Sustainable Facilities Master Plan
EXECUTIVE SUMMARY

June 21, 2012
Formula for Success: “Putting Children First”

High Performing Education
+ 
High Performing Facilities
+ 
Community Partnerships
= 
HIGH PERFORMING STUDENTS

“Triple Bottom Line”
Rethink, Innovate, Excel

**Career & College Ready Students**
- High Expectations
- Lifelong Learning
- Holistic Assessments

**Family and Community Engagement**
- Families
- Schools as Community Centers
- Community Partnerships

**Organizational Transformation**
- Excellence
- Diversity
- Satisfaction

How do the District facilities support the Strategic Plan?
Social Equity:

- Integrated Education Vision with District’s Strategic Plan
- 21st Century Education
- Every Child is ready

Environmental Stewardship:

- Alignment with Board Policy 3511; Grimes/Kennedy Green and Grid Neutral Model Schools Policy Initiative and Resolution No. 2583
- Comprehensive review of Facilities
- Sustainable Standards; Design, Maintenance & Operations

Economic Development:

- Economic Resource Management Traditional and Alternative Funding
- Review of Facilities as an Asset & Strategic Tool
- General Fund impacts

“Triple Bottom Line”
Sustainable Facilities Master Plan

Career & College Ready

SCUSD Educational Standards
- Alignment with Common Core Standards
- Core Academic Spaces
- Active Learning Labs; Arts, Science, Music, CTE
- Teacher Planning Centers
- Support Spaces

+ Family & Community Engagement

Schools as Centers of Communities
- Technology Centers; Media Centers, Computer Labs
- Parent Resource Centers, Conference Rooms
- Performing / Assembly Spaces
- Athletic / Gym / Field Spaces

Organizational Transformation

Optimization & Equity
- Sustainable Facilities Assessment
- Sustainable Sites, Water Efficiency, Materials & Resources, Energy & Atmosphere, Indoor Environmental Quality
- School Size/ Capacity
- Permanent to Portable Replacement

Social Equity - Approach

SAMPLE SITE EXAMPLE
Guiding Principles / Patterns

Goals / Expectations:
To establish the Guiding Principles / Patterns that will align the Strategic Plan and the Educational Vision with Facility Requirements for each of the grade configurations.

Form Follows Function - Form Follows Curriculum


1. Trends: Identify / Research School Trends
2. Goals: Review trends that align with District’s Educational Goal
   • Where We Learn
   • What We Learn
   • How We Learn
3. Needs: Define Facility Needs
Sustainable Facilities Master Plan

Trends – Goals - Needs

PROTO-TYPE PROGRAM SUMMARY

SCHOOL SIZE OPTIMIZATION
Grade Group Configuration
Academic Pathway Alignment
 Desired / Contract Max Classroom Loading Options

CAREER & COLLEGE READY
Core Academic Classrooms
Learning Labs
Science, Technology,
Fine & Performing Arts,
Career Tech

FAMILY & COMMUNITY ENGAGEMENT
Multipurpose Center
Dining, Gym, Assembly, Stage, Kitchen
Technology Center
Media Center, Computer Lab, Parent Resource

ORGANIZATIONAL TRANSFORMATION
School Size Optimization
Portable to Permanent Classroom Implementation
Strategy
## Sustainable Facilities Master Plan

### Environmental Stewardship - Approach

<table>
<thead>
<tr>
<th>Sustainable Sites</th>
<th>Materials &amp; Resources</th>
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<tbody>
<tr>
<td>- Create safe and welcoming schools</td>
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<td>- Manage stormwater/erosion control</td>
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<td>- Improve outdoor surfaces &amp; spaces</td>
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<tr>
<td>- Extend life-cycle of existing building materials</td>
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<tr>
<td>- Promote use of sustainable materials</td>
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<tr>
<td>- Reduce wasteful environmental impacts</td>
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<table>
<thead>
<tr>
<th>Water Efficiency</th>
<th>Indoor Environmental Quality</th>
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<tr>
<td>- Maximize efficient irrigation systems</td>
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<td>- Promote reduction of potable water usage.</td>
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<td>- Optimize lighting efficiency and functionality</td>
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<td>- Improve day-lighting</td>
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<td>- Address sound acoustics to improve learning</td>
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<thead>
<tr>
<th>Energy &amp; Atmosphere</th>
<th>Leadership, Education &amp; Innovation</th>
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<tr>
<td>- Optimize energy efficiency/performance</td>
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<tr>
<td>- Improve comfort of interior spaces</td>
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<td>- Reduce environmental impact</td>
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<tr>
<td>- Reduce operating costs</td>
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<tr>
<td>- To optimize facilities to align with Strategic Plan</td>
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<tr>
<td>- To address Common Core Standards impacts</td>
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<tr>
<td>- To engage Family’s &amp; Communities</td>
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Examples

- School Entry & Drop-off
- Service Access
- Campus Core
- Parking & Drives
- Outdoor Activity
- Utilities & Infrastructure
Examples

- Site Utilities & Infrastructure
- Specialty Systems
- Plumbing Systems
- Fire Protection Systems

Kit Carson Middle School
Earl Warren Elementary
John F Kennedy High School

Thomas Jefferson Elementary
Marian Anderson Elementary
Albert Einstein Middle
Examples

- Central Plant
- Specialty Systems
- HVAC Systems
- Alternative Energy Systems

Rosemont High School
Sequoia Elementary School
Marian Anderson Elementary
California Middle School
O. W. Erlewine Elementary School
Sutterville Elementary
Examples

- Signage
- Door Hardware
- Interior Finishes
- Exterior Finishes

A. A. B. Health Professional High
Albert Einstein Middle School
Enrollment & Family Services Center

Crocker Riverside Elementary
Caleb Greenwood K-8
Martin Luther King Jr.
- Electrical Systems
- Technology Systems
- Lighting Systems
- Low Voltage Systems

Sutter Middle School

Rosa Parks Middle School

Joseph Bonnheim Elementary

Abraham Lincoln Elementary

James W. Marshall Elementary

Golden Empire ES
Examples

- Career & College Ready
- Family & Community Engagement
- Organizational Transformation

Alice Birney K-8

The MET

Oak Ridge ES

George Washington Carver HS

Sutterville ES

Theodore Judah ES
The assessment template provides a matrix documenting:

1. **The Date Last Reviewed** to maintain as a “living document”

2. **The Repair / Replace Level:**
   - Level 4 – New Replacement (Assumes 100% replacement)
   - Level 3 – Major Repair (Assumes 50-75% repair)
   - Level 2 – Minor Repair (Assumes 25-50% repair)
   - Level 1 – Patch and Repair (Assumes 0-25% repair)
   - Level 0 – No observed need to replace, repair or patch

3. **Category for site and building components:**
   - C - Code / Life Safety / Access
   - M – Maintenance / Operations
   - HP – High Performance / Modernization / Transformation

4. **The Relative Urgency:**
   - 3 – Critical
   - 2 – Urgent, not critical
   - 1 – Moderate, recommended
   - 0 – No observed need
The Total Project Costs for the categories are as follows:

1. **Code & Life Safety** = labeled $ Value
2. **Maintenance & Operations Costs** = labeled $ Value
3. **High Performance Transformation** = labeled $ Value
   - Scope required to achieve Modernization / Transformation scope.
   - The combination of all categories to achieve the optimized Scope.
5. **The High Performance Transformation costs**
   - The Innovation & Education Section identifies the additional costs above the assessment items carried above to transform the facilities to align with the Educational Goals.
## Sustainable Facilities Master Plan

### Economic Development - District / Grade Configuration Example

#### Sustainable Transformation - Cost Summary

<table>
<thead>
<tr>
<th>SCHOOL NAME</th>
<th>SUSTAINABLE SITES (Including Irrigation)</th>
<th>WATER EFFICIENCY</th>
<th>ENERGY &amp; ATMOSPHERE</th>
<th>MATERIALS &amp; RESOURCES</th>
<th>INDOOR ENVIRONMENTAL QUALITY</th>
<th>INNOVATION &amp; EDUCATION</th>
<th>Total 2012 $’s</th>
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</table>
Sustainable Facilities Master Plan

Social Equity - Environmental Stewardship - Economic Development Program Summary

**Program Summary**

**Sustainable Sites through Indoor Environmental Quality** = $1,176,366,610

The cost to convert our schools to make them newer 45 year old schools.

**Innovation & Education** = $886,691,290

The additional cost to take our new 45 year old facilities and optimize them as 21st Century Schools for teaching and learning.
Economic Development - Additional Funding Opportunities

Local, State, Federal, Other Strategies

Current Modernization Eligibility $35m (Contingent on State Bond)

### Sustainable Facilities Master Plan

**Additional Funding Summary**

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**Elementary Schools**

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[Page 25]
The location of active turf areas support physical and mental health of students and community members. However, the largest water usage occurs in open passive spaces.

- Active recreational fields need to remain as turf.

- Alternative synthetic fields are available if programmatically feasible; ie. Synthetic turf like Luther Burbank Stadium.

- Non-essential turf areas can be utilize; low water use planting-combination of turf alternates and groundcovers.

**Case Study Example:** James Woody Community Center

- Estimated $4,757 annually savings
The installation of high performance irrigation heads and the use of "Smart Controllers" can save the user an estimated 40% on their water bill.

- Inefficient heads and improper spacing waste water through over-spray or lack of coverage.
- Smart controllers adjust the system needs based on daily climatic changes.
- Most schools do not even contain controllers resulting in the need for maintenance staff to turn on/off individual stations.
- Manual irrigation, systems are inadvertently left on wasting tremendous amounts of water.
- Reference: Assembly Bill AB 1881 and Sacramento City Model Water Efficient Landscape Ordinance section 15.92.210

**Case Study Example: James Woody Community Center**

### Irrigation Controllers
**Programmable to Smart Controller**

$1,699 annual savings

### Water Use Reduction
**Climate Sensitive Plants & Irrigation**

- 20% Reduction: $3,396 annual savings
- 50% Reduction: $8,491 annual savings

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<tr>
<th>Historical Landscape Water Use and Cost</th>
<th>CCF's</th>
<th>Water Cost ($0.612/CCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2006</td>
<td>21,781</td>
<td>$13,329.97</td>
</tr>
<tr>
<td>2006-2007</td>
<td>35,278</td>
<td>$21,590.14</td>
</tr>
<tr>
<td>2008-2009</td>
<td>24,048</td>
<td>$14,717.38</td>
</tr>
<tr>
<td>2009-2010</td>
<td>29,890</td>
<td>$18,292.68</td>
</tr>
<tr>
<td><strong>Annual Average</strong></td>
<td>27,749</td>
<td>$16,982.54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Avg. Annual Savings with % reduction in Water Consumption</th>
<th>Cost</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% Reduction</td>
<td>$13,586</td>
<td>$3,396</td>
</tr>
<tr>
<td>30% Reduction</td>
<td>$11,887</td>
<td>$5,094</td>
</tr>
<tr>
<td>50% Reduction</td>
<td>$8,491</td>
<td>$8,491</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anticipated Future Water Costs</th>
<th>Increase</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 (25% Rate Increase)</td>
<td>$4,320</td>
<td>$21,303</td>
</tr>
<tr>
<td>2020 (12% increase each year from 2013 estimate)</td>
<td>$30,111</td>
<td>$47,094</td>
</tr>
</tbody>
</table>

### Return On Investment (ROI) Analysis

| ET Based Controllers | $8,366 |
| Flow Monitoring      | $945   |
| Shipping/Taxes       | $1,862 |
| Installation Cost    | $3,724 |
| **Total One Time Investment** | $14,897 |

<table>
<thead>
<tr>
<th>Annual Water and Cost Savings</th>
<th>CCF's</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Annual Water Use</td>
<td>27,749</td>
<td>$16,983</td>
</tr>
<tr>
<td>ET Based Annual Water Use</td>
<td>24,974</td>
<td>$15,284</td>
</tr>
<tr>
<td><strong>Initial Savings</strong></td>
<td>2,775</td>
<td>$1,699</td>
</tr>
</tbody>
</table>

Time required for 100% ROI*: 6 years*

*Time required for Return on Investment is based on an average 12% annual increase in water rate per year. Assuming an ET based controller will save 10% in water consumption, cumulative savings starting from year one would be approximately $15,435.
On-site renewable energy systems reduce environmental and economic impacts associated with fossil fuel energy use. Reference: Grid Neutral Schools Program

Case Study Example: Napa New Technology High School

Project Parameters:
- 400 Student High School
- PV System Size: 108.92 DC kW
- Annual Percent Usage Offset 33.3%
- Projected: $23,653 annual savings

For live tracking see: http://live.deckmonitoring.com/?id=new_technology_high_school
Economic Development - General Fund Impact Case Study Examples

Case Study Example: Laney College - Classroom Lighting Upgrades

Project Parameters:
- Exterior lighting fixture replacement to: stairwells, exterior of buildings, parking lot
- Interior lighting fixture replacement, wireless dimmable ballasts, wireless light switches, occupancy sensors and daylight controls
- Utilized Integrated Classroom Lighting Controls in 31 Classrooms
- Labor & Materials $477,583
- Projected: **$44,546.56 annual savings**

Case Study Provided by: City of Oakland

Case Study Example: Sacramento City USD - Student Participation

Board Meeting: April 12, 2012 - “Enrollment & Attendance Report; Month 6, Ending February 24, 2012”

- Elementary School Attendance Rate: 96.10%
- Middle School Attendance Rate: 96.07%
- High School Attendance Rate: 95.08%

If we create facilities and experiences that increase High School Attendance Rate by 1% =

Additional days of attendance 11,502 x $41.58 per day = **$478,253 additional funding**
Sustainable Facilities Master Plan

Pillar I: Career & College Ready

- Hands-On Learning Laboratories
- Relevant & Rigorous
- Flexible & Adaptable Spaces

Project Lab (Art & Science)
Transformation Concept
Sustainable Facilities Master Plan

Pillar II: Family & Community Engagement

- Technology Center
- Educational & Social Experiences
- Community Resource

Technology Center Transformation Concept
Pillar III: Organizational Transformation

- Facilities for Linked Learning
- High School Reform
- Student Centered Organization
Sustainable Facilities Master Plan

Pillar III: Organizational Transformation

Academic Pathway Transformation Concept

Reference Floor Plan
Our time is now to:

**View facilities as a capital asset**
- Economic Resource Management
- Operational Efficiencies
- Reduce General Fund Expenditures

**View facilities as a strategic tool**
- Align with District’s Educational Vision
- Support & Enhance Student Achievement
- Sustainable Initiatives
- Promote Community Collaboration

**Seek all available Funding Strategies**
- Federal
- State
- Local

Our time is now to look holistically at the District and seek an implementation strategy that creates Community Centered 21st Century Educational Facilities for our students, staff, parents and community members in the Sacramento City Unified School District.