



Discover a World of Opportunity™

2012

SUSTAINABILITY MANAGEMENT PLAN



Prepared for Denver Public Schools by



TABLE OF CONTENTS

Acknowledgements.....	iv
1.0 Introduction	1
1.1 The Case for an SMP	2
1.2 DPS’s SMP Development Process.....	4
2.0 Baseline Inventory	8
2.1 Methodology	8
2.2 Baseline Inventory	9
3.0 Existing Practices.....	12
4.0 SMP Framework.....	15
4.1 Framework Focus Areas	15
4.2 Framework Terms.....	16
4.3 Vision and Policy.....	18
4.4 Goals	19
4.5 Strategies.....	19
4.6 Cross-cutting Theme: Partnerships	41
4.7 Cross-cutting Theme: Communications	42
5.0 Implementation Platform	43
5.1 Organizational Considerations	43
5.2 Monitoring and Reporting.....	44
5.3 Future Updates to the Plan	44
Appendix A: SMP Interview Notes	45
Appendix B: SMP survey results.....	46
Appendix C: Baseline Inventory Supporting Information	47

FIGURES AND TABLES

Figure 1. Plan-Do-Check-Act Cycle	3
Figure 2. DPS SMP Approach	4
Figure 3. SMP Development Timeline.....	5
Figure 4. Units of GHG Representation.....	9
Figure 5. DPS 2010 GHG Emissions	10
Figure 6. Annual Update Process for the Plan	15

Table 1. Group Interview Structure And Topic Areas 6

Table 2. Summary Of Results From District Survey 7

Table 3. DPS Baseline Inventory 9

Table 4. GHG Emissions Per Square Foot and Per Student..... 11

Table 5. Highlights of Existing DPS Sustainability Practices 12

Table 6. Framework For The SMP 17

Table 7. Summary Of SMP Priority Strategies..... 22

Table 8: Potential Integration Points for Sustainability in the DPS Curriculum..... 38

The contents of this report are offered as guidance only. Brendle Group, Inc. and all sources referenced in this report do not (a) make any warranty or representation, expressed or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method or process disclosed in this report may not infringe on privately owned rights; (b) assume any liabilities with respect to the use of, or for damages resulting from the use of, any information, apparatus, method or process disclosed in this report. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by Brendle Group, Inc.

ACKNOWLEDGEMENTS

Denver Public Schools would like to acknowledge the efforts of those who participated in developing this SMP.

SMP EXECUTIVE COMMITTEE

Jim Faes – DPS, Sustainability
Laurel Mattrey – DPS, Sustainability
Theresa Hafner – DPS, Enterprise Management, Executive Director
Michele Davison – Governor’s Energy Office
Joe Precourt – DPS, Transportation
DeeDee Case – DPS, Enterprise Management, Purchasing
Conor Merrigan – Governor’s Energy Office
Stephen Parce – DPS, Principal, DCIS
Sam Miller – DPS, Facilities Planning
BJ (Barbara) Berggren – Biik Design/Denver Center for International Studies Parent Volunteer
Brian Swift – DPS, Purchasing Supervisor
Bridget Beatty – DPS, Student Services
Joni Rix – DPS, Construction Services, Environmental Project Manager
Kyle Gamba – DPS, Principal, College View
Marta Osuna – DPS, St. Services, Transition Team
Paul Schmiechen – City & County of Denver Environmental Health
Darel Leedy – DPS, Building Controls Application Engineer
Benita Duran – Community Engagement, Construction Services
Becky Goyton – Denver Recycles, City/County
Bud Bullard – DPS, DOTS
Jennifer Draper Carson – Parent
Trena Deane – DPS, Facility Management, Executive Director
Derrick Cummings – DPS, Facility Management, Plumbing Supervisor
Troy Garner – DPS, Facility Management
Nicole Portee – DPS, Transportation, Executive Director
Beth Schwisow – DPS, Enterprise Management
Jessica Romer – Denver Urban Gardens
Liz Henry – Earth Force
Patty Breech – Green Up Our Schools
Tracy Hewitt – DPS, Facilities Managers, Area Supervisor
Patty Kincaid – DPS, Office of Teaching & Learning, Secondary Science Coordinator
Craig Harrer – DPS, Denver Green School Principal
Yael Nyholm – DPS, parent
Melanie Gavin – Xcel Energy
Donna Pacetti – Denver Water

OTHER DPS STAFF PARTICIPANTS

Matt Smidt – DPS, Preventative Maintenance
Roger Reyes – Facilities Management, Pest Management
James Blank (Jim) – DPS, Facilities, Electrical
Toni Shelton – DPS, Facilities Management, Professional Development
Don Fenton – DPS, Construction Services, QA and QC
Andy Raicevich – DPS, Facilities Management, SCC/Community Use
Mark Clay – DPS, Facilities, Plumbing/Irrigation
Patti Havenar – DPS, Facilities Management, HR
Stephen Finley – DPS, Director of Risk Management
Bart Muller – DPS, Human Resources
David Hart – DPS, Chief Financial Officer
Kristy Armstrong – DPS, Communications
Lonnie Rodriguez – DPS, Transportation, Route Supervisor
Kerry Black – DPS, Special Ed teacher, Thomas Jefferson High School.
Monica Schultz – DPS, Student Services, ACE School program
Dana Miller – DPS, Ellis Elementary
Jessica Chapman – DPS, Communications Specialist, Gilpin Montessori
Donna Baker – Breningstall, DPS, Ellis Elementary

OTHER PARTICIPATING STAKEHOLDERS

John-Paul Maxfield – Waste Farmers
Cate Townley – CU Denver College of Architecture
Steve Combs & Barbara Chapman – Red Apple Recycling
Sharon Procopio – City and County of Denver, Dept of Environmental Health
Jessica Scott – Greenprint Denver
J.D. Prater – Alliance for Climate Education
Steve Mudd – Xcel Energy Wind Source program
Shawnee Adelson – Denver Urban Gardens
Paul Tamburello – "Growhaus"
Devon Reifsneider – Goodwill Industries Denver

STUDENT BOARD OF EDUCATION

Talan Lousignant
Danny Hernandez
Morgan Blanco
Kennya Sanchez
Franchesca Ortega
Lara Alkarim

1.0 INTRODUCTION

Numerous school districts throughout Colorado and beyond are embracing sustainability as a tool to enhance the resiliency of their organizations, reduce costs, benefit the learning environment, drive innovation, and preserve valuable environmental qualities. Integrating sustainability into a vision/policy, district operations, staff roles, curriculum, and other areas enables a school district to minimize unsustainable practices. It also can simultaneously motivate staff, teachers, and students to adopt innovative changes in practice that often lead to improved performance and cost savings while integrating sustainability into a district's organizational culture and curriculum.

Denver Public Schools (DPS) finds itself in a time of rapid change – and challenge – not only in the capacity of the District's own resources, but also in the changing world around it, from energy and climate concerns to preparing students for the future. Recent economic challenges have pushed the District to seek ways to be more resourceful, while rising energy prices and resource limitations paint an uncertain future.

Yet amid these challenges and uncertainties there are great opportunities for DPS. In many respects, these challenges and uncertainties have already prompted the District to become more energy and resource efficient and to cut operating costs. Beyond these efficiencies, the District also can seek ways to build on its already successful partnerships and collaborations with the community to educate and involve District students, teachers, and staff in energy, water, and resource saving and sustainability opportunities. Not only can these and other strategies help reduce DPS's impact on the environment, they can provide many additional benefits to the District, from sustaining a healthy and productive learning and working environment to preparing students for the future.

Funded with a grant from the Colorado Governor's Energy Office, this Sustainability Management Plan (SMP) has been developed to take stock of DPS's progress toward sustainability to date and create a cohesive plan for the District to effectively manage energy, resource use, waste production, and other practices to reduce impacts and generate cost savings while also supporting students, teachers, and staff. The overall purpose of this SMP is to create a road map of sustainability for DPS and to provide an overall framework for sustainability that includes key goals, strategies, and actions to support sustainability in District facilities, operations, and curriculum.

The remainder of this SMP provides an overview of the development process, a snapshot of the District's current sustainability practices, and a framework for action to further sustainability in the District. The goals and strategies identified in the SMP have been developed around five focus areas identified by District staff and key community stakeholders:

- Conserve Resources: Energy, Water, Climate, and Green Building
- Close Loops: Waste and Procurement
- Use Land Wisely and for Multiple Benefits
- Prepare Students for the Future
- Support Employees

In addition, the SMP outlines goals and strategies within each focus area for achieving progress. Finally, the SMP presents an approach to implementation that looks at staffing, partnering, funding, measurement and reporting, and avenues for moving beyond District operations to the community as a whole.

1.1 The Case for an SMP

An SMP is, in essence, a road map that is a foundation for planning and action for sustainability. It defines and illustrates an organizational philosophy toward sustainability through established vision/policy, goals, strategies, and metrics. Many other Colorado school districts, institutions, organizations, and companies have embarked on efforts to develop SMPs to improve practices associated with energy use, transportation, solid waste, water consumption, and other areas. While the driving forces for many of these efforts have been to reduce energy consumption and environmental impacts as well as to save money, implementing an SMP offers many other benefits to DPS's students, teachers, and staff. Below is a list of some of the benefits that DPS can expect from implementing the strategies in this SMP:

- Reduced District energy costs for heating, cooling, and lighting
- Reduced District bus and other fleet motor vehicle fuel costs
- Reduced vulnerability to energy price increases and volatility
- Reduced peak energy demand
- Reduced waste and increase landfill diversion rates
- Reduced water consumption
- Guidance for constructing high-performing schools and other buildings
- Guidance to prepare students for the future with engagement and leadership opportunities
- Guidance for teachers and employees to contribute to District sustainability efforts
- A great example for the community

This Plan integrates top-down concepts (e.g., vision, policy, and management commitment) with bottom-up practices (e.g., lighting retrofits, water efficiency measures, solid waste practices, etc.) that can provide both early near-term benefits for DPS as well as tools for continual and long-term success. Broadly speaking, this SMP is a vehicle that will help move DPS systematically toward sustainability in its operations. It serves to focus attention and action at all levels on critical environmental, economic, and social issues. It creates efficiencies and standardization among programs and provides a shared decision-making and problem-solving framework. It is a logical step for an organization that is serious about uniting its various existing sustainability practices under a tangible and measurable long-term sustainability program. In addition to the direct resource efficiency improvements and support for staff and students DPS can expect from more sustainable practices, the SMP offers many other organizational benefits:

- Provides guidance for decision-making
- Provides a foundation for planning and action
- Influences changes in the workplace and classroom
- Creates efficiencies, synergies, and consistencies among programs leading to cost savings
- Shifts thinking from incremental to breakthrough
- Inspires commitment

- Creates visible management support and a unifying theme
- Reflects organizational style and culture
- Positions school districts to adapt to changes and take advantage of emerging opportunities
- Provides an example for the community and other school districts nationwide

Figure 1 describes the overarching tenants of action framed by an SMP, including vision and policy, planning, implementation actions, confirmation, and management. Built from the Deming quality model of “plan-do-check-act,” the SMP starts an ongoing cyclical process aimed at both continuous improvement and long-term thinking surrounding sustainability.

FIGURE 1. PLAN-DO-CHECK-ACT CYCLE



1.2 DPS's SMP Development Process

The process for developing this SMP involved a number of steps:

- Conducting a baseline inventory
- Administering a web-based, District-wide survey
- Facilitating several meetings and workshops with an SMP Executive Committee comprised of individuals from the District and community
- Convening and facilitating a number of group interviews
- Formulating a vision/policy statement and goals that support sustainability
- Developing strategies informed by these elements and the baseline inventory

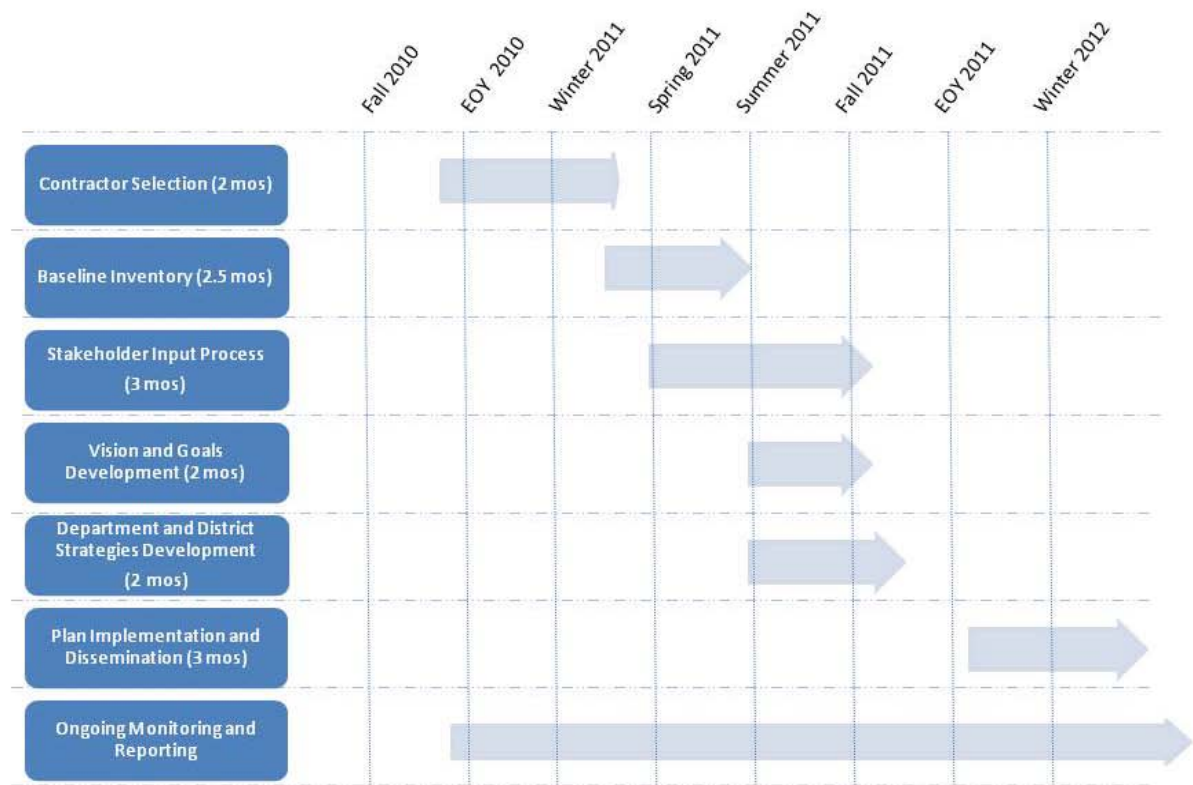
As shown in Figure 2, the SMP was developed using both a top-down and bottom-up approach. A vision, draft policy, and goals were developed from the top down to guide the process and inform strategies while the results of the inventory, survey, interviews, and SMP Executive Committee workshops were used to build a bottom-up foundation for implementing the strategies, including action steps and partnerships. The top-down and bottom-up approach allows full vertical integration, linking grassroots efforts in daily operations to cumulative goals in District policy in sustainability.

FIGURE 2. DPS SMP APPROACH



Overall, the SMP development process spanned approximately 1 year and included preparing the baseline inventory, developing SMP components, and preparing and reviewing the document (Figure 3).

FIGURE 3. SMP DEVELOPMENT TIMELINE



COLLABORATION PROCESS

Development of this SMP included collaboration with DPS’s SMP Executive Committee. Members consisted of knowledgeable and interested stakeholders from within and outside of the District able to validate the inventory process, identify data sources, document existing District sustainability practices, help craft focus areas and goals, and develop next steps. This committee met to achieve the following:

- Kick off the project and establish a forum for the collaborative tasks ahead
- Recommend a vision, focus areas, and goals that are uniquely suited to DPS and that will guide forward progress on sustainability
- Review and prioritize strategies for reaching established goals and measuring success

In addition to the SMP Executive Committee meetings, six group interviews (documented in Appendix A) spanning several District departments were conducted with DPS staff members, community representatives, and the Student Board of Education (Table 1). These interviews were designed to engage District staff and students and to give them a forum to discuss good things already happening related to sustainability as well as opportunities for improved sustainability in their unique areas of work or student life.

TABLE 1. GROUP INTERVIEW STRUCTURE AND TOPIC AREAS

Interview Group	Topic Areas
Facility Management	Existing practices and opportunities for energy and water, waste/recycling, green teams, procurement, and other topic areas
Human Resources, Risk Management, Chief Financial Officer	Existing practices and opportunities in human resources practices, communications, health and safety, building maintenance, and other topic areas
Facilities	Resource efficiency opportunities, facility and equipment maintenance and scheduling, facility design, employee training, and other topic areas
Transportation	Existing practices and opportunities for sustainability in District bus fleet, other vehicles, and staff and student commuting practices
Student Board of Education	Preparing students for the future, sustainability opportunities in schools from a student perspective
Education and Community	Opportunities for community partnerships, preparing students for the future

In addition to the group interviews, a web-based survey was administered to DPS staff and teachers, as well as to select community stakeholders and students, to collect their input on current best practices, challenges, and opportunities for improvement for sustainability in the District’s operations, curriculum, training, and other areas. In total, the 144 survey respondents spanned several stakeholder groups. Data from the survey was used to frame SMP strategies and to identify opportunities and challenges for implementation, from how best to motivate and involve staff and students to specific ideas for implementation (Table 2). More detailed documentation of survey results is provided in Appendix B.

TABLE 2. SUMMARY OF RESULTS FROM DISTRICT SURVEY

Topic	Survey Responses
Existing Practices	<ul style="list-style-type: none"> • Doing Well: Building lighting systems, indoor water use, solid waste/recycling, food services, and landscaping • Room for Improvement: Education/training of staff on sustainability, HVAC • Don't Know: Outdoor water use, renewable energy, District buses and other vehicles, green purchasing, computers/IT, cleaning, and curriculum
Greatest Opportunities	<ul style="list-style-type: none"> • Integrate sustainability into new buildings/major renovations • Use more renewable energy • Program lights and equipment • Change water fixtures and equipment • Use more fuel-efficient buses and vehicles • Implement recycling in lunchrooms as well as composting • Develop internships for students • Integrate sustainability into the curriculum • Improved communication
Greatest Challenges in Implementing the SMP	<ul style="list-style-type: none"> • Lack of up-front funding, even if strategies will save money • Lack of teacher/staff time • No clear leaders to take charge of implementation • Change District-level tools being used • Make the SMP a priority from the top down. • Must be a District "EPMP" goal. • Need to implement existing policies • Engage families in the process to benefit them at home too

Finally, the District also created a dedicated web page on the DPS sustainability web site (sustainability.dpsk12.org/management_plan) to provide transparency during development of the SMP and to facilitate the awareness and involvement of a larger group in the process. This web page houses meeting notes, presentation materials, interview notes, and other SMP resources so that staff and community members can be informed throughout the process.

2.0 BASELINE INVENTORY

To develop a baseline sustainability inventory for the District, DPS and the consultant worked together to collect data; compile information on existing practices; and develop a baseline characterization of District-wide energy and water consumption, solid waste generation and diversion rate, and fuel consumption from fleet transportation activities. The inventory establishes a baseline from which to measure DPS's progress toward sustainability from year to year and includes a calculation of the District's associated greenhouse gas (GHG) emissions. The year 2010 was selected as the baseline year for the inventory as it was the most recent year for which complete data were available. (Note: any updates to the inventory in subsequent years should, for completeness, align data between fiscal year and calendar year. The overall impact of this alignment should be nominal.)

2.1 Methodology

Sources of information for the inventory included utility records and DPS databases; these sources are summarized in Appendix C. Associated GHG emissions were calculated using an approach consistent with The Climate Registry's General Reporting Protocol. The following specific data were collected to develop the inventory:

Energy

- Monthly electricity consumption (kilowatt hour [kWh]) and cost (as well as electricity generated by DPS solar panels to offset the District's consumption)

Water

- Monthly water consumption (gallons [gal]) and cost

Sewer

- Monthly water consumption (gallons [gal]) and cost

Waste

- Annual solid waste generation (tons) and cost
- Annual diversion to recycling (tons) and cost
- Annual diversion to compost (tons) and cost

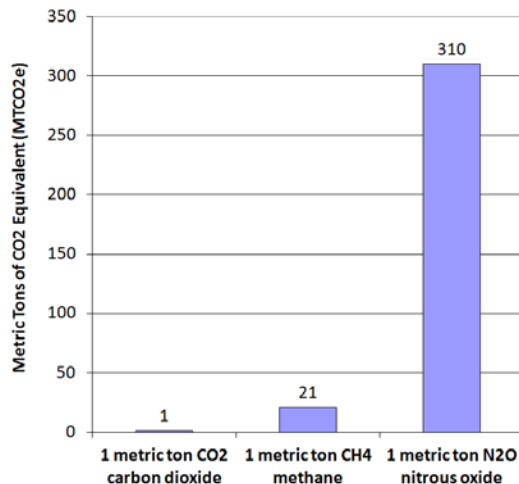
Transportation

- Monthly fuel consumption by fuel type (gallons [gal]) and cost

The GHG inventory includes carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Units of carbon dioxide equivalent (CO₂e) were used to normalize the global warming potential (GWP) of the various GHGs. As portrayed in Figure 4, the emission of 1 ton of N₂O has a GWP 310 times larger than that of the emission of 1 metric ton of CO₂. Similarly, the emission of 1 metric ton of CH₄ has a GWP 21 times that of CO₂. To avoid confusion between emissions of the different types of gases and their respective GWPs, all emissions are reduced to the common unit of CO₂e. Thus, the emission of 1 metric

ton of N₂O is expressed as the emission of 310 metric tons of CO₂e. Metric tons of CO₂e are labeled as MTCO₂e.

FIGURE 4. UNITS OF GHG REPRESENTATION



2.2 Baseline Inventory

Table 3 summarizes the findings of the DPS baseline inventory. Recycling is represented as an activity that avoids GHG emissions at the landfill by diverting materials that would potentially decompose from the waste stream. The emissions avoided as a result of the District’s solar photovoltaic (PV) systems are also included.

TABLE 3. DPS BASELINE INVENTORY

Emission Source*	Quantity	Unit	Cost	Emissions (MTCO ₂ e)
Electricity	92,545,183	kWh	\$8,602,708	80,409
Natural Gas	6,869,889	therms	\$4,254,868	36,820
Fleet Fuels	681,000	gallons	\$1,757,029	6,819
Solid Waste	6,210	tons	\$263,450	negligible
Water	499,133	thousand gallons	\$1,541,307	47
Sewer	93,548	thousand gallons	\$307,417	**
TOTAL			\$16,797,429	125,159

*Utilities data for calendar year 2010; fleet fuels and solid waste are for fiscal year 2010.

**Insufficient information on numerous wastewater treatment systems serving DPS to estimate GHG emissions from wastewater treatment.

Other Activities	Quantity	Unit	Cost	Emissions (MTCO ₂ e)
Recycling	837	tons	\$70,650	Significant upstream emissions avoided by recycling
Solar Photovoltaic Systems	485,542 (generated)	kWh	-\$13,110 (savings)	344 (avoided)

GREENHOUSE GAS EMISSIONS

Figure 5 shows the sources for the District’s GHG emissions for 2010, which are estimated at 125,159 metric tons (MT)CO₂e. Electricity, as the dominant source of energy consumption in the district, comprises the largest share of emissions, followed by natural gas and fleet fuels. Not displayed in this pie chart are solid waste, water, and propane, all of which comprise relatively smaller portions of total emissions.

FIGURE 5. DPS 2010 GHG EMISSIONS

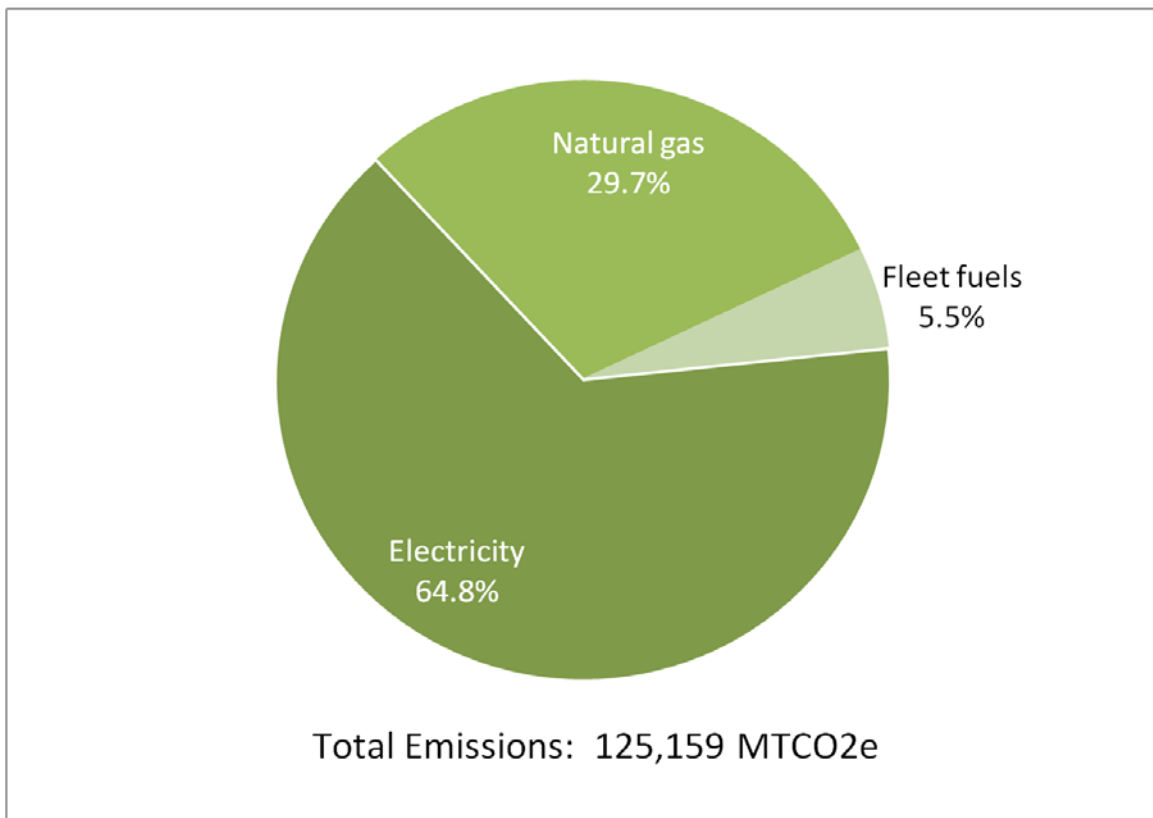


Table 4 provides a comparison of DPS’s GHG emissions to two other Colorado school districts on a normalized basis of both emissions per square feet of building space and per student.

TABLE 4. GHG EMISSIONS PER SQUARE FOOT AND PER STUDENT

School District	Metric Tons CO ₂ e Per Square Foot of Building Space	Metric Tons CO ₂ e Per Student
Poudre School District	0.006	1.1
Boulder Valley School District	0.010	1.4
Denver Public Schools	0.009	1.7

3.0 EXISTING PRACTICES

The GHG inventory, interviews, and surveys were used to collect information on the District’s existing practices related to sustainability. In developing this SMP, it is important to note that DPS is not starting from scratch with respect to its sustainability efforts. These existing practices, further detailed in Appendix A from interviews for the process, serve as a basis for identifying future opportunities and prioritizing strategies. In particular, the District already has undertaken a number of efforts to make its operations more efficient (Table 5). In addition, the District already has an established Department of Sustainability, which is overseeing several current sustainability projects and initiatives and communicating results through newsletters, its web site, and sustainability reports.

TABLE 5. HIGHLIGHTS OF EXISTING DPS SUSTAINABILITY PRACTICES

<i>Resource Use, Energy and Water</i>
Geo-exchange HVAC systems are in place
Vastly improved heating equipment
28 schools with solar PV arrays
80% percent of schools covered by a T-8 lighting retrofit
Facilities managers trained on energy efficiency issues
Variable frequency drives (VFDs) for fans and pumps
Lighting occupancy sensors
Partnership with Xcel Energy and the City and County of Denver on Energy Challenge
Coordinated and regularly updated equipment and occupancy scheduling of all year round programs with Integrated Building Automation Assistance Team (IBAST)
Effort to expand central equipment controls to all the schools
Toilet, faucet, and urinal replacements – in 5 years, all 5,000 fixtures in the District will be replaced
Ambitious goals around landscape, starting with bond funds
Automated irrigation controls
System of checking sprinkler heads and fixture water leaks
Existing high-performing buildings, including the Denver Green School and Evie Garrett Dennis Campus

<i>Staff, Student, and Teacher Training and Engagement</i>
Professional development programs that support sustainability training as needed
Trade-related classes focused on project management; hands on and also awareness
Trade-related training that incorporates maintenance; for example, custodial staff can change a ballast
Focus on performance improvement and coaching
Alliance for Climate Education middle and high school presentations and green and environmental clubs
Numerous sustainability champions in the District; parents, facilities managers, and wellness committees
Scheduling for daily maintenance work been transitioned from “fighting fires” to site-based approach
Students educated on energy use and renewable energy and engaged in the Energy Challenge; many green teams have formed; students engaged in energy audit teams
Behavior and education on carbon dioxide (CO ₂) emissions
Meaningful work/career training experiences for special education students
Green Internship programs to work in energy and outdoor industries
Denver School Garden Coalition that includes 30 school-based community gardens and education around eating healthy
Butterfly garden with young students
<i>Materials</i>
Working to minimize paper use through e-faxing use and online registration processes for professional development
Largely eliminated bleach use in custodial services
Green product demonstrations and training
Recycling programs free for every school and administrative building
Denver Recycles in all but four schools; composting in a growing number of schools (14 schools at the time of this publication)

One hundred percent compostable and made of recyclable content paper towels
One hundred percent paperless employee applications; also for many workers compensation claims
Reusable trays in cafeterias; cafeteria recycling, composting activities
Recycling of specialty items, including textiles, paper tower dispensers, etc.
<i>Transportation/Vehicles</i>
Idling tracking and automatic shutoff of newer buses
Route planning optimization using driver feedback, software, and global positioning systems (GPS)
Some hybrid cars
Investigation of fleet fluids and solvents; vetting materials with vendors
Use of biodiesel in summer months
Regional Transportation District (RTD) passes for high school students
Participation in Safe Routes to School to encourage walking
New employee training includes carpooling
<i>Land Use</i>
School gardens and greenhouses
Healthy food education for kids
Integrated pest management approaches
Schoolyards redevelopment project with new learning landscape playgrounds
Urban farm feasibility study

4.0 SMP FRAMEWORK

Central to the SMP is the framework presented on the following pages. This framework brings together the various SMP components – from its vision and policy to goals and supporting strategies – into one cohesive plan for sustainability in the District.

4.1 Framework Focus Areas

Table 6 summarizes the SMP in a framework that organizes the District’s approach to sustainability into five main focus areas that were identified through a review of existing DPS sustainability goals, a facilitated process, and a survey of the SMP Executive Committee. The framework offers a snapshot of these focus areas, along with short-term (5 year) and long-term (10 year) goals, strategies, funding, and external partnerships that will enable DPS to achieve these goals. These five focus areas are defined below:

- Conserve Resources: Energy, Water, Climate, Green Building
- Close Loops: Waste and Procurement
- Use Land Wisely and for Multiple Benefits
- Prepare Students for the Future
- Support Employees

It is important to note that this initial version of the SMP was developed using a linear process of conducting an inventory, developing a vision and policy, and crafting goals and strategies. The SMP, however, is intended to be maintained using a cyclical process of continuous improvement, which involves annually measuring and reporting progress, as well as re-evaluating short-term goals and strategies and making refinements as needed (Figure 6).

FIGURE 6. ANNUAL UPDATE PROCESS FOR THE PLAN



4.2 Framework Terms

The following definitions provide for a common and shared understanding of the framework among District staff, students, and stakeholders:

Focus Areas: Priority areas determined by the SMP Executive Committee as themes under which goals and strategies are organized.

Goals: Short-term and long-term goals that embody achieving progress toward sustainability within the District. For DPS, the timeline for short-term goals is 5 years or less, while the long-term timeline is 10 years.

Cross-cutting Topics: Topics that can leverage and support all focus areas, goals, and strategies in the SMP.

Strategies: The main paths for achieving goals in each focus areas – for example, energy efficiency improvements (under *Conserve Resources* focus area).

Implementation Steps: A more specific subset of a strategy taken from the list of opportunities that the District is committed to implementing within a set period of time.

Metrics: Quantitative indicators that are used to track and report progress toward sustainability for specific focus areas, goals, and strategies.

TABLE 6. FRAMEWORK FOR THE SMP

<i>Vision and Policy</i>					
<i>Focus Areas</i>					
	Conserve Resources: Energy, Water, Climate, Green Building	Close Loops: Waste and Procurement	Prepare Students for the Future	Support Employees	Use Land Wisely and for Multiple Benefits
Long-term (10-year goals)	<ul style="list-style-type: none"> Reduce greenhouse gas emissions from electricity use by 15%. Increase energy and water savings by 20%. Increase renewable energy use in buildings and vehicles by 20%. Pursue net zero energy schools. 	<ul style="list-style-type: none"> By 2022, all DPS departments are purchasing 50% of goods and services using defined sustainable purchase and procurement guidelines. Pursue zero waste schools. 	Sustainability is integrated into classes at all grade levels.	100% employee awareness of DPS sustainability commitment and participation in adopted practices.	All District schools have ready access to and support for land and landscapes that support and enhance the learning environment by providing hands-on opportunities for recreation, food production, community participation, and other student benefits.
Short-term (5-year goals)	<ul style="list-style-type: none"> Complete Energy Star benchmark for all applicable facilities. Apply for Clean School Bus Grant. Increase RTD ridership by 15%. Increase Safe Routes to Schools participation. Develop short and long term goals to reduce transportation greenhouse gas emission. 	<ul style="list-style-type: none"> Implement recycling in all schools. Increase the District-wide waste diversion rate 3% annually (30% total in 10 years). 	Curriculum web portal is complete and all teachers have access to sustainability curriculum resources.	<ul style="list-style-type: none"> All interested new DPS employees receive voluntary sustainability training. All interested existing DPS employees receive voluntary sustainability training. 	District has a plan to optimize use of all District land incorporating property value and location, value as a learning landscape, opportunity for shared community resources, food production, and other considerations.
Strategies	<ul style="list-style-type: none"> Partnerships: Leverage existing and future partnerships for all focus areas. Communication: Communicate internally and externally to build participation, coordinate efforts, and share success. 				
Metrics	<ul style="list-style-type: none"> See Section 4.5. 				
	<ul style="list-style-type: none"> Reduction in water use (kgals) Percent of energy inventory for building use from alternative energy resources Number of schools qualifying for Energy Star or improving on scale Comparison of energy use to comparable buildings based on kBtu/sf/yr Occupant use and comfort Vehicle miles traveled for students and employees Overall yellow and white fleet fuel consumption Percent of fleet that uses hybrid or alternative energy source 	<ul style="list-style-type: none"> Percent of certified product purchases in each identified category District diversion rate 	<ul style="list-style-type: none"> Number of classes integrating sustainability into the curriculum Extent of revised sustainability curriculum adopted by the Board of Education 	<ul style="list-style-type: none"> Extent of integration of sustainability into Employee Performance Management Process (EPMP) goals Number of employees receiving voluntary sustainability training Number of employee green teams 	<ul style="list-style-type: none"> Underutilized or abandoned acreage/student devoted to learning landscapes and food production Underutilized or abandoned acreage of land being used for multiple uses
Ongoing	Implementation Platform: Monitoring and Reporting				

4.3 Vision and Policy

Vision

To provide a defining vision for sustainability that supports not only this SMP effort but other District sustainability activities and its collaboration with the broader community, the following is the vision for the SMP:

"Denver Public Schools will be a leader in the stewardship of people and resources for future generations and champion sustainability solutions for students and the community."

This vision anchors the remaining components of the SMP and provides direction for developing goals, implementing strategies, creating partnerships, and involving the entire District in moving the SMP forward.

Policy

To complement the SMP vision, the District also has developed a draft policy. While visions are intended to be motivational and inspirational, policy is used to provide more formal institutional recognition of the SMP and adoption of the practices it embodies. Policy becomes the driving force for a program or plan, providing both formal top management support and a unifying theme for District staff and teachers. Elements of a strong policy statement that provide guidance for moving forward include the following:

- Implies visible management support
- Reflects organizational culture and style
- Is consistent with other organizational policies
- Applies to all major operations
- States beliefs and intentions (what), not ways for meeting intentions (how)
- Provides direction for decision-making
- Provides a foundation for planning and action
- Is documented and clearly communicated to all employees
- Drives change in the workplace
- Inspires commitment
- Serves as a unifying theme

The following is a proposed draft policy to support the SMP. Additional steps will be necessary to finalize this policy, including collaboration among the District's Department of Sustainability, the Office of the Superintendent, and other departments.

"Denver Public Schools recognizes sustainability as a guiding principle in preparing students for the future and believes that our education system should practice an ethic of sustainability in all of its practices. The District defines sustainability as meeting the educational, environmental, social, and economic needs of present generations without compromising the ability of future generations to meet their own needs. We will accomplish this through a comprehensive management plan that provides for clear leadership and monitoring of the plan and seeks District-wide involvement and ownership of sustainability as a model for everyday education and business."

4.4 Goals

Important components of the SMP framework are the goals that DPS developed for marking progress toward sustainability. These goals will serve as yardsticks to which the District will strive, both over the near term as well as into the future. These goals were developed to address the five focus areas of the framework. As goals are revisited in the future, additional topics can be added to the framework. It is also important to note that the District Department of Sustainability has already developed goals to address various aspects of the *Conserve Resources* focus area. These are included below in the SMP to integrate them into the District's broader sustainability framework.

Goals are further distinguished between 5-year, short-term goals and long-term, 10-year goals that embody achieving true sustainability around the District. Long-term goals are intended to keep DPS on a continual path of improvement toward sustainability, employing new methodologies and technologies as they evolve.

Short-term goals generally are intended to follow a "SMART" format, ensuring that the short-term goals contain **s**pecific, **m**easurable, **a**chievable, **r**ealistic, and **t**imely elements. This SMART short-term goal guidance is designed to facilitate goals that are actionable and that can be achieved relatively easily over the short term.

S = Specific. Specific short-term goals are more likely to be achieved than general short-term goals. Answer *who*, *what* (to be accomplished), *where* (location, if applicable), and *why* (specific reasons or purpose of short-term goal).

M = Measurable. Establish concrete criteria for measuring progress toward each short-term goal. Answer *how much*, *how many*, and/or *how will we know when it is accomplished?*

A = Attainable. Set short-term goals within reach in order to garner commitment and to increase the likelihood of success.

R = Realistic. Short-term goals should fit with the overall strategy and priorities of the organization, and the tools needed to accomplish the short-term goals should be available.

T = Time-bound. Set a time frame for each short-term goal that is measurable, attainable, and realistic (e.g., next month, in 3 months, by 2015, etc.).

The SMP's short-term and long-term goals are summarized in the next section by Focus Area.

4.5 Strategies

The strategies presented here were developed on the basis of input from District stakeholders, review and analysis of building assessments, and best practices from other cities and organizations. These strategies were developed for each focus area to support the goals outlined in the Plan framework. It is important to recall the preceding introductions and descriptions of goals and strategies in this document (e.g., Figure 6, Section 4.4, etc.). In particular, the goals represent the greater outcomes of an SMP, and the strategies to support these goals will be revised and updated as part of a recurring and cyclical maintenance process. This document reflects the prioritized strategies for DPS' first maintenance cycle

and knowingly does not include a top prioritized strategy for every goal. In part, this method is employed to limit the number of top prioritized strategies that DPS is committed to in the first maintenance cycle in order to gauge the District's potential for managing numerous top strategies. However, to achieve the articulated goals (especially the short-term goals), associated strategies will need to be prioritized and developed further in subsequent maintenance cycles. For this purpose, second tier (based on the input of this process) strategies are briefly listed with each focus area.

Top tier strategies were prioritized using the expertise and input of SMP Executive Committee members. Many opportunities that relate to potential strategies were collected throughout the SMP development process; prioritization was then used to help focus efforts on the most relevant topics. This approach involved taking into consideration the overall mix of strategies and keeping a number of emerging themes in mind:

- Cost effectiveness
- Doing better instead of doing more (quality vs. quantity)
- Existing District goals, practices, and sustainability projects
- Leveraging existing District partnerships

Before examining the initial list of potential strategies, SMP Executive Committee members determined the most important criteria to use in ranking the strategies. Of the following criteria, committee members identified the first two (result in multiple wins/have management support) as the most important in their screening process:

- Enable multiple wins
- Have management support
- Promote health and well-being
- Cost effective
- Visible to the District and/or community
- Effective in reducing GHG emissions
- Easy to implement
- Timely
- Low up-front initial costs

Once multiple wins and management support were identified as the primary guiding factors for prioritization, strategies were developed based on review of group interview notes, documentation from SMP Executive Committee meetings, and review of all survey results (Table 7). Strategies are organized by focus areas and associated goals of the SMP framework and are presented with general strategy descriptions; sub-level implementation steps; and a discussion of benefits, costs, and metrics. When applicable, context for benefits and costs was provided for all strategies to inform District decision making.

It should also be noted that the strategies listed in the SMP represent a handful of key ideas and themes that were elevated to top priorities for this planning cycle. Many other opportunities around which future strategies can be developed were identified and are documented in Appendix A. This SMP is intended to be a living document that will be maintained to ensure that these first identified priorities

are implemented and to provide guidance in developing new strategies from the other documented opportunities in future planning cycles as depicted in Figure 6.

TABLE 7. SUMMARY OF SMP PRIORITY STRATEGIES

Focus Area	Strategy	Description
1	Strategy 1-1: Implement Energy and Water Efficiency Projects	By prioritizing energy and water conservation projects in conjunction with utility, environmental and health focused partners, continue to reduce energy and water use in District facilities.
1	Strategy 1-2: Develop Sustainable Design Guidelines	Develop and implement a comprehensive set of sustainable design guidelines for both existing buildings and new construction/renovation that reflect DPS's culture and commitment to academic excellence and social responsibility while reducing life cycle costs in building operation and maintenance.
1	Strategy 1-3: Develop a Sustainable Transportation Master Plan	Target areas such as vehicle maintenance, emission improvements, routing, procedures, and bus replacement. Through partnerships with federal, state and local agencies, enhance efficiencies to reduce vehicle miles traveled. Promote alternative transportation for students and staff.
2	Strategy 2-1: Develop an Environmentally Preferable Purchasing Program	Develop a District-wide, centralized environmentally preferable purchasing program. The program will address purchasing relevant to each department throughout the District.
3	Strategy 3-1: Develop a Land Use Master Plan	Develop a land use master plan for District properties that incorporates a systems thinking approach to District land, including environmental, economic, and human considerations. The Master Plan will provide direction for optimizing use of land for multiple purposes, including such considerations as student learning and health and wellness, demonstration gardens, shared District/neighborhood resources, and others.

Focus Area	Strategy	Description
4	Strategy 4-1: Integrate Sustainability into Curriculum and Instruction	<ul style="list-style-type: none"> • Take a voluntary approach to integrating sustainability into the curriculum, focusing on providing teachers the resources, support, training, and tools they need. • Recognize the sustainability-related themes and opportunities that already exist in current curriculum and standards. • Adapt and customize available curriculum-based sustainability efforts nationally and internationally in all areas of study and for all grades • Acknowledge the ever-increasing requirements and time demands of teachers, principals, and administrators. • Integrate sustainability across grade levels and course subjects, from basic sustainability literacy to topics such as nutrition and specialized job training • Tap the grassroots energy and initiative of DPS teachers, staff, parents, and community members who are already championing sustainability and sharing their knowledge with students • Leverage existing community-based resources for engaging students in sustainability
5	Strategy 5-1: Establish Employee-focused Voluntary Sustainability Training Using a Green Team Structure	<p>Voluntary employee green teams will identify and deliver sustainability training and will support fellow employees. The District will embark on a concerted campaign to grow the number of green teams and to engage more employees in sustainability by providing them voluntary training and resources to integrate sustainability into their day-to-day work.</p>

FOCUS AREA 1: CONSERVE RESOURCES: ENERGY, WATER, CLIMATE, GREEN BUILDING

This focus area emphasizes a DPS commitment to reduce the District’s impact on natural resources by supporting a healthier environment through energy management, water conservation practices, and transportation practices. These actions are integral to the overall operation of the District’s fleet and its schools and other buildings as the District progresses toward green building facility management. This focus area also emphasizes the desired performance outcomes from employing sustainable design, products, and practices in new construction, renovation, operation and maintenance, from inception of the project through build out. This focus area leverages the significant related work already achieved through the District’s Department of Sustainability, especially for informing the goals and Strategy 1-1.

The short- and long-term goals for this focus area are as follows:

Short term (5 years or less)

- Complete Energy Star baseline registration and usage indices of all applicable DPS facilities and applicable utilities (energy and water); monitor and report.
- Successfully prepare and submit EPA documents for the Clean School Bus grant program
- Increase ridership of students and staff on RTD by 15%
- Increase participation in Safe Routes to Schools through promotion
- Develop transportation focused GHG reduction goals, both short and long term, to reduce DPS fleet affect by 15%

Long term (in 10 years)

- Reduce the electric energy portion of the GHG percentage by 1.5 percent for a total reduction of 15 percent in 10 years.
- Increase energy and water savings to the District through a variety of reduction and efficiency strategies by 20 percent by 2020.
- Increase overall renewable energy use by buildings and vehicles 20 percent by 2022.
- Pursue net zero energy schools.

Potential metrics, or ways to measure progress for this focus area, include the following:

- Reduction in water use (kgals, or thousand gallons) by site through sub-metering
- Percent of energy inventory for building use from alternative energy resources
- Number of schools qualifying for Energy Star or improving on scale
- Comparison of energy use to comparable buildings (using, for example, Energy Star, Architecture 2030: The 2030 Challenge, Commercial Buildings Energy Consumption Survey data) based on kBtu/sf/yr
- Occupant use and comfort surveys, including before and after surveys as applicable
- Vehicle miles traveled for students and employees
- Overall yellow and white fleet fuel consumption
- Percent of fleet that uses hybrid or alternative energy source

The first strategies to be implemented for this focus area include the following:

Strategy 1-1: Implement Energy and Water Efficiency Projects

Through the prioritization of energy and water efficiency and conservation projects – in conjunction with utility, environmental, and health focused partners – DPS will continue to reduce energy and water use in District facilities. These projects will have a particular emphasis on reducing the GHG emissions associated with electric energy use.

>> Responsible Parties for This Strategy

The DPS Facility Management department will work closely with the DPS Purchasing, Denver Water, DPS utility providers, and engineering professionals.

>> Implementation Steps

- Complete baseline registration for all DPS schools under the Energy Star program.
- Establish a monitoring and reporting system for energy performance from Energy Star data.
- Expand energy audits under performance contracts with Colorado Governor’s Energy Office.
- Promote the DPS Energy Challenge and other techniques, to promote conserving resources through behavior modifications.
- Establish an incentives program.
- Audit existing water use through sub-metering to determine building and landscape use at each district facility.
- Track district facility energy use and associated GHG emissions compared to baseline.
- Investigate geo-exchange and alternative energy heating/cooling systems for District schools.

>> Resources

- EPA
 - www.epa.gov/enviroed/educate.html
 - www.epa.gov/watersense/
- Denver Water
 - www.denverwater.org
- US Department of Energy
 - energy.gov

>> Funding

- Denver Water - Incentives, Xeriscape
 - www.denverwater.org/Conservation/IncentivePrograms/
 - www.denverwater.org/Conservation/Xeriscape/XeriscapeResources/
- US Department of Energy – Alternative Fuel Buses; Wind for Schools
 - www.afdc.energy.gov/afdc/laws/law/CA/5357
 - www.windpoweringamerica.gov/schools_wfs_project.asp

>> Benefits and Costs

Poudre School District (PSD) provides a potential benchmark for possible benefits and costs for DPS. Initiating a water conservation program at PSD reduced overall gallons consumed for interior and landscaping use by one half in the first year. Procedural changes at PSD in the HVAC and Outdoor Services departments have reduced electric, natural gas, and water costs by approximately \$500,000 per year – representing a 17 percent savings.

Strategy 1-2: Develop Sustainable Design Guidelines

Develop and implement a comprehensive set of sustainable design guidelines for both existing buildings and new construction/renovation that reflect the District’s culture and commitment to academic excellence and social responsibility while reducing significant costs for operation and maintenance over the lifetime of the building. Given DPS’s future outlook for efforts related to this topic area, sustainable design guidelines will have a particular emphasis on existing buildings.

>> Responsible Parties for This Strategy

The DPS Construction Department will coordinate with the DPS Facility Department to create a diverse DPS Sustainable Design Guideline Development Team.

>> Implementation Steps

- Create a Sustainable Design Guideline Development Team, mission, and goals.
- Convene coordination meeting and solicit membership for the team.
- Review existing DPS building operation/maintenance, design and construction, and best management practices.
- Establish vision, mission, goals, and timeline for sustainable design guidelines.
- Decide on a guideline development strategy (DPS staff or out-sourced professional services).
- Consider incorporating third-party certification standards as performance thresholds and/or categories for existing buildings and new construction/renovation (e.g., LEED- NC, LEED EB O+M).
- Consider incorporating “buildings that teach” concepts into guidelines.
- Obtain necessary funding.
- Develop and adopt sustainable design guidelines as a working document for DPS, the construction department, and use in all bid documents.
- Monitor performance of buildings operating and built/renovated under the guidelines.
- Interview occupants of buildings operating or built/renovated under guidelines.
- Review and regularly update DPS guidelines based on lessons learned.

>> Resources

- US Green Building Council: www.usgbc.org
- Collaborative for High Performance Schools: www.chps.net
- Poudre School District
 - eweb.psdschools.org/documentlibrary/downloads/Plan_Design_and_Construction/Sustainable_Design_Guidelines.pdf

- www.psdschools.org/documentlibrary/downloads/Plan_Design_and_Construction/Sustainable_Design_Guidelines_2005.pdf
- State of Minnesota
 - www.sustainabledesignguide.umn.edu/
- University of Connecticut
 - www.masterplan.uconn.edu/images/SDG.pdf

>> Funding

- Colorado Governor's Energy Office
 - www.colorado.gov/energy/

>> Benefits and Costs

For existing buildings, strategies such as re-commissioning, proactive preventative maintenance, lighting upgrades, and retrofitting of water fixtures can result in significant cost savings as well as improved occupant productivity and comfort (see Strategy 1-1, above).

In new construction, there is often no significant difference in the construction cost to build a new facility designed to higher sustainable design standards than to conventional methods. For projects that do have costs impacts, the typical range is less than 5 percent of total cost. This is especially true if an integrated design process is used throughout the process. However, sustainably designed and constructed facilities use 25 to 30 percent less energy. Evidence also exists that suggests these methods increase building value 10 to 15 percent.

Strategy 1-3: Develop a Sustainable Transportation Master Plan

The focus on sustainable K-12 transportation intuitively begins with the traditional fleet of school buses and includes improved maintenance, procurement, routing, procedures, and scheduling. However, every school day each member of the DPS educational community of students, staff, parents, support personnel, and vendors has a collective impact upon transportation's overall effect upon the environment. From this perspective, the range of opportunities to create sustainable changes upon traditional transportation habits is broad.

Sustaining efficiencies in fleet operations will target areas such as vehicle maintenance, emission improvements, routing, procedures, and bus replacement. Through partnerships with federal, state, and local agencies, DPS Transportation can enhance its opportunities to accomplish these efficiencies and to reduce vehicle miles traveled. Similarly, promoting alternative transportation for students and staff is relatively common and there are numerous examples of school districts initiating successful programs.

>> Responsible Parties for This Strategy

DPS Transportation and Sustainability Departments will work together with related local/regional, state and federal agencies.

>> Implementation Steps

- Increase student and staff ridership through continued partnerships with RTD.
 - Conduct survey to determine current staff and student ridership with RTD.
 - With RTD, review effectiveness of routes as they relate to DPS participation.
 - Work with RTD to develop a campaign to increase participation.
- Improve bus routing efficiency and support staff driving scheduling.
 - Review data from GPS/AVL systems currently installed on buses to develop the most efficient routes.
 - Review data from GPS/AVL systems currently installed on white fleet vehicles and compare/align with data from the work order system to determine the most effective delivery of services.
 - Use GPS for warehouse delivery routes.
 - Work with Student Services to find efficiencies with special education program placement as it relates to routing.
 - Involve transportation in Individualized Education Program (IEP) discussions.
 - Increase attention by maintenance staff to work order scheduling.
 - Review bell schedules to determine if they affect routing strategies.
 - Review placement of special programs to avoid cross town transportation.
- Create and promote programs that support alternative modes of transportation.
 - Develop an “I Walk and Ride Safely” student program.
 - Working with Colorado Department of Transportation “Safe Routes to School” coordinators, develop methods to promote, increase participation and publicize findings.
 - Develop a “Drive Less Challenge” for students and staff.
 - Investigate the TravelSmart alternative transportation program (that includes support curriculum).
 - Develop bicycle safety programs/events.
- Promote a healthier environment.
 - Consider the US Environmental Protection Agency Clean School Bus USA Program and associated grants.
 - Consider the US Environmental Protection Agency National Idle-Reduction Campaign.
- Adopt policies and procedures to reduce GHG.
 - Baseline all methods.
 - Adopt idling policy for DPS staff and parents.
 - Purchase ultra low sulfur diesel.
 - Install idle reduction devices.
 - Explore use of alternate fuel vehicles, such electric hybrids, ethanol hybrids, biodiesel, and compressed natural gas vehicles.
- Reduce vehicle miles traveled (VMT) by students and staff.
 - Baseline VMT.
 - Locate Staff Development classes throughout the district to reduce VMT.
- Participate in regional outreach discussions regarding sustainable development that includes topics of transportation to support development.

>> Resources

- Colorado Department of Transportation
 - <http://www.coloradodot.info>
 - <http://www.coloradodot.info/programs/bikeped/colorado-bike-month>
 - <http://www.coloradodot.info/programs/bikeped/share-the-road>
- Greenprint
 - <http://www.greenprintdenver.org/transportation/>
 - <http://www.greenprintdenver.org/transportation/support-multi-model-transportation/>
- RTD
 - http://www.rtd-fastracks.com/main_1
- City of Denver
 - <http://www.denvergov.org/Planning/BlueprintDenver/tabid/431883/Default.aspx>

>> Funding

- US Environmental Protection Agency
 - <http://www.epa.gov/cleanschoolbus/funding.htm>
 - <http://epa.gov/cleandiesel/grantfund.htm#dera>
 - <http://www.epa.gov/smartway/financing/dera-financing.htm>
- US Department of Energy Grants
 - <http://www1.eere.energy.gov/wip/sep.html>
- Colorado Department of Transportation
 - <http://www.coloradodot.info/programs/bikeped/safe-routes>

>> Benefits and Costs

Efficient routing will reduce fuel consumption, vehicle maintenance costs, and vehicle replacement costs, freeing up funds for an accelerated bus replacement program. For example, at Poudre School District, routing efficiencies and cost savings resulted in a reduction of yearly new bus replacements from 10 to 7 and retirement every 20 years instead of 30 years (new buses cost approximately \$100,000).

Safe walking and bicycle riding programs encourage alternative transportation methods. For example, at Boulder Valley School District, Bear Creek was recognized for the school's high percentage of students (70 percent) who walk and bike to school throughout the year as a result of similar programs. These programs also reduce traffic.

Alternative fuel vehicles, such as hybrid electric buses (PHEV), save money and reduce GHG emissions. Manufacturer information suggests PHEV buses can have up to 50 percent better fuel efficiency compared to standard diesel buses. The buses will also reduce GHG emissions by anywhere from 30 to 40 percent.

Second Tier Strategies for Focus Area (refer to Section 4.5 for further explanation)

- Pilot the US Environmental Protection Agency's Indoor Air Quality Tools for Schools Program.
- Implement renewable energy projects.
- Implement strategies based on the outcome of the Transportation Master Plan.

FOCUS AREA 2: CLOSE LOOPS

This focus area emphasizes the interconnections between purchasing and disposal, recycling and recycled content material, product and product user. Closing the loops related to material flows requires a consideration of both goods and services as well as a perspective of materials entering and exiting the District. Incoming materials include those purchased as well as donated, while outgoing materials include materials for salvage/recycling, composting, and donation. The District has many existing examples of best practices associated with this focus area to build from, such as its green cleaning product purchases and use. Benefits related to this focus area include measurable improvements in landfill diversion and reduced GHG emissions from solid waste.

The short- and long-term goals for this focus area are as follows:

Short term (5 years or less)

- Implement recycling in all DPS schools.
- Increase the District-wide waste diversion rate 3 percent annually (30 percent total in 10 years).

Long term (10 years)

- By 2022, all DPS departments purchase 50 percent of goods and services using defined sustainable purchase and procurement guidelines.
- Pursue zero waste schools.

Potential metrics, or ways to measure progress for this focus area, include the following:

- Percent of certified product purchases in each identified category.
- District diversion rate.

The first strategies to be implemented for this focus area include the following:

Strategy 2-1: Develop an Environmentally Preferable Purchasing Program

Develop a District-wide, centralized environmentally preferable purchasing program. The program will address purchasing relevant to each department throughout the District.

>> Responsible Parties for This Strategy

The Department of Sustainability will establish the program in conjunction with key DPS departments of Purchasing and Enterprise Management, including Food and Nutrition Services.

>> Implementation Steps

- Conduct an in-depth study and inventory of current green purchases in operations and research available options for environmentally preferable purchasing, including the financial impacts of each alternative.
- Building on the study/inventory, establish procurement guidelines that identify priority criteria and addresses topics of recycled content requirements, local purchasing guidance (including composting and recycling services), food supply, vendor product third-party certification as applicable (e.g., ENERGY STAR™ products, Electronic Product Environmental Assessment Tool (EPEAT) products, Green Seal, ConservaTree, GREENGUARD, Floorscore, made in America, chemical restriction list, etc.).
- With procurement guidelines, develop a decision tool, including guidelines and criteria, for selecting green products and incorporate these guidelines into the centralized procurement process. Connect the developed decision tool with an associated tracking/accountability method for determining progress.
- Infuse sustainability language in Requests for Proposals (RFPs), requiring service providers to demonstrate the following:
 - Sustainability in services provided
 - Performance above industry standards/application of best industry practices
 - Willingness to address prioritized sustainability topics
 - Client references for previous sustainable work
- Establish a manufacturer take-back pilot program that involves both products at end-of-life and packaging. Begin pilot program by identifying products that present the greatest challenges to the District and have good economic or physical potential. Incorporate take-back materials into the accountability method for procurement guidelines. A collection infrastructure and system is a key program component, as well as associated contract/bid language.
- Establish an intra-departmental shared savings mechanism that allows for department(s) with increased spending for this strategy to be supported by department(s) that benefits from cost savings from the strategy (e.g., maintenance equipment purchases supported through savings from energy use reduction).

>> Resources

- US Environmental Protection Agency Environmentally Preferable Purchasing: www.epa.gov/epp
- Eco-cycle's Green Schools Program, including Green Star Schools: www.ecocycle.org/schools
- Pacific Northwest Pollution Prevention Resource Center's (PPRC) Product Stewardship for Manufacturers Tool: www.pprc.org/pubs/epr/takeback.cfm
- Responsible Purchasing Network: www.responsiblepurchasing.org
- ENERGY STAR™: www.energystar.gov
- EPEAT: www.epeat.net
- WasteSpec: www.tjcog.dst.nc.us/regplan/wastespec.shtml
- Conservatree: www.conservatree.com

>> Funding

- Pollution Prevention Advisory Board Grants:
 - www.cdphe.state.co.us/oeis/p2_program/ppabgrants.html

>> **Benefits and Costs**

Based on research of national models, the potential cost savings realized for green product procurement can range from minimal (less than 1 percent) to upwards of 10 percent, depending on the practices implemented. Using green products and installing green materials will contribute to the indoor air quality of buildings over their lifetimes, and a healthy indoor air quality environment results in healthier occupants.

Second Tier Strategies for Focus Area (refer to Section 4.5 for further explanation)

- Expand and formalize District sustainable food program (including topics of gardens, educational and curriculum related opportunities - including optimized collaboration with various non-profits, etc.).
- Pilot a program similar to Eco-Cycle's Green Star Schools Program focused on topics ranging from waste reduction and composting to traditional recycling.

FOCUS AREA 3: USE LAND WISELY AND FOR MULTIPLE USES

This focus area addresses using District-owned land broadly, incorporating considerations beyond just the optimal use of land from a cost perspective to incorporating student learning, health and wellness, neighborhood considerations, and others. In particular, this focus area also acknowledges the value of District-owned land – as well as potential joint partnership projects on land owned by others, such as the City of Denver – to provide opportunities for learning landscapes that enhance DPS curriculum by providing landscaping and infrastructure that teaches. Since 1998, in partnership with the University of Colorado-Denver (UCD), DPS has transformed 93 neglected or underutilized public elementary schoolyards into attractive and safe multi-use parks tailored to the needs and desires of their neighbors and communities. The 2008 Denver Public Schools General Obligation Bond will provide an opportunity for all 98 DPS elementary schools to have a learning landscape by December 2012.

The short- and long-term goals for this focus area are as follows:

Short term (5 years or less)

- Develop a plan to optimize use of all District land incorporating property value and location, value as a learning landscape, opportunity for shared community resources, food production, and other considerations.

Long term (in 10 years)

- All District schools have ready access to and support for land and landscapes that support and enhance the learning environment by providing hands-on opportunities for recreation, food production, community participation, and other student benefits.

Potential metrics, or ways to measure progress for this focus area, include the following:

- Underutilized or abandoned acreage per student devoted to learning landscapes and food production.
- Underutilized or abandoned acreage of land being used for multiple uses.

The first strategies to be implemented for this focus area include the following:

Strategy 3-1: Develop a Sustainable Land Use and Resource Efficiency Master Plan

According to a 2008 Urban Land Institute report¹, DPS has an extensive collection of buildings and land that far exceed what it needs to serve its population. This includes vacant land that is not needed for new schools as well as underutilized service buildings.

¹ ULI Colorado. 2008. Report with recommendations on the ULI – DPS property assessment. ULI, Denver, Colorado.

Under this strategy, the District will develop a Land Use Master Plan for DPS properties that incorporates a systems thinking approach to District land, including environmental, economic, and human considerations. The Master Plan will provide direction for optimizing use of land for multiple purposes, including such considerations as student learning and health and wellness, demonstration gardens, shared District/neighborhood resources, and others. It will also address more sustainable land use practices associated with irrigation, fertilizer use, pest management, and other related topics. The strategy also will build on the site-specific findings of the 2008 Urban Land Institute study by addressing the following questions on a District level:

- What are the market conditions for property in the immediate vicinity?
- What does the current zoning allow?
- Should the property be sold quickly or would it be better to wait for the real estate market to revive?
- Are there possible alternative uses for the property that would allow DPS to retain ownership but draw income from leases, etc.?
- Should the property be held for future use?

>> Responsible Parties for This Strategy

- DPS Facility Management
- DPS Planning and Analysis

>> Implementation Steps

- Conduct a baseline inventory of the District's current land assets and uses.
- Conduct a needs assessment for land use, incorporating learning, health and wellness, recreation, district infrastructure, and other considerations.
- Evaluate potential land uses, including sites suitable for multiple uses.
- Evaluate sustainability and resource efficiency opportunities associated with land use inputs (e.g., water consumption, fertilizers, etc.).
- Develop landscape plans focused on water reduction.
- Evaluate the benefit of a replacement plan for synthetic turf on athletic fields.
- Coordinate with Denver Water and DPS curriculum staff to develop water use awareness materials.
- Develop phased plan for allocating land uses.
- Evaluate community partnerships, joint use/shared services, and funding opportunities.
- Document findings in a land use and resource efficiency Master Plan.

>> Resources

- Greenprint Denver: www.greenprintdenver.org
- Neighborhood associations
- Denver Urban Gardens: www.dug.org
- University of Colorado-Denver Learning Landscapes Program:
 - www.ucdenver.edu/academics/colleges/architectureplanning/discover/centers/cccd/learninglandscapes/Pages/index.aspx
- Slow Food Denver: www.slowfooddenver.org

- Learning Landscape Alliance
- Denver Schoolyard Consortium
- Urban Land Institute: Colorado.uli.org
- Office of Economic Development, City and County of Denver
 - www.denvergov.org/Default.aspx?alias=www.denvergov.org/oed

>> Funding

- National Institutes of Health: grants.nih.gov/grants/funding/funding_program.htm
- LiveWell Colorado: movement.livewellcolorado.org
- City and County of Denver- Various Departments
- Great Outdoors Colorado: www.goco.org
- U.S. Department of Agriculture – Sustainable Agriculture Research and Education (SARE): www.sare.org

>> Benefits and Costs

Developing a strategic Land Use Master Plan for the District’s properties will enable the District to evaluate ways to use land more efficiently, as well as identify opportunities for sharing resources with the community, and, in some cases, selling or allocating land for more cost-effective uses.

Second Tier Strategies for Focus Area (refer to Section 4.5 for further explanation)

- Establish a formal agreement with the City and County of Denver for shared maintenance and resources (e.g., exterior maintenance, etc.).
- Develop other strategies based on the outcome of the Land Use Master Plan.

FOCUS AREA 4: PREPARE STUDENTS FOR THE FUTURE

By definition, sustainability focuses on future generations and the human, economic, and environmental challenges being handed down to them. Today's students and those that follow will require new understanding, knowledge, and skills to contribute and thrive in this future world. This focus area provides a direct and vital link between the SMP and the DPS mission to prepare students to become contributing citizens:

The mission of the Denver Public Schools is to provide all students the opportunity to achieve the knowledge and skills necessary to become contributing citizens in our diverse society.

The short and long term goals for this focus area are as follows:

Short term (5 years or less):

- Curriculum web portal is complete and all teachers have access to sustainability curriculum resources.

Long term (10 years):

- Sustainability is integrated into classes at all grade levels.

Potential metrics, or ways to measure progress for this focus area, include the following:

- Number of jobs training programs addressing sustainability.
- Number of classes integrating sustainability into the curriculum.
- Extent of revised sustainability curriculum adopted by the Board of Education.

The first strategy to be implemented for this focus area includes the following:

Strategy 4-1: Integrate Sustainability into Curriculum and Instruction

Recognizing that preparing students for the future will come through a combination of educational enhancements across all grade levels and subject areas, this strategy focuses on providing DPS teachers with the tools and resources they need to integrate sustainability across the curriculum. The strategy is designed so that it accomplishes the following:

- Takes a voluntary approach to integrating sustainability into the curriculum, focusing on providing teachers the resources, support, training, and tools they need
- Recognizes the sustainability-related themes and opportunities that already exist in current curriculum and standards
- Does not reinvent, but adapts and customizes available curriculum-based sustainability efforts nationally and internationally in all areas of study and for all grades
- Is realistic and acknowledges the ever-increasing requirements and time demands of teachers, principals, and administrators
- Integrates sustainability across grade levels and course subjects, from basic sustainability literacy to topics such as nutrition and specialized job training

- Taps the grassroots energy and initiative of DPS teachers, staff, parents, and community members who are already championing sustainability and sharing their knowledge with students
- Leverages existing community-based resources for engaging students in sustainability

>> **Responsible Parties for This Strategy**

- DPS Curriculum Leaders
- DPS Department of Sustainability
- DPS Career Education Center
- Jobs Training Leaders
- Community partners with educational/outreach materials and resources

>> **Implementation Steps**

- Focus on creating a web portal where teachers can access materials, tools, case studies, and information from existing DPS curriculum, the Department of Sustainability, community partners, and national and international programs for integrating sustainability into their curriculum.
- Establish an appropriate working group – either an existing or new group to work on this strategy in an ongoing sustained way and to help populate the portal.
 - Determine if there are any existing or new sub-groups that would advance the work quicker, covering sub-topics such as workforce, course subject areas such as science, or separate groups for elementary, middle school, and high school curriculum work.
- Create an asset map of existing DPS teachers, classes, events, and activities that are integrating sustainability into curriculum and/or where sustainability could be integrated (Table 8).
- Take an interdisciplinary approach to sustainability so that it can be integrated into science, social studies, after school programs, and career and technical education classes as well as integrated across environmental, economic, and human dimensions (e.g., gardens and nutrition).
- Solicit and make available community partnerships and resources as part of the web portal.
- Offer support to teachers to help them include sustainability activities in their classrooms and lesson plans.
- Incorporate sustainability in curriculum training for teachers so that they are aware of information available to support integrating sustainability.
- Consider incentives, such as linking cost savings from sustainability to funding for classrooms/departments.

TABLE 8: POTENTIAL INTEGRATION POINTS FOR SUSTAINABILITY IN THE DPS CURRICULUM

Elementary	Secondary	High
Nutrition Unit	Water as a Resource	Earth Natural Resources (Water, Energy)
Investigating Animals and Their Needs, Water Interdisciplinary Unit	Climate and Weather	Climate Change
Investigating Ecosystems, Renewable/Non-renewable Energy	Ecology	River Systems
	Urban Advantage	Ecology Unit
	Investigation Project	Electricity of Everyone Unit
		Land Use Planning

>> Resources

- Denver Urban Gardens: www.dug.org
- Slow Food Denver: www.slowfooddenver.org
- U.S. Environmental Protection Agency: <http://www.epa.gov/region8/ee/teachingsustainability.html>
- Denver Green School (including founding documents)
- Project Learning Tree Energy & Society Kit: <http://www.plt.org/energy---society-kit>
- The Cloud Institute Education for Sustainability Standards and Performance Indicators: www.cloudinstitute.org/cloud-efs-standards/
- Facing the Future: www.facingthefuture.org/
- Green Education Foundation: www.greeneducationfoundation.org
- National Energy Education Development (NEED) Curriculum and Program Resources: <http://www.need.org/curriculum-guides>

>> Funding

- Project Learning Tree: www.plt.org
- U.S. Environmental Protection Agency Environmental Education Grants: www.epa.gov/enviroed/grants.html
- U.S. Department of Education: www.ed.gov/fund/grants-apply.html

Second Tier Strategies for Focus Area (refer to Section 4.5 for further explanation)

- Expand and support voluntary student green teams.
- Create volunteer programs that connect students with sustainability in the community.
- Help Special Education students develop marketable job skills.
- Develop a “train the trainer” program using partnerships with technical schools to train students in sustainability.
- Leverage and expand events such as school energy challenges and lights off campaigns.

FOCUS AREA 5: SUPPORT EMPLOYEES

DPS employees - including both teachers and staff members - need to be supported with the appropriate training, tools, and resources for implementing sustainability. This focus area's goals are to provide voluntary sustainability training and increase sustainability skills and knowledge among faculty and employees. The strategy for reaching these goals uses an enhanced version of green teams as the platform to develop and deliver the necessary training support to faculty and employees.

The short- and long-term goals for this focus area are as follows:

Short term (5 years or less):

- All interested new DPS employees receive voluntary sustainability training.
- All interested existing DPS employees receive voluntary sustainability training.

Long term (10 years):

- Establish and maintain 100 percent employee awareness of DPS sustainability commitment and participation in adopted practices.

Potential metrics, or ways to measure progress for this focus area, include the following:

- Extent of integration of sustainability into EPMP goals.
- Number of employees receiving voluntary sustainability training.
- Number of employee green teams.

The first strategy to be implemented for this focus area includes the following:

Strategy 5-1: Establish Employee-focused Voluntary Sustainability Training Using a Green Team Structure

By serving as sustainability hubs for DPS employees, employee green teams can help grow a culture and competency around sustainability where eventually it becomes like safety – something that is everyone's responsibility. These green teams can provide training, coordination, and technical support (i.e., the Department of Sustainability) so that all employees with an interest in sustainability can do their part to make things happen at the individual school level and across the District. Under this strategy, voluntary employee green teams would help identify and deliver the sustainability training and support other employees. The strategy includes a concerted campaign to grow the number of green teams and to engage more employees in sustainability by providing them voluntary training and resources to integrate sustainability into their day-to-day work.

>> Responsible Parties for This Strategy

- DPS Department of Sustainability
- DPS Student Leadership
- Existing DPS green teams

>> Implementation Steps

- Implement a campaign to increase the number of school green teams.
- Link green team activities to student councils for shared structure/format.
- Create a system of voluntary trainings for sustainability champions using employee green teams as a venue for training and peer-to-peer sharing of practices.
- Ensure that sustainability training provides cross-cutting information to support sustainability across multiple departments.
- Incorporate sustainability training resources into new employee handbook materials.
- Use employee green teams to create an established means of communication for employees, students, and the community to convey new sustainability ideas and feedback on existing ones.
- Provide top-down support for training, while troubleshooting where lack of knowledge or misinformation are currently barriers to sustainability (e.g., zero waste events).

>> Resources

- Community partners with educational/outreach materials and resources
- Northwest Earth Institute Discussion Courses: www.nwei.org

>> Funding

- Funding support for employee sustainability training and education may be available from a number of foundations and labor-related agencies as well as in the form of in-kind technical assistance from the higher education sector.

Second Tier Strategies for Focus Area (refer to Section 4.5 for further explanation)

- Incorporate sustainability in job descriptions to inform and acknowledge expectations.

4.6 Cross-cutting Theme: Partnerships

The diverse nature of the strategies in this SMP provides an opportunity for broad collaboration across the District and with community partners. Partnerships are a particularly important component of SMP implementation to help share and leverage resources and expertise. The District is fortunate to already have several community partners with an interest in sustainability in general, as well as in specific strategies in the SMP. Valued partners can include colleges, universities, and other higher education institutions, non-profit and community organizations, the business community, the building industry and professional organizations, communities of faith, and others. Such partnerships can be leveraged to share resources and expertise and they can also ensure that sustainability becomes part of the fabric of the District and community and not an effort dependent on a small handful of champions.

The Department of Sustainability has facilitated many important partnerships that will increase its capacity to implement sustainability initiatives that will have far-reaching savings and positive environmental impacts. Such partnerships in the past year have included the following:

- Denver Recycles
- Denver Water
- City and County of Denver's Greenprint Office
- Colorado Governor's Energy Office
- Xcel Energy
- Oak Leaf Energy Partners
- Main Street Power
- Denver School Garden Coalition
- City and County of Denver's Office of Environmental Health

The combination of all of these groups, agencies, and resources has greatly increased the District's Department of Sustainability ability to produce major efficiency results and savings for the District and, ultimately, the taxpayers. These benefits will continue as the strategies in the SMP are implemented.

4.7 Cross-cutting Theme: Communications

Along with partnerships, effective communication will be critical for implementing the SMP, including achieving its goals and completing its strategies. With such a large and diverse District such as DPS, effective communication will be necessary – both within the District and to its external stakeholders and community – to encourage participation and action, coordinate efforts, and report progress to both the District and the community. Ideas and implementation steps to enhance communication include the following:

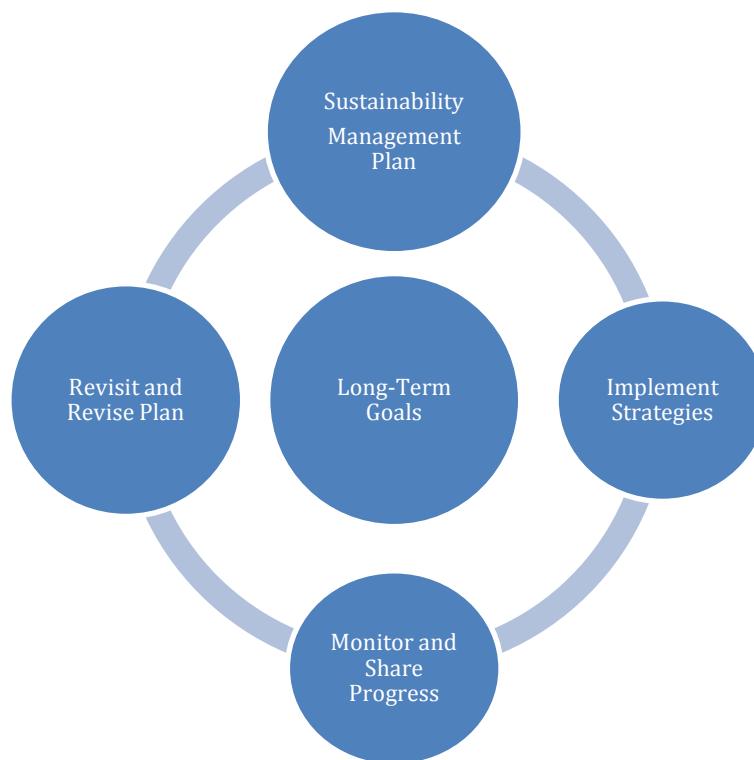
- Incorporate sustainability into new employee orientation to communicate from the outset the SMP's goals and strategies and how they relate to the employee's roles and responsibilities.
- Review job descriptions to help inform and include expectations for sustainable behavior and work habits.
- To foster cross-department collaboration, identify opportunities that impact other departments, and then communicate/coordinate those strategies to prompt people to think in similar ways.
- Conduct communications and outreach to hourly employees – educate them about sustainability with prompts/signs, access to SMP and/or training. These efforts could include information, for example, on commuting options.
- Explore opportunities for publications to streamline communications internally.
- Use the District's sustainability website to share overall progress and social media to share each school's efforts.
- Using recent successes, build DPS interdepartmental relationships to improve communications, partnership, and leadership.
- Broaden communications to parents and the business community to encourage support from the private and non-profit sectors.

5.0 IMPLEMENTATION PLATFORM

In total, the above sections of the SMP reference several different high-level strategies, each with its own set of implementation steps, costs and benefits, resources and partners, and performance metrics. For the strategies to work together as a cohesive system, these distributed efforts need to be coordinated and integrated in order to accomplish the following:

- Ensure parts are not working at odds with each other.
- Maximize synergies between related strategies.
- Cross-pollinate lessons learned.
- Measure cumulative impacts relative to stated goals.
- Determine next meaningful paths based on progress and emerging opportunity.

Managing the SMP as a system requires an organizational structure as well as a communication structure. The remainder of this section addresses each of these centralized implementation pieces.



5.1 Organizational Considerations

The District is fortunate to have two members of its Department of Sustainability dedicated to keeping the SMP on track from year to year. This Department can be responsible for the yearly measuring of progress to goals and coordination of the integration bullet points above. Ideally, the DPS SMP Executive Committee convened to support the initial development of this SMP could continue in some

form to meet to support implementation and to guide the continued evolution of the SMP. As well, among the DPS staff that participated in the various interviews, there are likely champions for different strategies or even specific action steps based on professional expertise and motivation. Finally, the community is rich with sustainability expertise and resources that should be tapped in implementing the various strategies of this SMP. The SMP Executive Committee, with its District and outside stakeholder membership, could be the forum for involving community resources in a way that supports ongoing development of the implementation platform for the SMP.

5.2 Monitoring and Reporting

Monitoring is essential for evaluating the cumulative effect of the SMP, especially as implementation across the different strategies continues to grow and mature in years to come through this continuous improvement process. With the baseline GHG inventory established in the SMP, a protocol and information management system has been provided to ensure ongoing measurement of the District's carbon footprint on an annual basis. The carbon footprint is aggregated from a number of supporting key metrics, such as energy consumption, solid waste generation, recycling rates, and transportation metrics that support 5-year and 10-year goals within the different focus areas of the SMP. These measurements can then provide the basis for a quantitative and technically credible annual sustainability report to the community. The report would share quantitative progress toward goals while sharing success stories and communicating intentions for the upcoming year.

5.3 Future Updates to the Plan

The monitoring and reporting process will not only reveal the District's progress toward its goals, it will also help identify opportunities for updates to the SMP itself. These updates may include new goals, strategies, potential partners and resources, and additional areas of focus beyond the SMP's current five focus areas. With the experience of having started to implement strategies and actions, DPS may wish to re-evaluate both the short-term and long-term goals identified in the SMP and refine them based on progress and changing perceptions. At times, for example, what may seem to have been an aggressive goal may be more achievable than initially thought, prompting staff to revise goals upward as progress is made.

Manifesting the intents articulated in Sections 5.2 and 5.3, DPS is committed to an annual SMP report. The Sustainability Department will lead this annual effort and will convene an advisory committee for vetting all information.

APPENDIX A: SMP INTERVIEW NOTES









This appendix contains the notes from six interviews conducted early in the SMP process to inform the baseline and strategy development. The interviews were linked to specific DPS departments and are presented in the following order:

- Facilities Shops
- 900 Grant Admin Staff: HR/Finance/Communications/Risk Management
- Teachers, Principals, Student Services
- Community Groups and Utility Provider
- Transportation Division
- Student Board of Education

APPENDIX B: SMP SURVEY RESULTS

Denver Public Schools Sustainability Management SurveyMonkey Plan Survey

1. Please indicate your affiliation with the District. Use the blank box to indicate your specific department or school affiliation.

		Response Percent	Response Count
District Leadership (e.g., Superintendent)		3.5%	5
School Leadership		7.0%	10
Teacher/Faculty		36.4%	52
District Staff		23.1%	33
Individual School Staff		6.3%	9
Parent		17.5%	25
Community Stakeholder		4.2%	6
Student		2.1%	3
	List Department or School		92
answered question			143
skipped question			1

2. How do you think the District is currently doing with respect to practices that are integrating sustainability and saving money and/or resources for the following topic areas?

	Poorly	Somewhat Poorly	Good	Very Good	Excellent	Don't Know	Response Count
Building Lighting Systems	14.1% (20)	23.2% (33)	27.5% (39)	7.0% (10)	4.9% (7)	23.2% (33)	142
Building Heating/Cooling and Ventilation Systems	32.9% (47)	25.9% (37)	16.8% (24)	4.2% (6)	1.4% (2)	18.9% (27)	143
Indoor Water Use	18.3% (26)	16.9% (24)	33.1% (47)	9.9% (14)	0.7% (1)	21.1% (30)	142
Outdoor Water Use	9.2% (13)	14.8% (21)	28.2% (40)	7.7% (11)	0.0% (0)	40.1% (57)	142
Renewable Energy	21.1% (30)	23.2% (33)	17.6% (25)	7.0% (10)	4.9% (7)	26.1% (37)	142
Solid Waste and Recycling	6.3% (9)	16.2% (23)	40.8% (58)	22.5% (32)	8.5% (12)	5.6% (8)	142
District Buses and Other Vehicles	15.0% (21)	19.3% (27)	17.1% (24)	5.0% (7)	0.7% (1)	42.9% (60)	140
Green Purchasing	12.7% (18)	16.9% (24)	14.8% (21)	4.2% (6)	0.0% (0)	51.4% (73)	142
Food Services	16.2% (23)	20.4% (29)	30.3% (43)	8.5% (12)	2.8% (4)	21.8% (31)	142
Computers, Printers and other IT Equipment	9.2% (13)	15.6% (22)	29.1% (41)	9.2% (13)	1.4% (2)	35.5% (50)	141
Green Cleaning	15.4% (22)	14.7% (21)	12.6% (18)	5.6% (8)	1.4% (2)	50.3% (72)	143
Landscaping	8.5% (12)	21.3% (30)	29.8% (42)	9.2% (13)	2.8% (4)	28.4% (40)	141
Indoor Air Quality	23.9% (34)	23.9% (34)	21.1% (30)	4.9% (7)	0.7% (1)	25.4% (36)	142
Sustainability in the Curriculum	18.4% (26)	20.6% (29)	19.9% (28)	9.9% (14)	3.5% (5)	27.7% (39)	141
Education/Training of Staff on Sustainability Practices	30.0% (42)	30.0% (42)	12.9% (18)	6.4% (9)	0.7% (1)	20.0% (28)	140

I Don't Know or Other Response (please specify)

41

answered question

143

skipped question

1

3. How effective do you think the following SMP strategies and actions would be to save the District money and resources and improve its sustainability practices?

	Not effective	Marginally effective	Somewhat effective	Very effective	We're already doing enough of this	Response Count
Provide District staff more education and training about finding best money and resource-saving practices in the District's daily operations.	5.0% (7)	16.5% (23)	37.4% (52)	40.3% (56)	0.7% (1)	139
Program building/school lights and other equipment to automatically shut off when not in use.	2.8% (4)	3.5% (5)	15.6% (22)	74.5% (105)	3.5% (5)	141
Adjust building/school temperatures and heating/cooling systems to use less energy.	5.7% (8)	7.1% (10)	17.0% (24)	67.4% (95)	2.8% (4)	141
Integrate sustainability into new buildings and major renovations.	2.1% (3)	5.0% (7)	9.3% (13)	82.9% (116)	0.7% (1)	140
Use more renewable energy to operate buildings/schools	3.6% (5)	4.3% (6)	12.9% (18)	75.7% (106)	3.6% (5)	140
Change water fixtures and water-using equipment in bathrooms, kitchens and other areas to more water saving fixtures.	2.8% (4)	6.4% (9)	13.5% (19)	73.0% (103)	4.3% (6)	141
Provide more facilities and guidance for recycling.	2.1% (3)	4.3% (6)	28.4% (40)	55.3% (78)	9.9% (14)	141
Reduce waste from food services and evaluate sustainability in food services procurement.	2.8% (4)	5.6% (8)	21.1% (30)	66.9% (95)	3.5% (5)	142







Use native, drought tolerant plants and water conserving irrigation systems around District schools and buildings.	2.8% (4)	10.6% (15)	13.4% (19)	68.3% (97)	4.9% (7)	142
Use more fuel efficient buses and vehicles in the District fleet and find ways to reduce miles driven.	2.1% (3)	5.7% (8)	17.9% (25)	72.9% (102)	1.4% (2)	140
Purchase more environmentally friendly paper, school supplies, furniture and other supplies.	2.1% (3)	8.5% (12)	20.4% (29)	64.8% (92)	4.2% (6)	142
Integrate more green cleaning practices into janitorial operations.	1.4% (2)	9.9% (14)	19.7% (28)	64.8% (92)	4.2% (6)	142
Better manage power saving features on computers, printers and other school equipment.	2.1% (3)	5.7% (8)	22.9% (32)	61.4% (86)	7.9% (11)	140
Integrate sustainability into the curriculum.	3.5% (5)	9.2% (13)	22.7% (32)	61.0% (86)	3.5% (5)	141
Provide more opportunities for parents, students, district staff and teachers to work together on sustainability.	3.6% (5)	9.4% (13)	25.9% (36)	57.6% (80)	3.6% (5)	139

I don't know OR please list other potentially helpful strategies here.

24

answered question	142
skipped question	2





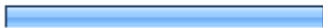



4. Do you think the District would benefit from an overarching vision/policy or definition of sustainability?

		Response Percent	Response Count
The District should develop a commonly shared vision/policy of sustainability to guide where it wants to go in its efforts		45.1%	64
The District should develop a commonly shared definition of what sustainability means to the District		10.6%	15
The District should develop both a vision/policy and definition		33.1%	47
Visions/definitions are more appropriate for individual schools rather than the District as a whole		5.6%	8
No vision/policy or definition of sustainability is needed		2.8%	4
I don't know		2.8%	4
		answered question	142
		skipped question	2







5. Please rank from least to greatest the following potential challenges in implementing the SMP once it is completed. (1 being least challenging, 7 being most challenging)

	Response Average	Response Total	Response Count
Lack of staff/teacher time	4.83	623	129
Lack of staff/teacher education and training	4.39	566	129
No clear leaders to take charge of implementation	4.51	595	132
Lack of student participation	3.21	404	126
Lack of up-front funding even if strategies will save money in the long run	5.39	712	132
No clear benefits from the SMP	2.61	334	128
Lack of rewards/incentives	3.05	387	127
I don't know	2.75	11	4
Other	4.17	25	6
answered question			133
skipped question			11

6. What sorts of tools, incentives, programs or other ideas do you think would best motivate staff, teachers, parents, students and/or other stakeholder to participate in implementing the SMP? Multiple answers are allowed.

		Response Percent	Response Count
"Challenges" between schools or departments to see who can save the most energy/resources		52.6%	72
Recognition of schools, individuals and/or departments for accomplishments		67.2%	92
Building accomplishments into annual employee reviews		24.8%	34
Developing more specific inter-school or departmental green teams to implement the SMP (e.g. teachers, students, parents)		54.0%	74
Developing incentives for staff and/or students to participate		61.3%	84
Requiring it as part of their daily tasks in their job		27.7%	38
I don't know		0.7%	1
Other		2.9%	4
		answered question	137
		skipped question	7

7. How would you best describe your level of willingness to participate in implementing the SMP?

		Response Percent	Response Count
Not willing, I'm too busy with my other day-to-day responsibilities		2.2%	3
I'm willing to occasionally participate on a limited basis		40.6%	56
I'd like to be regularly involved as part of a team in implementing the SMP		28.3%	39
I'd like to be a leader in implementing the SMP in my school or department		13.0%	18
I'd like to be a key District Champion to help get the SMP implemented		8.7%	12
I am not sure		7.2%	10
		answered question	138
		skipped question	6

APPENDIX C: BASELINE INVENTORY SUPPORTING INFORMATION

MAJOR SOURCES OF DATA

Data	Source	Period
Electricity, natural gas, water, and sewer	Utility Manager queries via Laurel Mattrey, Sustainability Planner, (720) 423-4171, laurel_mattrey@dpsk12.org	Calendar year 2010
Solar (PV) generation	Utility Manager queries via Laurel Mattrey, Sustainability Planner, (720) 423-4171, laurel_mattrey@dpsk12.org	Calendar year 2010
Fleet fuels	Joe Precourt, Manager of Transportation 720-423-4063 Joe_precourt@dpsk12.org	Fiscal year 2010
Solid waste, recycling, and composting	Becky Goyton, Recycling Program Administrator, Denver Recycles, Solid Waste Management, City of Denver, (303) 446-3404 Becky.goyton@denvergov.org	Fiscal year 2010

DPS FACILITY ENERGY AND WATER USE INTENSITIES

Facility Name	Energy Use Intensity (kBtu/SF/yr)	Water Use Intensity (gal/SF/yr)
Abraham Lincoln High	32	18
Administration Building	159	26
All City Stadium	158	362
Amesse Elementary	113	31
Ana Marie Sandoval	70	28
Archuleta	67	75
Asbury Elementary	89	35
Ashley Elementary	102	30
Balarat	21	0
Barnum Elementary	91	34
Barrett Elementary	80	48
Beach Court Elementary	71	41
Bradley Elementary	73	45
Bromwell Elementary	95	69
Brown Elementary	90	17
Bruce Randolph School	100	56
Bryant-Webster Dual Language	79	32
Carson Elementary	98	70
Castro Elementary	127	55
CEC Middle College of Denver	135	13
Centennial	114	38
Cheltenham Elementary	155	52

Facility Name	Energy Use Intensity (kBtu/SF/yr)	Water Use Intensity (gal/SF/yr)
CMS Community School	61	43
Cole Arts & Science Academy	80	32
Colfax Elementary	82	38
College View Elementary	82	14
Columbian Elementary	77	46
Columbine Elementary	69	34
Contemporary Learning Academy	67	23
Cory Elementary	97	39
Cowell Elementary	90	42
Crofton Elementary	112	36
Del Pueblo Elementary	130	42
Denison Montessori	81	31
Denver Center for Internatl Studies	51	22
Denver Green School @ Fallis	77	77
Denver School Of The Arts	88	17
Dora Moore	54	16
DOTS	271	8
Doull Elementary	103	51
Eagleton Elementary	100	54
East High	58	32
Ebert	108	30
Edison Elementary	69	28
Ellis Elementary	67	38

Facility Name	Energy Use Intensity (kBtu/SF/yr)	Water Use Intensity (gal/SF/yr)
Emerson Street	126	33
Emily Griffith Opportunity School	85	11
Evie Dennis Campus Building #1	13	2
Evie Dennis Campus Building #2	8	1
Evie Dennis Campus Building #3	8	1
Evie Dennis Campus Building #4	12	154
Evie Dennis Campus Building #5		
Fairmont Dual Language Academy	75	44
Fairview Elementary	53	33
Farrell B Howell	77	28
Force Elementary	85	44
Ford Elementary	116	69
Fox Street Center	64	8
Front Range Aircraft Training Center	73	0
Garden Place Academy	66	23
George Washington High	71	57
Gilpin Elementary	75	16
Godsman Elementary	86	23
Goldrick Elementary	77	38
Grant Beacon Middle School	76	107
Grant Ranch	56	40
Green Valley Ranch Elementary	83	64
Greenlee Elementary	63	29

Facility Name	Energy Use Intensity (kBtu/SF/yr)	Water Use Intensity (gal/SF/yr)
Greenwood Elementary	80	42
Gust Elementary	103	32
Hallett Fundamental Academy	81	34
Hamilton Middle	99	24
Harrington Elementary	66	10
Henry World School	106	43
Hill Middle School of Arts & Science	77	10
Hilltop DPS Training Center	106	0
Hilltop Fueling Station	2,071	0
Hilltop Parking Lot		
Hilltop PC Garage	97	0
Hilltop Service Center	138	30
Hilltop Trans Lounge - Brown	52	0
Hilltop Trans Main Office - Blue	89	0
Hilltop Trans Training - Red	48	0
Hilltop Trans Training Office -Green	104	0
Hilltop Transportation Bus Garage	2	28
Holm Elementary	126	67
John F Kennedy High	53	36
Johnson Elementary	92	59
Kaiser Elementary	76	42
Kepner Middle	72	50
Knapp Elementary	85	61

Facility Name	Energy Use Intensity (kBtu/SF/yr)	Water Use Intensity (gal/SF/yr)
Knight	104	26
Kunsmiller Creative Arts Academy	74	49
Lake Middle	65	34
Lincoln Elementary	81	20
Lowry Elementary	68	85
Manual High	66	22
Marrama Elementary	54	71
Maxwell Elementary	55	62
Mc Meen Elementary	65	31
McGlone Elementary	79	61
Mckinley-Thatcher Elementary	64	31
Merrill Middle	76	59
Mitchell Elementary	95	39
MLK Early College	51	37
Montbello High	84	40
Montclair School	76	59
Morey Middle	85	12
Munroe Elementary	77	49
Newlon Elementary	88	35
North East ECE Center		
North High	57	46
Northeast Terminal	173	43
Oakland Elementary	42	69

Facility Name	Energy Use Intensity (kBtu/SF/yr)	Water Use Intensity (gal/SF/yr)
Old NE Bus Terminal	0	0
P.R.E.P. Center	58	14
Palmer Elementary	77	48
Park Hill Elementary	84	28
Philips Preparatory	101	42
Pioneer Charter	100	41
Place Bridge Academy	63	58
Rachel B Noel	93	50
Remington	67	28
Rishel Middle	47	41
Rosedale Elementary	2	11
Sabin World School	59	56
Samuels Elementary	120	69
Schmitt Elementary	113	25
Skinner Middle	96	28
Slavens Elementary	86	40
Smedley Elementary	117	16
Smiley Middle	64	46
Smith Renaissance of the Arts	81	24
South High	53	49
Southmoor Elementary	82	72
Steck Elementary	81	79
Stedman Elementary	103	56

Facility Name	Energy Use Intensity (kBtu/SF/yr)	Water Use Intensity (gal/SF/yr)
Steele Elementary	89	19
Swansea Elementary	188	45
Teller Elementary	81	24
Thomas Jefferson High	81	37
Traylor Academy	62	32
Trevista at Horace Mann	66	24
University Park Elementary	56	34
Valdez Elementary	142	24
Valverde Elementary	80	61
Waller	57	49
West High	69	19
Westerly Creek	58	63
Whiteman Elementary	83	31
Whittier	124	62
William Roberts	53	75
Wyman Elementary	49	38
Yuma Street	71	3