Agenda Item #3

THE LOS ANGELES UNIFIED SCHOOL DISTRICT SUSTAINABILITY INITIATIVES PROGRAM

Sustainability Initiatives Strategic Plan

CAFE

A Great Part of Your Day

Los Angeles Unified School District

Los Angeles Unified School District
FACILITIES SERVICES DIVISION
laschools.org

The L.A. SCHOOL Ride

PSG Los Angeles Unified School District Procurement Services Group

Los Angeles Unified School District

Today's Learners, Tomorrow's Leaders

Sustainability Steering Group

- **The Sustainability Steering Group is headed by:**
  - The Chief Facilities Executive
  - The Chief Operating Officer
  - The Chief Academic Officer
- **Working Groups were created in each area to generate ideas and projects to bring forward to the Steering Group for review and approval:**
  - AB 32
  - Facilities
  - Workforce Development
  - Regulatory Affairs
  - Communications
  - Office of Environmental Health and Safety
  - Transportation
  - Procurement
  - Food Services
  - Academic

AB 32 Working Group

- **Goal:**

  Reduce the LAUSD Carbon Footprint by 10% by 2012

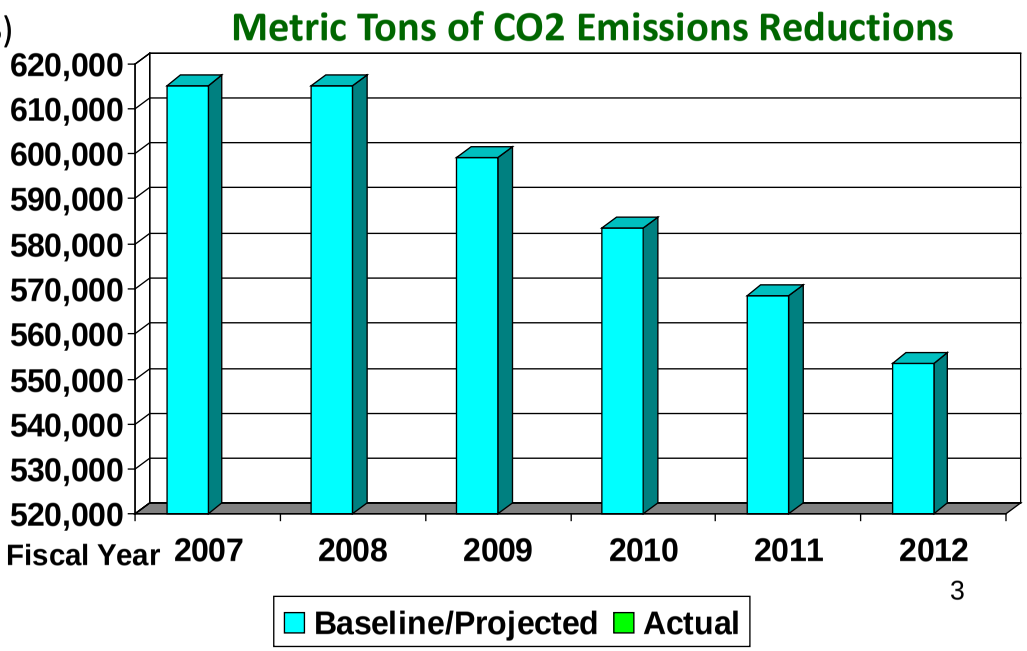
- **Strategies:**
  - Energy Conservation
  - Renewable Energy Installations
  - Encourage carpooling and mass transit
  - Coordinate efforts of Maintenance and Operations (M&O), the Office of the General Counsel (OGC), and the Office of Environmental Health and Safety (OEHS) to acquire necessary information to continue Carbon Footprint tracking

- **Metric:**

  Review and report improvement in each category as projects are completed

- **Funding Sources:**
  - Measure Q
  - Air Quality Management District (AQMD)
  - Without project funding, carbon footprint will not be reduced

- **Impact upon project completion:**
  - Cost avoidance specific to each project completed

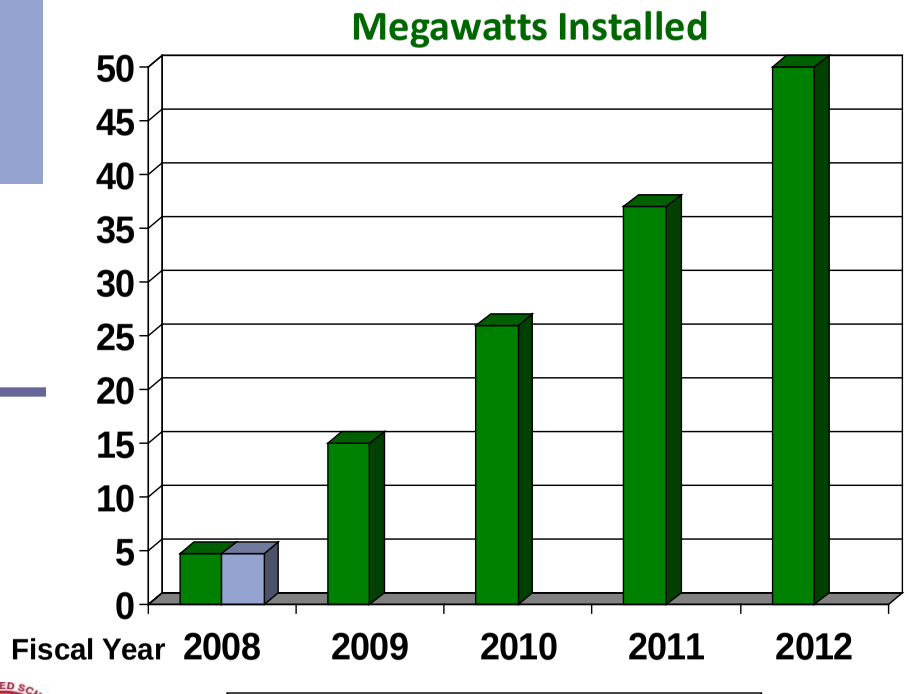


Facilities Working Group
Renewable Energy

Goal:

Install 50 MW of Renewable Energy by 2012

- **Strategy:**
  - Average installation of 250 kW per site at 50 sites each year
- **Metric:**
  - Achieve 12.5 MW installed annually, starting in 2009



- **Funding Sources:**
  - Measure Q
  - LADWP Settlement Funds
  - Utility Incentives
  - Tax Exempt Municipal Leases (TEML)
  - Power Purchase Agreements (PPA)
- **Impact after 50 MW are complete:**
  - Annual Cost Avoidance of $12.5 million; $312 million over the projected 25 yr life of project
  - Estimated return on investment between 12 and 14 years
  - Will reduce CO2 emissions by more than 57,000 tons, approximately 6% of the 2007 District baseline (Assumes system purchase)

Alternative Financial Options for Renewable Energy Projects

Measure Q Funds Renewable Projects for Purchases	Renewable Projects Funded by Tax Exempt Municipal Leases Buyout after year 5	Renewable Projects Funded by Power Purchase Agreements Direct to LAUSD Buyout after year 5	Renewable Projects Funded by Power Purchase Agreements through ESCOs Buyout after year 5
Assumes between $70.0 and $80 M of Measure Q funds would be made available for Renewable Projects each year from 2009 to 2012.	Limited number of financial institutions that can provide $70.0 M per year in funds available from 2009 to 2012. Financial institutions are able to execute a lease more readily than a PPA at the present time.	PPAs are funded by banks and other financial institutions. The number of financial institutions that can provide funding for any PPA is severely limited in the current economic climate.	Greatest cost of project implementation. ESCOs utilize PPA and TEML financing that the District has independent access to at lower costs. ESCOs rely on banks and financial institutions to provide project funding.
Maximizes the projected return to the General Fund at $12.5M per year at full project completion	Defers the maximum return to the General Fund until year 6. Will generate reduced level of savings in years 1 though 5. Savings will vary dependent upon available interest rates.	Defers the maximum return to the General Fund until year 6. Generate savings in years 1 though 5 similar to a Tax Exempt Municipal Lease.	Defers the maximum return to the General Fund until year 6. Generates lowest level of savings in years 1 though 5 than a TEML or Direct PPA to LAUSD.

ESCO - Energy Service Companies PPA – Power Purchase Agreement TEML – Tax Exempt Municipal Lease

Facilities Working Group
Energy Conservation

- **Goal:**

  Reduce Annual Energy Consumption 10% by 2012

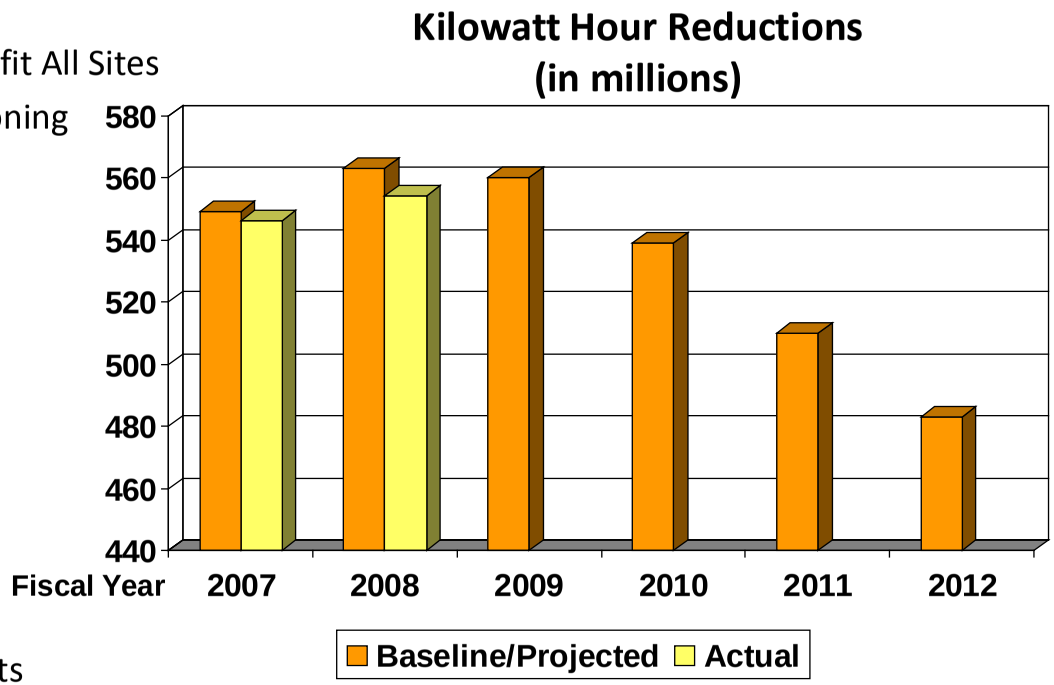
- **Strategies:**
  - Initiate Conservation Awareness Program
  - Install Energy Management Systems in 120 High Schools
  - Retrofit Lighting in 300 Schools
  - Computer Power Management Retrofit All Sites
  - Heating, Ventilation, and Air Conditioning (HVAC) Retrofits in 60 schools

- **Metric:**

  Energy Cost Avoidance VS Usage in Fiscal 2006-2007, but includes 60 new schools due to be open by 2012.

- **Funding Sources:**
  - Measure Q
  - LADWP Settlement Funds
  - Utility Incentives
  - Tax Exempt Municipal Leases
  - Energy Service Company Agreements
  - Prop 1D Funds

- **Impact after projects are complete:**
  - Cost Avoidance of $7.0 million annually
  - Average return on investment less than 7 years
  - Will reduce the LAUSD Carbon Footprint by 2% (using the 2007 year baseline)



Alternative Financial Options for Energy and Water Conservation Projects

Measure Q Funds Projects for Purchases	Projects Funded by Tax Exempt Municipal Leases Buyout after year 5	Projects Funded by Power Purchase Agreements through ESCOs Buyout after year 5
Assumes between $12.0 and $13.0 M of Measure Q funds would be made available for Energy and Water Conservation Projects each year from 2009 to 2012.	Financial institutions are able to execute a lease more readily than a PPA at the present time. Some energy and water projects may not qualify for implementation under a Tax Exempt Municipal Lease.	Greatest cost of project implementation. ESCOs utilize TEML or Guaranteed Savings financing that the District has independent access to at lower costs.
Maximizes the projected return to the General Fund at $7.0M per year at full project completion	Defers the maximum return to the General Fund until year 6. Will generate reduced level of savings in years 1 though 5 vs. purchased systems. Savings will vary dependent upon available interest rates.	Defers the maximum return to the General Fund until year 6. Generates lowest level of savings in years 1 though 5 than a TEML Direct to LAUSD.

ESCO - Energy Service Companies PPA – Power Purchase Agreement TEML – Tax Exempt Municipal Lease

Facilities Working Group
Water Conservation

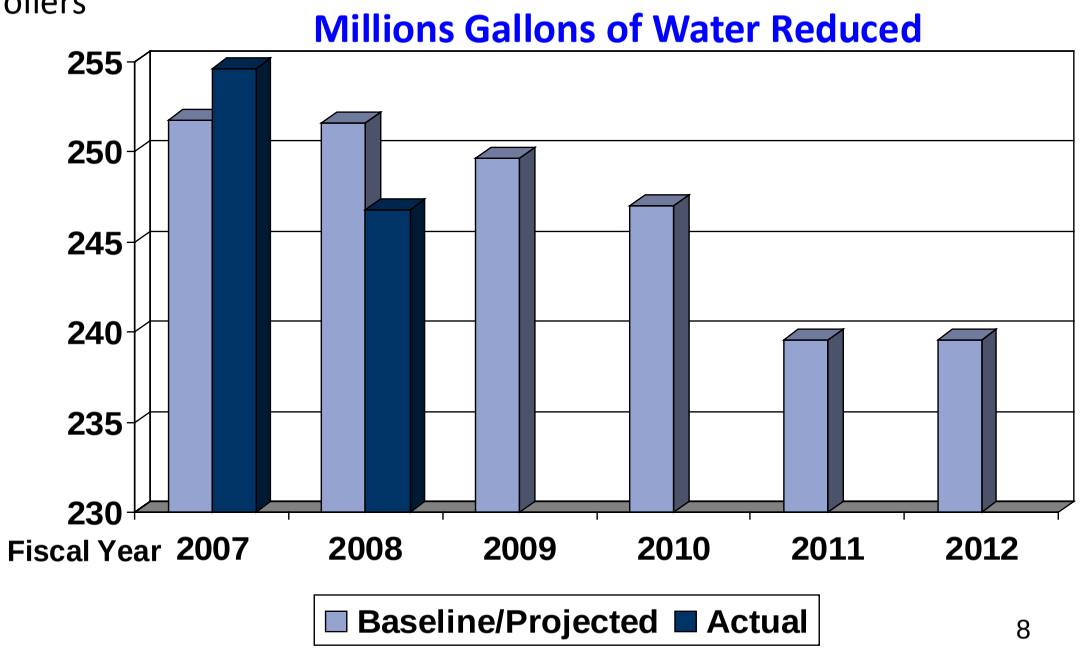
Goal:

Reduce Annual Water Consumption by 10% by 2012

- **Strategies:**
  - Low Flow Restroom Fixtures
    - Includes Ultra Low Flow Urinals and
    - Waterfree Urinals
  - Smart Irrigation Controllers
  - Water Brooms
  - Cooling Tower Conductivity Controllers
- **Metric:**

  Water Cost Avoidance VS fiscal 2006 to 2007, but includes 60 new schools set to open by 2012
- **Funding Sources:**
  - Utility Incentives
  - Measure Q Bond funds

- **Impact after project completion:**
  - Annual cost avoidance of $800,000
  - Average Return on Investment is less than 5 years
  - Reduces the District's Carbon Footprint by less than 1%



Facilities Working Group
New Construction

Goals:

- **All new schools perform 20% better than Collaborative for High Performance Schools (CHPS) and High Performance Schools (HPS) standards**
- **Pursue Leadership in Energy & Environmental Design (LEED) Silver Certification at 4 sites**

Strategies:

- Design for Energy performance designs better than CA Energy Code by 30%
- Design for renewable energy to offset at least 30% of the site's annual energy use
- Design water systems to perform 20%-40% below Environmental Protection Agency (EPA) and local requirements

Metrics:

CHPS and LEED Standards

Funding Sources:

- New Construction Bond Funds
- Prop 1D Funds
- Utility Incentives
- Measure Q Funds

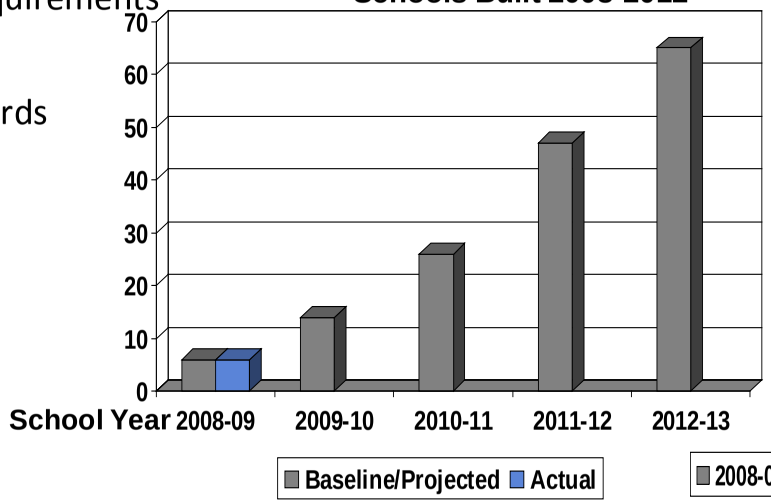
Impact:

- Cost Avoidance on a per site basis
- New Construction adds to Carbon Footprint; estimates to be determined

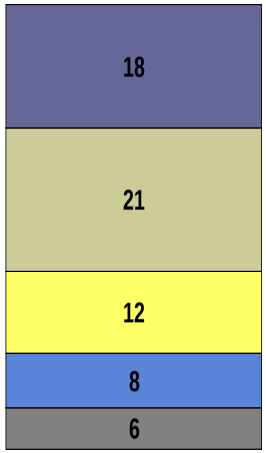
  after construction designs are complete for each site.

the collaborative for high performance schools

Total Number of New Schools Built 2008-2012



Total Number of New Schools Built to CHPS Standards



Facilities Working Group
Existing Facilities

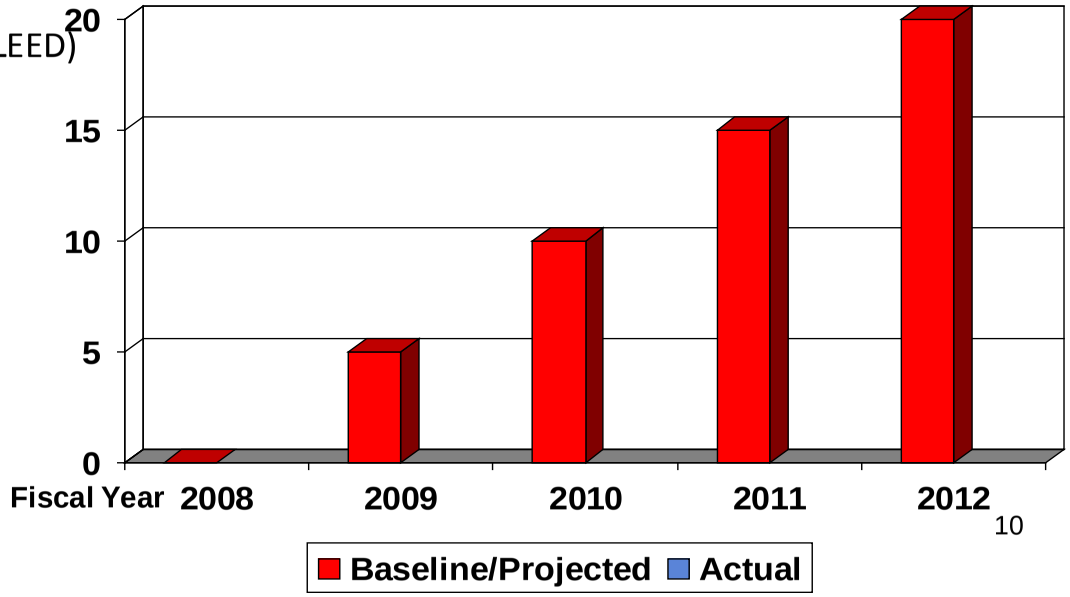
Goal:

Design major modernization projects to meet CHPS Standards

- **Strategies:**
  - Energy performance designs better than CA Energy Code by 30%
  - Design for renewable energy to offset at least 30% of the site's annual energy usage
  - Design water systems to perform 20%-40% below EPA and local requirements
  - Participate in Collaborative for High Performance Schools (CHPS) and Leadership in Energy & Environmental Design (LEED) programs for existing schools
- **Metrics:** CHPS and LEED Standards
- **Funding Sources:**
  - Modernization and Repair Bond Funds
  - Prop 1D Funds
  - Utility Incentives
  - Measure Q Funds

- **Impact:**
  - Cost Avoidance on a per site basis
  - Modernization Construction may add to or may reduce Carbon Footprint depending on the scope of each project; estimates to be determined after construction designs are complete for each site.

Total Major Modernization Projects Build to CHPS Standards

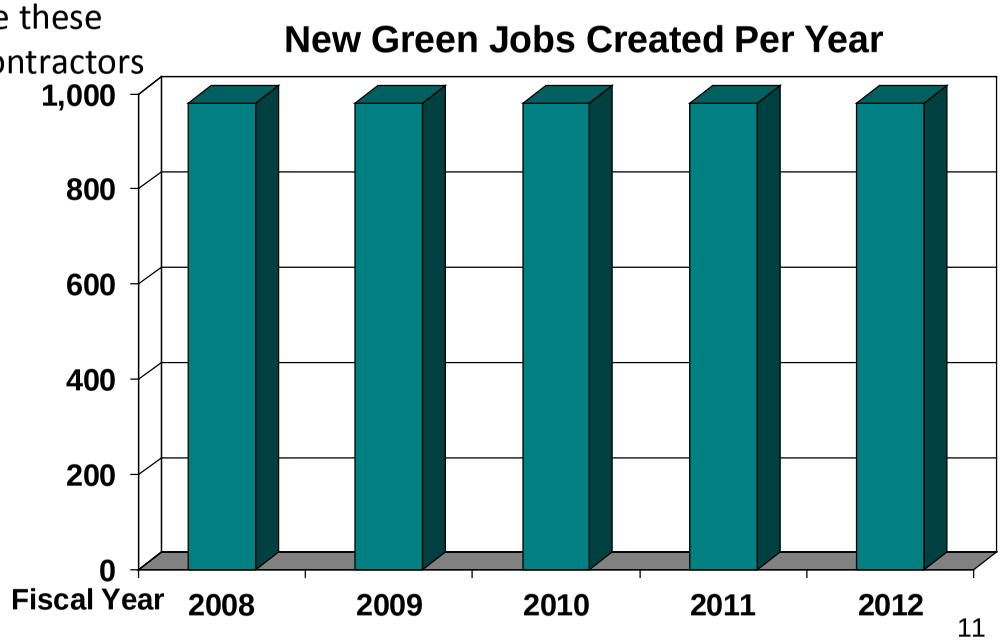


Workforce Development Working Group

Goal:

Create Green Jobs through implementation of the Sustainability Program

- **Strategies:**
  - Incorporate "We Build" Green, ISEE* (Green, and Small Business Enterprise (SBE) into RFQ/RFP documents
  - Use existing compliance tools to ensure these program standards are being met by contractors
- **Metric:**
  - Existing program and compliance standards for "We Build", ISEE, and SBE
- **Funding:**
  - General Fund
- **Impact:**
  - No Cost Avoidance Estimated; Staffing requirement for program execution

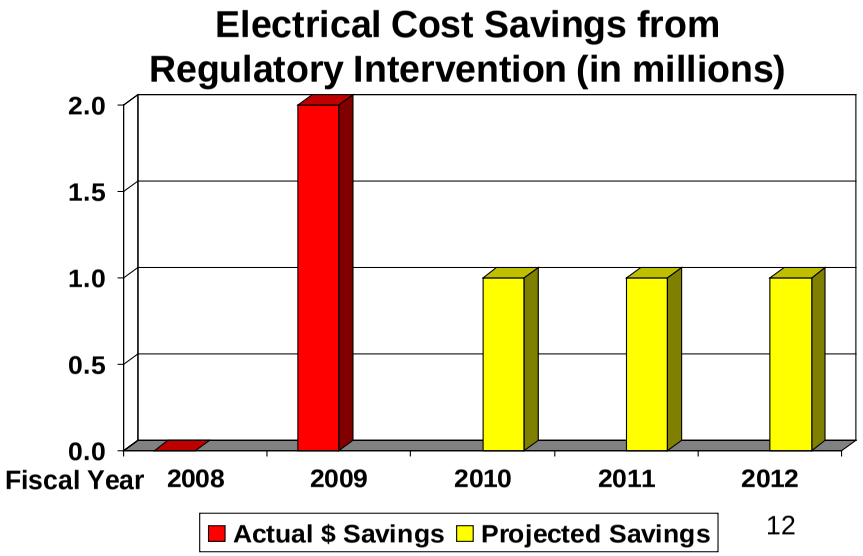


*ISEE – I'm a Student Exploring Excellence (Architecture & Engineering Education and Internship Program)

Regulatory Affairs, Government, and Utility Relations Working Group

- **Goals:**
  - Achieve full restoration of customer choice in electricity
  - Minimize impact of utility rate increases
  - Achieve Department of the State Architect (DSA) certification of Solar Panel projects within 90 days
- **Strategies:**
  - Negotiate with the California Public Utilities Commission (CPUC) and DWP to improve incentives for renewable energy, energy conservations and water conservation projects
  - Expedite project implementation with DSA's office for renewable energy projects to receive approvals within 90 days
  - Take advantage of opportunities from legislation for project finding
- **Metric:**
  - Finalization of Carbon Footprint Data
  - Restoration of customer choice in electricity by 2011
  - Measurable impact of intervention on utility rates and incentives
  - Acquire all available funding sources for renewable and energy projects
  - Successful DSA certification of projects within 90 days
- **Funding:**

  Staff Hours required to support program
- **Impact:**
  - No Cost Avoidance estimated
  - No Direct Carbon Reduction



Communications Working Group

Goal:

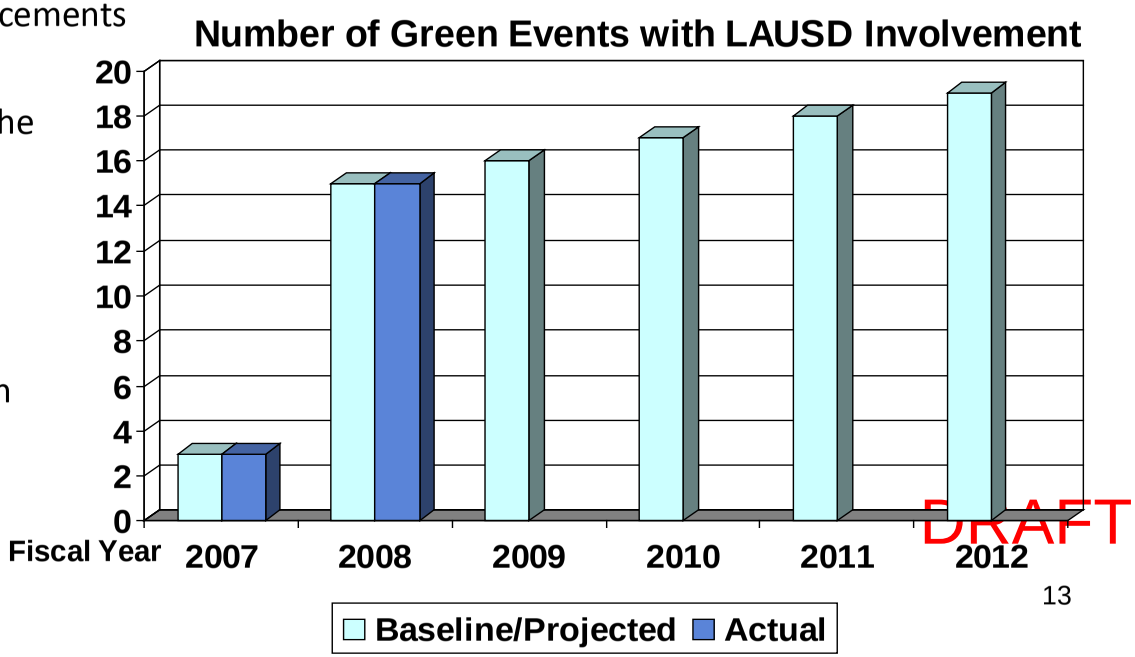
Inform District staff and schools, other school districts, industry partners, government officials, and the general public about the achievements of the Sustainability Program.

- **Impact:**
  - No Cost Avoidance Estimated; Staffing requirement for program execution
  - No direct carbon footprint impact estimated

- **Strategies:**
  - Create Sustainability Website
  - Prepare public service announcements
  - Create outreach opportunities
  - Make presentations to share the vision and the progress of the Sustainability program

- **Metrics :**
  - Number of Green Events with LAUSD Involvement

- **Funding:** General Fund

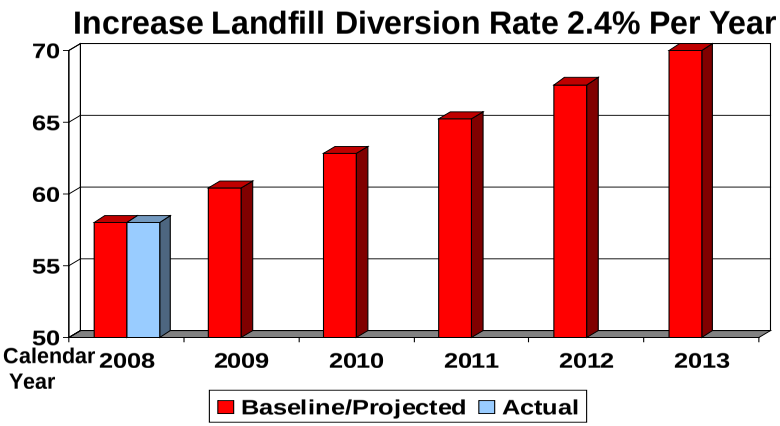


Office of Environmental Health and Safety Working Group

Goal:

By 2015 reduce waste the District disposes in landfills by 70%

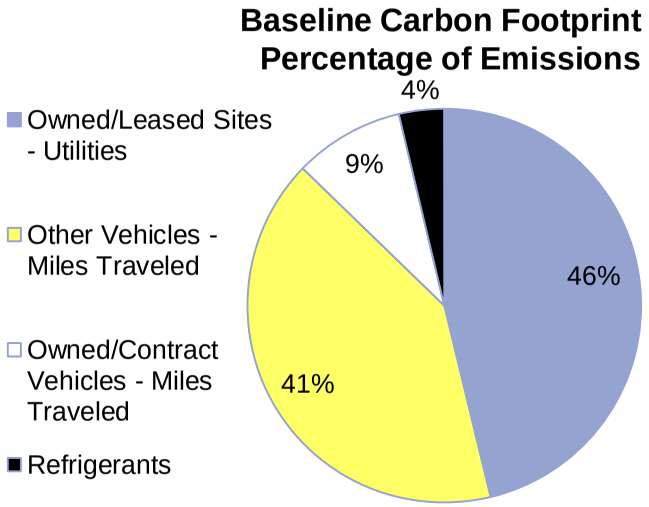
- **Strategies:**
  - By December 2013, increase the number of schools that participate in the City of Los Angeles/LAUSD joint recycling program from 477 to 792
  - By December 2013, implement a District-wide Styrofoam recycling program
  - Provide outreach programs to students and staff
- **Metrics:**
  - Increase landfill diversion rate 2.4% per year
- **Funding Sources:**
  - General Fund
  - Recycling Rebates
- **Impact after full Implementation:**
  - Cost Avoidance: $470,500 in recycling bin rentals and transportation costs; $1,017,000 in landfill costs
  - No direct carbon footprint impact estimated at this time



Goal:

Finalize Identification of LAUSD's Carbon Footprint to Target Opportunities for Reduction

- **Strategies:**
  - Within each category of activity, identify subcategories of activities that contribute significantly to the District's Carbon Footprint
  - Identify specific actionable items for reductions
  - Prepare recommendations for Sustainability Steering Group review
- **Metrics:**
  - Annual Updates to Carbon Footprint Reduction
- **Funding Sources:**
  - General Fund
- **Impact:**
  - No Cost Avoidance Estimated; Staffing requirement for program execution
  - No direct carbon footprint impact estimated



Transportation Working Group

Goal:

Maximize Fuel Consumption Reduction Opportunities

- **Strategies:**
  - Utilization of enhanced routing software
    - Results increased efficiency and lower emissions
  - Vehicle life-cycle planning
    - Introduce alternatively fueled vehicles as older vehicles are replaced, e.g., move out diesel buses and replace with Compressed Natural Gas (CNG)
  - Establish a system to accurately monitor District- owned operational vehicles and their usage
  - Reduce/Reuse transportation waste by continuing to recycle, and increasing efforts when possible
  - Reduce the number of vehicles on the road
- **Metrics:**
  - Fuel use/emission reduction
  - Age of fleet
  - Percentage of alternatively fueled fleet vehicles
- **Funding:**
  - Measure Q Bond Funds
  - External Grant Funds
- **Impact:**
  - Staff is working to maintain long term cost neutrality while implementing programs
  - Carbon reductions to be determined on a project by project basis

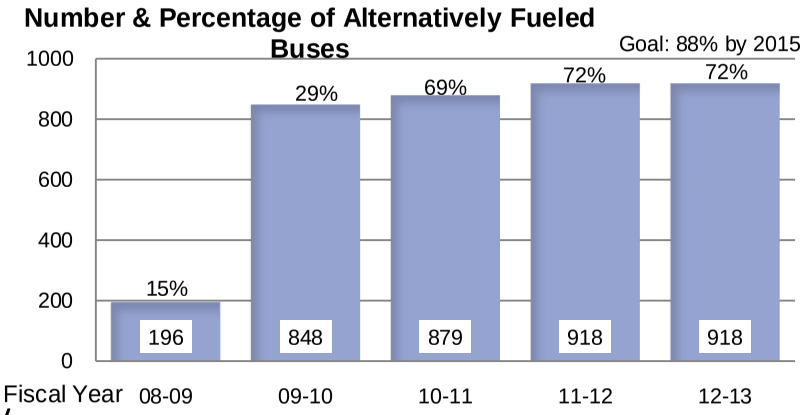
Expected Emission Percent Change with B20 Bio-Diesel Blend	
Emission Type	Percent Change in Emissions
Nitrogen Oxide (NOx)	+2.0%
Particulate Matter	-10%
Hydrocarbons	-21.1%
Carbon Monoxide	-11.0%

Transportation Working Group Continued

Goal:

Maximize Alternative Fuel Opportunities

- **Strategies:**
  - Compressed Natural Gas (CNG) applications
  - Propane (also known as liquefied petroleum gas)
  - Bio-diesel pilot study on heavy duty diesel buses and trucks
  - Cleaner burning gasoline
- **Metric:**
  - Percent of alternatively fueled vehicles in fleet
  - Emission reduction
- **Funding:**
  - Measure Q Bond Funds
  - External Grant Funds
- **Impact:**
  - Staff is working to maintain long term cost neutrality while implementing programs
  - Carbon reductions to be determined on a project by project basis

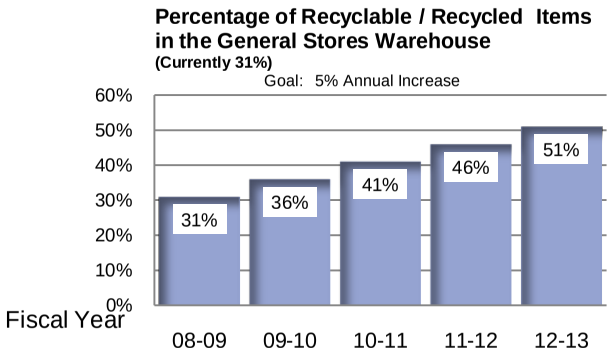


Procurement Working Group

Goal:

Expand, implement, and enforce Green Procurement Policy

- **Strategies:**
  - Establish specifications around compostable, biodegradable, recyclable, and energy efficient products and total cost of ownership
  - Strengthen "responsibility" requirements for product vendors to have sustainability policy
  - Increase supply load of warehouse distribution operation to decrease emissions, through a decreased number of deliveries to school sites
  - Decrease package content (Garcia Motion)
  - Make "Energy Star" features mandatory for all contracts for new computers, printers, copiers, appliances, etc.
- **Metric:**
  - Increase the percentage of total items carried in the warehouse that are recyclable (currently 31%)
  - Emission reduction from baseline
- **Funding:**
  - General Funds
  - Locally determined funds
- **Impact:**
  - Cost: Maintain current product costs with greener materials; eventually help drive the market down
  - Carbon reductions to be determined on a project by project basis

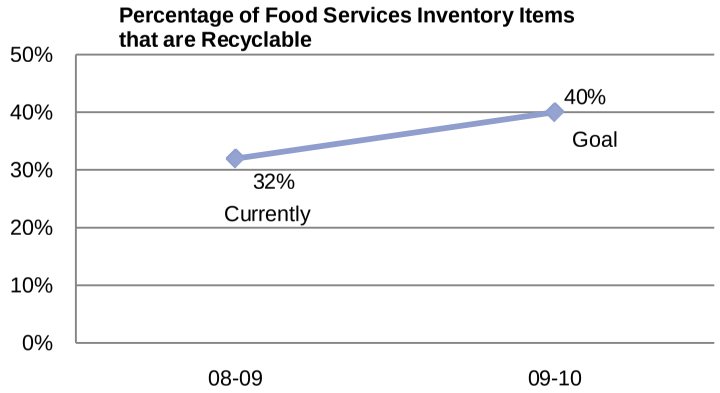


Food Services Working Group

Goal:

Convert existing food packaging to biodegradable and recycled content (to the extent that the District can bear potential additional costs)

- **Strategies:**
  - Increase use of serving trays, utensils, etc., that are made from recycled materials
  - Request food package bids that contain material that biodegrades in 40 days, or 98% in 28 days
- **Metric:**
  - Increase products from recycled content (biodegradable/compostable/recyclable/reusable)
- **Funding:**
  - General Fund
- **Impact:**
  - Staff is working to maintain cost neutrality while implementing programs
  - Carbon reductions to be determined on a project by project basis



Academic Working Group

- **Goal:**

  Increase Energy Awareness of Students

  - Strategy: Initiate Energy Conservation Pilots for Middle and High Schools that Connect Personal and School Energy Usage with Academically Rigorous Learning
  - Partners Include: LADWP, Southern CA Edison, International Brotherhood of Electrical Workers (IBEW), Resource Action Program, Grid Alternatives, CA Energy Commission and Flex Your Power

- **Middle School**
  - Metric: Professional Development for 650 6th Grade Science Teachers Jan-March 2009
    - Will serve approx. 19,500 students
  - Model Lessons Implemented April-June 2009
  - Full Role-Out 2009-2010
    - Funding: LAUSD, LADWP
    - Cost avoidance to be determined on a project by project basis

- **High School**
  - 1 Project Per Campus Per Class
  - 6 Campuses over 18 months – 6 projects
  - Engage approximately 300 high school students in 18-month pilot from Jan. 2009 – June 2010 and further expansion
    - Approx. $60K per site for 18 month project = $360K
    - Additional investment from DWP, Edison and Gas Company
    - Cost avoidance to be determined by projects

Academic Working Group, Continued

Goal:

Increase Student Awareness of Sustainability Related Issues

- **Strategies:**
  - Water Quality Pilot Program
    - Collaboration between LAUSD science teachers/specialists and water quality professionals from LADWP
    - March 2009 field test lessons ready and by end of June to field test in September 2009 pilot program to commence in 2010 across the District.
- **Metric:**
  - Number of classes participating in the pilot program
- **Funding:**
  - General Fund
- **Impact:**
  - Staff Hours requirement to support Program execution
  - No direct carbon footprint impact estimated