

# CAMPUS SUSTAINABILITY PROGRESS REPORT

FISCAL YEARS  
2017 & 2018

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**Tufts**  
UNIVERSITY

Office of  
Sustainability



**Sustainability** is an integral part of Tufts' campus culture. From day one, new students and employees are introduced to sustainability efforts at the university and what they can do to help further campus-wide sustainability goals.

Tufts University continued to build on its long-standing legacy of environmental stewardship and leadership in fiscal years 2017 and 2018. Amidst increasing global concern over environmental and climate-related issues, Tufts engaged in a wide variety of environmental initiatives that have solidified the university's position as a leader in sustainability.

In this report, we provide **a mere sampling** of the strides Tufts has taken towards campus sustainability in the past two years.

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Universities play a crucial role in helping the world adapt to a changing planet. At Tufts, we do not take this responsibility lightly.

Notable developments in the past two years have included the integration of the SMFA into the School of Arts and Sciences along with 160,000 square feet of leased space, and participation by the Boston and Grafton campuses in university-wide and campus-specific environmental initiatives.

In this report, you will read stories that illustrate how our commitment to sustainability is put into practice across Tufts. Faculty, staff, and students all play an active role not only in making the university a more sustainable place, but also in providing solutions that have applications beyond Tufts' campuses.

From student- and employee-led initiatives to changes in our university infrastructure, a great deal has taken place over the last two years to further solidify Tufts' position as a leader in sustainability.

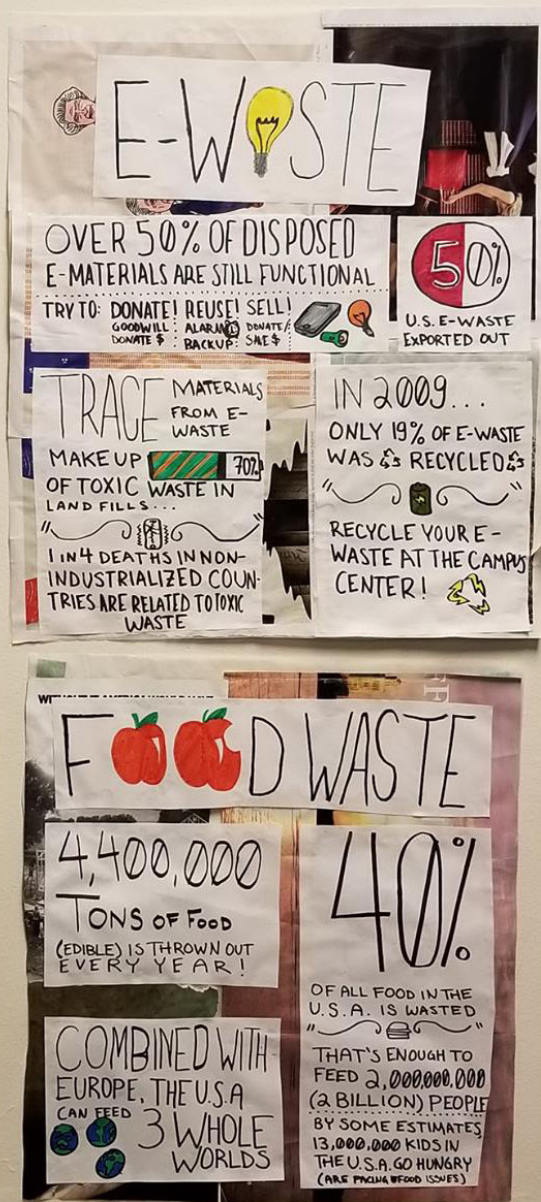
Anthony P. Monaco  
President

*Tony Monaco*



# FUNDING & OUTREACH

New funding opportunities and the expansion of outreach programs made it easier for the Tufts community to get involved with sustainability initiatives.



## FY 17 & 18 PROGRESS REPORT

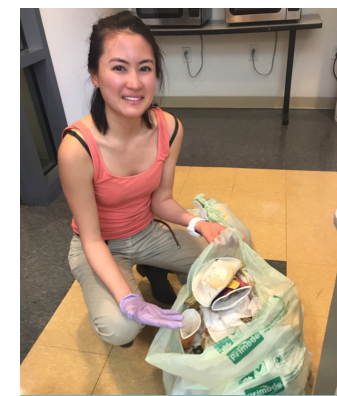
### TUFTS GREEN FUND

The Sustainable Investment Fund's endowment payout provided **funding for sustainability projects proposed by the Tufts community** for the first time in Spring 2018. The winners are listed below.

**\$6500** went to **Tufts Energy Group's solar charging station project** on the Medford/Somerville campus, in coordination with SunBug, a local solar energy company. Students are able to charge their devices via solar energy on the patio.



**\$3000** funded a new water bottle filling station on the 8th floor of the **School of Dental Medicine**, proposed by staff members **Mary-Ellen Marks, Jini McClelland, and Talita Turnier**.



**\$500** helped start a new **composting program** throughout the Boston Health Sciences campus, as proposed by **Michelle Lee Bravati** (N 18) who tested a pilot program earlier in the spring.

Moving forward, the Green Fund will be able to fund any number of projects with budgets adding up to \$40,000 for each round of project submissions.

These funds will help further both sustainability efforts at Tufts as well as the Tufts community's engagement with sustainability issues and solutions.

### Green Fund Soft Launch Spring 2018



**\$10,000**

Available for funding



**30**

Ideas submitted



**314**

Votes casted



**70**

Comments made



**3**

Projects Funded

### Brighter World: The Campaign For Tufts

Tufts launched a new fundraising campaign that targets institutional needs identified through the T10 university-wide strategic plan. **"Sustaining a Healthy Planet"** is one of the causes highlighted in the campaign. The campaign makes it possible to make a gift directly to a number of sustainability and environmental initiatives and programs on campus, including the Green Fund.



STUDENT OUTREACH



The Office of Sustainability was present at **ten undergraduate and graduate student orientations in FY17 and eleven in FY18**. Staff and interns handed out resources and educated new students about how to get involved with sustainability at Tufts.

In collaboration with dining services, Eco-Reps hosted a **Scrape Your Plate Night** in Dewick and Carmichael dining halls to encourage students to leave less food on their plate after a meal.

The **TCU Senate** hosted a **meeting** on Tufts environmental history, the Campus Sustainability Council, and other Tufts sustainability initiatives and commitments.

The **SMFA** created the **Sustainability Task Force**. They piloted **Carte Util**, a **mobile art supplies freecycle program** that allows people to donate their art supplies for reuse by others.

In both FY17 and 18, Eco-Reps and many environmentally-focused groups from Tufts and the surrounding community got together for **EarthFest**.



**Maria Fong**, A21, became the **SMFA campus's first ever Eco-Rep**. She represented the Tufts Office of Sustainability at the SMFA's accepted students day, where she got incoming students excited about sustainability at Tufts!

Eco-Reps created a four part video series on Facebook, **"The Adventures of the Tufts Recycling Fairy."** The videos helped educate students about what can and can't be recycled at Tufts.

Eco-Reps hosted **32 and 49 events** in FY 17 and 18 respectively that helped further **engage the student body with sustainability issues** in an accessible, fun and informal way.

Eco-Rep Program  
Fall 2016 - Spring 2018

- 23** dorms on the Medford/Somerville and SMFA campuses with Eco-Reps
- 2051** students reached at events (excluding meet and greets)
- 5781** total Meatless Monday pledges
- 6460** gallons of compost collected from dorms
- 831** certified green dorm rooms

FACULTY AND STAFF OUTREACH

The SMFA Admissions Office switched over the Keurig Cups to compostable ones in the main SMFA staff kitchen. The SMFA now **diverts 596 cups** from the landfill each month.

A total of **12 offices** from all four campuses became certified **Green Offices** in 2018. Green Offices leverage the position of employees to further Tufts' sustainability efforts.



Through an Eco-Ambassador grant, **Dan Birdsall**, the Fletcher School's associate director of the Office of Admissions and Financial Aid, purchased a new **compost bin** for the school's high-traffic area, the Hall of Flags.

Certified Green Offices  
2018 Challenge

- SILVER**
  - Tufts Technology Services (TAB 211 Suite)
  - SMFA Office of Admissions
  - The Dean's Suite (School of Dental Medicine)
  - The Latino Center
- GOLD**
  - Hospital Administration (School of Veterinary Medicine)
  - The Office of Academic Affairs (School of Dental Medicine)
  - Research Administration (School of Dental Medicine)
  - The Office of Institutional Research and Evaluation
  - Tufts Technology Services, Office of the CIO
  - The Fletcher School Office of Admissions & Financial Aid
  - The Center for Engineering Education & Outreach
  - Admissions and Financial Aid (The Fletcher School of Law and Diplomacy)
  - Foster Hospital Administration (Cummings School of Veterinary Medicine)
- PLATINUM**
  - Stockholm Environment Institute (SEI)

Eco-Ambassadors  
by the numbers

- 96** active Eco-Ambassadors at Tufts
- 71** offices with an Eco-Ambassadors
- 28** new Eco-Ambassadors in 2018

Eco-Ambassadors  
per school or department

- 25** at the School of Arts, Sciences and Engineering
- 31** in Central Administration
- 11** at Cummings School of Veterinary Medicine
- 7** at the School of Medicine
- 1** at the Friedman School
- 3** at the Fletcher School
- 3** at the HNRCA
- 3** at the SMFA
- 1** at Tisch College



Educational Technology Services (ETS) and the Center for the Enhancement of Learning and Teaching (CELT) replaced their Poland Springs water cooler with a **new water filtration system** through an Eco-Ambassador grant.



The Office of Sustainability presented at all **104 new employee orientations**. New employees learned about Tufts' environmental commitments, how to recycle, commuting options, and the Eco-Ambassador program.





# ACADEMICS & RESEARCH

Tufts introduced new majors, tracks, and courses with an environmental or sustainability focus, making it easier for students to academically engage with sustainability topics.

## FY 17 & 18 PROGRESS REPORT

### COURSES & EVENTS

The course “**The Greening of Art**” was offered at the SMFA campus. This course explores the **impact of theories for sustainable development on contemporary sculpture.**

In the course “**Global Climate Change**,” students were introduced to Earth’s climate systems to better understand causes of present and future climate change.

Students in the **Engineering Management Class** worked with the Office of Sustainability to create project proposals to make Tufts more sustainable. Some ideas presented by students included **curbside composting** for off-campus students, **greater education on water-saving dual function handles of toilets**, and an **app-based Tufts bike rental system.**

### New Academic Programs Fall 2016 to Spring 2018



**Food Systems and Nutrition**  
a minor within the Environmental Studies program



**Urban Justice and Sustainability Certificate**  
a post-master’s program within Urban and Environmental Policy and Planning



**Environmental Humanities**  
a track within the Environmental Studies program



**Sustainable Water Management**  
a Master’s Degree program offered through Tufts Institute of the Environment

### TIE-SEI Nexus Symposium

In 2017, **Tufts Institute of the Environment (TIE)** and the Stockholm Environment Institute (SEI) commemorated 10 years of partnership. Over the course of these 10 years, Tufts and SEI have collaborated on numerous projects and academic initiatives to further interdisciplinary work on environmental issues.

During the symposium, several Tufts and SEI researchers participated in a panel discussion about the **future of energy policy and climate change.**

The Experimental College course “**Waste: The Global Systems that Support Our Consumption**,” was offered in FY18. The course examined various aspects of waste and waste management.

TIE, Tufts Environmental Studies Program, Tufts Art Gallery, and the Visual and Critical Studies Department hosted an art gallery, “**nARTure. Reshaping eco-art.**”

TIE Fellow Isabel Beavers created a new course called “**Interdisciplinary Practices: Sci+Art**” that was offered in Spring 2018.

TIE partnered with **DC Environmental Film Festivals** to engage the public in environmental issues through film. They screened “**HAPPENING: A Clean Energy Revolution**,” and “**WASTED! The Story of Food Waste.**”



ACADEMICS & RESEARCH

FACULTY AND STUDENT RESEARCH

**Iryna Zenyuk**, assistant professor in the School of Engineering, received a National Science Foundation CAREER award for her research to improve performance of **polymer electrolyte fuel cells** that can be used in electric vehicles.

**Dr. Kelly Gallagher** helped **analyze U.S. government investments in Energy Research, Development and Demonstration** and found a significant decrease in the 2018 budget proposed by the Trump Administration compared to previous years.

**Christian Peters** and **Timothy Griffin**, faculty members at the Friedman School, were a part of a study published in *Elementa* in July 2016 titled “**Carrying capacity of U.S. agricultural land: Ten diet scenarios.**” This was the first study that attempts to calculate U.S. agricultural land needed to support different types of diets. The study found that the **baseline diet representing current U.S. food consumption would support the fewest number of people**, while a vegetarian diet that includes dairy products would support the most.

**Alexandra Kulinkina**, EG17, a PhD candidate in the Department of Civil and Environmental Engineering, contributed to a report on waterborne diseases which was published by the **World Health Organization** during her internship in Bonn, Germany.

**Carolyn Wong**, Tufts School of Medicine research assistant, John Durant, Tufts School of Engineering associate professor, and others won a \$7,000 grant to evaluate the benefits of **youth participation in particulate matter data collection.**

**Urban and Environmental Policy and Planning**  
M.A. Candidates Field Projects

Field Projects provide UEP students the opportunity to work on real-world challenges with government, nonprofit, community, and private sector partners.

The following projects were conducted in **2018**:

**Wasted: A Greenhouse Gas Inventory of Food Waste**  
for the Metropolitan Area Planning Council, Department of Clean Energy, Boston MA

**Clean Green Driving Machines: Reducing Municipal Vehicle Fuel Consumption**  
for the Mass. Department of Energy Resources, Green Communities Division

**Supporting Small Scale Food Manufacturing: An Analysis of Challenges and Opportunities**  
for CommonWealth Kitchen

**Imagining CoHo**  
for Tufts University Office of Campus Planning

**Soil in the City**  
for Urban Farming Institute

**Engaging the City**  
for The City of Boston, Housing Innovation Lab

**Growing Mystic River Greenways**  
for Mystic River Watershed Association (MyRWA)

**Replanting Metro Boston's Roofs**  
for Recover Green Roofs

The Chair of the Civil Engineering Department, **Steven Chapra**, published his research on the **projected increase of harmful algal blooms due to climate change** in the *Environmental Science and Technology* Journal.

**Rachael Bonoan**, a Ph.D. candidate in biology, is **raising bees on the Grafton campus** on different diets to see how nutritional deficiencies caused by pollinating large amounts of a single type of crop impact their ability to react to health threats.

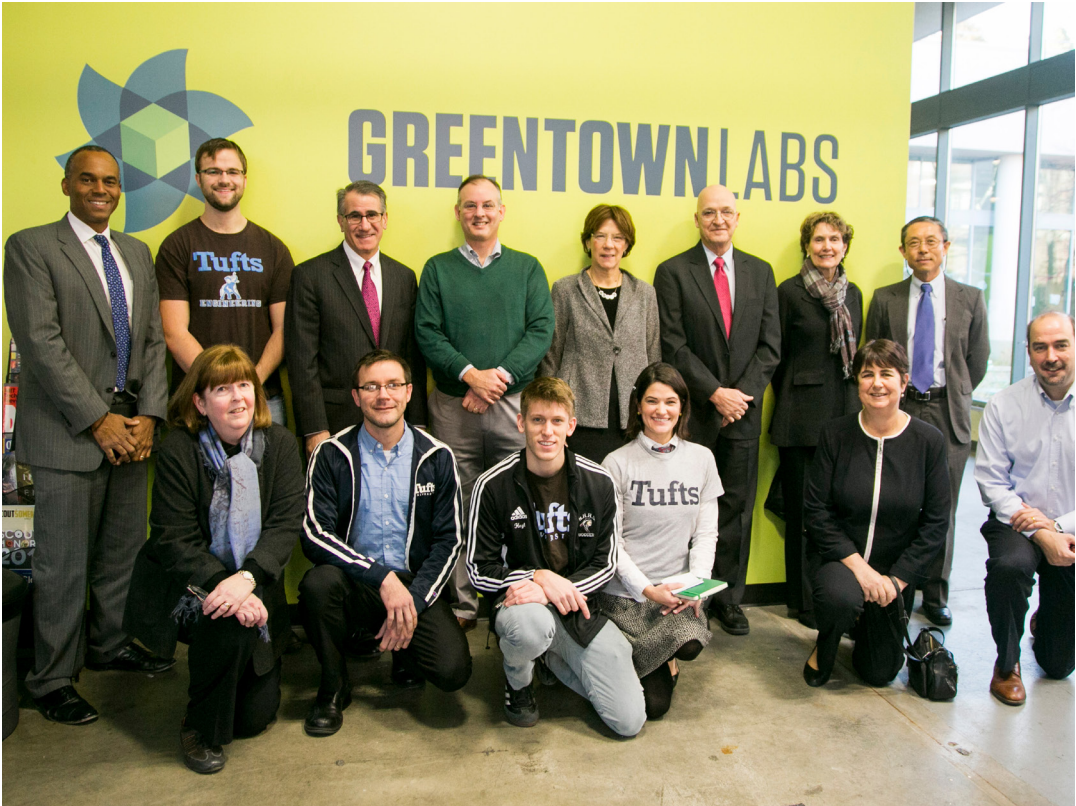


SUSTAINABLE INNOVATION

In FY17 and 18, there was a university-wide effort to promote and support a spirit of innovation. Funding opportunities and collaborations helped the Tufts community make sustainable contributions both locally and globally.



CLEAN ENERGY



**Benny Kim**, E16, EG17, was chosen to be the first **Greentown Fellow**, the liaison between Tufts University and Greentown Labs to help facilitate collaborations.

Tufts and Greentown Labs hosted the event “**Are We Ready to Embrace Offshore Wind?**” during which industry experts and Tufts faculty had a lively panel discussion.

**GREENTOWN LABS**

The university entered into an agreement with Greentown Labs, the nation's **largest clean technology startup incubator** based in Somerville, MA.

Greentown Labs helps new cleantech startups develop their business by providing the resources and space they need to succeed. **Tufts is their first academic sponsor.** This new partnership will create many opportunities for students and faculty at Tufts interested in entrepreneurial ventures to collaborate with Greentown Labs member companies.

**Gigawatt Partnership**  
Agreement between Tufts and Greentown Labs

**Faculty In-Residence**  
from Tufts will advise fledgling Greentown Labs businesses

**Access**  
for Greentown Labs companies to Tufts facilities such as the Science and Engineering Complex

**Greentown Fellow**  
a recent Tufts graduate who will serve as the liaison between Tufts and the incubator

**Opportunities for Students**  
at the Gordon Institute and Tufts affiliate startups to work with Greentown Labs member companies

SUPPORTING ENTREPRENEURSHIP



**Epic CleanTec** won first place in the general/high-tech ventures track of the **Tufts \$100K New Ventures Competition** for their innovative wastewater management system that converts solid waste into high quality fertilizer.

Participants addressed sustainability issues including climate change-related disasters during the 5th and 6th annual IDHACKs. IDHACK is a **24-hour hackathon** in which participants solve problems that NGOs face in the international development sector.

Sustainability was addressed in the new course, “**Social Entrepreneurship, Policy and System Change.**” The course is a part of the Entrepreneurial Leadership Studies Program.



**Lithio Storage**, a company founded by Anthony D’Angelo, EG 18, won the **\$100,000 MIT Clean Energy Grand Prize** for developing “the next generation of thermally stable, energy efficient batteries for grid-scale storage.” This helps batteries withstand larger temperature ranges, a major barrier for storing energy generated by wind, solar, and other renewable sources of energy.

**The Friedman School of Nutrition Science and Policy Food and Nutrition Entrepreneurship**  
for a healthier, sustainable, more equitable food supply

Entrepreneurship is a major priority of the Friedman School’s strategic plan. The school’s new initiative to create a hub of nutrition entrepreneurship and innovation at Tufts centers around **four pillars**:

**Coursework**  
A new graduate-student Nutrition Entrepreneurship program was launched in collaboration with the Tufts Gordon Institute.

**Partnerships**  
Friedman is actively searching for new partnerships with major food accelerators and companies.

**Entrepreneurship Advisors**  
A growing network of advisors made up of successful business and social entrepreneurs provide guidance to Friedman students and faculty.

**Innovation Council**  
Launched in 2018, this new council links diverse companies that are prioritizing nutrition innovation and entrepreneurship in many sectors.



# RESPONDING TO CLIMATE CHANGE

Both institutionally and individually, the Tufts community addressed climate change in a variety of ways.

## RESPONDING TO CLIMATE CHANGE

### WE ARE STILL IN

In April 2016, President Monaco signed the **Second Nature Climate Commitment**, pledging on behalf of the university to take action to mitigate and adapt to climate change. Following the election of President Trump in 2016, Second Nature released an open letter to the new congressional delegation and incoming presidential transition team. President Monaco was **one of over 235 senior leaders in higher education** who signed the letter. Since then, following the President's decision to withdraw the U.S. from the Paris Agreement, over 2,000 business leaders and 300 colleges & universities have also responded to the call. This illustration of **solidarity between business and education leaders** shows that many sectors support and recognize the need for climate leadership.



In partnership with The Nature Conservancy, Tufts held a **Community Resilience Building Workshop** on the Medford/Somerville campus to help uphold the Second Nature Climate Commitment goals. **Over 60 community members** attended. After reviewing the potential climate related hazards that threaten the local area, the attendees broke up into smaller groups and **discussed the current vulnerabilities and strengths of the campus** and what actions should be prioritized in moving forward.

**Climate change** was included in **Tufts' Hazard Mitigation Plan** for the first time in 2017. Specifically, it noted the predicted influence of climate change on changing precipitation patterns in relation to the **potential increased risk of flooding** on all four campuses. This is part of a wider effort to increase Tufts resiliency to climate change.



Undergraduate students from the Jonathan M. Tisch College of Civic Life responded to the devastating effects of Hurricane Maria in Puerto Rico by **launching fundraisers and staging supply drives** to help the impacted residents.

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 an Association of Collegiate Schools of Architecture (ACSA) member.

Tufts' Operations Division created a formal **Engineering Department**. This helps coordinate operational efforts concerning energy efficiency.

Tufts University School of Medicine co-sponsored an event about the **public health threats** associated with **climate change and nuclear war**.



CLIMATE POLICY LAB

The Fletcher School created the Climate Policy Lab in December 2016 to better understand which energy and climate policies work, which don't and why. The Lab hopes to be a **source of advice for governments** as they seek to create new climate policies in accordance with **the Paris Agreement**.



The Climate Policy Lab announced its new partnership with **Woods Hole Research Center**. This new collaboration between Tufts faculty and Woods Hole researchers will spark innovative solutions to climate change-related issues.

The **Danish District Energy Alliance** conducted a **Campus Energy Accelerator Workshop** on the Medford/Somerville campus, informing Tufts students about energy systems and ways to increase energy efficiency.

In July 2017, Vice Provost for Research Dr. Meydani recognized the efforts of labs across the University to reduce their energy use through participation in the **North American Freezer Challenge, a part of the Tufts Green Labs Initiative**.



Emma Cusack, E19, organized the placement of **“Shut the Sash”** stickers on the fume hoods in all labs across the Medford/Somerville campus to **decrease lab energy usage**.

Tufts Friedman School Professor **Parke Wilde** helped organize the **First International Flyingless Conference** in April 2017 to engage in cultural change within academia. Attendees of the **Global Arts and Psychology Seminar** were connected via livestream from five hub locations on four different continents, **eliminating the need for air travel**. Wilde seeks to help reduce the carbon footprint of academic conferences.



**Former Vice President Al Gore** spoke at Tufts about the obstacles and sources of optimism in confronting the consequences of the climate crisis.

SUSTAINABLE COMMUTING



In May 2018, MassRIDES, a program of the Massachusetts Department of Transportation, awarded Tufts University a **Spotlight Award for Excellence in Commuter Options Award Honorable Mention**. This award is given to companies and organizations that promote and facilitate sustainable commuting options to their employees.

Instead of purchasing more vehicles, **the SMFA campus outsourced additional shuttling services to Lyft**, diversifying intra-campus transportation options for students.

**35 hours per week** of shuttle services were added to the existing schedule on the Medford/Somerville campus to **support and encourage students' use of public transportation**.

The university **increased the subsidy for public transit passes** to 35% for employees on all campuses.

**New employees** learned about the various commuting options and benefits programs available to them while at Tufts during **all 52 new hire orientations** in FY18.

Tufts created a university-wide **policy for telecommuting** to provide guidelines and make it easier for employees to work from home and avoid commuting.

Students could take advantage of the **My Bus Home** service for winter break travels, reducing the need for parents to travel to pick them up.

Tufts Bikes  
2017-2018 School Year



**\$3720**  
worth of bike repairs performed for students free of charge



**112**  
students' bikes fixed



**24**  
bikes available at the library for free through a bikeshare



**4**  
public bike repair workshops held





# WASTE REDUCTION

Tufts University has a goal to reduce waste generated by its campuses by 3% each year.

During FY 17 and 18, the Tufts community worked to reduce the amount of waste sent to landfills in creative and innovative ways.

## FY 17 & 18 PROGRESS REPORT

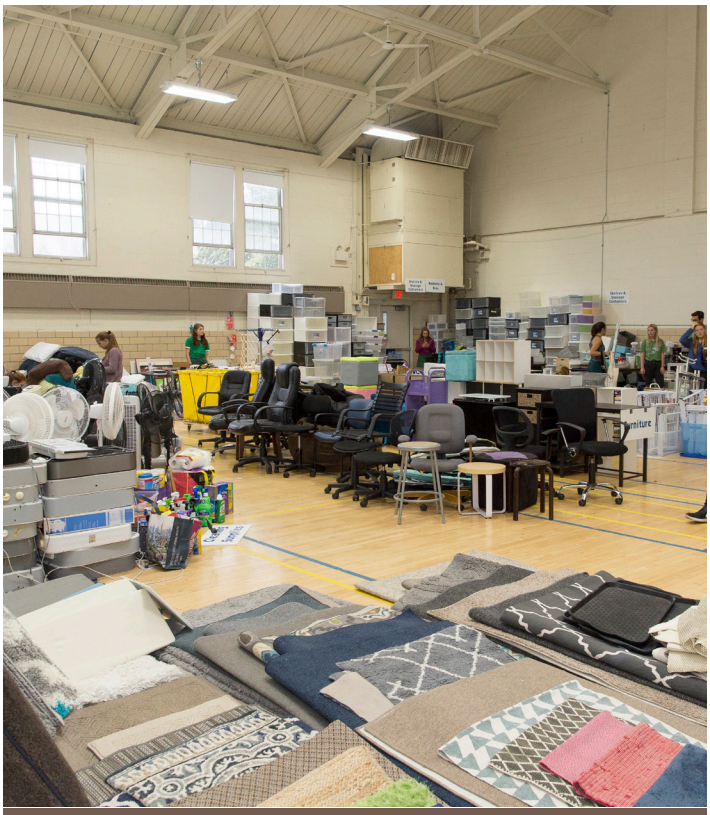
### REDUCING WASTE FROM MOVE OUT



For the first time, large **recycling roll off containers** were available during Move Out in 2017. This helped reduce the amount of waste sent to the landfill by making it easier for students to recycle items such as used notebooks as they moved out for the summer.



**Plastic bags and film were collected separately during Move Out 2018.** The collected bags were taken to Whole Foods who then delivered them to Trex, a company that converts used plastic film into environmentally responsible outdoor products.



### Move Out Donations Spring 2017 and 2018



**1,763**  
pounds of non-perishable food to Project Soup



**5,000**  
books to Book it Forward, Tufts' Lending Library



**26,540**  
pounds of textile donations to Bay State Textiles

Some items from move out were put aside and stored over the summer to be sold back to students in the first ever **Blue and Brown Pass Down Sale** hosted by **Tufts Green House** in September 2017. \$2500 from the sale was donated to three local charities: the Somerville Homeless Coalition, Food For Free, and Groundworks Somerville. Remaining funds went towards Green House programming.

**Tina Woolston**, Director of the Office of Sustainability, was interviewed for a **Boston Globe article** on waste reduction during move out. The article also featured Tufts' Move In Sale.

In 2018, the **Move Out program** was advertised and run in the dorms for **the SMFA and Boston campuses**, increasing the total number of items diverted from landfills.



WASTE REDUCTION

ZERO WASTE INITIATIVES



The university officially made the switch to **single-stream recycling** in January 2017. Now, all recyclable materials can be placed in the same bin. This helps **improve the university's recycling rate** by simplifying recycling.

**Four textile recycling bins** were installed on the Medford/Somerville campus, making it easier for students and employees to **sustainably dispose of the clothes they no longer need.**



**22 Zero-Waste events** were organized across all of Tufts' campuses in FY17 and 18 including Fletcher Orientation, Matriculation Lunch, AS&E Graduate Student BBQ, Community Day, Seniors' Welcome Back Reception, International Center's Thanksgiving Dinner, Commencement, President's Picnic, and more. At Zero-Waste events, **trash bins are replaced with compost bins**, and all of the items provided to attendees can be composted or recycled. Student Zero-Waste workers helped attendees properly discard their items. **In FY18 alone, Zero-Waste staff collected 447 bags of compost and 269 bags of recycling.**



**Tufts Food Rescue Collaborative**, a student-staff-faculty partnership that works with Food For Free, a Cambridge food rescue organization, collaborated with Tufts Dining Services. They helped **turn leftover food from Tufts into portioned meals** to be delivered to homeless families in Brighton and low-income children and teens in Somerville and Cambridge.

The Office of Student Success and Advising set up the **Book It Forward Lending Library**. Students receiving financial aid can check out donated used textbooks and other books for free.

Designated collection boxes were available throughout the Medford/Somerville campus for seniors to **donate their graduation gowns** after commencement.

Tufts became an advisory member of the **Post Landfill Action Network (PLAN)** to further participate in the national student-led zero waste movement.

**Ink and toner collection sites** for WB Mason were introduced to 6 locations on the Medford/Somerville campus, 2 locations on the SMFA campus, and 1 location in Grafton.



BUILDING RENOVATIONS & CONSTRUCTION

Tufts upgraded both new and old buildings to help the university meet its sustainability and climate-related goals while still accommodating the need for growth and development.



Medford/Somerville Campus



### THE SCIENCE AND ENGINEERING COMPLEX

The SEC, which opened its doors in Fall 2017, was certified **LEED Gold**. LEED (Leadership in Energy and Environmental Design) is a voluntary green building rating system that recognizes **high-performance, energy efficient, and sustainable buildings**. The SEC repurposes historic Anderson and Robinson Halls. The sustainable design of the SEC is an especially impressive feat.

- #### Energy Efficiency

Here are just a few of the many ways the SEC maintains energy efficiency:
- Triple Glazed Windows** reduce heat loss during cooler months and keeps the building cool during warmer months.
- Carbon dioxide sensors** help maintain the air quality level and a comfortable temperature in the room depending on the number of people that are present.
- Air Quality Monitoring System** samples the air in labs every 15 minutes to check for contamination, reducing the frequency of air changes needed to ensure safe air quality.
- High-Efficiency Fume Hoods** Tufts installed new fume hoods that can sense how much air should be drawn in depending on whether a person is present and if the sash is open or shut.

### THE CENTRAL ENERGY PLANT

The Central Energy Plant (CEP) has already started providing electricity, steam, and hot water for heating and chilled water for cooling to the SEC.

Completed in spring 2018, this new plant is projected to **reduce the university's energy costs by around 20%** thanks to the efficiency of the co-generator and boilers.

The new plant will **decrease the university's reliance on the regional electric grid**, making the Medford/Somerville campus more self-sufficient.

# 14%

Percent reduction in **greenhouse gas emissions** estimated during design, due to the CEP's energy efficient cogenerators and boilers.

This amount is equivalent to 384 homes' energy use for one year.

The **waste heat** generated during the fuel burning process is also harnessed to heat and cool water for use in campus buildings.





## LEGEND

- Energy-efficiency upgrade
- Stormwater runoff mitigation
- Reused existing infrastructure
- Increased transportation access
- LEED-certified building or space
- New green space
- Central Energy Plant

**Tufts upgraded the exterior lighting of the Medford/Somerville campus to meet more recent standards of energy efficiency.**



Students cross the renovated intersection of College Ave. and Boston Ave.



Pipes being installed to deliver chilled water from the Central Energy Plant to campus buildings.

## Medford/Somerville Campus Upgrades

Obsolete heating and cooling units were replaced with an energy-efficient heat pump at the **DeRuiter Lab** in the 200 Boston Ave. building.

**The Central Energy Plant (CEP)**  
was completed and started  
providing **chilled water for  
heating and cooling to the SEC  
and other buildings on campus.**

**Halligan Hall:** Environmentally preferable materials used for renovation. Thoughtful design **improved indoor environmental quality**, such as increased natural light.

**Stormwater Mitigation:** In order to **increase campus resilience to flooding**, massive drainage systems were installed underneath playing fields and behind Cousens Gym.

**Chilled water lines** were installed throughout campus, starting with the Academic Quad, to **connect the Central Energy Plant to various campus buildings.**

The **intersection of College Ave. and Boston Ave.** was renovated to address **pedestrian and bicycle safety** concerns and improve traffic flow.

The **Science and Engineering Complex (SEC)** received a LEED Gold certification for its energy-efficient and sustainable design. **Tufts now has four LEED Gold** buildings or spaces.

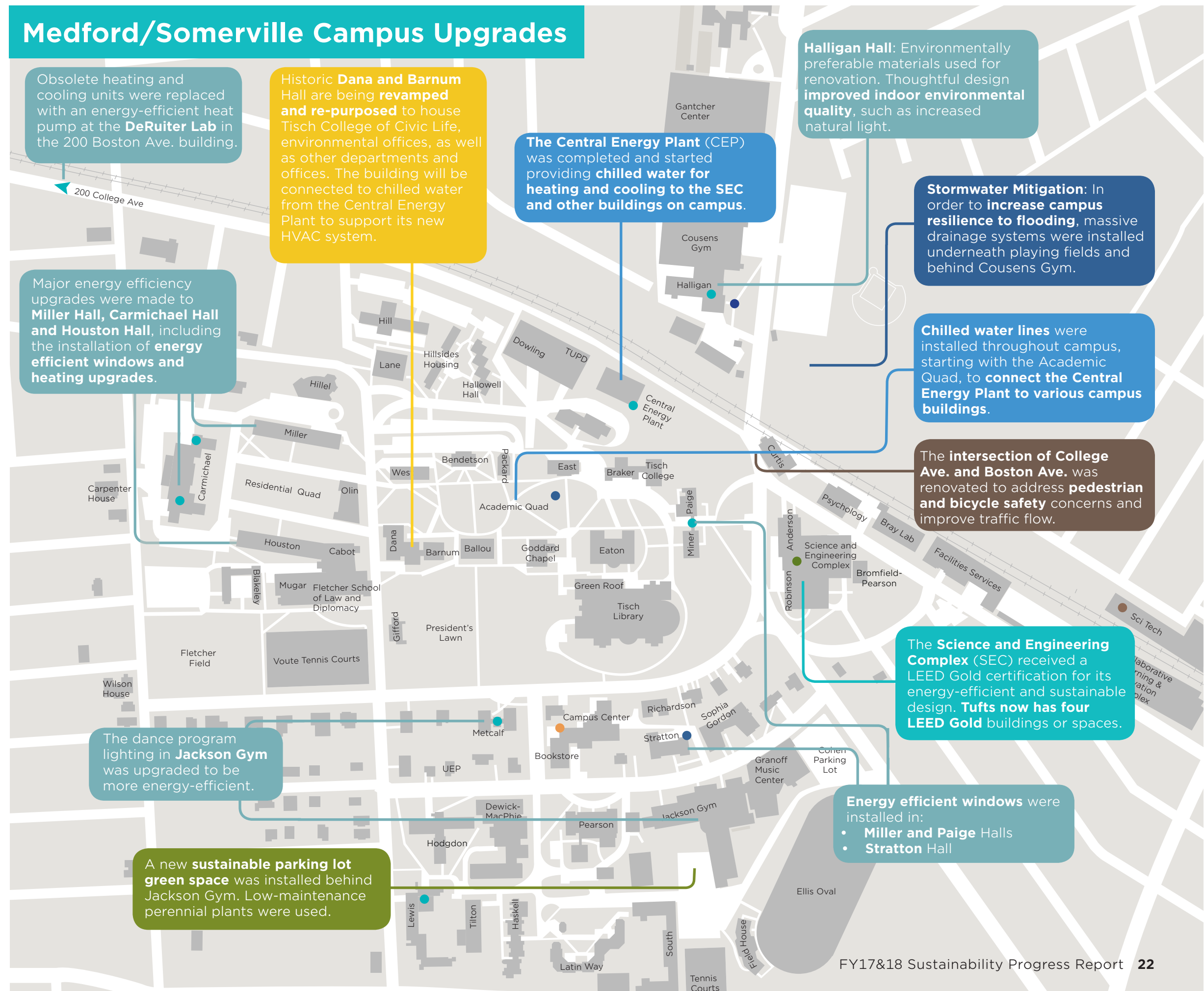
**Energy efficient windows** were installed in:

- **Miller and Paige** Halls
- **Stratton** Hall

The dance program lighting in **Jackson Gym** was upgraded to be more energy-efficient.

A new **sustainable parking lot green space** was installed behind Jackson Gym. Low-maintenance perennial plants were used.

Major energy efficiency upgrades were made to **Miller Hall, Carmichael Hall and Houston Hall**, including the installation of **energy efficient windows and heating upgrades.**





BUILDING RENOVATIONS AND CONSTRUCTION

Boston Campus

Tufts completed many renovations on the Boston Health Science Campus. The deliberate decisions made during the planning process helped make the spaces and the overall campus more sustainable.

The following locations had renovations that utilized environmentally preferable materials and thoughtful design to improve indoor environmental quality:

- the Chen Lab
- the School of Dental Medicine Vertical Expansion
- the School of Nutrition’s Dean Suite
- Central Services at 75 Kneeland
- DLAM 6th Floor



The Gross Anatomy Lab at Tufts School of Medicine has many sustainable features including LED lighting, an efficient HVAC system, sinks with knee activation to reduce water usage, and efficient toilets. In addition, the lab was built using recycled materials, and is much better lit by sunlight, reducing the need for artificial lighting, when compared to the lab’s previous location underground.

Grafton Campus



Tufts completed two new solar installations on the Grafton campus. This is expected to save the university up to \$5.3 million over the next twenty years. The energy generated here will help the Massachusetts electric utility meet its sustainability goals, and it will help make the grid greener due to the reduced dependence on nonrenewable sources of energy.



UNIVERSITY REPORT CARDS

In this section, you will find a breakdown of the university’s greenhouse gas emissions as well as a summary of the university’s waste, water use, and energy use by campus for both fiscal years covered in this report (FY17 and 18).

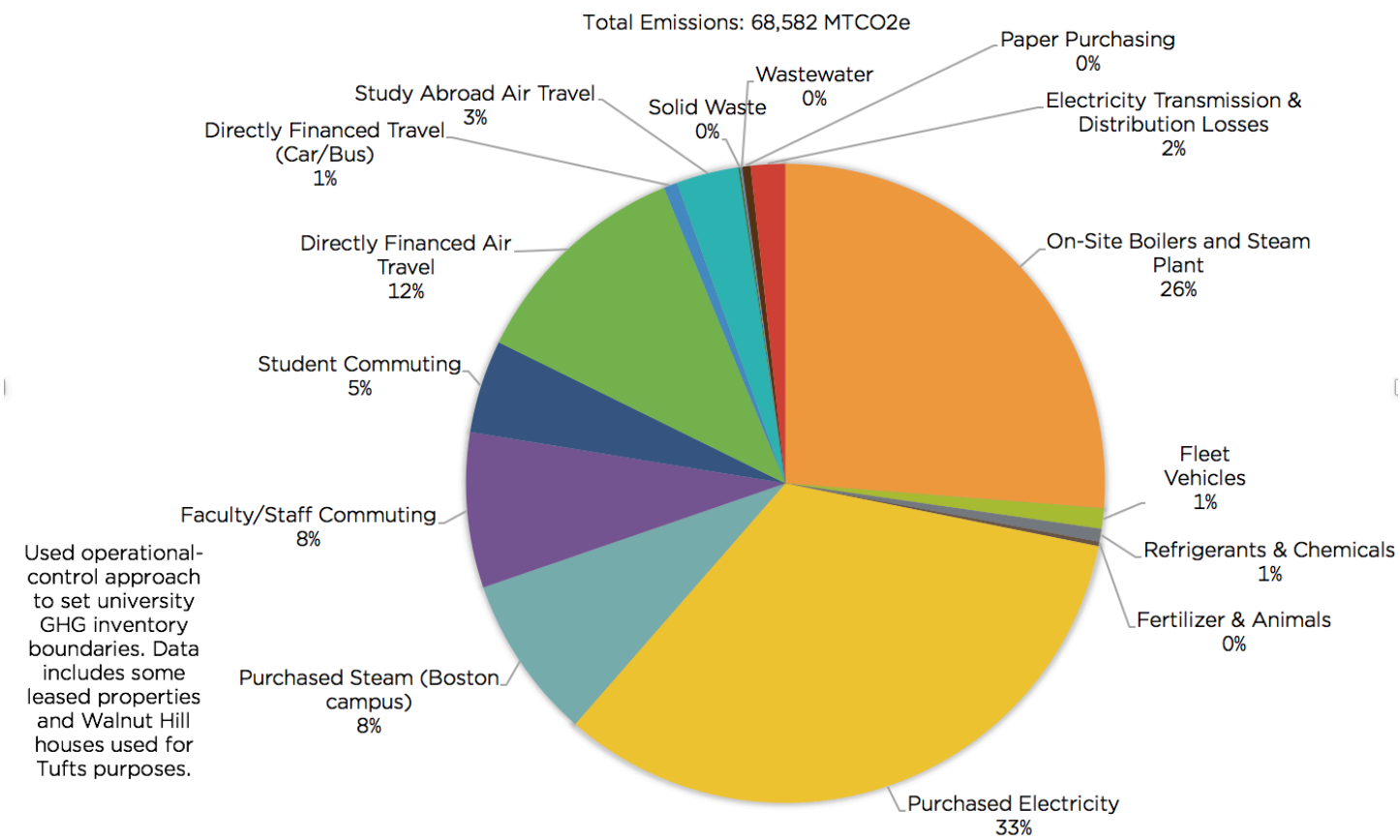
As of FY17, Tufts University has reduced greenhouse gas emissions by 8% below 1990 levels.

Tufts is working towards being 10% below 1990 levels by 2020, in accordance with the New England Governors and Eastern Canadian Premiers Climate Change Action Plan.

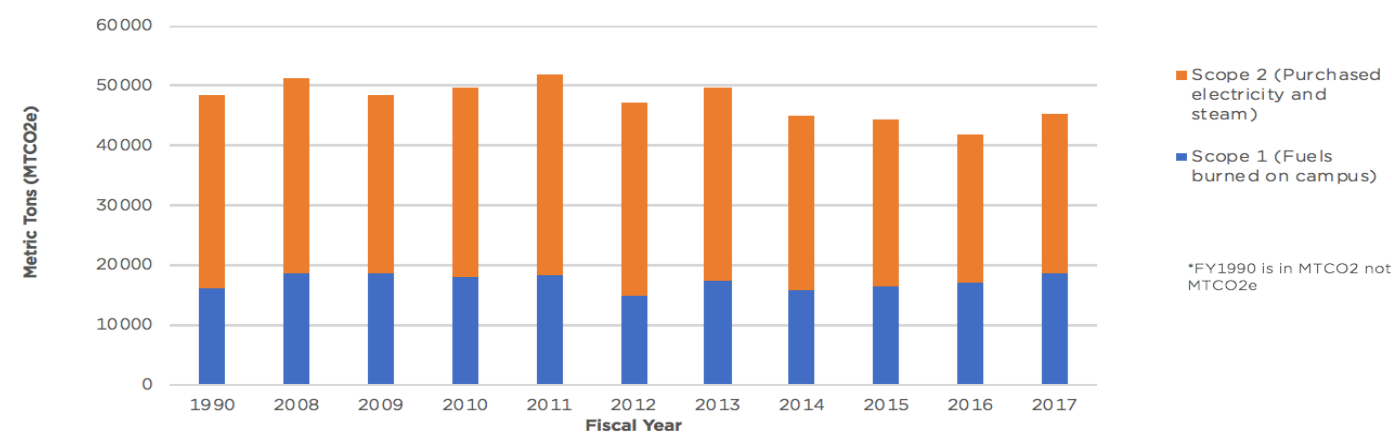


## All Campuses: Emissions

**FY 2017 UNIVERSITY GREENHOUSE GAS EMISSIONS BY SOURCE**

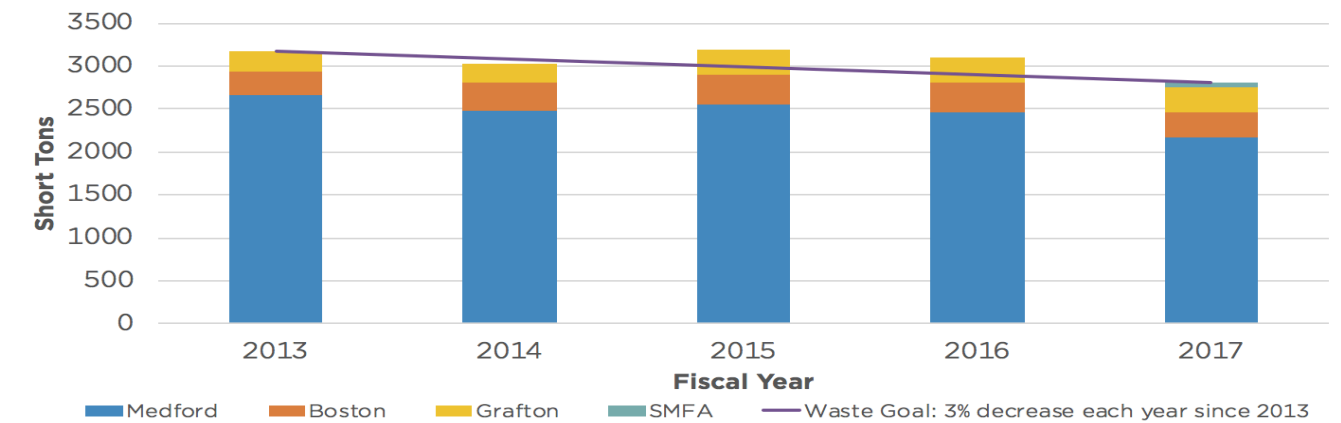


**University Greenhouse Gas Emissions By Scope Over Time (All Campuses)**

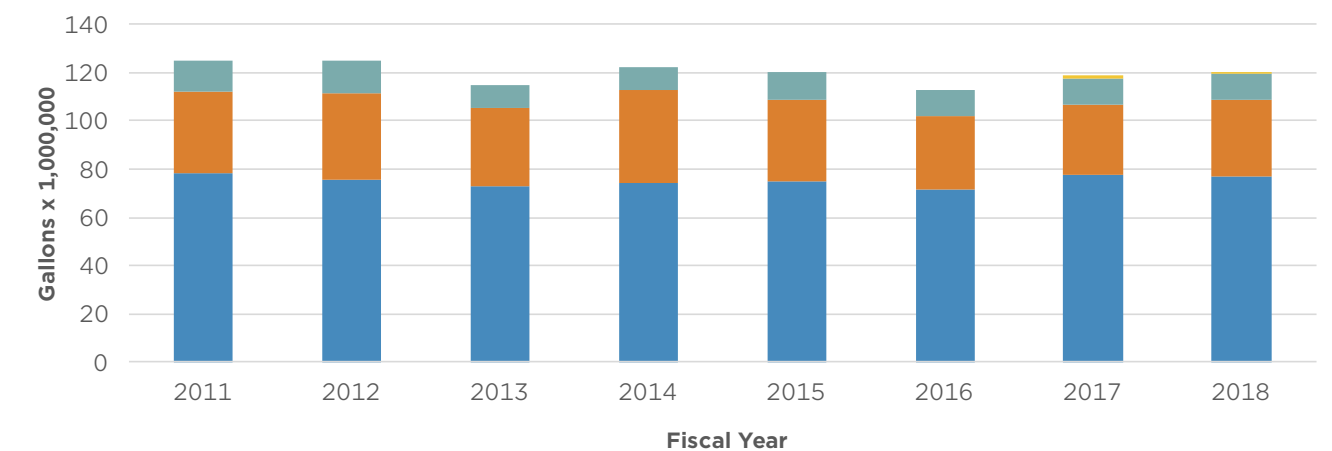


## All Campuses: Waste, Water, and Energy

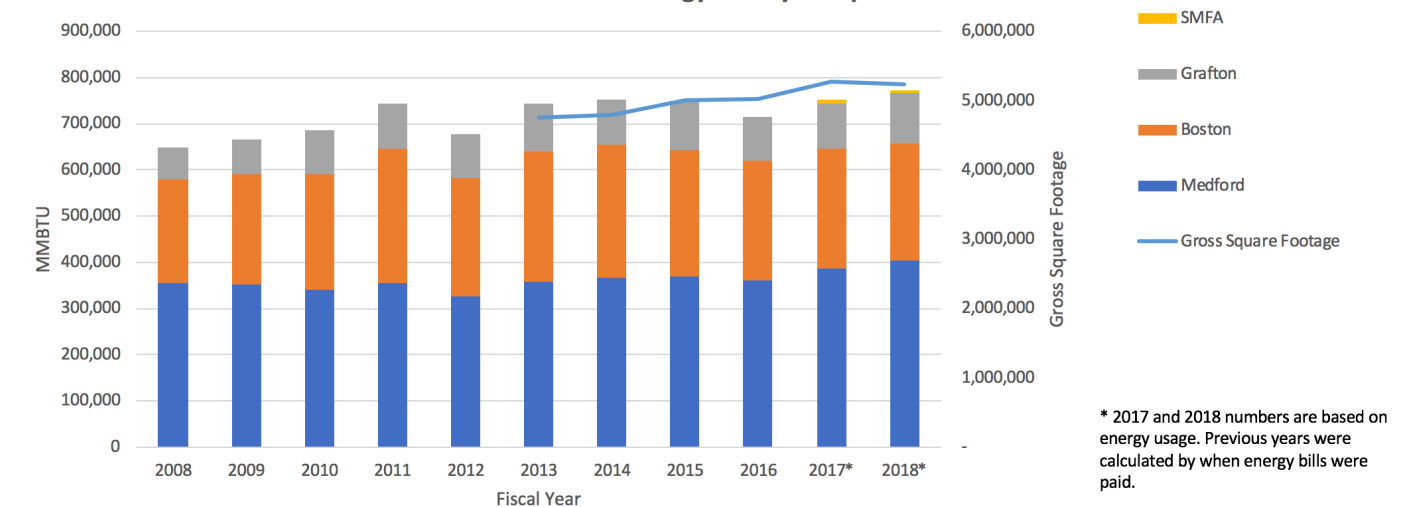
**Total Waste By Campus (FY 2013 - FY 2017)**



**Water Use By Campus (FY 2011-2018)**



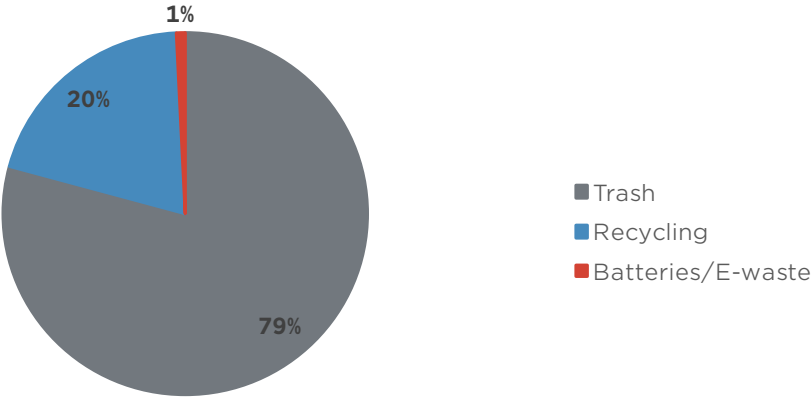
**Tufts Annual Energy Use By Campus**



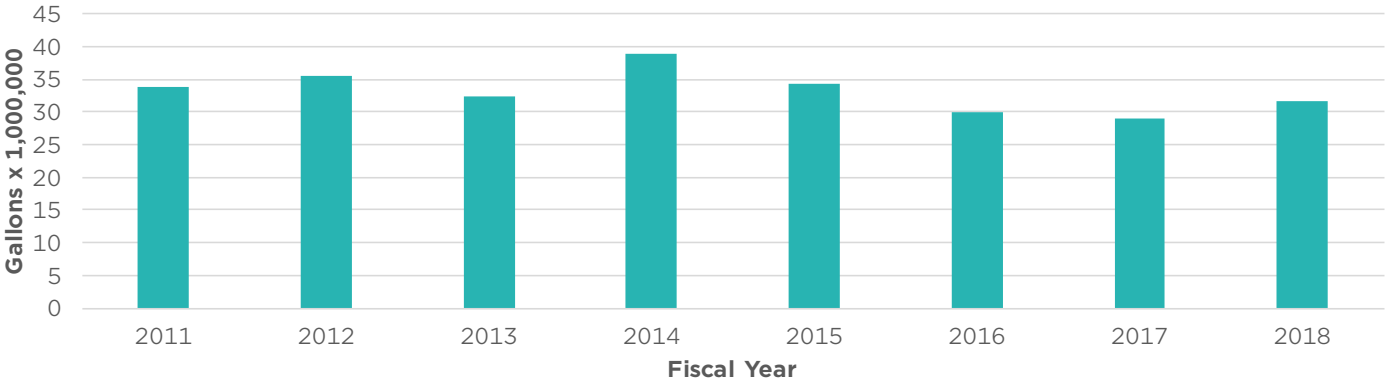


# Boston Health Sciences Campus

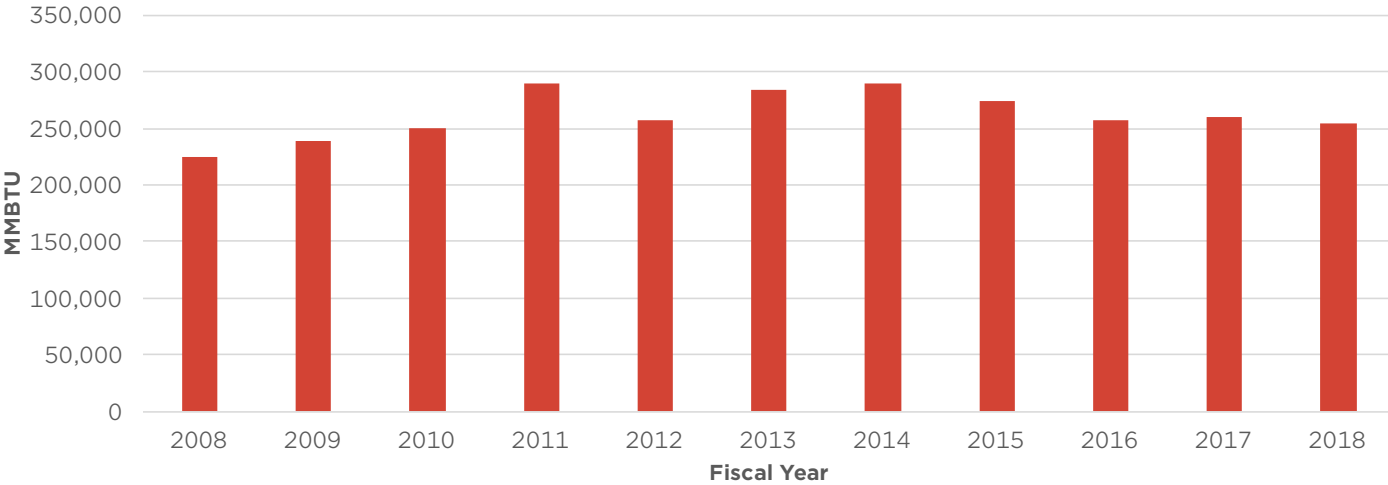
Boston Campus Total Waste (FY 2017)



Boston Campus Water Use (FY 2011-2018)

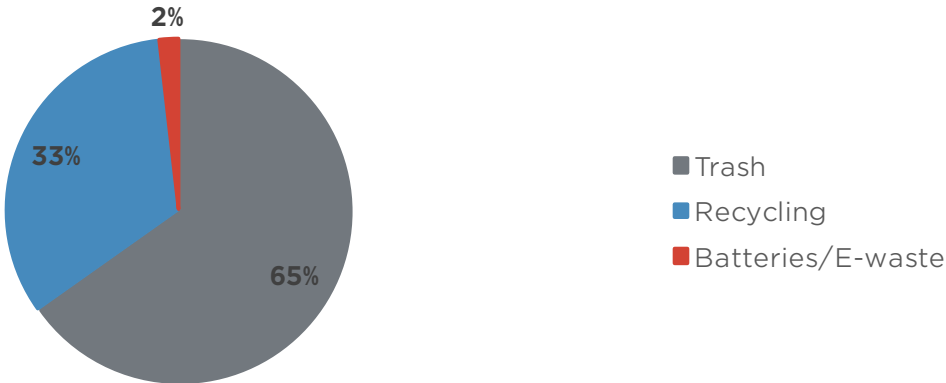


Boston Campus Energy Use (FY 2008 - 2018)

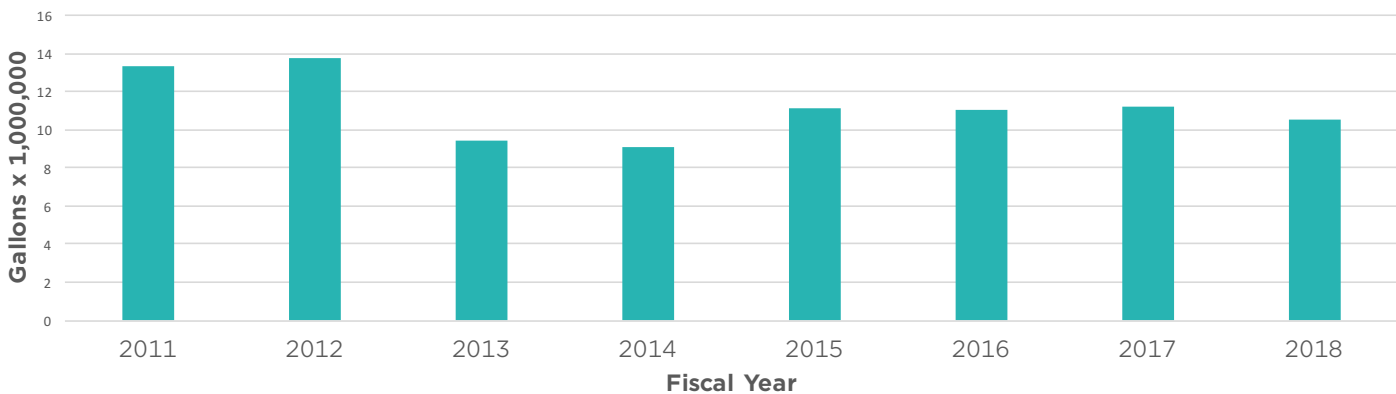


# Grafton Campus

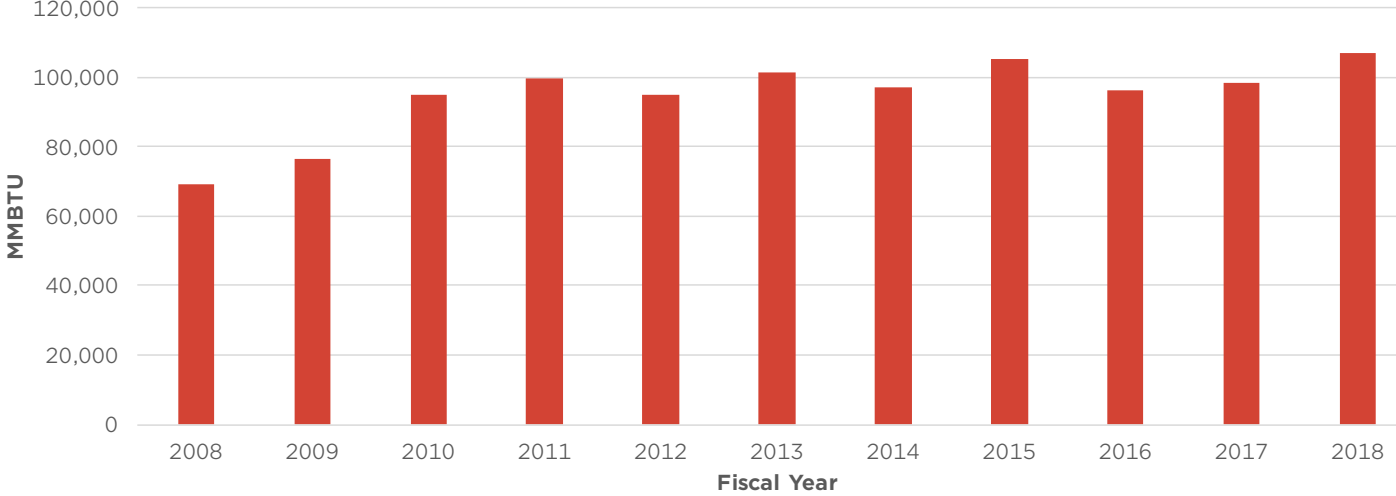
Grafton Campus Total Waste (FY 2017)



Grafton Campus Water Use (FY 2011-2018)



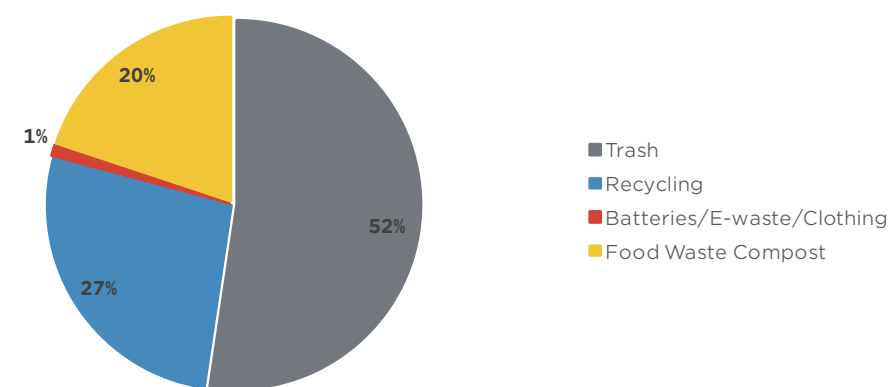
Grafton Campus Energy Use (FY 2008 - 2018)



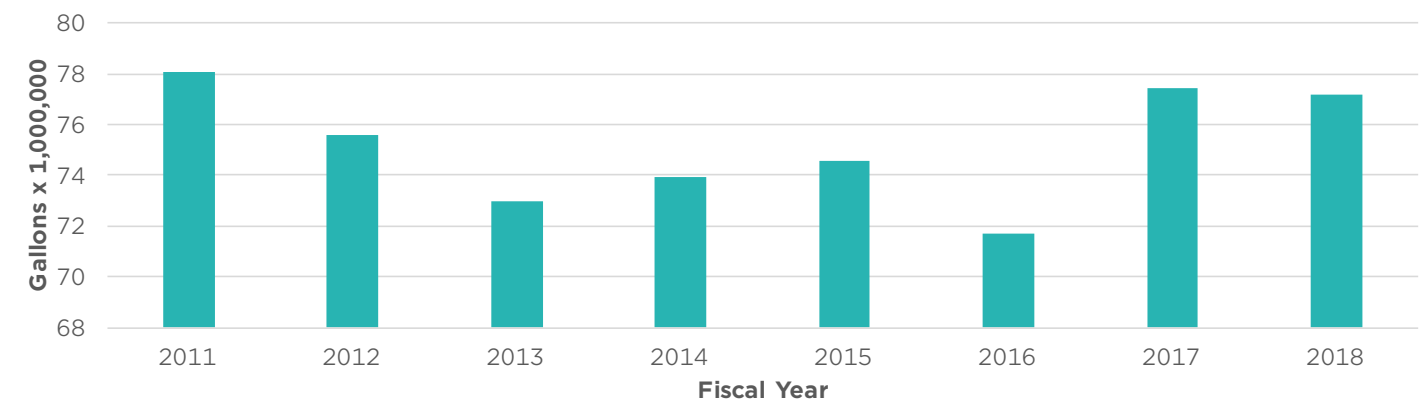


# Medford/Somerville Campus

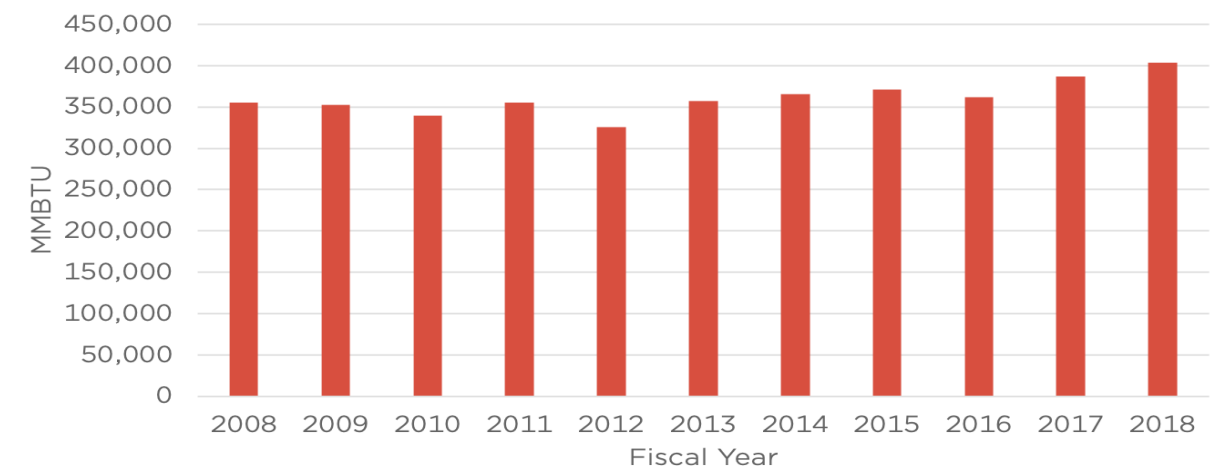
Medford/Somerville Campus Total Waste (FY 2017)



Medford/Somerville Campus Water Use (FY 2011 - 2018)



Medford Campus Energy Use (FY 2008 - 2018)





# ACKNOWLEDGMENTS

## DISCLAIMER

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 Years 2017 and 2018 (June 2016 – July 2018).

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](mailto:sustainabilityoffice@tufts.edu)**

## DEPARTMENTS & PROGRAMS

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

- Administrative Services
- Campus Services
- Capital Projects
- Center for the Enhancement of Learning and Teaching
- Climate Policy Lab
- Controller (Finance Division)
- Dining Services
- Educational Technology Services
- Environmental Studies
- Environmental Health and Safety
- Facilities Services
- Fletcher School Office of Admissions and Financial Aid
- Gordon Institute
- Office of the President
- Office of the Provost
- Office of Sustainability
- Operations
- Public and Environmental Safety
- Tufts Eco-Ambassadors
- Tufts Eco-Reps
- Tufts Energy Group
- Tufts Food Rescue Collaborative
- Tufts Institute of the Environment

- Tufts School of Dental Medicine Administration
- SMFA Admissions
- SMFA Sustainability Task Force
- Stockholm Environmental Institute
- Urban and Environmental Policy and Planning
- University Advancement

## DATA & FEEDBACK

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# PHOTOGRAPHY

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