wishes to harness this benefit and the environmental, financial and operational benefits of improving waste management practices. Based upon current successes, the University has established ambitious recycling goals.

- *Goal* – Recycle 75 percent of all waste materials generated in construction and renovation projects (C&D waste).
- *Goal* – Recycle at least half of non-C&D waste and continue to identify opportunities to implement programs to improve performance.
- *Goal* – Actively promote reuse of unneeded goods through the Clean Sweep initiative and other programs.

Air Quality

Air quality issues are generally less visible, but have the potential to directly affect human health and the environment. Boston College maintains good air quality on campus through a variety of programs, and will measure greenhouse gases as required by tracking fuel usage or by employing other methods used to measure success in meeting benchmarks, targets and goals.

A well-run indoor air quality (IAQ) management program yields substantial benefits for an institution, including its employees, faculty and students. In addition to the benefits of health and well-being, the expensive process of investigating and mitigating suspected IAQ problems can be reduced significantly or avoided entirely by employing good housekeeping and building maintenance practices, including during facilities improvement projects.

- *Goal* - Evaluate mobile source emissions generated on-campus.
- *Goal* - Explore the following best practice measures to reduce emissions from diesel construction equipment and vehicles, by requiring contractors to:
  - Install emissions control devices to reduce particulates and other tailpipe pollutants.
  - Burn only ultra-low sulfur diesel fuel.

Stormwater Management

Uncontrolled stormwater can cause flooding and habitat damage and waste of water. Through innovative approaches such as retention, treatment, and reuse, as well as use flr(ofd. Amot de pand)]Tr.7(t)-5.ial btraBo

each contribute and relate to local environments in different ways. Sustainability, education and student formation are all inte

Campus Sustainability Advisory Panel

The Director of Sustainability and Energy Management chairs the Campus Sustainability Advisory Panel, which was formed to assure broad institutional coverage of interested parties during implementation of the Institutional Master Plan. The panel includes representatives from operating units such as Facilities Management, Environmental Health and Safety, Dining Services, Auxiliary Services, Capital Projects Management, Procurement Services and Governmental and Community Affairs. In addition to University administrators, students will serve on the panel. The Director also meets regularly with Sustain BC, a campus group which includes the Director of Boston College's Environmental Studies Program as well as other faculty, staff and student members (see Education and Outreach section later in this chapter for a description of Sustain BC).

Social Justice

Boston College is committed to maintaining and strengthening its Jesuit, Catholic mission, especially to integrating intellectual, personal, ethical and religious dimensions, and to linking high academic achievement with service to others.

Below is a representative sample of the many service groups and activities that incorporate principles of social and environmental justice.

- Volunteer and Service Learning Center
- Volunteer Opportunities
- Campus Organizations
    - Boston College Neighborhood Center
    - Campus Ministry (Justice Programs)
    - Career Center (Post Grad Volunteering)
    - Church Ministry Internships (Intersections Project)
    - Global Proficiency Program
    - Lynch School of Education (Outreach)
    - PULSE Program
    - Urban Catholic Teacher Corps
    - Urban Ecology Institute
    - Women's Resource Center
- Campus Ministry
    - Appalachia Volunteers
    - Arrupe International Service Trips Program
    - 4Boston
    - Urban Immersion
    - Ignatian Family Teach-In and School of the Americas Vigil

original design, prerequisite LEED credits and at least a minimum of the other credits are likely to be met. Early review of requirements helps to ensure that the project will remain on schedule. The LEED "checklist" consists of six credit categories, with many credit synergies (e.g., green roofs affect water, materials and energy). If the team is confident about the checklist, the next step is to register the project with the USGBC for the appropriate certification category. While LEED rating system versions include those for new construction (and major renovations) and also exist for homes, neighborhoods, interiors, buildings core and shell, schools and existing buildings, the overarching set of credit categories common to all include:

- *Site Selection* (e.g., land reuse/remediation, density, alternative transportation, habitat protection, stormwater management, light pollution and heat island reduction)
- *Water Efficiency* (e.g., minimum plumbing and landscaping irrigation efficiencies, wastewater reuse, conservation of potable water)
- *Energy & Atmosphere* (e.g., renewable power generation on-site or off-site purchases, Energy Star appliances and building ratings, automated building energy and airflow systems, system commissioning, CFLs/other high efficiency lamps, daylighting, insulation)
- *Materials & Resources* (e.g., life cycle analysis, recycling, composting, recycled/reused/rapidly renewable resource-content in material usage such as floors and walls, use of locally/regionally sourced resources)
- *Indoor Environmental Quality* (e.g., thermal comfort, outdoor air supply, particulates management, lighting controls, window views, green cleaning)
- *Innovation in Design* (e.g., car share services, education/outreach/awareness programs, sustainable food provisions, exceptional performance in other five credit categories)

The team can actively manage project information about the status of meeting credit goals via LEED-Online, which is enabled once the project is registered. Post-construction, and once the online templates and supporting documents are completed, the team submits the full set of application materials to the USGBC fo tent inTC fo lllls, wy mGBC fbmitsUSGide recyclerenievurcpong e

Elevators

Boston College is evaluating the use of more energy-efficient and environmentally friendly elevators, such as the Otis Gen2 and Kone systems. New elevator systems set the standard for elevator performance, efficiency and comfort.

Combined Heat and Power

The University is currently evaluating the feasibility, as well as the environmental and economic benefit, of combined heat and power (CHP) technology. Several locations, configurations and load profiles are being assessed on the BC campus.

Geothermal Heat Exchange Wells

Geothermal systems are scalable and can be constructed in a distributed fashion. As such, they are effective to support multi-year phased renovation and new construction in different areas of the campus as part of the University's IMP. The University is currently evaluating the campus geologic and groundwater conditions to assess the feasibility of geothermal installations as part of the proposed campus development.

Greenhouse Gases

On the issue of climate change, the American College and University Presidents Climate Commitment (ACUPCC) has developed a comprehensive, timeline-based action plan for campus climate neutrality that has received a great deal of visibility. Boston College recognizes the need to build support for sustainability among college and university administrations across America and has seriously considered the ACUPCC commitment. Similar to decisions reached by Harvard University and Tufts University (schools which also support Energy Star building, green building standards, transportation demand management, clean power, waste minimization, and most of the ACUPCC's other recommended strategies), Boston College has determined to not become a signatory to the ACUPCC. The University will develop its own program better tailored to its needs.

The University has taken steps toward assessing its annual GHG baseline and begun the process of calculating its carbon inventory; it commits to, within two years, developing a plan to reduce its greenhouse gas emissions.

Water Conservation

Several measures have been undertaken to reduce water consumption at Boston College's facilities:

- Low-flow toilets and shower heads as well as faucet aerators have been installed in a number of the residence halls, and will be used in new student living areas being created through renovation projects in Upper Campus and Newton Campus residence halls.

- Retrofitted autoclaves were installed in Merkert Chemistry Center, saving approximately 400,000 gallons of water per year.
- Installation of waterless systems for Merkert Chemistry Center’s vacuum pumps is in

rate of 38 percent and a weekly recycling rate of 45 percent. Students are recycling approximately 2.6 pounds per week. RecycleMania is supported by the U.S. EPA and the National Recycling Coalition as a project of the College and University Recycling Council.

Another student effort to increase enthusiasm about sustainability, led with support from the University, is the Undergraduate Government of Boston College's (UGBC) new partnership for recycling with Boston College's Athletics Department and the Boston Red Sox. UGBC has

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prepared by Helen Liu, a leading researcher at the University of Massachusetts[1], leachate resulting from SBR derived from scrap tires and chemicals from the other components of the synthetic surface system (sand, polyolefin fibers and acrylic backings) meet current environmental standards and should not be considered hazardous.

Composting and Organics

A successful pilot food composting program in Corcoran Commons Dining Hall was implemented in the summer of 2007. Following on that success, in January 2008, a new sorting system that includes organic waste was installed at the McElroy Dining Hall as a

organized and supported by Boston College's environmental clubs such as Ecopledge and the Environmental Law Society, as well as by the Undergraduate Government of Boston College (UGBC). Sustain BC is a faculty- and student-led group that advocates for initiatives and policies that benefit the environment.

Academic

Environmental Scholars

The Environmental Scholars Program provides a combined internship and advanced

Principles of Ecology
Coastal Field Ecology
Animal Behavior
Marine Biology
Methods in Environmental Field Research
Exploring the Earth I: Origin and Systems
Exploring the Earth II: Structures and Internal Processes
Origin and Evolution of Life
Oceanography I
Rivers and the Environment
Weather, Climate and the Environment
Geoscience, Global Warming and Public Policy
Earth Materials
Environmental Geology
Environmental Hydrology
Environmental Geophysics
Application of Geographical Information Systems
Hydrogeology
Watershed Geomorphology
Environmental Oceanography
Statistical Analysis of Scientific Data
Site Characterization, Remediation and Long Term Monitoring for Hazardous Waste Sites

Environmental Policy - Foundation Courses:
Environmental Management
Environmental Law and Policy
Nature in American Culture
Understanding Urban Ecosystems
Environmental Economics
Literary Themes
Literature and Ecology
American Nature Writing
Geology of National Parks
Environmental History
Organizational Behavior: “Green Version”
Negotiation
Health Science: East and West
Planet in Peril: Environmental Issues in Society
Environmental Policy

Urban Ecology Institute

The Urban Ecology Institute (UEI) is a Boston College program that helps urban communities build healthy and vibrant cities by educating urban residents about the ecology of their environment and engaging them in the transformation of their communities. UEI is