

Sustainability Strategic Plan

2013–2016 At Yale, we believe that sustainability depends on the entire university community: faculty who conduct leading research and teach the next generation; staff who manage and carry out the operations of our complex organization; and students who inspire and challenge us to even more innovation. We have a responsibility to future generations to ensure that sustainable practices are at the heart of our university.

Yale Sustainability Strategic Plan
2013–2016

Letter from President Peter Salovey

At Yale, we believe that sustainability depends on the entire university community: faculty who conduct leading research and teach the next generation; staff who manage and carry out the operations of our complex organization; and students who inspire and challenge us to even more innovation.

Yale has been addressing sustainability for over a century, led by faculty in our School of Forestry & Environmental Studies and joined now by faculty across the campus. In the past decade, we have committed to increased sustainability in our campus operations as well, addressing such areas as greenhouse gas emissions, energy and water conservation, land use policies, waste reduction, and building renovation and construction. The strategic plan that follows demonstrates that commitment and challenges us to do more.

Sustainability calls for new ways of supplying energy, serving food, circulating vehicular and pedestrian traffic, distributing documents, and maintaining landscapes. We have much of the necessary technology; our challenge is to change our behaviors so that what we do with our resources provides the best stewardship for the future. As a social psychologist, I am pleased that our strategies include engaging the Yale community in bringing about this change so that sustainability is embedded in the policies, practices, and day-to-day operations of our campus.

Our success depends upon leadership and engagement at the individual, departmental, and institutional levels. We have a responsibility to future generations to ensure that sustainable practices are at the heart of our university.

Sincerely,

A handwritten signature in black ink, reading "Peter Salovey". The signature is written in a cursive, flowing style.

Peter Salovey
President
Chris Argyris Professor of Psychology

CONTENTS

4	INTRODUCTION
7	ENERGY AND GREENHOUSE GAS EMISSIONS
9	NATURAL AND BUILT ENVIRONMENT
	<i>Landscape</i>
	<i>Water Use</i>
	<i>Stormwater</i>
	<i>Transportation</i>
	<i>Buildings</i>
11	MATERIALS MANAGEMENT
	<i>Purchasing</i>
	<i>Disposal</i>
13	FOOD AND WELL-BEING
15	SUSTAINABILITY LEADERSHIP AND CAPACITY BUILDING
18	APPENDIX A: SUSTAINABILITY STRATEGIC PLAN CONTRIBUTORS

INTRODUCTION

Yale's first Sustainability Strategic Plan was launched in 2010 with an ambitious set of goals intended to expand upon the University's greenhouse gas emissions targets that were established in 2005. One of the overarching goals of the first plan was to ensure that our environmental citizenship would extend beyond the robust leadership present for over a century in our academic community, with our operational policies and practices demonstrating similar leadership. With growing support and commitment from almost every sector of the campus, we have made significant progress over the past three years in advancing sustainability on campus. Some of the major accomplishments achieved as a result of the first plan include:

- 17% reduction in campus greenhouse gas emissions
- 24% reduction in municipal solid waste
- 28% recycling rate
- 95% of dining hall food waste composted
- 37% of dining hall food meeting one of the four sustainable food criteria
- 100% of new on-campus construction and major renovations earning at least Leadership in Energy & Environmental (LEED) Gold certification

In addition to the quantitative goals, we have developed and begun implementing the following sustainability management plans:

- Green Purchasing Guidelines
- Sustainable Stormwater Management Plan 2013–2016
- Water Management Plan 2013–2016
- Sustainability Supplement to the Framework for Campus Planning
- A Plan for Sustainable Transportation at Yale

This second Sustainability Strategic Plan for 2013 to 2016 builds on the successes of the first plan, addresses areas where additional effort is needed, and includes a new model of cost effectiveness. The goals in the Sustainability Strategic Plan 2.0 are intended to engage all members of the Yale community in advancing a more environmentally friendly, healthier, and financially robust institution. Developed with the input and

insights of a steering committee and team of delegates, this plan sets forth goals and related objectives in five areas:

- Energy and Greenhouse Gas Emissions
- Natural and Built Environment
- Materials Management
- Food and Well-Being
- Sustainability Leadership and Capacity Building

In addition, an internal companion document, the Sustainability Action Plan, includes detailed descriptions of the approaches, projects, responsible departments, and incremental steps for each overall goal and its objectives.

We will continue to collect metrics to determine progress toward meeting the goals. The new plan has also been developed with attention to determining the overall cost effectiveness of our sustainability investments. We recognize that in the current financial climate we need to achieve further progress in our sustainability goals within existing budgetary parameters of departments and units, except in those special cases where provostial approval is secured for pilot projects. We have identified two categories of sustainability investments that will be tracked and measured over time: (1) any incremental cost increase to business as usual (e.g., energy conservation, LEED-certified buildings, transportation), which will be reviewed in the regular university budget process; and (2) sustainable product replacement within standard operating procedures and budgets (e.g., green cleaning products). The return on these sustainability investments takes three forms: (1) cost savings over time, (2) cost avoidance, and (3) benefits to health and overall personal and environmental well-being. The third category is more difficult to quantify but is nonetheless a benefit to be considered. This overall approach will allow informed financial decision-making in an era when there are many worthy projects competing for finite funding.

Finally, in order for Yale to continue as a leader in sustainability – developing best practices, using resources wisely, and securing the ecological and environmental future of the campus – we must continue to advance the policies, practices, and behaviors that have reduced our ecological impacts, enhanced the quality of life, and provided hands-on learning. President Richard Levin’s vision made possible the first Yale Sustainability Strategic Plan. With President Peter Salovey’s leadership, this plan will build on that extraordinary foundation. We are entrusted with the care of a 312-year-old institution. This plan, the collaboration that went into its development, and the systemic and behavioral changes that will emerge from it will ensure that Yale is a leader in sustainability well into the future.

ENERGY & GREENHOUSE GAS EMISSIONS

Yale is dependent upon energy to heat and cool campus buildings, and power its lights, appliances, equipment, electronics, and vehicles. This energy comes primarily from fossil fuels such as natural gas, oil, and gasoline. Recognizing that our reliance on fossil fuels contributes to global climate change, the University set a target in 2005 to reduce greenhouse gas emissions from its two power plants and purchased electricity 43% below 2005 levels by 2020. To date, Yale has reduced its greenhouse gas emissions by 17%.

In addition to reinforcing efforts to meet the 2020 goal, this new plan expands our reduction efforts to include emissions from the university fleet and sets interim energy-reduction targets for campus buildings.

- Goal Reduce energy consumption and greenhouse gas emissions 5% below 2013 levels by June 2016. This will result in more than a 20% total reduction in greenhouse gas emissions from 2005 levels.
- Objectives
1. Yale Facilities will work with Environmental Health and Safety, the Office of the Provost, and the Office of Sustainability to develop a detailed energy conservation strategy to reduce energy consumption in labs between 6 and 8%.
 2. Develop and implement a seven-year strategic energy management plan that identifies ongoing energy improvements and maintenance to building, central plant, and distribution systems.
 3. Develop a process to mitigate the net increases in campus energy intensity associated with new construction and renovations.
 4. Pilot and evaluate new energy technologies for campus-wide use.
 5. Establish and implement data center strategies that reduce facility demand and energy consumption.
- Goal Increase the renewable energy portfolio to represent 1% of the total electricity generated on campus by June 2016.
- Objective Develop alternative operating and financing mechanisms to install on-site renewable energy installations.

- Goal Reduce university greenhouse gas emissions from university fleet vehicles by 80 tons of carbon dioxide equivalent per year below 2013 levels by June 2016.
- Objectives
1. Implement policies to encourage the purchase of vehicles with higher fuel efficiency standards by June 2016.
 2. Reduce university fleet fuel consumption 5% below 2013 levels by June 2016 by developing plans for on-campus and nearby Yale fueling locations.

NATURAL & BUILT ENVIRONMENT

As Yale continues to grow, so does our impact on the land, water, and air that we depend upon for the health and well-being of Yale and our surrounding communities. By remaining mindful of the value of the ecological context of the campus, Yale is better able to plan, develop, and manage its campus in a way that improves the quality of these natural resources and ensures a healthy and vibrant community for its members. The recognition that all systems are linked and thus influenced and affected by one another is necessary to the development and management of a sustainable campus.

Landscape

- Goal Develop and implement sustainable land development and maintenance practices on the Yale campus by June 2016.
- Objectives
1. Implement no-mow zone methods in selected and approved sites throughout the Yale campus.
 2. Develop phase one of a campus tree management plan by June 30, 2015.

Stormwater

- Goal Establish a baseline for campus stormwater runoff and define a specific reduction target by June 2016.
- Objectives
1. Implement the Sustainable Stormwater Management Plan 2013–2016 to reduce and manage stormwater runoff.
 2. Pilot, monitor and evaluate stormwater mitigation impacts of green infrastructure projects in alignment with recommendations of the Sustainable Stormwater Management Plan 2013–2016.
 3. Replace mulch in selected locations across campus to control and reduce stormwater runoff.

Water Use

- Goal Reduce potable water use on campus 5% below 2013 levels by June 2016.
- Objective Implement the Water Management Plan 2013–2016 for continuous improvements in water use in buildings, power plants, irrigation systems.

Transportation

- Goal Lessen Yale's impact on New Haven traffic congestion and vehicle emissions by reducing single-occupancy vehicle use by faculty and staff to campus 2% below 2013 levels by June 2016.
- Objectives
1. Encourage commuters who live within the Yale shuttle zone to ride the shuttle.
 2. Expand ridesharing program participation.
 3. Promote the use of West Campus as a park-and-ride location.
- Goal Increase participation in the Federal Pre-tax Commuter Benefits Program 25% above 2013 levels by June 2016.
- Objective Increase awareness of and improve accessibility to the Federal Pre-tax Commuter Benefits Program.

Buildings

- Goal Earn a minimum of LEED Gold certification and achieve Yale-specific required credits on all new construction and approved comprehensive renovations; ensure that all other construction adheres to Yale's sustainable design requirements.
- Objectives
1. Update Yale University design standards to incorporate Yale's sustainable approach to design, construction, and maintenance as reflected in the 2013 sustainability plans.
 2. Conduct an analysis of the benefits and effects of the evolving LEED rating requirements, as well as the opportunities presented by LEED for Multiple Buildings and Campuses, and develop a set of recommended next steps.
- Goal Plan campus development in alignment with recommendations of the Sustainability Supplement to the Framework for Campus Planning.
- Objective Educate Facilities staff and outside consultants on the practical use of the Sustainability Supplement, including procedures for project review to ensure alignment with the Sustainability Supplement recommendations.

MATERIALS MANAGEMENT

There are complex ecological and health consequences associated with the selection, procurement, use, and disposal of the materials that we use every day. Applying a materials management approach to our purchasing and waste management practices recognizes the direct influence of these two systems on each other. To reduce the ecological and health impacts of our purchasing and waste decisions, the goals and strategies in this plan aim to take into account the connection between products that enter campus in tandem with those that leave campus. This approach will enable the University to minimize the system-wide impacts and move toward more sustainable purchasing decisions and disposal options.

Initiatives related to reducing the volume of purchases, enhancing the sustainability of products entering the campus, and empowering Yale community members to make informed buying choices are key strategies. Equally important are strategies to minimize the waste that leaves campus via a waste minimization hierarchy that begins with source reduction, then reuse, recycling, and composting where applicable, and lastly disposal of municipal solid waste. This approach can reduce the environmental and economic costs of campus waste.

Purchasing

- | | |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Goal | Achieve a 10% reduction in paper purchases and a 10% reduction in office supply purchases from 2013 levels by June 2016. |
| Objectives | <ol style="list-style-type: none">1. Institutionalize the use of PaperCut software to measure printing and help adjust systems or behaviors to reduce volume.2. Assess business systems to determine opportunities to transition to paperless or to reduce paper volume if possible.3. Establish tools and tactics to streamline ordering into larger batches and reduce the overall volume of materials being purchased. |
| Goal | Establish sustainable procurement standards by June 2014. |
| Objectives | <ol style="list-style-type: none">1. Establish and advance sustainable purchasing guidelines for three high-volume areas—break rooms, catering, and office supplies.2. Assess each commodity group for availability of sustainability-oriented vendors. Survey all vendors for sustainability practices. Use survey results to inform purchasing guidelines. |

Disposal

- Goal Establish and commit to purchasing and disposal practices that meet industry standard sustainability practices for Information Technology Services at Yale by June 2014.
- Objectives
1. Require all ITS equipment vendors to utilize sustainable practices in their product life cycles by June 2014.
 2. Require as endorsed by ITS all cloud-provider vendors to utilize sustainable practices in their product life cycles by June 2015.
- Goal Achieve a 50% waste diversion rate by June 2016 via reuse, recycling, and/or composting strategies.
- Objectives
1. Expand compost collection beyond Yale Dining.
 2. Divert lab waste from the municipal solid waste stream by educating and training laboratory staff on the proper disposal of lab recyclables and medical waste.
 3. Improve custodial staff compliance with proper material-handling practices through appropriate training and education.
 4. Implement departmental-level recycling plan for Yale Animal Resources Center.
 5. Promote and measure the use of the Yale Eli Surplus Exchange Program.
- Goal Implement strategies to reduce municipal solid waste with the intention to commit to an institutional total volume waste reduction target by January 2015.
- Objectives
1. Develop a University-wide, comprehensive integrated waste management plan.
 2. Standardize and perform biannual campus waste stream audits in order to evaluate material composition and to target reduction opportunities.
 3. Develop contractual data collection requirements with waste vendors to gather necessary waste metrics.
 4. Increase trayless dining to include all residential colleges by September 2013.
 5. Develop and implement a pilot program that provides undergraduate dorms with common room furniture, leading to a reduction in annual bulky waste collection.
 6. Reduce packaging materials for office supplies by instituting the use of reusable/returnable “Boomerang” cardboard tote boxes for office supply orders.
 7. Identify specific strategies to reduce Yale Dining waste by establishing regular waste assessments in all dining hall facilities.

FOOD & WELL BEING

Indoor and outdoor air quality, water quality, and exposure to toxic chemicals are clearly linked to human and ecosystem health. Health issues related to consumption of food may be less obvious, but are no less important either to people or the planet. Another critical element of human well-being relates to the experience of working or studying at Yale. The University has an opportunity to maintain and enhance the excellence of its campus and surroundings in ways that make Yale and New Haven a more livable city – walkable, bikeable, and community-oriented. Strategic efforts to promote well-being will enhance Yale’s ecological footprint while ensuring a top-quality experience for employees and students.

- Goal Ensure that 37% of the food purchased and served by Yale meets one or more of the following sustainability criteria: local, eco-sensitive, humane, or fair.
- Objectives
1. Develop automated tracking and reporting capabilities derived from implementation of new purchasing and data-management systems.
 2. Continue to work with suppliers to increase the availability of more sustainably raised and harvested meat such as poultry, fish, and beef.
- Goal Increase the purchase and preparation of plant-based foods in Yale Dining by 15% over 2013 levels by June 2016.
- Objective Implement the Healthy Meal Collaborative in Yale Dining, which is a national program to double the volume of plant-based foods served by 2020.
- Goal Reduce sodium content in on-campus food offerings to 2,200 milligrams daily by June 2016.
- Objectives Yale has committed to the National Salt Reduction Initiative, which aims to enhance the healthiness of prepared foods by reducing their sodium content. This work will be supported by training staff, updating menus, and making more food from scratch.
- Goal Reduce cleaning chemical usage on campus 30% from 2013 levels by June 2016.
- Objectives
1. Develop a chemical purchasing protocol for preferred green cleaning products by June 2016.
 2. Phase out old custodial equipment over the next three years and replace it with new, more appropriate technologies to support green cleaning goals.
 3. Conduct annual custodial staff training on green cleaning purchasing policies and protocols, single-stream recycling, water use and disposal protocols, and general sustainability awareness and education.
 4. Use only phosphate-free cleaning products and practices in all Yale Dining facilities.

- Goal Organize an exploration of initiatives within the university that promote both human well-being and ecosystem vitality by June 2014.
- Objectives
1. Facilitate an active dialogue about sustainability and health care among Yale Health Services, the School of Medicine, and the Yale-New Haven Hospital.
 2. Partner with staff and faculty in the professional schools to identify current and pipeline initiatives related to well-being and community engagement.
 3. Consider educational opportunities related to sustainability and well-being in high-impact jobs such as custodial services, grounds maintenance, and food preparation.

SUSTAINABILITY LEADERSHIP & CAPACITY BUILDING

Sustainability leadership for a university requires a multifaceted strategy that unites the operational and academic mission of the institution. A university that strives to be a sustainability leader must demonstrate an ability to make informed decisions in the face of uncertainty, take risks and assess new technologies, commit to reduced ecological and human health impacts despite growth, and inspire innovation and efficiency from staff, students, and faculty alike.

The success of this plan relies on system modification and behavior change. As a university with a robust culture of sustainability, Yale is able to call upon its professionals to effect change in their workplaces and in their lives while simultaneously offering students the experience of living, studying, and playing in a setting that is imbued with sustainability values.

Goal Establish a portfolio of sustainability action plans for schools and departments by December 2013.

- Objectives**
1. Establish second-generation action plans for the Schools of Management, Divinity, and Forestry & Environmental Studies.
 2. Roll out action plans for the School of Medicine and the School of Public Health.
 3. Establish and implement new plans for the Schools of Architecture, Art, Engineering and Applied Sciences, Drama, Music, and Nursing, as well as the Institute of Sacred Music.
 4. Execute sustainability action plans for the Yale University Art Gallery, the Yale Peabody Museum of Natural History, and the Yale Center for British Art.
 5. Continue to implement action plans for Yale Health Services and Athletics.

Goal Promote sustainability as a core business value at Yale by June 2016.

- Objectives**
1. Develop training modules for those who regularly purchase materials for Yale by June 2016.
 2. Establish a training program to certify all lead administrators and operations managers in sustainable business practices by June 2016.

- Goal Create a regional food alliance with area farmers, and institutions, the Yale Sustainable Food Project, and Yale Dining to discuss new approaches to food distribution by June 2014.
- Objectives
1. Identify participants and establish regular communications with them by January 2014.
 2. Partner with alliance participants to develop a vision and strategy by December 2014.
 3. Host a conference, led by Yale Dining, to promote networking and knowledge exchange by January 2015.
- Goal Establish a culture of green information technology at Yale through a portfolio of training and certification programs, as well as consistent online messaging to all computer-using members of the Yale community by June 2016.
- Objectives
1. Establish a corps of 20 Certified Green IT professionals and develop training for all Tier 1 IT professionals.
 2. Establish a model for innovative working environments and practices for ITS employees to achieve efficient use of resources (e.g., reduced power usage and fuel consumption) by June 2014.
- Goal Expand Green Certification Programs by June 2016.
- Objectives
1. Increase the number of Green Workplaces certified by 25% each year.
 2. Develop a green labs action plan that sets targets and details implementation and communication approaches.
 3. Consider additional certification programs such as Green Businesses, Green Dorm Rooms, or Green Athletic Teams.

APPENDIX A: SUSTAINABILITY STRATEGIC PLAN CONTRIBUTORS

Sustainability Strategic	Linda Lorimer, chair (<i>Vice President of the University</i>)
Plan Steering	Julie Newman, co-chair (<i>Director, Office of Sustainability</i>)
Committee Members	John Bollier (<i>Associate Vice President for Facilities</i>)
	Julie Grant (<i>Assistant Vice President for Business Operations</i>)
	Martha Highsmith (<i>Senior Advisor to the President</i>)
	Janet Lindner (<i>Associate Vice President for Administration</i>)
	John Mayes (<i>Associate Vice President & Chief Procurement Officer</i>)
	Timothy O'Connor (<i>Associate Provost for Science & Technology</i>)
	Len Peters (<i>Associate Vice President and Chief Information Officer</i>)
	Peter Reinhardt (<i>Director, Environmental Health & Safety</i>)
	Elizabeth Stauderman (<i>Chief Communications Officer and Special Assistant to the President</i>)
	Rafi Taherian (<i>Executive Director, Yale Dining</i>)
	Cynthia Walker (<i>Deputy Dean, Yale School of Medicine Finance & Administration</i>)
Office of	Sarah Jane Compton (<i>Office Coordinator</i>)
Sustainability Staff	Keri Enright-Kato (<i>Program Manager</i>)
	Amber Garrard (<i>Education & Outreach Manager</i>)
	Melissa Goodall (<i>Assistant Director</i>)
	Mark Woloszyn (<i>Project Assistant</i>)
Sustainability Strategic	Claudine Alexandre (<i>Purchasing</i>)
Plan Deputy Members	Brenda Armstrong (<i>Environmental Health & Safety</i>)
	Richard Bascom (<i>Business Operations</i>)
	Mark Bomford (<i>Yale Sustainable Food Project</i>)
	Susan Cascio (<i>University Properties</i>)
	Virginia Chapman (<i>Facilities, Planning</i>)
	Kristina Chmelar (<i>Facilities, Planning</i>)
	Dana Courtney (<i>Business Operations</i>)
	Lisa D'Angelo (<i>Office of the Provost, Division of Science & Technology</i>)
	Robert Ferretti (<i>Facilities, Grounds Maintenance</i>)
	Daniel Flynn (<i>Yale Dining</i>)

APPENDIX A: SUSTAINABILITY STRATEGIC PLAN CONTRIBUTORS

Sustainability Strategic	Edward Frey (<i>Information Technology Services</i>)
Plan Deputy Members	David Gallaer (<i>Information Technology Services</i>)
	Roger Goode (<i>Facilities, Building Services</i>)
	Mary Hu (<i>Yale School of Medicine</i>)
	Anthony Kosior (<i>Facilities, Utilities & Engineering</i>)
	George Longyear (<i>Support Services</i>)
	Joseph Mastracchio (<i>Purchasing</i>)
	Bruce McCann (<i>Yale School of Medicine</i>)
	Christopher Mihok (<i>Purchasing</i>)
	Julie Paquette (<i>Facilities, Utilities & Engineering</i>)
	Holly Parker (<i>Sustainable Transportation Systems</i>)
	Lori Rasile (<i>Business Operations</i>)
	Donald Relihan (<i>Traffic, Receiving, and Stores</i>)
	Geraldine Remer (<i>Yale Dining</i>)
	Abigail Rider (<i>University Properties</i>)
	Russell Sharp (<i>Information Technology Services</i>)
	Cathy Van Dyke (<i>Yale Dining</i>)
	George Zdru (<i>Facilities, Planning</i>)
Editorial Consultants	Joyce Ippolito, Editor
	Bethany Zemba, Editor