

# CITY OF SAN DIMAS

## ENERGY EFFICIENCY & CONSERVATION STRATEGY

Prepared for:

City of San Dimas

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## **INTRODUCTION**

The City of San Dimas has engaged in the process of developing an Energy Efficiency Conservation Strategy (EECS). This effort was initiated in order to meet funding requirements for the Department of Energy's *Energy Efficiency and Conservation Block Grant* (EECBG) program. The EECS is intended to both assist in the application for stimulus funds under the EECBG program as well as to guide on-going City action to save energy and reduce emissions.

The EECS development process includes several components:

- A kick-off workshop with City staff to set goals and evaluate current existing sustainability measures and opportunities
- A comprehensive greenhouse gas (GHG) inventory to determine both municipal and community-wide emissions
- Evaluation, selection and implementation of projects to be funded directly with EECBG funds.

All of the planning activities, GHG inventory, and implementation of retrofit projects will be funded through the EECBG program.

### **The top 5 City Goals:**

- Engage, support and educate of residents and the business community in their efforts to be more sustainable in the use of nature resources.
- Identify and commit to reducing energy and water use in all City Operations.
- Conduct energy audits and collect key data and information in order to develop and implement a prioritized set of targets and strategies.
- Promote energy efficiency and water conservation in City housing programs
- Develop strategies for the reduction of greenhouse gas emissions from transportation by reviewing land use, fleet conversions, and other potential cost effective strategies.

These goals were identified by City staff as being in alignment with current practices, consistent with City policy and achievable within City operations.

## **POLICY BACKGROUND**

With the passage of AB-32 and other related climate legislation by the State, local governments in California are now facing new regulatory challenges related to climate change. While the specific requirements for cities are still emerging, it is clear that all projects requiring EIRs under CEQA must consider climate change and, that cities will be responsible for understanding and evaluating

these applications. In addition, cities will be on the front line of regional planning efforts related to SB-375, which links transportation, housing and employment at a regional scale.

In order to proactively address this context and prepare for impending requirements, many cities are conducting GHG inventories. These inventories allow individual cities to understand the sources and quantities of emissions from various sectors in order to appropriately target action and create policy that will result in emissions reductions in line with AB-32 targets.

### **SUMMARY OF GHG INVENTORY FINDINGS**

A greenhouse gas (GHG) emissions inventory has been performed for the City of San Dimas. A GHG inventory provides information on the activities that cause emissions and removals, as well as background on the methods used to make the calculations. Policy makers use greenhouse gas inventories to track emission trends, develop strategies and policies and assess progress. The distinct inventories have been presented below. These include a 2006 “baseline”, 2020 “business-as-usual”, and 2020 “business-as-usual” with State Actions.

Table 1 summarizes estimated City-wide GHG emissions for the 2006 baseline, 2020 business-as-usual (BAU), and 2020 business-as-usual with State action inventories. Emissions are reported in metric tons of carbon dioxide equivalents (MTCO<sub>2e</sub>). The 2020 emissions estimated in the BAU inventory including state actions reflect full implementation of the Renewable Portfolio Standards, Corporate Average Fuel Economy Standards, Low Carbon Fuel Standards, and Title 24 Code cycle updates.

Table 2 summarizes the estimated upstream and downstream emissions reduction benefits associated with San Dimas’ diverted solid waste. These values include the emissions reductions associated with decreases in raw materials acquisition and manufacturing emissions and increases in forest and soil carbon sequestration associated with diverting solid waste.

Table 1: Historical and projected City-wide greenhouse gas emissions by sector (MTCO<sub>2e</sub>)<sup>1</sup>

City of San Dimas Emissions Sectors	2006 Baseline (MTCO <sub>2e</sub> )	% of Total	2020 Business-As-Usual (MTCO <sub>2e</sub> )	% of Total	2020 Business-As-Usual with Statewide Action (MTCO <sub>2e</sub> )	% of Total
Residential	57,536	19%	59,447	19%	45,257	18%
Non-residential	54,815	18%	57,894	18%	43,433	17%
Water	4,195	1%	4,975	2%	4,229	2%
Transportation	159,007	52%	162,426	51%	128,317	51%
Infrastructure <sup>2</sup>	5,611	2%	6,198	2%	5,268	2%
Landfilled Solid Waste <sup>3</sup>	24,728	8%	26,334	8%	26,334	10%
<b>Total Emissions</b>	<b>305,893</b>		<b>317,274</b>		<b>252,838</b>	
<i>Total Emissions per Capita</i>	<b>8.55</b>		<b>8.21</b>		<b>6.54</b>	

Table 2: Lifecycle emissions reductions associated with solid waste diversion (MTCO<sub>2e</sub>)<sup>4</sup>

City of San Dimas Emission Reduction Sectors	2006 Baseline (MTCO <sub>2e</sub> )	2020 Business-As-Usual (MTCO <sub>2e</sub> )	2020 Business-As-Usual with Statewide Action (MTCO <sub>2e</sub> )
<i>Diverted Solid Waste Lifecycle Benefits</i>	(168,351)	(179,280)	(179,280)

<sup>1</sup> Numbers vary slightly due to rounding.

<sup>2</sup> Infrastructure includes emissions due to street lighting, traffic lighting, and agricultural and pumping energy use.

<sup>3</sup> Landfilled solid waste includes waste-to-energy municipal solid waste.

<sup>4</sup> Diversion includes recycled materials, green waste, source reduction, and other diversion.

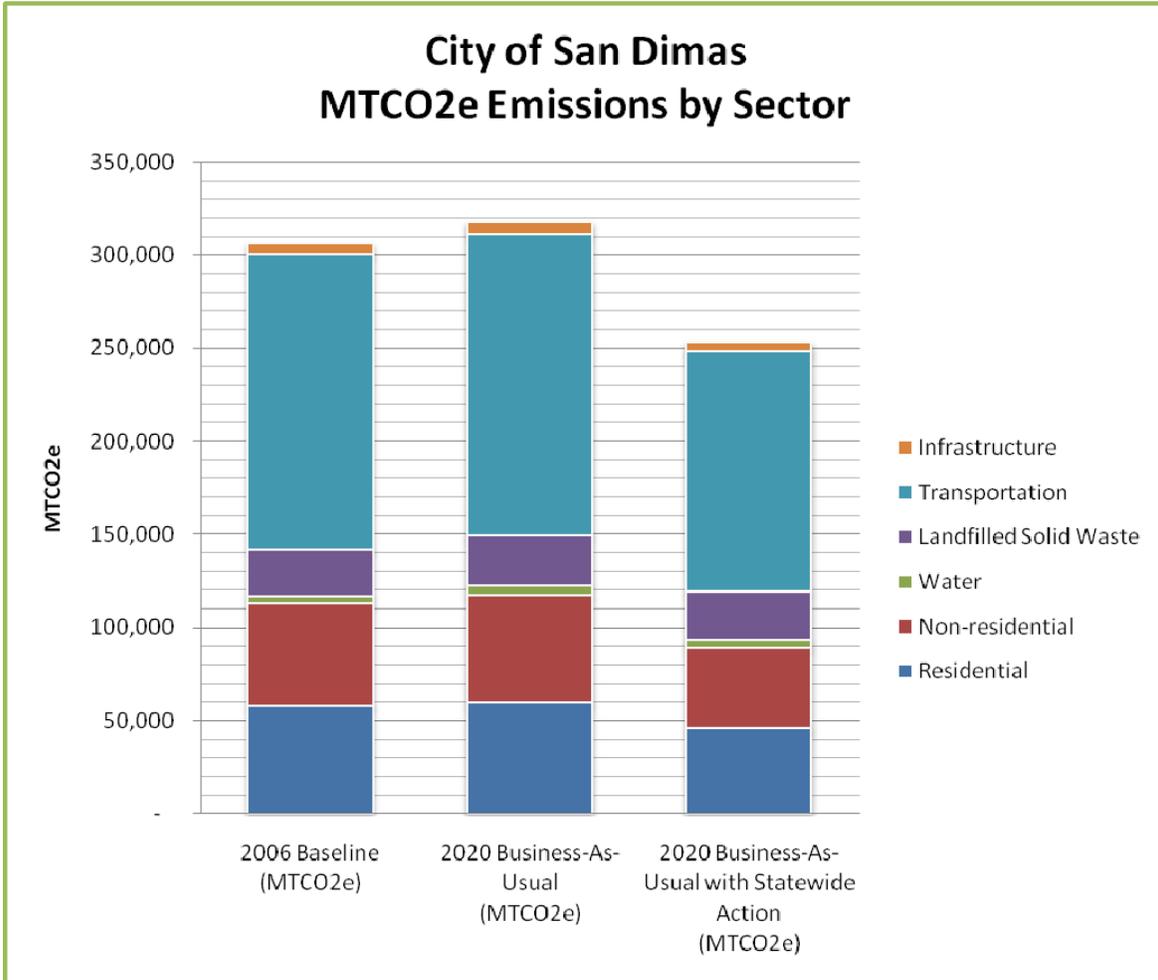


Figure 1: Historical and projected City-wide greenhouse gas emissions (MTCO2e)

There are a number of relevant observations and notes on the City-wide greenhouse gas emission data:

- Transportation is clearly the largest contributor to the City's GHG footprint.
  - Reducing the City's transportation greenhouse gas emissions will be an important element of reducing overall greenhouse gas emissions. Measures that promote bicycling, walking and other alternative transportation may facilitate in bringing this source of GHG emissions down.
- Residential and non-residential building energy use is the next largest greenhouse gas emitter. Policies and actions that promote building energy efficiency for home and

business improvements will play an important role in reducing the City's greenhouse gas footprint.

- The City's solid waste practices result in both GHG emissions and reductions. While the City's landfilled solid waste is a significant contributor to citywide emissions, the lifecycle impacts of solid waste diversion indirectly reduce emissions. These solid waste diversion greenhouse gas reductions are mainly due to source reductions which decrease the amount of materials or products generated before they become municipal solid waste, thus impacting the reduced energy required to mine and process materials.
- The relative percent contribution of emissions from different sectors remains consistent throughout the 2006 and 2020 estimates. This means that even with anticipated state actions, San Dimas' 2020 emissions profile is expected to remain comparable in the future.

#### **EXISTING CITY PROGRAMS**

The City of San Dimas is already implementing a number of programs that will conserve energy and reduce GHGs; here is a partial list:

- Green building is promoted via the City's website, which provides links to Remodeling Guides for homeowners.
- The City's website includes a section on Residential Energy Savings that informs cost-effective ways to increase the energy efficiency of homes and ways in which Southern CA Edison can be a useful resource.
- The Environmental Services page on the City's website provides valuable resources such as a carbon footprint calculator, water conservation information, smart gardening workshops, and recycling tips.
- The City has a Tree Preservation Ordinance which has been in effect since 1990.
- The City participates biannually in the County Smart Gardening program, offering free workshops on composting, worm composting, and grass recycling.
- The City's Environmental Coordinator provides outreach to city elementary schools several times a year on energy and water conservation, alternative transportation and pollution prevention.

## PLANNED CITY PROGRAMS OR PROJECTS

- Several relevant efforts are underway with the City's Community Development Long-Range Planning division such as: Walnut Creek Preserve Master Plan, climate action plan opportunities, mixed use re-zoning, and a comprehensive review of non-motorized transportation routes.
- The City Public Works Department is updating its Bikeway Systems Master Plan in order to become eligible for funding bike and alternative transportation infrastructure projects. The City Public Works Department successfully obtained a grant from the South Coast Air Quality Management District to construct a CNG Facility at the School District Yard. The matching funds were not awarded to the School District by the EPA so alternative options are being considered.
- The City Public Works Department is anticipating award of an EPA Climate Showcase Grant (Round 2) in 2010 to re-use 40,000-60,000 gallons of water/day for landscaping and building operational water needs.

## EECBG PROGRAM

As part of the EECBG requirement, the City was required to complete an EECS specifically for the DOE, referred to as "Attachment D," along with "Activity Sheets" which outline each of the projects to be pursued. After completing the GHG inventory, which was the first project funded by the EECBG program in San Dimas, a number of projects were evaluated to determine which would be the best fit for this program. The selected project included in the DOE package are:

- Development of the City-focused EECS
- Development of the GHG Inventory
- Retrofit of irrigation controllers in street medians to conserve water
- Retrofit of lighting in the San Dimas Senior Center to conserve energy

As these projects are implemented by the Community Development Department, they will be monitored and progress will be reported quarterly to the DOE. The results of the City's efforts will be shared with information networks and databases, to contribute to the body of collective knowledge among local and state agency officials regarding the embodied energy efficiency efforts implemented with EECBG funds. Program results and best practices will be shared with SCAG regional databases. The measures prescribed in the City's proposed project will provide energy and water savings and are intended to contribute to the region's reduction targets.

## POTENTIAL FUTURE PROJECTS

In addition to the projects selected for EECSBG funding, other projects were identified that will help the City save energy and reduce GHGs. A summary of these projects is provided below to serve as a springboard for identifying potential future projects that may help the City reach its goals. These ideas correspond with major sources of emissions within the City, particularly transportation, solid waste and residential energy usage.

- **Transportation:** Promote access to and usage of alternative transportation options throughout the City, such as:
  - Creating and providing access to maps of local bike paths and public transportation (e.g. on the City's website or for distribution in hard copy)
  - Encouraging carpools, vanpools, bike commuting, telecommuting by local businesses through education and assistance in developing alternative transportation programs
  - Encouraging bike or walk to school/work days
  - Explore increasing bike lanes in the city and provide more secure locations to lock a bicycle.
  - Explore constructing a Bike Station at the future Gold Line Metrolink Station to encourage bike/transit commuting.
  - Consider providing electric bicycles for city employees to use for in town lunch trip and errands.
- **Solid Waste:** Improve solid waste recycling rates by:
  - Continue working with contracted waste hauler to increase commercial and multi-family residential recycling
  - Working with waste hauler to increase recycling rates throughout the City
  - Encourage backyard composting by making available compost bins to reduce solid waste loads.
- **Residential Energy:** Promote residential energy conservation by:
  - Explore providing educational resources via the City's website, public workshops, and other venues on homeowner retrofit measures, including information on potential strategies, energy cost savings and utility rebate programs

- Consider requiring more stringent energy conservation strategies in new development than required by code
- Consider incentivizing residents by waiving/reducing permit fees, or expediting the permit process for energy efficiency or renewable energy projects.
- Evaluate creating a rebate program that provides subsidies for some portion of energy efficiency measures that are implemented, or establish a reasonable flat fee per measure.
- Consider providing direct grants to qualifying homes for implementing energy efficiency retrofits.
- Consider utilizing the free Southern California Edison residential energy surveys as a prerequisite to eligibility for residents who apply for retrofit permits. This is recommended to ensure that participants have thought carefully about which projects make sense for them and have selected appropriate projects. Free utility audit programs are listed on SCE's website:  
<http://www.sce.com/Tools/Residential/HomeEnergySurvey.htm?from=redirect>.  
This audit process will help residents to prioritize energy measures that make long-term economic sense for their homes and will help validate applications.
- Explore sponsoring 1-2 representative energy audit pilot projects. In this option, selected homes would undergo more detailed energy audits (e.g. through a SoCal Edison program or conducted by a Certified HERS Contractor). The recommended retrofits will then be implemented up to the budget allocated.
- Utilize the HUD retrofit program to implement energy efficiency upgrades for qualifying homes.
- Consider the types of housing energy efficiency upgrades that are most common for the residential vintage housing stock in the area and focus the implementation on select measures (for example installation of insulation). By analyzing what energy efficiency measures provide the greatest impact and expected paybacks. This may also allow the City to partner with a local green jobs training program (e.g. with a local community college).
- The city will monitor the development of regional cost effective programs that address the upfront cost of residential energy projects such as a PACE program. This program and potentially others like it may be explored
- **Education and Outreach:** Provide educational resources to the community on sustainability by:

- Consider holding free public workshops in a central location to explain the benefits of energy efficiency, why and how to conduct audits, how to select appropriate projects and funding. (This could be presented by a public utility service representative and/or other qualified consultant).
- Broadcasting educational workshops on the local public channel.
- Promoting sustainability through the City's Website, street signage, local newspapers, flyers in local businesses, phone tree, etc.

Projects such as these will help the City and its residents save money, reduce energy usage, reduce greenhouse gas emissions, improve air quality and boost the economy.