse Gas Reduction Plan (Regional GHG Plan) and certified the Environmental Impact Report (EIR)

for the Regional GHG Plan. Prepared in collaboration with twenty-one (21) San Bernardino County jurisdictions, the Regional GHG Plan is the first multi-jurisdictional, regional GHG plan with an EIR in California. It enables each of the participating cities to proceed with adopting its own Climate Action Plan (CAP), consistent with State guidelines. The Plan was prepared in response to AB 32 and also supports local implementation of SB 375.

Mr. Smith introduced SANBAG consultants Rich Walter, ICF, and Michael Hendrix, Atkins, to provide a brief update on the San Bernardino County Regional Greenhouse Gas Reduction Plan and EIR.

The Regional Greenhouse Gas Reduction Plan can be found at:
http://www.sanbag.ca.gov/planning2/plan_greenhouse.html

3. Western Riverside Council of Governments (WRCOG) Climate Action Plan (CAP) Presentation

Alexa Washburn, WRCOG Program Manager, stated that WRCOG received a \$410,000 sustainable communities planning grant from the Strategic Growth Council (SGC) to develop a Climate Action Plan (CAP) for Western Riverside County. It is a three year work program that WRCOG is expected to complete by September 2014. The Plan establishes policies and priorities which enable WRCOG's member jurisdictions to successful the requirements of AB 32 and SB 375.

Once the CAP is adopted in the summer of 2014 WRCOG will move into the implementation and monitoring phase where a tracking tool will be developed. This task will be funded through a SCAG Sustainability Grant. Public review of the Draft CAP is available for comments through April 30, 2014. The approval process of the draft will be in May and June 2014, followed by the SGC Grant to be completed in September 2014 at the same time embarking on Phase II which is the SCAG Sustainability Grant in which WRCOG is looking to integrate climate adaptation and resiliency strategies, link CAP measures to public health, and establish implementation and monitoring tools.

More information on the CAP can be found at, www.activeCAPwrcog.com

CONSENT CALENDAR

Approval Item

5. Minutes of the February 6, 2014 Meeting

A MOTION was made (Forester) to approve the Minutes. The MOTION was SECONDED (Robertson) and unanimously APPROVED by the following vote:

AYES: Bartlett, Bertone, Clark, Forester, Genis, Graham, Johnson, Krupa, Mitchell, Mojado, Munzing, Ramirez, Ramos-Watson, Robertson, Terrazas, Viegas-Walker, Williams, Wilson
NOES: None
ABSTAIN: None

Receive and File

6. 2014 Regional Council and Policy Committee Meeting Schedule
7. SCAG Sustainability Planning Grants Program – Monthly Update

A MOTION was made (Munzing) to accept the Receive and File items. The MOTION was SECONDED (Wilson) and unanimously APPROVED by the following vote:

AYES: Bartlett, Bertone, Clark, Forester, Genis, Graham, Johnson, Krupa, Mitchell, Mojado, Munzing, Ramirez, Ramos-Watson, Robertson, Terrazas, Viegas-Walker, Williams, Wilson
NOES: None
ABSTAIN: None

CHAIR'S REPORT – Hon. James Johnson thanked the EEC members for allowing him the honor of serving as Chair this past year.

STAFF REPORT

Jonathan Nadler, SCAG Staff, reminded EEC members who are not on the Regional Council (RC) that registration was open for SCAG's General Assembly, May 1-2, 2014, at the Renaissance Esmeralda Indian Wells Resort and Spa. Mr. Nadler reminded members to submit their FPPC 700 Form to Lillian Harris-Neal, Clerk of the Board.

FUTURE AGENDA ITEMS

Hon. Larry Forester, Signal Hill - Health Risk Assessment versus Health Risk Impact
Hon. Carmen Ramirez, Oxnard – Landfills as they relate to Greenhouse Gas emissions and Methane gas as an energy source

ANNOUNCEMENTS – Hon. Cheryl Viegas-Walker, El Centro, announced that there will be a tour of the Salton Sea on the morning of April 30, 2013. Seating is limited.

ADJOURNMENT

Hon. James Johnson adjourned the meeting at 11:52 a.m.

The next meeting of the Energy & Environment Committee will be held on Thursday, June 5, 2014 at the SCAG Los Angeles Office.

Action Minutes Approved by:


Jonathan Nadler, Manager
Compliance & Performance Monitoring

Energy and Environment Committee Attendance Report

2014

Member (including Ex-Officio) LastName, FirstName	Date Appointed if after 1/1/14	Representing	X = County Represented						X = Attended Black Shading = Dark												Total Mtgs Attended				
			Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec					
Bartlett, Lisa		OCCOG			X				X	X		X												3	
Bertone, Denis		SGVCOG		X					X	X	X	X	G												4
Clark, Margaret		Rosemead		X					X	X	X	X	E												4
Ehrenkranz, Jordan		WRCOG					X		X	X	X		N												3
Englander, Mitchell		Los Angeles		X									E												
Forester, Larry		Gateway Cities		X						X	X	X	R												3
Friedman, Laura		AVCOG		X					X	X	X	X	A												4
Genis, Sandra		OCCOG			X				X	X	X	X	L												4
Graham, Ed		Chino Hills						X				X													1
Hernandez, Steven		CVAG						X					A												
Johnson James		Long Beach		X					X	X	X	X	S												4
Krupa, Linda		Hemet					X				X	X	S												2
Martin, Thomas		GCCOG		X					X	X	X		E												3
Mitchell, Judy		SBCCOG		X					X	X	X	X	M												4
Mojado, Geneva	2/1/2014	Tribal COG								X	X	X	B												3
Munzing, Mike		District 12			X				X	X	X	X	L												4
Pedroza, Sam		SGVCOG		X							X		Y												1
Pollock, David		VCOG						X	X	X	X														3
Ramirez, Carmen		Oxnard						X	X	X	X	X													4
Ramos Watson, Lupe		CVAG					X		X	X	X	X													4
Robertson, Deborah		District 8						X		X	X	X													3
Sanmarco, Stephen		SBCCOG		X					X	X															2
Schuyler, Steve	2/1/2014	BIASC								X															1
Terrazas, Jack		Imperial County	X						X	X	X	X													4
Viegas Walker, Cheryl		El Centro	X						X	X	X	X													4
Williams, Diane		SANBAG						X	X	X	X	X													4
Wilson, Edward		Signal Hill		X					X	X	X	X													4
TOTALS			2	11	3	3	4	2																	

SOUTHERN CALIFORNIA



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2014 MEETING SCHEDULE

REGIONAL COUNCIL AND POLICY COMMITTEES

All Regular Meetings are scheduled on the <u>1st Thursday of each month, except for September*</u>	
Executive/Administration Committee (EAC)	9:00 AM – 10:00 AM
Community, Economic and Human Development Committee (CEHD)	10:00 AM – 12:00 PM
Energy and Environment Committee (EEC)	10:00 AM – 12:00 PM
Transportation Committee (TC)	10:00 AM – 12:00 PM
Regional Council (RC)	12:15 PM – 2:00 PM

January 2, 2014

February 6, 2014

March 6, 2014

April 3, 2014

**May 1 – 2, 2014
 (SCAG 2014 Regional Conference & General Assembly)**

June 5, 2014

DARK IN JULY

August 7, 2014

September 11, 2014*
 (Note: League of California Cities Annual Conference in Los Angeles, Sept. 3 – 5)

October 2, 2014

November 6, 2014

December 4, 2014

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DATE: June 5, 2014

TO: Regional Council (RC)
Executive/Administration Committee (EAC)
Community, Economic, and Human Development (CEHD) Committee
Energy and Environment Committee (EEC)
Transportation Committee (TC)

FROM: Hasan Ikhata, Executive Director, ikhata@scag.ca.gov, 213-236-1944

SUBJECT: SCAG Sustainability Planning Grants Program – Monthly Update

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

Receive and File.

EXECUTIVE SUMMARY:

SCAG is providing a monthly update (attached) regarding the successful implementation of the 73 Sustainability Grants to member agencies. Forty-four (44) of the seventy-three (73) SCAG-approved Sustainability Planning Grants were funded in the fall of 2013. At the time this report was distributed, forty-four (44) grant projects have had Scopes of Work developed and finalized; forty-two (42) grant projects have had Request for Proposals (RFPs) released; twenty-five (25) grant projects have selected consultants; and thirteen (13) grant projects have had contracts executed. SCAG staff intends to have all contracts executed by the end of the fiscal year.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; and Goal 4: Develop, Maintain and Promote the Utilization of State of the Art Models, Information Systems and Communication Technologies.

BACKGROUND:

On September 12, 2013, the Regional Council approved seventy-three (73) Sustainability Planning Grant projects and directed staff to proceed with funding projects with available funds for Phases I and Phase II projects (total of 44 projects). The remaining projects will be part of Phase III and will proceed as additional funds become available in FY 2014-2015.

SCAG staff is providing monthly updates to the Board regarding implementation of the seventy-three (73) grants. At the time this report was distributed, forty-four (44) grant projects have had scopes of work developed in partnership with the cities, forty-two (42) grant projects have had RFPs released, twenty-five (25) grant projects have consultants selected and thirteen (13) grant projects have completed negotiations and have contracts executed. SCAG staff intends to have all contracts executed by the end of the fiscal year.

FISCAL IMPACT:

Funding is included in SCAG's FY 2013-14 Overall Work Program (OWP) Budget. Staff's work budget for the current fiscal year are included in FY 2013-14 OWP 065.SCG02663.02.

ATTACHMENT:

Summary Progress Chart

SCAG Sustainability Planning Grants

May 6, 2014

Regional Council Progress Update

Rank	Applicant	Project	Working / Last Contact	Scope	RFP	Selection	Contract
Phase 1 (Available funds FY 13-14)							
1	San Bernardino County	Bloomington Area Valley Blvd. Specific Plan Health and Wellness Element - Public health; Active transportation; Livability; Open space	x	x	x	x	x
2	Los Angeles - Department of City Planning	Van Nuys & Boyle Heights Modified Parking Requirements - Economic development; TOD; Livability	x	x	x	x	x
3	Los Angeles - Department of City Planning	Bicycle Plan Performance Evaluation - Active transportation; performance measures	x	x	x	x	x
4	Western Riverside Council of Governments	Public Health: Implementing the Sustainability Framework - Public health; Multi-jurisdiction coordination; Sustainability	x	x	x	x	
5	Santa Ana	Complete Streets Plan - Complete streets; Active transportation; Livability	x	x	x	x	x
6	San Bernardino Associated Governments	Climate Action Plan Implementation Tools - GHG reduction; Multi-jurisdiction coordination; Implementation	x	x	x	x	x
7	Riverside	Restorative Growthprint Riverside - GHG reduction; Infrastructure investment; Economic development	x	x	x	x	x
8	Orange County Parks	Orange County Bicycle Loop - Active transportation; Multi-jurisdictional; Public health	x	x	x	x	x
9	Ventura County	Connecting Newbury Park - Multi-Use Pathway Plan - Active transportation; Public health; Adaptive re-use	x	x	x	x	x
10	Imperial County Transportation Commission	Safe Routes to School Plan - Multi-modal; Active transportation	x	x			

Rank	Applicant	Project	Working /				
			Last Contact	Scope	RFP	Selection	Contract
11	Yucaipa	College Village/Greater Dunlap Neighborhood Sustainable Community - Complete Streets; TOD	x	x	x	x	x
12	Las Virgenes-Malibu Council of Governments	Multi-Jurisdictional Regional Bicycle Master Plan - Active transportation; Public health; Adaptive re-use	x	x	x	x	x
13	Eastvale	Bicycle & Pedestrian Master Plan - Active Transportation	x	x	x	x	
14	West Covina	Downtown Central Business District - Multi-modal; Active transportation	x	x			
15	Placentia	General Plan/Sustainability Element & Development Code Assistance - General Plan Update; Sustainability Plan	x	x	x	x	x
16	Paramount/Bellflower	Regional Bicycle Connectivity - West Santa Ana Branch Corridor - Active transportation; multi-jurisdiction	x	x	x	x	
17	Costa Mesa	Implementation Plan for Multi-Purpose Trails - Active Transportation	x	x	x	x	x
Phase 2 (Available funds)							
18	Fullerton	East Wilshire Avenue Bicycle Boulevard - Active transportation; Livability; Demonstration project	x	x	x		
19	Beaumont	Climate Action Plan - GHG reduction	x	x	x	x	
20	Palm Springs	Sustainability Master Plan Update - Leverages larger effort; commitment to implement	x				
21	Big Bear Lake	Rathbun Corridor Sustainability Plan - Multi-modal; Economic development; Open space	x	x	x		
22	Western Riverside Council of Governments	Land Use, Transportation, and Water Quality Planning Framework - Integrated planning, Sustainability	x	x	x		
23	Anaheim	Bicycle Master Plan Update - Active transportation	x	x	x	x	x

Rank	Applicant	Project	Working /				
			Last Contact	Scope	RFP	Selection	Contract
24	Ontario	Ontario Airport Metro Center - Multi-modal; Visualization; Integrated planning	x				
25	Coachella Valley Association of Governments	CV Link Health Impact Assessment - Active transportation; Public health; Multi-jurisdiction	x	x	x	x	
26	San Bernardino Associated Governments	San Bernardino Countywide Complete Streets Strategy - Multi-modal; Livability; Multi-jurisdiction	x	x	x		
27	Chino Hills	Climate Action Plan and Implementation Strategy - GHG reduction; Implementation; Sustainability	x	x	x	x	
28	Coachella	La Plaza East Urban Development Plan - Mixed-use, TOD, Infill	x	x	x		
29	South Bay Bicycle Coalition/Hermosa, Manhattan, Redondo	Bicycle Mini-Corral Plan - Active transportation; implementable; good value	x	x	x		
30	Hawthorne	Crenshaw Station Area Active Transportation Plan and Overlay Zone - Multi-modal; Active transportation; GHG reduction	x	x	x		
31	Chino	Bicycle & Pedestrian Master Plan - Multi-modal; Active transportation	x	x	x	x	
32	Stanton	Green Planning Academy - Innovative; Sustainability; Education & outreach	x	x	x		
33	Hermosa Beach	Carbon Neutral Plan - GHG reduction; Sustainability	x	x	x		
34	Palm Springs	Urban Forestry Initiative - Sustainability; Unique; Resource protection	x	x	x		
35	Orange County	"From Orange to Green" - County of Orange Zoning Code Update - Sustainability; implementation	x	x	x		
36	Calimesa	Wildwood and Calimesa Creek Trail Master Plan Study - Active transportation; Resource protection	x	x	x		

Rank	Applicant	Project	Working /				
			Last Contact	Scope	RFP	Selection	Contract
37	Western Riverside Council of Governments	Climate Action Plan Implementation - GHG Reduction; Multi-jurisdiction; implementation	x	x	x	x	
38	Lynwood	Safe and Healthy Community Element - Public health & safety, General Plan update	x	x	x	x	
39	Palmdale	Avenue Q Feasibility Study - Mixed-use; Integrated planning	x	x	x		
40	Long Beach	Willow Springs Wetland Habitat Creation Plan - Open Space; Resource protection	x	x	x		
41	Indio	General Plan Sustainability and Mobility Elements - Sustainability; Multi-modal, General Plan update	x	x	x		
42	Glendale	Space 134 - Open space/Freeway cap; Multi-modal	x	x	x		
43	Rancho Palos Verdes/City of Los Angeles	Western Avenue Corridor Design Implementation Guidelines - Urban Infill; Mixed-use; Multi-modal	x	x	x	x	
44	Moreno Valley	Nason Street Corridor Plan - Multi-modal; Economic development	x	x	x	x	
Phase 3 (Pending additional funds)							
45	Park 101/City of Los Angeles	Park 101 District - Open space/Freeway cap; Multi-modal	Oct-13				
46	Los Angeles/San Fernando	Northeast San Fernando Valley Sustainability & Prosperity Strategy - Multi-jurisdiction; Economic development; Sustainability	x				
47	San Dimas	Downtown Specific Plan - Mixed use; Infill	Oct-13				
48	Los Angeles - Department of City Planning	CEQA Streamlining: Implementing the SCS Through New Incentives - CEQA streamlining	Oct-13				
49	Pico Rivera	Kruse Road Open Space Study - Open space; Active transportation	Oct-13				

Rank	Applicant	Project	Working /				
			Last Contact	Scope	RFP	Selection	Contract
50	South Bay Cities Council of Governments	Neighborhood-Oriented Development Graphics - public outreach	Oct-13				
51	San Bernardino Associated Governments	Safe Routes to School Inventory - Active transportation; Public health	Oct-13				
52	Burbank	Mixed-Use Development Standards - Mixed use; Urban infill	x				
53	San Bernardino Associated Governments	Countywide Habitat Preservation/Conservation Framework - Open Space; Active Transportation	Oct-13				
54	Rancho Cucamonga	Healthy RC Sustainability Action Plan - Public health; implementation	x				
55	Pasadena	Form-Based Street Design Guidelines - Complete Streets; Multi-modal; Livability	x				
56	South Gate	Gateway District/Eco Rapid Transit Station Specific Plan - Land Use Design; Mixed Use; Active Transportation	Oct-13				
57	Lancaster	Complete Streets Master Plan - Complete Streets Plan	x				
58	Rancho Cucamonga	Feasibility Study for Relocation of Metrolink Station - Transit Access	Oct-13				
59	Santa Clarita	Soledad Canyon Road Corridor Plan - Land Use Design; Mixed Use Plan	Oct-13				
60	Seal Beach	Climate Action Plan - Climate Action Plan	x				
61	La Mirada	Industrial Area Specific Plan - Land Use Design	Oct-13				
62	Hemet	Downtown Hemet Specific Plan - Land Use Design; Mixed Use Plan	x				
63	Hollywood Central Park/City of Los Angeles	Hollywood Central Park EIR - Open Space/Freeway Cap; Multi-modal	Oct-13				
64	Desert Hot Springs	Bicycle/Pedestrian Beltway Planning Project - Active Transportation	x				

		Working /					
Rank	Applicant	Project	Last Contact	Scope	RFP	Selection	Contract
65	Cathedral City	General Plan Update - Sustainability - General Plan Update; Sustainability Plan	Oct-13				
66	Westminster	General Plan Update - Circulation Element - General Plan Update; Complete Streets	x				
67	La Canada Flintridge	Climate Action Plan - Climate Action Plan	Oct-13				
68	Huntington Beach	Neighborhood Electric Vehicle Plan - Electric Vehicle	Oct-13				
69	Pasadena	Green House Gas (GHG) Emission Reduction Evaluation Protocol - Climate Action Plan	Oct-13				
70	San Bernardino Associated Governments	Countywide Bicycle Route Mobile Application - Active Transportation	Oct-13				
71	Dana Point	General Plan Update - General Plan Update	Oct-13				
72	Garden Grove	RE:IMAGINE Downtown - Pedals & Feet - Active Transportation; Infill	x				
73	Barstow	Housing Element and Specific Plan Update - Housing; Land Use Design	Oct-13				
						Working	55
						Scope	44
						RFP	42
						Selection	25
						Contract	13

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DATE: June 5, 2014

TO: Energy and Environment Committee (EEC)

FROM: Rongsheng Luo, Program Manager, (213) 236-1994, luo@scag.ca.gov

SUBJECT: Greenhouse Gas (GHG) Emission Standards for Light-Duty Vehicles: Manufacturer Performance Report for the 2012 Model Year

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

Receive and File Only – No Action Required.

EXECUTIVE SUMMARY:

On April 25, 2014, the U.S. Environmental Protection Agency (EPA) released the first annual Manufacturer Performance Report that assesses the automobile industry's progress toward meeting greenhouse gas (GHG) emissions standards for cars and light trucks in the 2012 model year. The report reveals that consumers bought cleaner vehicles in the first year of the program than the 2012 GHG standard required. The staff report includes background and key findings of the report.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective a: Create and facilitate a collaboration and cooperative environment to produce forward thinking regional plans.

BACKGROUND:

The U.S. Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) jointly established a National Program consisting of standards for light-duty vehicles that reduce GHG emissions and improve fuel economy. EPA's GHG rules for light-duty vehicles require compliance with progressively more stringent GHG emission standards for the 2012 through 2025 model years. The annual report provides substantial detail on manufacturer performance in meeting the 2012 standards - the first year of this fourteen year program.

The GHG standards include certain flexibilities, including credit transfers across years and between fleets (within a manufacturer), credit trading between manufacturers, and credits for air conditioning improvements, which allow greater emissions reductions, lower compliance costs, and more consumer choice, as well as temporary incentives for flexible-fueled vehicles. Because the program allows credits and deficits to be carried into future years, at the close of the 2012 model year all manufacturers are considered to be in compliance with the program. Final compliance status for 2012 will not be determined until 2015.

The key findings of the Manufacturer Performance Report are:

- Automakers' overall GHG performance was, on average, 286 grams of GHG/mile, 9.8 grams of GHG/mile better than what the 2012 standards required.

REPORT

- Companies are using the optional flexibilities that allow credit transfers across years and between fleets (within a manufacturer), credit trading between manufacturers, credits for air conditioning improvements, and credits for flexible fuel vehicles.
- Only one relatively small automaker has a negative overall credit balance at the end of model year 2012. This company is still considered to be in compliance because of the multi-year nature of the current regulation.

California allows auto manufacturers to comply with the Federal GHG rule or the California GHG rule for light-duty vehicles, and all automakers have chosen to comply with the Federal GHG rule.

FISCAL IMPACT:

Work associated with this item is included in the current Fiscal Year 2013-14 Overall Work Program (14-025.SCG00164: Air Quality Planning and Conformity).

ATTACHMENT:

Executive Summary of Greenhouse Gas Emission Standards for Light-Duty Vehicles: Manufacturer Performance Report for the 2012 Model Year.

Greenhouse Gas Emission Standards for Light-Duty Vehicles

Manufacturer Performance Report for the **2012** Model Year



EPA-420-R-14-011 April 2014

Fisker
Porsche
Toyota
Honda
Mazda
Ford
Subaru
General Motors
Mitsubishi
Nissan
Volkswagen
BMW
Chrysler
Volvo
Mercedes-Benz
Suzuki
Jaguar
Land Rover
Ferrari
Coda
Tesla
Fisker
Porsche
Toyota
Honda
Mazda
Ford
Subaru
General Motors
Mitsubishi
Nissan
Volkswagen
BMW
Chrysler
Volvo
Mercedes-Benz
Suzuki
Jaguar
Land Rover
Ferrari
Coda
Tesla
Fisker
Porsche
Toyota
Honda

Greenhouse Gas Emission Standards for Light-Duty Vehicles

Manufacturer Performance Report for the **2012** Model Year

NOTICE:

This technical report does not necessarily represent final EPA decisions or positions. It is intended to present technical analysis of issues using data that are currently available. The purpose in the release of such reports is to facilitate the exchange of technical information and to inform the public of technical developments.

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Executive Summary

On May 7, 2010, the Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) issued a joint Final Rule to establish a National Program with new standards for light-duty vehicles that reduce greenhouse gas emissions and improve fuel economy.¹ EPA finalized greenhouse gas emissions (GHG) standards under its authority in the Clean Air Act, and NHTSA finalized Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act of 1975, as amended (EPCA). These standards apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016, and represent the first phase of the EPA and NHTSA joint harmonized National Program. On October 15, 2012, EPA and NHTSA issued a subsequent rulemaking further reducing greenhouse gas emissions and improving the fuel economy of light-duty vehicles for model years 2017–2025, building on the success of the first phase of the joint National Program.²

In March 2013, EPA released a report documenting manufacturers' use of the early credit provisions allowed under the GHG standards for the 2009-2011 model years.³ EPA is releasing this subsequent report as part of our continuing commitment to provide the public with transparent and timely information about manufacturers' compliance with the GHG program. This report summarizes the information presented in the March 2013 report and presents substantial detail regarding the performance of the manufacturers towards meeting GHG standards in the 2012 model year – the first model year of the standards. As was the case with the March 2013 report, we are excluding Hyundai and Kia data because of the ongoing investigation into their testing methods. This report is also a reference for users of the GHG credits data, which we are making available in formats appropriate for importing into spreadsheets or database applications.⁴ Similarly, information on the CAFE program can be downloaded from the NHTSA website.⁵

The 2012 model year was the first year of a 14-year program to reduce the greenhouse gas emissions from new light-duty vehicles. Because the program allows credits and deficits to be carried into future years, at the close of the 2012 model year no manufacturer is considered to be out of compliance with the program. We intend to report annually on the status of manufacturers and their compliance with the program.

¹ Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, Final Rule, Federal Register 75 (7 May 2010): 25324-25728.

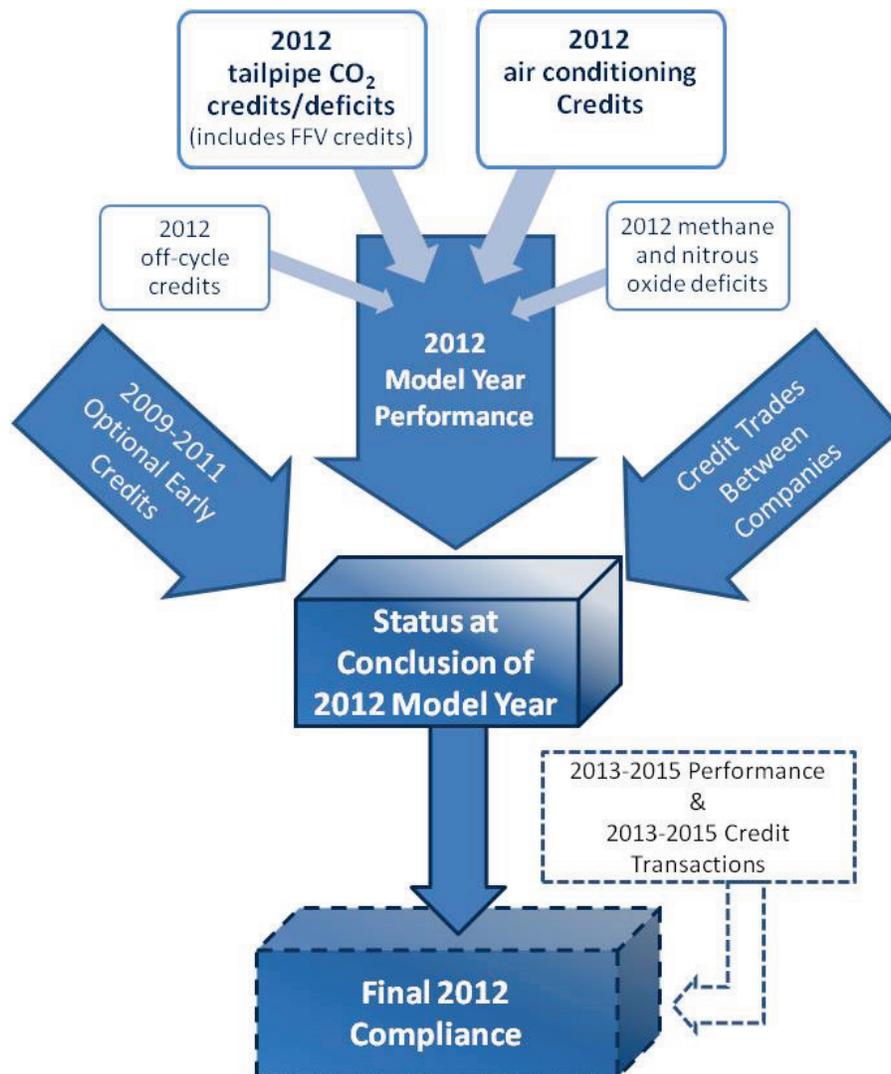
² The CO₂ standards for the 2022-2025 model years are subject to future evaluation under 40 CFR 86.1818-12(h), which describes the “mid-term evaluation” process. This mid-term evaluation, which will be completed by April 1, 2018, will include an opportunity for public comment and will be carried out jointly with NHTSA as they are similarly required to evaluate the augural CAFE standards for model years 2022-2025 under their regulations. EPA and NHTSA also expect to involve the California Air Resources Board, recognizing the agency's interest “in maintaining the National Program to address GHG emissions and fuel economy” (see 77 FR 62628, October 15, 2012).

³ Greenhouse Gas Emission Standards for Light-Duty Automobiles: Status of Early Credit Program for Model Years 2009-2011, Compliance Division, Office of Transportation and Air Quality, U.S. Environmental Protection Agency, Report No. EPA-420-R-13-005, March 2013.

⁴ This report and the data upon which it is based can be found and downloaded at <http://www.epa.gov/otaq/regs/ld-hwy/greenhouse/ld-ghg.htm>.

⁵ <http://www.nhtsa.gov/fuel-economy>.

Process for Determining a Manufacturer's 2012 Model Year Compliance Status



There are a number of inputs and a multi-year process to determine manufacturer compliance with the light-duty vehicle GHG emission standards. The majority of this report focuses on detailing the 2012 performance of manufacturers, which includes the following:

- CO₂ exhaust emission performance, including credits for flexible fuel vehicles, relative to a fleet average CO₂ standard (resulting in credits or deficits);
- GHG reductions (credits) from improvements to air conditioning systems that reduce refrigerant leakage or improve system efficiency;
- “Off-cycle” CO₂ emission reductions (credits) from technology improvements that can’t be sufficiently measured by EPA test procedures; and
- GHG deficits from meeting alternative methane or nitrous oxide standards.

The aggregation of all of these elements represents a manufacturer’s 2012 model year performance. But this is only an intermediate step, a single model year snapshot, the results of

which do not define compliance or lack thereof. Once the 2012 model year performance is determined, a manufacturer can apply credits available from prior model years (in the case of the 2012 model year, these are credits from the 2009-2011 optional early credits program). In addition, a manufacturer may purchase credits from another manufacturer. When credits from these two sources are added to credits (or deficits) resulting from 2012 model year performance, the result is the status at the conclusion of the 2012 model year. This status is discussed in the concluding section of this report. Finally, because a 2012 model year deficit can be carried forward into the 2015 model year, compliance with the 2012 model year standards can't be fully assessed until the end of the 2015 model year. Thus compliance with the 2012 model year may depend on performance in each of the 2013-2015 model years as well as on credit purchases made in those model years.

2012 Model Year Performance – Does Not Include Impact of Credit Trades or Credit Transfers from Prior Model Years

Manufacturer	2012 Total Vehicle Production	Net 2012 Credits (Mg)	Grams/Mile Equivalent
Tesla	2,952	178,517	309.7
Coda	115	5,524	246.0
Fisker	1,415	46,694	169.0
Porsche*	29,873	198,348	31.8
Toyota	2,020,248	13,163,009	31.6
Honda	1,540,579	7,851,251	24.9
Mazda	279,004	734,887	13.0
Ford	1,754,323	4,333,951	11.9
Subaru	270,012	543,316	9.4
General Motors	2,364,374	2,872,354	5.9
Mitsubishi	64,467	57,837	4.5
Nissan	1,228,164	(729,937)	(2.9)
Volkswagen	565,572	(502,495)	(4.5)
BMW	257,010	(291,272)	(5.6)
Chrysler	1,533,883	(1,892,184)	(5.7)
Volvo	71,807	(175,195)	(12.0)
Mercedes-Benz*	255,405	(748,723)	(14.3)
Suzuki	31,263	(127,699)	(20.3)
Jaguar Land Rover*	54,561	(424,032)	(35.5)
Ferrari*	1,510	(40,983)	(139.0)
Total	12,326,537	25,053,168	9.8

* These companies are using a temporary program that allows all or part of their fleet to be subject to less stringent standards. See Section 3.1.2.

Manufacturers cumulatively generated almost 39 million Megagrams (metric tons, or Mg) of GHG credits in the 2012 model year, as well as almost 14 million Mg of deficits, yielding a net

positive total for the model year of about 25 million Mg of GHG credits, as shown above.⁶ On a gram per mile basis, this quantity of credits represents a net industry over-compliance with the 2012 model year CO₂ standards of about 10 grams/mile. This industry-wide over-compliance means that consumers bought vehicles with lower greenhouse gas emissions than the 2012 model year standards required.

In this first year a credit trading market emerged within the program. Six manufacturers participated in credit transactions as buyers or sellers of credits. This is the first time in an EPA light-duty vehicle emissions standards program that credit trading activity has occurred on such a scale, and it is clear that buying credits may be an important way for some manufacturers to bring their fleet into compliance and an incentive for other manufacturers to bring lower GHG vehicles to market early. Credit trading activity is detailed in this report.

Manufacturers widely utilized the optional provisions in the program that allow them to generate CO₂ credits. This is especially true of the optional flexible fuel vehicle (FFV) and air conditioning (A/C) credits, which EPA anticipated would be widely used in the early years of the program.⁷ Only one manufacturer reported off-cycle credits (which had been previously approved by EPA, as required) but the volume of these credits is less than 0.03 percent of the total net credit volume.

In the rulemaking for the 2012-2016 model years, we projected a fleet-wide standard of 295 grams/mile and that the industry as a whole would just meet that level (including the use of air conditioning and FFV credits).⁸ In fact, the fleet-wide 2012 model year standard (based on sales and footprint values for individual models) was 296 grams/mile, or 1 gram/mile higher than what we predicted. However, the actual performance for the 2012 model year was 286 grams/mile, or 9 grams/mile better than our rulemaking projection.⁹ The 2012 standard also represents a significant level of greenhouse gas reductions relative to the performance of manufacturers in the 2011 model year. Overall, the industry lowered tailpipe GHG emissions in model year 2012 relative to 2011 by about 19 grams/mile.¹⁰

⁶ Because of the division between cars and trucks, the total credits and total deficits cannot be determined from this table, which shows only the net credits by manufacturer. Total credits and deficits are described in Section 3, Tables 3-1 and 3-2.

⁷ Credits for flexible fuel vehicles are similar to those in the CAFE program, but are only applicable through the 2015 model year. See Section 4.1.3 for more information.

⁸ Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, Final Rule, Federal Register 75 (7 May 2010): 25324-25728. See Table I.B.2-4, page 25331.

⁹ For the purpose of making an appropriate comparison to the rulemaking values, the fleet-wide values cited in this paragraph include Hyundai and Kia data, using estimates for some vehicles subject to the ongoing EPA enforcement action. Final model year 2011-2013 values for Hyundai and Kia have not been determined.

¹⁰ "Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 Through 2013," U.S. EPA-420-R-13-011, Office of Transportation and Air Quality, December 2013 (Table 4.5, p. 38). Because this is the first year of the GHG program, there is no national data from the 2011 model year for comparison, thus in this first year we are referencing EPA's "Trends" report for a year-to-year comparison. While the Trends report does not provide formal compliance data, Table 4.5 of the Trends report shows that unadjusted, industry-wide (including Hyundai and Kia) CO₂ emissions (not reflecting any credits) were 19 grams/mile lower in model year 2012 relative to model year 2011. Part of this reduction reflects a higher car share of the market in 2012; unadjusted car fleet CO₂ emissions dropped by 17 grams/mile and unadjusted truck fleet CO₂ emissions decreased by four grams/mile. In subsequent years we will be able to compare year-to-year data from EPA's GHG program.

Looking at the 2012 model year performance only (i.e., what manufacturers did with 2012 models, as represented by the center top arrow in the figure above), half the manufacturers had a net deficit. However, the early optional credits from the 2009-2011 model years and credit purchases enabled all but one manufacturer to offset 2012 model year deficits and have credits remaining to carry forward to use in a future model year.

After accounting for the transfer of credits from the early credit program (2009-2011 model years), and for credits from optional credit provisions and credit transactions with other manufacturers, all but one manufacturer (Jaguar Land Rover) finished the 2012 model year with credits remaining to carry over to use in the 2013 or later model years. The table below shows the compliance status of each manufacturer at the conclusion of the 2012 model year.

Status of Manufacturers at the Conclusion of the 2012 Model Year – Includes the Impact of Credit Trades and Credit Transfers from Prior Model Years

Manufacturer	Credits from 2009-2011 Model Years (Mg)	Total Credits from 2012 Model Year (Mg)*	Net Credits Carried Forward to 2013 Model Year (Mg)[†]
Toyota	80,266,189	13,163,009	93,429,198
Honda	35,425,108	7,851,251	43,276,359
General Motors	24,564,829	2,872,354	27,437,183
Ford	15,296,436	4,333,951	19,630,387
Nissan	17,631,200	(979,937)	16,651,263
Chrysler	9,610,207	(1,892,184)	7,718,023
Subaru	5,755,171	543,316	6,298,487
Mazda	5,482,642	734,887	6,217,529
Volkswagen	6,441,405	(502,495)	5,938,910
Mitsubishi	1,449,336	57,837	1,507,173
Suzuki	876,650	(127,699)	748,951
BMW	884,903	(291,272)	593,631
Volvo	740,358	(175,195)	565,163
Porsche	-	198,348	198,348
Mercedes-Benz	428,044	(320,782)	107,262
Fisker	-	46,694	46,694
Ferrari	90,000	(40,983)	49,017
Coda	-	5,524	5,524
Tesla [‡]	-	576	576
Jaguar Land Rover	-	(424,032)	(424,032)
Total	204,942,478	25,053,168	229,995,646

* Credits include all those available and used by the manufacturer, including credits from flexible fuel vehicles, air conditioning systems, off-cycle technologies, and deficits from CH₄ and N₂O standards.

[†] Includes the impact of credit trades with other manufacturers, if any.

[‡] Tesla generated credits in the 2010-2012 model years, but sold all of them. They also sold most of their 2012 model year credits. See Sections 2 and 3.1.1.

DATE: June 5, 2014
TO: Energy and Environment Committee (EEC)
FROM: Rongsheng Luo, Program Manager, (213) 236-1994, luo@scag.ca.gov
SUBJECT: U.S. and California Greenhouse Gas Emissions Reports

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

Receive and File Only – No Action Required.

EXECUTIVE SUMMARY:

On April 15, 2014, the U.S. Environmental Protection Agency (EPA) published the 19th annual U.S. greenhouse gas (GHG) inventory. The report, Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2012, tracks total annual U.S. emissions and removals by source, economic sector, and greenhouse gas from 1990 through 2012. The staff report includes background and key findings of the report.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective a: Create and facilitate a collaboration and cooperative environment to produce forward thinking regional plans.

BACKGROUND:

In 1992, the United States signed and ratified the United Nations Framework Convention on Climate Change (UNFCCC). The ultimate objective of the Convention is to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." By ratifying, parties to the Convention are committed to "develop, periodically update, publish and make available...national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies." EPA prepares the annual inventory to fulfill these commitments.

Based on national energy data, data on national agricultural activities, and other national statistics, this report provides a comprehensive accounting of total GHG emissions for all man-made sources in the United States (no breakdown by state) since 1990. The annual U.S. GHG emissions inventory is comparable to those of other UNFCCC Parties.

The key findings of the 1990-2012 U.S. Inventory include:

- In 2012, U.S. GHG emissions totaled 6,526 million metric tons CO2 equivalent.
- U.S. emissions decreased by 3.4 percent from 2011 to 2012. Recent trends can be attributed to multiple factors including reduced emissions from electricity generation, improvements in fuel efficiency in vehicles with reductions in miles traveled, and year-to-year changes in the prevailing weather.
- Total US GHG emissions in 2012 were 10 percent below 2005 levels.

REPORT

California Air Resources Board (ARB) is expected to release its next edition of California's GHG emission inventory for years 2011 to 2012 later this year. Upon its release, staff will prepare a similar staff report including a comparison with the U.S. GHG emission inventory.

FISCAL IMPACT:

Work associated with this item is included in the current FY2013/14 Overall Work Program (14-025.SCG00164: Air Quality Planning and Conformity).

ATTACHMENT:

Executive Summary of Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2012

Executive Summary

An emissions inventory that identifies and quantifies a country's primary anthropogenic¹ sources and sinks of greenhouse gases is essential for addressing climate change. This inventory adheres to both (1) a comprehensive and detailed set of methodologies for estimating sources and sinks of anthropogenic greenhouse gases, and (2) a common and consistent mechanism that enables Parties to the United Nations Framework Convention on Climate Change (UNFCCC) to compare the relative contribution of different emission sources and greenhouse gases to climate change.

In 1992, the United States signed and ratified the UNFCCC. As stated in Article 2 of the UNFCCC, “The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”²

Parties to the Convention, by ratifying, “shall develop, periodically update, publish and make available... national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies...”³ The United States views this report as an opportunity to fulfill these commitments.

This chapter summarizes the latest information on U.S. anthropogenic greenhouse gas emission trends from 1990 through 2012. To ensure that the U.S. emissions inventory is comparable to those of other UNFCCC Parties, the estimates presented here were calculated using methodologies consistent with those recommended in the Revised 1996 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories (IPCC/UNEP/OECD/IEA 1997), the *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* (IPCC 2000), and the *IPCC Good Practice Guidance for Land Use, Land-Use Change, and Forestry* (IPCC 2003). Additionally, the U.S. emission inventory has continued to incorporate new methodologies and data from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 2006). The use of the most recently published calculation methodologies by the IPCC, as contained in the 2006 IPCC Guidelines, is considered to improve the rigor and accuracy of this inventory and is fully in line with the prior IPCC guidance. The structure of this report is consistent with the UNFCCC guidelines for inventory reporting.⁴ For most

¹ The term “anthropogenic,” in this context, refers to greenhouse gas emissions and removals that are a direct result of human activities or are the result of natural processes that have been affected by human activities (IPCC/UNEP/OECD/IEA 1997).

² Article 2 of the Framework Convention on Climate Change published by the UNEP/WMO Information Unit on Climate Change. See <<http://unfccc.int>>.

³ Article 4(1)(a) of the United Nations Framework Convention on Climate Change (also identified in Article 12). Subsequent decisions by the Conference of the Parties elaborated the role of Annex I Parties in preparing national inventories. See <<http://unfccc.int>>.

⁴ See <<http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf>>.

source categories, the IPCC methodologies were expanded, resulting in a more comprehensive and detailed estimate of emissions.

Box ES- 1: Methodological Approach for Estimating and Reporting U.S. Emissions and Sinks

In following the UNFCCC requirement under Article 4.1 to develop and submit national greenhouse gas emissions inventories, the emissions and sinks presented in this report are organized by source and sink categories and calculated using internationally-accepted methods provided by the IPCC.⁵ Additionally, the calculated emissions and sinks in a given year for the United States are presented in a common manner in line with the UNFCCC reporting guidelines for the reporting of inventories under this international agreement.⁶ The use of consistent methods to calculate emissions and sinks by all nations providing their inventories to the UNFCCC ensures that these reports are comparable. In this regard, U.S. emissions and sinks reported in this inventory report are comparable to emissions and sinks reported by other countries. Emissions and sinks provided in this inventory do not preclude alternative examinations, but rather this inventory report presents emissions and sinks in a common format consistent with how countries are to report inventories under the UNFCCC. The report itself follows this standardized format, and provides an explanation of the IPCC methods used to calculate emissions and sinks, and the manner in which those calculations are conducted.

On October 30, 2009, the U.S. Environmental Protection Agency (EPA) published a rule for the mandatory reporting of greenhouse gases (GHG) from large GHG emissions sources in the United States. Implementation of 40 CFR Part 98 is referred to as the Greenhouse Gas Reporting Program (GHGRP). 40 CFR part 98 applies to direct greenhouse gas emitters, fossil fuel suppliers, industrial gas suppliers, and facilities that inject CO₂ underground for sequestration or other reasons.⁷ Reporting is at the facility level, except for certain suppliers of fossil fuels and industrial greenhouse gases. The GHGRP dataset and the data presented in this inventory report are complementary and, as indicated in the respective methodological and planned improvements sections in this report's chapters, EPA is using the data, as applicable, to improve the national estimates presented in this inventory.

ES.1. Background Information

Greenhouse gases trap heat and make the planet warmer. The most important greenhouse gases directly emitted by humans include CO₂, CH₄, N₂O, and several other fluorine-containing halogenated substances. Although the direct greenhouse gases CO₂, CH₄, and N₂O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2012, concentrations of these greenhouse gases have increased globally by 40, 151, and 20 percent, respectively (IPCC 2007 and NOAA/ESLR 2013). This annual report estimates the total national greenhouse gas emissions and removals associated with human activities across the United States.

Global Warming Potentials

Gases in the atmosphere can contribute to the greenhouse effect both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other greenhouse gases, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the earth (e.g., affect cloud formation or

⁵ See <<http://www.ipcc-nggip.iges.or.jp/public/index.html>>.

⁶ See <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5270.php>.

⁷ See <<http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>> and <<http://ghgdata.epa.gov/ghgp/main.do>>.

albedo).⁸ The IPCC developed the Global Warming Potential (GWP) concept to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas.

The GWP of a greenhouse gas is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram (kg) of a trace substance relative to that of 1 kg of a reference gas (IPCC 2001). Direct radiative effects occur when the gas itself is a greenhouse gas. The reference gas used is CO₂, and therefore GWP-weighted emissions are measured in teragrams (or million metric tons) of CO₂ equivalent (Tg CO₂ Eq.).^{9,10} All gases in this Executive Summary are presented in units of Tg CO₂ Eq.

The UNFCCC reporting guidelines for national inventories were updated in 2006,¹¹ but continue to require the use of GWP values from the *IPCC Second Assessment Report (SAR)* (IPCC 1996). This requirement ensures that current estimates of aggregate greenhouse gas emissions for 1990 to 2012 are consistent with estimates developed prior to the publication of the *IPCC Third Assessment Report (TAR)* (IPCC 2001), the *IPCC Fourth Assessment Report (AR4)* (IPCC 2007) and the *IPCC Fifth Assessment Report (AR5)* (IPCC 2013). Therefore, to comply with international reporting standards under the UNFCCC, official emission estimates are reported by the United States using SAR GWP values. All estimates are provided throughout the report in both CO₂ equivalents and unweighted units. A comparison of emission values using the SAR GWP values versus the TAR, AR4 and AR5 GWP values can be found in Chapter 1 and, in more detail, in Annex 6.1 of this report. The GWP values used in this report are listed below in Table ES-1.

The official greenhouse gas emissions presented in this report using the SAR GWP values are the final time the SAR GWP values will be used in the U.S. inventory. The United States and other developed countries have agreed to submit annual inventories in 2015 and future years to the UNFCCC using GWP values from the IPCC AR4, which will replace the current use of SAR GWP values in their annual greenhouse gas inventories.¹² The use of IPCC AR4 GWP values in future year inventories will apply across the entire time series of the inventory (i.e., from 1990 to 2013 in next year's report).

Table ES-1: Global Warming Potentials (100-Year Time Horizon) Used in this Report

Gas	GWP
CO ₂	1
CH ₄ ^a	21
N ₂ O	310
HFC-23	11,700
HFC-32	650
HFC-125	2,800
HFC-134a	1,300
HFC-143a	3,800
HFC-152a	140
HFC-227ea	2,900
HFC-236fa	6,300
HFC-4310mee	1,300
CF ₄	6,500
C ₂ F ₆	9,200
C ₄ F ₁₀	7,000
C ₆ F ₁₄	7,400

⁸ Albedo is a measure of the Earth's reflectivity, and is defined as the fraction of the total solar radiation incident on a body that is reflected by it.

⁹ Carbon comprises 12/44^{ths} of carbon dioxide by weight.

¹⁰ One teragram is equal to 10¹² grams or one million metric tons.

¹¹ See <<http://unfccc.int/resource/docs/2006/sbsta/eng/09.pdf>>.

¹² "Revision of the UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention," FCCC/CP/2011/9/Add.2, Decision 6/CP.17, 15 March 2012, available at <<http://unfccc.int/resource/docs/2011/cop17/eng/09a02.pdf#page=23>>

SF₆ 23,900

Source: IPCC (1996)

^a The CH₄ GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to production of CO₂ is not included.

ES.2. Recent Trends in U.S. Greenhouse Gas Emissions and Sinks

In 2012, total U.S. greenhouse gas emissions were 6,525.6 Tg, or million metric tons, CO₂ Eq. Total U.S. emissions have increased by 4.7 percent from 1990 to 2012, and emissions decreased from 2011 to 2012 by 3.4 percent (227.4 Tg CO₂ Eq.). The decrease from 2011 to 2012 was due to a decrease in the carbon intensity of fuels consumed by power producers to generate electricity due to a decrease in the price of natural gas, a decrease in transportation sector emissions attributed to a small increase in fuel efficiency across different transportation modes and limited new demand for passenger transportation, and much warmer winter conditions resulting in a decreased demand for heating fuel in the residential and commercial sectors. Since 1990, U.S. emissions have increased at an average annual rate of 0.2 percent. Figure ES-1 through Figure ES-3 illustrate the overall trends in total U.S. emissions by gas, annual changes, and absolute change since 1990.

Table ES-2 provides a detailed summary of U.S. greenhouse gas emissions and sinks for 1990 through 2012.

Figure ES-1: U.S. Greenhouse Gas Emissions by Gas

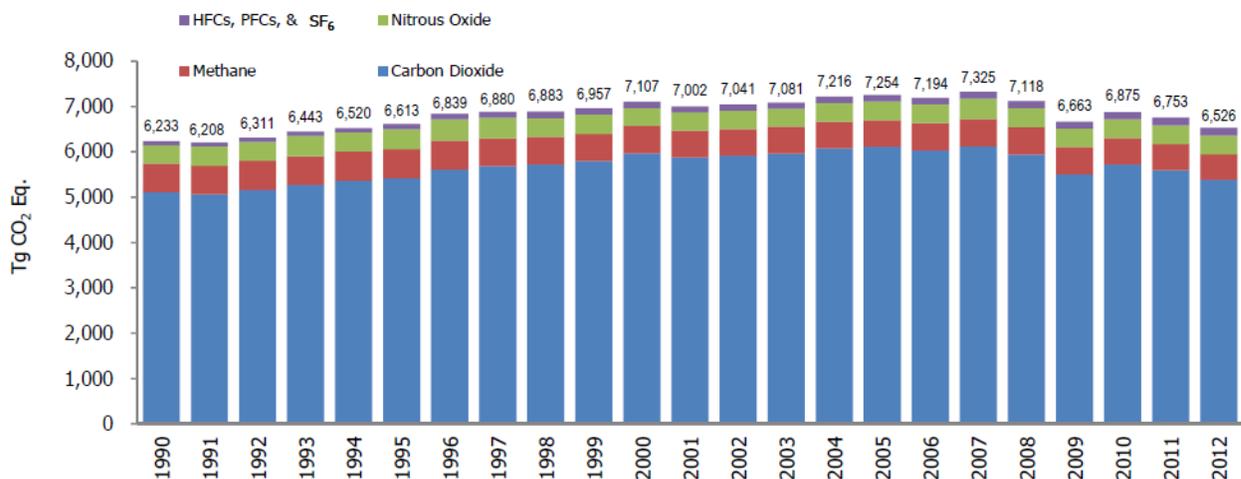


Figure ES-2: Annual Percent Change in U.S. Greenhouse Gas Emissions

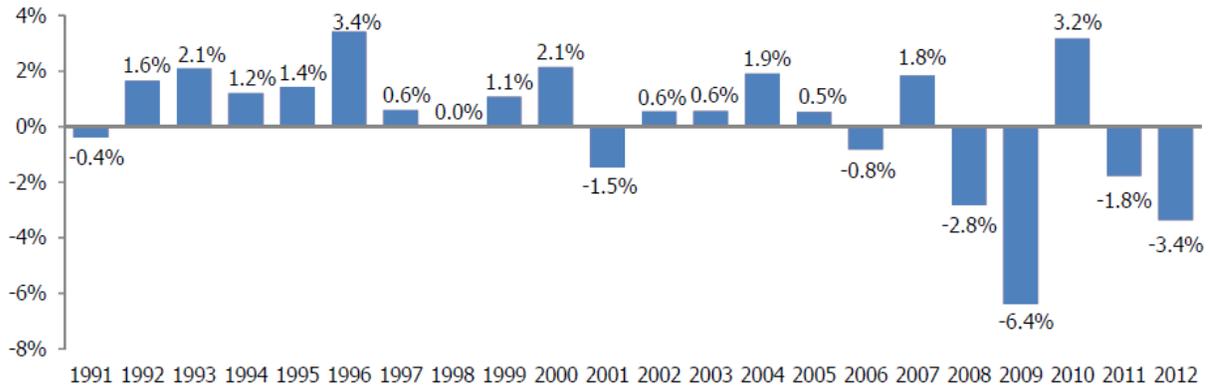


Figure ES-3: Annual Greenhouse Gas Emissions Relative to 1990 (1990=0)

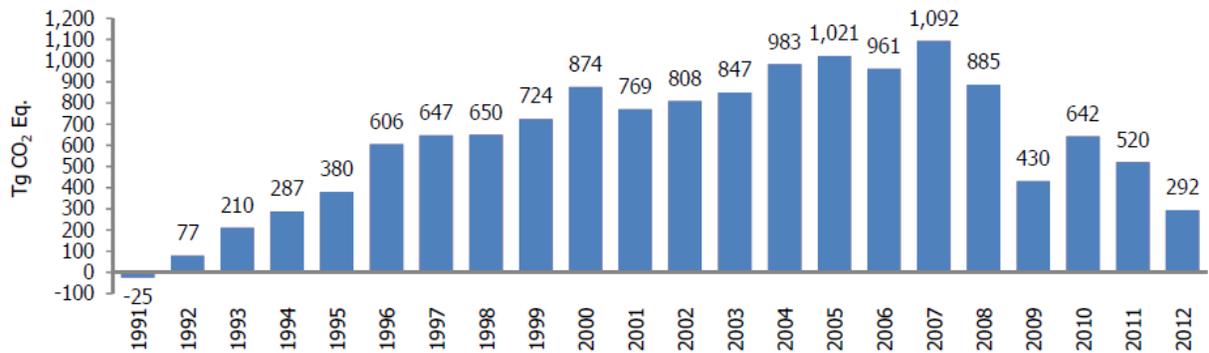


Table ES-2: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks (Tg or million metric tons CO₂ Eq.)

Gas/Source	1990	2005	2008	2009	2010	2011	2012
CO₂	5,108.7	6,112.2	5,936.9	5,506.1	5,722.3	5,592.2	5,383.2
Fossil Fuel Combustion	4,745.1	5,752.9	5,593.4	5,225.7	5,404.9	5,271.1	5,072.3
Electricity Generation	1,820.8	2,402.1	2,360.9	2,146.4	2,259.2	2,158.5	2,022.7
Transportation	1,494.0	1,891.7	1,816.5	1,747.7	1,765.0	1,747.9	1,739.5
Industrial	845.1	827.6	804.1	727.5	775.6	768.7	774.2
Residential	338.3	357.9	346.2	336.4	334.8	324.9	288.9
Commercial	219.0	223.5	224.7	223.9	220.7	221.5	197.4
U.S. Territories	27.9	50.0	41.0	43.8	49.6	49.6	49.6
Non-Energy Use of Fuels	120.8	141.0	128.0	108.1	120.8	117.3	110.3
Iron and Steel Production & Metallurgical Coke Production	99.8	66.7	66.8	43.0	55.7	60.0	54.3
Natural Gas Systems	37.7	30.0	32.7	32.2	32.4	35.1	35.2
Cement Production	33.3	45.9	41.2	29.4	31.3	32.0	35.1
Lime Production	11.4	14.0	14.0	10.9	12.8	13.5	13.3
Incineration of Waste	8.0	12.5	11.9	11.7	12.0	12.1	12.2
Ammonia Production	13.0	9.2	8.4	8.5	9.2	9.4	9.4
Other Process Uses of Carbonates	4.9	6.3	5.9	7.6	9.6	9.3	8.0
Cropland Remaining Cropland	7.1	7.9	8.6	7.2	8.6	7.9	7.4

Urea Consumption for Non-Agricultural Purposes	3.8	3.7	4.1	3.4	4.7	4.0	5.2
Petrochemical Production	3.4	4.3	3.6	2.8	3.5	3.5	3.5
Aluminum Production	6.8	4.1	4.5	3.0	2.7	3.3	3.4
Soda Ash Production and Consumption	2.7	2.9	2.9	2.5	2.6	2.6	2.7
Carbon Dioxide Consumption	1.4	1.3	1.8	1.8	2.3	1.8	1.8
Titanium Dioxide Production	1.2	1.8	1.8	1.6	1.8	1.7	1.7
Ferroalloy Production	2.2	1.4	1.6	1.5	1.7	1.7	1.7
Zinc Production	0.6	1.0	1.2	0.9	1.2	1.3	1.4
Glass Production	1.5	1.9	1.5	1.0	1.5	1.3	1.2
Phosphoric Acid Production	1.6	1.4	1.2	1.0	1.1	1.2	1.1
Wetlands Remaining Wetlands	1.0	1.1	1.0	1.1	1.0	0.9	0.8
Lead Production	0.5	0.6	0.5	0.5	0.5	0.5	0.5
Petroleum Systems	0.4	0.3	0.3	0.3	0.3	0.3	0.4
Silicon Carbide Production and Consumption	0.4	0.2	0.2	0.1	0.2	0.2	0.2
<i>Land Use, Land-Use Change, and Forestry (Sink)^a</i>	<i>(831.1)</i>	<i>(1,030.7)</i>	<i>(981.0)</i>	<i>(961.6)</i>	<i>(968.0)</i>	<i>(980.3)</i>	<i>(979.3)</i>
<i>Wood Biomass and Ethanol Consumption^b</i>	<i>219.4</i>	<i>229.8</i>	<i>254.7</i>	<i>250.5</i>	<i>265.1</i>	<i>268.1</i>	<i>266.8</i>
<i>International Bunker Fuels^c</i>	<i>103.5</i>	<i>113.1</i>	<i>114.3</i>	<i>106.4</i>	<i>117.0</i>	<i>111.7</i>	<i>105.8</i>
CH₄	635.7	585.7	606.0	596.5	585.5	578.3	567.3
Enteric Fermentation	137.9	142.5	147.0	146.1	144.9	143.0	141.0
Natural Gas Systems	156.4	152.0	151.6	142.9	134.7	133.2	129.9
Landfills	147.8	112.1	114.3	115.3	109.9	107.4	102.8
Coal Mining	81.1	53.6	63.5	67.1	69.2	59.8	55.8
Manure Management	31.5	47.6	51.5	50.5	51.8	52.0	52.9
Petroleum Systems	35.8	28.8	28.8	29.1	29.5	30.5	31.7
Forest Land Remaining Forest Land	2.5	8.1	8.7	5.8	4.7	14.0	15.3
Wastewater Treatment	13.2	13.3	13.3	13.1	13.0	12.8	12.8
Rice Cultivation	7.7	7.5	7.8	7.9	9.3	7.1	7.4
Stationary Combustion	7.5	6.6	6.6	6.6	6.4	6.3	5.7
Abandoned Underground Coal Mines	6.0	5.5	5.3	5.1	5.0	4.8	4.7
Petrochemical Production	2.3	3.1	2.9	2.9	3.1	3.1	3.1
Mobile Combustion	4.6	2.4	1.9	1.8	1.8	1.7	1.7
Composting	0.3	1.6	1.7	1.6	1.5	1.6	1.6
Iron and Steel Production & Metallurgical Coke Production	1.0	0.7	0.6	0.4	0.5	0.6	0.6
Field Burning of Agricultural Residues	0.3	0.2	0.3	0.2	0.2	0.3	0.3
Ferroalloy Production	+	+	+	+	+	+	+
Silicon Carbide Production and Consumption	+	+	+	+	+	+	+
Incineration of Waste	+	+	+	+	+	+	+
<i>International Bunker Fuels^c</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>
N₂O	398.6	415.8	423.3	412.2	409.3	417.2	410.1
Agricultural Soil Management	282.1	297.3	319.0	316.4	310.1	307.8	306.6
Stationary Combustion	12.3	20.6	21.1	20.8	22.5	21.6	22.0
Manure Management	14.4	17.1	17.8	17.7	17.8	18.0	18.0
Mobile Combustion	44.0	36.9	25.5	22.7	20.7	18.5	16.5
Nitric Acid Production	18.2	16.9	16.9	14.0	16.7	15.8	15.3
Forest Land Remaining Forest Land	2.1	7.0	7.5	5.1	4.2	11.8	12.8

Adipic Acid Production	15.8	7.4	2.6	2.8	4.4	10.6	5.8
Wastewater Treatment	3.5	4.5	4.8	4.8	4.9	5.0	5.0
N ₂ O from Product Uses	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Composting	0.4	1.7	1.9	1.8	1.7	1.7	1.8
Settlements Remaining							
Settlements	1.0	1.5	1.5	1.4	1.5	1.5	1.5
Incineration of Waste	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Field Burning of Agricultural Residues	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Wetlands Remaining							
Wetlands	+	+	+	+	+	+	+
<i>International Bunker Fuels^c</i>	<i>0.9</i>	<i>1.0</i>	<i>1.0</i>	<i>0.9</i>	<i>1.0</i>	<i>1.0</i>	<i>1.0</i>
HFCs	36.9	119.8	136.0	135.1	144.0	148.6	151.2
Substitution of Ozone Depleting Substances ^d	0.3	103.8	122.2	129.6	137.5	141.5	146.8
HCFC-22 Production	36.4	15.8	13.6	5.4	6.4	6.9	4.3
Semiconductor Manufacture	0.2	0.2	0.2	0.1	0.2	0.2	0.2
PFCs	20.6	5.6	5.1	3.3	3.8	6.0	5.4
Semiconductor Manufacture	2.2	2.6	2.4	1.7	2.2	3.0	2.9
Aluminum Production	18.4	3.0	2.7	1.6	1.6	2.9	2.5
SF₆	32.6	14.7	10.7	9.6	9.8	10.8	8.4
Electrical Transmission and Distribution	26.7	11.0	8.4	7.5	7.2	7.2	6.0
Magnesium Production and Processing	5.4	2.9	1.9	1.7	2.2	2.9	1.7
Semiconductor Manufacture	0.5	0.7	0.5	0.3	0.4	0.7	0.7
Total	6,233.2	7,253.8	7,118.1	6,662.9	6,874.7	6,753.0	6,525.6
Net Emissions (Sources and Sinks)	5,402.1	6,223.1	6,137.1	5,701.2	5,906.7	5,772.7	5,546.3

+ Does not exceed 0.05 Tg CO₂ Eq.

^a Parentheses indicate negative values or sequestration. The net CO₂ flux total includes both emissions and sequestration, and constitutes a net sink in the United States. Sinks are only included in net emissions total.

^b Emissions from Wood Biomass and Ethanol Consumption are not included specifically in summing energy sector totals. Net carbon fluxes from changes in biogenic carbon reservoirs are accounted for in the estimates for Land Use, Land-Use Change, and Forestry.

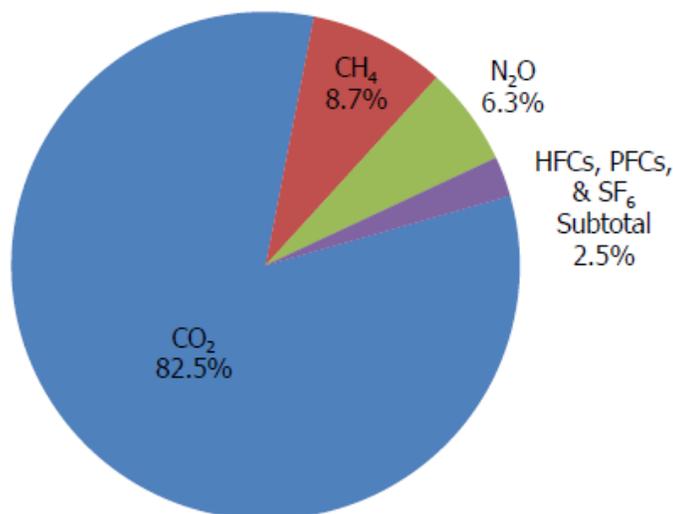
^c Emissions from International Bunker Fuels are not included in totals.

^d Small amounts of PFC emissions also result from this source.

Note: Totals may not sum due to independent rounding.

Figure ES-4 illustrates the relative contribution of the direct greenhouse gases to total U.S. emissions in 2012. The primary greenhouse gas emitted by human activities in the United States was CO₂, representing approximately 82.5 percent of total greenhouse gas emissions. The largest source of CO₂, and of overall greenhouse gas emissions, was fossil fuel combustion. CH₄ emissions, which have decreased by 10.8 percent since 1990, resulted primarily from enteric fermentation associated with domestic livestock, natural gas systems, and decomposition of wastes in landfills. Agricultural soil management, manure management, mobile source fuel combustion and stationary fuel combustion were the major sources of N₂O emissions. Ozone depleting substance substitute emissions and emissions of HFC-23 during the production of HCFC-22 were the primary contributors to aggregate HFC emissions. PFC emissions resulted as a by-product of primary aluminum production and from semiconductor manufacturing, while electrical transmission and distribution systems accounted for most SF₆ emissions.

Figure ES-4: 2012 Greenhouse Gas Emissions by Gas (Percentages based on Tg CO₂ Eq.)



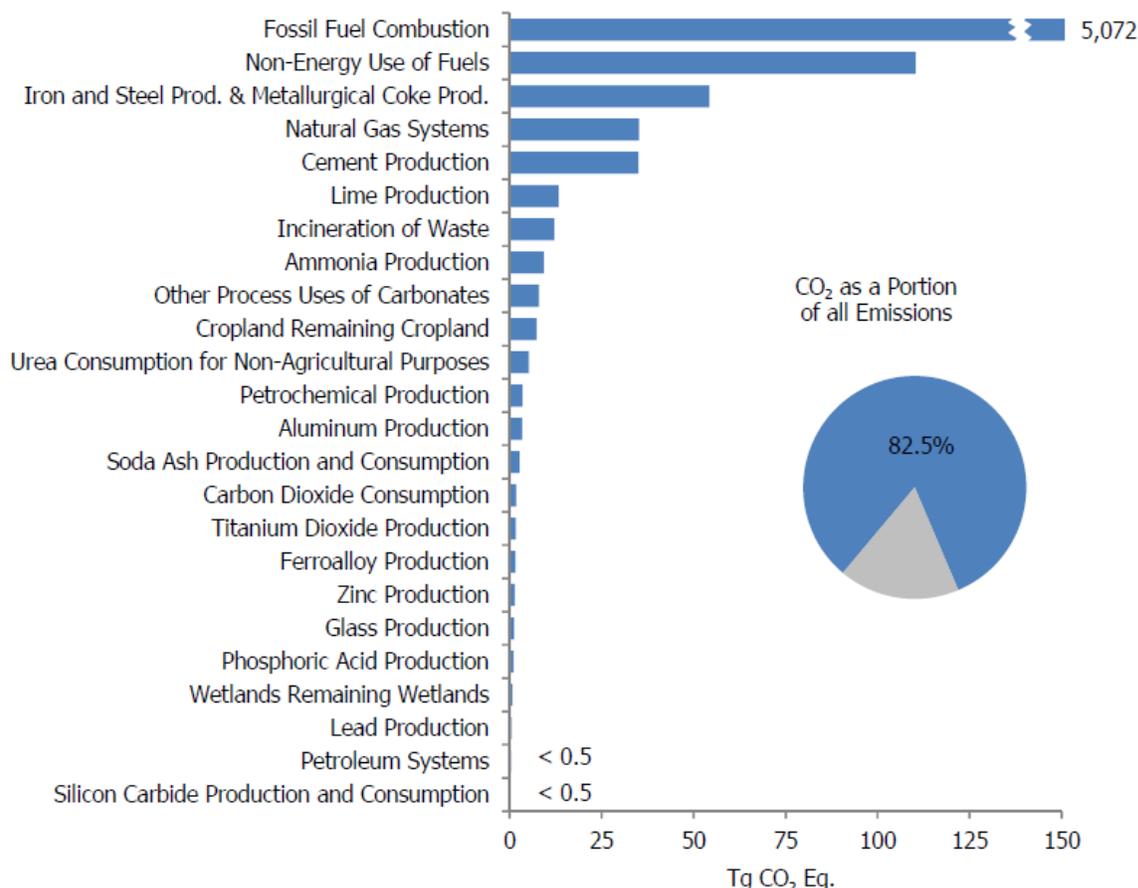
Overall, from 1990 to 2012, total emissions of CO₂ increased by 274.5 Tg CO₂ Eq. (5.4 percent), while total emissions of CH₄ decreased by 68.4 Tg CO₂ Eq. (10.8 percent), and N₂O increased by 11.5 Tg CO₂ Eq. (2.9 percent). During the same period, aggregate weighted emissions of HFCs, PFCs, and SF₆ rose by 74.8 Tg CO₂ Eq. (83.0 percent). From 1990 to 2012, HFCs increased by 114.3 Tg CO₂ Eq. (309.6 percent), PFCs decreased by 15.2 Tg CO₂ Eq. (73.8 percent), and SF₆ decreased by 24.2 Tg CO₂ Eq. (74.3 percent). Despite being emitted in smaller quantities relative to the other principal greenhouse gases, emissions of HFCs, PFCs, and SF₆ are significant because many of these gases have extremely high global warming potentials and, in the cases of PFCs and SF₆, long atmospheric lifetimes. Conversely, U.S. greenhouse gas emissions were partly offset by carbon sequestration in forests, trees in urban areas, agricultural soils, and landfilled yard trimmings and food scraps, which, in aggregate, offset 15.0 percent of total emissions in 2012. The following sections describe each gas's contribution to total U.S. greenhouse gas emissions in more detail.

Carbon Dioxide Emissions

The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO₂ are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced. Since the Industrial Revolution (i.e., about 1750), global atmospheric concentrations of CO₂ have risen approximately 40 percent (IPCC 2007 and NOAA/ESLR 2013), principally due to the combustion of fossil fuels. Within the United States, fossil fuel combustion accounted for 94.2 percent of CO₂ emissions in 2012. Globally, approximately 32,579 Tg of CO₂ were added to the atmosphere through the combustion of fossil fuels in 2011, of which the United States accounted for about 17 percent.¹³ Changes in land use and forestry practices can also emit CO₂ (e.g., through conversion of forest land to agricultural or urban use) or can act as a sink for CO₂ (e.g., through net additions to forest biomass). In addition to fossil fuel combustion, several other sources emit significant quantities of CO₂. These sources include, but are not limited to non-energy use of fuels, iron and steel production and cement production (Figure ES-5).

¹³ Global CO₂ emissions from fossil fuel combustion were taken from Energy Information Administration *International Energy Statistics 2011* <<http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm>> EIA (2014).

Figure ES-5: 2012 Sources of CO₂ Emissions



Note: Electricity generation also includes emissions of less than 0.05 Tg CO₂ Eq. from geothermal-based generation.

As the largest source of U.S. greenhouse gas emissions, CO₂ from fossil fuel combustion has accounted for approximately 78 percent of GWP-weighted emissions since 1990, and is approximately 78 percent of total GWP-weighted emissions in 2012. Emissions of CO₂ from fossil fuel combustion increased at an average annual rate of 0.3 percent from 1990 to 2012. The fundamental factors influencing this trend include (1) a generally growing domestic economy over the last 23 years, (2) an overall growth in emissions from electricity generation and transportation activities, along with (3) a general decline in the carbon intensity of fuels combusted for energy in recent years by most sectors of the economy. Between 1990 and 2012, CO₂ emissions from fossil fuel combustion increased from 4,745.1 Tg CO₂ Eq. to 5,072.3 Tg CO₂ Eq.—a 6.9 percent total increase over the twenty-three-year period. From 2011 to 2012, these emissions decreased by 198.8 Tg CO₂ Eq. (3.8 percent).

Historically, changes in emissions from fossil fuel combustion have been the dominant factor affecting U.S. emission trends. Changes in CO₂ emissions from fossil fuel combustion are influenced by many long-term and short-term factors, including population and economic growth, energy price fluctuations, technological changes, energy fuel choices, and seasonal temperatures. In the short term, the overall consumption of fossil fuels in the United States fluctuates primarily in response to changes in general economic conditions, energy prices, weather, and the availability of non-fossil alternatives. For example, in a year with increased consumption of goods and services, low fuel prices, severe summer and winter weather conditions, nuclear plant closures, and lower precipitation feeding hydroelectric dams, there would likely be proportionally greater fossil fuel consumption than a year with poor economic performance, high fuel prices, mild temperatures, and increased output from nuclear and hydroelectric plants. In the long term, energy consumption patterns respond to changes that affect the scale of consumption (e.g., population, number of cars, and size of houses), the efficiency with which energy is used in

equipment (e.g., cars, power plants, steel mills, and light bulbs) and behavioral choices (e.g., walking, bicycling, or telecommuting to work instead of driving).

Figure ES-6: 2012 CO₂ Emissions from Fossil Fuel Combustion by Sector and Fuel Type

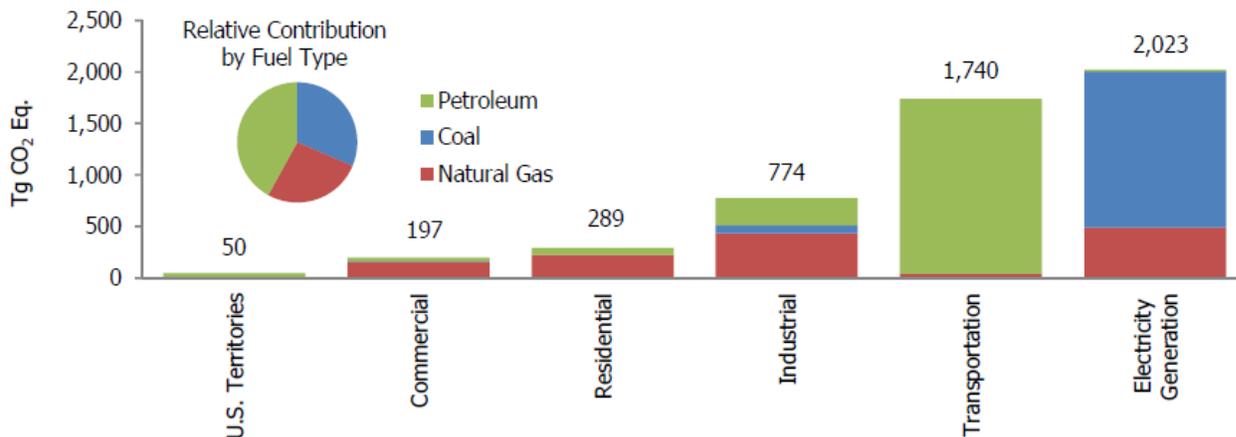
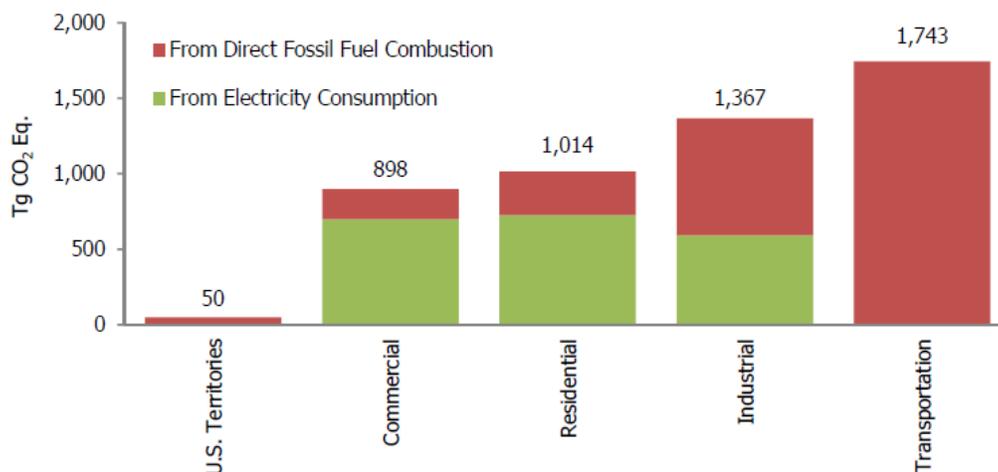


Figure ES-7: 2012 End-Use Sector Emissions of CO₂ from Fossil Fuel Combustion



The five major fuel consuming sectors contributing to CO₂ emissions from fossil fuel combustion are electricity generation, transportation, industrial, residential, and commercial. CO₂ emissions are produced by the electricity generation sector as they consume fossil fuel to provide electricity to one of the other four sectors, or “end-use” sectors. For the discussion below, electricity generation emissions have been distributed to each end-use sector on the basis of each sector’s share of aggregate electricity consumption. This method of distributing emissions assumes that each end-use sector consumes electricity that is generated from the national average mix of fuels according to their carbon intensity. Emissions from electricity generation are also addressed separately after the end-use sectors have been discussed.

Note that emissions from U.S. territories are calculated separately due to a lack of specific consumption data for the individual end-use sectors. Figure ES-6, Figure ES-7, and Table ES-3 summarize CO₂ emissions from fossil fuel combustion by end-use sector.

Table ES-3: CO₂ Emissions from Fossil Fuel Combustion by Fuel Consuming End-Use Sector (Tg or million metric tons CO₂ Eq.)

End-Use Sector	1990	2005	2008	2009	2010	2011	2012
Transportation	1,497.0	1,896.5	1,821.2	1,752.2	1,769.5	1,752.1	1,743.4
Combustion	1,494.0	1,891.7	1,816.5	1,747.7	1,765.0	1,747.9	1,739.5
Electricity	3.0	4.7	4.7	4.5	4.5	4.3	3.9
Industrial	1,531.8	1,564.6	1,501.4	1,329.5	1,416.6	1,393.6	1,367.1
Combustion	845.1	827.6	804.1	727.5	775.6	768.7	774.2
Electricity	686.7	737.0	697.3	602.0	641.1	624.9	592.9
Residential	931.4	1,214.7	1,189.2	1,122.9	1,175.2	1,115.9	1,014.3
Combustion	338.3	357.9	346.2	336.4	334.8	324.9	288.9
Electricity	593.0	856.7	842.9	786.5	840.4	791.0	725.5
Commercial	757.0	1,027.2	1,040.8	977.4	993.9	959.8	897.9
Combustion	219.0	223.5	224.7	223.9	220.7	221.5	197.4
Electricity	538.0	803.7	816.0	753.5	773.3	738.3	700.4
U.S. Territories^a	27.9	50.0	41.0	43.8	49.6	49.6	49.6
Total	4,745.1	5,752.9	5,593.4	5,225.7	5,404.9	5,271.1	5,072.3
Electricity Generation	1,820.8	2,402.1	2,360.9	2,146.4	2,259.2	2,158.5	2,022.7

Note: Totals may not sum due to independent rounding. Combustion-related emissions from electricity generation are allocated based on aggregate national electricity consumption by each end-use sector.

^a Fuel consumption by U.S. territories (i.e., American Samoa, Guam, Puerto Rico, U.S. Virgin Islands, Wake Island, and other U.S. Pacific Islands) is included in this report.

Transportation End-Use Sector. When electricity-related emissions are distributed to economic end-use sectors, transportation activities accounted for 34.4 percent of U.S. CO₂ emissions from fossil fuel combustion in 2012. The largest sources of transportation greenhouse gases in 2012 were passenger cars (43.1 percent); light duty trucks, which include sport utility vehicles, pickup trucks, and minivans (18.4 percent), freight trucks (21.9 percent), commercial aircraft (6.2 percent), rail (2.5 percent), and ships and boats (2.2 percent). These figures include direct emissions from fossil fuel combustion used in transportation and emissions from non-energy use (i.e. lubricants) used in transportation, as well as HFC emissions from mobile air conditioners and refrigerated transport allocated to these vehicle types.

In terms of the overall trend, from 1990 to 2012, total transportation emissions rose by 18 percent due, in large part, to increased demand for travel with limited gains in fuel efficiency over the same time period. The number of vehicle miles traveled by light-duty motor vehicles (passenger cars and light-duty trucks) increased 35 percent from 1990 to 2012, as a result of a confluence of factors including population growth, economic growth, urban sprawl, and low fuel prices during the beginning of this period. Almost all of the energy consumed for transportation was supplied by petroleum-based products, with more than half being related to gasoline consumption in automobiles and other highway vehicles. Other fuel uses, especially diesel fuel for freight trucks and jet fuel for aircraft, accounted for the remainder. The primary driver of transportation-related emissions was CO₂ from fossil fuel combustion, which increased by 16 percent from 1990 to 2012. This rise in CO₂ emissions, combined with an increase in HFCs from close to zero emissions in 1990 to 72.9 Tg CO₂ Eq. in 2012, led to an increase in overall emissions from transportation activities of 18 percent.

Industrial End-Use Sector. Industrial CO₂ emissions, resulting both directly from the combustion of fossil fuels and indirectly from the generation of electricity that is consumed by industry, accounted for 27 percent of CO₂ from fossil fuel combustion in 2012. Approximately 57 percent of these emissions resulted from direct fossil fuel combustion to produce steam and/or heat for industrial processes. The remaining emissions resulted from consuming electricity for motors, electric furnaces, ovens, lighting, and other applications. In contrast to the other end-use sectors, emissions from industry have steadily declined since 1990. This decline is due to structural changes in the U.S. economy (i.e., shifts from a manufacturing-based to a service-based economy), fuel switching, and efficiency improvements.

Residential and Commercial End-Use Sectors. The residential and commercial end-use sectors accounted for 20 and 18 percent, respectively, of CO₂ emissions from fossil fuel combustion in 2012. Both sectors relied heavily on electricity for meeting energy demands, with 72 and 78 percent, respectively, of their emissions attributable to electricity consumption for lighting, heating, cooling, and operating appliances. The remaining emissions were due to the consumption of natural gas and petroleum for heating and cooking. Emissions from the residential and commercial end-use sectors have increased by 9 percent and 19 percent since 1990, respectively, due to increasing electricity consumption for lighting, heating, air conditioning, and operating appliances.

Electricity Generation. The United States relies on electricity to meet a significant portion of its energy demands. Electricity generators consumed 35 percent of total U.S. energy uses from fossil fuels and emitted 40 percent of the CO₂ from fossil fuel combustion in 2012. The type of fuel combusted by electricity generators has a significant effect on their emissions. For example, some electricity is generated through non-fossil fuel options such as nuclear, hydroelectric, or geothermal energy. Including all electricity generation modes, generators relied on coal for approximately 39 percent their total energy requirements in 2012.¹⁴ In addition, the coal used by electricity generators accounted for 93 percent of all coal consumed for energy in the United States in 2012.¹⁵ Recently a decrease in the carbon intensity of fuels consumed to generate electricity has occurred due to a decrease in coal consumption, and increased natural gas consumption and other generation sources. Including all electricity generation modes, electricity generators used natural gas for approximately 29 percent of their total energy requirements in 2012. Across the time series, changes in electricity demand and the carbon intensity of fuels used for electricity generation have a significant impact on CO₂ emissions.

Other significant CO₂ trends included the following:

- CO₂ emissions from non-energy use of fossil fuels have decreased by 10.5 Tg CO₂ Eq. (8.7 percent) from 1990 through 2012. Emissions from non-energy uses of fossil fuels were 110.3 Tg CO₂ Eq. in 2012, which constituted 2.0 percent of total national CO₂ emissions, approximately the same proportion as in 1990.
- CO₂ emissions from iron and steel production and metallurgical coke production decreased by 5.7 Tg CO₂ Eq. (9.5 percent) from 2011 to 2012, reversing a two-year trend of increasing emissions primarily due to increased steel production associated with improved economic conditions. Despite this, from 1990 through 2012, emissions declined by 45.6 percent (45.5 Tg CO₂ Eq.). This overall decline is due to the restructuring of the industry, technological improvements, and increased scrap utilization.
- In 2012, CO₂ emissions from cement production increased by 3.0 Tg CO₂ Eq. (9.5 percent) from 2011. After decreasing in 1991 by 2.2 percent from 1990 levels, cement production emissions grew every year through 2006 except for a slight decrease in 1997. Since 2006, emissions have fluctuated through 2012 to the economic recession and associated decrease in demand for construction materials. Overall, from 1990 to 2012, emissions from cement production have increased by 5.3 percent, an increase of 1.8 Tg CO₂ Eq.
- Net CO₂ uptake from Land Use, Land-Use Change, and Forestry increased by 148.2 Tg CO₂ Eq. (17.8 percent) from 1990 through 2012. This increase was primarily due to an increase in the rate of net carbon accumulation in forest carbon stocks, particularly in aboveground and belowground tree biomass, and harvested wood pools. Annual carbon accumulation in landfilled yard trimmings and food scraps slowed over this period, while the rate of carbon accumulation in urban trees increased.

Box ES- 2: Use of ambient measurements systems for validation of emission inventories

In following the UNFCCC requirement under Article 4.1 to develop and submit national greenhouse gas emission inventories, the emissions and sinks presented in this report are organized by source and sink categories and calculated using internationally-accepted methods provided by the IPCC.¹⁶ Several recent studies have measured emissions at the national or regional level (e.g., Petron 2012, Miller et al. 2013) with results that differ from EPA's estimate of emissions. A recent study (Brandt et al. 2014) reviewed technical literature on methane emissions and estimated methane emissions from all anthropogenic sources (e.g., livestock, oil and gas, waste emissions) to be

¹⁴ See Table 7.2b Electric Power Sector of EIA 2013.

¹⁵ See Table 6.2 Coal Consumption by Sector of EIA 2013.

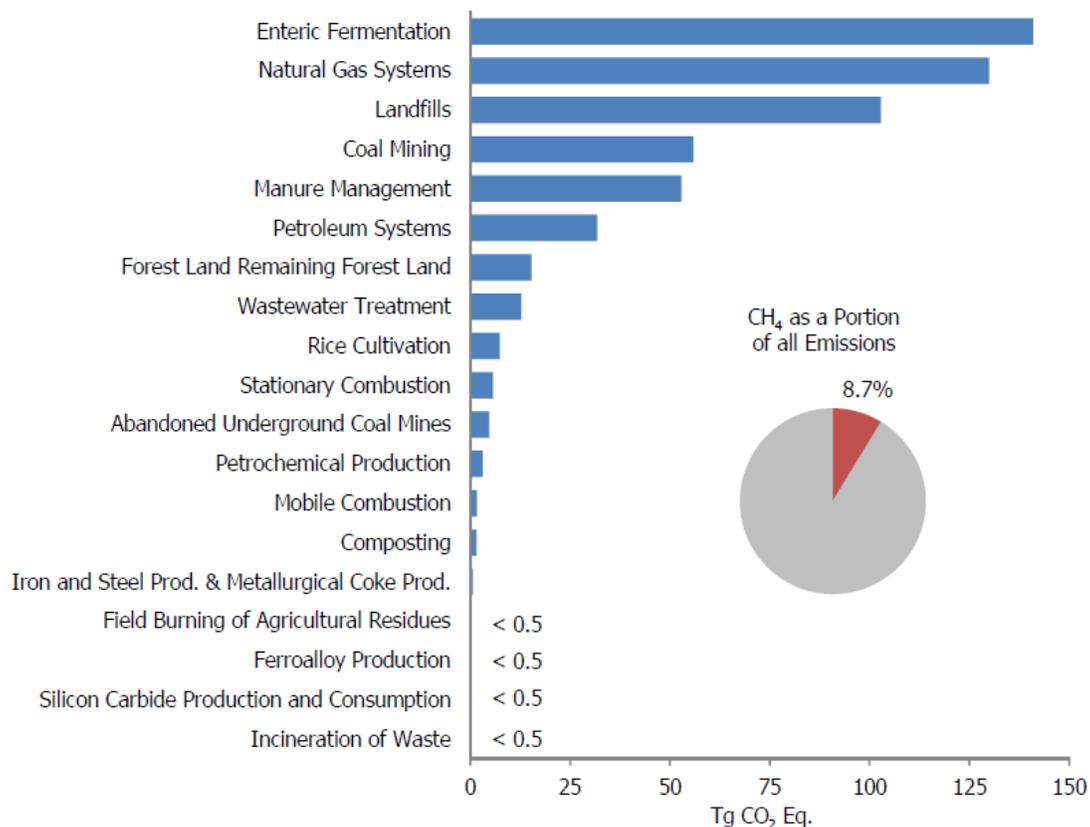
¹⁶ See < <http://www.ipcc-nggip.iges.or.jp/public/index.html>>.

greater than EPA’s estimate. EPA has engaged with researchers on how remote sensing, ambient measurement, and inverse modeling techniques for greenhouse gas emissions could assist in improving the understanding of inventory estimates. An area of particular interest in EPA’s outreach efforts is how these data can be used in a manner consistent with this Inventory report’s transparency on its calculation methodologies, and the ability of these techniques to attribute emissions and removals from remote sensing to anthropogenic sources, as defined by the IPCC for this report, versus natural sources and sinks. In working with the research community on ambient measurement and remote sensing techniques to improve national greenhouse gas inventories, EPA relies upon guidance from the IPCC on the use of measurements and modeling to validate emission inventories.¹⁷

Methane Emissions

Methane (CH₄) is more than 20 times as effective as CO₂ at trapping heat in the atmosphere (IPCC 1996). Over the last two hundred and fifty years, the concentration of CH₄ in the atmosphere increased by 151 percent (IPCC 2007). Anthropogenic sources of CH₄ include natural gas and petroleum systems, agricultural activities, landfills, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (see Figure ES-8).

Figure ES-8: 2012 Sources of CH₄ Emissions



Some significant trends in U.S. emissions of CH₄ include the following:

- Enteric fermentation is the largest anthropogenic source of CH₄ emissions in the United States. In 2012, enteric fermentation CH₄ emissions were 141.0 Tg CO₂ Eq. (24.9 percent of total CH₄ emissions), which

¹⁷ See < http://www.ipcc-nggip.iges.or.jp/meeting/pdfiles/1003_Uncertainty%20meeting_report.pdf >.

represents an increase of 3.1 Tg CO₂ Eq. (2.3 percent) since 1990. This increase in emissions from 1990 to 2012 in enteric generally follows the increasing trends in cattle populations. From 1990 to 1995 emissions increased and then decreased from 1996 to 2001, mainly due to fluctuations in beef cattle populations and increased digestibility of feed for feedlot cattle. Emissions generally increased from 2005 to 2007, though with a slight decrease in 2004, as both dairy and beef populations underwent increases and the literature for dairy cow diets indicated a trend toward a decrease in feed digestibility for those years. Emissions decreased again from 2008 to 2012 as beef cattle populations again decreased.

- Natural gas systems were the second largest anthropogenic source category of CH₄ emissions in the United States in 2012 with 129.9 Tg CO₂ Eq. of CH₄ emitted into the atmosphere. Those emissions have decreased by 26.6 Tg CO₂ Eq. (17.0 percent) since 1990. The decrease in CH₄ emissions is largely due to the decrease in emissions from production and distribution. The decrease in production emissions is due to increased voluntary reductions, from activities such as replacing high bleed pneumatic devices, and the increased use of plunger lifts for liquids unloading, and increased regulatory reductions. The decrease in distribution emissions is due to a decrease in cast iron and unprotected steel pipelines. Emissions from field production accounted for 32.2 percent of CH₄ emissions from natural gas systems in 2012. CH₄ emissions from field production decreased by 25.2 percent from 1990 through 2012; however, the trend was not stable over the time series—emissions from this source increased by 23.4 percent from 1990 through 2006 due primarily to increases in hydraulically fractured well completions and workovers, and then declined by 39.4 percent from 2006 to 2012. Reasons for the 2006–2012 trend include an increase in plunger lift use for liquids unloading, increased voluntary reductions over that time period (including those associated with pneumatic devices), and Reduced Emissions Completions (RECs) use for well completions and workovers with hydraulic fracturing.
- Landfills are the third largest anthropogenic source of CH₄ emissions in the United States (102.8 Tg CO₂ Eq.), accounting for 18.1 percent of total CH₄ emissions in 2012. From 1990 to 2012, CH₄ emissions from landfills decreased by 44.9 Tg CO₂ Eq. (30.4 percent), with small increases occurring in some interim years. This downward trend in overall emissions can be attributed to a 21 percent reduction in the amount of decomposable materials (i.e., paper and paperboard, food scraps, and yard trimmings) discarded in MSW landfills over the time series (EPA 2010) and an increase in the amount of landfill gas collected and combusted,¹⁸ which has more than offset the additional CH₄ emissions resulting from an increase in the amount of municipal solid waste landfilled.
- In 2012, CH₄ emissions from coal mining were 55.8 Tg CO₂ Eq., a 4.0 Tg CO₂ Eq. (6.7 percent) decrease below 2011 emission levels. The overall decline of 25.2 Tg CO₂ Eq. (31.1 percent) from 1990 results from the mining of less gassy coal from underground mines and the increased use of CH₄ collected from degasification systems.
- Methane emissions from manure management increased by 68.0 percent since 1990, from 31.5 Tg CO₂ Eq. in 1990 to 52.9 Tg CO₂ Eq. in 2012. The majority of this increase was from swine and dairy cow manure, since the general trend in manure management is one of increasing use of liquid systems, which tends to produce greater CH₄ emissions. The increase in liquid systems is the combined result of a shift to larger facilities, and to facilities in the West and Southwest, all of which tend to use liquid systems. Also, new regulations limiting the application of manure nutrients have shifted manure management practices at smaller dairies from daily spread to manure managed and stored on site.

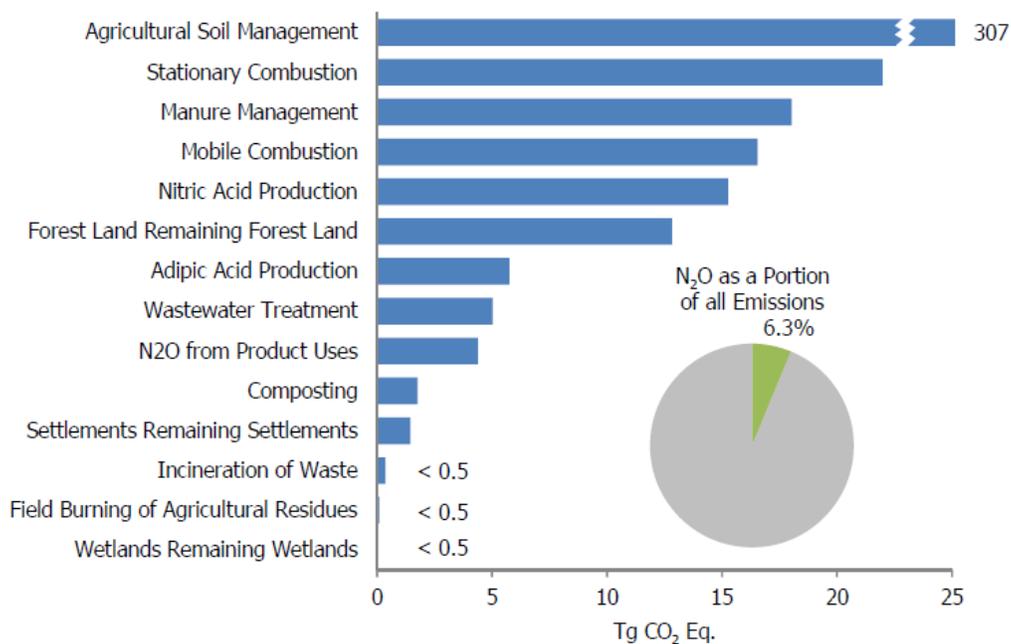
Nitrous Oxide Emissions

N₂O is produced by biological processes that occur in soil and water and by a variety of anthropogenic activities in the agricultural, energy-related, industrial, and waste management fields. While total N₂O emissions are much lower than CO₂ emissions, N₂O is approximately 300 times more powerful than CO₂ at trapping heat in the atmosphere (IPCC 1996). Since 1750, the global atmospheric concentration of N₂O has risen by approximately 20 percent (IPCC 2007). The main anthropogenic activities producing N₂O in the United States are agricultural soil

¹⁸ Carbon dioxide emissions from landfills are not included specifically in summing waste sector totals. Net carbon fluxes from changes in biogenic carbon reservoirs are accounted for in the estimates for Land Use, Land-Use Change, and Forestry.

management, stationary fuel combustion, fuel combustion in motor vehicles, manure management and nitric acid production (see Figure ES-9).

Figure ES-9: 2012 Sources of N₂O Emissions



Some significant trends in U.S. emissions of N₂O include the following:

- Agricultural soils accounted for approximately 74.8 percent of N₂O emissions and 4.7 percent of total emissions in the United States in 2012. Estimated emissions from this source in 2012 were 306.6 Tg CO₂ Eq. Annual N₂O emissions from agricultural soils fluctuated between 1990 and 2012, largely as a reflection of annual variation in weather patterns, synthetic fertilizer use, and crop production, although overall emissions were 8.7 percent higher in 2012 than in 1990. Annual N₂O emissions from agricultural soils fluctuated between 1990 and 2012.
- N₂O emissions from stationary combustion increased 9.7 Tg CO₂ Eq. (79.3 percent) from 1990 through 2012. N₂O emissions from this source increased primarily as a result of an increase in the number of coal fluidized bed boilers in the electric power sector.
- In 2012, total N₂O emissions from manure management were estimated to be 18.0 Tg CO₂ Eq. (58 Gg); in 1990, emissions were 14.4 Tg CO₂ Eq. (46 Gg). These values include both direct and indirect N₂O emissions from manure management. Nitrous oxide emissions have remained fairly steady since 1990. Small changes in N₂O emissions from individual animal groups exhibit the same trends as the animal group populations, with the overall net effect that N₂O emissions showed a 25 percent increase from 1990 to 2012 and a 0.1 percent increase from 2011 through 2012. Overall shifts toward liquid systems have driven down the emissions per unit of nitrogen excreted.
- In 2012, N₂O emissions from mobile combustion were 16.5 Tg CO₂ Eq. (4.0 percent of N₂O emissions). From 1990 to 2012, N₂O emissions from mobile combustion decreased by 62.4 percent. However, from 1990 to 1998 emissions increased 25.6 percent, due to control technologies that reduced NO_x emissions while increasing N₂O emissions. Since 1998, newer control technologies have led to an overall decline of 38.7 Tg CO₂ Eq. (70.1 percent) in N₂O from this source.
- N₂O emissions from adipic acid production were 5.8 Tg CO₂ Eq. in 2012, and have decreased significantly in recent years due to the widespread installation of pollution control measures. Emissions from adipic acid production have decreased by 63.6 percent since 1990 and by 67.2 percent since a peak in 1995.

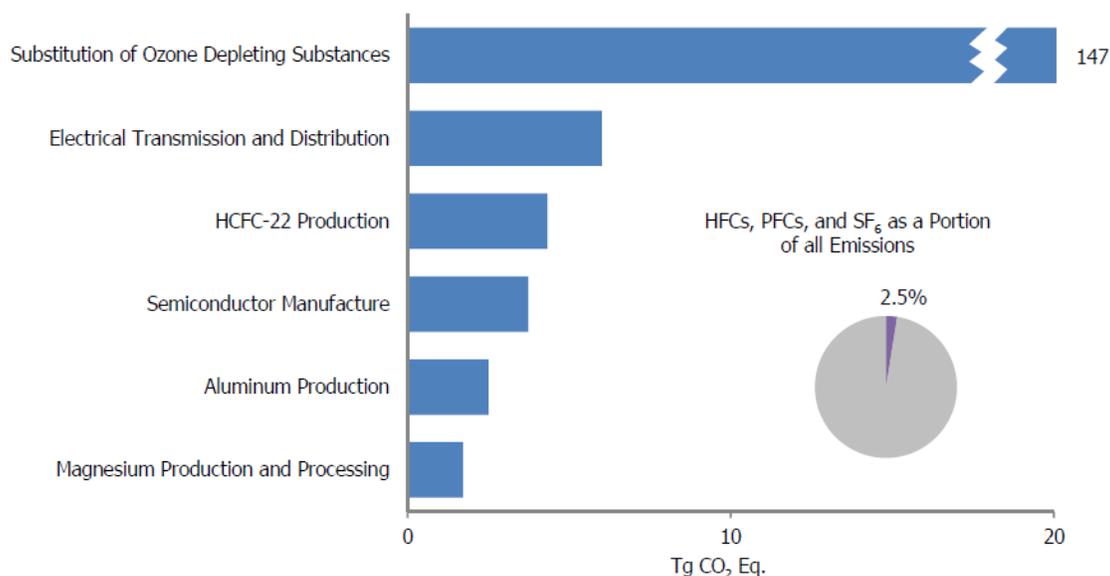
HFC, PFC, and SF₆ Emissions

HFCs and PFCs are families of synthetic chemicals that are used as alternatives to Ozone Depleting Substances, which are being phased out under the Montreal Protocol and Clean Air Act Amendments of 1990. HFCs and PFCs do not deplete the stratospheric ozone layer, and are therefore acceptable alternatives under the Montreal Protocol.

These compounds, however, along with SF₆, are potent greenhouse gases. In addition to having high global warming potentials, SF₆ and PFCs have extremely long atmospheric lifetimes, resulting in their essentially irreversible accumulation in the atmosphere once emitted. Sulfur hexafluoride is the most potent greenhouse gas the IPCC has evaluated (IPCC 1996).

Other emissive sources of these gases include HCFC-22 production, electrical transmission and distribution systems, semiconductor manufacturing, aluminum production, and magnesium production and processing (see Figure ES-10).

Figure ES-10: 2012 Sources of HFCs, PFCs, and SF₆ Emissions



Some significant trends in U.S. HFC, PFC, and SF₆ emissions include the following:

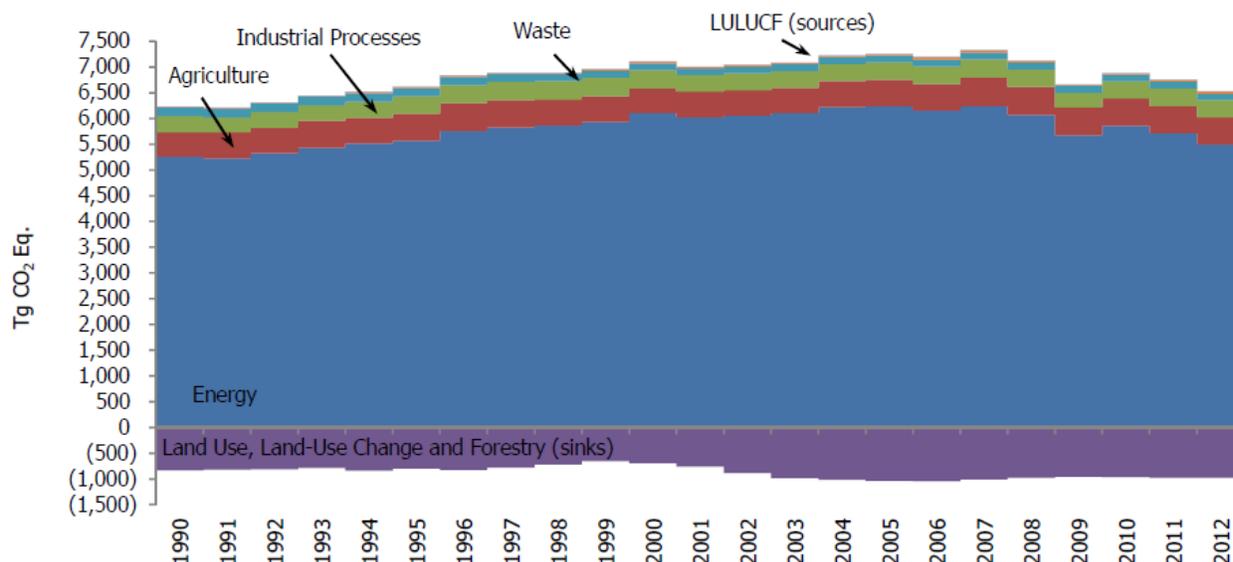
- Emissions resulting from the substitution of ozone depleting substances (ODS) (e.g., CFCs) have been consistently increasing, from small amounts in 1990 to 146.8 Tg CO₂ Eq. in 2012. Emissions from ODS substitutes are both the largest and the fastest growing source of HFC, PFC, and SF₆ emissions. These emissions have been increasing as phase-out of ODS required under the Montreal Protocol came into effect, especially after 1994, when full market penetration was made for the first generation of new technologies featuring ODS substitutes.
- GWP-weighted PFC, HFC, and SF₆ emissions from semiconductor manufacture have increased by 28 percent from 1990 to 2012, due to the rapid growth of this industry and the increasing complexity of semiconductor products (more complex devices have a larger number of layers that require additional F-GHG using process steps). Within that time span, emissions peaked in 1999, the initial year of the EPA's PFC Reduction / Climate Partnership for the Semiconductor Industry, but have since declined to 3.7 Tg CO₂ Eq. in 2012 (a 48 percent decrease relative to 1999).

- SF₆ emissions from electric power transmission and distribution systems decreased by 77.5 percent (20.7 Tg CO₂ Eq.) from 1990 to 2012, primarily because of higher purchase prices for SF₆ and efforts by industry to reduce emissions.
- PFC emissions from aluminum production decreased by 86.4 percent (15.9 Tg CO₂ Eq.) from 1990 to 2012, due to both industry emission reduction efforts and declines in domestic aluminum production.

ES.3. Overview of Sector Emissions and Trends

In accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC/UNEP/OECD/IEA 1997), and the 2003 UNFCCC Guidelines on Reporting and Review (UNFCCC 2003), Figure ES-11 and Table ES-4 aggregate emissions and sinks by these chapters. Emissions of all gases can be summed from each source category from IPCC guidance. Over the twenty-three-year period of 1990 to 2012, total emissions in the Energy, Industrial Processes, and Agriculture sectors grew by 238.8 Tg CO₂ Eq. (4.5 percent), 18.3 Tg CO₂ Eq. (5.8 percent), and 52.3 Tg CO₂ Eq. (11.0 percent), respectively. Emissions from the Waste and Solvent and Other Product Use sectors decreased by 41.1 Tg CO₂ Eq. (24.9 percent) and less than 0.1 Tg CO₂ Eq. (0.4 percent), respectively. Over the same period, estimates of net C sequestration in the Land Use, Land-Use Change, and Forestry (LULUCF) sector (magnitude of emissions plus CO₂ flux from all LULUCF source categories) increased by 124.1 Tg CO₂ Eq. (15.2 percent).

Figure ES-11: U.S. Greenhouse Gas Emissions and Sinks by Chapter/IPCC Sector



Note: Relatively smaller amounts of GWP-weighted emissions are also emitted from the Solvent and Other Product Use sectors

Note: Relatively smaller amounts of GWP-weighted emissions are also emitted from the Solvent and Other Product Use sectors.

Table ES-4: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks by Chapter/IPCC Sector (Tg or million metric tons CO₂ Eq.)

Chapter/IPCC Sector	1990	2005	2008	2009	2010	2011	2012
Energy	5,260.1	6,243.5	6,071.1	5,674.6	5,860.6	5,712.9	5,498.9

Fossil Fuel Combustion	4,745.1	5,752.9	5,593.4	5,225.7	5,404.9	5,271.1	5,072.3
Natural Gas Systems	194.2	182.0	184.3	175.2	167.0	168.3	165.1
Non-Energy Use of Fuels	120.8	141.0	128.0	108.1	120.8	117.3	110.3
Coal Mining	81.1	53.6	63.5	67.1	69.2	59.8	55.8
Petroleum Systems	36.2	29.1	29.1	29.5	29.9	30.9	32.1
Stationary Combustion	19.7	27.2	27.8	27.4	28.9	28.0	27.7
Mobile Combustion	48.6	39.3	27.4	24.5	22.5	20.2	18.2
Incineration of Waste	8.4	12.9	12.2	12.0	12.4	12.5	12.6
Abandoned Underground Coal Mines	6.0	5.5	5.3	5.1	5.0	4.8	4.7
Industrial Processes	316.1	334.9	335.9	287.8	324.6	342.9	334.4
Substitution of Ozone Depleting Substances	0.3	103.8	122.2	129.6	137.5	141.5	146.8
Iron and Steel Production & Metallurgical Coke Production	100.7	67.4	67.5	43.4	56.3	60.6	54.9
Cement Production	33.3	45.9	41.2	29.4	31.3	32.0	35.1
Nitric Acid Production	18.2	16.9	16.9	14.0	16.7	15.8	15.3
Lime Production	11.4	14.0	14.0	10.9	12.8	13.5	13.3
Ammonia Production	13.0	9.2	8.4	8.5	9.2	9.4	9.4
Other Process Uses of Carbonates	4.9	6.3	5.9	7.6	9.6	9.3	8.0
Petrochemical Production	5.7	7.5	6.5	5.7	6.5	6.6	6.6
Electrical Transmission and Distribution	26.7	11.0	8.4	7.5	7.2	7.2	6.0
Aluminum Production	25.3	7.1	7.2	4.6	4.3	6.2	5.9
Adipic Acid Production	15.8	7.4	2.6	2.8	4.4	10.6	5.8
Urea Consumption for Non-Agricultural Purposes	3.8	3.7	4.1	3.4	4.7	4.0	5.2
HCFC-22 Production	36.4	15.8	13.6	5.4	6.4	6.9	4.3
Semiconductor Manufacture	2.9	3.5	3.0	2.2	2.8	3.9	3.7
Soda Ash Production and Consumption	2.7	2.9	2.9	2.5	2.6	2.6	2.7
Carbon Dioxide Consumption	1.4	1.3	1.8	1.8	2.3	1.8	1.8
Titanium Dioxide Production	1.2	1.8	1.8	1.6	1.8	1.7	1.7
Magnesium Production and Processing	5.4	2.9	1.9	1.7	2.2	2.9	1.7
Ferroalloy Production	2.2	1.4	1.6	1.5	1.7	1.7	1.7
Zinc Production	0.6	1.0	1.2	0.9	1.2	1.3	1.4
Glass Production	1.5	1.9	1.5	1.0	1.5	1.3	1.2
Phosphoric Acid Production	1.6	1.4	1.2	1.0	1.1	1.2	1.1
Lead Production	0.5	0.6	0.5	0.5	0.5	0.5	0.5
Silicon Carbide Production and Consumption	0.4	0.2	0.2	0.2	0.2	0.2	0.2
Solvent and Other Product Use	4.4						
Agriculture	473.9	512.2	543.4	538.9	534.2	528.3	526.3
Agricultural Soil Management	282.1	297.3	319.0	316.4	310.1	307.8	306.6
Enteric Fermentation	137.9	142.5	147.0	146.1	144.9	143.0	141.0
Manure Management	45.8	64.6	69.3	68.2	69.6	70.0	70.9
Rice Cultivation	7.7	7.5	7.8	7.9	9.3	7.1	7.4
Field Burning of Agricultural Residues	0.4	0.3	0.4	0.4	0.3	0.4	0.4
Land Use, Land-Use Change, and Forestry (Emissions)	13.7	25.5	27.3	20.5	20.0	36.0	37.8
Forest Land Remaining Forest Land	4.6	15.1	16.2	10.8	8.9	25.7	28.1
Cropland Remaining Cropland	7.1	7.9	8.6	7.2	8.6	7.9	7.4
Settlements Remaining Settlements	1.0	1.5	1.5	1.4	1.5	1.5	1.5
Wetlands Remaining Wetlands	1.0	1.1	1.0	1.1	1.0	0.9	0.8
Waste	165.0	133.2	136.0	136.5	131.1	128.5	124.0
Landfills	147.8	112.1	114.3	115.3	109.9	107.4	102.8
Wastewater Treatment	16.6	17.8	18.1	17.9	17.9	17.8	17.8
Composting	0.7	3.3	3.5	3.3	3.2	3.3	3.3
Total Emissions	6,233.2	7,253.8	7,118.1	6,662.9	6,874.7	6,753.0	6,525.6
Net CO ₂ Flux From Land Use, Land-Use Change and Forestry (Sinks)*	(831.1)	(1,030.7)	(981.0)	(961.6)	(968.0)	(980.3)	(979.3)

Net Emissions (Sources and Sinks)	5,402.1	6,223.1	6,137.1	5,701.2	5,906.7	5,772.7	5,546.3
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* The net CO₂ flux total includes both emissions and sequestration, and constitutes a sink in the United States. Sinks are only included in net emissions total. Please refer to Table ES-5 for a breakout by source.

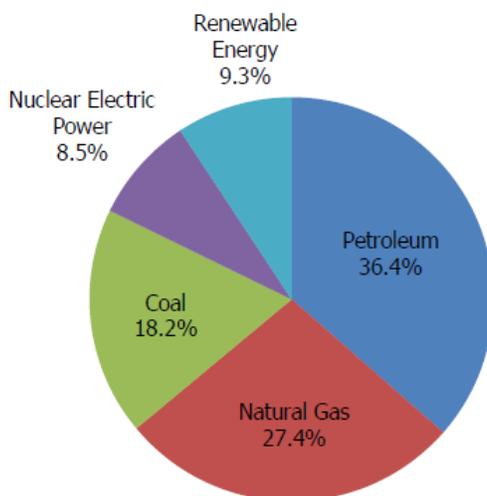
Note: Totals may not sum due to independent rounding.

Note: Parentheses indicate negative values or sequestration.

Energy

The Energy chapter contains emissions of all greenhouse gases resulting from stationary and mobile energy activities including fuel combustion and fugitive fuel emissions. Energy-related activities, primarily fossil fuel combustion, accounted for the vast majority of U.S. CO₂ emissions for the period of 1990 through 2012. In 2012, approximately 82 percent of the energy consumed in the United States (on a Btu basis) was produced through the combustion of fossil fuels. The remaining 18 percent came from other energy sources such as hydropower, biomass, nuclear, wind, and solar energy (see Figure ES-12). Energy-related activities are also responsible for CH₄ and N₂O emissions (40 percent and 9 percent of total U.S. emissions of each gas, respectively). Overall, emission sources in the Energy chapter account for a combined 84.3 percent of total U.S. greenhouse gas emissions in 2012.

Figure ES-12: 2012 U.S. Energy Consumption by Energy Source



Industrial Processes

The Industrial Processes chapter contains by-product or fugitive emissions of greenhouse gases from industrial processes not directly related to energy activities such as fossil fuel combustion. For example, industrial processes can chemically transform raw materials, which often release waste gases such as CO₂, CH₄, and N₂O. These processes include iron and steel production and metallurgical coke production, cement production, ammonia production and urea consumption, lime production, other process uses of carbonates (e.g., flux stone, flue gas desulfurization, and glass manufacturing), soda ash production and consumption, titanium dioxide production, phosphoric acid production, ferroalloy production, glass production, CO₂ consumption, silicon carbide production and consumption, aluminum production, petrochemical production, nitric acid production, adipic acid production, lead production, and zinc production. Additionally, emissions from industrial processes release HFCs, PFCs, and SF₆. Overall, emission sources in the Industrial Process chapter account for 5.1 percent of U.S. greenhouse gas emissions in 2012.

Solvent and Other Product Use

The Solvent and Other Product Use chapter contains greenhouse gas emissions that are produced as a by-product of various solvent and other product uses. In the United States, emissions from N₂O from product uses, the only source of greenhouse gas emissions from this sector, accounted for less than 0.1 percent of total U.S. anthropogenic greenhouse gas emissions on a carbon equivalent basis in 2012.

Agriculture

The Agricultural chapter contains anthropogenic emissions from agricultural activities (except fuel combustion, which is addressed in the Energy chapter, and agricultural CO₂ fluxes, which are addressed in the Land Use, Land-Use Change, and Forestry chapter). Agricultural activities contribute directly to emissions of greenhouse gases through a variety of processes, including the following source categories: enteric fermentation in domestic livestock, livestock manure management, rice cultivation, agricultural soil management, and field burning of agricultural residues. CH₄ and N₂O were the primary greenhouse gases emitted by agricultural activities. CH₄ emissions from enteric fermentation and manure management represented 24.9 percent and 9.3 percent of total CH₄ emissions from anthropogenic activities, respectively, in 2012. Agricultural soil management activities such as fertilizer application and other cropping practices were the largest source of U.S. N₂O emissions in 2012, accounting for 74.8 percent. In 2012, emission sources accounted for in the Agricultural chapters were responsible for 8.1 percent of total U.S. greenhouse gas emissions.

Land Use, Land-Use Change, and Forestry

The Land Use, Land-Use Change, and Forestry chapter contains emissions of CH₄ and N₂O, and emissions and removals of CO₂ from forest management, other land-use activities, and land-use change. Forest management practices, tree planting in urban areas, the management of agricultural soils, and the landfilling of yard trimmings and food scraps resulted in a net uptake (sequestration) of C in the United States. Forests (including vegetation, soils, and harvested wood) accounted for 88 percent of total 2012 net CO₂ flux, urban trees accounted for 9 percent, mineral and organic soil carbon stock changes accounted for 1 percent, and landfilled yard trimmings and food scraps accounted for 1 percent of the total net flux in 2012. The net forest sequestration is a result of net forest growth and increasing forest area, as well as a net accumulation of carbon stocks in harvested wood pools. The net sequestration in urban forests is a result of net tree growth in these areas. In agricultural soils, mineral and organic soils sequester approximately 4 times as much C as is emitted from these soils through liming and urea fertilization. The mineral soil C sequestration is largely due to the conversion of cropland to permanent pastures and hay production, a reduction in summer fallow areas in semi-arid areas, an increase in the adoption of conservation tillage practices, and an increase in the amounts of organic fertilizers (i.e., manure and sewage sludge) applied to agriculture lands. The landfilled yard trimmings and food scraps net sequestration is due to the long-term accumulation of yard trimming carbon and food scraps in landfills.

Land use, land-use change, and forestry activities in 2012 resulted in a net C sequestration of 979.3 Tg CO₂ Eq. (Table ES-5). This represents an offset of 18.2 percent of total U.S. CO₂ emissions, or 15.0 percent of total greenhouse gas emissions in 2012. Between 1990 and 2012, total land use, land-use change, and forestry net C flux resulted in a 17.8 percent increase in CO₂ sequestration, primarily due to an increase in the rate of net C accumulation in forest C stocks, particularly in aboveground and belowground tree biomass, and harvested wood pools. Annual C accumulation in landfilled yard trimmings and food scraps slowed over this period, while the rate of annual C accumulation increased in urban trees.

Table ES-5: Net CO₂ Flux from Land Use, Land-Use Change, and Forestry (Tg or million metric tons CO₂ Eq.)

Sink Category	1990	2005	2008	2009	2010	2011	2012
Forest Land Remaining Forest Land	(704.6)	(927.2)	(871.0)	(849.4)	(855.7)	(867.1)	(866.5)
Cropland Remaining Cropland	(51.9)	(29.1)	(29.8)	(29.2)	(27.6)	(27.5)	(26.5)
Land Converted to Cropland	26.9	20.9	16.8	16.8	16.8	16.8	16.8
Grassland Remaining Grassland	(9.6)	5.6	6.8	6.8	6.7	6.7	6.7
Land Converted to Grassland	(7.3)	(8.3)	(8.7)	(8.7)	(8.6)	(8.6)	(8.5)

Settlements Remaining Settlements	(60.4)	(80.5)	(83.9)	(85.0)	(86.1)	(87.3)	(88.4)
Other (Landfilled Yard Trimmings and Food Scraps)	(24.2)	(12.0)	(11.2)	(12.9)	(13.6)	(13.5)	(13.0)
Total	(831.1)	(1,030.7)	(981.0)	(961.6)	(968.0)	(980.3)	(979.3)

Note: Totals may not sum due to independent rounding. Parentheses indicate net sequestration.

Emissions from Land Use, Land-Use Change, and Forestry are shown in Table ES-6. Liming of agricultural soils and urea fertilization in 2012 resulted in CO₂ emissions of 7.4 Tg CO₂ Eq. (7,381 Gg). Lands undergoing peat extraction (i.e., *Peatlands Remaining Peatlands*) resulted in CO₂ emissions of 0.8 Tg CO₂ Eq. (830 Gg), and N₂O emissions of less than 0.1 Tg CO₂ Eq. The application of synthetic fertilizers to forest soils in 2012 resulted in direct N₂O emissions of 0.4 Tg CO₂ Eq. (1 Gg). Direct N₂O emissions from fertilizer application to forest soils have increased by 455 percent since 1990, but still account for a relatively small portion of overall emissions. Additionally, direct N₂O emissions from fertilizer application to settlement soils in 2012 accounted for 1.5 Tg CO₂ Eq. (5 Gg). This represents an increase of 48 percent since 1990. Forest fires in 2012 resulted in CH₄ emissions of 15.3 Tg CO₂ Eq. (727 Gg), and in N₂O emissions of 12.5 Tg CO₂ Eq. (40 Gg).

Table ES-6: Emissions from Land Use, Land-Use Change, and Forestry (Tg or million metric tons CO₂ Eq.)

Source Category	1990	2005	2008	2009	2010	2011	2012
CO₂	8.1	8.9	9.6	8.3	9.6	8.8	8.2
Cropland Remaining Cropland: Liming of Agricultural Soils	4.7	4.3	5.0	3.7	4.8	3.9	3.9
Cropland Remaining Cropland: Urea Fertilization	2.4	3.5	3.6	3.6	3.8	4.0	3.4
Wetlands Remaining Wetlands: Peatlands Remaining Peatlands	1.0	1.1	1.0	1.1	1.0	0.9	0.8
CH₄	2.5	8.1	8.7	5.8	4.7	14.0	15.3
Forest Land Remaining Forest Land: Forest Fires	2.5	8.1	8.7	5.8	4.7	14.0	15.3
N₂O	3.1	8.4	9.0	6.5	5.7	13.3	14.3
Forest Land Remaining Forest Land: Forest Fires	2.0	6.6	7.1	4.7	3.9	11.4	12.5
Forest Land Remaining Forest Land: Forest Soils	0.1	0.4	0.4	0.4	0.4	0.4	0.4
Settlements Remaining Settlements: Settlement Soils	1.0	1.5	1.5	1.4	1.5	1.5	1.5
Wetlands Remaining Wetlands: Peatlands Remaining Peatlands	+	+	+	+	+	+	+
Total	13.7	25.5	27.3	20.5	20.0	36.0	37.8

+ Less than 0.05 Tg CO₂ Eq.

Note: Totals may not sum due to independent rounding.

Waste

The Waste chapter contains emissions from waste management activities (except incineration of waste, which is addressed in the Energy chapter). Landfills were the largest source of anthropogenic greenhouse gas emissions in the Waste chapter, accounting for 82.9 percent of this chapter's emissions, and 18.1 percent of total U.S. CH₄ emissions.¹⁹ Additionally, wastewater treatment accounts for 14.3 percent of Waste emissions, 2.2 percent of U.S. CH₄ emissions, and 1.2 percent of U.S. N₂O emissions. Emissions of CH₄ and N₂O from composting are also accounted for in this chapter, generating emissions of 1.6 Tg CO₂ Eq. and 1.8 Tg CO₂ Eq., respectively. Overall,

¹⁹ Landfills also store carbon, due to incomplete degradation of organic materials such as wood products and yard trimmings, as described in the Land-Use, Land-Use Change, and Forestry chapter of the Inventory report.

emission sources accounted for in the Waste chapter generated 1.9 percent of total U.S. greenhouse gas emissions in 2012.

ES.4. Other Information

Emissions by Economic Sector

Throughout the Inventory of U.S. Greenhouse Gas Emissions and Sinks report, emission estimates are grouped into six sectors (i.e., chapters) defined by the IPCC: Energy; Industrial Processes; Solvent Use; Agriculture; Land Use, Land-Use Change, and Forestry; and Waste. While it is important to use this characterization for consistency with UNFCCC reporting guidelines, it is also useful to allocate emissions into more commonly used sectoral categories. This section reports emissions by the following economic sectors: Residential, Commercial, Industry, Transportation, Electricity Generation, Agriculture, and U.S. Territories.

Table ES-7 summarizes emissions from each of these sectors, and Figure ES-13 shows the trend in emissions by sector from 1990 to 2012.

Figure ES-13: Emissions Allocated to Economic Sectors

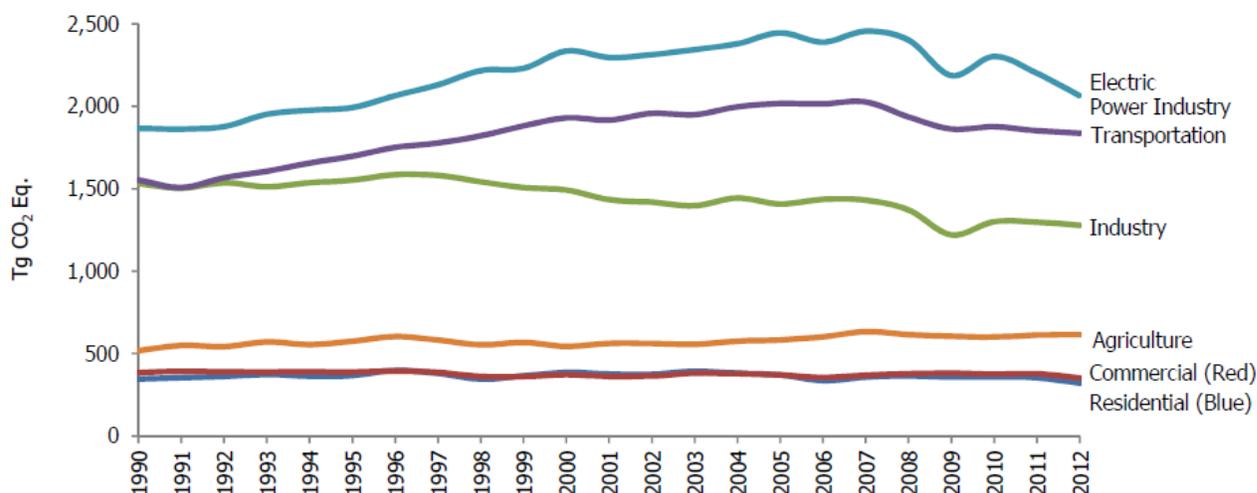


Table ES-7: U.S. Greenhouse Gas Emissions Allocated to Economic Sectors (Tg or million metric tons CO₂ Eq.)

Implied Sectors	1990	2005	2008	2009	2010	2011	2012
Electric Power Industry	1,866.1	2,445.7	2,401.8	2,187.0	2,302.5	2,200.9	2,064.0
Transportation	1,553.2	2,017.2	1,935.2	1,862.4	1,876.4	1,852.1	1,837.0
Industry	1,531.5	1,407.5	1,371.5	1,220.5	1,300.5	1,297.5	1,278.4
Agriculture	518.1	583.6	615.3	605.3	600.9	612.7	614.1
Commercial	385.3	370.4	379.2	381.9	376.6	378.3	352.7
Residential	345.4	371.3	365.4	357.9	360.0	353.6	321.4
U.S. Territories	33.7	58.2	49.8	47.9	58.0	57.9	57.9
Total Emissions	6,233.2	7,253.8	7,118.1	6,662.9	6,874.7	6,753.0	6,525.6
<i>Land Use, Land-Use Change, and Forestry (Sinks)</i>	<i>(831.1)</i>	<i>(1,030.7)</i>	<i>(981.0)</i>	<i>(961.6)</i>	<i>(968.0)</i>	<i>(980.3)</i>	<i>(979.3)</i>
Net Emissions (Sources and Sinks)	5,402.1	6,223.1	6,137.1	5,701.2	5,906.7	5,772.7	5,546.3

Note: Totals may not sum due to independent rounding. Emissions include CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. See Table 2-12 for more detailed data.

Using this categorization, emissions from electricity generation accounted for the largest portion (32 percent) of U.S. greenhouse gas emissions in 2012. Transportation activities, in aggregate, accounted for the second largest portion (28 percent), while emissions from industry accounted for the third largest portion (20 percent) of U.S. greenhouse gas emissions in 2012. In contrast to electricity generation and transportation, emissions from industry have in general declined over the past decade. The long-term decline in these emissions has been due to structural changes in the U.S. economy (i.e., shifts from a manufacturing-based to a service-based economy), fuel switching, and energy efficiency improvements. The remaining 21 percent of U.S. greenhouse gas emissions were contributed by, in order of importance, the agriculture, commercial, and residential sectors, plus emissions from U.S. Territories. Activities related to agriculture accounted for 9 percent of U.S. emissions; unlike other economic sectors, agricultural sector emissions were dominated by N₂O emissions from agricultural soil management and CH₄ emissions from enteric fermentation. The commercial and residential sectors each accounted for 5 percent of emissions and U.S. Territories accounted for 1 percent of emissions; emissions from these sectors primarily consisted of CO₂ emissions from fossil fuel combustion. CO₂ was also emitted and sequestered by a variety of activities related to forest management practices, tree planting in urban areas, the management of agricultural soils, and landfilling of yard trimmings.

Electricity is ultimately consumed in the economic sectors described above. Table ES-8 presents greenhouse gas emissions from economic sectors with emissions related to electricity generation distributed into end-use categories (i.e., emissions from electricity generation are allocated to the economic sectors in which the electricity is consumed). To distribute electricity emissions among end-use sectors, emissions from the source categories assigned to electricity generation were allocated to the residential, commercial, industry, transportation, and agriculture economic sectors according to retail sales of electricity.²⁰ These source categories include CO₂ from fossil fuel combustion and the use of limestone and dolomite for flue gas desulfurization, CO₂ and N₂O from incineration of waste, CH₄ and N₂O from stationary sources, and SF₆ from electrical transmission and distribution systems.

When emissions from electricity are distributed among these sectors, industrial activities and transportation account for the largest shares of U.S. greenhouse gas emissions (each with 28 percent) in 2012. The residential and commercial sectors contributed the next largest shares of total U.S. greenhouse gas emissions in 2012. Emissions from these sectors increase substantially when emissions from electricity are included, due to their relatively large share of electricity consumption (e.g., lighting, appliances, etc.). In all sectors except agriculture, CO₂ accounts for more than 80 percent of greenhouse gas emissions, primarily from the combustion of fossil fuels. Figure ES-14 shows the trend in these emissions by sector from 1990 to 2012.

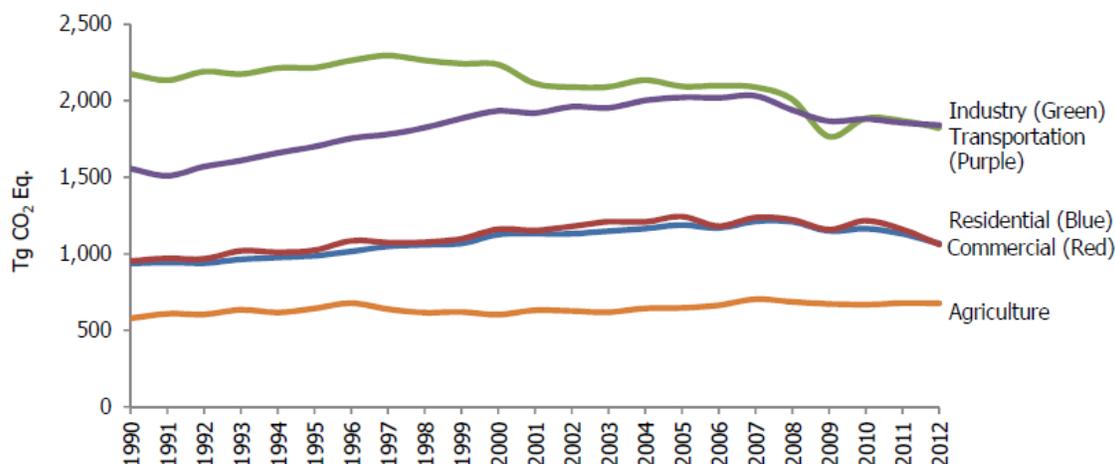
Table ES-8: U.S Greenhouse Gas Emissions by Economic Sector with Electricity-Related Emissions Distributed (Tg or million metric tons CO₂ Eq.)

Implied Sectors	1990	2005	2008	2009	2010	2011	2012
Industry	2,173.9	2,093.7	2,009.0	1,766.0	1,885.4	1,869.2	1,821.2
Transportation	1,556.3	2,022.0	1,939.9	1,866.9	1,880.9	1,856.4	1,841.0
Commercial	936.7	1,188.6	1,209.3	1,149.6	1,164.7	1,131.1	1,067.5
Residential	953.1	1,243.5	1,222.9	1,159.2	1,216.5	1,160.1	1,061.7
Agriculture	579.4	647.7	687.1	673.1	669.3	678.2	676.3
U.S. Territories	33.7	58.2	49.8	47.9	58.0	57.9	57.9
Total Emissions	6,233.2	7,253.8	7,118.1	6,662.9	6,874.7	6,753.0	6,525.6
Land Use, Land-Use Change, and Forestry (Sinks)	(831.1)	(1,030.7)	(981.0)	(961.6)	(968.0)	(980.3)	(979.3)
Net Emissions (Sources and Sinks)	5,402.1	6,223.1	6,137.1	5,701.2	5,906.7	5,772.7	5,546.3

See Table 2-14 for more detailed data.

²⁰ Emissions were not distributed to U.S. territories, since the electricity generation sector only includes emissions related to the generation of electricity in the 50 states and the District of Columbia.

Figure ES-14: Emissions with Electricity Distributed to Economic Sectors



Box ES- 2: Recent Trends in Various U.S. Greenhouse Gas Emissions-Related Data

Total emissions can be compared to other economic and social indices to highlight changes over time. These comparisons include: (1) emissions per unit of aggregate energy consumption, because energy-related activities are the largest sources of emissions; (2) emissions per unit of fossil fuel consumption, because almost all energy-related emissions involve the combustion of fossil fuels; (3) emissions per unit of electricity consumption, because the electric power industry—utilities and nonutilities combined—was the largest source of U.S. greenhouse gas emissions in 2012; (4) emissions per unit of total gross domestic product as a measure of national economic activity; and (5) emissions per capita.

Table ES-9 provides data on various statistics related to U.S. greenhouse gas emissions normalized to 1990 as a baseline year. Greenhouse gas emissions in the United States have grown at an average annual rate of 0.2 percent since 1990. This rate is slightly slower than that for total energy and for fossil fuel consumption, and much slower than that for electricity consumption, overall gross domestic product and national population (see Figure ES-15).

Table ES-9: Recent Trends in Various U.S. Data (Index 1990 = 100)

Variable	1990	2005	2008	2009	2010	2011	2012	Avg. Annual Growth Rate
Greenhouse Gas Emissions ^a	100	116	114	107	110	108	105	0.2%
Energy Consumption ^b	100	119	118	113	117	116	113	0.6%
Fossil Fuel Consumption ^b	100	119	116	109	113	111	108	0.4%
Electricity Consumption ^b	100	134	136	131	137	137	135	1.4%
GDP ^c	100	159	166	161	165	168	173	2.5%
Population ^d	100	118	122	123	124	125	125	1.0%

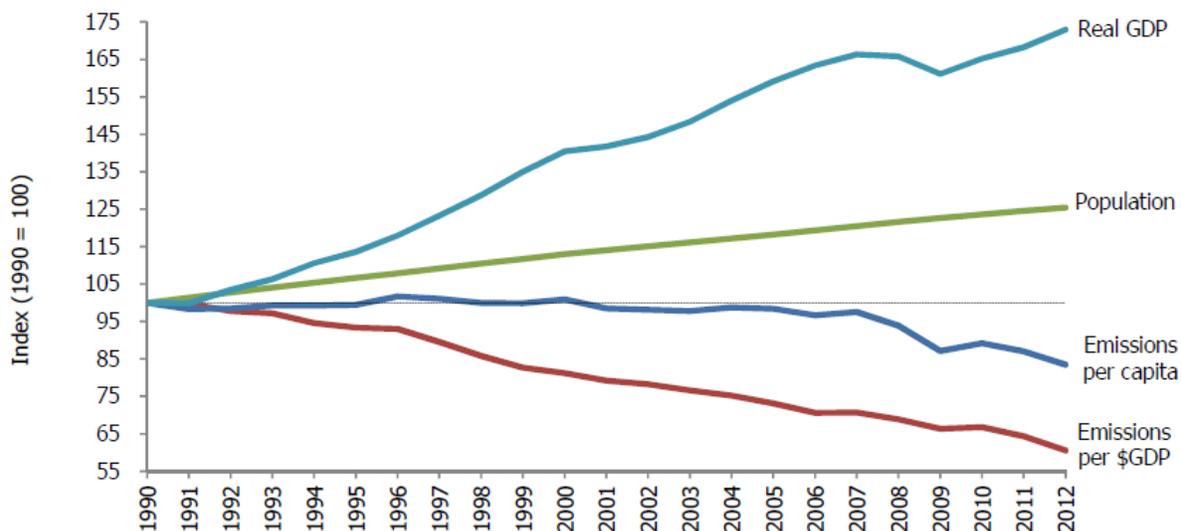
^a GWP-weighted values

^b Energy content-weighted values (EIA 2013)

^c Gross Domestic Product in chained 2009 dollars (BEA 2013)

^d U.S. Census Bureau (2013)

Figure ES-15: U.S. Greenhouse Gas Emissions Per Capita and Per Dollar of Gross Domestic Product



Source: BEA (2013), U.S. Census Bureau (2013), and emission estimates in this report.

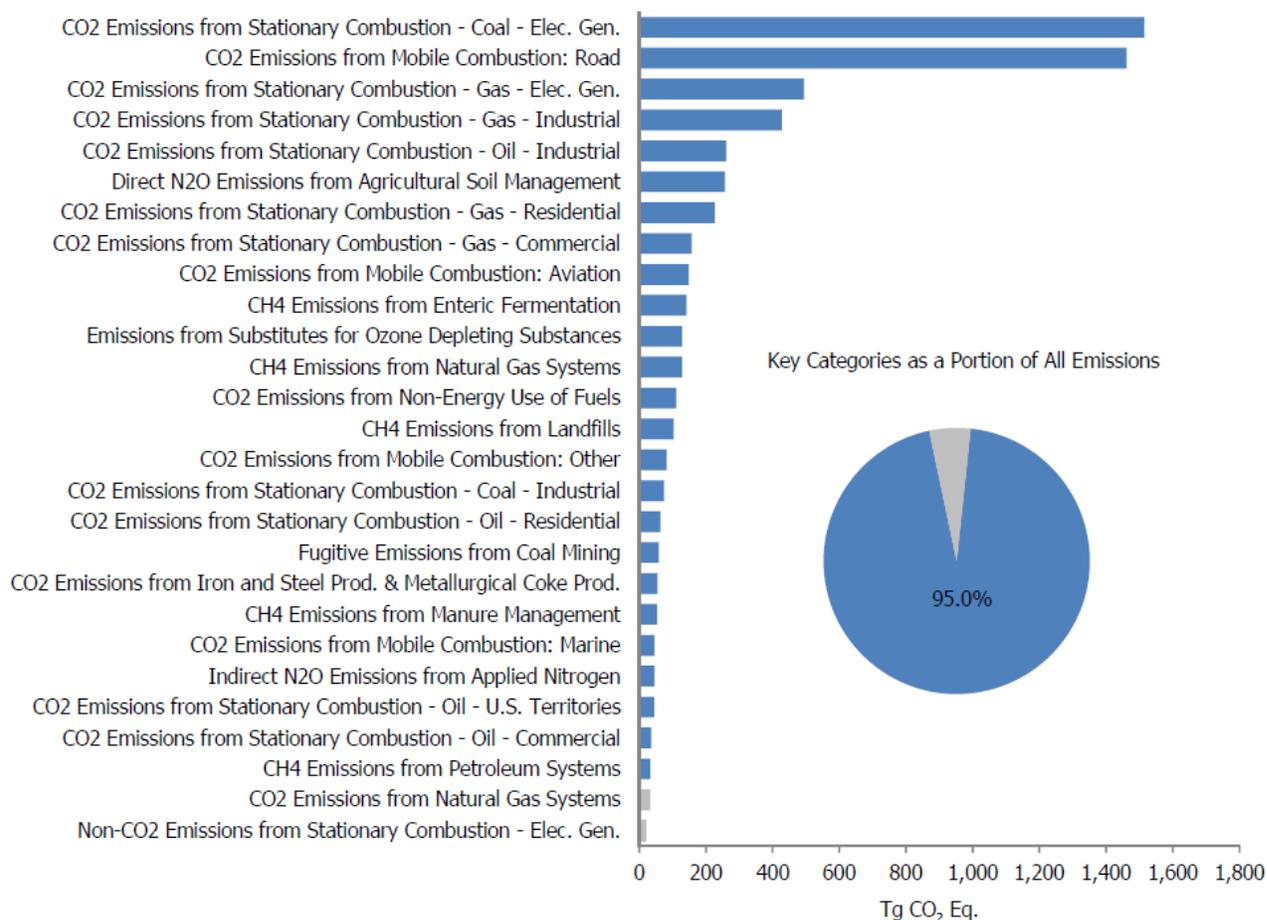
Key Categories

The IPCC *Good Practice Guidance* (IPCC 2000) defines a key category as a “[source or sink category] that is prioritized within the national inventory system because its estimate has a significant influence on a country’s total inventory of direct greenhouse gases in terms of the absolute level of emissions, the trend in emissions, or both.”²¹ By definition, key categories are sources or sinks that have the greatest contribution to the absolute overall level of national emissions in any of the years covered by the time series. In addition, when an entire time series of emission estimates is prepared, a thorough investigation of key categories must also account for the influence of trends of individual source and sink categories. Finally, a qualitative evaluation of key categories should be performed, in order to capture any key categories that were not identified in either of the quantitative analyses.

Figure ES-16 presents 2012 emission estimates for the key categories as defined by a level analysis (i.e., the contribution of each source or sink category to the total inventory level). The UNFCCC reporting guidelines request that key category analyses be reported at an appropriate level of disaggregation, which may lead to source and sink category names which differ from those used elsewhere in the inventory report. For more information regarding key categories, see section 1.5 and Annex 1.

²¹ See Chapter 7 “Methodological Choice and Recalculation” in IPCC (2000). <<http://www.ipcc-nggip.iges.or.jp/public/gp/gpgaum.htm>>.

Figure ES-16: 2012 Key Categories



Note: For a complete discussion of the key category analysis, see Annex 1. Blue bars indicate a Tier 1 level assessment key category. Gray bars indicate a Tier 2 level assessment key category.

Quality Assurance and Quality Control (QA/QC)

The United States seeks to continually improve the quality, transparency, and credibility of the Inventory of U.S. Greenhouse Gas Emissions and Sinks. To assist in these efforts, the United States implemented a systematic approach to QA/QC. While QA/QC has always been an integral part of the U.S. national system for inventory development, the procedures followed for the current inventory have been formalized in accordance with the QA/QC plan and the UNFCCC reporting guidelines.

Uncertainty Analysis of Emission Estimates

While the current U.S. emissions inventory provides a solid foundation for the development of a more detailed and comprehensive national inventory, there are uncertainties associated with the emission estimates. Some of the current estimates, such as those for CO₂ emissions from energy-related activities and cement processing, are considered to have low uncertainties. For some other categories of emissions, however, a lack of data or an incomplete understanding of how emissions are generated increases the uncertainty associated with the estimates presented. Acquiring a better understanding of the uncertainty associated with inventory estimates is an important step in helping to prioritize future work and improve the overall quality of the Inventory. Recognizing the benefit of conducting an uncertainty analysis, the UNFCCC reporting guidelines follow the recommendations of the *IPCC*

Good Practice Guidance (IPCC 2000) and require that countries provide single estimates of uncertainty for source and sink categories.

Currently, a qualitative discussion of uncertainty is presented for all source and sink categories. Within the discussion of each emission source, specific factors affecting the uncertainty surrounding the estimates are discussed. Most sources also contain a quantitative uncertainty assessment, in accordance with UNFCCC reporting guidelines.

Box ES- 3: Recalculations of Inventory Estimates

Each year, emission and sink estimates are recalculated and revised for all years in the Inventory of U.S. Greenhouse Gas Emissions and Sinks, as attempts are made to improve both the analyses themselves, through the use of better methods or data, and the overall usefulness of the report. In this effort, the United States follows the 2006 IPCC Guidelines (IPCC 2006), which states, “Both methodological changes and refinements over time are an essential part of improving inventory quality. It is good practice to change or refine methods” when: available data have changed; the previously used method is not consistent with the IPCC guidelines for that category; a category has become key; the previously used method is insufficient to reflect mitigation activities in a transparent manner; the capacity for inventory preparation has increased; new inventory methods become available; and for correction of errors.” In general, recalculations are made to the U.S. greenhouse gas emission estimates either to incorporate new methodologies or, most commonly, to update recent historical data.

In each Inventory report, the results of all methodology changes and historical data updates are presented in the "Recalculations and Improvements" chapter; detailed descriptions of each recalculation are contained within each source's description contained in the report, if applicable. In general, when methodological changes have been implemented, the entire time series (in the case of the most recent inventory report, 1990 through 2012) has been recalculated to reflect the change, per the 2006 IPCC Guidelines (IPCC 2006). Changes in historical data are generally the result of changes in statistical data supplied by other agencies. References for the data are provided for additional information.

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DATE: June 5, 2014

TO: Energy and Environment Committee (EEC)

FROM: Sarah Jepson, Manager, Active Transportation & Special Programs, jepson@scag.ca.gov, 213-236-1955

SUBJECT: Proposed Rule Defining the Scope of Waters Protected Under the Federal Clean Water Act

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

For Information Only - No Action Required.

EXECUTIVE SUMMARY:

The U.S. Army Corps of Engineers and U.S. Environmental Protection Agency (EPA) published a proposed rule in the Federal Register on April 21, 2014, intended to further define the scope of waters protected under the Clean Water Act. The proposed rule could expand the water bodies protected under the Clean Water Act.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective 1: Create and facilitate a collaborative and cooperative environment to produce forward thinking regional plans.

BACKGROUND:

In response to several cases brought before the U.S. Supreme Court, the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency published a proposed rule in the Federal Register (April 21, 2014) intended to further define the scope of waters protected under the Clean Water Act. The agencies are seeking input by July 21, 2014, that is technical and scientific in nature, to identify sub-categories of "other waters" that have a significant nexus to traditional waters regulated under the Clean Water Act. Specific areas in which the agencies are encouraging comment include:

- Alternate approaches to determining whether "other waters" are similarly situated
- More efficient technologies and approaches to determine which waters are subject to jurisdiction
- Ways to clarify the definition, extent, and aquatic features of tributaries as well as their distinguishing features from gullies, rills, and non-wetland swales
- Appropriate flow level for upland ditch exclusion
- Alternate connection types to identify "adjacent waters"
- The need for any more specificity as to when a water is deemed located in the floodplain of a jurisdictional water
- The definition of "neighboring," as used to define "adjacent water"
- The aquatic resource, implementation, and economic implications of the proposed definition
- Peer-reviewed literature to aid in review of the report

The proposed rule could expand the water bodies protected under the Clean Water Act. Staff will monitor the rulemaking and work with partner agencies to explore and better understand any potential ramifications of the proposed rule to the SCAG region. For more information, visit online at: <https://federalregister.gov/a/2014-07142>.

FISCAL IMPACT:

None

ATTACHMENT:

None

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DATE: June 5, 2014

TO: Community, Economic and Human Development (CEHD) Committee
Energy and Environment Committee (EEC)
Transportation Committee (TC)
Regional Council (RC)

FROM: Kimberly Clark, Senior Regional Planner, Land Use and Environmental Planning,
213-236-1844, clark@scag.ca.gov

SUBJECT: Progress of One-on-One Meetings with Local Jurisdictions to Provide Assistance for a
Bottom-up Local Input Process

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

For Information Only – No Action Required.

EXECUTIVE SUMMARY:

SCAG staff continues with its past practice of engaging in a bottom-up local input process for the 2016-2040 Regional Transportation Plan and Sustainable Communities Strategy (“2016 RTP/SCS” or “Plan”), which employs a “local control - regional collaboration” strategy for the Plan update. To facilitate and assist in the local review of the draft socioeconomic and geographic datasets for the 2016 RTP/SCS, staff has conducted meetings with jurisdictions one-on-one to collect data changes, answer questions, and provide technical guidance, as needed. To date, staff has requested sessions with all 197 jurisdictions, and has completed meetings with 183 jurisdictions, or 93% of all cities and counties in the SCAG region. This effort has resulted in feedback from 63% of jurisdictions on all or a portion of SCAG’s information requests in the current round of the Local Input Process (Round 2).

STRATEGIC PLAN:

This item supports SCAG’s Strategic Plan; Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective a: Create and facilitate a collaborative and cooperative environment to produce forward thinking regional plans.

BACKGROUND:

At the October 3, 2013 CEHD meeting, staff presented the sample package for local input on SCAG’s growth forecast and land use datasets for the 2016 RTP/SCS. Starting in November, all 197 local jurisdictions in the SCAG region were contacted and requested to provide input on their current and anticipated population, households, and employment figures for 2012, 2020, 2035, and 2040. This is in accordance with Stage 2 of the Bottom-up Local Input Process (“local control – regional collaboration”) for the 2016 RTP/SCS, as outlined in previous communication with local jurisdictions:

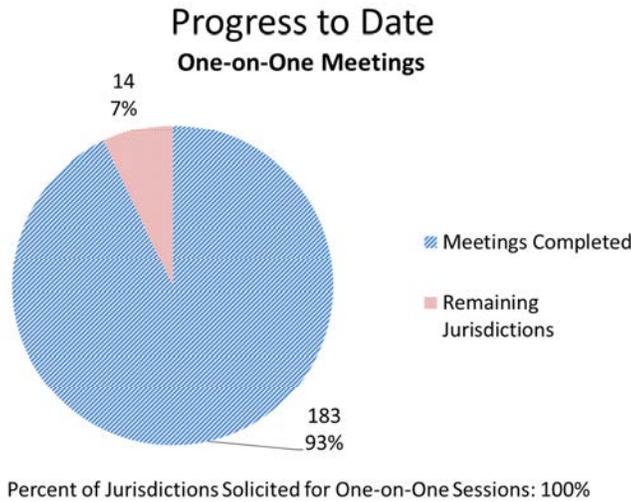
- Stage 1 - Preliminary General Plan, Zoning, Existing Land Use, and Resource Data Collection and Review (March 2013 - September 13, 2013)
- Stage 2 - Review of Base Year 2012 Socioeconomic Data and Future Years’ (2020, 2035, and 2040) Growth Forecast, and Local Survey (November 2013 - May 2014); and
- Stage 3 - Land Use Scenario Planning Exercises (May 2014 –September 2014)

REPORT

In order to facilitate the review of this data and to ensure that each jurisdiction is fully informed of the 2016 RTP/SCS planning process, SCAG staff has regularly conducted presentations for planning directors at subregional events and have met individually with local jurisdictions to collect data, answer questions, and provide technical assistance.

With the assistance of the region’s 15 subregional organizations, presentations have been made at the Orange County Council of Governments (OCCOG) Technical Advisory Committee; South Bay Cities COG Livable Communities Working Group; the Ventura County City-County Planners’ Association; the Coachella Valley Association of Governments Technical Planning Sub-Committee; the Imperial County Transportation Commission Technical Advisory Panel; the San Bernardino Associated Governments (SANBAG) Planning Directors Meeting; the Western Riverside Council of Governments (WRCOG) Planning Directors Technical Advisory Committee; the WRCOG City Managers Technical Advisory Committee; the San Gabriel Valley Council of Governments Technical Advisory Panel; and the Meeting of the Gateway Cities Planning Directors.

Staff has also met with 93% of all local jurisdictions at this time, and has contacted all 197 jurisdictions to schedule sessions. The progress of SCAG’s engagement to date with local jurisdictions is also shown below.



The deadline for providing input during Stage 2 of the Local Input Process was May 31st, 2014, and additional information on input received will be presented at SCAG’s June 5th Regional Council and Policy Committee Meetings. Staff will continue to hold one-on-one sessions with the remaining local jurisdictions during the month of June to ensure that each city is fully informed of the 2016 RTP/SCS Local Input Process.

To ensure adequate resources are allocated, various departments within SCAG have been involved and Frank Wen, Manager, Research & Analysis Department, continues to serve as the main point of contact for this process. He can be reached at: 213-236-1854 or RTPLocalInput@scag.ca.gov.

FISCAL IMPACT:

Activities related to the 2016 RTP/SCS development are included in the FY14 OWP under 010.SCG0170.01, 020.SCG1635.01, 055.SCG0133.025, and 070.SCG0130.10.

ATTACHMENT:

None.