



CAPITAL IMPROVEMENT PROGRAM UPDATE

Bond Oversight Committee

August 20, 2007

CIP Projects @ Cañada College

- ❖ B16 & 18 Sciences (Construction)
- ❖ B7 FMC new construction (Bidding)
- ❖ B8 Admin. Phase 2 Renovation (Design)
- ❖ B5/6 University Center Renovation (Design)
- ❖ Utility Infrastructure Upgrade (Bidding)

CIP Projects @ CSM

- ❖ B2 Music Renovation (Design)
- ❖ B4 Fine Arts Renovation (Design)
- ❖ B14 and 16 Instructional Renovation (Design)
- ❖ CSM CIP2 Design Build Project (RFP Process)

CIP Projects @ Skyline

- ❖ B3 Physical Education Phase II (Design)
- ❖ B7 Allied Health (Construction)
- ❖ B30 FMC replacement (Bidding)
- ❖ B1 Fine Arts Phase 2 (Pre-design)
- ❖ SKY CIP II \$90 Million (RFP Process)

CSM & SKY Design Build Projects

– Design Build Team Prequalification

– Skyline Design Build (Kwan Henmi Bridging Architects)

- Hensel Phelps Construction Company – WRNS Studio, LLP
- Sundt Construction, Inc. – Noll & Tam Architects
- Hunt Construction Group, Inc. – Ellerbe Becket

– CSM Design Build (Steinberg Architects)

- McCarthy Building Companies, Inc. – Kwan Henmi & LPA, Inc.
- Charles Pankow Builders, Ltd. – Kaplan McLaughlin Diaz
- Rudolph & Sletten, Inc. – DES Architects and Engineers

Why Sustainability?

- **Board of Trustees goal**
- **Guiding principle in the 2006 Facilities Master Plan**
- **Economic & Financial Benefits**
- **State Mandate: Green Building Action Plan
(Governor's Executive Order 5/20/2004)**
- **IT'S THE RIGHT THING TO DO!**

Sustainability Strategies

LEED: Leadership in Energy and Environmental Design

- Sustainable Sites (SS)
- Water Efficiency (WE)
- Energy & Atmosphere (EA)
- Materials & Resources (MR)
- Indoor Environmental Quality (IEQ)
- Innovation & Design Process (IDP)

Water Efficiency

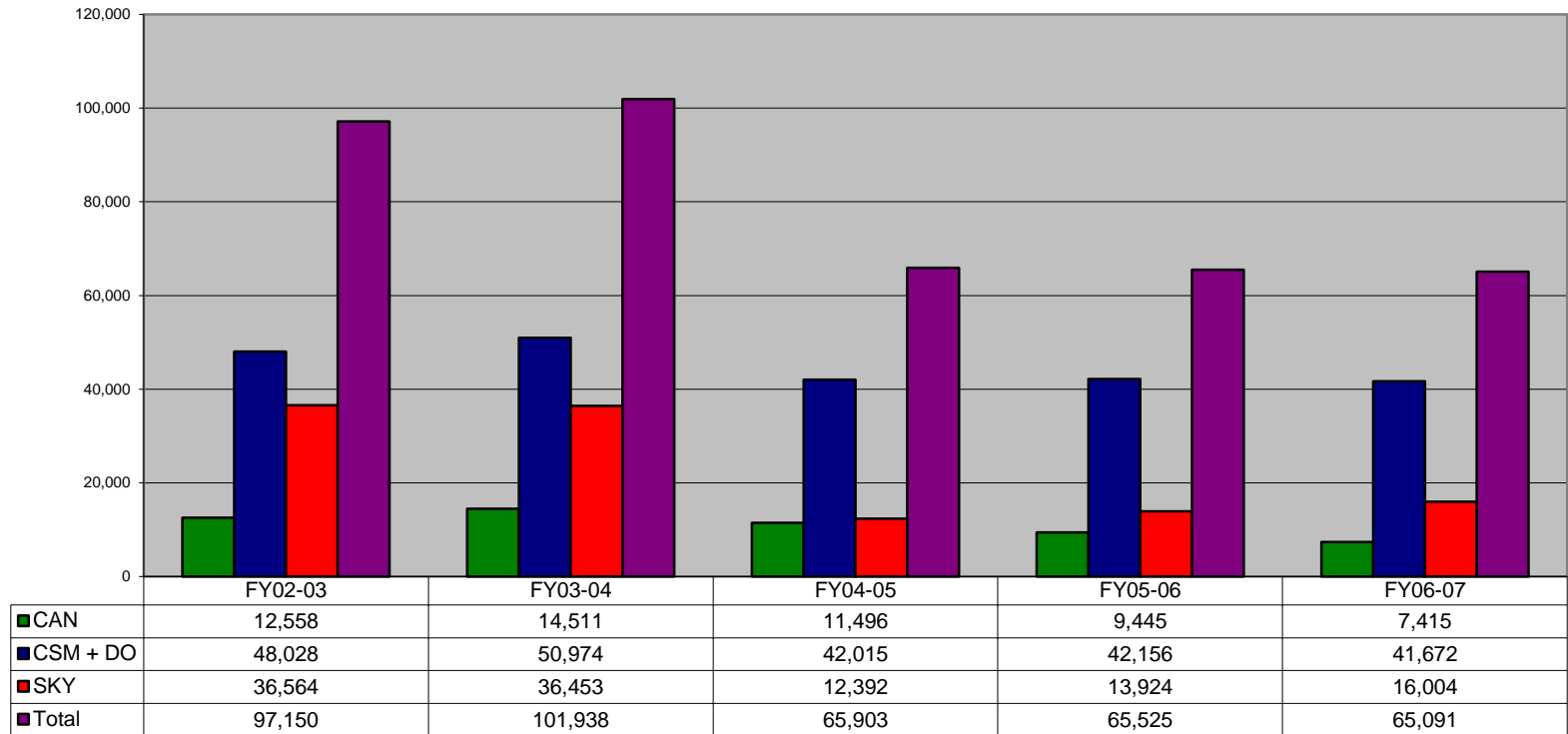
8 Synthetic Turf Fields at Cañada, CSM and Skyline



"Facilities Excellence"

Water Efficiency

Water Usage by Site (in ccf)



Water Efficiency

8 Synthetic Turf Fields

- Outcome

- Water usage
 - Synthetic Turf Savings = 3,400 ccf/month and \$106K per year
- Pesticides
- Herbicides
- Fuel / Oil
- Man power
- Paint / Chalk
- Low Maintenance

- Safety

- Low injury rate
- Maximum Usage

- Recycled Rubber



Sustainability and Energy Analysis

- Physical Analysis of Building Systems and Environment
 - Lighting & Electrical Systems
 - Mechanical / HVAC
 - Environmental Controls
 - Solar surveys
 - Landscape / Hardscape
 - Utilities
- Interview Staff (usage / habits)
- Review & Analyze Utility Data (waste, gas, electricity, water)
 - Monthly / Annual Utility Expenditures & Usage

Sustainability and Energy Efficiency Outcomes

Work completed

- Installation of new energy management control system at all campuses
- Comprehensive systems commissioning at all campuses
- Cañada College chilled water plant expansion
- Heating / Hot water variable flow pumping at all campuses
- Primary / Secondary variable-flow pumping retrofits
- Electrical distribution system repairs
- Installation of Utility Vision real-time monitoring and metering platform at all campuses
- Air handling system refurbishments at all campuses

Sustainability and Energy Efficiency Outcomes

Work Completed

- Underground piping repairs at all campuses
- Lighting retrofits : Lighting controls and circuit upgrades at all campuses
- Boiler repairs and preventative maintenance at all campuses
- Variable flow pumping retrofits at all campuses
- Co-gen plants: CSM (560 KW) & Skyline College (375 KW)
- Installation of new EMS digital control system at all campuses

Sustainability and Energy Efficiency Outcomes

Work Completed By the Numbers...

- Light Fixtures Retrofitted – Phase 1 & 2

- Cañada 4,065
- Skyline 668
- CSM 4,818

- Air Handlers Refurbished

- Cañada 27
- Skyline 32
- CSM 54

- Heat/Vent Units Refurbished

- Cañada 26
- Skyline 163
- CSM 117

Sustainability and Energy Efficiency Outcomes

Work Completed

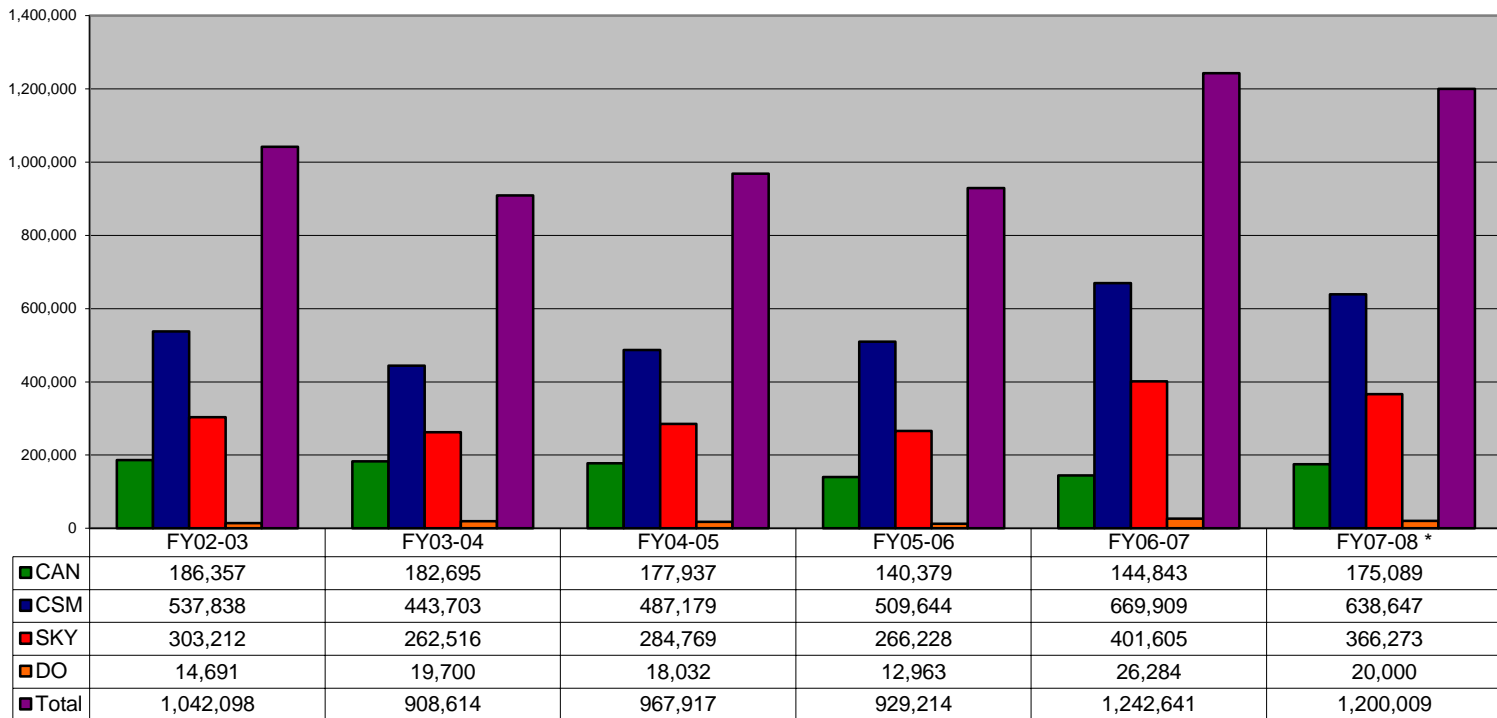
- Boilers Re-tubed
 - Skyline 2
 - CSM 2
- Underground Piping Replacement
 - Skyline 160 feet of pipe, 4 valves
 - CSM 46 feet of pipe, 54 valves, 9 expansion compensators
- EMS Control Points Connected & Functioning
 - Cañada 704
 - Skyline 633
 - CSM 1,555
- Commissioning
 - Skyline Buildings 3, 6, 7A and 8
 - Cañada Building 9
 - College of San Mateo Buildings 1, 8, 35 and 36

Sustainability and Energy Efficiency Rebates

- PG&E Energy Efficiency
 - Jan 2002 - \$27,000
 - DW High Efficiency Lighting Systems: July 2002 - \$102,600
 - CSM & SKY Co-Generation: November 2004 - \$878,557
- CCCCO / IOU / EE Partnership
 - CSM Gym VAV Retrofit Project, CSM Lobby Chiller Replacement Project, and SKY Gym VAV Retrofit Project: December 2006 - \$81,051
- Savings by Design
 - CSM B35: Summer 2006 - \$2,400
 - CSM B36: November 2006 - \$56,117
 - SKY B6/7A: May 2007 - \$38,546

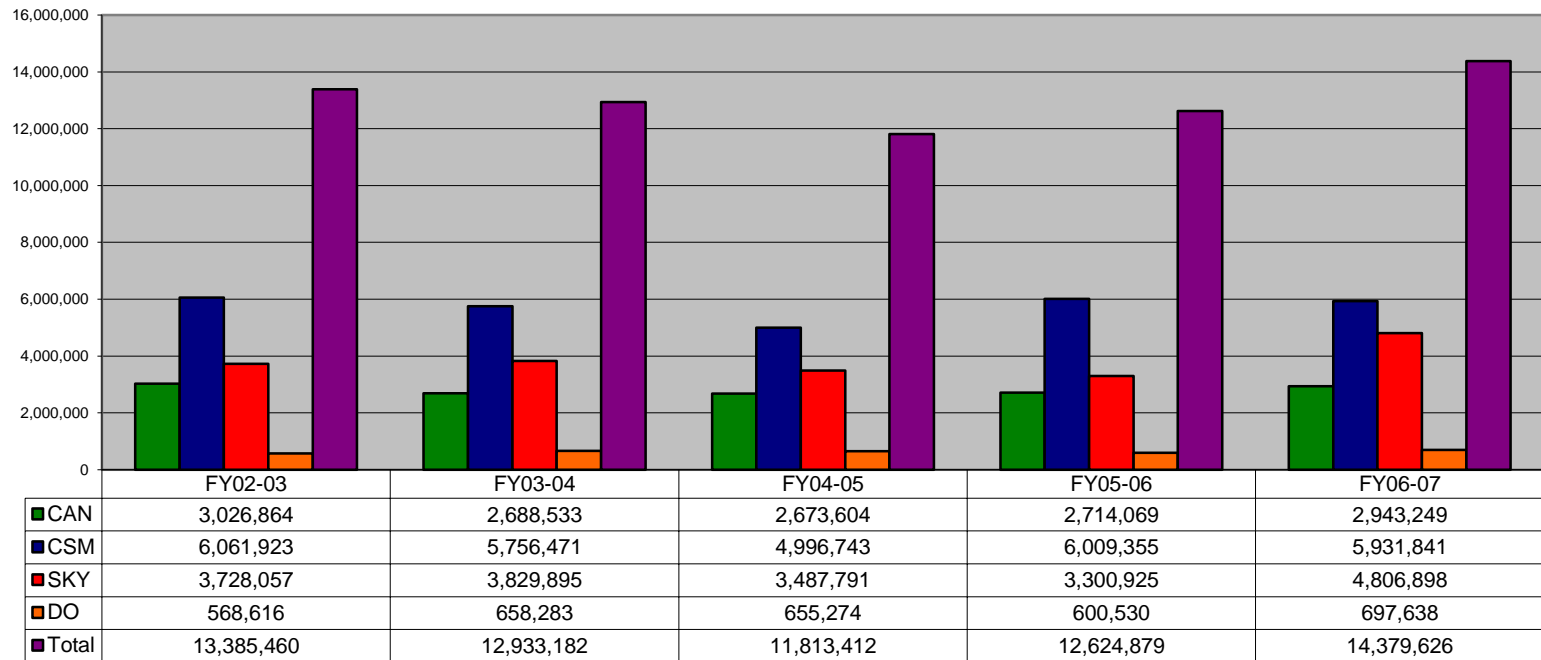
Energy Management

Natural Gas Usage by Site (in therms)



Energy Management

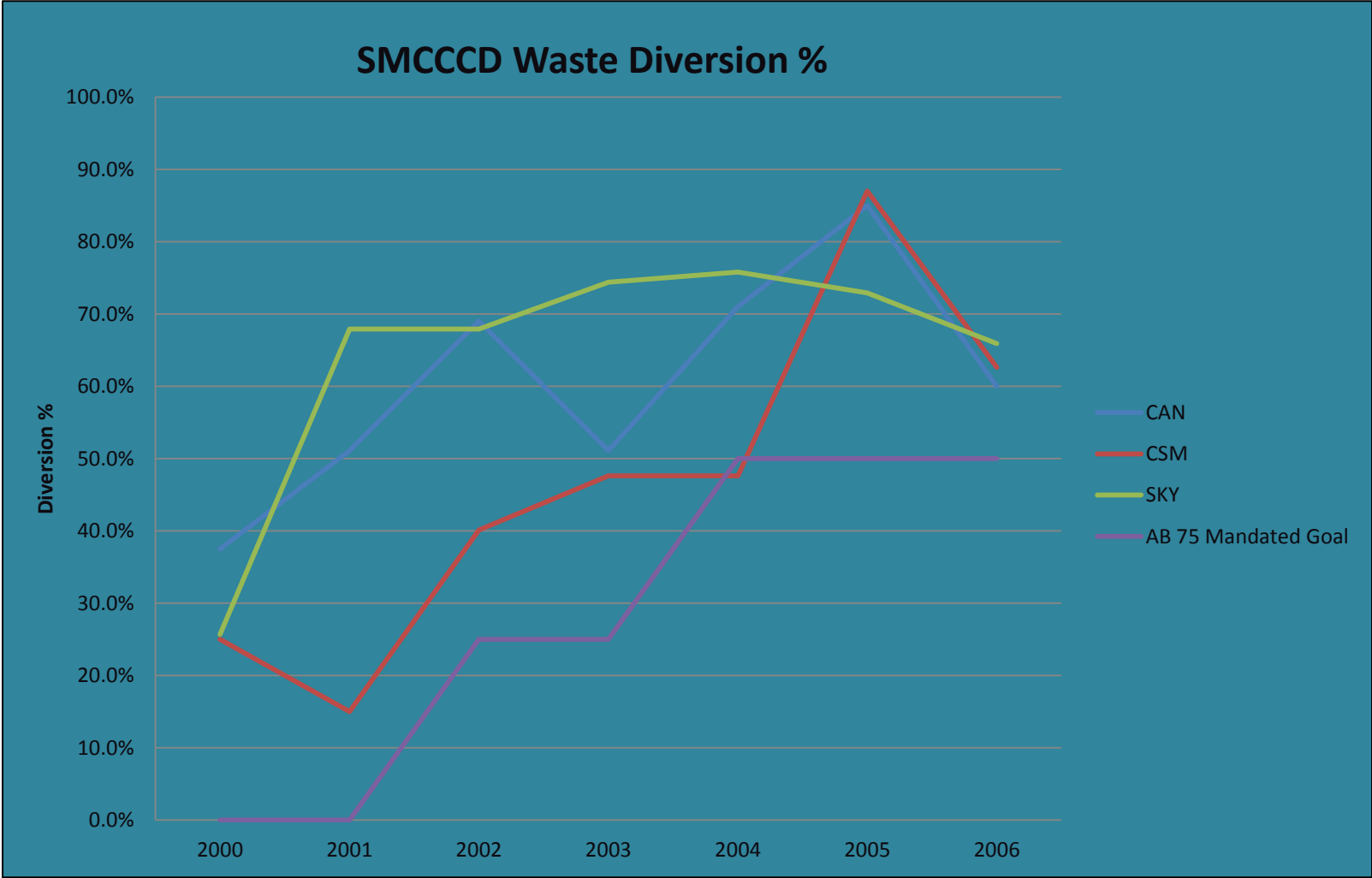
Electricity Usage by Site (in kWh)



Waste Reduction and Management

- Double-sided copiers
- Recycling programs
- Electronic forms
- Reducing/recycling grass clippings and tree trimmings - compost
- Donate and resale program for unwanted furniture and equipment
- Construction material diversion

Waste Reduction and Management



Indoor Air Quality (IAQ) Management Program

- Outreach/Education through web site
- Written IAQ Training Program
- Review and adjustment of maintenance protocols for alignment with best IAQ practices
- <http://www.smccd.edu/accounts/facilities/maintenance/EnvironmentalHealth.html>

Use of Green Construction Materials and Renewables

- Window Treatments
- Carpet
- Acoustic Ceiling Panels
- Tarkett Linoleum Floorings
- Fiberglass Reinforced Panel Wainscot in Classrooms
- Furniture Specifications & Guidelines

Building Design

- CSM Science Bldg. 36



42% MORE ENERGY EFFICIENT THAN REQUIRED BY CODE

Building Design

- Skyline Bldg. 6 Student Union
- Skyline Bldg 7A Science Annex



28% MORE ENERGY EFFICIENT
THAN REQUIRED BY CODE



SKYLINE COLLEGE, BUILDING 6
STUDENT AND COMMUNITY CENTER



SKYLINE COLLEGE
BUILDING 7A, SCIENCE

Building Design

- Canada Bldg. 9 Library / Learning Resource Center



30% MORE ENERGY EFFICIENT THAN REQUIRED BY CODE

Building Design

- Upcoming New Buildings
 - Cañada College: Facilities Maintenance Center (FMC)
 - Skyline College: Facilities Maintenance Center (FMC)
 - CSM Design Build (3 Bldgs)
 - Workforce / Wellness / Aquatic Center
 - Faculty Center
 - Student Services / Admin. / Student Activities
 - SKY Design Build (3 Bldgs)
 - Administration / Instructional Building
 - Cosmetology & Wellness Center
 - Automotive Technology Building

Goal: LEED- Silver Certification



Building Design Goals

- LEED Certifications
- PG&E Savings by Design
- Sustainable San Mateo County
- Exceed Title 24 energy requirements
- Renewable energy sources
- Recovery of waste heat
- Re-use & diversion of construction materials

District Benefits

- ❖ District energy use reduced by half
- ❖ Useful life of infrastructure extended at much lower cost
- ❖ Increased monitoring of building systems and usage
- ❖ Reduced dependency on energy grid
- ❖ Reduction in ozone depletion
- ❖ Reduction in waste stream
- ❖ Reduction in overall utility costs (gas, water, electricity, waste)
- ❖ Increased indoor environmental comfort
- ❖ Increased recycling
- ❖ Creates potential for future improvements and savings
- ❖ Sets good example for students
- ❖ IT'S THE RIGHT THING TO DO!

The Cost of Not Being Green

- Diminished indoor air quality
- Higher energy, maintenance & operating costs
- Lost productivity & performance
- Lost public relations opportunities
- Diminished occupant health
- Diminished student achievement
- High maintenance & operations cost

Summary

- **The Green Future is Here**
- **Affirm commitment to achieving Board's goal of sustainability**
- **Encourage sustainability in all campuses**

Question & Answer

www.smccd.edu/facilities

José D. Nuñez

Vice Chancellor

Facilities Planning, Maintenance &
Operations

(650) 574-6512

nunezj@smccd.edu