Tufts plays a crucial role in helping the world adapt to a changing planet while tackling such challenging issues as climate change and resource depletion. As active citizens, we have a responsibility to examine our impact on the environment and our surrounding communities. Sustainability at Tufts is a collective effort spanning departments, offices, and our campuses in Chinatown, Fenway/Mission Hill, Grafton, and Medford/Somerville.

The Campus Sustainability Progress Report contains information about Tufts’ sustainability programs, initiatives, and accomplishments from Fiscal Year 2016 (July 2015-June 2016).
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUCATION &amp; ACCOLADES</td>
<td>3</td>
</tr>
<tr>
<td>WASTE</td>
<td>6</td>
</tr>
<tr>
<td>ENERGY &amp; EMISSIONS</td>
<td>8</td>
</tr>
<tr>
<td>BUILDINGS &amp; INFRASTRUCTURE</td>
<td>11</td>
</tr>
<tr>
<td>CAMPUS REPORT CARDS</td>
<td>15</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>18</td>
</tr>
</tbody>
</table>
EDUCATION & ACCOLADES

Students, faculty, and staff worked on projects that earned Tufts multiple environmental awards and rankings, highlighting our university-wide commitment to sustainability.
FY16 HIGHLIGHTS

Tufts Dining is the first food provider in Medford and Somerville to receive certification from the Green Restaurant Association and the first university to certify all of its dining locations at three stars or above.

The Princeton Review included Tufts in its 2016 Guide to 353 Green Colleges, celebrating institutions with an overall commitment to sustainability.

The Princeton Review added Tufts to its 2016 list of Top-25 Impact Schools, highlighting colleges and universities with excellent community service opportunities, student government, sustainability efforts, and on-campus student engagement.

The Sierra Club highlighted Tufts on its 2016 Cool Schools List, featuring higher-education institutions making progress in the areas of campus energy use and transportation.

As part of the Tufts Meatless Monday campaign, students pledged to eat no meat in the dining centers.

Fall 2016 - Spring 2017

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>609</strong></td>
<td>Just Tonight</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>377</strong></td>
<td>Every Monday</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>834</strong></td>
<td>Vegan/Vegetarian</td>
</tr>
</tbody>
</table>

Students and faculty worked on sustainability research projects, including:

- Graduate students in UEP 0255, Field Projects: Planning & Practice partnered with community organizations to complete field projects focused on critical environmental issues, such as community-shared solar, food access, parks and open space, and active commuting.
- Students in EM-51, Engineering Management researched potential projects on the Tufts Medford/Somerville campus, including the potential use of reusable to-go containers in Hodgdon and Mugar cafés, creating a vertical urban farm to grow food on campus for Tufts Dining, and studying the costs and benefits of replacing paper towels with electric hand dryers in the bathrooms in Anderson Hall.
Tufts Dining is working to **reduce the amount of animal protein served in the dining centers**, focusing on creating plant-forward meals. For example, they invited the Humane Society to campus to provide **plant-based culinary education and training** to staff.

About **30 employees completed the online sustainability training programs**, which included information about sustainability programming and how to minimize energy use and waste in the workplace.

**The Tufts Institute of the Environment welcomed eight new fellows** who focused their research on interdisciplinary environmental topics, including: food-related travel, fluid milk waste, fracking wastewater treatment, conservation agriculture, water scarcity, conservation grazing, land-use alternatives for American lawns, and marine animals ingesting plastic.

**Tufts hosted the For a Sustainable Future event series** to celebrate the 25th anniversary of the Talloires Declaration, a 10-point action plan for incorporating sustainability and environmental literacy into university processes. As part of this series, the Tufts Institute of the Environment, Office of Sustainability, Office of the Provost, and Tufts Climate Action were the hosts for a **two-day climate-change symposium** featuring a keynote by Jeffrey Sachs, Senior United Nations Advisor and Professor of Economics. The event included panel discussions about climate research and divestment, and a conversation about next steps for Tufts.

Approximately 250 students attended the **11th annual Tufts Energy Conference at the Fletcher School**, which brought together professionals, students, and experts from the private, public, and nonprofit sectors to discuss critical global energy issues.

**44 students received Green Dorm Room Certifications** for following sustainable practices while living on campus.

Eight employees became **Eco-Ambassadors** after they completed a yearlong certification program featuring environmental behavior change and communications strategies.

More than 90 undergraduate orientation leaders completed an **online sustainability training**, which helped them educate incoming students in the fall.

---

EDUCATION & ACCOLADES

Tufts Dining is working to **reduce the amount of animal protein served in the dining centers**, focusing on creating plant-forward meals. For example, they invited the Humane Society to campus to provide **plant-based culinary education and training** to staff.

**About 30 employees completed the online sustainability training programs**, which included information about sustainability programming and how to minimize energy use and waste in the workplace.

**The Tufts Institute of the Environment welcomed eight new fellows** who focused their research on interdisciplinary environmental topics, including: food-related travel, fluid milk waste, fracking wastewater treatment, conservation agriculture, water scarcity, conservation grazing, land-use alternatives for American lawns, and marine animals ingesting plastic.

**Tufts hosted the For a Sustainable Future event series** to celebrate the 25th anniversary of the Talloires Declaration, a 10-point action plan for incorporating sustainability and environmental literacy into university processes. As part of this series, the Tufts Institute of the Environment, Office of Sustainability, Office of the Provost, and Tufts Climate Action were the hosts for a **two-day climate-change symposium** featuring a keynote by Jeffrey Sachs, Senior United Nations Advisor and Professor of Economics. The event included panel discussions about climate research and divestment, and a conversation about next steps for Tufts.

**Approximately 250 students attended the 11th annual Tufts Energy Conference at the Fletcher School**, which brought together professionals, students, and experts from the private, public, and nonprofit sectors to discuss critical global energy issues.

**44 students received Green Dorm Room Certifications** for following sustainable practices while living on campus.

**Eight employees became Eco-Ambassadors** after they completed a yearlong certification program featuring environmental behavior change and communications strategies.

More than 90 undergraduate orientation leaders completed an **online sustainability training**, which helped them educate incoming students in the fall.
In FY16, Tufts continued to expand its waste reduction efforts.
Tufts Dining collaborated with Students for Environmental Awareness (SEA) and Eco-Reps to host the Dewick-MacPhie Waste Less Dinner. The event featured the weighing of student plate waste to increase student awareness of how their choices create post-consumer food waste in the dining centers. The dinner also provided the opportunity to educate students on the various stages of the supply chain where food waste occurs and the initiatives Tufts Dining has embraced to reduce waste, including donating food to Food for Free.

Donations collected during the Eco-Reps Earth Day Clothing Swap were sent to Schoola, a foundation that sells secondhand clothing to raise money for the Malala Project.

Human Resources reduced their total paper use by an equivalent of eight trees by digitizing handouts created for the Foundations of Administrative Services Training, New Hire Orientation, and Open Enrollment programs.

Students living in the residence halls composted approximately 1,600 gallons of organic waste.

The Grafton Green Team and Grafton Farm worked together to start a classroom composting program. The compost will be used to fertilize the fields and grow crops for the farm animals on the Grafton campus.

Environmental Health and Safety (EH&S) & Facilities Services collaborated to install a recycling tote in the flammable waste-storage area that EH&S uses on the Boston campus to recycle previously non-recycled specialty bottles and provide a more environmentally friendly method for glass bottles.

The Tufts Bookstore worked with the Commencement Office and Facilities Services to collect and recycle 122 gowns after graduation.

Through an Eco-Ambassador grant, the Center for Engineering Education and Outreach purchased reusable cups printed with information about waste and deforestation to distribute during their summer workshops. This initiative ultimately reduced waste from approximately 5,000 disposable cups and provided sustainability education to elementary school students.
ENERGY AND EMISSIONS

In FY16, Tufts adopted innovative solutions to create state-of-the-art facilities, reducing our environmental impact and creating new opportunities for research and collaboration.

EMISSIONS-REDUCTION GOALS

- 7 percent below 1990 levels by 2012 (Kyoto Protocol): **Achieved**

- 10 percent below 1990 levels by 2020 (New England Governors and Eastern Canadian Premiers Climate Change Action Plan): **On Track**

- 75 to 85 percent below 2001 levels by 2050 (New England Governors and Eastern Canadian Premiers Climate Change Action Plan): **Superseded by Second Nature Climate Commitment**

  In the spring of 2017, President Monaco reconvened the Campus Sustainability Council with a renewed focus—carbon neutrality (see page 9).

- 10 to 25 percent below 1990 levels by 2020, in line with Massachusetts state goals (Global Warming Solutions Act of 2008): **On Track**
THE SECOND NATURE
CLIMATE COMMITMENT

We, the undersigned presidents and chancellors of colleges and universities, believe firmly in the power, potential, and imperative of higher education’s key role in shaping a sustainable society. Not only are we deeply concerned about the increasing pace and intensity of global climate change and the potential for unprecedented detrimental impacts, but we also understand that technology, infrastructure, global interconnectedness, and our greatest asset – engaged, committed, smart students – allow us to explore bold and innovative solutions and to lead in climate action and sustainable solutions.

We have begun to experience the effects of climate change in our communities, and we understand that these effects are projected to become more severe and damaging. We recognize that mitigation and adaptation are complementary strategies for reducing the likelihood of unmanageable change, managing the risks, and taking advantage of new opportunities created by our changing climate.

We believe colleges and universities must exercise leadership in their communities and throughout society by providing the knowledge, research, practice, and informed graduates to create a positive and sustainable future. Along with other aspects of sustainability, campuses that address the climate challenge by reducing greenhouse gas emissions and by integrating resilience into their curriculum, research, and campus operations will better serve their students and meet their social mandate to help create a vital, ethical, and prosperous civil society.

We further believe that exerting leadership in addressing climate change will reduce our long-term energy costs and the costs of climate disturbance, increase our quality of life, attract excellent students and faculty, and build the support of alumni and local communities.

We have resolved to take action in one of the following Climate Leadership Commitments. We believe carbon neutrality and resilience are extremely high-priority areas of action for all institutions, and we aim to lead the nation in these efforts. We urge others to join us in transforming society toward a sustainable, healthy, and more prosperous future.

ENERGY & EMISSIONS
BUILDING A CLEANER FUTURE

Acknowledging deep concerns about the potential impact of climate change on our institution and community, President Monaco signed the Second Nature Climate Commitment in April 2016, making Tufts one of 93 charter signatories. The commitment requires higher-education institutions to set targets, report on progress publicly, and collaborate with their surrounding community — all while integrating sustainability across the curriculum.

To meet the ambitious demands of the commitment, President Monaco convened a new Council for the Sustainability of Campus Operations in February 2017. The council will provide leadership and oversight for developing and executing a plan for Tufts to reach carbon neutrality. The council will prescribe strategies to engage the full Tufts community in actions to conserve energy use, and recommend development of capital projects and operational approaches that minimize the use of fossil fuels. Such strategies will include metering individual buildings, power generation, energy procurement and expanding a revolving green fund to support these efforts.

go.tufts.edu/cleanerfuture
We, the undersigned presidents and chancellors of colleges and universities, believe firmly in the power, potential, and imperative of higher education’s key role in shaping a sustainable society. Not only are we deeply concerned about the increasing pace and intensity of global climate change and the potential for unprecedented detrimental impacts, but we also understand that technology, infrastructure, global interconnectedness, and our greatest asset – engaged, committed, smart students – allow us to explore bold and innovative solutions and to lead in climate action and sustainable solutions.

We have begun to experience the effects of climate change in our communities, and we understand that these effects are projected to become more severe and damaging. We recognize that mitigation and adaptation are complementary strategies for reducing the likelihood of unmanageable change, managing the risks, and taking advantage of new opportunities created by our changing climate.

We believe colleges and universities must exercise leadership in their communities and throughout society by providing the knowledge, research, practice, and informed graduates to create a positive and sustainable future. Along with other aspects of sustainability, campuses that address the climate challenge by reducing greenhouse gas emissions and by integrating resilience into their curriculum, research, and campus operations will better serve their students and meet their social mandate to help create a vital, ethical, and prosperous civil society.

We further believe that exerting leadership in addressing climate change will reduce our long-term energy costs and the costs of climate disturbance, increase our quality of life, attract excellent students and faculty, and build the support of alumni and local communities.

We have resolved to take action in one of the following Climate Leadership Commitments. We believe carbon neutrality and resilience are extremely high-priority areas of action for all institutions, and we aim to lead the nation in these efforts. We urge others to join us in transforming society toward a sustainable, healthy, and more prosperous future.

Tufts, in cooperation with PowerOptions and Endicott College, was selected as the winner of the inaugural Green Ribbon Commission Renewable Energy Leadership Prize, awarded to nonprofits for their strategies for large-scale renewable-energy generation. Through the prize, the commission aims to inspire local large-scale energy consumers to implement renewable-energy strategies.

Following the May 2016 Conference on Resilient Building Codes, the Tufts University Department of Urban and Environmental Policy and Planning endorsed the White House Educators Commitment on Resilient Design as a member of the Association of Collegiate Schools of Architecture. The statement defines resilience as “the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events.”

As part of an effort to maximize the use of local produce and reduce greenhouse gas emissions from transporting food products, Tufts Dining became a partner with FATBOY Foods, in Medford. Dining centers now have applesauce and marinara sauce from FATBOY. Tufts Dining defines local food as anything purchased within a 250-mile radius.

In December 2015, the Tufts School of Medicine and Public Health joined 47 other schools in signing the Health Educators Climate Commitment, in recognition of the health impacts of climate change and in dedication to educating students to address those impacts.
BUILDINGS & INFRASTRUCTURE

Although Tufts continued to grow in FY16, Capital Programs and Facilities Services adopted innovative solutions to reduce the university’s environmental impact.
BUILDINGS & INFRASTRUCTURE

GRAFTON

Facilities Services made a number of upgrades to the Cummings School of Veterinary Medicine, including:

• Replacing all lighting in Swine unit No. 1 with LED light fixtures
• Adding a new energy-efficient chiller to the Hospital for Large Animals
• Adding a two-port electric vehicle charging station next to the wildlife clinic

BOSTON

Stephen Moss Lab: Replaced an obsolete fume hood with a reconditioned, more energy-efficient model. The lab casework in the lab was rehabilitated, decreasing waste sent to the landfill.

Lab Spaces: Consolidated laboratory spaces in order to reduce the need to occupy, heat, and air-condition excess space.
LENS

- Energy-efficiency upgrade
- Stormwater runoff mitigation
- Reused existing infrastructure
- Increased transportation access
- LEED-certified building or space
- Long-lasting materials

White roof on Lewis Hall

Bicycle repair station at the Mayer Campus Center

The Collaborative Learning and Innovation Complex is LEED Silver

Academic Quad: Added permeable pavement to allow for groundwater infiltration and prevent stormwater runoff.

The following locations received LED lighting upgrades:
- Carmichael Dining Center
- Dewick Dining Center
- Carmichael Residence Hall common spaces
- Dowling Hall outdoor sconces
- 22 classrooms

Lewis Hall: Completely replaced the old black plastic roof (EPDM) with white plastic roofing (PVC), which helps reduce the urban heat-island effect. The new roof also has an insulation value of R-30, which indicates the capacity of an insulating material to resist heat flow; the higher the R-value, the higher the insulating power.

Rise Craft Pizza: Reused the existing interior building structure from Hotung Café to create Rise Craft Pizza. This reduced the need to purchase new materials and send waste to the landfill.
The **Science and Engineering Complex**, expected to be one of the most energy-efficient laboratory spaces of its kind, is on track to receive a LEED Gold certification.

**Metcalf Hall**: Replaced all of the old, leaky, and inefficient windows with modern windows with improved insulated glazing, tight weatherstripping, and insulation in the frames.

**Sci-Tech**: The existing interior building structure from Sci-Tech was reused to build new labs. This reduced the need to purchase new materials and send waste to the landfill.

**Central Energy Plant (CEP)**: Fueled by natural gas, the CEP uses energy-efficient cogeneration technology to produce electricity as well as steam. The CEP's multi-story glass facade allows the Tufts community to watch the cogeneration plant at work.

**Stratton Hall**: Installed energy-efficient windows in the basement.

**Latin Way Apartments**: Installed Marmoleum throughout the common spaces. Marmoleum is an extremely durable, linseed-based flooring product that can last 50 to 60 years.

**Central Energy Plant (CEP)**: Replaced all of the old, leaky, and inefficient windows with modern windows with improved insulated glazing, tight weatherstripping, and insulation in the frames.

**Sci-Tech**: The existing interior building structure from Sci-Tech was reused to build new labs. This reduced the need to purchase new materials and send waste to the landfill.

**Central Energy Plant (CEP)**: Fueled by natural gas, the CEP uses energy-efficient cogeneration technology to produce electricity as well as steam. The CEP's multi-story glass facade allows the Tufts community to watch the cogeneration plant at work.

**Stratton Hall**: Installed permeable pavement on part of the driveways and the rear courtyard, replacing the asphalt paving and allowing for groundwater infiltration. This helps to prevent stormwater runoff, which carries polluted water into local bodies of water, such as the Mystic River.

**Repair station**: The Office for Campus Life, Tufts Community Union Senate, and Tufts Bikes partnered to open a bicycle-repair station on the upper patio. The new station will allow the Tufts community to make bike repairs for free, improving access to cycling.

**Latin Way Apartments**: Installed Marmoleum throughout the common spaces. Marmoleum is an extremely durable, linseed-based flooring product that can last 50 to 60 years.
UNIVERSITY REPORT CARDS

This year’s report includes a greenhouse gas emissions breakdown for the entire university as well as a summary of waste, water use, and energy use by campus.
Tufts University: All Campuses

FY16 University Greenhouse Gas Emissions by Scope

**Emissions by Scope**

- **Scope 1**
  - Fuels we burn on campus, our campus fleet, refrigerant leaks, fertilizer, and animal husbandry.
- **Scope 2**
  - Electricity and steam we purchase.
- **Scope 3**
  - Commuting, university-funded travel, study abroad, solid waste disposal, waste water treatment, and office paper.

MTCO2e is the metric tons CO2 equivalent emissions.

The following had a negligible amount of emissions that round down to 0%:

- Waste water treatment
- Office paper purchases
- Solid waste disposal
- Other directly financed travel (buses and personal vehicles).

**FY16 University Greenhouse Gas Emissions by Source**

**Emissions by Scope**

- **Scope 1**
  - Mobile Combustion
  - Stationary Combustion
- **Scope 2**
  - Purchased Electricity
  - Purchased Steam
- **Scope 3**
  - Air Travel
  - Commuting

The following had a negligible amount of emissions that round down to 0%:

- Waste water treatment, office paper purchases, solid waste disposal, and other directly financed travel (buses and personal vehicles).

MTCO2e is the metric tons CO2 equivalent emissions.
All Campuses

Total Waste (FY 2013-2016)

Waste by Type
- Food Waste Compost
- Batteries/E-waste/Clothing
- Recycling
- Trash

Waste Goal: 3% decrease each year since 2013

Total Water Use (FY 2006-2016)

Total Energy Use (FY 2006-2016)
**Boston Campus**

**FY16 Boston Waste in Tons**

Recycling in FY16 was a mix of dual stream, cardboard, and single stream.

**Boston Water Use (FY 2006-2016)**

**Boston Energy Use (FY 2006-2016)**
Recycling in FY16 was a mix of cardboard recycling and single stream.
Recycling in FY16 was a mix of dual stream, cardboard, and single stream. Compost was only recorded in Medford and includes all food waste compost, excludes yard waste. Other diversion was only recorded in Medford and includes: batteries, e-waste, printer cartridges, lamps, ballasts, clothing donations, furniture, mattresses, CDs, and bicycles.
ACKNOWLEDGMENTS

PROGRESS REPORT

The initiatives and projects in this report are based on the information available to the Office of Sustainability at the time of printing. It is by no means comprehensive or inclusive of all sustainability initiatives that took place at Tufts in Fiscal Year 2016 (June 2015-July 2016). The participation and contribution of all members of the Tufts community is incredibly valuable and greatly appreciated.

For inclusion in next year’s report, email: sustainabilityoffice@tufts.edu.

DEPARTMENTS & PROGRAMS

The following departments and programs were responsible for the initiatives and projects included in this report:

- Administrative Services
- Campus Services
- Capital Programs
- Dining Services
- Environmental Studies
- Environmental Health and Safety
- Facilities Services
- Human Resources
- Office of the President
- Office of Vice President Operations - Administration
- Tufts Eco-Reps
- Tufts Food Rescue
- Tufts GreEco Reps
- Tufts Institute of the Environment
- Tufts Photography
- Water Diplomacy Program

DATA & FEEDBACK

The following individuals contributed to this report:

Andrea Breault
Patricia Campbell
Julien Carter
Kate Doherty
Sara Gomez
Lucy Hanh
Betsy Isenstein
Shafiqul Islam
Patti Klos
Julie Lampie
Larry Mc Donough
Jill Parlee
Lynne Ramsey
Shaun Savage
Theresa Silver
Linda Snyder
Barb Stein
Whitney Stiehler
Gretchen Von Grossman
Gennette Zimmer
PHOTOGRAPHY

Cover
Science and Engineering Complex (Paul Rutherford for Tufts University)

Page 1
Tufts Century Ride (Alonso Nichols/Tufts University)

Page 3
Emma Schneider
(Zara Tzanev/Tufts University)

Page 4
Green Restaurant Certification (Tufts Dining)
Green Roof Research (Alonso Nichols for Tufts University)
Tufts Food Rescue Collaborative (Anna Miller/Tufts University)
Lab at the Collaborative Learning and Innovation Complex (Alonso Nichols/Tufts University)

Page 5
Dining Hall Preparation
( Joanie Tobin/Tufts University Photo)
Talloires, France
(Scott Tingley for Tufts University)
Eco-Ambassador Mugs
(Tufts Photography)

Page 6
Zero Waste Station at the President’s Picnic
(Juleen Wong, A17)

Page 7
Waste Less Dinner (Tufts Dining)
Lewis Hall Compost (Sarah Morton, A20)
Green Office Certificate (Alonso Nichols/Tufts University)
CEEO Cups (Lynne Ramsey)

Page 8
SEC Under Construction (Alonso Nichols/Tufts University)

Page 10
Green Ribbon Commission

Page 10
Tufts Health Science Campus
(Alonso Nichols/Tufts University)

Page 11
Lewis Hall White Roof
(Gretchen Von Grossman)

Page 12
Large Animal Hospital (Kelvin Ma/Tufts University)
Wildlife Clinic (Tina Woolston)
Stephen Moss Lab (Kelvin Ma/Tufts University)

Page 13
Lewis Hall White Roof (Gretchen Von Grossman)
Bicycle Repair Station (Tufts Bikes)
CLIC LEED Silver Sign (Lauren Diamond)

Page 14
Memorial Steps (Alonso Nichols/Tufts University)

Page 20
Purple Flowers (Alonso Nichols/Tufts University)

Back
Science and Engineering Complex (Paul Rutherford for Tufts University)
sustainability
Supporting a university-wide commitment

Tufts Prints Green
Printed on 100% recycled paper.
Please recycle.