2011 Sustainability Summary

Presented to
SDCCD Board of Trustees

February 9, 2012
The District continues to divert a significantly higher percentage of its waste stream than the 50% required by legislation.

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>City College</td>
<td>70.6%</td>
<td>72%</td>
<td>74.3%</td>
<td>80.9%</td>
<td>85.83%</td>
</tr>
<tr>
<td>Mesa College</td>
<td>57.8%</td>
<td>59%</td>
<td>66.9%</td>
<td>61.4%</td>
<td>97.06%</td>
</tr>
<tr>
<td>Miramar College</td>
<td>61.2%</td>
<td>69.5%</td>
<td>70.2%</td>
<td>89.5%</td>
<td>58.98%</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>62.5%</td>
<td>92.4%</td>
<td>87.7%</td>
<td>88.6%</td>
<td>89.27%</td>
</tr>
<tr>
<td>District Office/DSC</td>
<td>63.3%</td>
<td>78%</td>
<td>66.4%</td>
<td>59.6%</td>
<td>96.53%</td>
</tr>
</tbody>
</table>
SDCCD 2011 Sustainability Summary
Electrical Usage (2000 – 2011)

Electrical Usage (2000 – 2011)
SDCCD 2011 Sustainability Summary
kWh per Square Foot (2000 – 2011)
SDCCD 2011 Sustainability Summary
Gas Usage (2000 – 2011)
SDCCD 2011 Sustainability Summary
Water Usage (2000 – 2011)

WATER USAGE (HCF)

- 2002: 177,482 HCF
- 2003: 138,253 HCF
- 2004: 145,144 HCF
- 2005: 131,226 HCF
- 2006: 128,814 HCF
- 2007: 142,983 HCF
- 2008: 124,589 HCF
- 2009: 124,929 HCF
- 2010: 111,598 HCF
- 2011: 104,526 HCF
Summary of Borrego Solar Power Purchase Agreement

<table>
<thead>
<tr>
<th>Site</th>
<th>Type</th>
<th>Annual Production (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>City LRC</td>
<td>Roof</td>
<td>140,060</td>
</tr>
<tr>
<td>City Harry West Gym</td>
<td>Roof</td>
<td>257,858</td>
</tr>
<tr>
<td>District Office Parking Lot</td>
<td>Carport</td>
<td>422,490</td>
</tr>
<tr>
<td>Mid-City</td>
<td>Roof</td>
<td>82,844</td>
</tr>
<tr>
<td>Miramar Parking Lots</td>
<td>Carport</td>
<td>1,833,468</td>
</tr>
<tr>
<td>Mesa Parking Structure</td>
<td>Carport</td>
<td>303,079</td>
</tr>
<tr>
<td>Mesa Parking Lot #1</td>
<td>Carport</td>
<td>590,870</td>
</tr>
<tr>
<td>Mesa Parking Lot #2</td>
<td>Carport</td>
<td>848,947</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>4,479,616</td>
</tr>
</tbody>
</table>
By generating solar energy, the District is able to earn **Renewable Energy Credits** – one credit for every megawatt-hour (MWh) of renewable energy delivered to the local power grid.

Current value is estimated at approximately $60,000 annually.
By reducing generation of carbon dioxide (CO2), the District is able to earn **Carbon Offset Credits** – one credit for every metric ton of CO2 reduced.

Credits can be purchased by companies unable to meet caps on the total amount of CO2 they are allowed to emit under state regulations. Monetary value to be determined via cap and trade marketplace.
SDCCD 2011 Sustainability Summary
Decommissioning of Cogeneration Plants

• Thermal performance degraded with time
• Operational challenges of absorption chillers with centrifugal chillers
• Reliability of system uptime and impact on demand charges
• Reduced carbon footprint
LEED is an internationally recognized green building certification system, providing third-party verification that a building was designed and built using strategies aimed at improving performance across all the metrics that matter most:

- Energy savings
- Water efficiency
- Reduction of CO\textsubscript{2} emissions
- Improved indoor environmental quality
- Stewardship of resources and sensitivity to their impacts

The four certification levels include Platinum, Gold, Silver and Basic Certification.
**SDCCD 2011 Sustainability Summary**

**LEED Gold** – Arts & Humanities Building  
Business Technology Building  
Career Technology Center

**LEED Silver** – General Purpose Classroom Building  
R Building (Learning Resource Center)  
Science Building  
C Building  
M Building

- Silver (5)  
- Gold (3)
LEED Gold – Allied Health Building
Mesa College Police Station
Student Services

LEED Silver – Math and Science Building
SDCCD 2011 Sustainability Summary

LEED – Miramar College

**LEED Platinum** – Miramar College Police Station

**LEED Gold** – Aviation Maintenance Technology Center
  - Student Services Center
  - Advanced Transp. Tech. Center

**LEED Silver** – Library Learning Resource Center
  - Cafeteria/Bookstore
  - Automotive Technology
  - College Services Center
  - Humanities & Arts Building
  - Math & Business Building
  - Fire Science/EMT

**LEED Certified** – Hourglass Park Field House

- Aviation Maint.
- Adv. Transp. Technology
- Math & Business
- Police Station
- Cafeteria/Bookstore
SDCCD 2011 Sustainability Summary

LEED – Continuing Education

**LEED Gold** – West City Campus
- Skills Center
- North City Campus

**LEED Silver** – Linda Vista Campus
- Cesar Chavez Center
- ECC Wing Expansion

Silver (3)  Gold (3)
April 2011
San Diego Gas & Electric Energy Showcase 2011
Excellence in Energy Savings Honoree

May 2011
American Public Works Association
Project of the Year: Solar Power Purchase Agreement

July 2011
CCC-IOU Energy Efficiency Partnership Program
Best Practices Sustainability Award: City College Career Technology Center
SDCCD 2011 Sustainability Summary
Sustainability Presentations

“Higher Education Sustainability Conference”
July 2011

“SDG&E Higher Education Energy Workshop”
January 2012
SDCCD 2011 Sustainability Summary
New Initiatives in 2011

Solar Thermal Heating of Hourglass Aquatic Complex
System Sizing
• 148 Glazed Flat-Plate Collectors
• Located on Roof of Mechanical Room & on Carport Shading Structures

Energy Savings
• 31,500 Therms Per Year
• $27,700 Annual Cost Savings

Additional Solar Energy is fed back into campus HHW Loop

Potential for up to $19,000 in CSI Solar Incentives
Estimated **$1.9 Million** in Savings over 30 Years
SDCCD 2011 Sustainability Summary
TES Tank – Miramar Central Plant
SDCCD 2011 Sustainability Summary
TES Tank – Highlights

Tank Sizing
• 10,000 Ton-hours
• Equal to entire campus at full cooling load for 6 Hours
• 1 million gallon tank

Energy Savings
• 764,404 kWh per Year
• $190,000 Annual Cost Savings
SDCCD 2011 Sustainability Summary
TES Tank – Payback

Estimated $13 Million in Savings over 30 Years

9 Year Payback
SDCCD 2011 Sustainability Summary
Electric Vehicle Charging Stations
SDCCD 2011 Sustainability Summary
Hosting Agreement with Ecotality

- Part of EV Project funded by DOE through ARRA
- Low cost/free charging station installation
- Blink Network access
- Charging station operating costs offset by 50/50 revenue sharing
- Ownership transfers to SDCCD in April 2013
Smart Metering

A smart meter is a digital device that measures electricity usage multiple times per day, providing timely and meaningful information about when and where energy consumption is at its highest. This can help users better monitor energy usage and implement energy-saving techniques.
Sustainability Curriculum

Sustainability Certificate & Associate Degree includes coursework in:
- Environmental Biology
- Sustainability
- Critical Thinking
- Environmental Ethics
- Ecological Commerce
- Globalization
- Field experience in sustainability

Sustainable Urban Agriculture certificates in:
- Urban Farming
- Urban Gardening
- Intro to Ecological Landscaping
- Advanced Ecological Landscaping
- Organic Gardening for the Culinary Arts

Associate Degree
PHYSICAL CAMPUS
- New construction, green campus
- First Platinum LEED Building on a San Diego college campus
- Electric Vehicle Charging Stations
- Development of Vernal Pool area

CURRICULUM
- The Manzanita Project, March 2011
- Interns in the Organic Garden

ENVIRONMENTAL STEWARDSHIP TASKFORCE
- Earth Fair 2011
- Social Media
Questions?