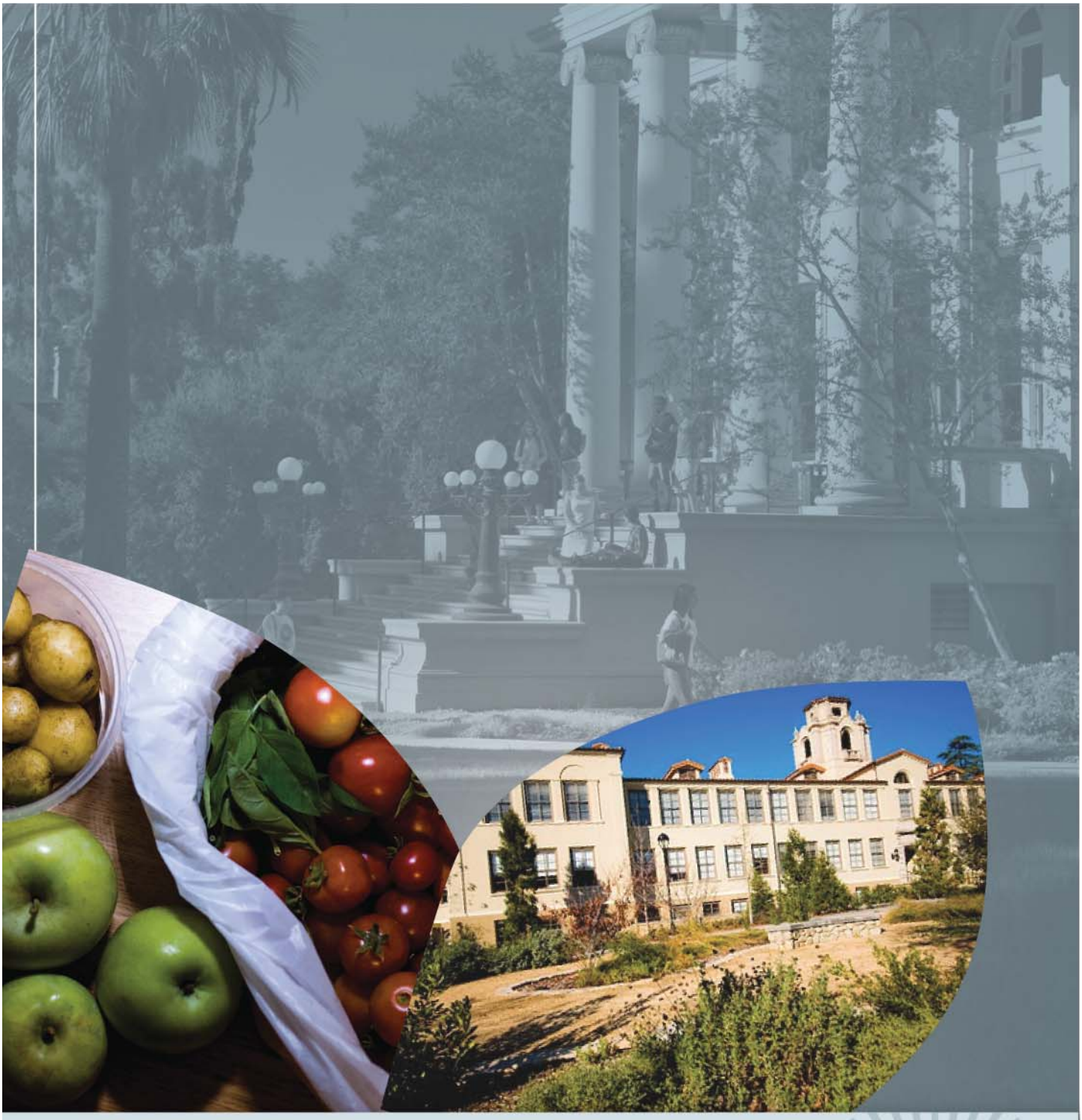

Pomona College

Sustainability Action Plan

May 2010, updated April 2011

President's Advisory Committee on Sustainability
Pomona College Sustainability Integration Office

POMONA COLLEGE
President's Advisory Committee on Sustainability
Sustainability Integration Office

May 2010, updated April 2011
Cover "leaf" photos: Courtesy Adam Long '13

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Executive Summary

For more than a decade, the Pomona College community has come together to proclaim a commitment to sustainability and to engage in a wide variety of programs, projects, and policies to reduce the College's impacts on the environment and to incorporate environmental issues into the experience of every student, employee, and friend of the College. The broad array of sustainability-related efforts that have come out of the college over the previous years have produced a variety of tangible and intangible benefits, including recognition of the College as a leader among institutions of higher education.

In this plan, Pomona outlines for the first time a broad framework and strategy for moving forward with sustainability efforts. The plan describes the College's *Vision for Sustainability* - eight broad goals addressing key aspects of sustainability, and follows those with quantitative and qualitative 10-year objectives and interim benchmarks for a variety of topics, including energy, water, waste, education, and purchasing. These goals, objectives, and benchmarks are ambitious and will take a concerted effort from a broad array of campus stakeholders. This plan provides a road map for action by detailing a variety of recommended actions - from new policies and procedures to the development of new programs and the further study of innovative new opportunities - and by providing information to aid with implementation of these new activities. This document also updates Pomona's response to the American College and University Presidents' Climate Commitment by setting target goals for greenhouse gas emissions reductions and detailing the steps we will take to get there.

After describing the background and history of sustainability at Pomona, the plan outlines the Vision for Sustainability and then provides a series of topic-specific action plans that provide the main body of the document. Subsequent chapters discuss specific pertinent issues - environmental justice and climate action - and guidance for implementation of the plan. Updated *Green Building Standards* and new *Sustainable Operations and Maintenance Standards* are also attached to the plan, and outline procedural and design standards for new construction, major renovation, and minor renovation/retrofit projects, and for everyday operations and maintenance of campus facilities.

A Vision for Sustainability

Goal 1: Reduced greenhouse gases

Goal 2: Reduced resource impact

Goal 3: Reduced air, water, and soil pollution and toxins

Goal 4: Increased environmental health for all members of the College community

Goal 5: Environmental awareness and education

Goal 6: Sustainable sustainability

Goal 7: Public commitment to sustainability

Executive Summary

Key Objectives for 2020

The following are some of the key objectives included in the plan:

Administration

>> Existence of consortium sustainability committee for collaboration and information-sharing

Education

>> General increase in variety, quantity, and enrollment of sustainability-focused and sustainability-related courses
>> 30% of staff/faculty and 50% of students have taken sustainability pledge

Energy

>> 15% reduction in energy use (not including emergency generators)
>> 4% of energy use from on-campus renewable sources
>> All buildings individually metered for gas and electricity (by May 2011)
>> 50% of campus built square-feet operating with EnergyStar score of at least 69

Facilities

>> Compliance with Green Building Standards and Sustainable Operations and Maintenance Standards
>> 15% of buildings certified under LEED-EBOM (Existing Buildings Operation and Maintenance)

Food & Agriculture

>> Dining Services: 30% of total food purchases qualify as sustainable by 2020

Pollution

>> 25% reduction of refrigerant use
>> No use of synthetic fertilizer
>> Full compliance with Sustainable Operations and Maintenance Standards

Purchasing

>> 90% white copy paper purchased 100% PCW, PCF, FSC-certified
>> 90% colored paper, cardstock, and alternative sizes (excluding posters) purchased at least 30% PCW

Transportation

>> Reduction of campus fleet gas use by 15%
>> Reduction of single occupancy vehicle commuting by 10%

Waste

>> Diversion of 75% waste from landfills
>> Reduction of total waste by 10%

Water

>> 5% annual reduction in 3-year average water use, adjusted for cooling degree days
>> Complete metering of all buildings for water use within 5 years

Emissions

>> 26% reduction in greenhouse gas emissions from 2008-09 levels

Implementation

All actions recommended in the plan are organized by time period - Years 1-2 and Years 3-5 - and whether they are higher or lower priority. Each action is accompanied by responsible stakeholders and an estimate order of magnitude for new funding required. The plan also outlines opportunities for funding new initiatives.

The President's Advisory Committee on Sustainability and the Sustainability Integration Office are responsible for providing annual updates on progress, including updated fiscal year data for a variety of "indicator" data points (e.g. campus energy use, number of sustaianbility-focused courses, greenhouse gas emissions). The entire plan will be updated after five years to reflect progress.

Introduction

In October 2006, Pomona College President David Oxtoby presented the newly created President's Advisory Committee on Sustainability (PACS) with a charge for future development:

- *To set priorities for sustainability on campus, including carbon emissions, recycling, energy conservation and regeneration, composting, etc.;*
- *To measure and establish reliable data, "numbers we can monitor and track," for current levels of sustainability;*
- *To set a series of "numerical benchmarks" we can achieve in the near and more distant future. These areas include carbon emissions; electricity and water conservation; … recycling; waste reduction; healthful food consumption; composting, etc.*[1]

This plan is a direct response to that charge, and is the College's first attempt to create a thorough strategy for sustainability – one that includes high-level goals, specific quantitative and qualitative objectives, and recommended opportunities for action. The scope is broad, including issues such as resource use), waste management, pollution, food, environmental justice, climate change, and education.

This document represents the culmination of a long history of environmental action at Pomona College, from the grassroots organizing and activism of students to the commitment of the administration to making the institution one that both teaches and exemplifies sustainable technology and behavior. Campus groups have initiated a variety of successful projects and programs and the College's efforts have begun to win attention on and off campus. However, the campus community knows there is much more to be accomplished. The past efforts of students, staff, faculty, administrators, trustees, and friends of the College have together formed a collective vision with which we will move forward to a more sustainable Pomona College. This plan reflects that vision and the College's ongoing commitment to create a better world and creates a foundation upon which the College can begin to respond to the vast array of environmental catastrophes now facing the planet.

Purpose of Sustainability Action Plan

The purposes of this report are the following:

- Describe the context of sustainability at the College, including the College's philosophy in approaching issues of sustainability
- Provide a vision for sustainability at Pomona College
- Provide an update on progress made since the 2006-2007 PACS report
- Explore a wide variety of sustainability issues and how Pomona is implicated
- Establish quantitative and qualitative objectives for demonstrating progress
- Identify opportunities the College can take in meeting objectives
- Establish new procedures, policies, and processes for specific activities (e.g. purchasing, construction)
- Identify possible financial mechanisms for funding actions
- Propose an implementation strategy including responsible stakeholders, priorities, and timelines
- Establish a means for tracking progress

1 PACS Minutes, October 21, 2006.

Introduction

This Plan operates on a 10-year timeline, establishing goals for the year 2020 (2019-20 academic year) with some intermediate benchmarks. Most opportunities for action are placed within a five-year timeline, with the assumption that this plan will be revisited in 2014-15 to assess progress and determine necessary action for meeting 2020 objectives.

This document by no means covers the entirety of programs, projects, and policies the College may implement in trying to reach sustainability goals, but instead lays out an achievable strategy based on already-identified and vetted opportunities. In future reviews of this document, the President's Advisory Committee on Sustainability and the Sustainability Integration Office will have the opportunity to identify which opportunities listed here were successful and which may not have been feasible or effective upon pursuing further.

Structure

The body of this document consists of five parts:

I. Background and History

This section outlines the historical context, and the community input process from which the Plan was developed.

II. A Vision for Sustainability at Pomona College

This section describes the vision for sustainability at Pomona College on which the Plan is based.

III. Action Plans

These topic-specific chapters each outline pertinent issues, specific qualitative and quantitative objectives, and opportunities for action. Each chapter identifies "main issues" and "objectives for 2020," along with similar goals for other institutions and the City of Claremont, where applicable. Some topics also have relevant policies or statements for approval, which can be used to guide the development and assessment of new programs and projects. The "main issues" are then used to organize a set of "potential recommended strategies," which list opportunities the College may take in moving forward to meet the objectives. Each potential strategy contains a short description, identification of responsible stakeholders, and an estimate of new funding required to implement this action. It is important to note that many actions will have savings associated with them as well; this preliminary estimate includes up-front costs only. It is difficult to compare projects with one-time versus ongoing costs, but this measure provides a simple preliminary, "order of magnitude" means of understanding impacts.

IV. Key Issues

These sections explore two issues implicated in the preceding chapters: climate change and environmental justice.

V. Implementation Plan

These chapters provide detail on implementation of this plan, including financing, prioritization and timeline, and reporting. These chapters also include summary cross-referencing of responsible stakeholders and objectives and goals.

Background and History

The following history and methodology provide valuable background to the process and efforts that have preceded this plan.

History

This document is the culmination of many years of interest, involvement, and action on the part of the College community. Technological advances, shifting social and economic priorities, and understanding of sustainability issues have and will continue to shift over time, making this Plan a living document.

Pre-2006: Growing Interest

Pomona College has a long history of community involvement and interest with environmental issues, including the creation of a student government position focusing partially on environmental issues sometime in the 1970s and up to the creation of the College's formal Statement of Environmental Policy, created and ratified by the Board of Trustees in 2003. Whether protesting the development of the Bernard Field Station, petitioning for more solar photovoltaic panels on campus, starting the Pomona College Organic Farm, or participating in the creation of the College's first Green Building Standards and the design process for the College's first LEED-certified building, students, staff, and faculty at the College have long been active in promoting sustainability on campus. However, before 2006 the institution did not have a formal approach to sustainability, and there was no activity to catalog current efforts and develop strategies for moving forward.

2006-2007: Formal Recognition

In President David Oxtoby's 2006 Convocation speech, he formally recognized the need for the College to focus on sustainability issues, stating:

As natural resources are used up we must urgently recognize that the supply of materials we have taken for granted (ranging from pure water to oil to minerals) is not unlimited. Moreover, the impact of waste materials on our surroundings is growing.... I look forward to exploring with all of you in the year ahead how Pomona College can become a leader in educating students for a sustainable world.

President Oxtoby followed this speech with the creation of the President's Advisory Committee on Sustainability (PACS), charging the committee to develop recommendations for moving forward. At the same time, growing student interest formalized as well, with the creation of a Pomona chapter of the national Campus Climate Challenge initiative[2] and the first-ever inventory of Pomona's greenhouse gas emissions.[3] Student interest led President Oxtoby in April 2007 to sign the American College and University President's Climate Commitment,[4] a growing collaboration of institutions of higher education across the country to commit to emissions reporting and reductions.

2 See http://climatechallenge.org.

3 Pomona College Campus Climate Challenge. (2007). *A First Step Toward a Climate Neutral Pomona College: Greenhouse Gas Emissions Inventory and Recommendations for Mitigating Emissions.* Available at http://pomona.edu/administration/sustainability/resources/publicationslist.aspx#.

4 See http://www.presidentsclimatecommitment.org.

Background and History

2008-present: Institutionalization

In 2008 the College hired the first full-time staff member dedicated to focusing on issues of sustainability on campus – from waste management and energy conservation to integration of sustainability into the curriculum and development of community partnerships with the City of Claremont and other institutions in the Consortium. One of the new Sustainability Coordinator's first tasks was to assist with the updating of the College's Statement of Environmental Policy (see Appendix A), which was approved in May 2009 and formally established the Pomona College Sustainability Integration Office. This office and PACS have now been leading the effort to generate this Plan.

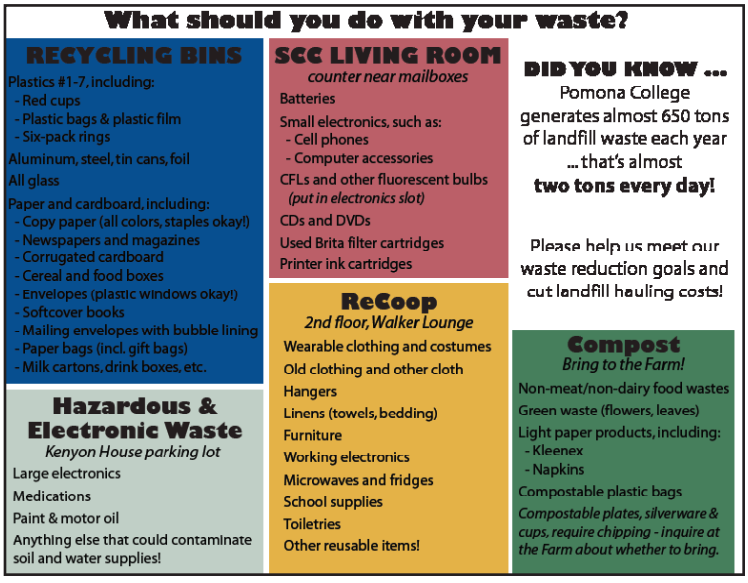
Progress on previous PACS recommendations

In its first year, PACS recommended four initial actions that the College should take in moving forward toward the committee's charge. Those four actions and related progress are described below:

>> **Professional sustainability audit and action plan** In Summer 2008 the College hired CTG Energetics[5] to work hand-in-hand with a group of trained students to conduct a thorough report of the campus' sustainability impacts and some recommendations for moving forward. This report was completed in October 2008 and was unique in using both a third-party consultant and a team of students to complete the data collection and analysis.

>> **New staffing to oversee sustainability efforts** In Summer 2008 the College hired its first full-time Sustainability Coordinator, responsible for creating, implementing, coordinating, and assessing campus sustainability efforts.

>> **Education and social marketing program to promote sustainable behavior** A variety of education and marketing programs have been implemented and expanded since the generation of the first PACS report, including a new sustainability website and electronic newsletter, a number of certification, competition, and incentive programs for students, staff, and faculty, and a large variety of educational publications and other materials (e.g. light switch stickers, signs for trash areas) to promote sustainable behavior on campus.



Signage placed in waste areas to increase awareness of waste diversion methods.

>> **Comprehensive recycling plan** This Plan addresses many of the issues noted by PACS in making this recommendation, including the dissemination of information about recycling opportunities and the adequate recycling of electronic and other wastes. The Sustainability Integration Office is currently engaged in a variety of activities to encourage appropriate recycling and waste management.

5 See http://www.ctg-net.com/energetics/Default.aspx.

Methodology

This Sustainability Action Plan was produced through a process that elicited input from a wide variety of campus stakeholders, including students, staff, faculty, trustees, and alumni. This process gave the campus community the opportunity to voice their ideas, concerns, and priorities. The following events, groups, and programs played a key role in the development of this document:

>> **President's Advisory Committee on Sustainability (PACS)** This group of faculty, staff, and students provide oversight on the College's sustainability-related efforts, including this Plan. This group generated most of the content for this Plan and has discussed every element, including the Guiding Principles and Goals, the Vision for Sustainability at Pomona College, and all of the objectives, actions, and implementation mechanisms. This group will continue to have primary oversight on implementation of this Plan and assessment of programs.

>> **Sustainability Integration Office (SIO)** This office – the SIO Director and student staff – has been responsible for identifying, researching, and presenting Plan content and opportunities for action to PACS and for the final compilation of this document. The SIO has primary implementation responsibility for most actions in this plan.

>> **Campus Sustainability Audit** This 900-page report was completed in October 2008 and included the College's first comprehensive carbon emissions audit, an assessment of a variety of other environmental impacts generated by the College, and some initial findings and recommendations about potential actions.

>> **Sustainability Action Fellowship** This group of 29 students was formed to work throughout the 2008-2009 school year to research and assess potential actions for this Plan. Teams of three to six students focused on issues including energy, water, waste, purchasing, education and communication, and environmental justice. Their names are included in relevant chapters to indicate their participation.

Sustainability Integration Office Director Bowen Close meets with the Communication/Education team of the Sustainability Action Fellowship to discuss potential stratgies.

>> **Facilities and Campus Services** This group of offices (including Maintenance, Housekeeping, Grounds, Planning and Project Management, and the Sustainability Integration Office) provided valuable input on the feasibility of a variety of actions and will continue to be the primary focus of implementation for most of the actions described in this plan. Staff members from these offices have participated in PACS and the Trustee Sustainability Task Force (see below) throughout this process, and key staff members have been interviewed by the Sustainability Action Fellows.

Background and History

>> **Trustee Sustainability Task Force** This Board of Trustees designated a Sustainability Task Force for the 2008-09 academic year to discuss sustainability-related issues and to update the College's Statement of Environmental Policy (see Appendix C – Pomona College Statement of Environmental Policy). This Task Force included trustees, students, staff, and faculty and provided a variety of general input for planning principles and College priorities. This group discussed the College's values and principles in moving forward with sustainability planning, and explored a variety of potential actions the College could take.

>> **Project Planning Committee** This group, including the President, the Treasurer, the Chair of the Board Facilities and Environment Committee, the Director of Facilities and Campus Services, the College's Master Planner and Landscape Architect, and the Director of the Sustainability Integration Office took the lead role in developing the College's new Campus Planning Guidelines and Landscape and Open Space Guidelines, which are strongly related to the Green Building Standards included in this Plan. This group provided high-level guidance on broad sustainability policies as they apply to construction and renovation activities.

>> **Trustee Design Charrettes** These events invited the Board of Trustees and high-level members of the Administration to join the Project Planning Committee for discussions about the new Campus Planning Guidelines and Landscape and Open Space Guidelines. These discussions also provided high-level guidance on broad sustainability policies as they apply to construction and renovation activities.

>> **Trustee-Faculty Retreat** Every two years, College faculty and trustees participate in a three-day retreat to discuss priority issues. In 2009, this retreat was focused on sustainability and featured high-profile speakers, film showings, and small-group sessions to discuss specific campus-related sustainability issues (e.g. student activism, curriculum, campus facilities, transportation). This Plan includes a variety of ideas and other input gained through this retreat.

>> **Public workshops and presentations** The Director of the Sustainability Integration Office and the Sustainability Action Fellows have conducted a series of public workshops, presentations, and outreach opportunities to provide the campus community with information and to solicit input. Events included:

- Two presentations of findings from the Campus Sustainability Audit
- Input solicitation during meals at dining halls
- Lunchtime presentation of carbon emissions inventory and long-range emissions projection
- A series of "study breaks" with faculty and students to discuss possible actions the College could take
- Alumni Association talk in San Francisco
- A "green building workshop" for students to gather ideas about future construction activities
- Presentations in EA and other sustainability-related classes about College programs and potential for future actions

A detailed list of participants and acknowledgements can be found in Appendix D - Participation and Acknowledgements.

A Vision for Sustainability

The campus community – including students, staff, faculty, trustees, and alumni – has formed a set of guiding principles and goals that together form the vision for sustainability at Pomona College.

Guiding Principles

Reasons for the Pomona College Sustainability Action Plan:

>> Pomona College is **committed to the principles of sustainability** and to an active role in addressing and solving the environmental, social, and economic challenges/crises facing the planet.
>> Pomona College **aspires to be a leader of sustainable practices** among educational institutions, and to prepare its students and alumni to carry those practices into the world.
>> Pomona College recognizes the effects our actions may have on other communities, particularly low-income and minority communities, and believes it a **moral obligation to reduce our environmental footprint.**
>> Pomona College is dedicated to **ensuring quality of life and environment** for both current and future generations of students.
>> Pomona College endeavors to **increase the body of knowledge and applications for sustainable practices** through cutting-edge research, publications, and other academic contributions.
>> Sustainability programs and projects are often **prudent financial investments** of College funds.

Pomona College has the following distinct advantages for influencing sustainability issues:

>> Pomona College is **a distinguished and stable private institution** in one of the nation's leading and most diverse metropolitan regions.
>> Pomona College is **in a position to engage the larger community,** to spread knowledge and experiences broadly, and to affect sustainable practices on a large scale.
>> Pomona College **has means to explore new technologies and advanced techniques for sustainability,** as well as to pursue sustainable investment strategies. We also **have the means to take a long-term perspective** in analyzing opportunities, making decisions, and allocating resources.
>> As a residential institution, Pomona College **has the opportunity to significantly affect students' personal, everyday behavior** as well as their academic and intellectual habits and interests.

The Sustainability Action Plan is based on a variety of assumptions, including:

>> **As the College is a leader in education, it should be a leader in sustainability**.
>> **Educational experiences and other awareness-building opportunities should be a cornerstone** of the College's sustainability strategies and means for implementation.
>> The **campus' aesthetic environment is important** and is to be preserved and enhanced.
>> The **climate, ecosystems, and biodiversity of Southern California are unique**, and must be respected, preserved, and restored.
>> To be successfully implemented, **sustainable practices require the broad support of the campus community** including students, faculty, staff, alumni, trustees, and friends of the College.
>> Reducing the College's environmental effects **through behavior modification and resource management should be given priority** over less visible and controllable means, such as carbon offsets or credits.

A Vision for Sustainability

Goals

Goal 1: Reduced greenhouse gases

Greenhouse gas emissions are the driving cause of global climate change and are implicated in a wide variety of College activities, including energy use and energy sources, solid waste management, water use, transportation, and the use of refrigerants and fertilizers.

Goal 2: Reduced resource impact

Reduced resource impact means consuming materials and generating wastes that can be fully integrated into natural systems as much as possible; in other words consuming as few non-renewable resources as possible and generating as little non-compostable or -recyclable waste as possible. Where the College is concerned, this goal includes issues such as energy use, water use, waste generation, and purchasing.

Goal 3: Reduced air, water, and soil pollution and toxins

The goal is to reduce the amount of contaminants and toxins released into the environment, which occurs from a wide variety of activities including transportation, chemical use (cleaning products, fertilizers, refrigerants, etc.), and waste disposal methods.

Goal 4: Increased environmental health for all members of the College community

A variety of College activities can have potentially harmful impacts on human health, including the use of chemicals found in cleaning products, fertilizers, and refrigerants, off-gassing of volatile organic compounds from facility furnishings and finishes, and the food served in campus dining facilities.

Goal 5: Environmental awareness and education

This goal intends to increase awareness of environmental issues and the importance of these issues among all members of the campus community, along with to provide information about how individuals and groups can reduce their impacts. More specifically, this goal includes that every student who graduates from Pomona has a greater environmental awareness than when they came. Whether curricular or co-curricular, educational efforts are central to any sustainability program or project.

Goal 6: Sustainable sustainability

Sustainability itself must be sustainable, meaning physical and organizational infrastructure must be in place to provide the support, resources, and motivation for sustainability efforts to continue. Whether financial (staffing and funding), procedural (policies and processes), or social (inclusion in public reports, speeches, and conversations about College priorities), resources and support are necessary for these efforts to continue.

Goal 7: Public commitment to sustainability

As stated above in Guiding Principles and Goals, this plan is partially based on the assumption that Pomona strives to be a leader in sustainability. In most cases, leadership takes the form of public declarations of sustainability commitments in internal and external communication outlets. This Plan will provide a valuable source of information for this type of communication.

Action Plan - Administration

To accomplish the wide variety of actions and meet the ambitious goals described in this document, the College must have an effective and well-supported organizational infrastructure. The Sustainability Integration Office and its director (Assistant Director of Facilities and Campus Services – Sustainability) are the first front in moving forward with a variety of these programs, though additional support is needed from a variety of different offices and groups, both on- and off-campus. The following administrative efforts are meant to fortify the College's current efforts and provide a stronger, more cohesive effort in moving forward.

Main Issues

>> Improved organizational infrastructure and support for sustainability
>> Engagement with surrounding community and political environment regarding sustainability matters
>> Environmental impacts of financial investments

Objectives for 2020

>> Existence of consortium sustainability committee for collaboration and information-sharing
>> Sufficient staffing and resources for sustainability programs
>> Existence of partnerships with local off-campus sustainability efforts and programs
>> Engagement with relevant sustainability-related policy issues (including local, regional, national, etc.)
>> Completion of assessment for sustainability-related improvements in College investment practices

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
$$ = $5,000-50,000
$$$ = Over $50,000

Issue 1: Improved organizational infrastructure and support for sustainability

>> **Create energy manager position (cross-listed with Energy)**
Energy efficiency and monitoring of building performance is not included in any current College job descriptions. The creation of a position specifically focused on monitoring energy use, identifying opportunities for efficiency and conservation, and working with building occupants to find suitable procedures and policies is necessary in order to make substantial gains in energy use reductions.
Responsibilities: Facilities and Campus Services, President's Office | New funding required: $$$

Action Plan - Administration

>> **Continue working with Southern California-area college and university sustainability staff for collaboration, coordination, and networking**
The Sustainability Integration Office currently participates in quarterly meetings of sustainability staff from University of California – Los Angeles, University of Southern California, California Institute of Technology, Pepperdine University, Loyola Marymount University, and other schools with relevant sustainability programs.
Responsibilities: SIO | New funding required: None

>> **Promote the sharing of sustainability programs, strategies, and projects amongst institutions**
Participating in conferences, publishing articles, and responding to list-serv requests for information encourages information-sharing and publicly displays the College's commitments to sustainability.
Responsibilities: SIO | New funding required: None

>> **Annually recruit students to participate in and present at national campus sustainability conferences and events**
Students have a wide variety of opportunities to network, to learn about sustainability programs and projects, and to gain valuable professional experience by participating in conferences.
Responsibilities: SIO | New funding required: None

>> **Pursue creation of consortium sustainability committee to share information and assess opportunities for collaborative projects**
While the other consortium institutions do not have a sustainability office, there is a variety of opportunities for collaboration and cooperation on various issues.
Responsibilities: SIO | New funding required: None

>> **Expand staffing for the Sustainability Integration Office**
The creation of more staff positions – whether part-time or full-time – will assist with the expansion of programs and projects and with the full implementation of this plan.
Responsibilities: Facilities and Campus Services, President's Office | New funding required: $$$

Timeline and Priorities

Years 1-2

Higher priority

>> Create energy manager position (cross-listed with Energy)
>> Continue working with Southern California-area college and university sustainability staff for collaboration, coordination, and networking

Lower priority

>> Promote the sharing of sustainability programs, strategies, and projects amongst institutions
>> Annually recruit students to participate in and present at national campus sustainability conferences and events

Years 3-5

Higher priority

>> Pursue creation of consortium sustainability committee to share information and assess opportunities for collaborative projects
>> Expand staffing for the Sustainability Integration Office

Action Plan - Education

As Pomona strives to become a more sustainable institution, the effort should include all aspects of the institution's activities, from daily operations to the educational mission. Beyond the obligation to reduce its own negative environmental impact, Pomona has an important role to play in contributing to society's long-term well-being. Leading by example, the College must both strive for environmental sustainability and further create positive value by educating students, staff, faculty, and other members of the college community to develop sustainable societal practices and to be environmental stewards. In order to stand behind its commitment to educating students who will "bear their added riches in trust for mankind," Pomona must stress the importance of leaving the world in at least as good of a condition as that in which it was found.

Sustainability Action Fellows (2008-09): *Tiffany Chan '11, Thomas Fenster '11, Derek Galey '09, Chelsea Hodge '09*

Main Issues

>> Increased availability, variety, and enrollment in sustainability-focused and sustainability-related courses
>> Increased use of campus as a living laboratory for sustainability
>> Increased campus educational programs
>> Increased student-focused educational programs
>> Increased staff/faculty-focused educational programs

How We're Doing

Pomona offers an increasingly broad array of sustainability education opportunities for the campus community both in and out of the classroom, from the distribution of stickers and pamphlets reminding people what to put in campus recycling bins to the quickly-growing 5C Environmental Analysis program. Pomona is home to the flagship Environmental Analysis Program, an academic program offering a major and minor with almost one dozen varied concentrations (including environmental sciences, policy, humanities, and more) that has recently expanded to be one of the Claremont Colleges intercollegiate programs thanks to a large Mellon Foundation grant. The hiring of a full-time Sustainability Coordinator in 2008 and the creation of the Sustainability Integration Office in 2009 have bred a variety of co-curricular programs and opportunities, including the 2008-09 Sustainability Action Fellowship and the continuation of the annual Power Down Dorm Energy Challenge started by students in 2006. Dozens of events, competitions, and programs and the creation of a large library of educational materials diffuse sustainability efforts throughout the campus and the everyday experiences of students.

Objectives for 2020

>> General increase in variety, quantity, and enrollment of sustainability-focused and sustainability-related courses
>> General increase in use of campus sustainability issues and campus facilities as topics of academic inquiry
>> 30% of offices/departments certified under Green Office Program

Action Plan - Education

>> 30% of staff/faculty and 50% of students have taken sustainability pledge
>> 25% of staff/faculty and 30% of students signed up for SIO eNewsletter
>> General increase in variety, quantity, and attendance/participation in sustainability-related educational programs and events

Related Policies/Statements for Adoption

The following statement(s) represent language that will be used on behalf of the College, the Sustainability Integration Office, and other campus groups to develop, structure, and assess sustainability-related efforts on campus.

Sustainability in the Curriculum

The goal of sustainability education is to provide all students with the analytical, empirical, and theoretical, and creative tools to evaluate past, current, and future environmental issues. Incorporating sustainability into the liberal arts curriculum also establishes the relationships between diverse environmental, economic, and social factors as a lens through which world issues can be viewed and analyzed.

Sustainability-focused courses concentrate on the relationships between diverse environmental, economic, and social dimensions of issues, while sustainability-related courses incorporate discussion of these relationships into courses that otherwise focus on a single topic.

In general, sustainability-focused or sustainability-related courses provide training in one of the following:

- Effective communication of sustainability issues, analysis, and recommendations
- Generation of recommendations and/or solutions to sustainability problems
- Basic-level technical skills to analyze sustainability issues
- The complex global systems in which sustainability issues exist (e.g. laws and policies)
- Philosophical or theoretical frameworks in which to view environmental and sustainability issues
- Historical patterns that have produced modern sustainability issues
- The complex social networks and dynamics of power in which sustainability issues have existed
- Analysis of literature, non-fiction, architecture, material arts (e.g. painting), and other art forms that have some bearing on sustainability issues past and present
- Awareness of connections between singular academic disciplines (e.g. Economics, English) and sustainability
- Understanding of the scientific method and the laws of science and how they apply to natural systems and environmental issues

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
$$ = $5,000-50,000
$$$ = Over $50,000

Issue 1: Increased availability, variety, and enrollment in sustainability-focused and sustainability-related courses

>> **Approve a definition of sustainability in the curriculum (see left) as a means of tracking relevant courses**
Responsibilities: SIO, Environmental Analysis | New funding required: None

>> **Maintain an updated list of sustainability-focused and sustainability-related courses at Pomona and the Claremont Colleges**
Classes offered that meet the above definitions should be catalogued with a public list.
Responsibilities: SIO, Environmental Analysis | New funding required: None

>> **Maintain list of current sustainability-related faculty and student research activities**
Publicly listing current research activities not only allows the campus community to learn about what their colleagues, students, and professors are doing, but also to display publicly the College's commitment to sustainability as a research topic.
Responsibilities: SIO, Environmental Analysis | New funding required: None

>> **Pursue opportunities for funding and other support to hold faculty development workshops for incorporating sustainability into the curriculum**
Faculty development workshops can help faculty, whether or not they're currently engaged in sustainability teaching, incorporate global, national, and regional sustainability issues into their syllabi.
Responsibilities: SIO, Environmental Analysis | New funding required: None for seeking out opportunities; $$ if workshops College-funded

Issue 2: Increased use of campus as a living laboratory for sustainability

>> **Maintain an updated list of campus sustainability topics, projects, and opportunities appropriate for classroom projects, theses, and studies**
Students have become increasingly interested in using campus facilities and issues in academic projects, and this practice should be encouraged by making available lists of opportunities and by pointing out available relevant data
Responsibilities: SIO, Environmental Analysis | New funding required: None

>> **Promote greater faculty use of campus sustainability living/learning laboratories**
Reach out to faculty with opportunities for campus sustainability issues and programs to be integrated into the classroom and about the use of campus facilities – including buildings, renewable energy installations, and other sites – in classroom work.
Responsibilities: SIO, Environmental Analysis | New funding required: None

Action Plan - Education

Issue 3: Increased campus educational programs

Note: Topic-specific educational programs are included in individual action plan chapters.

>> **Continue to engage in education campaigns**
The Sustainability Integration office and other related groups should continue to develop, implement, and assess programs, including signage and incentives for reducing impacts.
Responsibilities: SIO | New funding required: None

>> **Continue to identify opportunities for communicating sustainability with various constituencies**
The College's sustainability goals, successes, and programs should continue to be incorporated into communication efforts with specific groups including students, staff, faculty, prospective students, alumni, and donors.
Responsibilities: SIO, Office of Communications | New funding required: None

>> **Create and implement annual sustainability film festival**
Annual film showings on a related theme (e.g. waste, energy) create fun, interactive ways for the campus community to learn about and become engaged in sustainability issues, particularly when accompanied by related campus programs and projects.
Responsibilities: SIO, Environmental Analysis | New funding required: None

>> **Create outreach program based on resource use data**
Information about energy use, water use, and waste management can be effectively used to encourage specific users and facilities to improve their behavior.
Responsibilities: SIO | New funding required: None

>> **Participate in national campaigns and competitions where appropriate**
National competitions and contests related to campus waste management, energy use, and student programs are potential ways to engage the campus community and publicly display efforts.
Responsibilities: SIO | New funding required: None

>> **Start sustainability awards program to recognize champions and successes**
Annual sustainability awards for faculty, staff, students, and other members of the community provide incentives for sustainable behavior and express appreciation for support and participation.
Responsibilities: SIO | New funding required: $, potential funding for monetary awards

>> **Develop sustainability pledge program for students, staff, and faculty**
Whether online or otherwise, a sustainability pledge for the campus community reinforces good behavior and encourages individuals to engage in new practices.
Responsibilities: SIO | New funding required: None

>> **Create series of public service announcements highlighting sustainability behaviors**
Short movies describing the importance of sustainability behaviors and what to do can be shown before events, including before movies at Rose Hills Theater
Responsibilities: SIO | New funding required: None

Issue 4: Increased student-focused educational programs

>> **Continue to incorporate sustainability issues into Orientation programs**
Materials handed out to first-year students, green living training for Residence Hall Staff, and sustainability-related events during Orientation encourage increased awareness and participation from students' first days on campus.
Responsibilities: SIO | New funding required: None

>> **Continue the Sustainability Action Fellowship program**
This program provides students with opportunities to be engaged in sustainability planning,

particularly in the implementation of this document.
Responsibilities: SIO | New funding required: None

>> **Start peer-to-peer education program**
Students responsible for education programs in residence halls, dining halls, and other student-focused spaces can be very effective in increasing student participation in programs and behaviors.
Responsibilities: SIO | New funding required: None

Issue 5: Increased staff/faculty-focused educational programs

>> **Incorporate sustainability information into staff/faculty orientation**
Human Resources is willing to include sustainability information in the binder of information presented to new employees during orientation.
Responsibilities: SIO | New funding required: None

>> **Launch the Green Office Program**
The College's new Green Office Program (currently in pilot) will certify offices based on sustainability activities and provide encouragement for the adoption of new practices and programs.
Responsibilities: SIO | New funding required: None

>> **Conduct outreach about the activities and successes of various offices, departments, and individuals on campus and about relevant programs, including the Green Office Program**
Inclusion of sustainability actions in the staff newsletter, on the Sustainability Integration Office website, and in other places increases awareness of opportunities to reduce impact and increases social acceptance of such behaviors.
Responsibilities: SIO | New funding required: None

>> **Develop sustainable living workshop series for staff and faculty**
Students could take the lead role in researching and presenting sustainable living workshops on various topics, including energy efficiency, sustainable food systems, and sustainable home waste management
Responsibilities: SIO | New funding required: None

Timeline and Priorities

Years 1-2

Higher priority

>> Approve the definition of sustainability in the curriculum as a means of tracking relevant courses
>> Maintain an updated list of sustainability-focused and sustainability-related courses at Pomona and the Claremont Colleges
>> Maintain an updated list of campus sustainability topics, projects, and opportunities appropriate for classroom projects, theses, and studies
>> Continue to engage in education campaigns
>> Continue to identify opportunities for communicating sustainability with various constituencies
>> Create and implement annual sustainability film festival
>> Create outreach program based on resource use data
>> Continue to incorporate sustainability issues into Orientation programs
>> Continue the Sustainability Action Fellowship program
>> Incorporate sustainability information into staff/faculty orientation
>> Launch the Green Office Program

Lower priority

>> Maintain a list of current sustainability-related faculty and student research activities
>> Participate in national campaigns and competitions where appropriate
>> Conduct outreach about the activities and successes of various offices, departments, and individuals on campus and about relevant programs, including the Green Office Program

<u>Years 3-5</u>

Higher priority

>> Pursue opportunities for funding and other support to hold faculty development workshops for incorporating sustainability into the curriculum
>> Promote greater use of campus sustainability living/learning laboratories
>> Start sustainability awards program to recognize champions and successes
>> Start peer-to-peer education program
>> Develop sustainable living workshop series for staff and faculty

Lower priority

>> Develop sustainability pledge program for students, staff, faculty
>> Create series of public service announcements highlighting sustainability behaviors

Action Plan - Energy

Energy use and energy sources are central to almost any discussion about environmental issues, sustainability, and climate change. Energy use, particularly its general dependence on the burning of fossil fuels, causes a wide variety of environmental damage including air, water, and soil pollution, negative economic and health impacts for communities, and the generation of climate change-causing greenhouse gasses. These impacts are caused not only by using these resources, but also by extracting them, which often occurs at the expense of natural landscapes and ecosystems. If Pomona College is to become an environmentally sustainable institution, the College must reduce our overall energy consumption and consumption of fossil fuels, including coal, oil, and natural gas.

Sustainability Action Fellows (2008-09): *Sam Gordon '11, Katie Hall '09, David Kotevski '10, Cailee Moberg '11, Zach Stewart '12, Alex Tran '09*

Main issues

>> Development of organizational infrastructure
>> Improvement of physical infrastructure
>> Reduced energy use through conservation and efficiency
>> Increased energy from renewable sources
>> Better energy-related data and information
>> Increased awareness of issue

How We're Doing

Pomona has engaged in a variety of energy-saving and renewable energy projects over the last five-plus years, including the installation of solar photovoltaic arrays, variable speed motors, EnergyStar appliances, and more efficient equipment. However, most campus buildings are well above average in energy intensity (electricity and gas use per square-foot) compared to other buildings of similar use and in similar climate zones. The College does not have well-established energy management infrastructure – organizationally in that energy management and efficiency programs are not a part of any technician's job responsibilities, and physically in that buildings are not always even metered individually, making it impossible to track building performance and opportunities for improvement. Establishing equipment and staffing for monitoring energy use are of primary importance, as is establishing energy management as a core element of maintenance and capital project strategies.

This Plan establishes a general prioritized strategy for moving forward with energy efficiency and conservation strategies:

- Building metering and sub-metering (benchmarking and monitoring)
- Retro-commissioning, monitoring based-commissioning, and/or full-scale energy audits (identification of opportunities)
- Implementation of feasible efficiency projects
- Ongoing benchmarking and monitoring

Action Plan - Energy

Objectives for 2020

>> 15% reduction in energy use (not including emergency generators)
>> 4% of energy use from on-campus renewable sources
>> District-based energy reductions:

Table 1 lists energy use reduction goals for buildings on campus, by use district. These goals were developed with the following issues in mind:

- Building program and use
- Year of construction or renovation
- Comparison to energy use intensity in similar buildings in various peer groups, including other institutions of higher education, other buildings in California, and other buildings served by Southern California Edison electricity utility

These numbers include a base assumption of 5-10% reduction from behavior change alone, based on observations of both specific behavior-centric energy reduction campaigns (e.g. Power Down Dorm Energy Challenge) and of natural fluctuations in building-specific energy use over time. Districts do not include buildings expected for renovation or demolition in the next ten years.

Table 1. Energy zones and reduction goals.

Energy Zone	Reduction Goal
Academic - Administrative	30%
Alexander Hall, Carnegie Hall, Crookshank Hall, Hahn Building, Kenyon House, Mason Hall, Smith Campus Center, Pearsons Hall, Sumner Hall	
Recreation	25%
Pendleton Dance Center, Rains Center, Merritt Field	
Venues	25%
Bridges Auditorium, Bridges Hall, Lebus Court, Seaver Theater, Rembrandt Hall	
Dining	20%
Frank Hall, Frary Hall	
Sciences	20%
Cowart IT Building, Lincoln Hall, Edmunds Hall, Andrew Building, Brackett Observatory, Millikan Laboratories, Seaver North, Seaver South, Richard C. Seaver Biology	
Residential	10%
Clark I/III/V Halls, Norton Hall, Harwood Court, Lawry Court, Walker Hall, Walton Commons, Mudd-Blaisdell-Gibson Hall, Lyon Hall, Wig Cottages, Wig Hall, Smiley Hall	
Houses	10%
Baldwin House, Dean of Students House, Dean of College's House, Emeritus House, Sumner House, President's House, Seaver House, Renwick House	
Seeley G. Mudd Library facility	10%

>> Reduce diesel generator fuel use by 30%
>> All buildings individually metered for gas and electricity (by May 2011)
>> Metering project completed on all major buildings (by May 2012)
>> Metering project completed on all buildings (by May 2015)
>> 50% of campus built square-feet operating with EnergyStar score of at least 69
>> Retro-commissioning or monitoring-based commissioning completed on every major building
>> Energy audits completed for all campus buildings

Additional Information about Energy Analysis/Modeling

Energy is likely the most important issue for this Plan to emphasize, given its substantial financial and environmental impacts. The following analyses were taken into consideration when developing objectives and potential actions.

Assumptions

Trends in energy use
Since the 1999-2000 year, electricity use per ft^2 has grown on average 2.36% each year and natural gas use per ft^2 has grown on average 3.79% each year. Compounded with increased total ft^2, total energy use has grown on average 4.89% each year.

Trends in energy cost
Since the 1999-2000 year, the cost of electricity per unit has grown on average 7.39% each year and the cost of natural gas per unit has grown on average 12.51% each year, but in both cases this is mainly due to high degrees of volatility. In late 2009 the College's electricity rates were raised just over 11%.

Construction Activity
Table 6 following lists assumptions about new construction/renovation projects within the next 10 years. These numbers incorporate potential sustainability goals (see notes below).

Table 2. Assumed construction activity 2010-2020.

Project	Year	Sq-ft	Electricity kWh/ft^2	Total Elec. kWh	Gas therms/ft^2	Total Gas therms
North Campus Housing (Ph. I)	10-11	77,166	17.7	1,366,652	0.1	9,883
South Campus Athletic Facility	10-11	320,200	0.5	150,000	0.0	0
Studio Art complex*	12-13	35,000	6.5	228,375	0.1	2,855
International Center**	13-14	121,400	9.5	1,154,835	0.5	60,793
Music complex***	15-16	40,521	25.0	1,014,587	0.2	6,103

** Assuming net-zero electricity use with on-site solar photovoltaic.*

*** Assuming 20% reduction in kWh/square-foot from existing Oldenborg.*

**** Assuming 30% reduction kWh/square-foot from existing Thatcher/Montgomery Museum.*

Summary

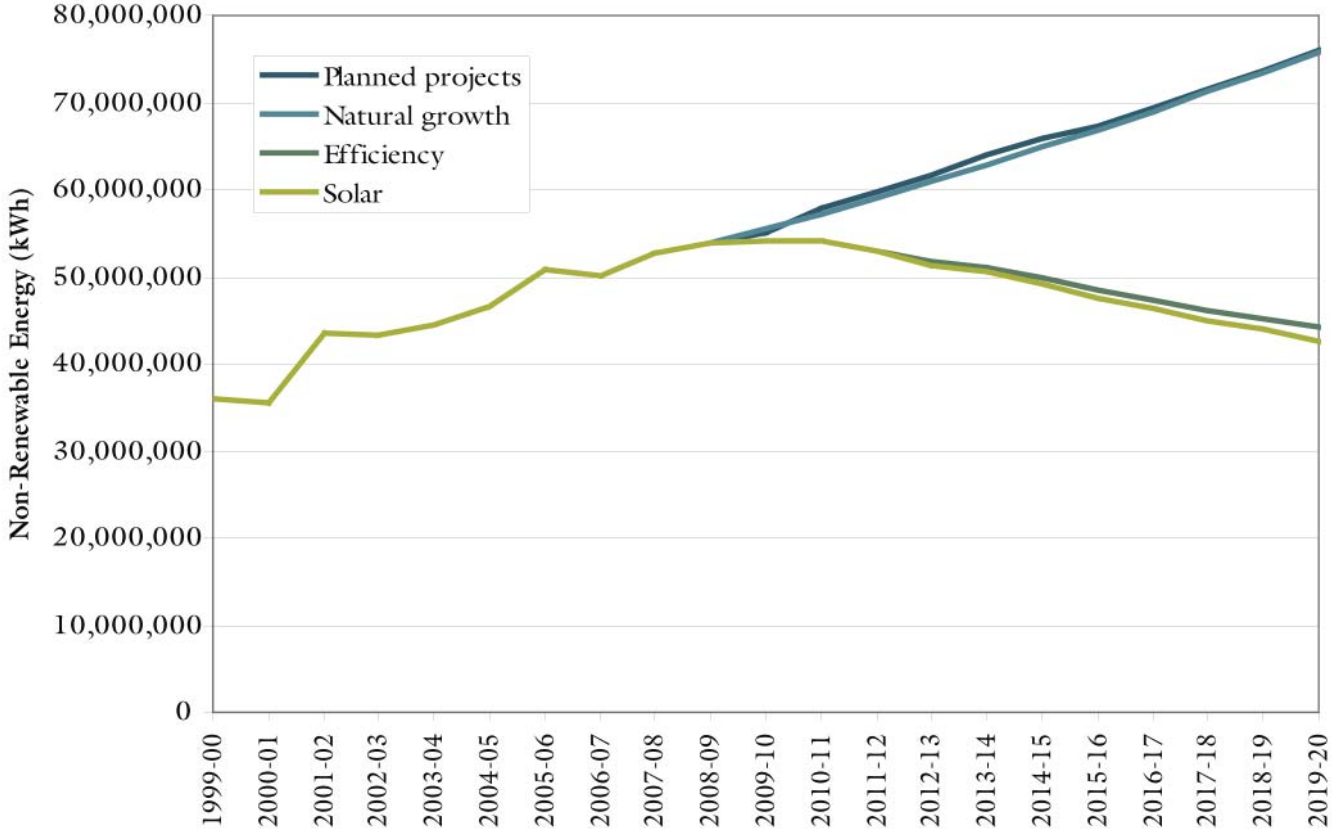
Table 3 and Figure 1 (see next page) summarize campus-wide energy use for the 2008-09 academic year and projected energy use based on implementation of the above assumptions/goals, including:

- District energy goals
- Planned solar projects
- Potential solar projects
- New building energy load assumptions
- 1% annual growth in energy intensity (energy/ft^2) for new construction
- Energy unit cost growth rate identical to 2000-2009 unit cost growth rate

Table 3. Energy reduction scenarios and outcomes.

Year	Total ft2	Elec. Total kWh	Gas kWh	Total kWh	Total kWh/ ft²	Total Solar kWh	% Energy Solar	Total Purchased kWh	Total Cost
CURRENT									
2008-2009	1,547,596	24,816,154	29,125,020	53,941,175	34.8	98,210	0.2%	53,842,965	$3,546,020
WITH PLANNED PROJECTS									
2019-2020	2,029,603	33,402,009	43,993,417	77,395,427	38.1	1,389,373	1.8%	76,006,054	$11,681,016
WITH PLANNED PROJECTS + EFFICIENCY GOALS									
2019-2020	2,029,603	23,136,534	22,394,292	45,530,826	22.4	1,389,373	3.1%	44,141,453	$7,329,554
PLAN RECOMMENDATION: PLANNED PROJECTS + EFFICIENCY GOALS + POTENTIAL SOLAR PROJECTS									
2019-2020	**2,029,603**	**23,136,534**	**22,394,292**	**45,530,826**	**22.4**	**3,002,714**	**6.6%**	**42,528,113**	**$6,947,373**
Change from 08-09	**31%**	**-7%**	**-23%**	**-16%**				**-21%**	**96%**

Figure 1. Effect of energy reduction efforts on energy use.



Comparable Goals

The following are similar goals adopted by other institutions or relevant groups:

- City of Claremont[6]
  - Reduce 20% from 2003 energy use levels by 2015
- Colorado University - Boulder[7]
  - Reduce energy use by 5% per square-foot every year
  - Use 25% renewables by 2010 (from 2000)
- Emory University[8]
  - Reduce average campus energy use by 25% per square foot by 2015, using December 2005 as a baseline
- Macalester College[9]
  - Eliminate fuel oil usage by switching to natural gas by 2015.
- Smith College[10]
  - Reduce electrical consumption 19% through efficiency projects by 2015 and by an additional 9% by 2030
  - Reduce electrical consumption through behavioral conservation programs by 10% by 2020
- University of California – Santa Barbara[11]
  - 33% less electricity by 2050 (from 2010)
  - Reduce fossil fuel use by 80% in 10 years
  - Increase to 7% photovoltaic, 20% wind, and 6% other renewables in 10 years
- University of California System
  - Buildings more than 20% more efficient than Title 24[12]
  - Reduce growth-adjusted energy use by at least 10% by 2014 from 2000 levels[13]
- University of Wisconsin - Oshkosh[14]
  - 20% reduction in electricity by 2012, over 2005 levels
  - Reduce fuel use for heating by 50% by 2012

6 See http://www.ci.claremont.ca.us/download.cfm?ID=25654.
7 See http://ecenter.colorado.edu/files/6d9ff53a1e960600f0565eae8d4607d40d55b5c0.pdf.
8 See http://oxford.emory.edu/a_distinctive_place/from_the_dean/SustainabilityActionPlan.pdf.
9 See http://www.macalester.edu/sustainability/MacalesterSustainabilityPlanSept2009.pdf.
10 See http://www.smith.edu/green/docs/SCAMPDraft2-19-10.pdf.
11 See http://sustainability.ucsb.edu/plan/docs/sustainability_plan_workingdoc4.08.pdf.
12 See http://www.universityofcalifornia.edu/sustainability/documents/policy_sustain_prac.pdf.
13 See http://www.universityofcalifornia.edu/sustainability/enrg_effncy.html.
14 See http://www.uwosh.edu/assets/announcement/sustainability/docs/Campus_Sustainability_Plan_Final_Whole.pdf.

Action Plan - Energy

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
$$ = $5,000-50,000
$$$ = Over $50,000

Issue 1: Development of organizational infrastructure

>> **Initiate energy management program with energy manager position**
The College does not currently have any sort of formalized energy management or monitoring program, including staffing, software, and regular benchmarking. The creation of an energy manager position would provide staffing for, among other tasks, the creation of long-term energy management strategies and regular monitoring of building performance.
Responsibilities: Facilities and Campus Services, President's Office | New funding required: $$

>> **Begin conducting monthly and annual reviews of building-level energy performance**
Monthly reviews of building-level energy use should occur on a small scale for early identification of potential problems; annual reviews with Facilities and Campus Services leadership staff and leadership of building occupant groups (departments and offices) should occur to identify and explain trends and opportunities for improvement.
Responsibilities: Energy Manager, Facilities and Campus Services, SIO | New funding required: None

Issue 2: Improvement of physical infrastructure

>> **Complete Phase 1 of metering project**
Within one year, all campus buildings should be individually metered for gas and electricity use. Within two years, all major campus buildings[15] should have plans for relevant sub-metering, in line with the establishment of an energy management program. The data from these meters will allow for benchmarking and monitoring that is not currently available.
Responsibilities: Facilities and Campus Services | New funding required: Unknown, likely $$

>> **Create long-term energy management plan detailing potential projects**
Once an Energy Manager is in place, they should develop a long-term strategic plan for energy management, efficiency, conservation, and opportunities for reductions, including details on specific projects. (The retro-commissioning, monitoring-based-commissioning, and energy audit activities also detailed in this chapter will be necessary for the development of this plan.)
Responsibilities: Energy Manager, Facilities and Campus Services, SIO | New funding required: Unknown, likely none

>> **Complete Phase 2 of metering project**
Implement plans for sub-metering, real-time metering, or any additional remaining tasks in the metering project, such that all buildings on campus are metered in a way that relevant data is available for the energy management program and long-term energy management plan.
Responsibilities: Energy Manager, Facilities and Campus Services | New funding required: Unknown, likely $$

15 All buildings over 15,000 ft^2.

Issue 3: Reduced energy use through conservation and efficiency

>> **Pursue all identified projects deemed feasible with a demonstrable 6 year or less payback**
As energy audits, commissioning exercises, and other information-gathering activities are completed, identified feasible efficiency and conservation projects should be implemented.
Responsibilities: Energy Manager, Facilities and Campus Services | New funding required: Unknown, likely $$$

>> **Develop HVAC scheduling and setpoints program**
The College needs to develop formally adopted procedures and policies for the operations and maintenance of HVAC equipment, including building-specific schedules and temperature setpoints. This should also include determining the protocol for building rollback/shut down during holidays, vacations and other low-use periods.
Responsibilities: Energy Manager, Facilities and Campus Services, SIO, Maintenance | New funding required: Unknown, likely none

>> **Complete desktop virtualization pilot**
ITS intends to complete a pilot of desktop virtualization, removing hard drives and physical computer towers from desks and replacing with server-based storage.
Responsibilities: ITS | New funding required: Unknown, planned within ITS

>> **Continue lighting retrofit projects**
The College is already aware of a variety of lighting-related projects that could be completed with a short payback period, and should continue implementing these opportunities.
Responsibilities: Energy Manager, Facilities and Campus Services | New funding required: Unknown, likely $$

>> **Continue implementing identified projects deemed feasible with a demonstrable 6 year or less payback**
Additional identified feasible efficiency and conservation projects should be implemented.
Responsibilities: Energy Manager, Facilities and Campus Services | New funding required: Unknown, likely $$$

>> **Assess opportunities to reduce energy load of audio/visual equipment**
Audio/visual equipment likely constitutes a large portion of building plug load, and should be analyzed for potential conservation and efficiency measures.
Responsibilities: Energy Manager, Media Services, ITS | New funding required: None

>> **Identify opportunities for increased reflectivity on roofs and other relevant surfaces**
Increased reflectivity on roofs ("cool roofs") reflects solar heat gain and reduce air conditioning loads.
Responsibilities: Energy Manager, Facilities and Campus Services, Maintenance | New funding required: Unknown, likely $$

>> **Assess opportunities for weatherization activities and increased insulation**
Weatherization and insulation can significantly reduce heating and air conditioning loads and increase the efficiency of HVAC equipment.
Responsibilities: Energy Manager, Facilities and Campus Services, Maintenance | New funding required: Unknown, likely $$

>> **Evaluate and potentially complete desktop virtualization program**
If ITS deems the desktop virtualization project feasible and there are positive impacts, it should be implemented.
Responsibilities: ITS | New funding required: Unknown, planned within ITS

Issue 4: Increased energy from renewable sources

>> Move forward with planned solar photovoltaic and water heating projects

The College plans to implement solar projects as described in Table 4 and Table 5.

Responsibilities: Facilities and Campus Services, SIO | New funding required: None (funding already established)

Table 4. Photovoltaic analysis - planned projects.

Facility	kWh size	Est. kWh/year
North Campus Residence Halls	82	130,341
South Campus Athletic Facility	75	125,000
Haldeman Pool	15	22,800
TOTAL	**172**	**278,141**

Table 5. Solar heating analysis - planned projects.

Facility	Est. therms/year
Haldeman Pool	7,950
Frank Dining Hall	5,367
North Campus Residence Halls	2,855
Pendleton Pool	2,170
TOTAL	**18,342**

>> Explore feasibility of additional solar projects

The College should explore opportunities for additional solar projects. Potential sites have been identified as follows, keeping in limits of the College's *Campus Planning Guidelines* for use of roof-mounted technologies.

Table 6. Photovoltaic analysis - potential projects.

Facility	Est. ft^2 available*	kWh size**	Est. kWh/year***
Seaver Theater	18,447	201	300,917
Bridges Auditorium	17,056	185	278,226
Millikan Laboratory	15,429	168	251,686
Rains Center	15,000	163	244,688
Studio Art Facility	14,000	152	228,375
International Center	10,000	109	163,125
Seaver North	7,192	78	117,320
Lyon Hall	7,029	76	114,661
North Campus Residence Halls Ph. II	5,000	54	81,563
Gibson Hall	2,809	31	45,822
Frank Dining Hall	2,787	30	45,463
Seaver Biology	2,450	27	39,966
Brackett Observatory	778	8	12,691
TOTAL	**117,977**	**1,283**	**1,924,500**

** Estimated using aerial maps*

*** Estimated at ¾ usable space; 0.0145 kW/ft^2*

**** Estimated at 1,500 kWh/watt/year*

Table 7. Solar heating analysis - potential projects.

Facility	Est. therms/year
Rains Center	2,258
Frary Hall	484
TOTAL	**2,742**

Responsibilities: Facilities and Campus Services, SIO | New funding required: None

>> Begin assessing alternatives for diesel generators and emergency power

The College's emergency power system consists entirely of diesel generators, which may soon be out of compliance with regional air quality standards. Alternatives may include fuel cells or microturbines.

Responsibilities: SIO, Facilities and Campus Services | New funding required: None

>> Move forward with feasible solar installations and emergency power projects

As projects are deemed feasible and funding identified, projects should be implemented.

Responsibilities: SIO, Facilities and Campus Services | New funding required: $$$

>> **Explore feasibility of other renewable energy technologies**
Wind turbines, fuel cells, geothermal heat pumps, and other renewable sources of energy should be explored.
Responsibilities: SIO | New funding required: $

Issue 5: Better energy-related data and information

>> **Begin engaging in retro-commissioning and monitoring based-commissioning for all major campus buildings**[16]
Together with energy audits, this process will provide information about opportunities for energy efficiency and conservation in mechanical, electrical, and structural systems.
Responsibilities: Energy Manager, Facilities and Campus Services | New funding required: Unknown, likely $$

>> **Begin engaging in full-scale, detailed energy audits for all campus buildings**
Together with retro- and monitoring based-commissioning, this process will assist with identifying opportunities for energy efficiency and conservation in mechanical, electrical, and structural systems.
Responsibilities: Energy Manager, Facilities and Campus Services | New funding required: Unknown, likely $$

>> **Complete retro-commissioning or monitoring based-commissioning for all major campus buildings**[17]
Together with energy audits, this process will provide information about opportunities for energy efficiency and conservation in mechanical, electrical, and structural systems.
Responsibilities: Energy Manager, Facilities and Campus Services | New funding required: Unknown, likely $$

>> **Complete full-scale, detailed energy audits for all campus buildings**
Together with retro- and monitoring based-commissioning, this process will assist with identifying opportunities for energy efficiency and conservation in mechanical, electrical, and structural systems.
Responsibilities: Energy Manager, Facilities and Campus Services | New funding required: Unknown, likely $$

>> **Complete operations profile for every building**
Each campus building should have a written document that outlines how the building is to be operated and maintained, regarding mechanical, electrical, structural, and other relevant systems. This document should be available to all building occupants.
Responsibilities: Energy Manager, Facilities and Campus Services, SIO | New funding required: None

Issue 6: Increased awareness of issue

Along with actions covered in Education section.

>> **Develop methods for meaningful communication of building performance**
Building occupants should be made aware of monthly energy use, whether through electronic communication, building signage, or other means.
Responsibilities: SIO | New funding required: None

>> **Create targeted education campaigns based on metering data**
Once buildings are metered and sub-metered, this data will provide information from which targeted programs can be developed.
Responsibilities: SIO | New funding required: None

16 All buildings over 15,000 ft².
17 All buildings over 15,000 ft².

Action Plan - Energy

Timeline and Priorities

Years 1-2

Higher priority

>> Initiate energy management program with energy manager position
>> Begin conducting monthly and annual reviews of building-level energy performance
>> Complete Phase 1 of metering project
>> Create long-term energy management plan detailing potential projects
>> Pursue all identified projects deemed feasible with a demonstrable 6 year or less payback
>> Develop HVAC scheduling and setpoints programs
>> Move forward with planned solar photovoltaic and water heating projects
>> Explore feasibility of additional solar projects
>> Begin engaging in retro-commissioning and monitoring based-commissioning for all major campus buildings
>> Begin engaging in full-scale, detailed energy audits for all campus buildings
>> Develop methods for meaningful communication of building performance

Lower priority

>> Complete desktop virtualization pilot
>> Continue lighting retrofit projects (when not otherwise covered in commissioning or audit activities)
>> Begin assessing alternative for diesel generators and emergency power

Years 3-5

Higher priority

>> Complete Phase 2 of metering project
>> Continue implementing identified projects deemed feasible with a demonstrable 6 year or less payback
>> Move forward with feasible solar installations and emergency power alternatives
>> Explore feasibility of other renewable energy technologies
>> Complete retro-commissioning and monitoring based-commissioning for all major campus buildings
>> Complete full-scale, detailed energy audits for all campus buildings
>> Create targeted education campaigns based on metering data

Lower priority

>> Assess opportunities to reduce energy load of audio/visual equipment
>> Identify opportunities for increased reflectivity on roofs and other relevant surfaces
>> Assess opportunities for weatherization activities and increased insulation (when not otherwise covered in commissioning or audit studies)
>> Evaluate and potentially complete desktop virtualization program
>> Complete operations profile for every building

Action Plan - Facilities

While behavior and education programs and the installation of innovative technologies often constitute the "showier" side of sustainability efforts, the design of new buildings and renovation projects and the ongoing operation and maintenance of existing facilities constitute the largest resource and environmental impact of the College. Incorporating sustainability goals and expectations into standards for building design and operations and maintenance practices has the potential to significantly alter and improve the campus' performance.

How We're Doing

Pomona originally established *Green Building Standards* in 2003, and that document outlined standards for new constructions buildings that functionally established a minimum LEED Silver certification for new buildings. Efficiency and other sustainability impacts have been taken into consideration in major renovation projects and non-LEED relevant projects (e.g. parking structure), but not systematically and in some cases with rather disappointing results. A centralized, strategic approach is necessary.

The College engages in a wide variety of sustainable operations and maintenance procedures, including green cleaning standards and the reduced use of fertilizers and pesticides. The Operations and Maintenance Standards below include a both current practices and new standards.

Objectives for 2020

>> Compliance with Green Building Standards and Sustainable Operations and Maintenance Standards
>> 15% of square-footage certified under LEED-EBOM (Existing Buildings Operation and Maintenance)[18]

Related Policies/Statements for Adoption

The following statement(s) represent language that will be used on behalf of the College, the Sustainability Integration Office, and other campus groups to develop, structure, and assess sustainability-related efforts on campus.

Green Building Standards

Meant to act as a stand-alone document, an update to the College's 2003 Green Building Standards policy is included as Attachment A to this document.

Executive summary:

<u>New Construction/Major Renovation</u>
These updated standards focus on events, analyses, and reports throughout the programming, design, construction, and project completion phases of a project, including:

>> *A sustainability workshop during the programming phase*
>> *Life cycle cost analysis on major building systems*

18 This would include LEED-EBOM certification of LEED-NC (New Construction) projects, which are required to maintain LEED-EBOM certified under the updated Green Building Standards. An additional approximately 35,000 square-feet would need to be LEED-EBOM certified, constituting one or two existing campus buildings.

>> *Cost-benefit analysis of building systems and features*
>> *Sustainability report upon project completion*

These standards use the LEED as a framework for designing and operating green buildings, but also incorporate a variety of design features and processes required by the College. All eligible new construction projects will strive for a minimum LEED-NC Gold level certification; renovation projects will use these standards as a guideline.

Minor Renovation/Projects
The process for projects of at least $5 million that otherwise do not constitute "new construction or major renovation" should include a sustainability workshop, the use of life cycle cost analysis for major building systems, and other activities to ensure an efficient and high-performing facility.

Sustainable Operations and Maintenance Standards

Meant to act as a stand-alone document, the Sustainable Operations and Maintenance Standards policy is included as Attachment B to this document.

Executive summary:

These standards outline a variety of procedures to follow in operating and maintaining facilities, and have been developed in coordination with Maintenance, Grounds, Housekeeping, and other relevant departments. These procedures include:

>> *Maintaining LEED-EBOM certification for all LEED-NC certified facilities*
>> *Integrated Pest Management*
>> *Erosion and sedimentation control*
>> *Purchasing fixtures, furniture, and building elements*
>> *Green cleaning program*

Comparable Goals

The following are similar goals adopted by other institutions or relevant groups:[19]

- Harvard University
  - Requires LEED-NC Silver certification for projects over $5 million (Gold for Allston buildings)
  - Requires projects $100,000 to $5 million to use LEED-CI as a guideline
  - Labs21 Pilot Partner for innovative sustainable laboratory development
- Yale University
  - Internal requirements based on LEED standards, requiring LEED-NC Silver certification for projects over $4 million
- Carnegie Mellon
  - Requires LEED-NC Silver certification for eligible projects
  - Labs21 Partner for sustainable laboratory development
- Cornell University
  - Requires LEED-NC Silver certification for projects over $5 million
  - Requires new construction and renovations to outperform ASHRAE 90.1 energy efficiency standards by 30-50%
  - Labs21 Partner for sustainable laboratory development
- Caltech University

19 See http://www.usgbc.org/ShowFile.aspx?DocumentID=6230.

    - Requries LEED-NC Gold certification for eligible projects
    - Developing campus-wide LEED-EBOM policy for existing buildings; will soon require a certain number of buildings to be LEED-EBOM certified within a certain number of years
- Furman University
    - All new and renovated construction projects must meet or exceed LEED-NC Silver certification[20]
- Oberlin College
    - Requires LEED-NC Silver certification for eligible projects
- University of Califoria system
    - Requires all construction to meet LEED-NC Silver standards (but does not require certification)
    - Major renovations must comply with LEED-NC or LEED-CI standards, depending on eligibility
    - New construction and major renovations must outperform Title 24 energy codes by 20%
    - All campuses must begin certifying existing buildings for LEED-EBOM certification
- Brown University
    - Requires LEED-NC Silver "equivalency"
    - New construction and major renovations must outperform energy codes by 25-50%
- Stanford University
    - Has developed internal green building standards that require that new construction and major renovations outperform Title 24 by 30% for energy use and outperform Energy Policy Act of 1992 by 25% for water use

20 See http://furman.edu/press/sustain.pdf.

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
$$ = $5,000-50,000
$$$ = Over $50,000

Issue 1: Compliance with established standards

>> **Adopt and move forward with implementing updated Green Building Standards and Sustainable Operations and Maintenance Standards (see Related Policies/Statements for Adoption, above)**
Responsibilities: SIO, Facilities and Campus Services, Grounds, Maintenance, Dining Services, Project Management | New funding required: Unknown (project-specific)

Action Plan - Facilities

Issue 2: Pursue LEED certification of existing buildings

>> **Explore opportunities to pursue LEED-EBOM certification for one or two existing campus facilities**

To meet the objective listed above, approximately 35,000 square-feet of existing buildings must be certified, which likely constitutes one or two buildings.

Responsibilities: SIO, Facilities and Campus Services, Project Management | New funding required: Unknown, likely $$

Timeline and Priorities

Years 1-2

Higher priority

>> Adopt and move forward with implementing updated *Green Building Standards* and *Sustainable Operations and Maintenance Standards*

Yeasr 3-5

Higher priority

>> Explore opportunities to pursue LEED-EBOM certification for one or two existing campus facilities

Action Plan - Food and Agriculture

Pomona's goal is to serve food on campus that is healthy, fresh and delicious, and that is produced in a just and sustainable manner. Food should be produced in a way that is fair to farmers, that supports the (ideally local) communities from which it comes, that cares for the environment and that treats animals humanely. The food climate at the College should be one in which food is not simply the fuel that energizes students, but also one that creates an environment of awareness and fosters an understanding about where food comes from, who produces it, how this is achieved, and the implications of the food choices consumers make every day.

Co-Author: *Samantha Meyer '10, Sustainable Food and Purchasing Coordinator, Dining Services*

Main issues

>> Definition of "sustainable food"
>> Effective implementation infrastructure
>> Increased purchases of sustainable food in campus dining facilities
>> Better food-related data and information
>> Increased awareness of issue

Actions and goals concerning dining-related waste, water use, energy use, and other issues are included in those chapters; this chapter focuses on food purchasing activities alone.

How We're Doing

Pomona Dining Services (Frank, Frary, and Oldenborg Dining Halls) currently purchase an array of local, organic, or otherwise "sustainable" food items, but it constitutes a small percentage of total purchases (estimated at under 10%). Efforts are currently underway to connect with a produce/food distributor that sources local goods and to integrate more natural items into the dining halls, as well as to engage in more educational and awareness programs and labeling to identify these items when available. The Coop Store also offers a variety of organic and natural products, but the Coop Fountain and the Sagehen Café do not.

Objectives for 2020

>> Dining Services:
- 15% of total food purchases qualify as sustainable by 2015
- 30% of total food purchases qualify as sustainable by 2020
- 10% of total food purchases qualify as sustainable in more than one category by 2020
- 50% of produce purchases local by 2020
- 100% seafood purchases are Marine Stewardship Council certified, Aquaculture Certification Council certified, and/or Seafood Watch Guide "Best Choices" or "Good Alternatives" by 2015

>> Other dining establishments:
- Programs are in place to encourage the use of food items that qualify as sustainable.

Action Plan - Food and Agriculture

A Note About Costs

Increased purchasing of "sustainable" food items will likely be accompanied by increased food costs. Most of the actions listed below require seeking out opportunities, but moving forward with those opportunities is dependent on financial, logistical, and other feasibility. Additionally, Dining Services is committed to seeking out related cost-saving opportunities – for instance, making organic granola from scratch may save costs over purchasing non-organic name brand granola.

Related Policies/Statements for Adoption

The following statement(s) represent language that will be used on behalf of the College, the Sustainability Integration Office, and other campus groups to develop, structure, and assess sustainability-related efforts on campus.

Sustainable Food Definition

The College defines sustainable food as food items that meet one or more of the following characteristics:

- Local[21]
  - Produce: grown locally, ideally from an independently-owned small[22] family farm.
  - All other foods: processed/prepared locally AND (a) processed/prepared by a small, locally-owned company AND/OR (b) contains only locally-grown/produced ingredients
- Fair
  - Fair Trade Certified
  - Domestic Fair Trade Certified
  - Rainforest Alliance Certified
- Humane
  - AGA grass-fed
  - Pasture raised
  - 100% grass-fed
  - Certified Humane Raised and Handled
  - Cage-free
- Sustainable Seafood
  - Marine Stewardship Council Certified
  - Aquaculture Certification Council Certified
  - Seafood Watch Guide "Best Choices" or "Good Alternatives"
- Protected Harvest Certified
- Food Alliance Certified
- USDA Certified Organic
- Other practices or certifications as determined by PACS

Additionally, food items will not be considered sustainable if:

- Information is available that indicates that confinement/battery cages, child labor, slave labor, or indentured servitude are used in the production/processing of the items.

21 Defined as within 200 miles of campus ("as the crow flies").

22 The Small Business Administration provides revenue- and employee-based size regulations for businesses considered "small." Refer to those standards to see if the business is considered small; the Sustainable Food Working Group has the ability to determine whether a business should be considered.

- Information is available that indicates that food items qualified as sustainable under a certain characteristic are not actually in keeping with the intention of that characteristic (e.g. a locally grown produce item is transported to campus via a distribution center that is not local).
- They contain harmful additives as determined by Dining Services and PACS

Comparable Goals

The following are similar goals adopted by other institutions or relevant groups:

- University of California system[23]
  - 20% sustainable food products by 2020
- University of California - Riverside[24]
  - 5% sustainable purchases in 2 years
  - 20% sustainable purchases in 5 years
  - 30% sustainable purchases in 10 years
  - Divert 75% of food waste in 5 years
  - Zero waste in 10 years
- University of California – Santa Barbara[25]
  - Sell 100% of used oil
  - 25% organic in 5 years
  - 25% local (county) in 5 years
  - 25% compostable disposables in 5 years
  - Reduce waste by 50% in 5 years
  - 10% sustainable meat/fish/poultry in 5 years
  - 50% organic and local salad bar in 5 years
- Luther College[26]
  - 35% local in 5 years
- Mount Allison University[27]
  - Increase amount of "sustainable meals" (meals that include at least 1 local and/or organic ingredient) by 30%
- Smith College[28]
  - Increase the amount of local food purchased by 10% by 2014.
  - Increase amount of "environmentally beneficial" food purchased by 3% by 2014, e.g., organic, hormone or antibiotic free
  - Increase amount of "humane" food purchased by 3.5%, to 4% of total food budget by 2014, e.g., cage-free or fair trade

23 See http://www.universityofcalifornia.edu/sustainability/documents/policy_sustain_prac.pdf.
24 See http://sustainability.ucr.edu/publications/sustainabilityplan.pdf.
25 See http://sustainability.ucsb.edu/plan/docs/sustainability_plan_workingdoc4.08.pdf.
26 See http://www.luther.edu/sustainability/food.
27 See http://www.mta.ca/environment/gap.html#ch7.
28 See http://www.smith.edu/green/docs/SCAMPDraft2-19-10.pdf.

Action Plan - Food and Agriculture

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
$$ = $5,000-50,000
$$$ = Over $50,000

Issue 1: Definition of "sustainable food"

>> **Adopt the definition of "sustainable food" (see left) for moving forward**
Responsibilities: SIO, PACS, Dining Services | New Funding Required: None

Issue 2: Effective implementation infrastructure

>> **Establish part-time student or staff position to focus on issues of sustainability and nutrition**
A dedicated job position or portion thereof will be necessary for the successful implementation of programs and projects, particularly in food tracking and education programs.
Responsibilities: Dining Services, Facilities and Campus Services | New funding required: $$

>> **Assess options for third-party sustainability certifications of Dining Services as an operation**
Programs such as the Green Restaurant Association provide certification programs to assist restaurants and food service operations in moving forward with sustainability efforts.
Responsibilities: Dining Services, Sustainable Food Working Group | New funding required: Unknown

Issue 3: Increased purchases of sustainable food in campus dining halls

>> **Explore potential for using distributors of locally-produced foods**
Distributors of strictly local or otherwise sustainable items make it easier to get information about where food comes from, gain access to small farms and businesses, and track purchasing efforts.
Responsibilities: Dining Services, Sustainable Food Working Group | New funding required: None

>> **Identify opportunities to purchase products with specific animal welfare-related standards**
Grass-fed beef, cage-free eggs, and other such items are potential opportunities for inclusion in dining hall menus.
Responsibilities: Sustainable Food Working Group, Dining Services | New funding required: None

>> **Identify opportunities to purchase locally-processed/prepared food items and businesses**
While local farms are easy to find and access through distribution companies, local producers/processors of meat, seafood, staples, and value-added products (e.g. jam, cheese, canned items) may be more difficult to identify.
Responsibilities: Sustainable Food Working Group, Dining Services | New funding required: None

>> **Identify opportunities to purchase more fair trade products**
While the College already purchases certified fair trade coffee, additional products including chocolate, tea, and sugar should be explored.
Responsibilities: Sustainable Food Working Group, Dining Services | New funding required: None

>> **Identify hazardous food additives and conduct review of products that contain those additives**

Additives such as trans-fats, MSG, and high fructose corn syrup and other that have demonstrated hazardous effects on health should be catalogued and identified in food purchasing activities.

Responsibilities: Sustainable Food Working Group, Dining Services | New funding required: None

>> **Start programs for regular specialty meals and events**

While it may be cost- and supply-prohibitive to supply some sustainable food items at every meal, specialty events (e.g. weekly grass-fed burgers) may be good ways to more easily incorporate and market these items.

Responsibilities: Sustainable Food Working Group, Dining Services | New funding required: None

>> **Work with Coop Committee and Sagehen Café to explore opportunities for more sustainable purchasing**

The extent to which these businesses purchase "sustainable food" items is unknown, and opportunities to do more should be identified.

Responsibilities: Sustainable Food Working Group, Coop Committee, Sagehen Cafe | New funding required: None

>> **Consider potential for on-campus growing/processing of food items that would otherwise be purchased**

For instance, growing herbs on-site or making more items from scratch not only make it easier and cheaper to incorporate more sustainable items, but can also potentially reduce food costs overall.

Responsibilities: Sustainable Food Working Group, Dining Services | New funding required: None

>> **Expand Pomona's Sustainable Catering program**

Pomona engages in a large volume of catering activities throughout the year, and has responded to staff and faculty requests by starting to identify opportunities for reducing the environmental impacts of catering. These efforts should continue and expand.

Responsibilities: Sustainable Food Working Group, Dining Services | New funding required: None

Issue 4: Better food-related data and information

>> **Require an annual sustainable food report**

Dining Services will be responsible for the submittal of an annual report (July to June) with spending in each category of the sustainable food definition (above). This report is due to PACS by September 1 of the following fiscal year.

Responsibilities: Dining Services | New funding required: Unknown

Issue 5: Increased awareness of issue

Along with actions covered in Education section.

>> **Develop marketing and education/awareness plan for sustainable food programs**

Increased signage, labeling, and marketing campaigns are necessary for the success of the sustainable food program, including information about where and how foods were produced and why it's important to consider these issues.

Responsibilities: Dining Services, Sustainable Food Working Group | New funding required: Unknown

>> **Create trainings for Dining Services staff on sustainability-related topics**

Because labeling, composting, and a variety of other food-related programs require the understanding and buy-in from Dining Services staff, trainings and workshops are important to increase overall awareness and discuss why these efforts are important.

Responsibilities: Dining Services, Sustainable Food Working Group | New funding required: None

Action Plan - Food and Agriculture

>> **Identify opportunities to engage in community-based food projects**
There are a variety of opportunities for students, staff, and faculty to engage in academic or co-curricular projects with local farms, food businesses, or community organizations. For instance, students with the Draper Center for Community Partnerships are currently engaged in a community food assessment of communities in the City of Pomona.
Responsibilities: SIO, Environmental Analysis, Draper Center | New funding required: None

Timeline and Priorities

Years 1-2

Higher priority

>> Adopt a definition of "sustainable food" for moving forward
>> Establish part-time student or staff position to focus on issues of sustainability and nutrition
>> Explore potential for using distributors of locally-produced foods
>> Identify opportunities to purchase products with specific animal welfare-related standards
>> Identify opportunities to purchase locally-processed/prepared food items and businesses
>> Identify opportunities to purchase more fair trade products
>> Identify hazardous food additives and conduct review of products that contain those additives
>> Require an annual sustainable food report
>> Develop marketing and education/awareness plan for sustainable food programs

Lower priority

>> Start programs for regular specialty meals and events
>> Work with Coop Committee and Sagehen Café to explore opportunities for more sustainable purchasing
>> Create training for Dining Services staff on sustainability-related topics

Years 3-5

Higher priority

>> Consider potential for on-campus growing/processing of food items that would otherwise be purchased
>> Identify opportunities to engage in community-based food projects

Lower priority

>> Assess options for third-party sustainability certifications of Dining Services as an operation
>> Expand Pomona's Sustainable Catering program

Action Plan - Pollution

The use and disposal of hazardous materials is inevitable on a college campus – Science and Studio Art classes require the use of chemicals, and disposal of batteries, electronics, and laboratory wastes is unavoidable. However, it is extremely important that the institution work to minimize use of these materials and to ensure their proper disposal. These materials can cause substantial air, water, and soil pollution and irreversible health effects when used (particularly if used in excess) or if not properly processed and disposed of or reused where possible.

Main issues

>> Reduced use of toxic materials
>> Appropriate disposal of hazardous waste
>> Increased awareness of issue

How We're Doing

Pomona was an early adopter of green cleaning procedures, and has almost entirely eliminated use of non-green cleaning products throughout campus. Pomona has also been an early adopter of operations and maintenance practices that reduce the use of toxic paints, solvents, and chemicals, including for pest management (however, the campus has struggled with serious ant infestations in recent years, and has been forced to use conventional chemicals to control the issue). Little has been done, however, to take a comprehensive look at chemical use and use and disposal of hazardous materials on campus.

Objectives for 2020

>> 25% reduction of emissions from refrigerant use
>> No use of synthetic fertilizer
>> Full compliance with Green Cleaning Procedures
>> No non-essential use of chemicals determined hazardous (see actions below)
>> Full compliance with Sustainable Operations and Maintenance Standards

Action Plan - Pollution

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
$$ = $5,000-50,000
$$$ = Over $50,000

Issue 1: Reduced use of toxic materials

>> **Require Allied and other contractors to provide details refrigerant use tracking**
The College does not currently track how much refrigerant and of what types are used in campus chilling systems.
Responsibilities: Maintenance | New funding required: None

>> **Develop Green Labs certification program, including purchasing standards and standards for use of chemicals**
Similar to a Green Office Program, a Green Laps Program can certify campus laboratories for various actions they take, including reduced or more efficient use of chemicals and other hazardous materials.
Responsibilities: SIO | New funding required: None

>> **Identify and implement alternatives to chemical fertilizers**
Grounds is moving away from chemical fertilizers and toward organic fertilizers as quickly as possible, but reduced effectiveness and higher cost make it difficult. Additional research is necessary to better understand opportunities.
Responsibilities: Grounds | New funding required: $$

>> **Comprehensively review use of chemicals determined to be hazardous to human health and develop an action plan for reducing their use**
The College should conduct a comprehensive review to identify any chemicals used that could be hazardous to human health, and work strategically to reduce their use where possible.
Responsibilities: SIO, Maintenance, Housekeeping, Dining Services, Grounds, various academic departments | New funding required: Unknown

>> **Pursue Green Seal certification for Housekeeping operations**
While a variety of Green Seal-certified products are currently used as part of Housekeeping's green cleaning program (See Pomona College Sustainable Operations and Maintenance Standards), the entire Housekeeping program can pursue Green Seal certification, which mandates a variety of purchasing and operations activities to reduce environmental impacts.
Responsibilities: SIO, Housekeeping | New funding required: $

Issue 2: Appropriate disposal of hazardous wastes

>> **Encourage an academic project that assesses the campus hazardous waste stream**
A comprehensive review of hazardous wastes could makes a good opportunity for an academic project, particularly a thesis.
Responsibilities: SIO, EA | New funding required: None

>> **Provide receptacle(s) for disposal of medications and other specialized hazardous wastes**
Informal research indicates students do not know what should be disposed of as hazardous waste. Additional receptacles are necessary for improved disposal.
Responsibilities: SIO, Office of Campus Life | New funding required: $

>> **Assess current methods of disposal for hazardous waste**
Currently, North State Environmental, the vendor used for all Claremont Colleges, picks up hazardous wastes. More research should be done to see how North State handles the wastes and whether this is the best option.
Responsibilities: SIO | New funding required: None

Issue 3: Increased awareness of issue

Along with actions covered in Education section.

>> **Conduct an educational campaign specifically about hazardous wastes and appropriate disposal**
Informal research indicates students do not know what should be disposed of as hazardous waste. Information campaigns and increased signage are necessary to improve disposal.
Responsibilities: SIO | New funding required: None

>> **Conduct more outreach about current practices and successes in reducing chemical use**
The College's green cleaning programs, integrated pest management procedures, and reduced use of chemical fertilizers are achievements to be celebrated and communicated to the campus community and the public.
Responsibilities: SIO | New funding required: None

Timeline and Priorities

Years 1-2

Higher priority

>> Require Allied and other contractors to provide detailed refrigerant use tracking
>> Develop Green Labs certification program, including purchasing standards and standards for use of chemicals
>> Encourage an academic project that assesses the campus hazardous waste stream
>> Provide receptacle(s) for disposal of medications and other specialized hazardous wastes
>> Conduct educational campaign specifically about hazardous wastes and appropriate disposal

Lower priority

>> Identify and implement alternatives to chemical fertilizers
>> Conduct more outreach about current practices and successes in reducing chemical use

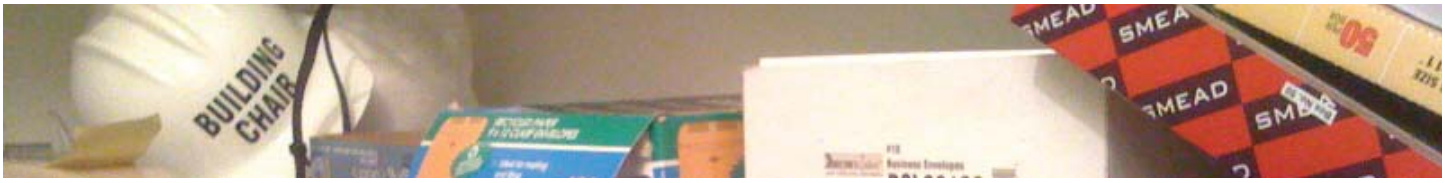
Years 3-5

Higher priority

>> Comprehensively review use of chemicals determined to be hazardous to human health and develop an action plan for reducing their use
>> Assess current methods of disposal for hazardous waste

Lower priority

>> Pursue Green Seal certification for Housekeeping operations



Action Plan - Purchasing

Pomona College purchases a broad array of items as part of its everyday operations – from staples and printer paper to furniture and light fixtures to the stock of goods available in the Coop Store. It is important to realize that every single one of these purchased goods has an environmental impact associated with its manufacturing, transportation, and disposal, and that the collective impact of all of Pomona's purchases is substantial. Seeking to be a leader in sustainability, Pomona seeks to reduce the significant impacts of its consumption behavior. The goal is two-fold: to reduce the volume of products purchased, and to improve the environmental quality of the products purchased.

Sustainability Action Fellows (2008-09): *Lucy Block '11, Ariel Gondolfo '11, Mackenzie Grieman '09, Zack Mattler '11*

Main Issues

>> Reduced consumption
>> Improved impacts of consumption
>> Better purchasing-related data and information
>> Increased awareness of issue

Note: construction and food purchases are covered in separate chapters.

How We're Doing

Pomona operates with a completely decentralized purchasing process, which makes analyzing or controlling purchasing patterns difficult. Individual departments and offices have the discretion to purchase whatever they like from whomever they like, in most instances, with little centralized oversight. However, the College does have two policies related to purchasing – that everyday copy/printer paper purchased with College funds must contain at least 30% post-consumer recycled content, and that applicable appliances purchased with College funds must be EnergyStar certified. It is unclear the extent to which these policies are followed, but informal research leads to an estimate of 95+% compliance. Informal surveys indicate that a variety of offices are taking environmental impacts into consideration when purchasing items, but budget constraints often limit this behavior. Currently, all standard computers purchased by Information Technology Services receive an EPEAT Gold rating, indicating high environmental standards in production and operation (including energy efficiency and limited use of toxic materials). The Coop Store currently stocks a limited variety of environmentally-friendly items for sale; mostly food and drink items.

Objectives for 2020

>> 90% white copy paper purchased 100% PCW, PCF, FSC-certified
>> 90% colored paper, cardstock, and alternative sizes (excluding posters) purchased at least 30% PCW
>> College letterhead 100% PCW, PCF, FSC-certified
>> 30% of College offices/departments certified through Green Office Program

Action Plan - Purchasing

Related Policies/Statements for Adoption

The following statement(s) represent language that will be used on behalf of the College, the Sustainability Integration Office, and other campus groups to develop, structure, and assess sustainability-related efforts on campus.

Environmental Purchasing Policy

Pomona College is committed to reducing its impact on the environment. When making purchasing decisions, this means considering alternative practices, items, and services that reduce environmental impact in production, transport, use, and disposal. All college personnel who make purchasing decisions are expected to support and follow this policy to the extent that these recommendations are practical and/or economically feasible.

Scope
All consumable products, furniture, fixtures and equipment are covered by this policy, including but not limited to: office supplies (e.g. paper products, writing utensils, fasteners, desk accessories, etc.), printing products (e.g. toner and ink), computing equipment, cleaning products, appliances, food,[29] lighting, fixtures and furniture,[30] and everyday cleaning supplies.[31]

Goals
The goals of this policy include the following environmental outcomes:
- Reduced resource impact from analysis of cradle-to-cradle supply, purchasing, use, and disposal process
- Consideration of economic, social, environmental, and ethical aspects of all products and services
- Reduced waste in the production and use of products, measured by reduced mass sent to landfills
- Proper treatment and/or recycling of waste content created during the production or lifetime of products
- Increased use of natural products, eventual elimination of products with toxic, unsustainable, or highly wasteful content

Objectives
Identify and select environmentally-preferred products through consideration of the following:
- Production
  - Reduced resource use during manufacturing and use
  - Location of production (distance traveled by product materials and final product)
  - Social and environmental track record of producer
- Materials
  - Materials sourced in an environmentally-conscious way, including compliance with various certifications and labels (e.g. Fair Trade Certified, USDA Organic, Forest Stewardship Council)
  - Recycled content in product and packaging materials
- Efficiency
  - Efficiency and conservation, including compliance with EnergyStar and/or EPEAT standards

29 Including food purchases made by individual offices and departments. Dining Services food purchases are covered in the Food and Agriculture Chapter of the *Sustainability Action Plan*.

30 Including fixture purchases made by offices and departments. Fixture and furniture purchases for construction and renovation projects are covered in *Green Building Standards* and *Sustainable Operations and Maintenance Standards*.

31 Including cleaning supplies purchases made by individual offices and departments. Housekeeping cleaning supplies purchases are covered in *Sustainable Operations and Maintenance Standards*.

- Waste/Disposal
  - Minimal packaging
  - Waste minimization through durability
  - Minimization of hazardous and toxic wastes
  - Ability to be recycled or disposed of safely
  - Ability to return the product for refurbishing/reclamation at the end of its life-cycle
- Product life-cycle
  - Product lifetime: how long the product lasts
  - Maintenance: how often the product needs to be maintained or repaired during its lifetime
  - Initial/Startup costs: the money needed upfront to purchase the product
  - Operation costs: the money required to keep the product running
  - Payback time: how long until the efficiency and reduced resource use savings pays for the product

Existing Standards

- Copy paper of at least 30% post-consumer recycled content, with the goal of increasing as feasible
- EnergyStar certified appliances and electronic equipment whenever applicable and feasible. his standard also applies to vendor appliances and equipment, including vending machines, computing equipment, and kitchen equipment.

In all purchasing decisions, considerations of reuse or elimination of need should be considered before deciding to acquire new items; however, increased efficiency should also be valued when deciding whether to replace items that use resources (e.g. energy, water) or that have some other ongoing environmental impact.

Bidding requirements or recommendations

The College strives to incorporate the above considerations in all purchasing decisions. In following these purchasing procedures, the College is committed to leading by example and to encouraging current suppliers to provide products and services with a reduced environmental impact. To that end, College purchasers should include a clause in bidding specifications that reads:

> *Pomona College is committed to purchasing environmentally-preferred products with increased recycled content, reduced packaging, reduced transport distance, and other attributes that reduce the products' environmental impact. Please supply information about the related environmentally-preferred qualities of specified items, when available, and suggestions about alternative items that you feel may help us meet our sustainable purchasing goals, along with relevant environmentally-related information.*

Procedures, Strategies and Responsible Parties

It is the responsibility of individual purchasers to incorporate these considerations into their purchasing decisions. The Sustainability Integration Office is available for technical advice and in identifying potential alternatives and opportunities for improvement. The following qualities should be considered desirable in making purchasing decisions:

- Biodegradable/Compostable
- Carcinogen-free
- Chlorofluorocarbon(CFC)-free
- Durable
- Energy-efficient / water-efficient

- Heavy metal free (e.g. no mercury, no lead)
- Low volatile organic compound (VOC) content
- Made from rapidly renewable materials
- Recyclable
- Recycled content
- Refurbished
- Reusable

The President's Advisory Committee on Sustainability and the Sustainability Integration Office will regularly review these purchasing procedures to identify new purchasing categories and opportunities to target in improving green purchasing initiatives. The Sustainability Integration Office will also maintain electronic and other communication tools to assist offices with purchasing decisions, such as a Purchasing Guide and other relevant materials.

Evaluation
The President's Advisory Committee on Sustainability will work with relevant offices (e.g. Treasurer's Office, Business Office) to develop tracking mechanisms for evaluating progress. Progress will be based on percentage of products that meet environmental goals as compared to the total volume of applicable purchases, based on cost. These offices will develop a method for evaluating and tracking purchases and assign responsibilities based on that method.

Related Goals in the Sustainability Action Plan
The Pomona College Sustainability Action Plan establishes the following purchasing-related goals:
- [Copy goals from this Plan when this Policy is used a stand-alone document]

Comparable Goals

The following are similar goals adopted by other institutions or relevant groups:
- A very large variety of schools have some form of an Environmental Purchasing Policy.
- The following schools are a sampling of those with paper purchasing policies requiring 100% PCW white copy paper:
  - Evergreen State University[32]
  - Princeton University[33]
  - University of Vermont[34]
  - Middlebury College[35]
  - University of California - Davis[36]
- UW Oshkosh[37]
  - Develop and follow sustainability-focused purchasing policies for more than 50% of spending for campus materials and equipment in 4 years
- Smith College[38]
  - Reduce campus printer fleet from 700 to 450 by 2020

32 See http://www.evergreen.edu/policies/policy/paperpurchasing.
33 See http://www.princeton.edu/~greening/paper.html.
34 See http://www.uvm.edu/~procure/?Page=contracts.htm.
35 See http://www.middlebury.edu/sustainability/resource/paper.
36 See http://manuals.ucdavis.edu/ppm/350/350-05.pdf.
37 See http://www.uwosh.edu/assets/announcement/sustainability/docs/Campus_Sustainability_Plan_Final_Whole.pdf
38 See http://www.smith.edu/green/docs/SCAMPDraft2-19-10.pdf.

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
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$$$ = Over $50,000

Issue 1: Reduced consumption

>> **Remove plastic shopping bags from campus (waste cross-list)**
Work with the Coop Fountain, Sagehen Café, and any other identified users of plastic bags to move to compostable alternatives (e.g. biodegradable plastic, paper)
Responsibilities: SIO, Coop Fountain, Sagehen Café | New funding required: Unknown; potential cost increases could perhaps be covered by charge for bags or other programs

>> **Declare campus "Styrofoam-free" (waste cross-list)**
The Treasurer's Office can include in a green purchasing email that campus is now "Styrofoam-free" and that this material should not be used.
Responsibilities: SIO, Treasurer's Office | New funding required: None

>> **Assess opportunities to move printed items to electronic formats (waste cross-list)**
PACS should conduct a review of opportunities and create a sub-committee to contact target offices/departments/programs.
Responsibilities: PACS | New funding required: None

>> **Engage in print management activities to reduce printed documents (waste cross-list)**
ITS has identified a variety of potential activities and equipment to use to cut down on unwanted printed documents and is interested in exploring reducing printers on campus for print management.
Responsibilities: ITS | New funding required: Unknown

>> **Create "paper reuse opportunities," including collection of half-used paper for use in printers (waste cross-list)**
Student organizations, the SIO, ITS, Duplicating Services, and other relevant offices can work together to launch a one-sided paper campaign.
Responsibilities: SIO, ITS, Duplicating Services | New funding required: None

>> **Assess opportunities to start an office surplus reuse or donation program (waste cross-list)**
Offices can share with each other surplus or otherwise unwanted office supplies, furniture, and other items in a structured way.
Responsibilities: SIO, Treasurer's Office | New funding required: None

Issue 2: Improved impacts of consumption

>> **Approve new Environmental Purchasing Policy (see previous pages)**
Because Pomona does not have centralized purchasing, an environmental purchasing policy would encourage purchasers to take environmental issues into consideration and would reiterate specific purchasing requirements, such as the purchase of EnergyStar certified appliances.
Responsibilities: SIO, Treasurer's Office | New funding required: None

Action Plan - Purchasing

>> **Continue exploring centralized purchasing options and eco-friendly options to incorporate**
The Treasurer's Office is currently assessing opportunities to incorporate some centralization into purchasing, including established contracts or partnerships with certain vendors. Standards limiting purchasing options (e.g. level of recycled content in paper) can be incorporated.
Responsibilities: SIO, Treasurer's Office | New funding required: Unknown potential changes in department cost

>> **Reiterate established purchasing standards and establishment of new Environmental Purchasing Policy (see above)**
A reminder of existing standards (30% recycled content copy paper, EnergyStar certified appliances) and an announcement of new policies/standards ("Styrofoam-free campus," removal of plastic shopping bags, Environmental Purchasing Policy) should be communicated campus-wide from the Treasurer's Office.
Responsibilities: Treasurer's Office | New funding required: None

>> **Conduct pilot test of 100% post-consumer recycled content paper purchasing for interested departments**
There is hesitancy among many offices to use 100% post-consumer recycled content paper because of potential issues with printers or the look and feel of the paper. Conducting a pilot – providing offices with reams of this paper they may try risk-free - may help reduce these hurdles.
Responsibilities: SIO | New funding required: None (for the pilot)

>> **Conduct pilot test of 100% post-consumer recycled content letterhead**
Pomona's letterhead is currently 30% recycled content, but 100% recycled content options are available. These papers should be tested for potential issues with printers and for the look and feel of the paper, particularly with the highest volume users (e.g. Annual Giving, the President's Office).
Responsibilities: SIO | New funding required: None (for the pilot)

>> **Pilot use of vegetable-based inks in printers**
Vegetable-based inks, as opposed to petroleum-based inks, reduce environmental impacts in manufacturing and disposal. These inks should be tested in printers.
Responsibilities: SIO, Duplicating Services, ITS | New funding required: None

>> **Assess opportunities to transition Pomona logo items in Coop Store to alternative products**
T-shirts, notebooks, and other Pomona products all have alternatives with better environmental impacts (including organic cottons and other fabrics, recycled paper and plastics, etc.).
Responsibilities: SIO, Coop Committee | New funding required: None

Issue 3: Better purchasing-related data and information

>> **Develop methods for tracking paper use**
The College currently has little idea how much paper it uses on an annual basis. Working with the Business Office, we can begin to track how much paper is purchased and of what recycled content.
Responsibilities: Business Office | New funding required: None

>> **Incorporate reporting into potential centralized purchasing contract**
In assessing opportunities to partner with a particular office supply distributor, the College should try to establish means of "green product tracking" to understand purchasing patterns and the extent to which offices are purchasing more environmentally-friendly items.
Responsibilities: SIO, Business Office, Treasurer's Office | New funding required: None

Issue 4: Increased awareness of issue

Along with actions covered in Education section.

>> **Launch Green Office Program**
The Sustainability Integration Office has begun developing a green office program that certifies participating offices at four different levels for environmentally-friendly behavior and actions. This program should be fully launched.
Responsibilities: SIO | New funding required: None

>> **Distribute sustainable purchasing guide to offices**
The Sustainability Integration Office has developed a small brochure outlining environmentally-related characteristics to consider when making purchases (e.g. "When purchasing paper, consider: recycled content, FSC-certification, processed chlorine free, …."). This guide should be distributed to department administrative assistants.
Responsibilities: SIO | New funding required: None

>> **Develop sustainable purchasing guide for students**
A sustainable purchasing guide for students could outline issues to take into consideration when making specific purchases, as well as online and near-campus sources for environmentally-friendly items.
Responsibilities: SIO | New funding required: None

Timeline and Priorities

Years 1-2

Higher priority

>> Remove plastic shopping bags from campus
>> Declare campus "Styrofoam-free"
>> Assess opportunities to move printed items to electronic formats
>> Engage in print management activities to reduce printed documents
>> Approve new Environmental Purchasing Policy
>> Continue exploring centralized purchasing options and eco-friendly options to incorporate
>> Reiterate established purchasing standards and announces establishment of new Environmental Purchasing Policy
>> Develop methods for tracking paper use
>> Launch Green Office Program

Lower priority

>> Create "paper reuse opportunities," including collection of half-used paper for use in printers
>> Assess opportunities to start an office surplus reuse or donation program
>> Conduct pilot test of 100% post-consumer recycled content paper purchasing for interested departments
>> Conduct pilot test of 100% post-consumer recycled content letterhead
>> Pilot use of vegetable-based inks in printers
>> Incorporate reporting into potential centralized purchasing contract

Action Plan - Purchasing

Years 3-5

Higher priority

>> Assess opportunities to transition Pomona logo items in Coop Store to alternative products

>> Distribute sustainable purchasing guide to offices

Lower priority

>> Develop sustainable purchasing guide for students

Action Plan - Transportation

Transportation is a necessary part of the College's operations – from students traveling to campus from their homes all over the world for the start of every school year, to the staff and faculty who travel to campus for work almost every day, to the trucks and carts used to carry people, food, waste, and maintenance materials from one side of campus to the other. The College's Southern California location also makes transportation activities an integral part of how the campus population connects with its surroundings, whether it's students going into nearby communities for internships, faculty taking classes into the surrounding natural areas to conduct research, or campus groups in student internships, faculty research activities, or students heading into Los Angeles for cultural experiences and events. Each of these transportation activities has an environmental impact that varies based on the distance traveled and the mode of transportation used, and these individual impacts can build quickly to have a substantial impact on air, water, and soil pollution, resource use, and the emissions of greenhouse gases.

Main issues

>> Improved transportation modes
>> Reduced transportation miles
>> Voluntary Offsets
>> Better transportation-related data and information

How We're Doing

Pomona has a variety of programs aimed at reducing the impacts of transportation activities. As a residential campus, student commuting miles are inherently quite low to begin with, and the College tries to reduce student driving even more through programs including a student-run bike shop with free bike rental, a fleet of folding bikes that can be checked out free of charge and taken on area public transit, discounted transit passes for sale, and a detailed transit guide describing area destinations accessible by public transit. For employees, the College has an extensive Rideshare program, paying employees for every day they carpool, walk, bike, or use alternative transit methods, heavily subsidizing the cost of public transit to get to work, and providing a variety of prizes and other incentives for participating. The College also provides over 20 faculty rental properties within 1 mile of campus and provides home loan assistance for faculty who want to purchase homes within five miles. The College also hosts 13 Zipcars, shared cars that can be rented out by the hour or by the day and that help reduce the number of cars on campus. The College's Land Use Plan also identifies a variety of actions that will reduce the use of cars in the center of campus and further emphasize pedestrian and other means of transportation. However, the College is need of additional infrastructure to increase biking and other non-automobile forms of transportation around campus. The College also lacks a cohesive policy or procedure regarding bikes on campus.

Objectives for 2020

>> Reduction of campus fleet gas use by 15%
>> Reduction of single occupancy vehicle commuting by 10%
>> Conversion of 50% of fleet to alternatively fueled vehicles (including solar charging for carts, biodiesel for Grounds vehicles, and hybrids for automobiles)

>> Starting now, follow these standards for automobile purchases:
- Large automobiles (vans, trucks, SUVs): Global Warming Score[39] of at least 5
- Small automobiles (everything else.): Global Warming Score of at least 7
- Vehicles with special needs (e.g. larger chassis for hauling): Global Warming Score of at least 5 when possible
- All automobile purchases: if special circumstances apply where the Global Warming Score standard cannot be met, consultation with the Sustainability Integration Office is required

Comparable Goals

The following are similar goals adopted by other institutions or relevant groups:

- Colorado University - Boulder[40]
  - Reduce single occupancy vehicle trips to 2000 levels in 10 years
  - Conversion of 25% of fleet to high efficiency or alternatively fueled vehicles in 10 years
- Hamilton College
  - Fleet vehicle replacements over time are targeted to reduce gas consumption by 20 percent before 2015.[41]
- Macalester College[42]
  - Reduce single-occupancy vehicles commuting to campus by at least 50 percent from 2008 levels by 2025.
- Smith College[43]
  - Improve fleet-weighted average EPA estimated fuel mileage from 16 mpg to 25 mpg by 2015, which will reduce fuel use in college fleet vehicles by 33%.
  - Reduce single-occupant personal vehicle use for commuting from 69% of trips to 59% of trips by 2015.
- University of California – Santa Barbara[44]
  - By 2011, 75% of vehicle purchases ultra-low emissions or alternative fuels
- University of Wisconsin - Oshkosh[45]
  - Reduce auto trip to campus by 20% in 10 years
- Virginia Tech[46]
  - Alternative transportation use will increase from the current level of 45%, to 52% in 2015, and 60% in 2020

39 See http://www.driveclean.ca.gov/Know_the_Score/Understand_the_Smog_Score.php.
40 See http://ecenter.colorado.edu/files/6d9ff53a1e960600f0565eae8d4607d40d55b5c0.pdf.
41 See http://www.hamilton.edu/Sustainability/HamiltonClimateActionPlan-Aug09.pdf .
42 See http://www.macalester.edu/sustainability/MacalesterSustainabilityPlanSept2009.pdf.
43 See http://www.smith.edu/green/docs/SCAMPDraft2-19-10.pdf.
44 See http://sustainability.ucsb.edu/plan/docs/sustainability_plan_workingdoc4.08.pdf.
45 See http://www.uwosh.edu/assets/announcement/sustainability/docs/Campus_Sustainability_Plan_Final_Whole.pdf.
46 See http://facilities.vt.edu/sustainability/sustPlan.pdf.

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
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$$$ = Over $50,000

Issue 1: Improved transportation modes

>> **Require consultation from Sustainability Integration Office in vehicle purchasing process**
When offices and departments purchase vehicles, they should consult with the Sustainability Integration Office to discuss opportunities to increase efficiency or pursue alternative fuels (e.g. hybrids, electric vehicles).
Responsibilities: SIO, Business Office | New funding required: None (though potential for increased cost in vehicles)

>> **Develop short- and long-term plan for Green Bikes program development**
Green Bikes should develop a mission statement, short- and long-term program goals, and strategies for new and improved programs, in order to effectively reach the widest audience and best encourage biking activities on campus.
Responsibilities: SIO, Green Bikes | New funding required: Unknown

>> **Implement currently identified bike rack projects**
Facilities and Campus Services has identified a small number of bike rack projects to be implemented, including a bike "parking lot" in the Wig Hall courtyard.
Responsibilities: Facilities and Campus Services | New funding required: $$

>> **Produce educational information and resources for campus cyclists**
Bike maps, bike tours, and a library of bike videos, books, and other materials can help to encourage biking as a recreational activity and as a viable form of transportation in the area.
Responsibility: Green Bikes (SIO) | New funding required: None

>> **Assess opportunities for alternative fuels in existing campus vehicles**
Explore opportunities for current campus fleet vehicles, including biodiesel and solar power for electric carts.
Responsibilities: SIO | New funding required: None

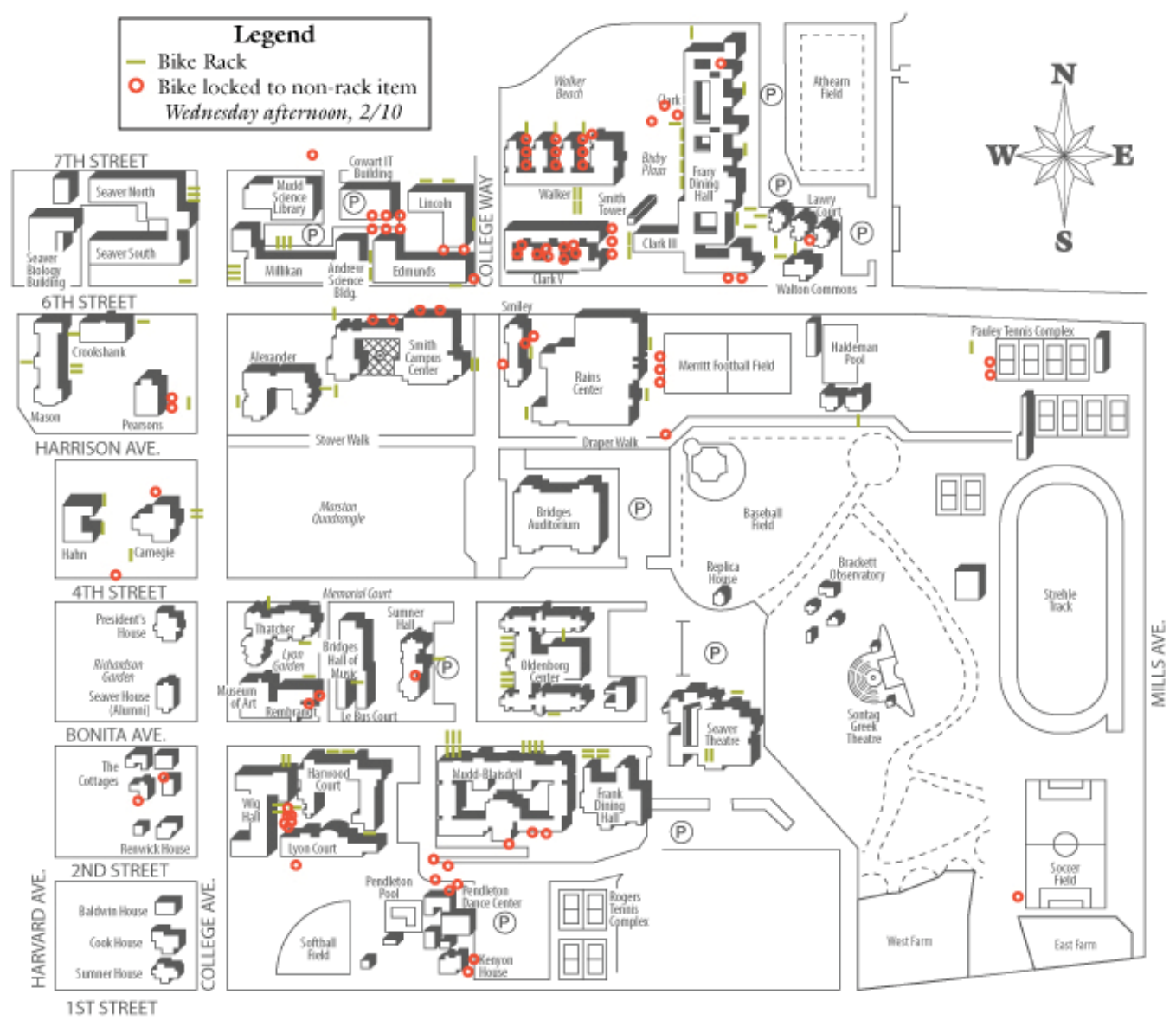
>> **Move forward with feasible opportunities for alternative fuels in existing campus vehicles**
Begin to pursue opportunities previously identified.
Responsibilities: SIO, Facilities and Campus Services | New funding required: Unknown

>> **Work with City and local agencies to improve awareness of local transit options**
Increased outreach about area transit systems and opportunities to use public transit can help the campus community use those modes more often. Claremont's current mayor has expressed an interest in helping with this project.
Responsibilities: SIO, Office of Campus Life | New funding required: None

>> Draft Campus Bike Plan to better assess needs

A campus bike plan will better identify additional needs and opportunities for bike storage, parking, amenities, safety, and other related campus programs and infrastructure. Figure 2 shows current bike rack locations and locations of bikes locked to non-rack structures during a recent study.

Figure 2. Bike rack locations and incompliant bike study.



Responsibilities: Facilities and Campus Services, SIO, Student Affairs | New funding required: Unknown

Issue 2: Reduced transportation miles

>> Continue to restrict first-year students from bringing cars to campus

The ban on first-year students bringing cars to campus should continue, in order to emphasize the use of alternative means around campus and into surrounding areas.

Responsibilities: Student Affairs, Office of Campus Life | New funding required: None

>> **Better publicize staff-faculty carpooling website and develop improved system for student rideshare opportunities**
The current staff-faculty carpooling website is not well publicized or developed, and there exists no structured way for students to share rides (whether everyday trips to the grocery store, weekly trips into Los Angeles for internships, or rideshares to other regions during breaks).
Responsibilities: SIO, Human Resources, Student Affairs | New funding required: Unknown, likely $ or $$

>> **Publicize available videoconferencing as a means of reducing travel needs**
Videoconferences can be (and has been) used to reduce travel for activities such as job interviews and small group meetings.
Responsibilities: SIO, ITS | New funding required: None

>> **Develop an annual Bike to Work day**
Hold an annual event encouraging biking for commuting, perhaps in coordination with Metro and/or the City of Claremont's annual events.
Responsibilities: SIO, potentially Human Resources | New funding required: None

>> **Assess opportunities for telecommuting or flexible schedules as means of reducing commuting miles**
More flexible policies regarding telecommuting or flexible schedules (such as a four-day work week) can significantly cut down on commuting miles.
Responsibilities: Human Resources | New funding required: None

Issue 3: Voluntary offsets

>> **Assess opportunities to partner with travel offset organizations and develop outreach for voluntary travel offsets**
If an appropriate opportunity is found to offset the environmental impacts of travel, the College should encourage individuals to engage in offsets for travel activities (e.g. study abroad travel, research travel)
Responsibilities: SIO, PACS | New funding required: Unknown

Issue 4: Better transportation-related data and information

>> **Develop a program for tracking transportation miles**
The College currently does not track transportation miles with anything but broad estimates, so does not fully understand the impacts of travel activities.
Responsibilities: Business Office, SIO | New funding required: Unknown

Timeline and Priorities

Years 1-2

Higher priority

>> Require consultation from Sustainability Integration Office vehicle purchasing process
>> Develop short- and long-term plans for Green Bikes program development
>> Implement currently identified bike rack projects
>> Draft Campus Bike Plan to better assess needs
>> Continue to restrict first-year students from bringing cars to campus
>> Develop a program for tracking transportation miles

Action Plan - Transportation

Lower priority

>> Produce educational information and resources for campus cyclists
>> Better publicize staff-faculty carpooling website and develop improved system for student rideshare opportunities
>> Publicize available videoconferencing as a means of reducing travel needs

Years 3-5

Higher priority

>> Assess opportunities for alternative fuels in existing campus vehicles
>> Move forward with feasible opportunities for alternative fuels in existing campus vehicles
>> Assess opportunities to partner with travel offset organizations and develop outreach for voluntary travel offsets

Lower priority

>> Work with City and local agencies to improve awareness of local transit options
>> Develop an annual Bike to Work Day
>> Assess opportunities for telecommuting or flexible schedules as means of reducing commuting miles

Action Plan - Waste

Waste is an important issue for Pomona College to consider for a variety of issues, including Southern California's looming waste management capacity issues (for instance, the landfill that currently handles Claremont's wastes will close in the 2010s, necessitating increased transportation miles and associated pollution to haul wastes to a more distant site) and recent significant increases in landfill hauling costs. Pomona College's management of waste has consequences for climate change, local communities, local ecosystems, future generations, and the College's overall sustainability. As landfills fill up and related pollution and land use issues increase, it is more important than ever for the College to engage in alternative waste management strategies, including reuse, recycling, and composting. Education and awareness issues are also particularly implicated in waste management, because personal decision-making and everyday behaviors have a direct impact on waste generation and diversion.

Sustainability Action Fellows (2008-09): *Elaine Choi '11, David DiTullo '11, Pauline Wang '12, Nate Wilairat '11*

Main issues

>> Increased diversion of wastes from landfill disposal
>> Reduction of total wastes generated by the campus (including landfill, recycling, and other disposal methods)
>> Better waste-related data and information
>> Increased awareness of issue

How We're Doing

Pomona has a well-established recycling program, though more awareness is necessary to prevent cross-contamination and to increase overall use of recycling infrastructure. The College has also had success with diversion of construction and demolition wastes, the establishment of a pre-consumer composting program that brings produce scraps to the campus' Organic Farm, and a program that collects and resells or donates reusable campus consumer items, but there are still many improvements that can be made to reduce waste generation and the use of landfills.

Objectives for 2020

>> Diversion of 75% waste from landfills
>> Construction and renovation waste diversion rate of 90%
>> Reduction of total waste by 10%

Comparable Goals

The following are similar goals adopted by other institutions or relevant groups:

- City of Claremont[47]
  - 70% diversion rate by 2010
  - 10% reduction of total waste by 2015

47 See http://www.ci.claremont.ca.us/download.cfm?ID=25654.

- Kalamazoo College[48]
  - Reduce total solid waste (including recycling) that is sent off campus by 25% by 2020.
- Macalester[49]
  - 100% reduction of landfill waste in 11 years
  - 40% recycling rate in 3 years
- Smith College[50]
  - Reduce landfill solid waste by 20% (147 tons) by 2015.
  - Compost all pre- and post-consumer food waste produced by Dining Services by 2012.
  - Increase recycling rate to 34% of solid waste by 2015.
  - Increase recycling rate to 50% of solid waste by 2025.
- University of California system[51]
  - 50% diversion by June 30, 2008
  - 75% diversion by June 30, 2012
  - Zero waste by 2020
- University of California – Santa Barbara[52]
  - Food waste reductions:
    - 50% in 10 years
    - 80% in 20 years
    - 100% in 25 years
  - Waste reduction:
    - 50% in 10 years
    - 80% in 15 years
    - 90% in 25 years
    - 100% in 30 years

48 See http://dspace.nitle.org/bitstream/handle/10090/12018/KCollegeSustainabilityClimateActionPlan.pdf?sequence=1.
49 See http://www.macalester.edu/sustainability/MacalesterSustainabilityPlanSept2009.pdf.
50 See http://www.smith.edu/green/docs/SCAMPDraft2-19-10.pdf.
51 See http://www.universityofcalifornia.edu/sustainability/recycle.html.
52 See http://sustainability.ucsb.edu/plan/docs/sustainability_plan_workingdoc4.08.pdf.

Recommended Potential Strategies

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Key to Financial Estimates
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Issue 1: Increased diversion of wastes from landfill disposal

>> **Expand composting program to residence halls**
Providing compost receptacles in residence halls, particularly those with kitchens, can help steer organic wastes away from the landfill and toward the Organic Farm's composting programs.
Responsibilities: SIO, Organic Farm | New funding required: $

>> **Expand opportunities for specialized wastes disposal**
Providing more opportunities for appropriately disposing of specialized wastes – such as electronics, batteries, printer cartridges, and medications – in residential and office environments can be accomplished through programs such as on-call pickups and more disposal containers.
Responsibilities: SIO | New funding required: None

>> **Start composting program that allows composting of all food scraps from dining halls**
The purchase and use of composting equipment (as opposed to free-form pile method currently used) or the use of an off-site composting facility would allow for not only more controlled composting activities, but the expansion of the program to include pre- and post-consumer wastes, including more than the produce scraps currently composted at the College's Organic Farm.
Responsibilities: SIO, Organic Farm, Dining Services | New funding required*:* $$

>> **Further develop ReCoop/Clean Sweep program to collect as much reusable waste as possible**
After a few years of implementing this project, involved groups should conduct an internal study and planning process to further develop activities, methods, and scope to best serve the campus community and divert as much waste as possible.
Responsibilities: SIO, ReCoop/Clean Sweep | New funding required: Unknown

>> **Develop new waste management techniques and programs**
The Housekeeping department is more intimately aware of waste disposal trends on campus than anyone else, and can assist with the creation of new programs and projects to help divert landfill wastes.
Responsibilities: SIO, Housekeeping | New funding required: Dependent on resulting ideas

Issue 2: Reduction of total wastes generated by the campus

>> **Remove plastic shopping bags from campus (purchasing cross-list)**
Work with the Coop Fountain, Sagehen Café, and any other identified users of plastic bags to move to compostable alternatives (e.g. biodegradable plastic, paper).
Responsibilities: SIO, Coop Fountain, Sagehen Café | New funding required: Unknown; potential cost increases could perhaps be covered by charge for bags or other programs

>> **Declare campus "Styrofoam-free" (purchasing cross-list)**
The Treasurer's Office can include in a green purchasing email that campus is now "Styrofoam-free" and that this material should not be used.
Responsibilities: SIO, Treasurer's Office | New funding required: None

>> **Assess opportunities to move printed publications and forms to electronic formats (purchasing cross-list)**
PACS should conduct a review of opportunities and create a sub-committee to contact target offices/departments/programs.
Responsibilities: PACS | New funding required: None

>> **Engage in print management activities to reduce printed documents (purchasing cross-list)**
ITS has identified a variety of potential activities and equipment to use to cut down on unwanted printed documents and is interested in exploring reducing printers on campus for print management.
Responsibilities: ITS, SIO | New funding required: Unknown

Action Plan - Waste

>> **Eliminate use of non-reusable diningware in normal dine-in dining hall operations**
Dining Services currently uses disposable diningware for a variety of functions, including dessert cups and smoothies.
Responsibilities: Dining Services | New funding required: None

>> **Create "paper reuse opportunities," including collection of half-used paper for use in printers (purchasing cross-list)**
Student organizations, the SIO, ITS, Duplicating Services, and other relevant offices can work together to launch a one-sided paper campaign.
Responsibilities: Environmental Affairs Commissioner, SIO, ITS, Duplicating Services | New funding required: None

>> **Assess opportunities to start an office surplus reuse or donation program (purchasing cross-list)**
Offices can share with each other surplus or otherwise unwanted office supplies, furniture, and other items in a structured way.
Responsibilities: SIO, Treasurer's Office | New funding required: None

>> **Discontinue use of all non-biodegradable disposable diningware in dining hall operations and catering**
All plates, bowls, cups, cutlery, and other diningware (excluding servingware unless biodegradable options are available) should be biodegradable/compostable.
Responsibilities: Dining Services | New funding required: None (cost increases built into prices for catering)

>> **Assess opportunities for reduced chemical waste in academic programs**
Work with specific academic departments to reduce chemical waste.
Responsibilities: SIO | New funding required: None

>> **Explore eliminating paper ordering and invoicing system in Dining Services**
Dining Services should begin discussing completely electronic ordering and invoicing systems with purveyors to reduce paper use and waste.
Responsibilities: Dining Services | New funding required: None

Issue 3: Better waste-related data and information

>> **Develop ways to better continuously assess campus waste streams and provide data publicly**
Comprehensive waste stream data and means of tracking that data is not currently available, but should be centrally compiled and tracked and placed online in a user-friendly format.
Responsibilities: SIO, Housekeeping, Project Management, Organic Farm, City of Claremont | New funding required: Unknown

>> **Conduct an annual food waste audit for post-consumer dining wastes**
Conducting annual post-consumer food waste measurements in the dining halls can increase awareness and help track progress.
Responsibilities: SIO, Dining Services | New funding required: None

>> **Start bi-annual campus-wide audit of trash and recycling bins**
Ensuring every office, classroom, and other relevant campus space has both a trash and recycling bin will likely help reduce cross-contamination and encourage recycling.
Responsibilities: SIO, Housekeeping | New funding required: None

>> **Conduct follow-up comprehensive campus waste audit to better understand campus waste**
As a follow up to the March 2010 audit, analyzing the campus waste stream will illustrate progress and opportunities for targeted projects to better reach goals.
Responsibilities: SIO, Housekeeping | New funding required: None

Issue 4: Increased awareness of issue

Along with actions covered in Education section.

>> **Create targeted education campaigns based on waste audit**
The initial 2010 waste audit will provide more data on which targeted programs can be developed.
Responsibilities: SIO | New funding required: None

>> **Create move-in waste awareness program for first-year students**
Reducing and correctly diverting move-in wastes – particularly cardboard and packaging – can help reduce high August and September landfill rates.
Responsibilities: SIO, Office of Campus Life | New funding required: Unknown

>> **Conduct annual field trips to the landfill, recycling center, electronic waste center, and other sites**
Visiting the final destinations for campus waste helps increase awareness and provide material for educational campaigns.
Responsibilities: SIO | New funding required: None

>> **Create Zero Waste Events program, including educational guides and materials for departments**
Create program with signage and marketing, checkout items, and other support necessary for zero-waste or reduced-waste event planning.
Responsibilities: SIO | New funding required: $

Timeline and Priorities

Years 1-2

Higher priority

>> Expand composting program to residence halls
>> Remove plastic shopping bags from campus
>> Declare campus "Styrofoam-free"
>> Assess opportunities to move printed publications and forms to electronic formats
>> Engage in print management activities to reduce printed documents
>> Eliminate use of non-reusable diningware in normal dine-in dining hall operations
>> Develop ways to better continuously assess campus waste streams and provide data publicly
>> Conduct an annual food waste audit for post-consumer dining wastes
>> Create targeted education campaigns based on waste audit

Lower priority

>> Expand opportunities for specialized waste disposal
>> Create "paper reuse opportunities," including collection of half-used paper for printers
>> Assess opportunities to start an office surplus reuse or donation program
>> Start bi-annual campus-wide audit of trash and recycling bins
>> Create move-in waste awareness program for first-year students
>> Conduct annual field trips to the landfill, recycling center, electronic waste center, and other sites

Years 3-5

Higher priority

>> Start composting program that allows composting of all food scraps from dining halls
>> Further develop ReCoop/Clean Sweep program to collect as much reusable waste as possible

Action Plan - Waste

>> Discontinue use of all non-biodegradable disposal diningware in dining hall operations and catering
>> Conduct follow-up comprehensive campus waste audit to understand campus waste
>> Create Zero Waste Events program, including educational guides and materials for departments

Lower priority
>> Develop new waste management techniques and programs
>> Assess opportunities for reduced chemical waste in academic programs
>> Explore eliminating paper ordering and invoicing system in Dining Services

Action Plan - Water

Southern California has a particularly long history of water shortages, alleviated only by transporting water from Northern California and the Colorado River. In the coming years, population in this area will continue to grow and resources will continue to dwindle. The Colorado River, which feeds the aqueduct, has experienced drought conditions most of the last decade and reserve supplies have also decreased in the past three years, prompting the Metropolitan Water District that serves Claremont to issue an alert in June of 2008 "urging local jurisdictions to adopt and implement water conservation ordinances and to significantly increase efforts and programs to conserve water."[53]

Stormwater is also an important environmental issue, considering that millions of gallons of rain and municipal runoff result in the need for costly management infrastructure and create substantial pollution impacts from the variety of soil and water pollutants, including deadly bacteria, that runoff carries along with it into the water treatment system and natural waterways.

While Pomona is fortunate to have access to two wells that produce millions of gallons of water annually, it should also set a positive example and decrease its environmental impacts by reducing consumption of potable water, increasing sustainable stormwater management techniques, and increasing awareness of water issues on campus.

Sustainability Action Fellows (2008-09): *Ameer Abdul-Badee '09, Katharine Brieger '11, Jamie Hall '12, Danielle Manning CMC '11, Zack Mirman '11, Nicholas Tyack '11*

Main issues

>> Reduced water use and reduced reliance on imported water sources
>> Increased capacity of sustainable stormwater management infrastructure
>> Better water-related data and information
>> Increased awareness of issue

How We're Doing

While Pomona is by far the largest water user of the Claremont Colleges, over the last 10 years water use has stabilized and begun to decline due to deliberate changes in irrigation frequency, technology, and strategies and the strategic removal of turf and shrubs and replacement with drip-irrigated plantings and/or mulch. Further reductions can be made with more judicious use of turf and the replacement of current plantings with more drought-resistant and native species, where appropriate. Some efforts have been made to incorporate plumbing fixtures with higher water efficiencies (e.g. waterless urinals, dual-flush toilets, and low-flow showerheads); however, these models have yet to be the standard across campus. The College also has in place a variety of technologies, designs, and practices for natural stormwater management, including the use of bioswales, permeable hardscapes, and a particularly innovative site design on north campus that channels runoff into the Wash. No buildings or sites are specifically metered for water use, making it difficult to understand, benchmark, and track water use across campus.

53 The Metropolitan Water District of Southern California. (2009). *A Call to Save Water.* Accessed at http://www.mwdh2o.com.

Action Plan - Water

Objectives for 2020

>> 5% annual reduction in 3-year average water use, adjusted for cooling degree days
>> Use of reclaimed/gray water (if possible)
>> No net increase in impermeable surfaces (except where runoff is channeled into natural treatment infrastructure)
>> Increased use of sustainable stormwater management techniques
>> Complete metering of major buildings for water use within 2 years[54]
>> Complete metering of all buildings for water use within 5 years

Comparable Goals

The following are similar goals adopted by other institutions or relevant groups:

- City of Claremont[55]
    - Reduce potable use by 20% by 2012 and 40% by 2017
- Kalamazoo College[56]
    - Reduce campus storm/rain water runoff 50% by 2020
    - Reduce potable water use 25% below 2008 levels by 2020
- Smith College[57]
    - Reduce potable water consumption by 11.8 million gallons (~24%) by 2015
    - Eliminate use of potable water for irrigation by 2015
    - Reduce potable water consumption by an additional 1.5 million gallons between 2015 and 2030
- University of California – San Diego[58]
    - Reduce water use by 4%/year
    - Increase use of reclaimed water
    - Provide metering for 100% of buildings
    - Submeter 100% of irrigation water use
- University of California – Santa Barbara[59]
    - Make water data accessible
    - Achieve all water-related LEED points in all new buildings/renovations
    - Reduce water use AND increase reclaimed water use by:
        - 15% - 3 years
        - 25% - 5 years
        - 50% - 15 years
        - 75% - 20 years
        - 90% - 25 years
        - 100% - 30 years

54 All buildings over 15,000 ft^2.
55 See http://www.ci.claremont.ca.us/download.cfm?ID=25654.
56 See http://dspace.nitle.org/bitstream/handle/10090/12018/KCollegeSustainabilityClimateActionPlan.pdf?sequence=1.
57 See http://www.smith.edu/green/docs/SCAMPDraft2-19-10.pdf.
58 See http://aps-web.ucsd.edu/sustainability/FM/PDFs/UCSD_Climate_Action_Plan_12-08.pdf.
59 See http://sustainability.ucsb.edu/plan/docs/sustainability_plan_workingdoc4.08.pdf.

Recommended Potential Strategies

The following recommended strategies, along with their listed priority level and timeline, represent a suggested potential group of activities for the College to pursue in attempting to reach the above Objectives. The actual actions the College may take in this area may include but are not limited to the list below, and some of the strategies listed below may not be implemented.

Key to Financial Estimates
$ = Under $5,000
$$ = $5,000-50,000
$$$ = Over $50,000

Issue 1: Reduced water use

>> **Retrofit plumbing fixtures**
The use of dual-flush toilets, waterless urinals, pint-flush urinals, low-flow showerheads, faucet aerators, and low-flow dishwashing nozzles should be expanded across campus. Retrofits should be used where possible, instead of complete replacement of fixture.
Responsibilities: Maintenance | New funding required: $$

>> **Stop force-thawing in dining facilities**
Food is currently thawed under continuously running water, a practice that could be ended with advanced planning and increased staff training.
Responsibilities: Dining Services | New funding required: None

>> **Training program for Grounds staff on maintenance of sustainable landscapes**
Training for Grounds staff can help with water-saving techniques and in ensuring the success and effectiveness of sustainable landscaping design.
Responsibilities: Grounds | New funding required: None

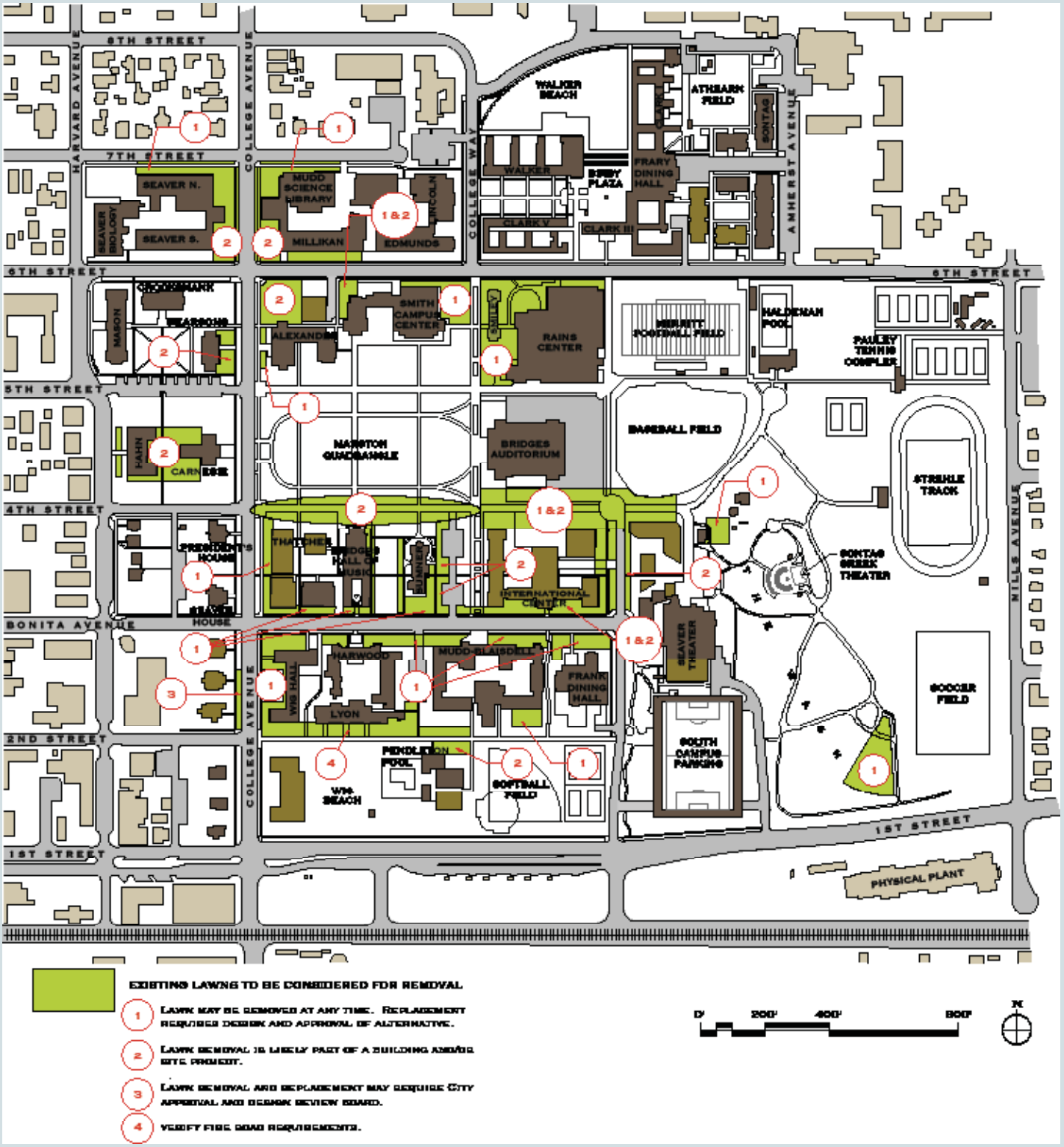
>> **Public encouragement of campus community to report water waste**
Encouraging the community to report examples of water waste, most notably broken sprinklers, not only encourages conversation about our landscaping-related sustainability programs but assists Grounds in identifying problems.
Responsibilities: SIO | New funding required: None

>> **If available, begin using reclaimed water for landscaping**
If the City of Claremont makes available reclaimed water sources, the College should begin to explore the feasibility of using this water source on campus.
Responsibilities: SIO, Grounds, Facilities and Campus Services | New funding required: Unknown

>> **Examine opportunities for water re-use on campus**
Some campus waste water (e.g. shower water, laundry water, condensate from chilling infrastructure) may be reused on campus for other uses.
Responsibilities: SIO, Maintenance, Grounds | New funding required: Unknown

>> **Move forward with identified turf removal projects**
Land Images, the College's landscape architect, has identified opportunities for potential turf removal projects (see Figure 3, following page). These opportunities should be further studied based on current/future use of those spaces, feasible alternative designs, and cost.
Responsibilities: Grounds, Facilities and Campus Services | New funding required: $$

Figure 3. Potential opportunities for turf removal.



Issue 2: Increased capacity of sustainable stormwater management infrastructure

>> **Move forward with identified sustainable stormwater management opportunities**
Opportunities for sustainable stormwater management have been identified across campus and should be further studied based on feasibility and cost.
Responsibilities: Grounds, Facilities and Campus Services | New funding required: $$

Issue 3: Better water-related data and information

>> **Move forward with building-level water metering and conduct annual assessment**
Individual buildings, starting with the largest buildings on campus, should be monitored individually for water use. Systems should be submetered to accurately assess domestic, landscaping, and mechanical uses of water. Information from these meters should be monitored at least annually to assess progress and potential problem areas.
Responsibilities: Facilities and Campus Services | New funding required: $$

>> **Provide user-friendly public access to water use data and tracking**
Provide user-friendly online access to water tracking data, including meters where available.
Responsibilities: SIO | New funding required: None

Issue 4: Increased awareness of issue

Along with actions covered in Education section.

>> **Create educational signage and programs for domestic water use**
Create and post stickers, signage, and other educational programs that encourage water conservation in domestic uses (e.g. bathrooms and kitchens).
Responsibilities: SIO | New funding required: None

>> **Develop interpretive program for sustainable landscaping efforts**
The program could incorporate signage, tour events, self-led tour brochures, and/or other events and materials.
Responsibilities: Grounds, SIO | New funding required: $

>> **Develop sustainability garden on campus**
A sustainable garden site would include demonstrations of sustainable landscaping techniques and technologies (e.g. drip irrigation), and could potentially include innovative stormwater management and rainwater collection techniques.
Responsibilities: Facilities and Campus Services, Grounds, SIO | New funding required: $$

Timeline and Priorities

Years 1-2

Higher priority

>> Retrofit plumbing fixtures
>> Stop force-thawing in dining facilities
>> Move forward with building-level water metering and conduct annual assessment
>> Provide user-friendly public access to water use data and tracking

Lower priority

>> Training program for Grounds staff on maintenance of sustainable landscapes
>> Public encouragement of campus community to report water waste
>> Create educational signage and programs for domestic water use

Action Plan - Water

Years 3-5

Higher priority

>> Move forward with identified turf removal projects
>> If available, begin using reclaimed water for landscaping
>> Move forward with identified sustainable stormwater management opportunities
>> Develop interpretive program for sustainable landscaping efforts
>> Develop sustainability garden on campus

Lower priority

>> Examine opportunities for water re-use on campus

Key Issues
Environmental Justice & Climate Action

The following two issues – environmental justice and climate change – are implicated in almost all of the preceding content. Whether reducing energy use or changing purchasing practices, there are very real and very important impacts on communities and global climate systems that must be acknowledged. The following sections explore Pomona's relationship with these two topics.

Key Issue – Environmental Justice

Sustainability Action Fellows (2008-09): *Isabelle Ballard '11, Sabrina Baum '11, Katie Dutcher '09, Eleanor Hughes '10, Chelsea Muir '11*

Environmental justice is the conviction that everyone – regardless of race, gender, socioeconomic status, nationality – has the right to a healthy environment This movement is based on the assertion that certain groups within society have to shoulder a disproportionately high amount of environmental degradation and pollution. As a result, African Americans constitute one out of five deaths due to asthma, while they only constitute one out of every eight American citizens. In addition, Latino children are more likely to have suffered from asthma at some point in their lives than children of any other ethnic group. Hazardous waste sites and asthma rates are easy to quantify, but environmental justice encompasses far more than just these indicators, and also includes inequalities in land use, noise levels, water quality, access to healthy food and to neighborhood parks and green space. Environmental justice is the movement to make right these inequities, so that everyone can enjoy health, safety and security in their own environment.

Another crucial aspect of environmental justice is the self-determination of communities. The environmental justice movement is inherently different from the conventional environmental movement because of its belief that communities should speak on behalf of themselves, in a way that a rainforest, a stream, a species, or other more "traditional" environmental targets cannot. A core tenet of environmental justice is that people deserve a healthy environment, as well as the respect to advocate for themselves on the issues that concern their lives. As an educational institution, it is important that Pomona move forward with environmental justice efforts keeping this notion in mind.

Environmental Justice is a global movement, but has particular relevance at Pomona College because of our location in the Inland Valley. Because of the significant amount of goods transported through the Inland Valley every day, predominantly by diesel-powered trucks, this area has astronomical levels of environmental degradation, particularly air pollution. The Inland Valley has the fourth highest level of particulate pollution in the world (after Jakarta, Calcutta, and Bangkok), and the highest level of PM10, PM 25, and ozone pollution in the United States. The communities that are most directly impacted by the air pollution are predominantly communities of color: Riverside, 65% Latino, and Westside San Bernardino, 63% Latino, 48% African American, and 19% Caucasian. These communities have been profoundly affected by the high levels of air pollution in the area. For instance, the childhood rate for hospitalization for asthma in Riverside is 19% while the statewide rate is 17.1%, and the rate of asthma in San Bernardino County is 15.3% while the statewide rate is 13%. Kaiser Permanente Hospital conducted a study in the area and found that besides asthma, communities in the area also suffered from high levels

of respiratory disease, chronic obstructive lung disease, pneumonia, heart disease and premature death.

Implications

The following describes a variety of ways Pomona can move forward with environmental justice-related efforts:

Education
The benefits of incorporating environmental justice issues into the College's educational programs are three-fold:

- Education efforts will likely inspire Pomona students to become involved in local environmental justice efforts while at Pomona
- Education efforts have a long-term benefit in inspiring students to think about environmental justice issues when they leave Pomona
- Awareness of environmental justice issues is integral to career tracks in environmental fields

Efforts to increase coverage of environmental justice issues in educational programs can take place in the following ways:

>> **Increased incorporation into courses** Pomona features a variety of classes that cover environmental justice issues (including Religion, Ethics, and Social Practice; The Divine Body: Religion and the environment; Global Politics of Food and Agriculture; Politics of Community Development), which span a variety of departments. There is also an environmental justice track of the Environmental Analysis Program – Race, Class, Gender, and the Environment. However, it is important that environmental justice issues be more widely incorporated into a variety of classes, especially classes focused primarily on sustainability and social justice issues. Environmental justice can also be relevant to less directly-related courses, such as when an Economics course might discuss environmental externalities. To push this movement ahead, environmental justice could be a component or a specific focus of a curriculum faculty development workshop (see Education chapter for more information).

>> **Increased focus on environmental justice in co-curricular programming** Education on environmental justice issues should continue outside of the classroom through a combination of lectures, panels, discussions, debates, and other events. This kind of engagement opens up campus-wide discussion, sparking wider interest among the campus community. These events and programs are also an important means of reaching students who may not have the flexibility or time to take a course covering environmental justice.

Outreach
It is important that the campus community be involved in environmental justice efforts not only in the classroom and in campus activities, but also in engaging and partnering with the surrounding communities of the Los Angeles Basin. Such outreach can be conducted through channels including volunteer efforts, internships, Orientation Adventure, and academic research and projects. The Draper Center for Community Partnership and the Career Development Office's Pomona College Internship Program will be valuable partners in this effort.

In engaging in this outreach, it is important for the College to develop long-term connections with community organizations and specific communities. Extended engagement is far more likely to lead to community empowerment; nothing substantial in the way of real change or real relationships can be accomplished in a short period of involvement.

Direct Impacts

It is important to note that the College's environmental impacts – resource use, pollution, and disposal methods, among others – inherently connect the institution with environmental justice impacts. Connections between the College's actions and environmental justice issues can be made on various levels, from the very local (the use of toxic materials on campus and who must be exposed) to the regional (the communities living in proximity to the plants that supply our power) to the global (the extent to which campus activities contribute to climate change and other emissions). Almost every strategy suggested in this document can in some way be linked to the improvement of quality of life and environmental quality for some community in the world.

It is impossible to quantify or qualify all of the College's environmental justice impacts, but it is important to note that the following general strategies will provide relevant benefits:

- Reduction in energy use
- Reduction in use of toxic chemicals and materials
  - Reduction in refrigerant use
  - Use of "green" cleaning chemicals
- Reduction of chemical fertilizers
- Reduction in landfill waste disposal
- Reduced transportation miles
- Purchasing locally-grown and –produced items, including food
- Incorporation of fair trade certified items into Dining and other campus operations

Implementation/Moving Forward

To further these efforts, PACS and the Sustainability Integration Office have begun discussions with members of the President's Advisory Committee on Diversity and the Draper Center for Community Partnerships to hold a series of community meetings/summits, inviting representatives from student groups involved in social justice and environmental activism. These events would include discussions of environmental justice on campus and how to further all of the efforts discussed above and how to integrate a diverse section of the student body and campus community in sustainability efforts.

Key Issue - Climate Action

Key Issue – Climate Action Plan

This section serves as an update and clarification to the College's September 2009 Climate Action Plan, which was submitted to the American College and University President's Climate Commitment (ACUPCC) on September 15, 2009 to meet our required deadline.

The ACUPCC is a collaborative effort of hundreds of institutions around the country and provides a framework for colleges and universities to measure, understand, and mitigate the carbon emissions caused by their activities. The Sustainability Action Plan and this section particular provide analysis and recommendations in partial fulfillment of Pomona's participation in this agreement. The College's previous activities in fulfillment of the ACUPCC include the completion of the College's first broad greenhouse gas inventory in fall 2008. This inventory built upon the ground-breaking work of a group of students who were the first to press for an emissions inventory, for Pomona College President David Oxtoby to sign the ACUPCC, and for climate action on campus.

Climate Planning Principles

This section of the Sustainability Action Plan inparticular has been influenced by hundreds of hours of conversations within the College community, including students, staff, faculty, and trustees. In discussing the community's preferences in how we move forward, the following principles have been established:

>> **Prioritization of efforts** In order to emphasize personal responsibility and stewardship, educational opportunities, and the other sustainability values listed in the College's Statement of Environmental Policy (see Appendix C – Pomona College Statement of Environmental Policy), the College plans to take action on climate change with the following priorities:
   - **Conservation** (behavior modification and elimination of use)
   - **Efficiency** (technology improvements)
   - **Renewables** (purchase and development of alternative energy sources)
   - **Offsets** (third-party or off-campus offsetting of emissions).

   Prioritizing conservation and efficiency emphasizes providing educational and behavior-modifying opportunities, which the College views as central to its sustainability goals and as a means of extending positive influence beyond campus and into the rest of the world. Conservation and efficiency efforts reduce energy and other resources used by the college, eliminating need for relatively less cost-effective renewable energy technology (the production of which inevitably uses some resources and generates greenhouse gases). Offsets are discussed below.

>> **Purchases of offsets** The College does not plan to purchase offsets. While purchase of these offsets would likely be necessary to eventually "neutralize" all sources of carbon emissions, the College is committed to prioritizing behavior modification, conservation, efficiency, and renewable sources as methods of emissions reduction. While these methods provide opportunities to increase awareness, change behavior, and invest in innovative new technologies, offsets must be purchased annually and send the message that our negative environmental impacts can be "bought away." Also, the offset market is relatively new, and the College does not see them as a reliable and proven method of reducing global emissions. With time and further development of the offset market, the College may consider purchasing offsets in the future. If offsets are purchased, the College will prioritize options that provide demonstrable benefit to localized communities. The College will also explore opportunities for "local carbon offsets," meaning investments of time, money, and/or effort that directly reduce the carbon emissions of other community entities (for instance, training students to engage in efficiency upgrades for local homeowners).

>> **Use of "carbon neutrality"** While "carbon neutrality" has become a common term when talking about climate change, this term is often used in a misleading way. Because there are currently no tools available to sufficiently measure the entirety of emissions caused by any entity, understanding complete "neutrality" is impossible. For instance, we have no way of determining the emissions for the thousands of items purchased by the College every year. Without a more accurate inventory, it is impossible to determine what "carbon neutrality" means or to use it as a planning goal. The use of such a concrete term can mislead an institution and its community by implying that complete elimination of their negative environmental impacts is achievable by fully implementing their Climate Action Plan.

While many institutions have admitted that neutrality is more of an aspirational than literal goal, we are committed to exploring our options comprehensively and to determining possible reduction or neutralization goals for specific categories of emissions.

Carbon Inventory

Climate Action Plan Emissions Inventory

Based on the College's emissions inventory for the 2008-09 academic year, this report takes the following inventory into consideration to develop plans for carbon emissions reduction:

Figure 4. Climate Action Plan emissions inventory, 2008-09.

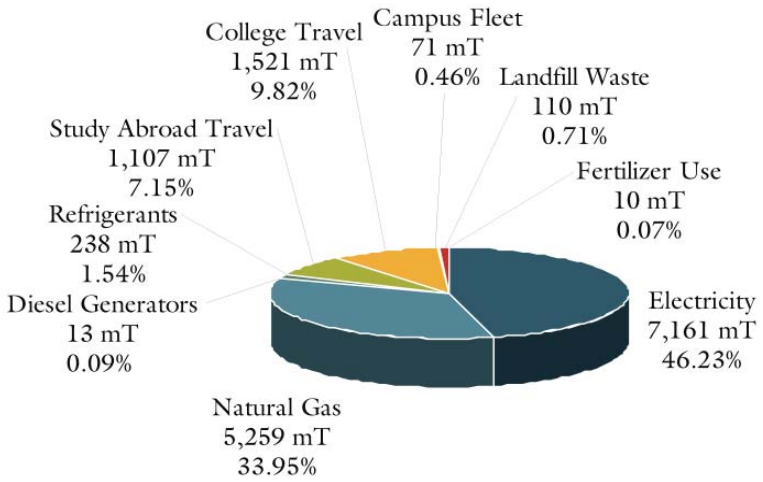


Table 8. Climate Action Plan emissions inventory, 2008-09.

Source	Emissions (mTCO2e)	Includes
Electricity	7,161.0	Purchased electricity
Natural Gas	5,259.2	Burning natural gas for water/space heating and cooking
Diesel Generators	13.4	Use of diesel generators for emergency power
Refrigerants	237.8	Refrigerants used in HVAC, ice machines, etc.
Study Abroad Travel	1,106.9	Air travel to/from study abroad programs
College Travel	1,520.8	Air and road travel funded by the College
Campus Fleet	70.6	Use of campus vehicles (not incl. carts)
Landfill Waste	110.2	Emissions from landfill solid waste management
Fertilizer Use	10.4	Use of fertilizers on campus
TOTAL	**15,490.4**	

Key Issue - Climate Action

This inventory includes sources of emissions that are:

- directly caused by the decisions and actions taken by the College, for which the institution has a responsibility to engage in mitigation; and
- measurable with fairly reliable tools and methods.

Full Emissions Inventory

The following figure depicts a broader inventory of emissions sources for which data is available. Categories of emissions not considered in this climate action plan are highlighted.

Figure 5. Full emissions inventory, 2008-09.

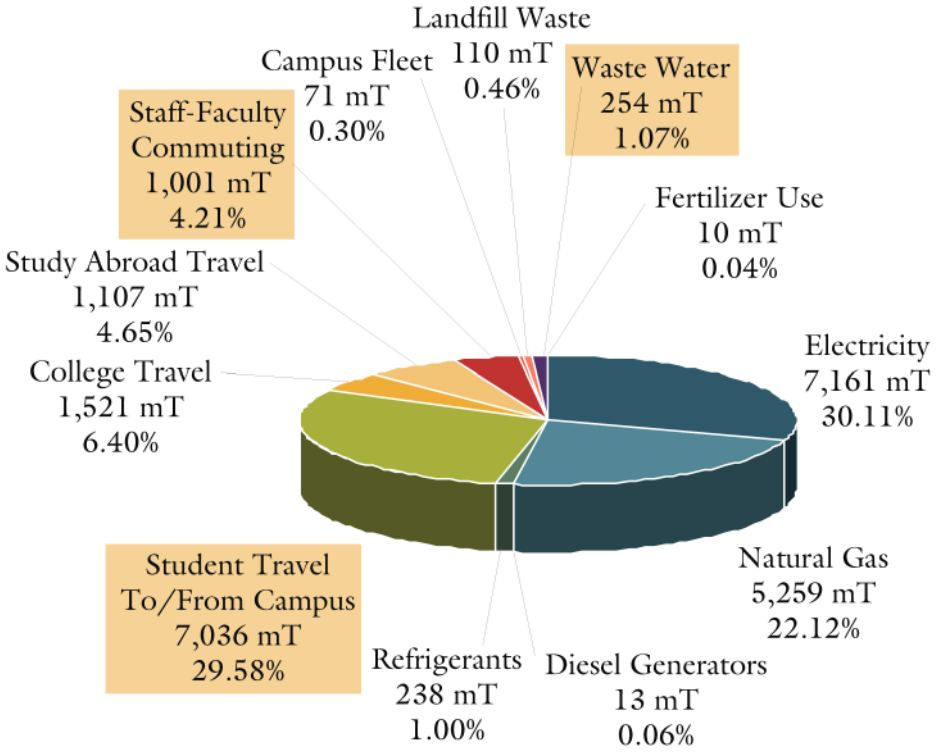


Table 9. Full emissions inventory, 2008-09.

Source	Emissions (mTCO2e)	Includes
Electricity	7,161.0	Purchased electricity
Natural Gas	5,259.2	Burning natural gas for water/space heating and cooking
Diesel Generators	13.4	Use of diesel generators for emergency power
Refrigerants	237.8	Refrigerants used in HVAC, ice machines, etc.
Student Travel To/From Campus	7,035.6	Students traveling back and forth to campus each year
Study Abroad Travel	1,106.9	Air travel to/from study abroad programs
College Travel	1,520.8	Air and road travel funded by the College
Staff-Faculty Commuting	1,000.9	Daily trips to and from campus for work
Campus Fleet	70.6	Use of campus vehicles (not incl. carts)
Landfill Waste	110.2	Emissions from landfill solid waste management
Waste Water	254	Pumping and treatment of water used by the College
Fertilizer Use	10.4	Use of fertilizers on campus
TOTAL	**23,781.2**	

Specific categories of this inventory are not considered in the CAP Inventory for one or both of the following reasons:

>> **Considering this source of emissions falsely shifts responsibility away from responsible decision-makers and onto the College.** For instance, the College does not believe it should be responsible for the emissions that result from commuting decisions of staff and faculty. The College engages in programs and activities to reduce these emissions and will continue to do so and expand these efforts, but believes that individual commuters should take the responsibility for these emissions. In this instance, purchasing offsets for commuting could actually encourage actions with negative impacts. For example, a staff or faculty member could move farther away, assuming that the College would purchase offsets for their resulting emissions.

>> **It is unclear how to determine responsibility for emissions**. For instance, water transmission and treatment require large amounts of energy for pumping and other processes. While we have an estimate of the energy and emissions caused by our water use, there no well-developed protocol for establishing responsibility for these emissions. Water conservation is a large part of the College's sustainability effort, but methods of transmitting and treating water are out of the College's control. (In this case, the tools for establishing these numbers are also newly developing and somewhat unreliable.)

As understanding of climate change and how to measure emissions develops, carbon inventories will expand and change. The College looks forward to expanding our inventory as we better understand how to measure the emissions and other environmental impacts of our activities. We also anticipate that climate change leaders will develop more specific protocols for allocating emissions between various parties. Until we are better able to assess our full range of emissions, we will consider a specific section of our carbon inventory for planning purposes.

Emissions Projection

Using the projection module of the Clean Air-Cool Planet calculator[60] (the predominant tool used by Colleges and Universities for measuring and analyzing emissions), the College's emissions history and projected emissions through 2020 are as shown in Figure 6 and Table 10 (following page).

60 Clean Air – Cool Planet. (2009). Downloaded from http://www.cleanair-coolplanet.org.

Figure 6. Emissions history and projection, 2000-2020.

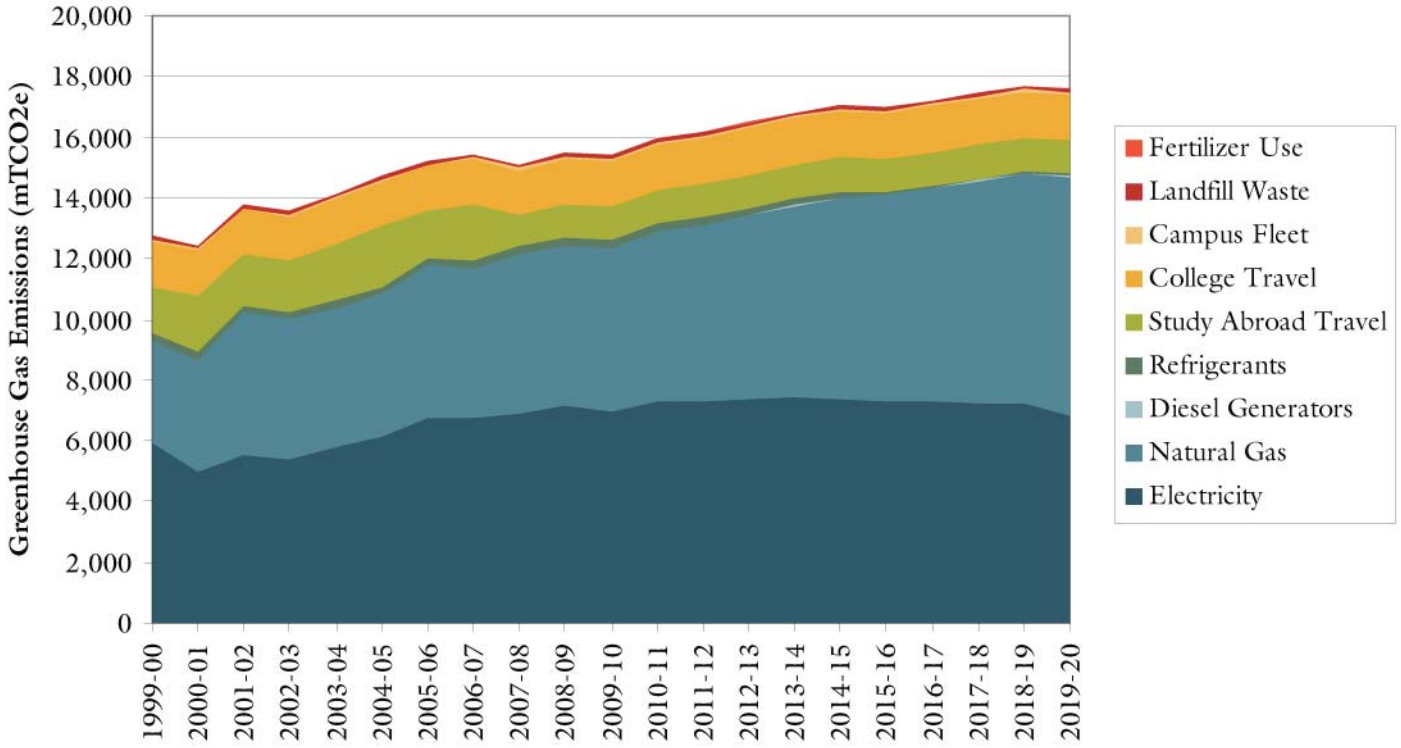


Table 10. Emissions history and projection, 2000-2020.

Year	Elec. Use	Gas Use	Diesel Gener. Use	Refrig. Use	Study Abroad Travel	College Travel	Campus Fleet	Landfill Waste	Fertil. Use	TOTAL
2000	5,955	3,326	*11**	*238**	1,560	*1,479**	60	*103**	*6**	**12,738**
2001	4,997	3,686	*11**	*238**	1,877	*1,478**	60	*103**	*6**	**12,456**
2002	5,511	4,705	*11**	*238**	1,679	*1,478**	60	*103**	*6**	**13,790**
2003	5,420	4,596	*11**	*238**	1,650	*1,478**	61	*103**	*6**	**13,563**
2004	5,830	4,544	*11**	*238**	1,881	*1,478**	53	*103**	*3**	**14,140**
2005	6,174	4,650	*11**	*238**	2,023	*1,478**	51	*103**	*6**	**14,732**
2006	6,756	5,019	*11**	*238**	1,559	*1,478**	53	*103**	*10**	**15,227**
2007	6,787	4,884	*11**	*238**	1,892	*1,478**	53	*103**	*10**	**15,455**
2008	6,866	5,285	11	238	1,023	1,478	88	105	10	**15,104**
2009	7,161	5,259	13	238	1,107	1,521	71	110	10	**15,490**
2010	6,955	5,405	13	238	1,107	1,521	71	110	10	**15,431**
2011	7,294	5,598	13	238	1,107	1,521	71	111	10	**15,962**
2012	7,302	5,812	13	238	1,107	1,521	71	111	10	**16,185**
2013	7,367	6,050	13	238	1,107	1,521	71	111	10	**16,487**
2014	7,413	6,332	13	238	1,107	1,521	71	111	10	**16,816**
2015	7,406	6,565	13	238	1,107	1,521	71	111	10	**17,041**
2016	7,302	6,794	13	67	1,107	1,521	71	111	10	**16,996**
2017	7,283	7,043	13	67	1,107	1,521	71	111	10	**17,226**
2018	7,259	7,301	13	67	1,107	1,521	71	112	10	**17,461**
2019	7,232	7,569	13	67	1,107	1,521	71	112	10	**17,701**
2020	6,856	7,847	13	67	1,107	1,521	71	112	10	**17,604**

** Indicates estimated data.*

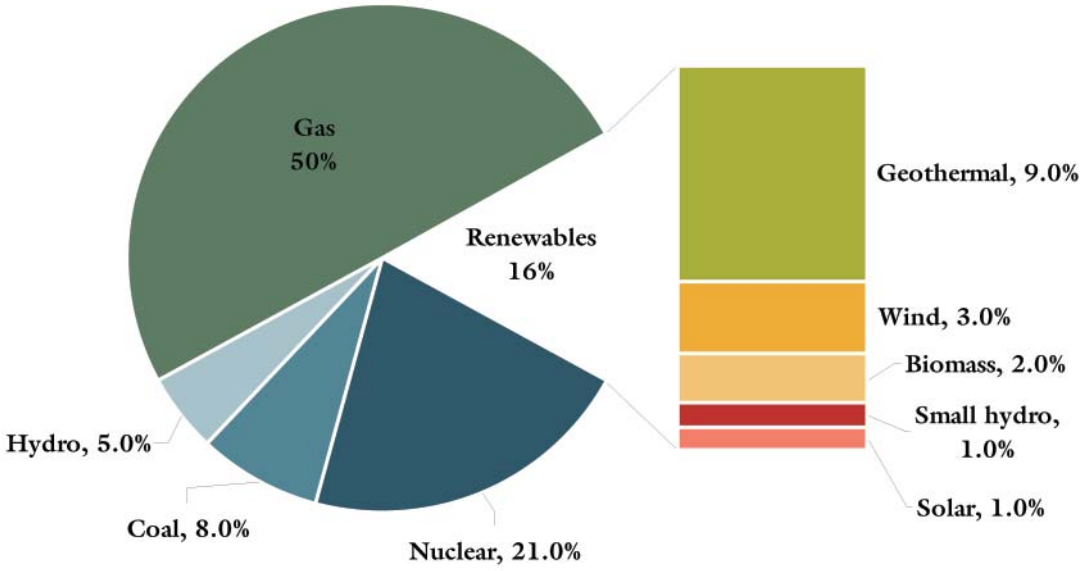
It is important to note that a large number of the factors are estimated from 1999-2000 to 2006-2007, because these factors were largely not measured or tracked. However, approximately 85% of 1999-2000 emissions as listed here are from reliable, tracked data sources, so this total number acts as a reasonable estimate.

Projection Factors

>> **Growth in energy use** This projection uses an estimated growth of purchased electricity and natural gas that is based on numbers established in the Energy section of this document and that includes planned construction projects and committed solar projects.

>> **Renewable Portfolio Standards** This emissions projection incorporates the most recently available information about current and future energy source portfolios of Southern California Edison, the College's source for purchased electricity. This portfolio is as follows[61]:

Figure 7. Southern California Edison energy source portfolio, 2009.



The State of California's Renewables Portfolio Standard requires electricity providers to increase procurement of renewable energy sources until reaching 20 percent by the end of 2010 and with a target of 33 percent by 2030.[62]

>> **Growth in landfill waste** There is insubstantial data to produce a reliable projection of solid waste growth, but a very conservative estimate predicts a one ton per year growth in waste sent to the landfill with no further intervention.

>> **Reduced impacts of refrigeration due to regulation** Changes in regulation about which refrigerants are allowed mandates an improvement in the emissions impacts of refrigerant use.

>> **Stable factors** Without further historical data or understanding how future develop will affect these numbers, the following factors are assumed to stay constant from 2008-09 numbers: diesel generator use, study abroad travel, campus fleet, fertilizer use.

Emissions Target

There are a variety of recommended actions included in this document that affect greenhouse gas emissions, including those that reduce energy use, landfill waste, and transportation miles.

61 Personal conversation with Southern California Edison representative.

62 California Public Utilities Commission. (2008). *California Renewables Portfolio Standard*. Accessed August 11, 2009, at http://www.cpuc.ca.go/PUC/energy/Renewables.

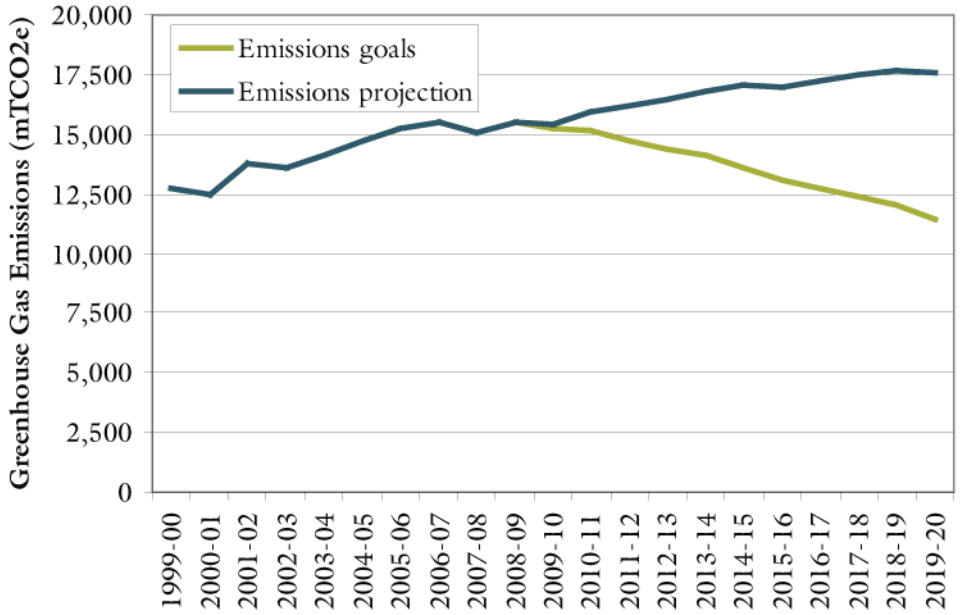
The following goals are incorporated into this target projection:

Table 11. Emissions factors and related goals incorporated into target projection.

Emissions Factor	Goal
Electricity purchases	Reductions from district-based building efficiency goals, new construction and committed solar projects
Natural gas purchases	Reductions from district-based building efficiency goals, new construction and committed solar projects
Renewable energy sources	Addition of potential solar projects not already committed
Diesel generators	30% reduction
Campus fleet	15% reduction in mileage
Refrigerant use	25% reduction
Fertilizer use	Elimination of synthetic fertilizers; increase in use of organic fertilizers keeping total volume steady
Landfill waste	50% reduction in landfill waste based on reduced total waste volume and increased diversion rate
Campus travel	Steady
Study abroad travel	Steady

Together, these goals have the following impact on emissions:

Figure 8. Effect of Sustainability Action Plan goals on emissions projection.



This constitutes a 26.0% reduction in emissions from 2008-09 levels, from 15,490.4 mTCO2e in 2008-09 to 11,453.0 mTCO2e in 2020. It also constitutes a 10.0% reduction from estimated 2000 emissions levels and a 34.9% reduction over projected 2020 emissions.

The vast majority of this change is caused by improved building efficiency and the correlative reduction in energy use, as is shown in Table 12:

Table 12. Portion of emissions change caused by various actions.

Action	Portion of Change
Reduced electricity purchases	98.06% (together with reduced natural gas purchases)
Reduced natural gas purchases	98.06% (together with reduced electricity purchases)
Increased use of renewable energy sources	0.48%
Reduced use of diesel generators	0.07%
Reduced mileage for campus fleet	0.17%
Reduced refrigerant use	0.27%
Reduced fertilizer use	0.03%
Reduced landfill waste	0.93%
Campus travel	Steady

Objectives for 2020

>> 26% reduction in greenhouse gas emissions from 2008-09 levels

Comparable Goals

Other Colleges and Universities

The following table describes the current climate commitments of a variety of other peer institutions:

Table 13. Emissions goals of other colleges and universities.

Institution	Commitment
Bowdoin College	- 8% below 2008 baseline by 2015 - "Neutral" by 2020
Brandeis University	- 15% below 2008 baseline by 2015 - 30% below 2008 baseline by 2020
Bryn Mawr College	- 10% below 2009 baseline by 2020
Cornell University	- 20% below 2008 baseline by 2010 - "Neutral" by 2050
Harvard University	- 30% below 2006 baseline by 2016
Kalamazoo College	- 25% below 2008 baseline by 2020 - "Neutral" by 2050
Lewis and Clark University	- 20% below 2006 baseline by 2018
Luther College	- 50% below 2004 baseline by 2012
Macalester College	- 17% below 2008 baseline by 2015 - 35% below 2008 baseline by 2020 - "Neutral" by 2050
Middlebury College	- "Neutral" by 2016
Mills College	- 15% below 2008 baseline by 2015
Wesleyan College	- 25% below 2008 baseline by 2017 - 50% below 2008 baseline by 2027 - 75% below 2008 baseline by 2037
Yale University	- 43% below 2005 baseline by 2020

State of California Goals – AB32

In June 2005, California Governor Arnold Schwarzenegger issued Executive Order S-3-05, which established the following greenhouse gas emissions goals for the entire state[63]:

- Reduce emissions to 2000 levels by 2012
- Reduce emissions to 1990 levels by 2020
- Reduce emissions 80% below 1990 levels by 2050

63 California Air Resources Board. (2009). *Assembly Bill 32: Global Warming Solutions Act*. Accessed August 11, 2009 at http://www.arb.ca.gov/cc/ab32/ab32.htm.

Assembly Bill 32, passed by the state legislature in August 2006, codifies into law the second of these targets. The mechanisms for enforcement and implementation of this law are currently in development.

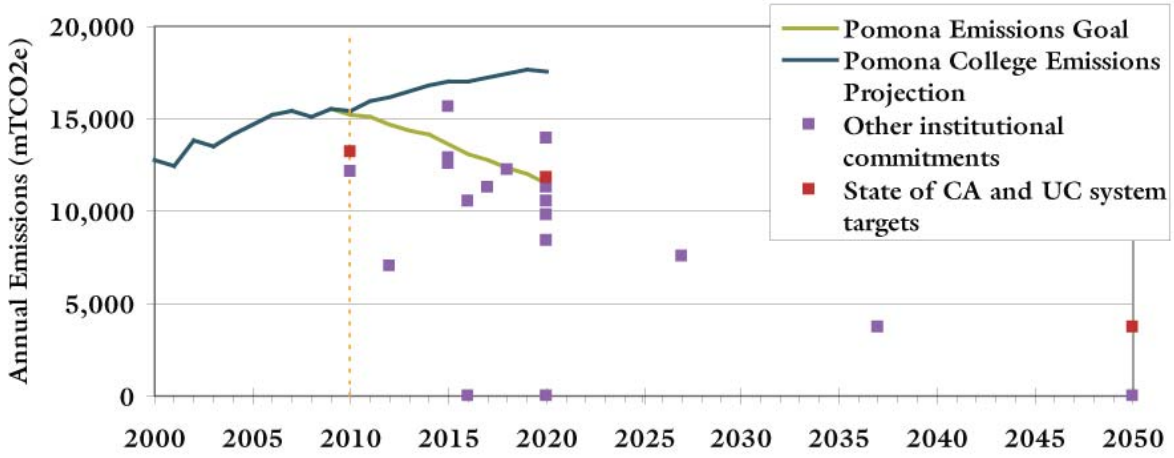
City of Claremont

The City of Claremont passed its Sustainable City Plan[64] in October 2008. The current version of this plan does not specify quantitative reduction goals, but the City intends to further develop these targets with future versions of the plan.

Visual Comparison

The following chart compares Pomona's emissions projection and goals with the comparable targets listed above:

Figure 9. Comparison of Pomona's emissions goals and projection to others' goals.



64 City of Claremont. (2009). *Sustainable City Plan*. Accessed August 18, 2009 at http://www.ci.claremont.ca.us/download.cfm?ID=25654.

Implementation Plan

Without a commitment to thorough implementation, monitoring, and assessment of this plan, it is unlikely the College will effectively move forward. The following section explores a number of the issues related to plan implementation, including reporting, financing, and responsibilities.

Reporting

The successful implementation of this plan is unlikely without a strong commitment to regular, thorough reporting on progress. Regular assessment and reporting will happen in the following ways:

>> **Sustainability Annual Report** Starting fall 2009 the Sustainability Integration Office produces a Sustainability Annual Report, which reports on many of the benchmarks listed in this plan and provides an update on new programs, projects, and accomplishments. A report for the preceding academic year reporting on progress of every goal listed in this plan will be due to PACS by September 30 of each year.

>> **Greenhouse gas emissions inventory** The Sustainability Integration Office will update the College's greenhouse gas emissions inventory annually to track changes in emissions and comply with ACUPCC reporting responsibilities. This inventory will be included in the Sustainability Annual Report.

>> **Sustainability Action Plan updating** This document itself will require assessment and updating in order to maintain relevance and to assist with planning progress after the first years of implementation.

- At the end of the first two years of implementation and the first five years of implementation, PACS and the SIO are responsible for identifying progress made on every opportunity listed here, including an explanation of whether the action was implemented and with what level of success.
- PACS should conduct a full review of progress and provide an update to this plan by May 2015.

Indicators

For the Sustainability Annual Report and because of the College's "charter participation" in STARS (Sustainability Tracking, Assessment, and Rating System – a national, voluntary data tracking program for colleges and universities), the following data points will be tracked annually to the best of the College's abilities. Together, these data points function as indicators of the College's progress toward sustainability. STARS also requires the College to report on the presence of a variety of specific programs (e.g. incentives for developing sustainability-related courses, on-campus organic garden, online-only catalog), which are not listed here. *An asterisk* next to a data point indicates it is required as part of the College's participation in STARS.*

INDICATORS

Administration

- Consortium collaboration (description)
- Percentage of endowment invested in "positive sustainability investments"*

Implementation Plan

Education

- Sustainability-focused and sustainability-related courses offered at Pomona and within the consortium
- Departments offering sustainability-focused and sustainability-related courses at Pomona and within the consortium
- Use of campus sustainability issues and campus facilities in academic work (description)
- Number of offices certified by the Green Office Program
- Number of staff/faculty and students who have taken sustainability pledge
- Number of staff/faculty and students signed up for the SIO eNewsletter
- Sustainability-related educational programs and events (description)
- Students served by formal peer-to-peer education programs*
- Number of employees served by peer-to-peer education program*
- Presence of student sustainability outreach campaigns (description)*
- Presence of sustainability in new student orientation (description)*
- Number of publications and outreach materials featuring or focusing on campus sustainability*
- Number of students graduating from departments with sustainability included in learning objectives*
- Faculty and departments conducting sustainability-related research*

Energy Use and Renewable Energy Sources

- Total energy use (electricity, natural gas, etc.)
- Total energy production from on-campus renewable sources (solar, etc.)
- Total energy use/intensity in facility districts
- Diesel generator use
- Percentage of major buildings and total buildings individually metered
- EnergyStar scores for campus facilities
- Percentage of square-footage with retro-commissioning, monitoring based-commissioning, or energy audits completed

Facilities

- Compliance with Green Building Standards (description)*
- Compliance with Sustainable Operations and Maintenance Standards (description)*
- Percentage of square-footage certified under LEED-EBOM*
- Percentage of square-footage certified under LEED-NC*

Food and Agriculture

- Percent of food purchases qualifying as "sustainable," including a breakdown of purchases by category (e.g. organic, local, fair trade – see Food and Agriculture chapter)
- Programs in place to encourage use of food items that qualify as "sustainable" (description)

Pollution

- Use of refrigerants
- Use of synthetic fertilizer
- Compliance with Green Cleaning Procedures (% of expenditures, description)*
- Use of chemicals determined hazardous

- Compliance with Sustainable Operations and Maintenance Standards (description)*
- Acreage covered by Integrated Pest Management standards*

Purchasing

- Paper use, including recycled content (and including publications, letterhead, and all types of paper)*
- Percentage of offices certified by the Green Office Program
- Percentage of computers/monitors at EPEAT silver and gold certification levels*
- Compliance with Green Cleaning Procedures (% of expenditures, description)*

Transportation

- Gas use by campus fleet
- Commuting methods and distances*
- Percentage of fleet fueled alternatively*
- Compliance with automobile purchasing standards (description)
- Student travel to/from campus
- College travel
- Study abroad travel

Waste

- Total waste, including total for various disposal methods (e.g. recycling, composting, e-waste)*
- Total diversion rate for construction and renovation wastes*

Water

- Total water use and cooling degree days*
- Percentage use of reclaimed/gray water
- Acreage of impermeable surfaces
- Use of sustainable stormwater management techniques (description)*
- Percentage of buildings metered for water use

Climate Change

- Total emissions
- Total Climate Action Plan emissions*

Other

- Number of employees earning "sustainable compensation" (see STARS description)*
- Percentage of students engaged in community service*
- Total number of student community service hours completed*

Financing

The actions recommended in this plan represent significant potential financial costs and savings. Some projects will require large one-time financial outlays, while some do not require any new funding sources or are virtually cost-free. Likewise, some projects will provide large financial savings, whether immediate or incurred over time, and some will not provide any financial savings but perhaps some significant social or other non-financial benefits.

Implementation Plan

The College's financial accounting procedures are not currently structured to accurately assess the long-term costs and benefits of projects that span departments and financial account. Care must be taken to provide the organizational infrastructure necessary to accurately assess the financial impacts of projects. This plan takes a variety of steps to helping insure this will happen, including:

- Requiring the use of life-cycle costing at specific points during the programming, design, and construction process for construction and renovation activities, and
- Committing the College to pursuing projects deemed feasible with a 6 year or less payback.

For all recommendations requiring new funding sources for up-front costs (listed below), the College faces a variety of financing opportunities, including the following:

>> **Revolving loan fund** Like many other institutions have begun to do, the College can deposit savings from projects into a fund from which future proposals could be funded. Projects funded would likely have to meet a certain threshold, such as a specific payback period or return on investment. Associated Students of Pomona College and the President's Office are currently discussing this opportunity with the chance that a fund will be established in April 2010.

>> **Grants** The College can pursue a wide variety of public and private grants for programs and projects, and the Sustainability Integration Office is currently working closely with Foundation and Corporate Relations to track available opportunities.

>> **Dedicated development targets** The College can work with Major Gifts to determine specific projects as targets for fundraising.

>> **Third-party funding** The College can engage in partnerships with third-party companies to provide funding for design and installation of projects. Examples of this might include a company that funds an extensive lighting retrofit, with the College paying the company with a certain portion of energy savings that ensue. Another example is a power purchasing agreement, in which an energy technology company (e.g. solar photovoltaic) pays for the installation and maintenance of an on-campus system, resulting in zero up-front costs for the College, and sells the power generated back to the College.

>> **Debt** The College can issue tax-exempt bonds to finance large-scale projects, such as a large renewable energy installation.

>> **One-time allocation** The College may continue to allocate funds on a case-by-case basis – this is likely how many of the recommendations included in this plan will be funded.

Institutions all over the world, including businesses, non-profits, and educational institutions, are constantly developing new financial mechanisms for funding sustainability efforts. As this plan is implemented, the College will inevitably determine new means of funding projects and programs.

Summary of Costs

The approximate financial estimates included with recommended actions in this plan refer to first-costs only; life-cycle costs must be assessed for individual projects based on context and specific implementation plans. The vast majority of actions recommended here are possible with no new funding because they either require no funding or represent a dedicated expenditure of existing budgets.

SUMMARY OF COSTS

Low-Cost ($ - under $5,000)

>> Start sustainability awards program to recognize champions and successes (potential funding for monetary awards)
>> Explore feasibility of other renewable energy technologies
>> Pursue Green Seal certification for Housekeeping operations
>> Provide receptacle(s) for disposal of medications and other specialized hazardous wastes
>> Better publicize staff-faculty carpooling website and develop improved system for student rideshare opportunities
>> Expand composting program to residence halls
>> Create Zero Waste Events program, including educational guides and materials for departments
>> Develop interpretive program for sustainable landscaping efforts

Mid-Cost ($$ - $5,000 to $50,000)

>> Initiate energy management program with energy manager position
>> Complete Phase 1 of metering project (unknown, likely $$)
>> Complete Phase 2 of metering project (unknown, likely $$)
>> Continue lighting retrofit projects (unknown, likely $$)
>> Identify opportunities for increased reflectivity on roofs and other relevant surfaces (unknown, likely $$)
>> Assess opportunities for weatherization activities and increased insulation (unknown, likely $$)
>> Begin engaging in retro-commissioning and monitoring based commissioning for all major campus buildings (unknown, likely $$)
>> Begin engaging in full-scale, detailed energy audits for all campus buildings (unknown, likely $$)
>> Complete retro-commissioning or monitoring based-commissioning for all major campus buildings (unknown, likely $$)
>> Complete full-scale, detailed energy audits for all campus buildings (unknown, likely $$)
>> Explore opportunities to pursue LEED-EBOM certification for one or two existing campus facilities (unknown, likely $$)
>> Establish part-time student or staff position to focus on issues of sustainability and nutrition
>> Identify and implement alternatives to chemical fertilizers
>> Implement currently identified bike rack projects
>> Start composting program that allows composting of all food scraps from dining halls
>> Retrofit plumbing fixtures
>> Move forward with identified turf removal projects
>> Move forward with identified sustainable stormwater management opportunities
>> Move forward with building-level water metering and conduct annual assessment
>> Develop sustainability garden on campus

High-cost ($$$, over $50,000)

>> Create energy manager position (cross-listed with Energy)
>> Expand staffing for the Sustainability Integration Office
>> Pursue all identified projects deemed feasible with a demonstrable 6 year or less payback

(unknown, likely $$$)
>> Continue implementing identified projects deemed feasible with a demonstrable 6 year or less payback (unknown, likely $$$)
>> Move forward with feasible solar installations and emergency power projects

Unknown Costs
>> Create long-term energy management plan detailing potential projects (likely none)
>> Develop HVAC scheduling and setpoints program (likely none)
>> Adopt and move forward with implementing updated Green Building Standards and Sustainable Operations and Maintenance Standards (project-specific costs)
>> Assess options for third-party sustainability certifications of Dining Services as an operation
>> Require an annual sustainable food report
>> Develop marketing and education/awareness plan for sustainable food programs
>> Continue exploring centralized purchasing options and eco-friendly options to incorporate
>> Draft Campus Bike Plan to better assess needs

>> Move forward with feasible opportunities for alternative fuels in existing campus vehicles
>> Remove plastic shopping bags from campus (purchasing cross-list)
>> Engage in print management activities to reduce printed documents (purchasing cross-list)
>> Develop ways to better continuously assess campus waste streams and provide data publicly
>> Create move-in waste awareness program for first-year students

Timeline and Priorities

A full list of recommendations listed by timeline and level of priority will be available at www.pomona.edu/sustainability.

Responsibilities

A full list of recommendations listed by responsible offices/departmenst will be available at www.pomona.edu/sustainability.

Appendix A – Pomona College Statement of Environmental Policy

Approved by the Board of Trustees May 16, 2009

Pomona College recognizes that the local and global environment in which it operates must be protected for future generations. It is therefore committed to the further development of an ethos of resource sustainability among faculty, staff, and students and to the incorporation of environmentally sound practices in its operations. Such commitments are essential if future generations are to have a healthy and productive environment.

Sustainability Values
The following are recognized as central values of the College that pertain to sustainability and environmental impacts:

- Leadership - Leading the way with teaching sustainability and practicing sustainable lifestyles
- Education - Providing both a thorough classroom education on sustainability and environmental issues and spreading information and best practices related to sustainability technologies, ideas, and behavior
- Conservation - Protecting quality of life and environment for current and future generations through reduction in resource use and impacts
- Solutions-based progress - Utilizing simple, straight-forward solutions where possible, while also exploring new technologies and advanced techniques
- Long-term perspective - Taking a long-term perspective in analyzing opportunities, making decisions, and prioritizing resources
- Stewardship - Preserving and restoring the Southern California climate and ecosystem, including biodiversity, through campus development, academic research, and service
- Community - Generating an intentional community that emphasizes sustainability
- Participation - Providing a participatory process of learning sustainability so that all members of the community are highly aware of the issues and their possible solutions
- Integration - Ensuring every member of the campus community comes into contact with sustainability efforts and considers sustainability while making decisions
- Economic responsibility - Making sound financial investments in sustainability-related projects and programs in order to maximize financial savings and environmental benefits
- Social justice - Recognizing that environmental impacts are disproportionately experienced by underrepresented populations and emphasizing environmental justice issues when discussing sustainability efforts

Policy Implementation
The Pomona College community affirms its commitment to the environment by incorporating the above values and implementing this policy in the following ways:

Campus Planning, Maintenance, and Construction
The College's capital planning and approvals process for new construction and major renovation of existing facilities will incorporate the Sustainability Values in its review. Each department and program proposing a capital project will be required to establish specific objectives consistent with this policy's Sustainability Values as part of the formal approval process, and all projects and project decisions will be assessed using life cycle cost-benefit analysis. Campus-wide building standards for new construction and

major renovation projects will be mandated in the College's Green Building Standards. Departmentally-funded infrastructure projects will need to comply with similar project review, establishing sustainability-related objectives with the assistance of Campus Planning and Maintenance and the Sustainability Integration Office.

Financial and Budgetary Planning

The College budget planning process will include explicit recognition of the Sustainability Values in the commitment of operating funds. This commitment includes: funding the administrative and program needs of the Sustainability Integration Office and providing separate funding within Campus Planning and Maintenance for sustainability projects and programs. Cost-saving sustainability measures will be considered appropriate investments of College funds, subject to financial analysis.

Educational and Research Support

Recognizing that education is the cornerstone to achieving sustainability goals, the College will continuously develop and recognize efforts to expand curricular, research, and extra-curricular opportunities for sustainability-related education. This includes recognition of the College's sustainability efforts in major communications outlets and the use of sustainability programs and projects in Admissions materials.

Ongoing Assessment and Review

Concepts of sustainability continuously evolve over time with added experience, research, and technological advances. The College will appoint a standing Sustainability Committee charged with working with the Sustainability Integration Office to generate, administer, and monitor an implementation framework for this policy. This Committee will also be responsible for annual reporting on progress toward sustainability goals and for providing recommendations for revising the implementation framework.

Appendix B - Participation

The following individuals participated in the data gathering, analysis, and discussions that contributed to this report:

President's Advisory Committee on Sustainability (PACS), 2008-09 and 2009-10
** Official member*
Prof. Charles Taylor, Chemistry, chair (08-09,09-10)*
Bowen Close, Director, Sustainability Integration Office (08-09, 09-10)*
Prof. Ann Davis, Philosophy (08-09, 09-10)*
Prof. Dwight Whitaker, Physics (08-09)*
Prof. Joti Rockwell (09-10)*
Prof. David Tanenbaum, Physics (08-09, 09-10)
Prof. Christopher Chinn, Classics (08-09, 09-10)
Kris Fossum, Assistant Dean (08-09, 09-10)*
Neil Gerard, Associate Dean and Director of the Smith Campus Center (08-09, 09-10)*
David Janosky, Dining Services General Manager (08-09, 09-10)*
Robert Robinson, Director of Facilities and Campus Services (09-10)*
Margie McKenna, Assistant Director of Facilities and Campus Services – Operations (08-09, 09-10)*
Kevin Quanstrom, Grounds Supervisor (08-09, 09-10)*
Sandra Seisdedos, Housekeeping Supervisor (08-09)
Samantha Kanofsky '09, Environmental Affairs Commissioner (08-09)*
Joanna Ladd '10, Environmental Affairs Commissioner (09-10)*
Student members included*: Chelsea Hodge '09, Elise Novak '09, Jamie Hall '12, Daniel Zucker '10, Adam Kotin '09, Emery Donovan '12, Samantha Meyer '10, J. Michael Larsen '10, Nik Tyack '11

Sustainability Action Fellowship, 2008-09

Communication/Education
Tiffany Chan '11
Thomas Fenster '11
Derek Galey '09
Chelsea Hodge '09

Energy
Sam Gordon '11
Katie Hall '09
David Kotevski '10
Cailee Moberg '11
Zach Stewart '12
Alex Tran '09

Environmental Justice
Isabelle Ballard '11
Sabrina Baum '11
Katie Dutcher '09
Eleanor Hughes '10
Chelsea Muir '11

Water
Ameer Abdul-Badee '09
Katharine Brieger '11
Jamie Hall '12
Danielle Manning CMC '11
Zack Mirman '11
Nicholas Tyack '11

Purchasing
Lucy Block '11
Ariel Gondolfo '11
Mackenzie Grieman '09
Zack Mattler '11

Waste
Elaine Choi '11
David DiTullo '11
Pauline Wang '12
Nate Wilairat '11

Appendix B - Participation

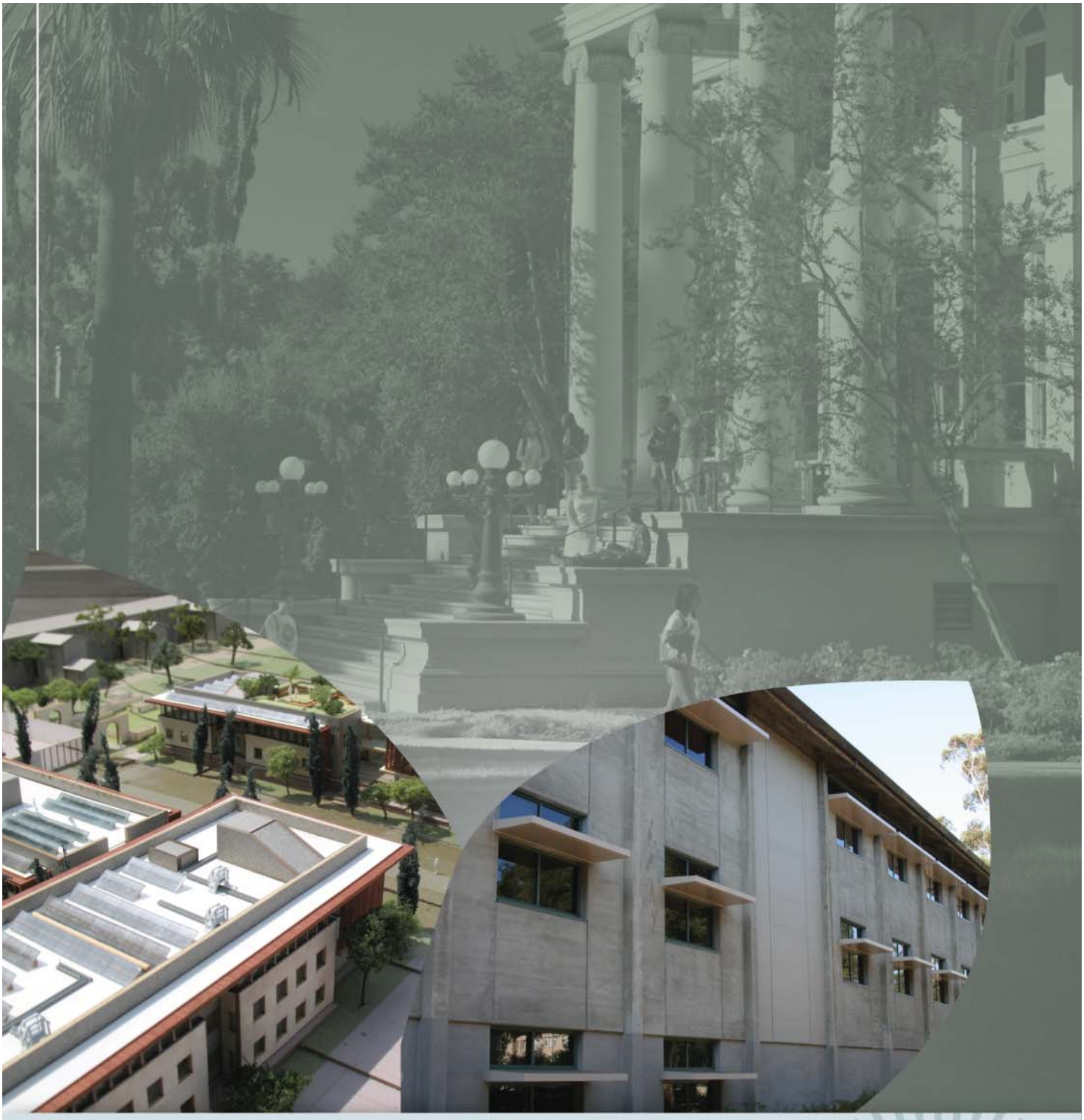
Campus Sustainability Audit, summer 2008
Jon Roberts, CTG Energetics
Audit team
- Kevin Graf ’09
- Caitlin Guthrie ’08
- J. Michael Larsen ’10
- Zachary Mirman ’11
- Tara Ursell ’08
- Cecilia Viggiano ’08

Trustee Sustainability Task Force, 2008-09
Jennifer Doudna, chair
Lucila Arango, trustee
George Moss, trustee
Marylyn Pauley, trustee
Jason Rosenthal, trustee
Eileen Wilson-Oyelaran, trustee
Prof. Charles Taylor, Chemistry
Prof. Christopher Chinn, Classics
Bowen Patterson, Sustainability Coordinator
Kevin Quanstrom, Grounds Supervisor
Robert Robinson, Director of Campus Planning and Maintenance
Karen Sisson, VP and Treasurer
Jamie Hall ’12 Samantha Kanofsky ’09 Alexander Tran ’09 Daniel Zucker ’10

Attachments

Attachment A – Pomona College Green Building Standards

Attachment B – Pomona College Sustainable Operations and Maintenance Standards



Pomona College

Green Building Standards

May 2010

Sustainability Integration Office
Facilities and Campus Services

POMONA COLLEGE
Sustainability Integration Office
Facilities and Campus Services

May 2010

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Green Building Standards

The following standards apply to all capital projects, including new construction, renovations, remodels, and upgrades. Upon review, specific standards may be altered by recommendation of the President's Advisory Committee on Sustainability to the President, the Board of Trustees Facilities and Environment Committee, or other person(s) or committee(s) as appropriate.

New Construction/Major Renovation

The following standards apply to all new construction and major renovation of buildings (requiring replacement of mechanical, electrical, and plumbing systems and replacement of over 50% of non-shell areas).

Process

It is important to note that before engaging in any new construction or renovation project, the College is committed to fully assessing the need for construction activity to take place. Creative reuse of facilities and the extensive use of renovations in place of new construction have been a hallmark of Pomona's building activity and will continue to be emphasized as a sustainable strategy for space utilization.

>> All projects must include relevant sustainable design/operations language in all RFPs where relevant, including architects, MEP consultants, commissioning agents, and general contractors.

>> A representative of the Sustainability Integration Office must be included in the following project activities:
- Project Team
- Interview/selection process for Architect, General Contractor, and other major contractors/ consultants
- Initial sustainability workshop during project programming phase

Programming

>> *Pomona College Campus Planning Guidelines* and *Pomona College Open Space and Landscape Guidelines* describe how the following elements apply to various sites and districts throughout campus. These guidelines must be reviewed as the project team determines the project's sustainability objectives and green building features:
- Potential for energy reductions and other sustainability benefits in site design and programming
- Applicability of roof-mounted renewable energy or other sustainability-related technologies
- Landscape style and irrigation technology

>> During the programming phase (or early in the schematic design phase), the project team must engage in the following activities:[65]
- **Hold a sustainability workshop**
  - Confirm energy budget goals
  - Develop project goals using Green Building Standards
  - Create preliminary LEED checklist and confirm Green Building Standards
  - Determine renewable energy integration goals
  - Include stakeholders, potential contractors, Savings By Design
  - Identify design concepts with significant operational savings
- **Develop preliminary life cycle cost model for building**

65 These tasks are also included in the upcoming *Pomona College Design Guidelines*, to be finished by Summer 2010. This document will be updated with confirmed language once those guidelines are completed.

>> Project managers/project teams for all projects must collaborate with the Sustainability Integration Office to produce a report describing initial sustainability goals/objectives (as well as final decisions; see "Project Completion" below). This report must be cataloged and available online.

>> **Utility rebates** All projects must enroll in Savings By Design and/or other relevant rebate programs in cooperation with utilities (e.g. electricity, natural gas, water utilities) and the Project Manager must inquire about these programs during the programming phase of the project.

Schematic Design/Design Development

>> All projects must include relevant sustainability objectives and other sustainable design/operations language in Project Owner's Requirements, where produced.

>> During the schematic design phase, the project team must engage in the following activities:[66]

- **Develop renewable energy goals**
- **Refine/confirm sustainability initiatives**
- **Life cycle cost analysis** Generation of a life cycle cost report to compare design alternatives, considering systematically the impacts of building systems on each other. At a minimum, the following major building systems must be examined using life cycle cost analysis:
  - Mechanical: HVAC equipment and controls, energy sources
  - Electrical: lighting sources and controls
  - Envelope: roofing, insulation/mass, glazing
- **Develop preliminary energy model**

>> During the design development phase, the project team must engage in the following activities:[67]

- **Life cycle cost analysis update** Update on life cycle cost report for whole building and decisions made on building systems and other features
- **Finalize energy model**
- Develop:
  - **Education and communication plan**
  - **Commissioning plan**
  - **Measurement and verification plan**
- **Evaluate materials for reuse** Evaluate and inventory existing building materials for reuse, whether on the project site or other campus locations.

Construction

>> During the construction phase, the project team must engage in the following activities:[68]

- **Evaluate materials for reuse/donation** Before clearout of existing facilities, the project team must walk the site to evaluate fixtures, furniture, and equipment for reuse/donation.
- **Develop solid waste management plan** The project team must develop a solid waste management plan that details how construction and demolition wastes will be handled in a manner that reduces landfill wastes and emphasizes reuse, recycling, and reclamation.

66 These tasks are also included in the upcoming *Pomona College Design Guidelines*, to be finished by Summer 2010. This document will be updated with confirmed language once those guidelines are completed.

67 These tasks are also included in the upcoming *Pomona College Design Guidelines*, to be finished by Summer 2010. This document will be updated with confirmed language once those guidelines are completed.

68 These tasks are also included in the upcoming *Pomona College Design Guidelines*, to be finished by Summer 2010. This document will be updated with confirmed language once those guidelines are completed.

Project completion

>> All project teams must collaborate with the Sustainability Integration Office to produce a report detailing sustainability-related project features, a review of initial sustainability goals/objectives and whether they were fulfilled, and relevant life cycle cost analyses. This report must be cataloged and available online.

>> Project contractor(s) must supply a report of waste management that includes the quantities landfilled, recycled, reused, salvaged, and donated, along with a breakdown of materials in each category and the destination of these materials.

Design

>> **LEED standards + Pomona College requirements**

- All eligible new construction projects must strive for a minimum of LEED-NC Gold level certification. Within the LEED framework, projects must meet particular prerequisites as outlined in Appendix A – LEED 2009 Requirements.
- All renovation projects must use LEED-NC and the College's prerequisites (Appendix A – LEED 2009 Requirements) as guidelines, with a goal of achieving Gold level equivalency. Whether certification-eligible projects apply for certification will be determined by the project team, based on assessment of financial and other impacts.

>> **Energy use and sources**

- Energy efficiency and conservation are important in programming, designing, and planning for the operations and maintenance of campus facilities. All projects must include a detailed energy model and exploration of opportunities to increase the efficiency and decrease the overall use of facilities under consideration. All projects must also include discussion of potential renewable energy applications (including solar photovoltaic, solar hot water heating, geothermal, or other relevant options) to offset facility energy use.
- Any project must keep in mind the district-based energy standards described in the Energy chapter of the *Sustainability Action Plan*.
- As described in the *Pomona College Campus Planning Guidelines*:

  Projects that increase square-footage above the existing 2010 base will include a feasibility study to determine the effects of a net-zero increase in energy use and carbon emissions for the additional square-footage. The evaluation should include programmatic, aesthetic, and first and life-cycle cost considerations.

>> **Labs21** All relevant laboratory projects must comply with Labs21 development standards.

>> **Ongoing monitoring and communication** All new and renovated facilities must include a comprehensive plan for building measurement and verification, ongoing commissioning activities, and a communication/education program, including meaningful monitoring of building resource use, generation of on-site energy, and other meaningful data.

Green Building Standards

Minor Renovations/Projects

The following standards apply to all renovation projects of at least $5 million but that do not meet the threshold for new construction/major renovations standards (above).

Process

>> *Pomona College Campus Planning Guidelines* and *Pomona College Open Space and Landscape Guidelines* describe how the following elements apply to various sites and districts throughout campus. These guidelines must be reviewed as the project team determines the project's sustainability objectives and green building features:
- Potential for energy reductions and other sustainability benefits in site design and programming
- Applicability of roof-mounted renewable energy or other sustainability-related technologies
- Landscape style and irrigation technology

>> **Sustainability workshop** The project team must conduct a sustainability workshop with a representative of the Sustainability Integration Office.
- Confirm compliance with Green Building Standards and Sustainable Operations and Maintenance Standards
- Include stakeholders, potential contractors, Savings By Design
- Identify design concepts with significant operational savings

>> **Life cycle cost analysis** The project team must use life cycle cost analysis to compare design alternatives for major building systems, including:
- Mechanical: HVAC equipment and controls, energy sources
- Electrical: lighting sources and controls
- Envelope: roofing, insulation/mass, glazing

>> **Utility rebates** Renovation projects of at least $5 million that do not meet requirements for LEED-NC certification should use LEED and College standards to develop sustainability goals and plans as relevant. Projects must enroll where eligible in Savings By Design and/or other relevant rebate programs in cooperation with utilities. Laboratory-related projects must reflect Labs21 development standards, where applicable.

Design

>> Refer to *Pomona College Sustainable Operations and Maintenance Standards* for purchasing standards related to fixtures, furnishings, and equipment.

Appendix A – LEED 2009 Requirements + Pomona College Requirements

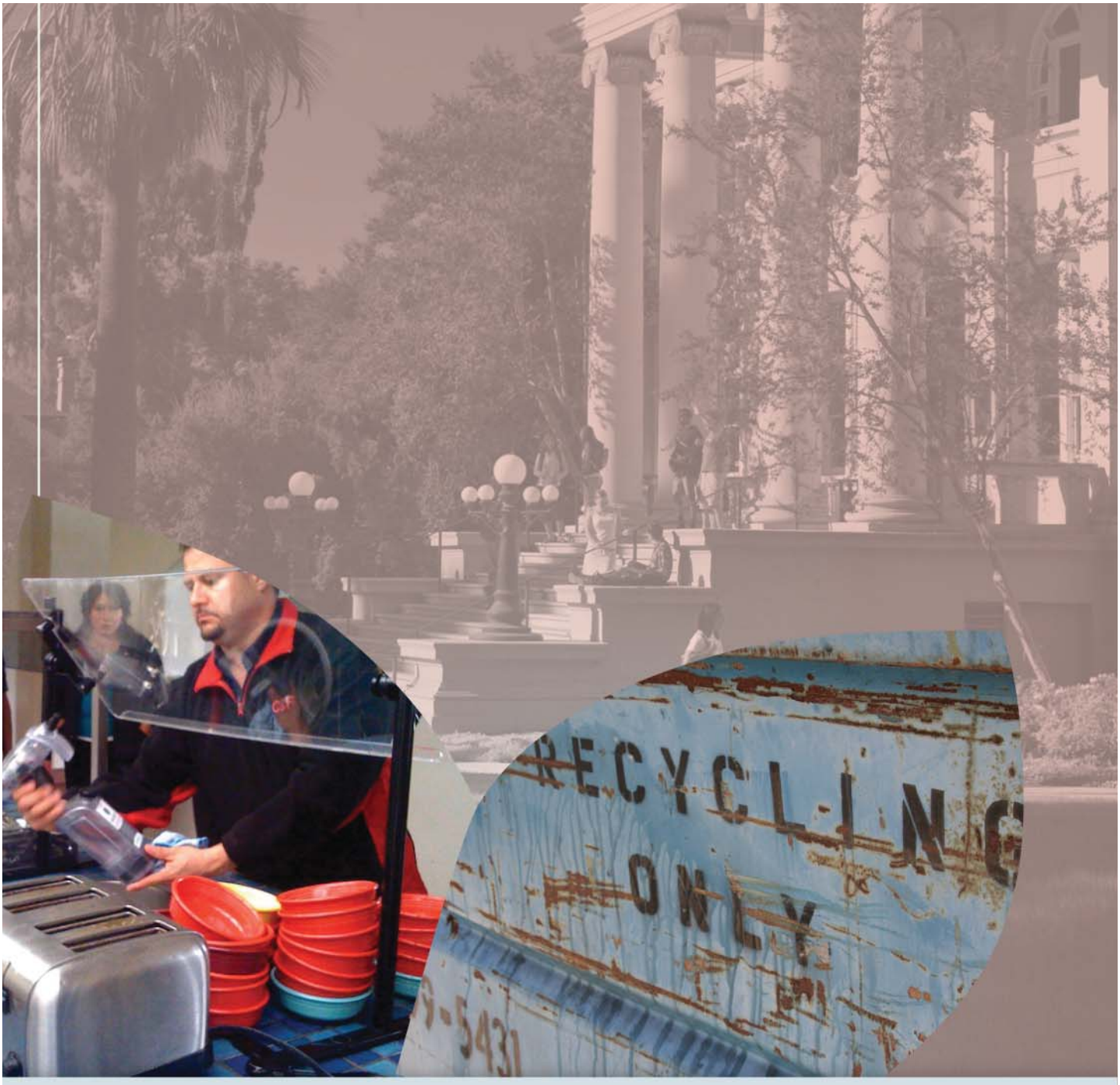
Project Checklist

11	Sustainable Sites	Possible Points:	26	PC Standard
Y	Prereq 1	Construction Activity Pollution Prevention		
1	Credit 1	Site Selection	1	This point should be possible when developing anywhere on campus.
5	Credit 2	Development Density and Community Connectivity	5	These points should be possible when developing anywhere on campus.
	Credit 3	Brownfield Redevelopment	1	
	Credit 4.1	Alternative Transportation—Public Transportation Access	6	This point is possible for many (but not all) locations on campus from proximity to existing facilities.
	Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1	This point should be possible for many (but not all) locations on campus from proximity to existing facilities.
	Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3	
	Credit 4.4	Alternative Transportation—Parking Capacity	2	
	Credit 5.1	Site Development—Protect or Restore Habitat	1	
	Credit 5.2	Site Development—Maximize Open Space	1	
1	Credit 6.1	Stormwater Design—Quantity Control	1	Prerequisite - MUST complete.
1	Credit 6.2	Stormwater Design—Quality Control	1	Prerequisite - MUST complete.
1	Credit 7.1	Heat Island Effect—Non-roof	1	Prerequisite - MUST complete.
1	Credit 7.2	Heat Island Effect—Roof	1	Prerequisite - MUST complete.
	Credit 8	Light Pollution Reduction	1	
6-8	**Water Efficiency**	**Possible Points:**	**10**	**PC Standard**
Y	Prereq 1	Water Use Reduction—20% Reduction		
2-4	Credit 1	Water Efficient Landscaping	2 to 4	2 or 4 points should be a goal for every project, in keeping with the standards College's Landscape Design Guidelines.
	Credit 2	Innovative Wastewater Technologies	2	
4	Credit 3	Water Use Reduction	2 to 4	Prerequisite - 4 points is the goal for every project.
17-26	**Energy and Atmosphere**	**Possible Points:**	**35**	**PC Standard**
Y	Prereq 1	Fundamental Commissioning of Building Energy Systems		
Y	Prereq 2	Minimum Energy Performance		
Y	Prereq 3	Fundamental Refrigerant Management		
10-19	Credit 1	Optimize Energy Performance	1 to 19	Prerequisite – each project MUST strive for at least 10 points on this credit.

	Credit 2	On-Site Renewable Energy	1 to 7	See *Campus Planning Guidelines* for guidance on when renewable energy technologies are appropriate for campus sites.
2	Credit 3	Enhanced Commissioning	2	Prerequisite - MUST complete.
2	Credit 4	Enhanced Refrigerant Management	2	Prerequisite - MUST complete.
3	Credit 5	Measurement and Verification	3	Prerequisite - MUST complete. Measurement and verification systems must coordinate with College-wide monitoring programs.
	Credit 6	Green Power	2	
7	**Materials and Resources**	**Possible Points:**	**14**	**PC Standard**
Y	Prereq 1	Storage and Collection of Recyclables		
	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3	
	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1	
2	Credit 2	Construction Waste Management	1 to 2	Prerequisite - MUST complete. Campus standards require at 90% waste diversion rate.
	Credit 3	Materials Reuse	1 to 2	
1	Credit 4	Recycled Content	1 to 2	Prerequisite - MUST complete. Projects must acquire at least one point.
3	Credit 5	Regional Materials	1 to 2	Prerequisite - MUST complete.
	Credit 6	Rapidly Renewable Materials	1	
1	Credit 7	Certified Wood	1	Prerequisite - MUST complete.
10	**Indoor Environmental Quality**	**Possible Points:**	**15**	**PC Standard**
Y	Prereq 1	Minimum Indoor Air Quality Performance		
Y	Prereq 2	Environmental Tobacco Smoke (ETS) Control		
	Credit 1	Outdoor Air Delivery Monitoring	1	
	Credit 2	Increased Ventilation	1	
1	Credit 3.1	Construction IAQ Management Plan—During Construction	1	Prerequisite - MUST complete.
	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1	
1	Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1	Prerequisite - MUST complete.
1	Credit 4.2	Low-Emitting Materials—Paints and Coatings	1	Prerequisite - MUST complete.
1	Credit 4.3	Low-Emitting Materials—Flooring Systems	1	Prerequisite - MUST complete.
1	Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1	Prerequisite - MUST complete.
1	Credit 5	Indoor Chemical and Pollutant Source Control	1	Prerequisite - MUST complete.
1	Credit 6.1	Controllability of Systems—Lighting	1	Prerequisite - MUST complete.

1	Credit 6.2	Controllability of Systems—Thermal Comfort	1	Prerequisite - MUST complete.
1	Credit 7.1	Thermal Comfort—Design	1	Prerequisite - MUST complete.
1	Credit 7.2	Thermal Comfort—Verification	1	Prerequisite - MUST complete.
	Credit 8.1	Daylight and Views—Daylight	1	Prerequisite - MUST complete.
	Credit 8.2	Daylight and Views—Views	1	Prerequisite - MUST complete.
3	**Innovation and Design Process**	**Possible Points:**	**6**	**PC Standard**
1	Credit 1.1	Innovation in Design: Specific Title	1	Prerequisite - MUST complete.
1	Credit 1.2	Innovation in Design: Specific Title	1	Prerequisite - MUST complete.
	Credit 1.3	Innovation in Design: Specific Title	1	
	Credit 1.4	Innovation in Design: Specific Title	1	
	Credit 1.5	Innovation in Design: Specific Title	1	
1	Credit 2	LEED Accredited Professional	1	Prerequisite - MUST complete.
2	**Regional Priority Credits**	**Possible Points:**	**4**	**PC Standard**
1	Credit 1.1	Regional Priority: Specific Credit - SSc7.1	1	Will complete when complying with the above.
1	Credit 1.2	Regional Priority: Specific Credit - WEc3 (40%)	1	Will complete when complying with the above.
	Credit 1.3	Regional Priority: Specific Credit	1	
	Credit 1.4	Regional Priority: Specific Credit	1	
56-67	**Total**	**Possible Points:**	**110**	

LEED certification thresholds:
- Certified: 40 to 49 points
- Silver: 50 to 59 points
- Gold: 60 to 79 points
- Platinum: 80 to 110



Pomona College

Sustainable Operations & Maintenance Standards

May 2010

Sustainability Integration Office
Facilities and Campus Services

POMONA COLLEGE
Sustainability Integration Office
Facilities and Campus Services

May 2010

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Sustainable Operations & Maintenance Standards

These standards are provided to reduce the environmental impacts caused by operating and maintaining facilities, including water, energy, and chemical use, the generation of a wide variety of wastes, and the purchase of materials. The following standards apply to operations and maintenance activities as they apply to all campus buildings, facilities, and outdoor sites. The majority of activities affected are housed in Facilities and Campus Services, including Grounds, Housekeeping, Maintenance, and the Sustainability Integration Office, but other offices and departments throughout the College are affected by and should be aware of these standards.

Implementation and Performance Measurement

Individual departments and offices, particularly those in Facilities and Campus Services, are responsible for ensuring that their activities are compliant with these standards. The Sustainability Integration Office and the President's Advisory Committee on Sustainability will assess compliance and performance over time as part of their regular sustainability assessment and reporting activities. These bodies will also assist offices and departments with issues including compliance, exceptions to standards, and outreach and training activities. These standards shall be made available to relevant staff members and posted publicly on the Sustainability Integration Office's website.

The College recognizes that in certain extraordinary circumstances, these standards may not provide necessary services or level of control. In those instances, departments involved will use their discretion in choosing operations and maintenance materials and activities that minimize environmental impact.

Standards

All buildings, facilities, and sites on campus shall be maintained and operated with the following procedures:

>> **LEED-EBOM certification** Every facility certified under LEED-NC must maintain LEED-EBOM certification, with the goal of a certification level equal to its initial LEED-NC certification level. Buildings without LEED-NC certification may also pursue LEED-EBOM certification.

>> **Operations and Maintenance Plan** All new and renovated facilities, whether or not they pursue LEED-EBOM certification, must have an operations and maintenance plan that acknowledges compliance with the standards described here, that outlines special circumstances, and that establishes site-specific operational standards and procedures; for instance, those associated with the Energy section below or those that come with specific building activities, such as laboratory research.

Site Impacts

Building Exterior and Hardscape Management

The College employs best management practices to reduce buildings' impacts on the surrounding site and natural area, including mitigation of potential impacts resulting from chemical, energy, and water use, and waste generation. To this end, the College shall engage in the following activities:

>> **Maintenance equipment**

- Maintenance equipment shall be used only as frequently as needed to maintain the safety and structural integrity of building exteriors and other hardscape.
- Alternative methods shall be used whenever feasible to reduce the need for maintenance equipment.

- Conventional equipment will be replaced with lower-impact alternatives when possible, for instance the use of low-decibel blowers.
- Equipment will be chosen to minimize or recycle wastes, for instance the use of mulching mowers where possible.

>> Cleaning

- Buildings, sidewalks, and other hardscape shall be cleaned only as often as needed to maintain safety and appearance.
- Cleaning products, including water, shall be used efficiently to reduce cost, resource use, and environmental impact. Technologies used to make resource use effective include the use of water brooms and a dilution system for cleaning chemicals.
- All cleaning products used shall be in compliance with the College's Green Cleaning Standards (see below), which help ensure that products used are effective and have minimum environmental impact.
- Paints and sealants used on building exterior shall meet specific environmental standards (see Purchasing section, below).

Landscape Management Plan

The College employs best management practices to reduce the environmental impacts associated with landscaping activities, including mitigation of potential impacts resulting from pest management, chemical and water use, and waste generation. To this end, the College shall engage in the following activities:

>> Integrated Pest Management (IPM) – Outdoor

- Outdoor pests (including insects, animals, invasive plants, and fungi) shall be managed in a way that protects the surrounding environment and human health, including the use of least toxic chemical pesticides and minimized use of chemicals.
- To minimize use of chemicals, Grounds and other relevant department shall engage in activities including inspection and monitoring of outdoor facilities, evaluation of the need for pest control, sanitation and other means of managing pest attractants, and structural maintenance.
- If the need for chemical controls is established, substances shall be used only in targeted locations and for targeted species in order to reduce their use. Substances used shall meet San Francisco's Tier 3 hazard criteria for a least toxic pesticide. All nonrodent pesticides are acceptable if used in self-contained baits and placed in inaccessible locations. Additional qualifications may be determined by Facilities and Campus Services.
- Any cleaning products used as part of a pest management program shall be in accordance with the College's Green Cleaning Standards (see below).
- The above standards may not be followed in times of an extraordinarily high need for pest control or when normal procedures have failed to control the situation.
- This program should be coordinated and integrated with indoor IPM efforts (see below).

>> Erosion and sedimentation control

- The College shall engage in activities to control erosion and sedimentation impacts associated with both ongoing landscape operations and construction-related activities. Grounds, third-party contractors, and other relevant departments will take measures to prevent erosion, sedimentation, and air pollution from dust or particulate matters, to restore eroded areas, and to identify potential risks for erosion and sedimentation.

- All construction projects completed on campus shall complete and implement an erosion and sedimentation control plan, in compliance with the LEED certification system and/or applicable local, state, or federal policy. Efforts specified in each plan are specific to each site and its conditions.
- Additional activities implemented in general campus operations shall include the following:
  - Develop project goals using Green Building Standards
  - Create preliminary LEED checklist and confirm Green Building Standards
  - Determine renewable energy integration goals
  - Include stakeholders, potential contractors, Savings By Design
  - Identify design concepts with significant operational savings
  - Adequate maintenance of drainage facilities, including clearing of downspouts, gutters, roof drains, and other drainage infrastructure.
  - Assessment of loose soil, drainage issues, and other risks during wet periods.
  - Maintenance of mulches or decomposed granite groundcover, particularly on areas with high pedestrian or vehicular traffic.
  - Cleanup and management of green waste and other detritus on campus hardscape.
  - The use of seeding and mulching to stabilize slopes and other at-risk areas.
- Diversion of landscape waste
- The College shall engage in landfill diversion activities for all campus green waste, whether composted on-site and used as mulch either throughout campus or at the campus' on-site Organic Farm, or managed through the City of Claremont's green waste composting procedures.

>> **Chemical fertilizer use**

- Chemical fertilizer shall be used only on athletic turf surfaces, and only as frequently as needed to maintain the necessary characteristics for athletic uses. The use of local and native plants and low-impact maintenance practices eliminates the use of chemical fertilizers elsewhere on campus.
- Chemical fertilizers shall be replaced with organic options when available and feasible.
- Fertilizers are used only during times of plant uptake and not when heavy rain is expected.
- Fertilizers are never used in proximity to a body of water.

Water Consumption

>> **Plumbing** Plumbing fixtures (including toilets, faucets and aerators, and shower heads) installed/replaced shall be chosen based on efficiency standards determined by the Sustainability Integration Office, Maintenance, and other appropriate offices.

>> **Landscaping**

- Landscaping changes and choices shall be made in accordance with *Pomona College Landscape and Open Space Guidelines*, which detail standards for plant palette and irrigation technology.
- Irrigation activities shall be conducted in accordance with frequency schedules as determined by Grounds, and with information provided by the College's weather station, flow sensors, and other relevant systems.

>> **Cooling towers** When a cooling tower is present, the College shall develop and implement a water management plan that addresses chemical treatment, bleed-off, biological control, and staff training. This plan will consider installing and/or maintaining a conductivity meter and automatic controls to adjust the bleed rate and maintain proper concentration.

Sustainable Operations & Maintenance Standards

Energy

>> **Schedules and setpoints** All buildings shall be operated in compliance with established schedules and set points for HVAC, lighting, and other major electrical and mechanical systems, when those established standards exist.

>> **Annual building review** Facilities and Campus Services shall conduct a building-level review of energy and other resource use and performance at least once in each 12 month cycle, with depth of analysis dependent on available data and metering technology.

>> **Refrigerants** The College shall use no CFC-based refrigerants in HVAC and refrigeration, if possible, in current equipment or when switching out equipment. Only refrigerants that comply with LEED enhanced refrigerant management standards shall be used.

>> **Implementation of projects** The College shall complete all energy efficiency or conservation projects deemed feasible and with a demonstrable payback period of less than 6 years.

>> **Facility auditing and commissioning** The College shall engage in retro-commissioning, monitoring-based commissioning, and energy audit activities as specified in the Pomona College Sustainability Action Plan.

>> **Utility rebates** The College shall apply for utility rebate programs (e.g. Southern California Edison Express Efficiency) whenever relevant to operations and maintenance activities.

Waste Management

>> All buildings shall be operated within the College's waste management programs and procedures, as deemed appropriate by Housekeeping and/or other relevant departments. This includes management of wastes including ongoing consumables, durable goods, and the wastes associated with regular operations, maintenance, construction, and demolition activities.

Purchasing

Facility fixtures, furnishings, and alterations materials
These standards cover purchasing activities associated with operations and maintenance and as conducted by Facilities and Campus Services; purchases conducted by individual building occupants or departments and unassociated with official operations and maintenance activities fall under the College's Sustainable Purchasing Policy.

>> **Fixtures, furniture, building elements** Fixtures, furniture, and building elements (including those materials permanently attached to the building) shall be purchased with the environmental impact in mind, including the following product characteristics:
- Postconsumer and/or postindustrial recycled content
- Salvaged materials
- Rapidly renewable materials
- Forest Stewardship Council certified wood
- Materials harvested, processed, extracted, and processed regionally

>> Additionally, certain materials shall meet specific standards, subject to change at the discretion of the Sustainability Integration Office, working in conjunction with Maintenance and other appropriate

departments. Exceptions are possible when compliance is financially or otherwise difficult; for example, when matching to otherwise existing materials or when trying to match historic fixtures.

- Adhesives and sealants must have a VOC content less than current VOC content limits of SCAQMD Rule #1168
- Paints and coatings have VOC emissions not exceeding VOC and chemical component limits of green Seal's Standards GS-11 requirements
- Non-carpet floor finishing is FloorScore-certified
- Carpet meets requirements of CRI Green Label Plus Carpet Testing Program and carpet cushion meets requirements of CRI Green Label Testing Program
- Composite panels and agri-fiber products contain no added urea-formaldehyde resins

Indoor Environmental Quality

>> Integrated Pest Management (IPM) – Indoor

- Indoor pests (including insects, animals, invasive plants, and fungi) shall be managed in a way that protects the surrounding environment and human health, including the use of least toxic chemical pesticides and minimized use of chemicals.
- To minimize use of chemicals, Maintenance and other relevant department shall engage in activities including inspection and monitoring of facilities, evaluation of the need for pest control, sanitation and other means of managing pest attractants, and structural maintenance and repairs.
- If the need for chemical controls is established, substances shall be used only in targeted locations and for targeted species in order to reduce their use. Substances used shall meet San Francisco's Tier 3 hazard criteria for a least toxic pesticide. All non-rodent pesticides are acceptable if used in self-contained baits and placed in inaccessible locations. Additional qualifications may be determined by Facilities and Campus Services.
- Any cleaning products used as part of a pest management program shall be in accordance with the College's Green Cleaning Program (see below).
- The above standards may not be followed in times of an extraordinarily high need for pest control or when normal procedures have failed to control the situation.
- This program should be coordinated and integrated with outdoor IPM efforts, as described above. In particular, it is acknowledged that indoor IPM efforts are strongly linked to the preventative nature of outdoor IPM efforts, including prevention of pests entering facilities through the structural maintenance and outdoor sanitation activities.

Green Cleaning Program

The College follows a Green Cleaning Program for all cleaning services covered under Facilities and Campus Services, including Housekeeping, Grounds, and Dining Services.

If products, procedures, or equipment must be used that do not meet the below standards, they should be used for an isolated issue that can only be mitigated by using that item or action. Occasional deviation from this program is acceptable on a case-by-case basis as determined by Facilities and Campus Services and the Sustainability Integration office. In cases where it would take significant financial investments to completely switch out equipment, procedures, or supplies, phased replacement is suggested. Additional requirements and suggestions may be developed as new options and best practices are available. Facilities and Campus Services will continually test environmentally-preferred products from a variety of manufacturers in order to best understand what will be effective for the College.

Sustainable Operations & Maintenance Standards

Staff using these procedures will be trained on an annual basis to reiterate the purpose, goals, and details of the Green Cleaning Program.

Preferred Products and Procedures
There are a variety of certifications and principles that apply to cleaning products, equipment, and procedures. After researching various certifications and labels, the College has determined that Green Seal-certified and EcoLogo-certified products are in general the preferred options, with exceptions made on a case-by-case basis.

>> **Cleaning Products** Cleaning products have one of the following certifications:
- General-purpose, bathroom, glass, and carpet cleaners: Green Seal GS-37
- Cleaning and degreasing compounds: EcoLogo CCD-110
- Hard surface cleaners: EcoLogo CCD-146
- Carpet and upholstery care: EcoLogo CCD-148
- Floor care: Green Seal GS-40
- Digestion additives: EcoLogo CCD-112
- Drain or grease trap additives: EcoLogo CCD-113
- Odor control additives: EcoLogo CCD-115
- Hard floor care: EcoLogo CCD-147
- Hand soap: Green Seal GS-41; EcoLogo CCD-104; foaming or other high-efficiency soaps where possible; no antimicrobial agents except where required

Cleaning systems utilizing ionized or electrolyzed water as a sanitizer and general cleaner will be phased in as feasible as a means of reducing chemical use.

The use of harsh disinfectants will be minimized and used only as needed at primary contact points, including bathroom sinks and toilets. Bleach and phenolic disinfectants will be used only when necessary. Disinfectants used will be H2O2-based and EPA-registered.

>> **Floor Care Systems**
- Floor sealers, finishes, strippers, and maintainers should be used on an as-needed basis rather than a frequency schedule in order to minimize their use. Green Seal-certified products (GS-40) will be preferred, though used only when effective and their use should be phased in. Housekeeping and the Sustainability Integration Office will continue to evaluate new Green Seal-certified floor care systems as they become available.
- When possible, floors will not be sealed or finished in order to reduce the need for maintenance products and procedures.
- To further reduce the impact of floor maintenance, the College utilizes the following procedures:
  - The use of dust collection mechanisms for burnishers
  - Autoscrubber or mop-on products in lieu of spray products.
  - Low-water autoscrubbers equipped with chemical control systems and with a noise level of less than 70dBA.
  - Orbital scrubbing/stripping machines that minimize water use and that do not require chemical stripper.
  - Scrubbing and burnishing pads with recycled content.
  - Equipment chosen to minimize water use.

- Staff trained in minimizing water use in floor procedures.
- Gel and other less environmentally-hazardous equipment batteries.

>> **Cleaning Equipment** Cleaning equipment should be high-efficiency, low-noise, and low-impact. Specific requirements are as follows:
- Vacuum cleaners are certified by Carpet and Rug Institute Green Label Testing Program and operated with sound level of less than 70dBA
- Carpet extraction equipment used for restorative deep cleaning is certified by Carpet and Rug Institute's Seal of Approval Testing Program
- Powered floor maintenance equipment is equipped with vacuums, guards, and/or other devices for capturing fine particulates and operates with sound level of less than 70dBA
- Propane-powered floor equipment has high-efficiency, low-emissions engines that meet CARB or EPA standards, and operates with a sound level of less than 90dBA
- Battery-powered equipment is equipped with environmentally preferable gel batteries
- Powered equipment is ergonomically designed to minimize vibration, noise and user fatigue
- Equipment is designed with safeguards, such as rollers or rubber bumpers, to reduce damage to surfaces

>> **Dilution Systems and Packaging** All cleaning products will be administered with an adequate dilution control system. Products with reduced packaging, recyclable packaging, and packaging with recycled content are preferred.

>> **Dusters, Mops, and Cleaning Tools** The College uses only re-usable, launderable, microfiber cloths and mops as cleaning tools, in lieu of paper. These cloths and mops will replace all disposable cleaning tools as feasible, and should be washed in water- and energy-efficient, EnergyStar label washing machines and dryers. Additional preferred tools include recycled content PET plastic wet mops (100% post-consumer waste PET), bamboo mop handles, and other products with recycled content and/or rapidly renewable materials.

>> **Entrance Matting** Permanent entry systems (including grills, grates, and mats) will be utilized in College facilities to reduce dirt and particulates entering facilities, which improves indoor air quality and reduces maintenance and cleaning needs. Entrance areas are vacuumed, swept, mopped, and/or dusted frequently. Entry systems should be made from environmentally preferable materials (such as rubber) and/or with recycled content where available, and should be recyclable.

>> **Deodorizers** Automatic Aerosol Deodorizers are not a part of the College's preferred Green Cleaning Program, because they contain high levels of Volatile Organic Compounds. Air freshening systems should be non-aerosol, including products that operate with a wick system or that otherwise have no aerosol propellants.

>> **Urinal Blocks** Urinal blocks should not be used because they contain hazardous materials.

>> **Paper Products**
- Cleaning-related paper products should hold at least one certification as follows:
  - Paper towels and napkins: Green Seal GS-09; EcoLogo CCD-086
  - Tissue paper: Green Seal GS-01; EcoLogo CCD-082
- Products should also be Processed Chlorine Free (PCF).

- Additional considerations for paper products include:
  - The use of rapidly renewable materials or tree-free fibers
  - Waste-reducing design, including coreless rolls and regulated towel dispensers
  - Post-consumer recycled content
  - The impacts of whitening and/or bleaching processes
  - Forestry practices and related certifications (e.g. Forest Stewardship Council-certified)
- The installation of high-efficiency hand dryers are recommended, as long as they can be installed without companion hand towel dispensers.
- Partial rolls of toilet paper and other paper products should not be discarded when replaced.

>> **Plastic bags** Plastic bags used in cleaning operations, including trash and recycling bags, should have the highest possible level of recycled content. Clean or unused bags that need to be discarded should be recycled.

Additional Procedures

Staff members cleaning a facility should make certain to turn off all lights and other powered equipment (as directed) when leaving work areas, and only turn on lights and equipment as necessary to complete assignments.