

City of Lemon Grove Energy Roadmap



Prepared through the SANDAG
Energy Roadmap Program

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This Program is a collaboration between SANDAG and San Diego Gas & Electric®



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Energy Roadmap for the City of Lemon Grove

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Acknowledgements and Program Contacts

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Introduction

This energy management plan, or “Energy Roadmap,” prepared by SANDAG in consultation with city staff, provides a framework for Lemon Grove to identify ways to save energy in government operations and in the community, resulting in municipal cost savings and benefits to the environment. These wide-ranging, cost-effective opportunities to save electricity, natural gas, and transportation fuel include:

The Lemon Grove Energy Roadmap charts a path to saving energy in government operations and in the community.

- No-cost expert technical assistance, such as free energy audits of government buildings,
- Help identifying and applying for energy efficiency rebates and innovative programs like zero-percent on-bill financing,
- Energy-saving resources for cutting edge topics like general plan updates, electric vehicles, and transportation demand management strategies, and
- The latest information on critical subjects like financing energy efficiency projects, emerging technology demonstrations, and residential retrofit programs.

California’s Vision for Local Governments

By 2020, California’s local governments will be leaders in using energy-efficiency to reduce energy use and global warming emissions both in their own facilities and throughout their communities.

California Long-Term Energy Efficiency Strategic Plan

The City of Lemon Grove (City) has already undertaken a number of actions related to energy reduction, smart growth, and sustainability. Through the Energy Efficiency and Conservation Block Grant program, Lemon Grove was awarded \$132,374 and completed energy efficient streetlight conversions that upgraded streetlights and reduced municipal utility bills. In 2014, the City was recognized for its smart growth redevelopment of the Main Street Promenade, receiving “Project of the Year” by the local chapter of the American Public Works Association.

Through its participation in the Energy Roadmap Program, the City was eligible to apply for an Emerging Cities Program grant from the SDG&E to undertake additional energy and greenhouse gas (GHG) reduction planning. The City was awarded \$27,300 to complete a city-wide GHG inventory. The inventory project is underway with support from the Energy Policy Initiatives Center (EPIC) at the University of San Diego Law School. EPIC has prepared several GHG inventories for local cities as well as the region-wide inventories for SANDAG. A report on the Lemon Grove inventory and findings is planned for completion by April 2015.

Lemon Grove's Main Street Promenade was named "Project of the Year" by the American Public Works Association in 2014.

With completion of this Energy Roadmap and the GHG inventory, Lemon Grove can apply for a Beacon Award from the Institute for Local Government. Participating in the voluntary Beacon Award program provides local agencies and their leaders with positive recognition for saving energy, conserving resources, promoting sustainability, and reducing GHG emissions.

By building on existing energy-saving efforts and taking advantage of some or all of the opportunities identified herein, Lemon Grove can continue to demonstrate leadership in energy efficiency and work toward greater sustainability in municipal operations and throughout the community – saving money for taxpayers, households, and businesses, keeping the air clean, supporting green jobs, and improving quality of life for everyone.

Section I. Saving Energy in City Government Operations

City government can be a significant user of energy in its own buildings, facilities, and equipment. City employees also play a role through their commute choices, equipment usage, and use of government vehicles. These and other energy-using activities required to operate City government provide the City with an opportunity to lead by example. The City can improve energy efficiency, and in the process, spend fewer taxpayer dollars on utilities and gasoline, contribute to cleaner air, and reduce GHG emissions.

Lemon Grove also can develop staff knowledge of energy efficiency and use its

The City completed energy efficient streetlight retrofits using a \$130,000 award from the California Energy Commission.

operations to showcase emerging energy-efficient technologies.

The section on saving energy in government operations identifies four distinct opportunities for Lemon Grove to lead by example with its buildings and facilities, vehicles, and energy usage practices:

1. **Save Energy in City Buildings and Facilities**
2. **Green the City Vehicle Fleet**
3. **Develop Employee Knowledge of Energy Efficiency**
4. **Promote Commuter Benefits to City Employees**

Section II. Saving Energy in the Community

Looking beyond its own operations, City government can play an important role in influencing the energy attitudes and actions of local residents and businesses. Opportunities for influence vary widely, from public education to adopting policies and implementing programs to save energy.

The Lemon Grove website can be a portal for local residents and businesses to access energy-saving programs and rebates.

Energy use can be a major expense for households and businesses, and it is a predominant source of air pollution and GHG emissions. Saving energy benefits the environment, puts money in the pockets of households and businesses, and supports growing economic opportunities including well-paying green jobs.

This section of the Energy Roadmap identifies the following opportunities to lead the community with innovative programs for energy efficiency and sustainability:

5. **Leverage Planning and Development Authority**
 - a. Smart growth development policies
 - b. Energy efficient building upgrades
 - c. Clean and efficient transportation options
6. **Market Energy Programs to Residents, Schools, and Local Businesses**
7. **Support Green Jobs and Workforce Training**

Potential Uses of the Energy Roadmap

Examples of activities this Energy Roadmap could assist the City with include:

- Reducing government spending on energy use such as utilities and gasoline
- Developing or assisting to implement measures to reduce GHG emissions from government operations and community activities
- Integrating sustainability, energy efficiency, or GHG reduction measures into a general plan, specific plan, or zoning ordinance
- Using government operations to demonstrate the feasibility of energy efficient and sustainable practices to local residents and businesses
- Managing the City vehicle fleet including new vehicle purchases

- Promoting energy efficiency programs through City communications such as email and the website
- Training employees that deal with energy issues
- Staying on top of the latest developments, programs, and trends in energy efficiency
- Applying and qualifying for future funding opportunities related to energy efficiency

About the Energy Roadmap Program

The Energy Roadmap Program is a collaboration between the SANDAG and SDG&E that offers local jurisdictions assistance in making their buildings and processes energy efficient, implementing state energy codes through access to training and workshops, and being a conduit to their constituents on programs that help reduce their energy bills, as well as the environmental impact on the community as a whole.

The program provides free energy assessments of government buildings and online tools to monitor electricity, natural gas, and transportation fuel use. It provides continued access to experts that can assist jurisdictions in taking the next steps to implement building improvements, petroleum reduction measures, and community outreach.

Each participating jurisdiction receives a customized Energy Roadmap that offers a comprehensive framework for saving energy at City government facilities and in the community. Each Energy Roadmap is consistent with the SANDAG 2050 Regional Transportation Plan/Sustainable Communities Strategy (2011); Regional Energy Strategy (2009), which serves as the San Diego region's energy policy blueprint; and Climate Action Strategy (2010), SANDAG's first ever guide on climate change. The strategies are available on the SANDAG website at www.sandag.org/energy.

The Energy Roadmap Program was developed based on existing, successful SDG&E local government partnerships with the cities of Chula Vista and San Diego and the County of San Diego and pilot projects undertaken through the SANDAG Sustainable Region Program with the Center for Sustainable Energy for the Cities of Carlsbad, Poway, and Solana Beach. The Energy Roadmap Program is funded primarily by California utility customers under the auspices of the California Public Utilities Commission. Transportation components are funded by SANDAG.

Save Energy in City Buildings and Facilities

Energy is a major operating cost for local governments. By evaluating energy usage in city government buildings and facilities (sites) and identifying energy-saving opportunities, the City of Lemon Grove (City) can reduce its municipal energy-related operating costs and use the savings for other government services. The City also can set an example for residents by implementing reduction measures at the municipal level. This chapter highlights:

- Free site assessments provided to the City
- Energy-saving opportunities identified at each site
- Costs and payback to the City to undertake the energy-saving projects

Energy Assessments

In 2013 two types of energy assessment services were provided at no cost to the City: 1) Preliminary energy assessments, called “Energy Report Cards,” of sites determined by municipal staff, and 2) More in-depth energy audits, called “Phase 2 Audits” for a subset of government buildings based on their Report Cards and direction from City staff.

Preliminary Assessments were performed for 13 municipal sites listed below and Energy Report Cards were prepared for each. The Energy Report Cards are provided in **Appendix A**. These preliminary assessments established each site’s baseline energy use and benchmarked it against similar building types in the country.

- | | | |
|------------------------------------|-------------------------|---------------------|
| ▪ City Hall and Sheriff Department | ▪ Public Works Facility | ▪ Civic Center Park |
| ▪ City Hall Annex | ▪ Senior Center | ▪ Lemon Grove Park |
| ▪ Fire Department | ▪ Community Center | ▪ H. Lee House |
| ▪ Recreation Center | ▪ Dan Kunkel Park | ▪ Parsonage Museum |
| | ▪ Berry Street Park | |

Benchmarking is a useful tool to judge a site’s energy performance compared to the national or state averages. Two online tools were employed to help determine how “good” or “bad” a site was performing. SDG&E’s *Energy Waves* program provided

historical energy usage and will enable the City to continue monitoring energy consumption/ site performance online. The U.S. Environmental Protection Agency's *Portfolio Manager* program identified how each site compared against national averages for similar facilities, and provided climate change information in carbon dioxide equivalent (CO₂E).

Lemon Grove could save \$10,870 each year from energy efficiency upgrades identified at municipal sites.

The preliminary energy assessments indicate that most Lemon Grove municipal sites are performing more efficiently than comparable buildings in California and the nation. The Phase 2 Energy Audits were to identify energy efficiency improvements in indoor/outdoor lighting; heating, ventilation and air conditioning (HVAC); building controls; and overall building operations and performance. These engineering assessments included utility rate review, recommended retrofit projects, and rebate programs and costs. No cost-effective HVAC improvements were identified at Lemon Grove's municipal sites, but outdoor lighting measures were identified for 12 buildings and parks that would reduce monthly utility bill costs. Eight sites could further lower their utility bills through indoor efficient lighting measures. The Phase 2 assessment is included as **Appendix B**.

EFM Solutions, an engineering firm and small business in San Diego, performed all site assessments on behalf of SANDAG and provided the City with project results in the form of the Energy Report Cards, Phase 2 energy audit findings, and a master spreadsheet of energy conservation measures (ECMs) identified. The ECM table is shown on the next page and **Appendix C**.

Energy Audit Findings

Lemon Grove has the potential to realize \$10,870 in annual operations savings on its utility bills by implementing the energy conservation measures identified through the energy engineering assessments. The economic, energy and environmental costs and savings are identified in the Table on the following page. Regarding energy-saving retrofit projects, Lemon Grove could undertake upgrades at all of the identified sites through SDG&E's On-Bill Financing Program.¹ This could enable the City to avoid paying upfront capital costs associated with energy-saving retrofits through zero-percent interest loan(s) on its utility bill(s). Once each loan is paid off (using the zero-percent on-bill financing), the City's utility bills would reflect annual bill savings.

¹ For local governments to qualify for SDG&E's on-bill financing program, retrofit projects must have an estimated cost of at least \$5,000 and no more than \$250,000, to be repaid within ten years.

Potential Savings by Energy Conservation Measure					
Location	Energy Conservation Measure (ECM)	Estimated Annual Savings for City			
		Electricity (kWh)	Demand (kW)	Bill Savings	Greenhouse Gases (MTCO ₂ e)
City Hall and Sheriff Department	Indoor lighting (Ltg.)	18,750	6.4	\$ 4,766	6.2
	Outdoor Ltg.	5,659	1.3	\$ 620	1.9
City Hall Annex	Indoor Ltg.	243	0.1	\$ 61	0.1
	Outdoor Ltg.	1,226	0.3	\$ 134	0.4
Fire Department	Indoor Ltg.	1,890	0.6	\$ 473	0.6
	Outdoor Ltg.	1,967	0.5	\$ 216	0.7
Recreation Center	Indoor Ltg.	390	0.4	\$ 207	0.1
	Outdoor Ltg.	4,170	1.0	\$ 457	1.4
Public Works Facility	Indoor Ltg.	513	0.2	\$ 138	0.2
	Outdoor Ltg.	1,511	0.4	\$ 166	0.5
Senior Center	Indoor Ltg.	2,010	0.8	\$ 571	0.7
	Outdoor Ltg.	4,310	1.0	\$ 472	1.4
Community Center	Indoor Ltg.	4,317	1.7	\$ 1,167	1.4
Dan Kunkel Park	Outdoor Ltg.	907	0.2	\$ 99	0.3
Berry Street Park	Outdoor Ltg.	1,148	0.3	\$ 126	0.4
Civic Center Park	Outdoor Ltg.	5,484	1.3	\$ 601	1.8
Lemon Grove Park	Outdoor Ltg.	2,295	0.5	\$ 252	0.8
H. Lee House	Outdoor Ltg.	832	0.2	\$ 91	0.3
Parsonage Museum	Outdoor Ltg.	2,291	0.5	\$ 251	0.8
Total Annual Savings:		59,912	17.5	\$ 10,867	19.8

Notes: HVAC = heating, ventilation and air conditioning (AC) | VFD = variable frequency drive
 Labels: kWh = kilowatt hours | kW = kilowatt | MTCO₂e = metric tons carbon dioxide equivalent

Finance Options for Energy Projects

SDG&E provides rebates, incentives, and financing options to pay for all or part of the costs of energy conservation measures. The SDG&E On-Bill Financing Program provides zero-percent financing for the installation of energy efficiency improvements meeting certain criteria. Financial assistance is also available from other agencies like the California Energy Commission. Additionally, Energy Efficiency and Conservation Block Grants have been used by many jurisdictions to pay for the upfront costs of energy conservation measures.

No-cost assistance with rebates, incentives, and financing options is available to the City as part of the Energy Roadmap Program. Please contact your Energy Roadmap coordinator with requests for assistance or questions.

Economic Considerations for the Energy Conservation Measures

Location	Energy Conservation Measure (ECM)	Gross Project Cost	Cost Covered by SDG&E Incentives	Net Project Cost	Simple Payback (years)
City Hall and Sheriff Department	Indoor lighting (Ltg.)	\$ 10,000	\$ 603	\$ 9,397	2.0
	Outdoor Ltg.	\$ 5,200	\$ 560	\$ 4,640	7.5
City Hall Annex	Indoor Ltg.	\$ 410	\$ 9	\$ 401	6.6
	Outdoor Ltg.	\$ 390	\$ 80	\$ 310	2.3
Fire Department	Indoor Ltg.	\$ 3,185	\$ 70	\$ 3,115	6.6
	Outdoor Ltg.	\$ 2,665	\$ 370	\$ 2,295	10.6
Recreation Center	Indoor Ltg.	\$ 1,170	\$ 46	\$ 1,124	5.4
	Outdoor Ltg.	\$ 3,510	\$ 310	\$ 3,200	7.0
Public Works Facility	Indoor Ltg.	\$ 1,229	\$ 17	\$ 1,212	8.8
	Outdoor Ltg.	\$ 1,788	\$ 250	\$ 1,538	9.3
Senior Center	Indoor Ltg.	\$ 4,141	\$ 92	\$ 4,049	7.1
	Outdoor Ltg.	\$ 3,608	\$ 470	\$ 3,138	6.6
Community Center	Indoor Ltg.	\$ 2,149	\$ 171	\$ 1,978	1.7
Dan Kunkel Park	Outdoor Ltg.	\$ 1,073	\$ 150	\$ 923	9.3
Berry Street Park	Outdoor Ltg.	\$ 1,560	\$ 250	\$ 1,310	10.4
Civic Center Park	Outdoor Ltg.	\$ 8,710	\$ 1,080	\$ 7,630	12.7
Lemon Grove Park	Outdoor Ltg.	\$ 3,120	\$ 500	\$ 2,620	10.4
H. Lee House	Outdoor Ltg.	\$ 1,040	\$ 160	\$ 880	9.6
Parsonage Museum	Outdoor Ltg.	\$ 2,626	\$ 415	\$ 2,211	8.8
Total Annual Savings:		\$ 57,571	\$ 5,603	\$ 51,968	4.8

Notes: Gross and net installation and equipment costs are estimated and do not replace product specifications and contractor bids.

San Diego Gas & Electric® Rebates and Incentives

As part of the energy audit findings, EFM Solutions identified the appropriate SDG&E rebates and incentives² for each municipal site. Generally, programs that apply to commercial businesses also

apply to public agencies. To review all of SDG&E's rebate and incentive programs, see Chapter 6 of this Energy Roadmap or visit www.sdge.com/business/rebatesincentives/.

Lemon Grove may qualify for zero-percent interest financing for these energy efficiency projects.

² SDG&E programs are funded by California utility customers and administered by SDG&E under the auspices of the California Public Utilities Commission. Rebates and incentives are provided on a first-come, first-served basis until program funds are no longer available.

Zero-Percent Interest On-Bill Financing from SDG&E

Through its On-Bill Financing Program,³ SDG&E provides interest-free, unsecured financing to qualified commercial and taxpayer-funded customers for the installation of energy-efficient upgrades. Financed equipment must qualify for a rebate or incentive from SDG&E's rebate/incentive program(s). EFM Solutions and the City's SDG&E account representative have met with City staff and discussed on-bill financing. The program for public agencies includes:

- Zero-percent financing on qualifying measures for up to ten years
- Offsets to energy-efficient upgrade costs after rebates and incentives through SDG&E
- Loan amounts that range from a minimum of \$5,000 up to \$250,000 per meter
- Loan installments that are added to monthly SDG&E bills
- For more information, contact your Energy Roadmap coordinator, or visit www.sdge.com/obf.

Low-Interest Loans from the California Energy Commission

The Energy Efficiency Financing Program provides financing for local governments, schools, and hospitals through low-interest loans for feasibility studies and installation of energy-saving measures. As of November 2014, terms included an interest rate of one percent fixed, a maximum loan of \$3 million per application, and a maximum loan term of 20 years. Again, EFM Solutions can assist Lemon Grove with applying for this loan, if needed. For more program information, contact the California Energy Commission's Special Projects Office, (916) 654-4104, email: pubprog@energy.state.ca.us, or www.energy.ca.gov/efficiency/financing.

Post-assessment assistance in identifying energy project financing and implementation is a service provided to Lemon Grove through the Energy Roadmap Program. Contact your Energy Roadmap coordinator for further assistance.

³ The On-Bill Financing (OBF) program is funded by California utility customers and administered by SDG&E under the auspices of the California Public Utilities Commission. The OBF program may be modified or terminated without prior notice and is provided to qualified customers on a first-come, first-served basis until program funds are no longer available. Eligibility requirements apply.

Implementation Strategy for Energy and Cost Savings

1. Determine whether to pursue energy efficiency projects that qualify for on-bill financing and/or have an immediate payback for the City.
2. Use SANDAG independent energy engineering contractors to assist with developing equipment specifications and documentation for financing.
3. Seek approval from SDG&E to use its On-Bill Financing Program (zero percent interest loans) to cover up front costs for energy upgrades.
4. Monitor site performance to ensure energy and cost savings are achieved.

The Energy Roadmap team can assist Lemon Grove with these implementation steps over the duration of the Roadmap Program (until December 2015).

2

Green the City Vehicle Fleet

The City maintains a fleet of approximately 15 vehicles that range from compact pick-ups to heavy duty trucks. The City can achieve transportation-related energy savings through actions that promote fuel conservation, efficiency, and an increased use of clean, alternative fuels in its vehicle fleet.

Lemon Grove's fleet is essential to the provision of public services such as sanitation and street repairs. This section offers tools and information that can help the City maintain efficient fleet operations through the use of advanced technology and alternative fuel vehicles.

Lemon Grove's fleet is essential to the provision of public services such as sanitation and street repairs.

California Goals for Transportation Fuels

California has adopted several transportation fuel laws and goals, and the California Energy Commission (Energy Commission) has been the responsible agency for the targets shown in the *California Goals and Transportation Fuels* table. In order to meet these goals the state allocates grant funds through the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). The Energy Commission will invest a total \$1.5 billion between 2009 and 2024 to support development and deployment of zero- and low-emission vehicles and low-carbon fuels, for which the City and local businesses can apply. Additional information is provided later in this section.

California Goals for Transportation Fuels	
Objective	State Goals and Milestones
Petroleum Reduction	Reduce petroleum fuel use to 15 percent below 2003 levels by 2020
Alternative Fuel Use	Increase alternative fuel use to 20 percent of on-road fuel demand by 2020 and 30 percent by 2030
In-State Biofuels Use	Increase biofuel use to one billion gasoline gallons equivalent (gge) by 2010, 1.6 billion gge by 2020, and two billion gge by 2050
In-State Biofuels Production	In-state production of 20 percent of biofuels used in California by 2010, 40 percent by 2020, 75 percent by 2050
Expand Zero Emission Vehicle Use	1.5 million plug-in electric vehicles and hydrogen vehicles will be on California roads by 2025

Lemon Grove's Fleet

Lemon Grove has a small fleet that consists primarily of trucks operated by the fire and public works departments. When replacing vehicles, the City evaluates vehicle duty requirements and selects the smallest, most efficient vehicle that can do the job.

Lemon Grove could track fleet-wide indicators such total fuel consumption and vehicle miles traveled (VMT) on a year-to-year basis. This data would help show the progress the City is making in greening its fleet. As more efficient and alternative fuel vehicles replace older, less efficient vehicles, Lemon Grove should be able to see fuel savings increase.

Online Fleet Planning Tools

The U.S. Department of Energy's (U.S. DOE) Petroleum Reduction Planning Tool (www.afdc.energy.gov/afdc/prep/) at the Alternative Fuels and Advanced Vehicles Data Center could supplement Lemon Grove's current fleet management system by evaluating and calculating petroleum reductions through three categories of reduction measures including efficiency (e.g., fuel economy, idling reductions), conservation (e.g., VMT reductions), and alternative fuels (e.g., vehicles that run on electricity or compressed natural gas). A petroleum reduction goal (e.g., 10% savings) can be set and the free online tool can identify potential savings based on the fleet information entered and petroleum reduction measures selected.

Argonne National Laboratory created the Alternative Fuel Life-Cycle Environmental and Economic Transportation Tool (AFLEET) to assist fleets in estimating petroleum use, greenhouse gas (GHG) emissions, air pollutant emissions, and the cost of ownership of light-duty and heavy-duty vehicles (<http://greet.es.anl.gov/afleet>). The tool features Microsoft Excel spreadsheets that can use default or custom inputs to show the economic and environmental impacts of different vehicle choices.

Lemon Grove also can reduce fuel use by encouraging employees to use the vehicles efficiently. This includes trip planning, efficient driving habits, and routine maintenance. Specific tips are described in **Appendix D**.

Alternative Fuels for Fleet Applications

Alternative fuel vehicle selection depends on several factors including:

- Vehicle cost
- Availability and proximity of refueling infrastructure
- Availability of grants and tax credits
- Whether new purchase or retrofit/conversion is being considered
- Vehicle maintenance

Alternative fuel vehicles offer savings of \$500-\$900 a year based on vehicle usage seen in Lemon Grove.

Descriptions of each type of alternative fuel and information on the availability of vehicles for a variety of fleet applications are provided in **Appendix D**. Opportunities specific to Lemon Grove's fleet for cost-saving vehicle replacements are described below.

Vehicle Replacement: Alternative Fuel Options for Lemon Grove

SANDAG partnered with the Center for Sustainable Energy¹ (CSE) to provide an assessment specific to Lemon Grove's fleet and vehicle replacement protocols. The City evaluates vehicles for replacement based on a number of factors including age, mileage, maintenance history, and condition. Since fleet turnover is relatively low, consideration for fuel efficiency and alternative fuel options during the vehicle procurement process could help Lemon Grove achieve its green fleet goals.

The following *Vehicle Replacement and Savings* table identifies suitable alternative fuel replacement options for pick-up trucks. The table identifies a vehicle currently in use in Lemon Grove's fleet and the potential savings on an annual and lifetime basis using real-life mileage information. Most municipal vehicles operate in a relatively small geographic area so yearly mileage and fuels savings may be low, but savings will add up over many years.

Based on current fuel prices, mileage and fuel consumption in Lemon Grove's vehicle fleet, CSE's analysis showed yearly savings per vehicle of \$650-\$900 for CNG and \$500-\$800 for propane. Propane and CNG vehicles can cost \$8,000-\$15,000 more than traditionally fueled vehicles and would require additional fueling infrastructure. But they also offer substantial fuel savings for large trucks, some of the biggest consumers of fuel. State rebates and other incentives are available for these vehicles, outlined below.

¹ CCSE serves as the region's staff to the San Diego Regional Clean Cities Coalition, funded through U.S. DOE grants.

The City should carefully evaluate all fuel types when vehicle replacement decisions are made.

Vehicle Replacement Options and Lifetime Savings

Vehicle Model	Fuel Type	Usage (miles/year)	Petroleum Displaced (Gallons)	Total Annual Savings (Fuel and Maintenance)	Years to Payback w/ Incentives
F150	CNG	6,000	462	\$855	6.14
F150	Propane	6,000	462	\$740	13.91
GMC 2500	CNG	3,500	389	\$664	7.91
GMC 2500	Propane	3,500	389	\$563	18.28
GMC 2500	CNG	5,000	556	\$949	5.53
GMC 2500	Propane	5,000	556	\$805	12.80
F350	CNG	5,000	625	\$855	6.14
F350	Propane	5,000	625	\$871	11.83

Notes: HEV = hybrid electric vehicle, CNG = compressed natural gas, Propane=LPG= liquid petroleum gas, MD/HD = medium duty/heavy duty, Petroleum Displaced = gasoline and diesel fuel

*Maintenance savings based on manufacturer estimates.

Source: Center for Sustainable Energy

Fuel Availability in Lemon Grove

Additional fueling infrastructure would be needed for widespread adoption of alternative fuel vehicles. In particular, for the vehicle replacements described in the table above, Lemon Grove would need additional CNG and propane infrastructure. Sites currently exist near Lemon Grove for fueling these vehicle types. The *Summary of Alternative Fuel Infrastructure Availability* table includes information on fueling stations and **Appendix D** contains detailed information on the location of these sites and the costs of installing each type.

Summary of Alternative Fuel Infrastructure Availability

Fuel	Existing Fueling/Charging Sites within Ten Miles of Lemon Grove's Public Works Yard ¹	Availability of Production-Distribution Infrastructure
Electricity	Two public access sites in La Mesa	Existing electricity grid and distributed energy sources.
Biodiesel	B5 available at a card lock in El Cajon and B20 is available in San Diego and Chula Vista.	Storage and blending terminals needed. Local producer is New Leaf Biofuel.
CNG	Three private and one public access station in San Diego, El Cajon, and Chula Vista	Existing natural gas pipeline network
Propane (LPG)	Two public access sites, one in Lemon Grove one in San Diego.	Existing
E85	Two public stations are located near the City in San Diego and Chula Vista.	Storage and distribution facilities needed in order to scale-up consumption
LNG	Private Access Station in El Cajon	Existing
Hydrogen	No fueling sites in or near the City	Significant investment required

Source: <http://afdc.energy.gov/afdc/locator/stations/>.

Notes: 1. Site names, addresses, and distances are provided in **Appendix D**.

2. Contact your Energy Roadmap coordinator for information regarding the installation of publicly available EVSE at City government sites.

State Grants and Rebates

The California Air Resources Board (CARB) and the Energy Commission offer grants and rebates for alternative fuel and advanced technology vehicles. Funding is allocated annually and the FY 2014-2015 budget for the ARFVTP (www.energy.ca.gov/altfuels/) is about \$100 million. CARB manages about \$30 million in rebates and projects through the Air Quality Improvement Program (www.arb.ca.gov/msprog/aqip/aqip.htm). The 2013 passage of California Assembly Bill 8 (AB 8) extends funding for the Carl Moyer Program, local diesel emission reduction programs, and ARFVTP through 2023. These programs accelerate the turnover of older vehicles and equipment and invest in the development and deployment of advanced clean emissions technology. Additionally, AB 8 allocates \$20 million in funding toward the installation of hydrogen fueling infrastructure and support the deployment of hydrogen fuel cell electric vehicles.

The Energy Commission has allocated funding for light-, medium-, and heavy-duty vehicles that use natural gas (\$10.8 million). Natural gas trucks are gaining increased market attention due to their lower fuel costs, can reduce GHG emissions by 15 to 20 percent, as well as decreased NOx emissions. Expanding alternative fuel infrastructure is another funding priority with allocations for PEV charging stations and CNG station upgrades and expansions.

Energy Commission Gaseous Vehicle Buy Down Incentives¹

Gross Vehicle Weight in Pounds (lbs.)	Natural Gas
Up to 8,500	\$1,000
8,501 – 16,000	\$6,000
16,001 – 26,000	\$11,000
26,001 – 33,000	\$20,000
33,001 & greater	\$25,000

Notes: Buy down funding must be secured through an eligible dealer.

CSE manages CARB's Clean Vehicle Rebate Project (CVRP), which provides rebates of up to \$2,500 for light duty battery electric and plug-in hybrid vehicle purchases (www.energycenter.org/cvrp). CSE received \$60 million in funding for FY 2013-2014. The *CVRP Rebate Amounts for Light-Duty Vehicles* table summarizes the rebates available.

CVRP Rebate Amounts for Light-Duty Vehicles

Vehicle Class	Maximum Incentive
Light duty zero emission vehicles (ZEV)	\$ 2,500
Plug-in hybrid electric vehicles (PHEV)	\$1,500
Zero emission motorcycles (ZEM)	\$ 900
Neighborhood electric vehicles (NEV)	\$ 900

Note: Eligible vehicles and associated rebate amounts are subject to change. Visit the CVRP program site for eligible vehicle models and associated rebates.

Rebates for commercial vehicles including trucks and buses are available through CARB's Hybrid Truck and Bus Voucher Incentive Project (HVIP) (www.californiahvip.org). As of January 2014, the HVIP will have about, \$14 million in voucher funding for the year. A summary of the incentives available is provided in the *ARB HVIP Voucher Amounts for Trucks and Buses* table below.

HVIP Voucher Amounts for Zero-Emissions Trucks and Buses

Gross Vehicle Weight (in pounds)	
5,001 – 8,500 lbs	\$12,000
8,501 – 10,000 lbs	\$18,000
10,001 – 14,000 lbs	\$30,000
14,001 – 19,500 lbs	\$35,000
19,501 – 26,000 lbs	\$40,000
> 26,000 lbs	\$45,000

HVIP Voucher Amounts for *Hybrid* Trucks and Buses

Gross Vehicle Weight (in pounds)	
6,001 – 8,500 lbs (plug-in hybrids only)	\$8,000
8,500 – 10,000 lbs (plug-in hybrids only)	\$10,000
10,001 – 19,500 lbs	\$15,000
19,501 – 33,000 lbs	\$20,000
33,001 – 38,000 lbs	\$25,000
> 38,000 lbs	\$30,000

Note: The first three vouchers redeemed by a fleet are eligible for the following additional voucher amounts: \$2,000 per vehicle if below 8,500 lbs.; \$5,000 per vehicle if 8,501 to 10,000 lbs.; \$10,000 per vehicle if over 10,000 lbs.

Electric Vehicle Adoption

California is actively planning for hydrogen fuel cell and electric vehicles, known as zero emission vehicles (ZEV), and established requirements for automakers to provide plug-in electric (PEV) and hydrogen vehicles for sale in California by 2020. In 2012,

There are more than 7,000 PEVs on the road in the region, with that number increasing by approximately 200 per month.

Governor Brown issued Executive Order B-16-2012 that directed state government to help accelerate the market for ZEVs in California and established several milestones on a path toward 1.5 million ZEVs in California by 2025. In 2013 the state released a ZEV Action Plan with specific strategies that state agencies will take.

Regional plug-in electric vehicle (PEV) adoption is increasing rapidly by consumers as well as fleets. In 2009, the San Diego region was selected to take part in the largest PEV rollout in U.S. history through the EV Project (www.theevproject.com). The original project was administered by Ecotality and is now run by the company, A Car Charging Group. Many public sites throughout the region were identified as potential locations for EV charging stations including restaurants, community and regional shopping centers, large venue entertainment centers, transportation corridors, schools, hotels, airports, convenience retail, and retail shopping. PEV fact sheets for the San Diego region are provided in **Appendix I**.

In 2012, SANDAG received a grant from the Energy Commission to develop a regional PEV readiness plan. The SANDAG Board of Directors accepted the plan in January 2014, and it is available at www.sandag.org/energy. The plan was developed with the help of CSE, and it includes fact sheets and templates to assist local governments as they address permit, inspection, training and fleet issues.

As of July 2014, over 500 Level 2 PEV chargers are available to the public throughout the region, and 20 fast chargers have been deployed near freeways and state routes.

To develop the readiness plan, SANDAG and CSE established the Regional Electric Vehicle Infrastructure working group that included representation from business, academia, local governments and regional agencies. The plan assesses the state of current PEV infrastructure and then identifies areas in which local governments, workplaces, and residents can more easily adopt and better prepare for PEVs and charging infrastructure in the region.

Most major automobile manufacturers have now introduced PEVs. Since December 2010, the Nissan Leaf and Chevrolet Volt have been available in San Diego. Additional plug-in vehicles are available from BMW, Fiat, Ford, Honda, Mitsubishi, Toyota, Tesla, and other manufacturers. There are more than 6,000 PEVs on the road in the region, with that number increasing by approximately 200 per month. Each manufacturer's vehicles are compatible with standardized EV chargers.

Develop Employee Knowledge of Energy Efficiency

Overview

Developing employee knowledge of energy efficiency is another way for the City to promote energy savings in City government operations and throughout the community. This chapter identifies free educational seminars and trainings available to City employees through the SDG&E Energy Innovation Center (EIC), located in Clairemont Mesa. Energy code training for planners, permit checkers and building inspectors is taught regularly.

Free energy code training is available for Lemon Grove's Building Inspectors and Plan Examiners through the Energy Roadmap program. Additional training opportunities for City employees are shown on the next page.

In addition to the EIC, local colleges and universities host educational programs and professional certifications in energy management. Lemon Grove staff has attended some of these trainings already. If interested in more training opportunities, your Energy Roadmap coordinator can help facilitate participation and assist with related enrollment costs.

Getting Started

As a first step in identifying educational, training, and certification opportunities, the City is asked to identify the following:

- Staff positions or employees that could benefit from energy-related workshops and trainings such as those listed in this section
- Other workshops or trainings of interest (even if not listed here)
- Workshops or trainings that Lemon Grove may be interested in hosting at a City facility

SDG&E conducts hundreds of expert-facilitated seminars on a broad spectrum of energy topics at the EIC. Workshop costs are covered by California utility customers under the auspices of the California Public Utilities Commission unless otherwise posted. An RSVP is generally requested for workshops to ensure that adequate space and food are provided. For more information, contact seminars@sdge.com.

The following table identifies quarterly workshops offered at the EIC as well as energy-related training and certification programs that could benefit City employees.

Training and Certification Programs		Audience
LEED® Professional Credentials	The Leadership in Energy and Environmental Design (LEED®) designation acknowledges expertise in green planning, design, construction, operations, neighborhood development, and other sustainable practices. SDG&E will cover the cost of appropriate City employees to undergo training for a LEED® Professional Credential.	City administration, planning, facilities, public works, environmental services
Title 24 Trainings	Title 24 Building Energy Efficiency Standards are updated about every three years. Residential and non-residential courses explore code changes and address questions.	Code inspectors, planning and/or facilities staff
Building Code Inspector Training	SDG&E offers free inspector training for City employees. Curriculum includes equipment identification and compliance, residential and commercial California Energy Code documentation and compliance, building plan verification for energy-efficiency standards, and 2010 California Green Building Code.	Code inspectors, planning staff
Building Operator Certification (BOC)	SDG&E offers BOC Level 1 and 2 trainings and certifications to City staff at a reduced rate. Building Operator Certification is a nationally-recognized training and certification program offering improved job skills and more comfortable energy-efficient facilities. The training is led by experienced, professional instructors.	Facilities, public works staff
Certified Energy Manager (CEM)	Certification is through the Association of Energy Engineers. CEM distinguishes high levels of competency and proficiency in energy management, demonstrating expertise in several areas ranging from standards, air quality, energy audits, lighting, procurement, and financing.	Facilities, public works staff
NATE Certification Exam (HVAC)	SDG&E and the Institute of Heating and Air Conditioning Industries, Inc. (IHACI) co-sponsor seminars designed to help experienced HVAC professionals prepare for successfully completing the North American Technician Excellence (NATE) Certification Exam.	Facilities, public works staff
Free Educational Seminars		Audience
Building Performance and Monitoring	- Energy management systems - SDG&E's kWickview energy management tool - Energy Star Portfolio Manager - Benchmarking tools - Building information modeling (BIM)	Facilities, public works
General Energy Workshops	- Energy Efficiency 101 - Electricity 101 - Basics of solar, basics of solar water heating	Layperson
Best Practices and Programs	- ENERGY STAR best practices - Rebate programs	Planning, public works, City administration
Online Workshop Calendar	To view upcoming workshops, visit www.seminars.sdge.com .	

4

Promote Commuter Benefits to City Employees

The City can achieve transportation related energy savings by promoting a commuter program to its employees. Such programs provide alternative transportation choices to driving alone and incentives to do so. Support services from SANDAG Transportation Demand Management (TDM) division, which oversees the iCommute program, are offered at no cost to the City as part of the Energy Roadmap. Services are customized to address the specific needs of your City and its employees. Needs are initially identified through City staff direction, a survey of employee commute habits and preferences, and the mapping of employee commutes so that iCommute can recommend which commute choices make sense to promote.

Based on the initial needs assessment, Lemon Grove could make informed decisions as to how it may like to promote biking, transit, carpools and other choices to its employees. iCommute offers resources and tools to design and implement a customized commuter program, also known as a TDM program. Promoting commuter programs can be an easy and cost-effective way to reduce air pollution within the City. Ways that Lemon Grove could take part are described in this section.

How Commuter Programs Work

A commuter program can stand side-by-side with your agency's benefits package, helping to attract and retain talented staff as well as improve overall employee

Commuter Program Benefits

By providing alternative transportation choices for its employees Lemon Grove can:

- Improve traffic flow, and reduce employee parking congestion
- Set an example for residents and businesses
- Reduce commuter-related expenses, and add commuter benefits to employee compensation packages at little or no cost
- Measure and reduce petroleum consumption and carbon footprint

satisfaction. A custom program could include everything from helping connect employees who want to carpool or vanpool with one another, to offering flexible or telework schedules, to providing free or reduced-cost transit passes.

iCommute services are offered at no cost to the City. Other programs are inexpensive for the City to implement and some come with subsidies sponsored by SANDAG.

For example, SANDAG provides a \$400

per month subsidy for qualifying vanpools.

The Commuter Benefit Starter Kit for Employers, available at iCommuteSD.com, provides the City with the tools to get started, including an overview of program options, sample policies, promotional materials, and tax benefit information.

Benefits of Participation

Alternative transportation is good business. By promoting TDM programs, cities can:

- Measure and reduce their petroleum and carbon footprint
- Add commuter benefits to employee compensation packages at little or no cost
- Utilize tax benefits and provide cost savings on payroll taxes
- Reduce employee parking and/or workspace demand
- Enhance retention and recruitment
- Receive points toward Leadership in Environmental and Energy Design certification

Regional Programs

The following is sampling of commuter programs that have been highlighted to illustrate how the City can reduce fuel consumption, greenhouse gas emissions, and vehicle miles traveled.

iCommuteSD.com

An easy way for the City to reduce fuel consumption and congestion is by encouraging carpools, vanpools, and bicycling. iCommuteSD.com enables Lemon Grove to set up a network so that City employees are matched with other City employees. The RideMatcher tool assists an employee in finding a carpool, vanpool, or bike buddy.

TripTracker is an easy and convenient way for an employee to record trips made by alternative modes of transportation. It calculates the number of gallons of fuel saved, monetary savings, pounds of carbon dioxide not emitted into the atmosphere, and miles an employee has not traveled alone. Logging trips also enters the employee into the iCommute monthly prize drawings. **Appendix E** includes a sample TripTracker report.

Guaranteed Ride Home

iCommute offers the Guaranteed Ride Home Program to make using alternative modes more feasible. Enrollment allows the use of a rental car or taxi in the case of a family emergency, unscheduled overtime, or if the commuter's rideshare partner becomes

unavailable. Employees that carpool, vanpool, take a Premium Express Bus, or the COASTER three or more times per week are eligible. In addition, commuters that walk or bike 75 percent or more of their trip, three or more days per week are eligible. This program may be used up to three times per year and requires a \$3.00 co-pay per use.

Transit

Lemon Grove is well served by the MTS transit system trolley and buses. Additional information on specific routes and timetables can be found at sdmts.com. Employees that use transit to commute are eligible for the pretax incentive.

Pretax Incentive

Employers can take advantage of employee and employer payroll tax savings offered through the IRS Commuter Fringe Benefit Program (IRS Section 132). The IRS allows employers to offer employees the opportunity to set aside a portion of their pretax salary to pay for transit and vanpooling. Bicyclists can receive up to \$20 per month but this cannot be combined with the transit or vanpool incentive. Employers benefit by not paying payroll taxes on that money, while in effect adding value to their employee's compensation package. Consult with your payroll department to take full advantage of this option.

Telework and Flexible Schedules

Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. Flexible schedules offer hours outside of the traditional 9 a.m. to 5 p.m. schedule. For example, employees can work a 4/10 (4 days per week, 10 hours per day) or 9/80 schedule. Teleworking and flexible schedules have been shown to help recruit and retain high performing employees, and help the employees become more productive and happier. The employee gains additional benefit from the reduction of commute-related expenses. Jobs that are most suited for teleworking are those that require reading, writing, researching, working with data, and talking on the phone, often referred to as "information-based jobs."

Appendix E includes sample Telework policies.

Bicycling

Riding a bike is an excellent choice for commuting that will save employees money, reduce stress, and help the environment. iCommuteSD.com has resources and tools for commuters that help plan routes, provide safety information, track trips, find bike buddies, and learn about bike to work events. Bicycling is an excellent first or last mile solution if transit is out of walking distance and bikes are allowed on trolleys and buses.

iCommute maintains bicycle lockers throughout San Diego County located at many transit stations and Park & Ride lots.

SchoolPool

SchoolPool is the iCommute ridematching service for parents of children who attend the same school. With this safe and secure service, you are matched with other parents in your neighborhood who are interested in sharing the driving responsibilities or would like to have their children bike or walk to school with other students and a parent leader. SchoolPool is available region-wide for all K-12 public and private schools. This program can reduce vehicle congestion around schools while helping the environment. SchoolPool also puts an emphasis on safety, as safety events are held at various schools throughout the year.

Getting Started

At any time, the City can request assistance from iCommute to develop a customized commuter benefit program to take full advantage of these no-to-low cost programs. The iCommute team can also help Lemon Grove engage its employees in learning about alternative transportation choices, and to establish municipal commuter policies.

Actions could include:

- Meet with iCommute to review no cost online tools and functionality of the iCommute website
- Survey staff on their current commute habits and preferences
- Formalize a commuter benefit policy that outlines the commuter benefits that the City can offer (samples available on iCommuteSD.com)
- Include commuter benefit information in new employee orientation packets and link to iCommute on your intranet site
- Participate in and promote iCommute annual events such as Rideshare Week, Bike to Work Day, and Walk and Bike to School Day. Join the Rideshare Week and Bike to Work Corporate Challenges to showcase your commitment to sustainable commute choices.

For more information on iCommute programs and services, and to download the Commuter Benefit Starter Kit for Employers, visit iCommuteSD.com or contact Goldin Doles at (619) 699-4814, or goldin.doles@sandag.org.

Leverage Planning and Development Authority

Local governments can promote energy efficiency in their communities by leveraging their authority over local land use and development activity. This chapter addresses ways in which energy considerations can be integrated into local land use and transportation planning. These energy efficiency and/or petroleum reduction measures are consistent with regional and state energy policies, and fall under the following categories.

1. **Smart growth development policies**
2. **Energy efficiency planning and permitting**
3. **Local planning for alternative fuel vehicles and infrastructure**

The Planning Role of Local and Regional Governments

Regional energy consumption is strongly related to urban form (i.e., the physical features and composition of the built environment). Local governments and SANDAG can influence the built environment, including the amount of energy consumed, through regulations, incentives, collaborative planning, and infrastructure investments that affect land use patterns, the transportation system, and other public facilities.

State law specifically vests local governments with authority over land use and development activities within their jurisdictions in accordance with their general plans and other policy documents that address land use, circulation (transportation), housing, public facilities, environmental management (open space, conservation, safety, scenic highways), and economic development. Local governments develop regulations and programs to implement their planning policies and goals.

Sustainable Communities Strategy

Pursuant to California Senate Bill 375 (SB 375) (Steinberg, 2008), SANDAG and metropolitan planning organizations (MPOs) across the state are required to develop a Sustainable Communities Strategy (SCS) in order to reduce Greenhouse Gas (GHG) emissions from passenger vehicles consistent with targets set by the California Air Resources Board (CARB). The following table, *GHG Reductions in the SANDAG Sustainable Communities Strategy*, presents the assigned CARB targets and the projected GHG reductions and vehicle miles traveled (VMT) reductions projected in the SCS.

On October 28, 2011, SANDAG became the first MPO in the state to adopt an SCS as part

of its 2050 Regional Transportation Plan (RTP). SANDAG is using this strategy as the foundation for updating its Regional Comprehensive Plan, which provides a long-term strategic planning framework for the region based on “smart growth” and “sustainability.” These principles are described in the next section.



GHG Reductions in the SANDAG Sustainable Communities Strategy

Average Weekday Per Capita CO₂ and VMT Reductions for Cars and Light Trucks from 2005

Target Year	CARB Target	GHG	VMT
2020	7%	14%	12%
2035	13%	13%	10%

Notes: CO₂ = carbon dioxide.

CARB identifies CO₂ as the GHG whose concentration is being most affected directly by human activities. CO₂ also serves as the reference to compare all other GHGs.

SB 375 also provides an opportunity for streamlining the California Environmental Quality Act (CEQA) process for certain local redevelopment projects, if they are consistent with the SCS as either a “residential/mixed use project” or as a “Transit Priority Project” (TPP). Environmental review of a residential/mixed use project consistent with the SCS would not need to consider growth-inducing impacts or increases in GHG emissions from passenger cars and light trucks. For a TPP, the project would need to be at least 50 percent residential with a density of at least 20 units per acre and be within one-half mile of a major transit stop or a high quality transit corridor included in the 2050 RTP. **Appendix F** contains larger definitions for what could qualify for CEQA streamlining.

1. Smart Growth Development Policies

Smart growth can be defined as a compact, efficient, and environmentally sensitive pattern of development that provides people with additional travel, housing, and employment choices by focusing future growth away from rural areas and closer to existing and planned job centers and public facilities, while preserving open space and natural resources. Smart growth policies fit into the broader context of sustainability by guiding development to preserve access to natural resources. The principles of sustainability are based on achieving conservation goals and objectives in three broad areas: a prosperous economy, a healthy environment, and social equity. With the adoption of SB 375, the state is recognizing the influence that smart growth policies have on long term sustainability.

The City has identified three sites for inclusion in the regional Smart Growth Concept Map (SANDAG, 2012). The Main Street Promenade and its potential extension are the first two, and the Massachusetts Trolley Station area as a possible future smart growth site is the third.

Main Street Promenade Redevelopment

In September 2013, the Main Street Promenade officially opened. The project transformed Main Street, between Broadway and North Avenue, into a walkable, linear park and transit plaza as displayed in the photos below. The City received \$1.9 million from SANDAG'S Smart Growth Incentive Program (SGIP) to help fund the project. The SGIP funds are awarded to improvements that support compact, transit-oriented developments that also create interesting places within communities.

Main Street Promenade



BEFORE —————→ **AFTER**

The Main Street Promenade is part of Lemon Grove's larger Downtown Village Specific Plan, which was designed to implement the General Plan's goal to create a lively mix of retail, offices, condominiums, and apartments supported by a variety of transportation options in the Village. The City has received another grant to study a Main Street Promenade extension (2 miles) that would connect two smart growth areas.

Massachusetts Trolley Station at Lemon Grove Avenue

The Massachusetts Trolley Station area is identified as a future mixed use zone and a Specific Plan is needed to guide development. Potential redevelopment would include a mix of residential and neighborhood commercial uses, which concentrate residential density near an existing transit center.

Lemon Grove's Health and Wellness Element

The City adopted a 2014 Health and Wellness Element as a new addition to its General Plan. The element focuses on providing opportunities for physical activity and healthy food. It presents a plan for providing better access to parks, exercise facilities, and healthy food options. It is also a plan for making the City friendlier for walking and biking. Active transportation choices like biking and walking provide a healthier alternative to driving and reduce petroleum consumption and pollution locally. Smart growth land use patterns accommodate biking and walking as mobility choices.

Active Transportation Grant Program

The SANDAG Active Transportation Grant Program encourages local jurisdictions to plan and build facilities that promote multiple travel choices for residents and connectivity to transit, schools, retail centers, parks, work, and other community gathering places. The grant program also encourages local jurisdictions to provide bicycle parking, education, encouragement, and awareness programs that support pedestrian and bicycle infrastructure.

Transportation Demand Management

Transportation Demand Management (TDM) is the application of strategies to reduce single occupancy vehicle travel by encouraging alternative transportation options. Including TDM measures in the development review process may offer developers creative, affordable, and effective ways to reduce vehicle trips and their impacts. TDM measures also contribute toward LEED certification.

The iCommute program offers free assistance to regional businesses and agencies in establishing and implementing customized TDM policies and programs that reduce traffic congestion, fuel use, air pollution, and GHG emissions. SANDAG recently completed a TDM tool for city planners: *Integrating Transportation Demand Management into the Planning and Development Process - A Reference for Cities*. The report is available as part of the SANDAG smart growth toolbox at the following link: http://www.sandag.org/uploads/publicationid/publicationid_1663_14425.pdf.

Another TDM strategy is parking management that provides parking options to reduce the amount of driving. Parking strategies can be effective in, and complement, smart growth areas with compact land use patterns and alternative travel options. Parking policies complement many TDM efforts, and normally have included incentives or disincentives for fewer spaces per unit of development (parking maximums rather than minimums), encourage shared parking among land uses (retail and office for example) and/or a fee per parking space. In 2010, SANDAG published *Parking Strategies for Smart Growth: Planning Tools for the San Diego Region* and continues to work with local

governments on innovative parking policies. The parking report is available at: http://www.sandag.org/uploads/publicationid/publicationid_1499_11603.pdf. Refer to **Appendix G** for additional TDM and Active Transportation planning information.

Funding for Smart Growth Planning

SANDAG manages the *TransNet* Smart Growth Incentive Program (SGIP), which funds transportation and transportation-related infrastructure improvements and planning efforts that support smart growth development. The SGIP awards two percent of the annual *TransNet* revenues to local governments through a competitive grant program. For more information on the SGIP, and upcoming funding cycles, visit www.sandag.org/smartgrowth.

To reduce traffic congestion and emissions from the use of vehicles in the city and promote alternative forms of transportation such as walking and bicycling, Lemon Grove can apply for grant funds through the *TransNet* SGIP and the Transportation Development Act *TransNet* Bicycle and Pedestrian grant programs.

Appendix F provides additional smart growth policy measures that reflect have been identified by State agencies like the Governor's Office of Planning and Research, the California Energy Commission and Office of the Attorney General.

2. Energy Efficiency Planning and Permitting

On a statewide scale, California's energy efficiency standards for new buildings and appliances have saved consumers an estimated \$75 billion since 1975 in reduced electricity bills.¹ In addition, most energy efficiency measures must be installed by a local labor force. In 2012, California-based clean-energy startups brought in nearly \$9 billion in investments over the previous three years, which was more than the sum of activity in all 49 other states.²

Energy Codes and Permit Review

Through building codes, local governments require a minimum level of protections to occupants on many fronts. Fire safety and electrical codes can save lives. Energy codes

¹ California Energy Commission, 2013. *2013 Integrated Energy Policy Report*, p2. Publication Number: CEC-100-2013-001-CMF.

² Clean Edge, Inc., May 2012. *2012 State Clean Energy Index*, Executive Summary. http://cleanedge.com/sites/default/files/SCEI2012execsum_0.pdf.

improve indoor air quality, make homes and offices more comfortable, and reduce utility bills. The 2013 Standards enter into effect July 1, 2014. Training is available to building inspectors, permit desk workers and planners on energy codes and your Roadmap Coordinator can help set that up.

The State’s framework for energy efficiency strategies is the *California Long Term Energy Efficiency Strategic Plan* (LTEESP), prepared by the California Public Utilities Commission (CPUC). The LTEESP identifies the following areas where local government authority can influence energy use in new and existing buildings:

1. Ensuring compliance and enforcement of the Title 24 energy code for residential and commercial buildings.
2. Adopting and implementing voluntary and mandatory “reach” (enhanced energy efficiency) codes beyond Title 24’s energy requirements (and potentially other “green” requirements).
3. Supporting highly efficient projects that voluntarily exceed minimum energy codes through favorable fee structures, fast-tracked permitting and other innovative and locally appropriate approaches.
4. Enacting ordinances with point-of-sale or other approaches that spur efficiency actions in existing, privately-owned buildings.
5. Applying efficiency-related “carrots” and “sticks” using local zoning and development authority.

If the City has interest in learning more about reach codes, SDG&E can provide, at no cost, the documentation necessary for the City to consider adoption of voluntary reach codes. In addition to energy codes, some cities have initiated policies to further promote energy efficiency and sustainability, such as green business programs, Property Assessed Clean Energy (PACE) finance programs, and residential building retrofit programs like Energy Upgrade California (EUC).

Energy Upgrade California – Home Retrofit Programs

EUC (www.energyupgradeca.org) is a statewide umbrella under which all energy-saving building retrofit programs are housed. EUC promotes a “whole house” performance approach to energy efficiency that focuses on the elements within a home that affect energy use, how they interact, and how they influence health and safety. This approach is meant to provide a “one stop shop” of measures rather than targeting one building aspect at a time, such as lighting, air conditioners, or insulation.

To determine the best approach for improvements to an individual home, a home energy assessment is done. Some are known as “home energy ratings” or HERS. The assessment can pinpoint exactly what upgrades can be made, the costs, and the rebates or incentives that may apply. The home assessments and retrofit projects are performed by licensed building contractors that have been trained for the EUC program. (More information on workforce development programs is contained in Chapter 7.)

Locally, the Center for Sustainable Energy (CSE) is collaborating with SDG&E to coordinate EUC. Additionally, a collaborative of local public agencies has tasked CCSE with continuing several local EUC programs through 2015 that were previously funded by ARRA grants to the City of Chula Vista, City of San Diego and County of San Diego. The collaborative is referred to as the San Diego Regional Energy Partnership (SDREP) and it includes the above jurisdictions, along with SANDAG and the Port of San Diego. Together, SDREP dedicates grant funds to expand energy efficiency resources to all local jurisdictions in San Diego County. SANDAG’s contribution is to:

“Further develop and support regional Energy Upgrade California (EUC) implementation and the broader existing home retrofit market to facilitate “deep energy retrofits” (both in terms of high energy savings and untapped markets in existing residential buildings) for member jurisdictions.”

Lemon Grove residents can participate in EUC, and City staff is encouraged to participate in the planning of these programs through a regional Retrofit Advisory Council (RAC) managed by CSE. **Appendix H** includes details about the RAC and other region-wide SDREP projects in which the City may want to become involved.

Appendix H also provides a series of energy-related policy measures that reflect the goals of state agencies like the California Energy Commission (CEC), CPUC, and Office of the Attorney General. The appendix includes further information on EUC and financing mechanisms for energy efficient building retrofits.

Property Assessed Clean Energy Finance Programs

In 2013, the Lemon Grove City Council opted to participate in two new Property Assessed Clean Energy (PACE) Programs—the Home Energy Retrofit Opportunity (HERO) program and the Figtree OnDemandPACE™ Financing program. These two programs operate in other cities in San Diego County and around the state. The voluntary programs are open to Lemon Grove residential and commercial property owners.

PACE allows property owners to pay for energy and water efficiency upgrades and renewable energy improvements without having to pay the costs up front. California

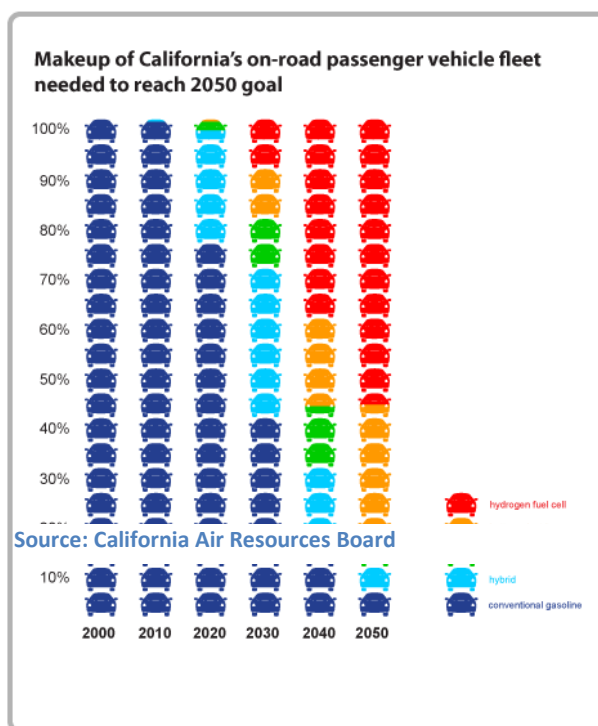
Assembly Bill 811 (AB 811) and California Senate Bill 555 (SB 555) serve as legislative authority for PACE operations. These two legislative actions enable the use of PACE as a financing tool, but provide slightly different structures. More information on PACE programs including which jurisdictions are participating is available in **Appendix H**.

3. Local Planning for Alternative Fuel Vehicles and Infrastructure

As automakers offer greater numbers of vehicles powered by a variety of fuels, infrastructure must keep up to enable this market growth. For example, Cadillac, Chevrolet, Daimler, Fiat, Ford, Honda, Mitsubishi, Nissan, Tesla and Toyota all offer plug-in electric vehicles (PEV) today. Also, Honda, Toyota, General Motors, Daimler, Hyundai and Nissan have stated they plan to bring hydrogen fuel cell vehicles to market in the 2015-2017 timeframe.

In order to keep pace with the market and reach state petroleum reduction targets, regional planning and actions are necessary to incorporate alternative fuel infrastructure where little to none exist today. Some alternative fuel options for local planning are included in **Appendix G**.

The chart to the right demonstrates how California's on-road passenger vehicle fleet is planned to change overtime. The State goal is for 95 percent of vehicles on California roadways to be powered by alternative fuels by 2050. Car, SUV and pick-up drivers will be using vehicles powered from natural gas, electricity, biofuels and hydrogen fuel cells.



The deployment of alternative fuel infrastructure (e.g., fueling stations and EV chargers) will need to become a consideration when planning the region's transportation network. Requests for the siting of EV chargers and other fueling infrastructure will grow in the near future.

Recognizing these factors, the SANDAG Board included several recommended actions in the 2050 RTP/SCS (2011) to begin planning for an increase in alternative fuel vehicles.

Specifically, Sustainable Communities Strategy Actions 21, 22 and 24 addressed alternative fuels, the transportation network, and the need for adequate infrastructure.

21. Support planning and infrastructure development for alternative fueling stations and plug-in electric vehicle (EV) chargers.
22. Develop or facilitate a regional approach to long-term planning for alternative fuel infrastructure that includes the continued development of public-private strategic alliances.
24. Integrate alternative fuel considerations into the development of the regional transportation network by, for example, integrating infrastructure for electric vehicle charging into regional park-and-ride lots and transit stations.

Siting alternative fueling stations is important to provide customers like fleet managers and the general public with a level of certainty that infrastructure will be available to support their investment in an alternative fuel vehicle. Support for alternative fuel infrastructure also can help attract private investment associated with alternative transportation to the region. The San Diego Regional Clean Cities Coalition, along with its members including the County, SANDAG, local cities, the Airport Authority, the Port of San Diego, and CSE, have committed to addressing the need for more fueling choices across the region. A list of both publicly and privately available alternative fueling stations is included in **Appendix D**.

SANDAG received a \$200,000 Energy Commission grant in 2012 to work with local governments and stakeholders to prepare a regional readiness plan for electric vehicles. Subsequently, SANDAG has received a \$300,000 grant to expand the EV planning effort and develop a regional readiness plan for all alternative fuels. Planning and related staff from Lemon Grove and other local governments are encouraged to participate. The San Diego Regional EV Readiness Plan was accepted by the SANDAG Board of Directors in January 2014, and the alternative fuel readiness plan is to be completed in summer 2016. Factsheets and best practices on permitting EV chargers, parking accessibility, types of chargers and other topics are provided in **Appendix I**.

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Market Energy Programs to Local Residents, Schools, and Businesses

This chapter provides information on educational resources available to residences, businesses, schools and the general public in the San Diego region. It also provides internet links to existing energy and water efficiency programs, renewable programs, and fuel-saving resources. The City could serve as a conduit to its constituents about these resources by including them on the municipal website or in the city newsletter.

California's Vision for Marketing, Education, and Outreach

Californians will be engaged as partners in the state's energy-efficiency, demand-side management, and clean energy efforts by becoming fully informed of the importance of energy efficiency and their opportunities to act.

-California Long-Term Energy Efficiency Strategic Plan

Other possible outreach mechanisms that the City could use include:

- Making available factsheets and pamphlets at city venues such as the permit desk, parks and recreation areas, libraries, and city hall. SDG&E, CSE, and SANDAG iCommute can provide materials about programs and services that the City can use.
- Inviting SDG&E, SANDAG iCommute, and/or CSE to host an information booth on energy-saving programs or commuter programs at community events.
- Helping to coordinate presentations by SDG&E and/or SANDAG iCommute to community organizations such as a neighborhood planning group or local chamber of commerce.

SDG&E Energy Innovation Center

In January 2012, SDG&E opened the Energy Innovation Center (EIC), which was designed to be one of San Diego's first Leadership in Energy & Environmental Design (LEED) Platinum buildings open to the public. The EIC is a community resource to explore the latest green technologies and learn about energy efficiency. It hosts trainings and workshops and includes a Food Service Demonstration Kitchen. The EIC is at 4760 Clairemont Mesa Boulevard, San Diego, CA 92117. Contact (800) 411-7343 or www.sdge.com/eic.



iCommute Programs for the Community

In addition to supporting the city-employee commuter programs identified in Chapter 4, SANDAG's iCommute program is a resource for residents and local businesses about alternatives to driving alone. To increase awareness of this resource, the City could:

- Provide information on commuting resources at city hall, the library and other sites, and/or online. Information could include links to the 511 transit trip planner, online ridematching service, and online cost-of-commute calculator.
- Participate in annual events and campaigns that encourage commute alternatives to driving alone such as Bike to Work Day, Dump the Pump, Rideshare Week, Walk and Bike to School Day:
 - Adopt proclamations and celebrate these events in your community
 - Participate in the Bike to Work and Rideshare Week Corporate Challenges to demonstrate your commitment to sustainable commute choices
 - Host a Bike to Work Day pit stop(s)
- Recognize and/or honor local commuters and employers who have demonstrated a commitment to sustainable commute choices.

SANDAG SchoolPool Program

SchoolPool is iCommute's free ridematching service for parents of children who attend the same school anywhere in the region. With this safe and secure service, parents are matched with other parents in their neighborhood who are interested in sharing the driving responsibilities or would like to have their kids bike or walk to school with other students and a parent leader. The City could:

Through SchoolPool, parents can receive a free helmet for each child who bikes and a free baseball cap for each child who walks. All children who bike or walk can receive reflective backpacks, and safety vests are provided for parent leaders.

- Encourage the School District and/or individual schools to enroll in SchoolPool, a secure online ridematching service administered by SANDAG for parents with children in kindergarten through 12th grade. SchoolPool can be a transportation solution for parents who live in districts where school bus services have been cut.
 - SchoolPool enables parents of children who attend the same school and live in the same neighborhood to share responsibilities of getting their children to and from school.

- SchoolPool helps parents connect their children with bike buddies and “walking school buses” – groups that ride their bikes or walk to school together with one or more adults.
- Parents who use SchoolPool to find bike buddies and walking school buses can receive a free helmet for each child who bikes and a free baseball cap for each child who walks. All children who either bike or walk can receive reflective backpacks. Safety vests are provided for parent leaders.

Comprehensive Energy Program Websites

Residential Energy-Saving Programs	www.sdge.com/residential
Commercial Energy-Saving Programs	www.sdge.com/business
Online Calendar of Workshops and Trainings	https://seminars.sdge.com
Tax Incentives Assistance Project (Available Energy Tax Credits)	www.energytaxincentives.org/

Low Income Assistance Programs

Residential Rate Assistance	www.sdge.com/residential/assistance/assistServCare.shtml
The Energy Team Program	www.sdge.com/energy-savings-assistance-program
Multi-Family Affordable Solar Housing	www.energycenter.org/index.php/incentive-programs/multifamily-affordable-solar-housing

Energy and Water Efficiency Programs

WECalc Home Water-Energy-Climate Calculator	Free online tool that estimates home water-related energy use and associated GHG emissions. www.wecalc.org/
WaterSmart San Diego County	http://www.watersmartsd.org/

Renewable Energy Programs

Self-Generation Incentive Program	www.energycenter.org/index.php/incentive-programs/self-generation-incentive-program
California Solar Initiative (CSI)	www.energycenter.org/index.php/incentive-programs/california-solar-initiative
CSI Thermal Program (Solar Water Heating)	www.energycenter.org/index.php/incentive-programs/solar-water-heating
Net Energy Metering	www.sdge.com/nem/

Business and Commercial Programs

Direct Install Program	www.sdge.com/save-money/direct-savings-direct-install
Technical Assistance and Technology Incentives	www.sdge.com/tati
Summer Saver	www.sdge.com/vendor/summersaver/
On-Bill Financing	www.sdge.com/obf
Energy Savings Bid	www.sdge.com/bid
Savings by Design	www.sdge.com/clean-energy/savings-design/savings-design

Transportation and Petroleum Reduction Programs

Clean Vehicle Rebate Project	www.energycenter.org/cvrp
SANDAG iCommute	www.icommutesd.com/
SDG&E Clean Transportation	www.sdge.com/cleantransportation/
SANDAG SchoolPool Program	www.icommutesd.com/Schoolpool

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Support Green Jobs and Workforce Training

The City can increase local awareness of workshops, training, and employment resources available to its constituents. It can make this information more widely available by including it on its website and/or providing handouts at local libraries and city hall.

California's Vision for Workforce Education and Training

By 2020, California's workforce is trained and fully engaged to provide the human capital necessary to achieve California's economic, energy efficiency, and demand-side management potential.

-California Long-Term Energy Efficiency Strategic Plan

Training and Education Resources

Sample Green Job Fields	Sample Green Jobs
Building retrofitting Mass transit-freight rail Smart grid Wind power Solar power Advanced biofuels Alternative transportation vehicles and infrastructure	Electricians, heating, ventilation and air conditioning installers, carpenters, construction workers and managers, home builders, roofers, building inspectors, engineers (civil, mechanical, environmental, electrical), welders, metal fabricators, assemblers, transit and truck drivers, dispatchers, software engineers, technicians, machinists, power line installers and repairers, iron and steel workers, sheet metal workers, equipment operators, chemists, chemical technicians, agricultural workers, farm product purchasers, agricultural inspectors



San Diego Miramar College's Advanced Transportation Technology & Energy Center

Advanced Transportation Technology & Energy (ATTE) Centers were created as a means for keeping California competitive as a national leader in advanced transportation and energy technologies, and to transform the workforce in the rapidly developing, technology-driven transportation and energy industries. San Diego Miramar College's ATTE Center is the regional center for San Diego County.

Courses, assistance, and outreach programs are tailored to the needs of regional employers and employees in California. The ATTE Center provides students, technicians, faculty, public, and other initiative centers with the education, training, and resources they need to effectively learn, teach, and work with advanced transportation and energy technologies, including:

- Electric, hybrid, and hydrogen fuel cell programs
- Gaseous fuel programs for light and/or heavy duty vehicles
- Intelligent transportation systems programs
- Railroad operation programs
- Light rail maintenance aeronautics and flight
- Technology programs and energy programs
- Motorcycle maintenance programs
- Automotive clean-air car emissions programs

The Miramar College ATTE Center is located at 10440 Black Mountain Road, San Diego, CA 92126. Call (619) 388-7673 or visit www.attemiramar.com for more information.



CUYAMACA
COLLEGE

Cuyamaca Community College's San Diego Green Building Training Collaborative

The Grossmont-Cuyamaca Community College District was awarded ARRA funds to launch the San Diego Green Building Training Collaborative under California's Clean Energy Workforce Training Program. The collaborative trains unemployed or underemployed workers with previous construction experience to be building analyst professionals, water auditors, solar photovoltaic installers, and solar thermal installers.

Trainings serve all of San Diego County and are offered at Cuyamaca College in Rancho San Diego and Palomar College in San Marcos. Certificates of Achievement are awarded upon program completion. Cuyamaca College offers green workforce training certificates and degrees in water/wastewater technology, environmental health and safety, sustainable landscaping, and renewable energy. For more information, visit www.cuyamaca.edu/preview/cleanenergy/.



SAN DIEGO STATE UNIVERSITY
College of
Extended Studies
never stop learning™

SDSU Green Industry Certificate Programs

The College of Extended Studies at San Diego State University (SDSU) offers two certificate programs related to green industry: Professional Certificate in Green Energy Management and Professional Certificate in Green Development and Property Management. The first program is designed to provide students with knowledge necessary for a career in energy management and renewable energy technology.

The courses emphasize an energy overview, energy efficient technologies, solar alternatives, sustainable back-up heating systems and renewable energy options, energy audits, converting to renewable energy, green sales strategies and concepts, the newest legislation, and new trends. The SDSU and the San Diego Workforce Partnership are working together on many certificate programs, and enrollees may be eligible for tuition assistance through the Workforce Partnership. See below for more on the Workforce Partnership. For more information on the SDSU Extended Studies programs, call (619) 594-3297, email green.ces@mail.sdsu.edu, or visit www.ces.sdsu.edu/.

The San Diego Workforce Partnership

The San Diego Workforce Partnership (www.sandiegowork.com/) works with public and private agencies, local businesses, and educational institutions to create workforce solutions for the San Diego region. It provides services for employers and job seekers, online access to workforce training and resource, and has ten One-Stop Career Centers located throughout San Diego County. The Workforce Partnership serves as this region's Workforce Investment Board.

The nearest One-Stop Career Center to Lemon Grove is East County Career Center, located at 924 East Main Street, El Cajon, CA 92021. More information can be found at <http://eccc.guhsd.net/>.

SDG&E Energy Innovation Center

The Energy Innovation Center (EIC) also hosts a variety of workshops and includes a Food Service Demonstration Kitchen that hosts free seminars on energy-efficient cooking, equipment, lighting and food safety. The EIC is located at 4760 Clairemont Mesa Boulevard, San Diego, CA 92117. Contact (800) 411-7343 or visit www.sdge.com/eic.

Statewide Resources for Training and Education



Grid Alternatives

Grid Alternative (www.gridalternatives.org) offers volunteer opportunities to gain hands-on solar experience and network with others interested in renewable energy, the environment, and our communities.



Solar Training Institute

The Solar Training Institute (www.trainingforsolar.com) provides accelerated training classes for contractors, electricians, engineers, solar energy entrepreneurs, sales people and anyone who is considering a career change to the growing solar industry.



**ECONOMIC &
WORKFORCE
DEVELOPMENT**
through the
CALIFORNIA
COMMUNITY
COLLEGES

California Community Colleges Economic and Workforce Development

The California Community Colleges Economic and Workforce Development (CCCEWD) program provides industry-specific workforce education, training, and consulting services to help California businesses compete. CCCEWD (www.cccewd.net/) is the state program from which the local Advanced Transportation Technology and Energy Center, San Diego Workforce Partnership, and One-Stop Career Centers stem.

Looking Forward

This Energy Roadmap provides a framework for the City to save energy in its government operations and the community at large. The Roadmap measures identified in each chapter can serve as a “jumping off” point for the City if it wishes to undertake any of the projects or policies. The City already successfully implements smart growth projects that reduce fuel consumption and enable its constituents to be more active. The Roadmap can support continued sustainability efforts, climate action planning, and community outreach.

Through 2015, SANDAG can provide technical support to the City with implementing its Energy Roadmap. Additionally, the City is able to apply for funding opportunities and/or other support from several programs listed here.

Energy-Saving Funding Opportunities

Local Government Partnerships with San Diego Gas & Electric

The SANDAG Energy Roadmap Program is primarily funded through a Local Government Energy Efficiency Partnership (LGP) with SDG&E. The utility manages several LGPs in the region for jurisdictions and other public agencies. The duration is typically three years, and they are approved by the California Public Utilities Commission (CPUC).

Prior to the start of new program cycles, SDG&E announces a request for abstracts for future LGP programs. The next program cycle, which will be determined by the CPUC, will likely begin in January 2016. Using its Energy Roadmap as a guide, the City can decide if it would like to propose to SDG&E its own LGP, have SANDAG continue to serve as the mechanism to provide member agencies with energy efficiency services, or take another course of action.

LGPs have three focus areas:

1. Identify energy efficiency savings in municipal sites
2. Utilize core energy efficiency programs
3. Engage the community on energy efficiency

The County of San Diego, City of Chula Vista, City of San Diego, and Port of San Diego also have their own LGPs with SDG&E. Examples of programs funded through these partnerships include:

- 43** City of Lemon Grove Energy Roadmap

- Municipal facility retrofits for energy efficiency improvements
- Strengthened building energy codes and code enforcement
- Land use planning and design
- Education and outreach
- Green building, permit expedite, and fee reduction programs
- Peer-to-peer best practices and networking
- Staff training programs
- Energy plan development

Emerging Cities Program with San Diego Gas & Electric

The City has already taken advantage of the Emerging Cities Program (ECP) to undertake a community-wide greenhouse gas (GHG) inventory in 2014. SDG&E developed the ECP to assist cities with implementing components of their Energy Roadmaps that cities are most interested in and that cannot be funded through the SANDAG LGP. Once the City has completed its inventory project, there could be further ECP opportunities. The program is available through 2015, and your Energy Roadmap coordinator will continue to work with City staff in this area. In 2014, seven cities with Energy Roadmaps received grants from SDG&E. Activities funded include:

- Expansion of a green business program
- Assessment of PACE programs for City consideration
- GHG inventory
- Energy chapters for a Climate Action Plan
- Energy-related implementation measures for an adopted Climate Action Plan



State Energy Program Grants and Energy Efficiency and Conservation Block Grants

The U.S. Department of Energy (DOE) and California Energy Commission release State Energy Program solicitations that support transportation, residential, commercial, agricultural, industrial, institutional energy efficiency, and renewable energy programs.

Both agencies also release Energy Efficiency and Conservation Block Grants (EECBG) solicitations. The EECBG provides local government grants to reduce fossil fuel emissions, reduce total energy use, and improve energy efficiency and conservation in the transportation and building sectors. Grants originate from DOE and are released from both the Energy Commission and DOE. For program opportunities, visit www.energy.ca.gov/contracts/index.html.



Clean Vehicle Rebate Project

The Clean Vehicle Rebate Project is funded by the California Air Resources Board and administered statewide by the California Center for Sustainable Energy (CCSE). A total of \$45.2 million has been appropriated for FY 2009-2013 to promote the production and use of zero-emission vehicles, including electric, plug-in hybrid electric, and fuel cell vehicles. Rebates of up to \$2,500 per light-duty vehicle are available for individuals and business owners who purchase or lease new eligible zero-emission or plug-in hybrid electric vehicles. The program received funds for 2014, and is expected to be funded in future years.



California Energy Commission Alternative and Renewable Fuel & Vehicle Technology Program

California Assembly Bill 118 (AB 118): Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) authorized the California Energy Commission (CEC) to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. The program runs through 2024 and the CEC has an annual program budget of approximately \$100 million to support projects that:

- Develop and improve alternative and renewable low-carbon fuels
- Optimize alternative and renewable fuels for existing and developing engine technologies
- Produce alternative and renewable low-carbon fuels in California
- Decrease, on a full fuel cycle basis, the overall impact and carbon footprint of alternative and renewable fuels and increase sustainability
- Expand fuel infrastructure, fueling stations, and equipment
- Improve light-, medium-, and heavy-duty vehicle technologies
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets
- Expand infrastructure connected with existing fleets, public transit, and transportation corridors
- Establish workforce training programs, conduct public education and promotion, and create technology centers

Additional information on the ARFVTP and associated investment plan can be found on the CEC website: www.energy.ca.gov/altfuels.



TransNet: Smart Growth Incentive Program and Active Transportation Grants

The *TransNet* Smart Growth Incentive Program (SGIP) funds transportation-related infrastructure improvements and planning efforts that support smart growth development. The SGIP awards two percent of the annual *TransNet* revenues for the next 40 years to local governments through a competitive grant program to support projects that will help better coordinate transportation and land use in the San Diego region. Lemon Grove has successfully applied for and received SGIP grants. Additional information on the current funding cycle is available at www.sandag.org/smartgrowth.

The goal of the Active Transportation Grant Program is to encourage local jurisdictions to plan and build facilities that promote multiple travel choices for residents and connectivity to transit, schools, retail centers, parks, work, and other community gathering places. More information on current funding opportunities is available at www.sandag.org/active.

Non-Financial Resources for Local Governments

National and State educational campaigns like ENERGY STAR or the Beacon Program can bring wide scale recognition to a city for its sustainability efforts. Other programs identified here can serve as technical resources on a variety of subjects.



ENERGY STAR Government Partnerships

In addition to appliance labeling, the ENERGY STAR program seeks partnerships with local businesses, congregations, industries, schools, and others. By becoming a Government ENERGY STAR Partner, a local government can receive recognition nationally and can co-brand local energy-saving initiatives with ENERGY STAR. More information is available at www.energystar.gov.

The U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy also host an annual ENERGY STAR Awards ceremony to honor organizations that have made outstanding contributions to protecting the environment through energy efficiency. For more information on government partnerships, visit www.energystar.gov/index.cfm?c=government.bus_government.

WaterSense® WaterSense Promotional Partners

The EPA also promotes water conservation efforts through its WaterSense program that helps consumers identify water efficient products and programs that meet EPA's water efficiency and performance criteria. Products carrying the WaterSense label perform

well, help save money, and encourage innovation in manufacturing. More information is available at www.epa.gov/watersense.

Local governments, utilities, and other organizations can become WaterSense Promotional Partners to help provide outreach on water-efficiency measures. Jurisdictions can receive recognition nationally and can co-brand local water-saving initiatives with WaterSense as a promotional partner. For more information on promotional partners, visit www.epa.gov/watersense/partners/promotional.html.



The Beacon Award

The Institute for Local Governments' California Climate Action Network (CCAN) has created the Beacon Award to recognize cities and counties that reduce Greenhouse Gas (GHG) emissions and save energy. To receive a silver, gold, or platinum Beacon Award, jurisdictions must achieve measurable GHG reductions and energy savings in agency facilities, and achieve measurable GHG reductions and promote energy conservation activities in the community.

The City of Lemon Grove has already applied for this award and as such, it is designated as a Beacon Award program participant, and is now working toward achieving the first Beacon Award level.



Department of Energy Clean Cities Program

Clean Cities advances the nation's economic, environmental, and energy security by supporting local actions to reduce petroleum consumption in transportation. A national network of nearly 100 Clean Cities coalitions brings together stakeholders in the public and private sectors to deploy alternative and renewable fuels, idle-reduction measures, fuel economy improvements, and emerging transportation technologies. A variety of Clean Cities tools and resources are available on the DOE website (<http://www1.eere.energy.gov/cleancities/>). The local affiliate of the DOE Clean Cities program is the San Diego Regional Clean Cities Coalition at www.sdcleancities.org.

San Diego Gas & Electric

As described in previous chapters, SDG&E (www.sdge.com) manages a variety of energy-saving programs that:

- Promote energy efficiency, demand response and conservation programs, services and resources
- Provide energy education and outreach to the community through its Energy Innovation Center



Center for Sustainable Energy

CSE (www.energycenter.org) works with local governments on several initiatives including:

- The San Diego Regional Retrofit Advisory Committee, that includes several local jurisdictions, SANDAG, and SDG&E
- The Energy Upgrade California program



Energy Policy Initiatives Center

The Energy Policy Initiatives Center (EPIC) is a nonprofit academic and research center of the University of San Diego, School of Law that studies energy policy issues affecting the San Diego region and California. EPIC serves as a source of legal and policy expertise, and provides information on the development of sustainable solutions that meet the region's future energy needs. For more information, contact (619) 260-4589 or visit www.sandiego.edu/epic/.



San Diego Association of Governments

SANDAG Energy and Climate Change Planning Program staff is knowledgeable about federal, state, regional, and local issues and can be a resource for jurisdictions after their Energy Roadmaps are completed. For more information on SANDAG energy and climate change planning, contact Susan Freedman at (619) 699-7387, susan.freedman@sandag.org or visit www.sandag.org/energy.



SANDAG iCommute Program

The SANDAG iCommute team can assist local governments with staff commuter programs, Transportation Demand Management ordinances, online tools, and outreach on alternative transportation options for the commute. Contact Antoinette Meier at (619) 699-7381, antionette.meier@sandag.org, or visit www.icommutesd.com.



Statewide Energy Efficiency Best Practices Coordinator

The CPUC created this position to help local governments with energy efficiency programs and policies. Like SANDAG is available to you locally, the Best Practices coordinator is a statewide resource that develops and distributes best practices case studies, provides information and examples of energy-efficiency policies and programs, provides materials that may help local governments implement climate action plans, and serves as a resource to help local government energy programs achieve success. Joseph Oldham serves as the Statewide Local Government Energy Efficiency Best Practices Coordinator through 2015. He is located at the Local Government Commission and can be reached at (559) 797-6034, or email: joldham@lgc.org.

Statewide Energy Efficiency Collaborative

The Statewide Energy Efficiency Collaborative (SEEC) was formed in 2010 as an alliance to help cities and counties reduce GHG emissions and save energy. SEEC (www.californiaseec.org/) serves as a statewide local government partnership and is an alliance among the Local Government Commission, International Council for Local Environmental Initiatives – Local Governments for Sustainability (ICLEI), the Institute for Local Government, and California's four investor-owned utilities, including San Diego Gas & Electric. Resources provided by these agencies are described below.

- Local Government Commission provides free webinars, holds an annual statewide conference, and provides peer-to-peer networking opportunities
- ICLEI is conducting a series of workshops and trainings for local governments on taking key steps to reduce greenhouse gas emissions
- Institute for Local Governments' California Climate Action Network is providing recognition for cities and counties through the Beacon Award



www.sandag.org/energy

This Program is a collaboration between SANDAG and San Diego Gas & Electric®

