

Campus Sustainability Progress Report

April 22, 2015

25TH ANNIVERSARY OF
OUR CLIMATE COMMITMENT
TALLOIRES DECLARATION



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“Universities have a major role in the education, research, policy formation, and information exchange necessary to make [sustainability goals] possible.”

Talloires Declaration, 1990

A LEGACY OF LEADERSHIP: Celebrating Innovation in Sustainability at Tufts

This year marks the 25th anniversary of a commitment by Tufts that still guides the University's vision for sustainability. 1990 was a pivotal year for both the University and the global community. The Intergovernmental Panel on Climate Change (IPCC) released its First Assessment Report, which highlighted the certainty of human influence on greenhouse gas concentrations and global average temperatures. Tufts President Jean Mayer assembled 22 university presidents and chancellors from across the globe for a conference in Talloires, France to voice their concerns over the state of the environment. The group developed and signed a 10-point action plan called the "Talloires Declaration" and committed to encouraging advocacy for sustainability and environmental literacy in teaching, research, operations, and outreach.

To date 472 academic institutions have signed the Talloires Declaration. And in 2013, Tufts renewed its own long-standing commitment to sustainability when the Campus Sustainability Council released a series of concrete goals and recommendations for water, waste, and energy & emissions—the three areas of University operations identified to have the greatest environmental impact.

Climate change is becoming increasingly visible with each passing year, and its effects on the University community cannot be overlooked. The winter of 2015 was one of the most extreme Tufts has experienced, and severe snowstorms resulted in a historic number of campus closings. Scientists continue to warn that if human impact on the atmosphere is not addressed, this type of weather may become the norm. Extreme weather events can be disruptive and costly; they can severely interfere with and cripple University operations, ultimately impacting our ability to effectively fulfill Tufts' mission and vision. As a member of the global community it is incumbent upon us to

minimize the impact of our campus operations on the global climate. We must continually measure our progress toward our sustainability goals so we can serve our students, the wider Tufts community, and the planet.

This year's Sustainability Progress Report showcases the crucial work of many individuals and departments to meet the action items outlined in the Talloires Declaration and the goals established by the Campus Sustainability Council. Each year, dedicated staff and faculty at Tufts work to make the Boston, Grafton, and Medford/Somerville campuses more resilient to climate change through programming and campus planning. For example, key projects in University operations such as the development of the Central Energy Plant and the Science and Engineering Complex will help the Medford/Somerville campus reduce its carbon footprint. While this report highlights many of the University's achievements, it also calls attention to areas that need improvement. As we work to expand our commitment to sustainability, it is crucial that we celebrate what we have accomplished and make plans to move forward.

Best wishes,



Tony Monaco
President, Tufts University
Chair, Campus Sustainability Council

Acknowledgements

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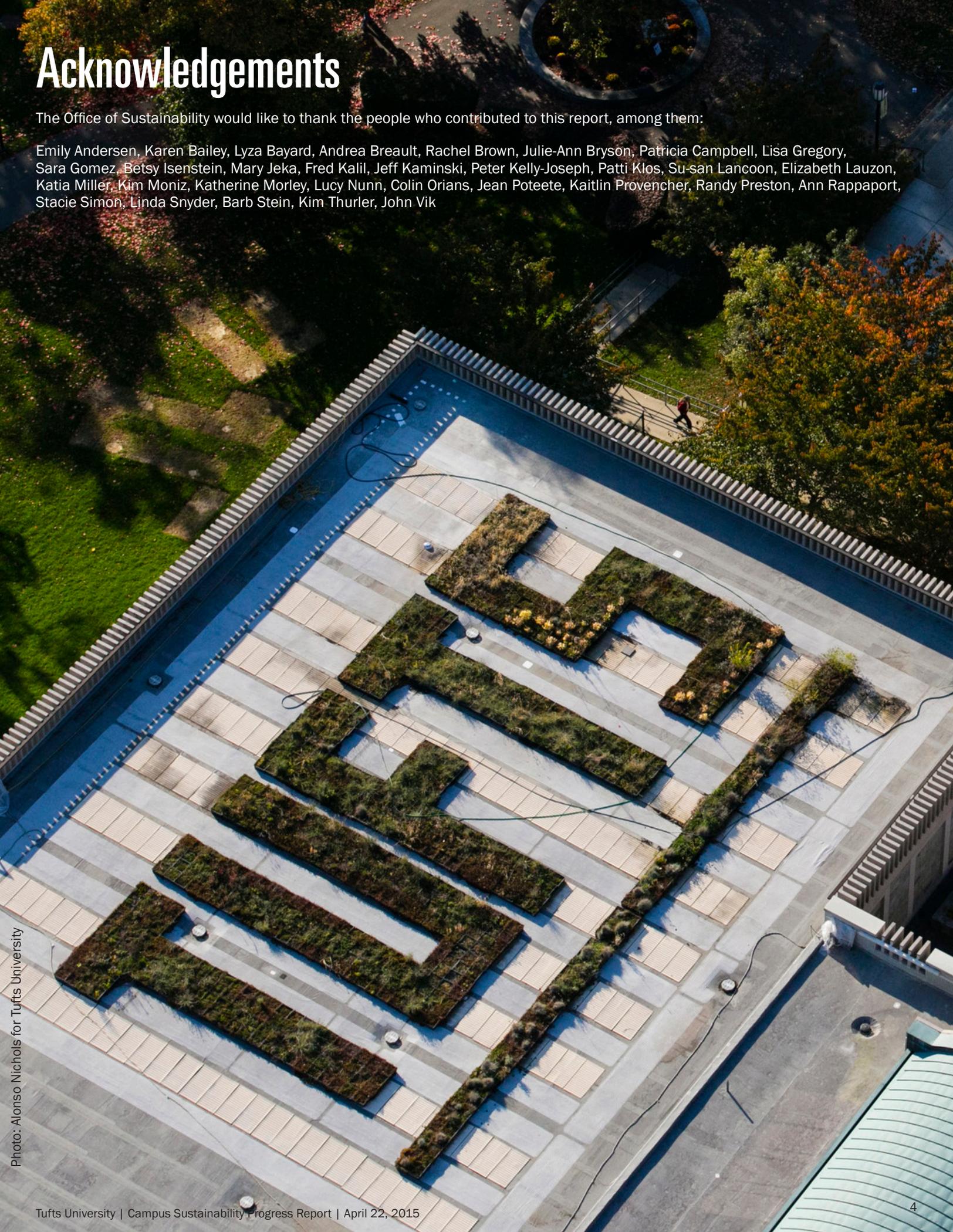


Photo: Alonso Nichols for Tufts University

Summary of 2013 Campus Sustainability Council Goals & Issues



Future focus



Some Progress



Significant Progress

CROSS-CUTTING ISSUES

Responsibility and accountability



Planning



Data, reporting, and feedback loops



Culture change



Laboratories and hospitals



Campus as a learning lab



WASTE

Goal: Reduce waste by 3% each year, on average, through source reduction, waste management strategies, and behavior change.



WATER

Goal 1: Within 1 year, develop a plan to evaluate and prioritize targets to reduce consumption.



Goal 2: Within 1 year, identify water reuse opportunities and implement appropriate strategies.



Goal 3: Within 1 year, institutionalize policies and protocols to proactively meet and exceed federal, state, and local wastewater and stormwater regulations.



Goal 4: Within 5 years, increase understanding of water issues and water-saving practices.



ENERGY AND EMISSIONS

Goal 1: Reduce energy consumption 5-7% each year and reduce greenhouse gas emissions in line with specific local, regional, and international goals.



Goal 2: Develop a renewable portfolio standard within one year.



Goal 3: Begin the process of adaptation planning within one year.



Goal 4: Address non-carbon greenhouse gas emissions.



Goal 5: Develop transportation initiatives to reduce impacts of campus vehicles (fleet), commuting, and business travel.



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NEXT STEPS:

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Science and Engineering Complex on Track to Open in 2017



Photo: Emily Andersen V17

“You can talk and get your hands dirty with some of the best educated veterinarians in the country. It’s a great place to learn.”

–EMILY ANDERSEN, V17

Students Break Ground on New Community Garden at the Cummings School of Veterinary Medicine

THEME: CULTURE CHANGE

Community, connection, and common good – these are just a few of the key beliefs bringing together students, faculty, and staff at the Cummings School Community Garden. In February 2014, DVM candidate and Student Eco-Ambassador Emily Andersen’s idea to create a vegetable garden on campus sprouted into a reality: “I wanted to get people excited about sustainability on campus while expanding sustainability programming,” she said. Andersen worked with Facilities, Equine Technicians, and the Farm Supervisor, Jim Phillips, to build the garden on a central, sunny patch of land near the mare barn. At the beginning of July,

Andersen invited individuals from the Cummings School community to select a plot for free.

In addition to growing vegetables for their own tables, the gardeners started to work with Library Manager Betsy Like to donate extra produce to the Travis Fund Farmers’ Market on the Grafton campus. They hope to expand their relationship by donating extra vegetables this summer. The Travis Fund provides financial support to found animals and owners who need assistance with the cost of unanticipated veterinary care.

To learn more about the garden visit: go.tufts.edu/CSCG

University Green Teams on the Rise

THEME: CULTURE CHANGE

Discovering how effective and inspiring it can be to leverage the expertise and passion of multiple individuals, Tufts faculty and staff are establishing green teams to collaborate on sustainability initiatives. Jeff Kaminski, a member of the Ballou Hall Green Team, explained that he was pleased with the number of people who wanted to address environmental issues in Ballou: “Several people have emailed me or stopped me in the hall to say thank you for my efforts. It showed me that many people are interested in sustainability but oftentimes can’t find the time to put ideas into motion.” Green teams provide an opportunity for colleagues to come together to discuss how to make their departments more environmentally-friendly. Working together toward a

common goal also creates a sense of camaraderie and encourages team-building. According to Katherine Morley, member of the Hirsh Health Sciences Library Green Team, “It is rewarding to be on a green team because you have the opportunity to share knowledge of green practices and come up with creative ways to educate coworkers. Being able to bounce ideas off each other helps build and sustain our enthusiasm.”

“It is amazing how one voice can multiply into several voices; how one hand can generate several hands to start a movement.”

–JEFF KAMINSKI,
BALLOU HALL GREEN TEAM



13 Offices Honored by President Monaco for Green Office Certification

Photo: Alonso Nichols for Tufts University

THEME: CULTURE CHANGE

In the summer of 2014, the Office of Sustainability re-launched the Tufts Green Office Certification Program, which supports, promotes, and recognizes offices that are engaging in sustainable practices. The updated program includes an interactive checklist that provides offices with real-time feedback on their performance and action items for improvement. President Monaco presented 13 offices with their certifications during an awards ceremony on January 18, 2015. The full list of certified green offices as of January 2015 is included below:



Central Administration:

The Office of the President · University Advancement · The Office of Institutional Research and Evaluation · **Dining Services at 89 Curtis Street** · The Finance Division

The Fletcher School:

The Center for International Environment & Resource Policy (CIERP) · The Fletcher Office of Admissions and Financial Aid · **Ginn Library**

Schools of Arts and Sciences and of Engineering:

Tisch Library · **The Center for Engineering Education and Outreach (CEE0)** · **Tufts Renewable Energy & Applied Photonics (REAP) Labs at the School of Engineering**

The Cummings School of Veterinary Medicine:

The Wildlife Building at the Cummings School of Veterinary Medicine · **Department of Environmental and Population Health** · **Hospital Administration at the Foster Hospital for Small Animals**

School of Medicine:

Hirsh Health Sciences Library · Medical Development

Will your office be the first to receive the Platinum certification? Learn more and get certified today at go.tufts.edu/greenoffice

Eco-Ambassadors by the Numbers

THEMES: CULTURE CHANGE

The Eco-Ambassador program provides faculty and staff with the resources, skills, and knowledge to promote sustainable behaviors in their offices and the wider Tufts community. As of 2015:



125
employees from



77
offices and departments have completed the program since its inception



89
active Eco-Ambassadors from 57 offices and departments



22
new Eco-Ambassadors have been trained in the past year

1,600

approximate number of employees reached by the program

To learn more visit go.tufts.edu/ecoambassadors

225 Students Earn Green Dorm Room Certification

THEME: CULTURE CHANGE

The Tufts Eco-Reps re-launched the Green Dorm Room Certification program in February 2014. Residential students can earn a Bronze, Silver, Gold, or Platinum Green Dorm Room Certification by filling out a series of questions about their rooms and submitting the list to their Eco-Rep. In just the first week of the program, 60 residents achieved certification. As of March 2015, about 225 rooms have been certified.



Tufts Hosts 2014 Eco-Rep Symposium

THEME: CULTURE CHANGE

The Annual Eco-Rep Symposium brings together undergraduate students to connect with – and learn from – each other. The event incorporates student-led workshops and discussions as well as time for networking. Started at Tufts in 2010, and subsequently hosted by Babson, Brown, and Boston University, this student sustainability leader symposium was held once again at Tufts on Saturday, November 15, 2014 in the Aidekman Arts Center on the Medford/Somerville campus.

The Tufts Office of Sustainability also spearheaded the creation of a Symposium Board of Curators, which the director currently chairs. The Board of Curators is comprised of sustainability staff from colleges and universities in the Northeast, and its mission is to ensure that the annual symposium continues to exist and flourish. It maintains resources for future hosts, selects host schools, and reviews the mission and branding of the symposium. In recognition that sustainability encompasses more than just the environment and includes issues of social sustainability, such as diversity and equity, the first act of the board was to change the name to the Sustainability Student Leaders Symposium.

To learn more about Tufts' Eco-Rep program, visit go.tufts.edu/ecoreps

GreECO Reps Bid on Sustainability

THEME: CULTURE CHANGE

When she was appointed as the Eco-Reps Greek Life Advisor, Ellen Osborn, A16, wanted to develop an initiative to more deeply involve Greek Life in sustainable campus living efforts, so she launched the Tufts GreECO Reps program in the Fall of 2014. All Tufts-recognized sororities and fraternities in good standing with the University are involved with GreECO Reps, with the exception of organizations that have fewer than five members or do not have a facility. GreECO Reps engage other students with a variety of projects such as:

- Conducting MassSave energy audits
- Holding New Member Green Orientation
- Distributing sustainability resources to off-campus Greek residents
- Promoting the Green Dorm Room Certification Program



Photo: Ellen Osborn, A16

Tufts Recycles! Interns Paint Electric Vehicle Charging Mural



In May 2014, Rachel Ison, A14, designed a mural to highlight the electric vehicle charging station in Dowling Hall, and it was painted by the *Tufts Recycles!* team. The mural is 8 feet high by 20 feet wide and features images of renewable energy sources.

Photo: Eujene Yum, A17

Eco-Rep Program 2014-2015 by the Numbers



2 coordinators



1 general manager



1 greek life advisor



1 special interest housing advisor



18 Eco-Reps



17 residence halls

1,600

students reached by the Eco-Rep program

Sustainable Investment Option for Donors Launched Earth Day 2015

THEME: CAMPUS AS A LEARNING LAB

In celebration of Earth Day, a new Sustainable Investment Fund (SIF) is available to donors who wish to guarantee that their donation will only be invested in companies that meet specific environmental, social, and governance (ESG) parameters. The fund will be seeded with one million dollars from the University endowment. An Advisory Committee of faculty, student, and staff representatives was created in February 2015 to provide input about how to define investment parameters and choose fund managers. The committee hopes to make its first investment by the end of 2015. The Investment Office will track the performance of the fund, and the advisory committee will meet regularly to review returns and how the assets are invested.

The investment policy for the fund will be available to potential donors who are interested in learning how their money will be invested.

To learn more go to go.tufts.edu/sustainabilityfund.

Extended Orientation Sustainability Week Aims for Environmental Literacy Early-On

THEME: CULTURE CHANGE

The Office of Sustainability, Tufts Sustainability Collective, and the College Transition Advisors co-hosted a series of events in Fall 2014 in conjunction with Extended Orientation called "Tying it All Together: How Social Justice, Healthy Living, and Active Citizenship Impact Each Other and the Environment and What You Can Do About It."

WASTE



Tufts Recycles! Transforms Tennis Ball Waste into an Ace Game

GOAL: REDUCE WASTE BY 3% EACH YEAR.

In the Summer of 2014, frustrated by dead tennis balls entering the waste stream, *Tufts Recycles!* partnered with Project Greenball, a non-profit organization that turns recycled tennis balls into surfaces such as equestrian turf that are donated to organizations serving people with disabilities or life-threatening illnesses.

Of the 125 million tennis balls produced each year in the US, most balls are sent to the landfill after use where they decompose slowly and take up unnecessary space. Tennis ball recycling stations were put in the Gantcher Center and recently added to the Voute Tennis Courts. Tufts is the first university to work with Project Greenball on this initiative.

To learn more, check out the *Tufts Recycles!* blog at: sites.tufts.edu/tuftsrecycles



Photos: Lauren Martin

Tufts Dining Takes a Bite Out of its Total Waste

GOAL: REDUCE WASTE BY 3% EACH YEAR.

This year, Tufts Dining minimized its take-out packaging to further reduce waste and lessen its environmental impact. Packaging is now made largely of recycled materials and produced with renewable energy. In the Summer of 2014, Tufts Dining made the following changes:

- Nearly all of the aluminum containers with plastic lids on campus were eliminated.
- EasyPak® containers, which are produced using renewable energy, are fully recyclable, and contain at least 50% recycled content materials, are now used for snacks and salads at Brown & Brew, The Commons, Hodgdon, Hotung, Mugar Café, and Tower Café.
- Tufts Dining now uses fully recyclable, unbleached, chlorine-free EcoCraft® paper-based bags for all prepackaged sandwiches sold in retail locations. EcoCraft® unbleached sustainable bags contain an average of 20% pre-consumer waste fiber and are compostable in a commercial composting facility.
- In the new Commons Marketplace, Tufts Dining replaced the aluminum pans and plastic lids previously used for the hot bar and salad bar with BioPlus® Earth unbleached cardboard boxes made from 100% recycled paperboard. The packaging contains a minimum of 35% post-consumer content.



UNIVERSITY CLUBS AND ORGANIZATIONS AIM FOR ZERO WASTE

At the Grafton WAZE Symposium, condiments were served in bulk to cut down on packaging waste.



WANT TO PLAN YOUR OWN ZERO WASTE EVENT?

Get started with the Office of Sustainability's Green Event Guide at go.tufts.edu/greenevents, and contact Tufts Recycles! at recycle@tufts.edu if you are interested in composting at your event.

You can find resources for zero waste events at: go.tufts.edu/zerowaste



THEME: REDUCE WASTE BY 3% EACH YEAR.

The next time you attend an event at Tufts, don't be alarmed if you can't find the trash can. An increasing number of zero waste events are springing up across the University, as faculty, staff, and students work to encourage environmentally sustainable behavior. Zero waste simply means that all food waste is composted or donated and all other materials are recycled or reused instead of being sent to the landfill.

When Dr. Sara Gomez, the Environmental Studies Program Administrator, attended the 2014 President's Picnic, she was so impressed that zero waste could be done at a large scale that she decided to apply the concept to the program's popular Lunch and Learn series.

Dr. Gomez was eager to make the series zero waste because of the message it would send to attendees. "My hope is that this is something they take away and apply in other places as well and not just at the Lunch and Learn." Even though approximately 35 people attend the Lunch and Learns each week, only a small bucket

of compostable waste remains after each seminar.

Zero waste isn't only something that is happening on the Medford/Somerville campus. In September 2014, the Wildlife Aquatics Zoo and Exotics (WAZE) Club at the Cummings School of Veterinary Medicine in Grafton worked to make its annual symposium free of trash by encouraging attendees to bring their own beverage containers, plates, and utensils.

The club provided the schedule electronically, set up a beverage station for filling attendees' reusable water bottles, and composted all food scraps. Condiments, such as butter and sugar, were served in bulk instead of in single serve packets. Eco-Ambassador and Clinical Assistant Professor at the Cummings School of Veterinary Medicine Dr. Maureen Murray reported, "To my knowledge, this is the largest event on the Grafton campus to go green. We had almost 200 attendees."

The Environmental Studies Lunch and Learn series, the WAZE Symposium, and other zero waste events such as the Matriculation meals for undergraduates

and the annual President's Picnic have proven that zero waste events can be achieved at any level.

"They become aware of their waste, they learn about recycling and composting, and we promote behavior changes by encouraging them to bring their own water bottle, utensils, and plate."

-DR. SARA GOMEZ

Hydration Stations Added to the Fletcher School

GOAL: REDUCE WASTE BY 3% EACH YEAR.

In 2014, Eco Ambassadors from The Fletcher School worked with Facilities Services and plumbers to add gooseneck faucets to four water fountains and retrofit seven other water fountains with automatic bottle filling stations to encourage students, staff, and faculty to use reusable water bottles. The new systems replaced about 14 bottled spring water coolers. Students, staff, and faculty are now noticeably using refillable water bottles more frequently, thus reducing the school's waste from single-use water bottles.





+Photo: Tori Manogue, A15

Composting Comes to Ballou Hall and Gifford House

GOAL: REDUCE WASTE BY 3% EACH YEAR.

Thanks to the work of the Ballou Hall Green Team, composting is now available in Ballou Hall, home to the offices of many senior administrators such as the President, Provost, Deans, and Executive Vice President, and at Gifford House, the President's residence.

Compost by the Numbers

GOAL: REDUCE WASTE BY 3% EACH YEAR.

Each year, the Eco-Reps on the Medford/Somerville campus work hard to help divert organic waste in the residence halls from the incinerator. This year they composted about:

Fall Semester
156 gallons

Spring Semester (as of March 2015)
242.5 gallons

Tufts Dining composted just over 300 tons in FY14, and they are trending in the same direction for FY15. Total volume composted in FY14:

Dewick-Macphie/Hodgdon/Central: 100.29 tons

Catering: 6.57 tons

Carmichael: 28.13 tons

Campus Center: 5.92 tons

Furniture Finds a New Home at 574 Boston Avenue

GOAL: REDUCE WASTE BY 3% EACH YEAR.

The Collaborative Learning and Innovation Complex, which will open its doors at 574 Boston Avenue in Spring 2015, is on track to receive LEED Gold Certification. The Project Sponsor Group is working with the departments and units moving to the building to make sure as much furniture as possible is reused, saving it from the waste stream. Approximately 200 total items will be reused including:



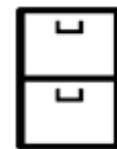
CHAIRS



TABLES



DESKS



FILE CABINETS



LOUNGE FURNITURE

Reducing Hazardous Chemical Waste Containers at 200 Boston Avenue

GOAL: REDUCE WASTE BY 3% EACH YEAR.

Chemicals are essential to support research and teaching, and their use and disposal is regulated by the U.S. Environmental Protection Agency. Eco-Ambassador Michael Doire, Department Manager in Biology, has worked with Tufts Environmental Health and Safety (TEHS) Managers Peter Nowak and Chris Rock to identify chemical wastes being generated by research activities that are compatible with each other and can safely be combined or “bulked” by trained experts.

Bulking compatible wastes reduces packaging and disposal costs since empty containers are returned to labs for reuse, sends fewer drums away for disposal, and decreases the number of pickups required to ship the drums. Working with academic departments that generate hazardous chemical waste, TEHS will continue to recommend this best practice where possible.

Freecycle Elist and Surplus Furniture Wish List Now Active

GOAL: REDUCE WASTE BY 3% EACH YEAR.

Members of the Tufts community now have an easy way to freecycle through a new elist launched by Eco-Ambassador Stacie Simon in early 2015. To sign up, login to elist.tufts.edu, and add yourself to the Freecycle Elist. You will then be able to send to freecycle@elist.tufts.edu and receive all messages sent to the list.

Facilities Services and *Tufts Recycles!* have been testing a surplus furniture reuse program with Tufts partner Personal Movers since November 2014. The website showcases various furniture available to the Tufts community for free, aside from a nominal delivery cost, and is updated weekly as new items are added. To learn more visit bit.ly/surplusfurniture.

New Freecycle Station in Hodgdon Residence Hall

GOAL: REDUCE WASTE BY 3% EACH YEAR.

Each time a residence hall is renovated, Facilities Services adds a freecycle station, and in the Summer of 2014, a freecycle station was added to Hodgdon Hall.

Recycling Saves Energy and Reduces Emissions

GOAL: REDUCE WASTE BY 3% EACH YEAR.

Boston-based waste and resource management company Save That Stuff calculated the energy and emissions savings from all the recycled materials they collected from Tufts campuses in the past year.

Tufts FY14 Energy and Emissions Savings

by partnering with Save That Stuff



4447
adult trees



6961
cubic yards of
landfill space



1,098,116
kilowatt hours
of electricity



444
metric tons of
carbon



355
cars from
the road

NEXT STEPS:

Meet Your Newest Deskside Helper: The Trash Buddy

**GOAL: REDUCE WASTE BY 3%
EACH YEAR.**

This winter, Tufts joined a rapidly growing number of colleges and universities in adopting a proven new office waste management initiative called the Trash Buddy program. A Trash Buddy is a miniature trash can that attaches to the desk-side paper recycling bin in employees' offices and cubicles. Comparable programs at other institutions have increased recycling by up to 55%. This new initiative will help the University work toward its goal of reducing waste by 3% each year. For information about the Trash Buddy program, visit go.tufts.edu/trashbuddy.





“Seeing the Eco-Reps was a helpful reminder during a time when I was transitioning to vegetarianism. The ecological, ethical, and health benefits of vegetarianism should be reason enough to make the change, but sometimes extra encouragement can be necessary. The program helped provide that encouragement.”

-PETER STONE, A15



Photos: Tori Manogue A15

STUDENT GROUPS AND DINING SERVICES TEAM UP TO REDUCE WATER USE FROM MEAT CONSUMPTION

GOAL: INCREASE UNDERSTANDING OF WATER ISSUES AND WATER-SAVING PRACTICES.

To encourage Tufts students to reduce water use and improve the environment through dietary choices, the Tufts Eco-Reps have hosted Meatless Meals in Dewick-MacPhie Dining Center on

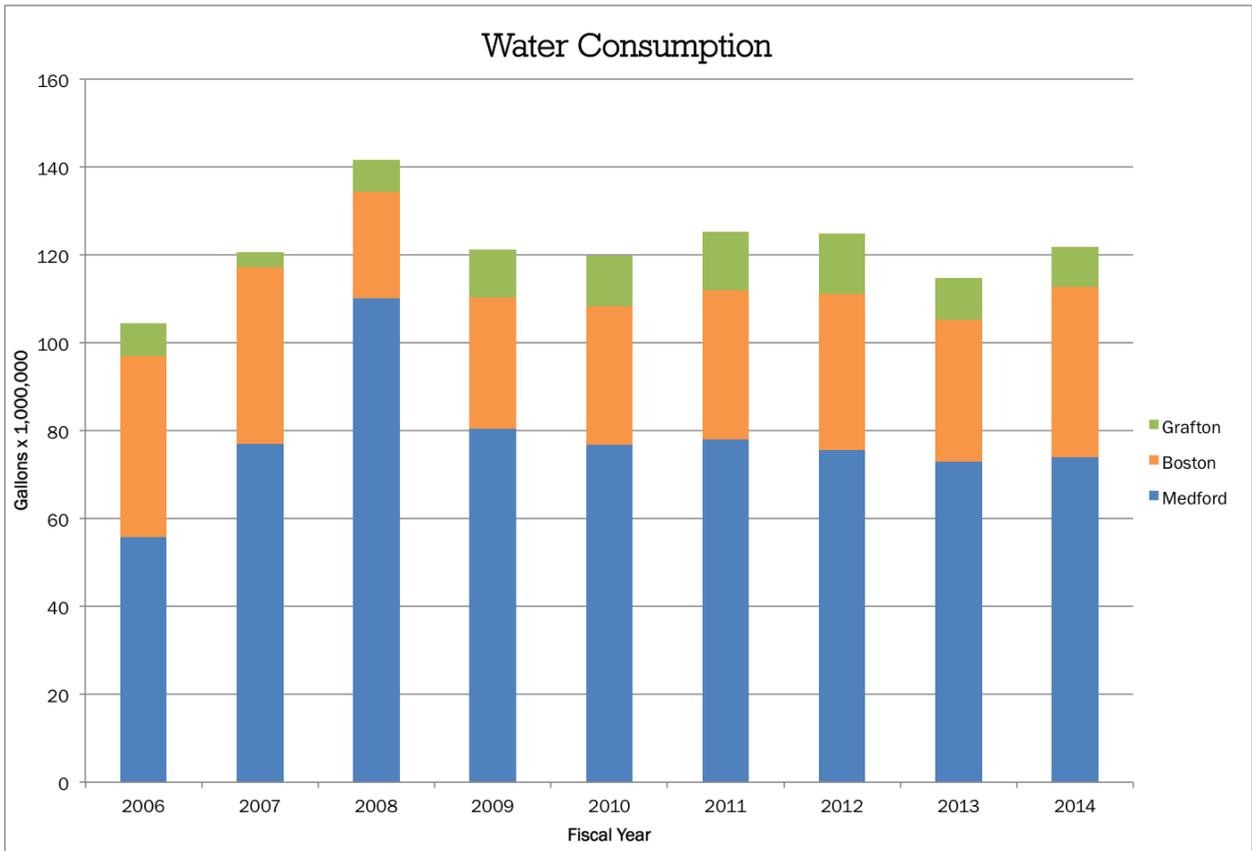
Mondays during the academic year. Through this effort, Tufts Dining Services and the Eco-Reps hope to reduce meat consumption and promote a healthier and more environmentally-friendly lifestyle, even if it is just one day a week.

During the Meatless Monday meals, the Eco-Reps obtain signature pledges from students who voluntarily eat a meatless dinner. Eco-Reps have been pleased with the positive response from other students, and they are hoping to recruit more athletes to participate in 2015.

1,850 gallons of water are required to produce a pound of beef, while only 39 gallons of water are needed to produce a pound of vegetables.

On March 5, 2015, the Eco-Reps collaborated with Tufts Dining’s Dietician Julie Lampie, Executive Chef Alan Archer from Nestlé, and the newly formed Tufts Veg Society in Carmichael Dining Center to create a menu of vegetarian, vegan, and gluten-free offerings for an educational dinner about nutrition and sustainability called Balance Your Plate. The meal featured locally caught sustainable hake (an alternative to cod or halibut), local Vermont cheese, and a vegan chickpea salad. The menu highlighted how plant-based food choices can have a positive impact on the environment while also being satisfying and delicious.

Learn more about Tufts Dining’s vegan and vegetarian options at dining.tufts.edu



Residence Hall Shower Head Savings



12 minutes
spent taking typical shower at Tufts



2.5 gal / min
consumption of old shower heads, or:



30 gallons
for every shower



1.75 gal / min
consumption of new shower heads, or:



21 gallons
for every shower



500
new shower heads installed, saving:



4500
gallons of water for every 500 showers

NEXT STEPS:

Facilities Services Pilots New Shower Technology

GOAL: REDUCE WATER CONSUMPTION

Facilities Services will be installing two ShowerStart™ thermostatic shut-off valves and two evolve showerheads. This technology saves hot water that is typically wasted as people wait for the water to heat up by slowing water flow down to a trickle once it is warm enough to shower. When the bather is ready to shower, warm water is released by pulling on a convenient tab. This shower technology will be pilot tested in the spring of 2015.



Image source: thinkevolve.com

Energy & Emissions

Student Research Explores University's Energy Goals

GOAL: CREATE A RENEWABLE PORTFOLIO STANDARD WITHIN ONE YEAR.

GOAL: ADDRESS NON-CARBON GREENHOUSE GAS EMISSIONS.

THEME: CAMPUS AS A LEARNING LAB

Students in Professor Ann Rappaport's Climate Science, Policy, and Planning class, offered each year in the Spring semester by the Urban and Environmental

Policy and Planning department, often use Tufts' campuses as a learning lab. In the past couple of years, her students have tackled a couple of the Campus Sustainability Council Report's goals: non-carbon greenhouse gases and Renewable Portfolio Standard (RPS) potential on Tufts' campuses.

In 2014, Chantal Davis, A14, determined that finding alternatives for two of the gases purchased by labs (nitrous oxide and trifluoromethane) would lead to a small, but important, decrease in Tufts' non-carbon greenhouse gas emissions. These gases have higher global warming potential than the more common carbon-

based gases such as CO₂ and methane and are often used in labs as refrigerants and for air conditioning.

In 2013, Kyle Connors, A13, examined the University's potential to develop an RPS. After determining that electricity is the largest source of carbon emissions at Tufts and citing the Medford/Somerville campus as one of the most ideal locations for rooftop solar production, Connors recommended that "Rather than focusing on a relatively low RPS, it may be smarter to look more seriously at energy efficiency as a major part of the emissions reduction plan."



Photo: Joanie Tobin for Tufts University
Solar panels on Dowling Hall.

Transportation Working Group Finalizes Transportation Demand Management Report

GOAL: DEVELOP TRANSPORTATION INITIATIVES TO REDUCE IMPACTS OF CAMPUS VEHICLES (FLEET), COMMUTING AND BUSINESS TRAVEL.

Vision Statement: The Tufts University TDM plan is a cost-effective program that allows the end user to make informed transportation choices. The TDM plan will provide clear, consistent information with a unified approach for all three US Campuses. The plan will benefit both the University and the surrounding communities.

The Transportation Working Group and its Fleet Management and Transportation Demand Management Task Forces have wrapped up their work, resulting in the hiring of a fleet/transportation manager for Tufts and the creation of a transportation demand management (TDM) plan.

This project included input from an online, University-wide commuter survey that garnered over 4,850 responses, multiple task force meetings and interviews and meetings with interested parties such as Tufts Shared Services, the Department of Public and Environmental Safety (DPES), and an advisory group at the Tufts Health Sciences Complex.

The vision and goals developed by the task force provided a set of guiding principles for evaluating potential TDM strategies. Relevant metrics were identified to benchmark the University's existing TDM and transportation programs and establish a means of measuring progress in the future.

View the complete report at go.tufts.edu/TDM



Plan for Future Growth



Increase Campus Sustainability



Improve Connectivity Between Campuses



Cost Effectiveness



Maintain Campus Competitiveness



Improve Transit Accessibility



Reduce Parking Demand



Promote Bicycle Use



Create a Pedestrian Friendly Campus

A list of goals from the Transportation Demand Management Report. Credit: Nelson\Nygaard

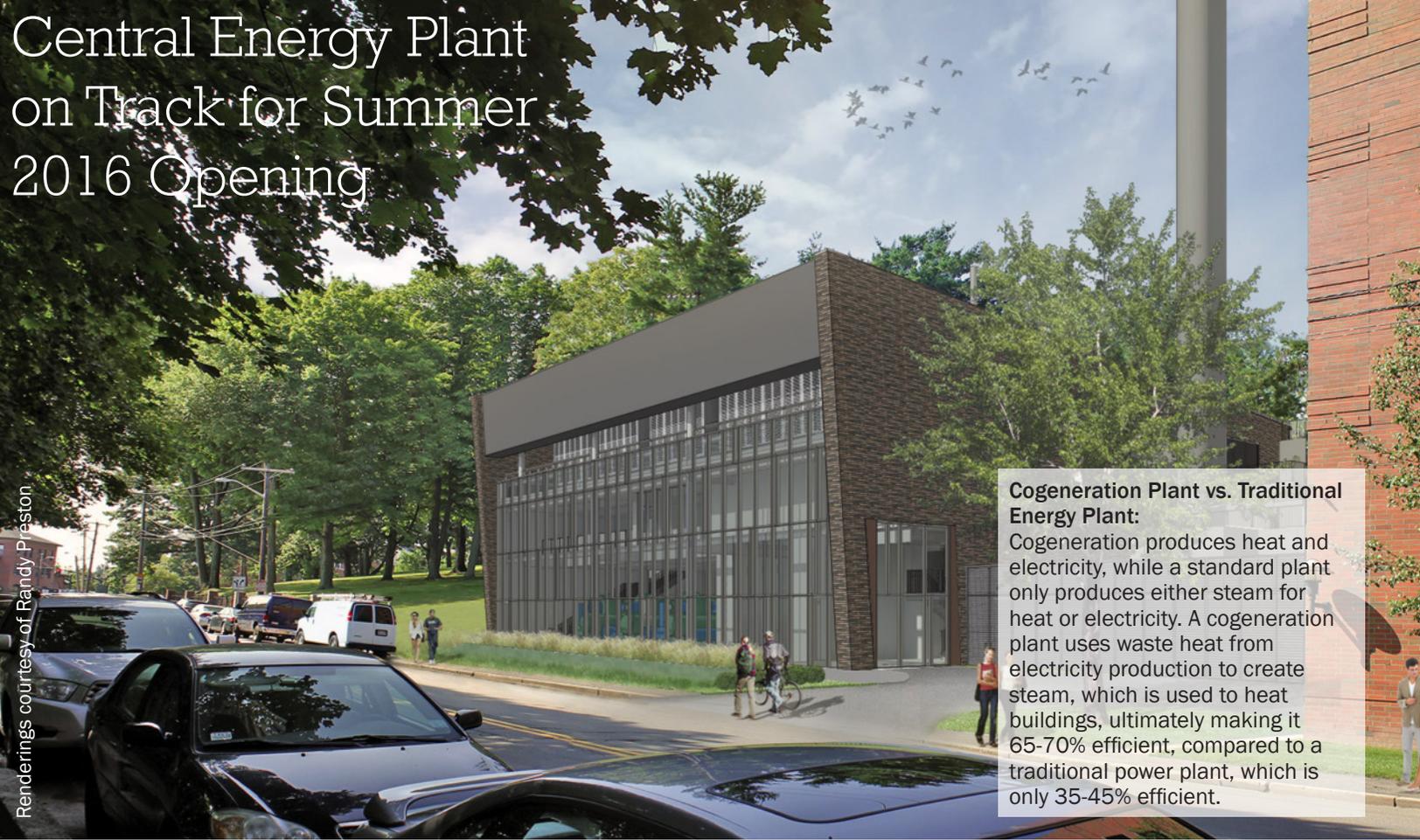
Tufts Hires New Fleet/Transportation Manager

GOAL: DEVELOP TRANSPORTATION INITIATIVES TO REDUCE IMPACTS OF CAMPUS VEHICLES (FLEET), COMMUTING, AND BUSINESS TRAVEL.

As a result of the Fleet Management Task Force of the Transportation Working Group, Andrea Breault was hired as the University's new Transportation/Fleet Manager. She will be providing leadership and management over the areas of policy development and implementation, transportation, fleet management, parking, and risk reduction, and she will serve as a university-wide leader for Transportation Demand Management and sustainability as it relates to the Tufts fleet.

Central Energy Plant on Track for Summer 2016 Opening

Renderings courtesy of Randy Preston



Cogeneration Plant vs. Traditional Energy Plant:
Cogeneration produces heat and electricity, while a standard plant only produces either steam for heat or electricity. A cogeneration plant uses waste heat from electricity production to create steam, which is used to heat buildings, ultimately making it 65-70% efficient, compared to a traditional power plant, which is only 35-45% efficient.

GOAL: REDUCE GREENHOUSE GAS EMISSIONS.

A new 19,000 square foot energy plant will replace the 60-year old central heating plant behind East Hall. The plant will generate steam, chilled water, and 4 MWs of power for the new Science and Engineering Complex (SEC) as well as many other buildings on the upper Medford/Somerville campus. Construction will begin this spring, and the building is on schedule to open in the summer of 2016. The Central Energy Plant (CEP) will reduce Tufts' greenhouse gas emissions by 12% or more through a process called cogeneration and will save Tufts over 20% in energy costs once it is up and running. The CEP will feature environmentally-friendly technology and design such as an LED lighting system and skylights to maximize natural daylight.

Director of the University Energy Program Randy Preston, who is managing the project, noted, "All equipment for the structure – for example chillers and cooling towers, which will provide air conditioning, has been chosen with energy efficiency in mind." In addition to helping Tufts reduce its total energy use, the plant will ultimately serve as an educational tool, featuring a glass wall to allow people to see into the plant and learn how cogeneration works. The project group anticipates having tours of the facility to provide more opportunities for the community to understand energy efficiency.

The landscape will feature native plants, which are adapted to the local climate and will not need extra water. Although there is currently not enough funding to add a rooftop garden, the structure has been designed to support the weight of a green roof. Proceeds from the Sustainable Investment Fund (page 10) could support this type of project.

Energy and Emissions: Central Energy Plant (CEP)

- 

20%
savings in energy costs

- 

12%
reduction in GHGs

- 

19,000
square footage of plant

- 

60
age of heating plant
being replaced

- 

3
high-efficiency boilers
will replace the old boilers

- 

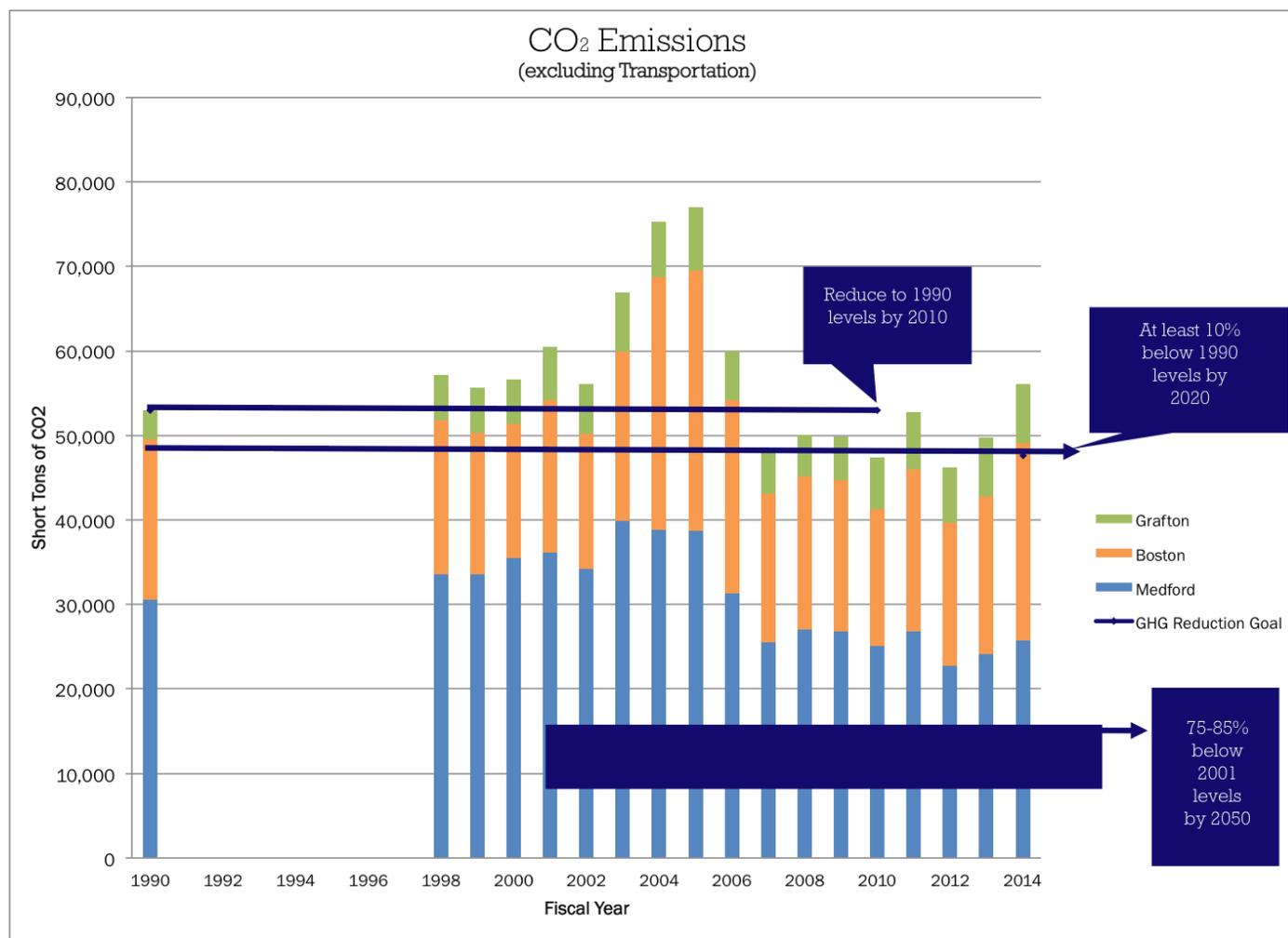
2016
plant expected to start generating
heat, electricity, and chilled water
on the Medford/Somerville Campus



Tufts Wins MassRIDES ECO Award

GOAL: DEVELOP TRANSPORTATION INITIATIVES TO REDUCE IMPACTS OF CAMPUS VEHICLES, COMMUTING, AND BUSINESS TRAVEL.

The annual MassRIDES Excellence in Commuter Options (ECO) Awards celebrate Massachusetts employers that promote sustainable transportation options. In 2015, Tufts earned a Pinnacle Award, which is the highest ECO Award an organization can receive for alternative, healthy transportation options. This marks the 4th year in a row that Tufts has received this award.



Emissions calculations exclude transportation. FY14 was the coldest winter in past years. The New England Governors and Eastern Canadian Premiers Climate Change Action Plan was formally adopted by Tufts in 2003. The goals of the Plan are represented by the dark blue lines, namely to reduce emissions to: (1) 1990 levels by 2010; (2) At least 10% below 1990 levels by 2020; and (3) 75-85% below 2001 levels by 2050. The Campus Sustainability Council reaffirmed these goals by committing to Massachusetts' Greenhouse Gas reduction goals which include a 2050 target of 80% below 1990 levels - a target that falls within the wide dark blue bar.



Zipcar Expands On-Campus Options

GOAL: DEVELOP TRANSPORTATION INITIATIVES TO REDUCE IMPACTS OF CAMPUS VEHICLES (FLEET), COMMUTING AND BUSINESS TRAVEL.

Three additional passenger vehicles were placed on the Medford/Somerville campus last summer, bringing Zipcars closer to the gym and the lower campus residence halls. Three Zipcar vans and five cars are now available to employees and students age 18 and up (18-20 year olds need a parent's signature). The "Zip-vans" have replaced the old Office of Campus Life vans, providing student groups with easy access to safe, new vehicles.



Photo: Tori Manogue, A15

Facilities Purchases Electric Lawnmowers

GOAL: REDUCE GREENHOUSE GAS EMISSIONS.

To move toward sustainable and low-impact technology, Facilities Services invested in two new electric mowers for the Medford/Somerville campus in the Fall of 2014. The mowers are much quieter than gasoline-powered machines, making them safer for the operators and less disruptive of teaching activities. They also reduce air pollution on campus, maintaining better air quality for students and employees and producing fewer greenhouse gas emissions, since the electrical grid that serves Tufts is cleaner than combustion from mower engines. Finally, the mowers will provide significant financial savings to the University over time, making this purchase both environmentally and economically sustainable.

LEDs Brighten University Buildings and Grounds

GOAL: REDUCE ENERGY CONSUMPTION 5-7% EACH YEAR.

Facilities Services recently converted 209 light posts on the Medford/Somerville campus to LED lighting. This project is a triple winner with higher quality light, less frequent lamp changes and reduced energy consumption with annual energy savings of 77,427 kilowatt-hours. Facilities is currently reviewing the remaining site lights university-wide for conversion to LED. In addition, the summer renovation of Hodgdon Hall included LED lighting in all residence hall common spaces.



Photo: Betsy Isenstein

Next Steps:

New Electric Vehicle Charging Stations to be Added to Medford/Somerville and Grafton Campuses

GOAL: DEVELOP TRANSPORTATION INITIATIVES TO REDUCE IMPACTS OF CAMPUS VEHICLES (FLEET), COMMUTING, AND BUSINESS TRAVEL.

Facilities Services recently received a grant from the Massachusetts Department of Environmental Protection to install two new electric vehicle charging stations. One will be installed on the Medford/Somerville campus and one will be installed on the Grafton campus. Both stations are expected to be available in June 2015.



Photo: Eujene Yum, A17



Renderings courtesy of Barb Stein



Science and Engineering Complex on Track to Open in 2017

GOAL: PURSUE ENERGY EFFICIENCY.

The Science and Engineering Complex is expected to open its doors in 2017 and will be a model of sustainability standards for labs for mechanical, electrical, and plumbing systems. The lab building is currently on track to be LEED Gold Certified, but the project team is hoping to achieve LEED Platinum Certification.

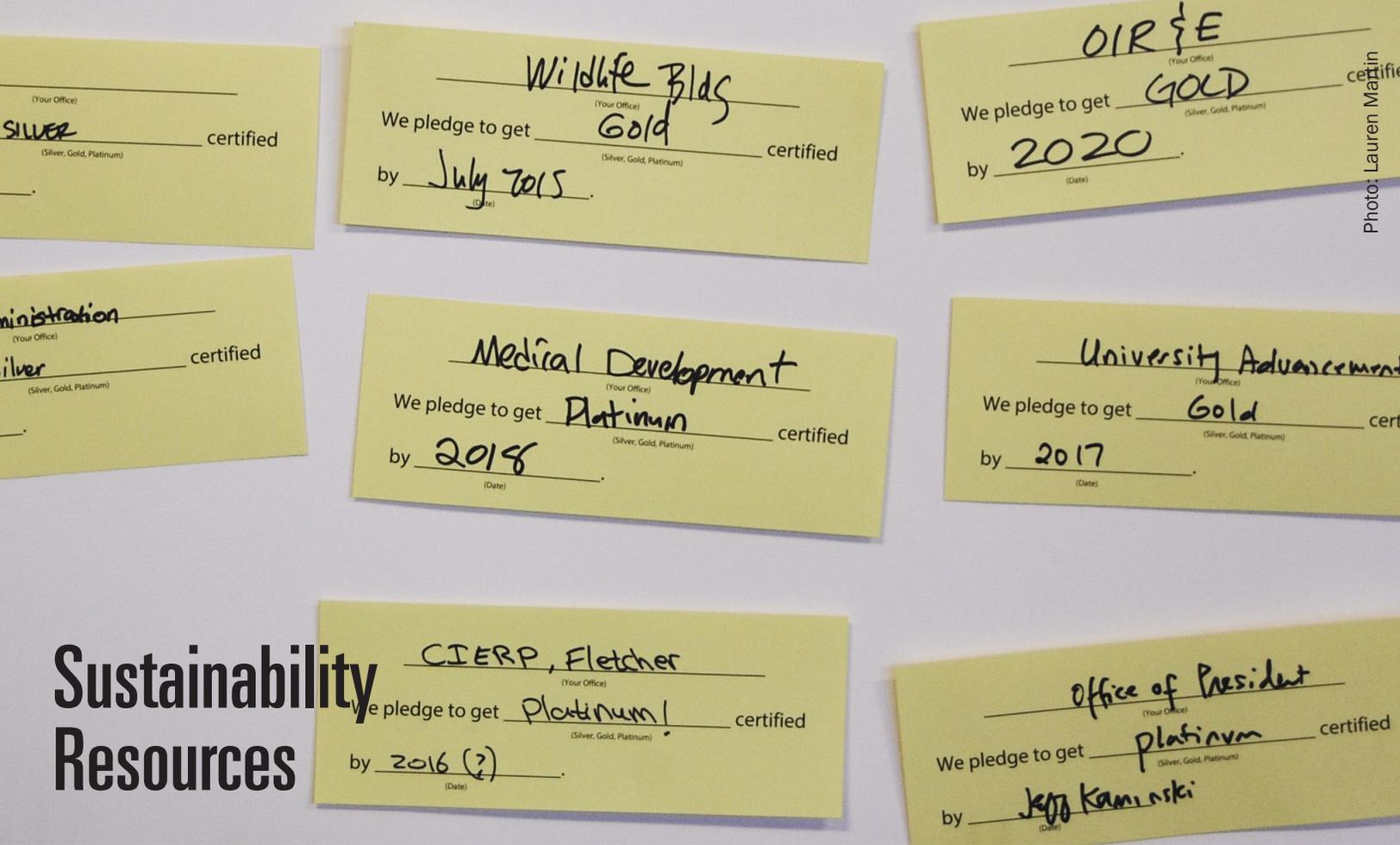


Photo: Lauren Martin

Sustainability Resources

For Everyone:

- Plan a green event: go.tufts.edu/greenevents
- Learn how to recycle at Tufts: go.tufts.edu/recyclingprimer
- Attend an Environmental Studies Lunch and Learn: go.tufts.tufts.edu/lunchandlearn
- Get to know the Medford/Somerville campus through a green lens with the Eco-Map: go.tufts.edu/ecomap
- Join a CSA program: go.tufts.edu/csa
- Join the Cummings School Community Garden: go.tufts.edu/cscg
- Learn about sustainable transportation options at Tufts: go.tufts.edu/greentravel
- TerraCycle your energy bar wrappers: go.tufts.edu/terracycle

For Students:

- Become an Eco-Rep: go.tufts.edu/ecoreps
- Join the Cummings School Student Eco-Ambassadors: go.tufts.edu/studentEAs
- Join a branch of the TSC: go.tufts.edu/TSC
- Submit your research paper, look for an on-campus sustainability-related project to work on for a class or browse other students' projects in the Sustainability Project Database: go.tufts.edu/greenprojects
- Apply to intern with the Tufts Institute of the Environment, Office of Sustainability, or *Tufts Recycles!*
 - environment.tufts.edu
 - sustainability.tufts.edu
 - sites.tufts.edu/tuftsrecycles

For Faculty/Staff:

- Join the Eco-Ambassador program: go.tufts.edu/ecoambassadors
- Get Green Office Certified: go.tufts.edu/greenoffice
- Start an office green team
- Assign a sustainability-related project to your class and have them upload it to the sustainability project database: go.tufts.edu/greenprojects



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