GW'S PROGRESS TOWARD URBAN SUSTAINABILITY

The George Washington University Sustainability Vision and Mission

The university envisions a future with healthy and thriving resource systems for all. In an effort to enhance its campus, the nation's capital, and the world at large, GW is building a greener campus, providing research and intellectual discourse on policies and technologies for sustainable systems and equipping students with the skills and knowledge to contribute to a sustainable future.

GOALS AND PERFORMANCE

In 2012, GW established seven overarching goals through the Ecosystems Enhancement Strategy. Building on GW's Climate Action Plan and GWater Plan, the strategy maps a route to meet sustainability commitments.

The strategy is formed around GW's recognition of the connection between people and nature and the need to protect and, if possible, regenerate ecosystem services on campus, in the community, in the surrounding watershed and globally.

For each of the seven goals, GW developed targets that help the university meet the unique challenges of an urban setting. This summary includes a high-level overview of how GW plans to meet these goals and examples of progress and performance.

A more comprehensive analysis of GW's sustainability progress is scheduled to be released fall/winter 2017 and can be found here:

go.gwu.edu/UrbanSustainabilityProgress

FROM THE CAMPUS TO THE WORLD: THINKING STRATEGICALLY

From climate change to natural resource depletion to the loss of biodiversity, living sustainably has become one of the central challenges of our time. While these trends pose risks to institutions, countries and the planet, they also provide opportunities for innovation.

As an institution of higher education in the heart of the nation's capital, GW has a unique contribution to make and is committed to developing, piloting and demonstrating models for urban sustainability. The university provides a test bed, a safe space for learning and inquiry, and opportunities to amplify what we learn and accomplish.

The university takes a comprehensive, strategic approach to sustainability that encompasses its physical footprint, as well as academics, and seeks to extend its influence beyond its campuses to benefit communities locally and globally.

THE UNIQUE OPPORTUNITY OF AN INSTITUTION OF HIGHER LEARNING

Put our heads together
GW is one of a handful of organizations exploring how an institution can enhance ecosystem services. This is a rich opportunity to bring together the resources on campus, the energy and dedication of our students, staff and faculty and the platform a university provides for sharing insights.

Practice what we teach
Our campuses provide living laboratories for exploring approaches to sustainability challenges that many public and private institutions have in common. By setting ambitious goals and targets, testing ways to meet them and reporting on our progress, we can help advance urban sustainability.

Run on student energy
Students provide ideas, passion and influence on sustainability issues across our campuses. They drove our initial sustainability initiatives and remain engaged in many ways: for instance, through student groups on campus; academic work and living labs; and our Eco-Equity Challenge. They also participate as Eco-Reps and sustainability interns.

GOAL 1 | NATURAL SPACE

STRENGTHEN HABITAT AND OPTIMIZE NATURAL SPACE

Our goal is to enhance natural ecosystems by increasing green space on our campus, enriching biodiversity, using native and non-invasive plants and reducing light pollution from our buildings and exterior campus lighting. Our Sustainable Landscape Guidelines help us manage our green spaces as a regenerative landscape that draws from the self-healing and self-organizing capacity of natural plant communities. We also prioritize converting impermeable spaces (such as parking lots) to permeable spaces (such as gardens, water reclamation parks and green roofs), and we use natural alternatives to pesticides.

PESTICIDE FREE SINCE 2014*

667,000 **BENEFICIAL INSECTS** (SUCH AS LADYBUGS AND GREEN LACEWINGS) **RELEASED ANNUALLY TO HELP MANAGE PESTS**

GOAL 2 | AIR AND CLIMATE

PROMOTE HEALTHY AIR AND CLIMATE

To achieve our goal for carbon neutrality by 2040, outlined in our Climate Action Plan, we are working to reduce our carbon footprint through more efficient buildings, use of renewable energy, reduced travel and commuting and by partnering to reduce the overall dependence of our region on carbon-intensive energy. We aim to improve air quality with interior green spaces, low-emitting interior finishes, building flush-out and by maintaining the tree canopy and green cover across our campuses. Many GW buildings are Leadership in Energy and Environmental Design (LEED) rated, with energy- and water-efficient equipment, green roofs and rainwater reuse systems among other sustainable features.

50% **OF OUR ELECTRICITY** COMES FROM **SOLAR ENERGY**

28%↓ **REDUCTION** IN **GREENHOUSE GAS EMISSIONS** BETWEEN **2008** AND **2016**

12 **LEED RATED BUILDINGS**

2 **LEED RATED INTERIORS**

GREENHOUSE GAS EMISSIONS
Progress Toward Target

2008 Baseline	**2016** Status	**2025** Target	**2040** Target
128,200 MTCDE[1]	28% Reduction	40% Reduction	100% Reduction (Carbon Neutral)

[1] MTCDE is Metric Tons of Carbon Dioxide Equivalent

GOAL 3 | FRESH WATER

FOSTER CLEAN AND ABUNDANT FRESH WATER

As outlined in the GWater Plan, GW is committed to reducing water consumption, increasing rainwater retention, enhancing water quality and reducing the use of bottled water. There are campus locations that retain stormwater to use for everything from irrigating plants to providing water for toilets and decorative fountains. To help curb the use of bottled water on campus, we installed water bottle filling stations to encourage the GW community to drink filtered tap water instead of bottled water.

67 **WATER BOTTLE FILLING STATIONS**

RESULTING IN AT LEAST 780,000[2] **BOTTLES FILLED**

TRANSFORMED A PARKING LOT ("SQUARE 80") INTO A GREEN SPACE THAT RECLAIMS WATER

7 LOCATIONS ON CAMPUS OUTFITTED TO **COLLECT STORMWATER FOR REUSE** WITH A **RETENTION CAPACITY** OF APPROXIMATELY **92,000 GALLONS***[2]

WATER CONSUMPTION
Progress Toward Target

2008 Baseline	**2016** Status	**2018** Target
286,000 Kgal	8.5% Reduction	25% Reduction

[2] Through 2016

GOAL 4 | FOOD

SUPPORT SUSTAINABLE FOOD PRODUCTION SYSTEMS

GW strives to provide sustainable, local food options for our campus and the broader community. For instance, the university donates food harvested from the Foggy Bottom Campus GroW Garden to a local food kitchen that prepares meals for the homeless. On campus, GW has worked to increase the availability of ecological, local, fair and humane food in institutional campus dining venues since 2014.* As student dining options have shifted to primarily retail dining establishments, we are engaging with those businesses to encourage best practices in sustainability and promote sustainable food choices for students.

18% **"REAL FOOD"** LOCAL, ECOLOGICAL, FAIR AND HUMANE **SERVED** IN **INSTITUTIONAL DINING VENUES DURING 2015**[3]

STUDENTS CAN BUY FOOD FROM LOCAL FARMS USING DINING CASH[4]

1,000 **POUNDS OF FOOD**

FROM THE GroW GARDEN CONTRIBUTED ANNUALLY TO **HELP PROVIDE MEALS** TO THE **HOMELESS**

[3] In 2014, the university committed to the Real Food Challenge for institutional dining venues. Starting in 2016, student dining options have shifted to primarily retail dining establishments.

[4] Including two local farmers markets and Community Supported Agriculture (CSA)

GOAL 5 | WASTE

OPTIMIZE WASTE DECOMPOSITION AND TREATMENT

GW has adopted a zero waste approach – reducing the amount of waste sent to landfills while increasing recycling, reuse and composting. The university has hired staff to address this effort, and we are seeing results with a decrease in waste to landfill and an increase in recycling. GW also instituted composting programs for catering services, the dining hall at the Mount Vernon Campus and for several of the food vendors operating on campus.

19%↓ **DECREASE** IN **TONS** OF **WASTE SENT** TO **LANDFILL SINCE 2006**

70+ **TONS** OF **USABLE ITEMS DONATED** THROUGH **"GREEN MOVE-OUT" SINCE 2014**

GW ZERO WASTE PLAN = LESS TRASH; MORE RECYCLING, REUSING AND COMPOSTING

DIVERSION RATE
Progress Toward Target

2012 Baseline	**2016** Status	**2020** Target
23.5% Diversion Rate	35.2% Diversion Rate	40% Diversion Rate

GOAL 6 | URBAN ENVIRONMENT

ENCOURAGE A NATURAL URBAN ENVIRONMENT THAT HELPS ENHANCE PHYSICAL, MENTAL AND SOCIAL WELL-BEING

GW works to increase access to green spaces and raise awareness of and engagement with natural ecosystems at the local, regional and global level. For example, the Eco-Equity Challenge connects our students with the community as they address environmental and social justice issues. From rain barrel projects to working with youth to map sustainability-related resources in their neighborhood, our students have an opportunity to improve their own sense of well-being by focusing on sustainability in an urban setting.

IN 2016…

4,276 **HOURS OF SERVICE PROVIDED** BY **707 PARTICIPANTS** ENGAGED IN SUSTAINABILITY-RELATED **VOLUNTEER PROGRAMS**

20 **SUSTAINABILITY SITES IMPACTED** THROUGHOUT THE **WASHINGTON METRO AREA**

7 ON OUR **FOGGY BOTTOM CAMPUS** IN THE **HEART OF URBAN D.C.**

GOAL 7 | INVESTMENT

DEVELOP SUSTAINABLE INVESTMENT STRATEGIES

GW is committed to developing a framework that will help consider sustainability trends and issues as we evaluate the risks and opportunities of the university's strategic investments. GW invests a portion of its $1.5 billion endowment in funds that include renewable energy, sustainable farming, carbon offsets, energy efficiency and clean energy solutions and other sustainable activities. We also invest in local community development financial institutions and manage a sustainable endowment fund – set up by the graduating class of 2007 – that supports projects for energy conservation and a more environmentally-friendly campus.

$21 MILLION+ **INVESTMENT** IN **FUNDS** IN **2016** WITH **SUSTAINABILITY-FOCUSED** AND **COMMUNITY-ORIENTED INITIATIVES**

LOOKING AHEAD

As an anchor institution in Washington, D.C., GW remains strongly committed to sustainability. The results presented here reflect eight years of GW's progress. The university will continue to update its strategy, goals and targets to drive further improvements.

Looking ahead, the university will dive deeper into how it uses fresh water, identify additional reduction opportunities and modify related targets if needed. The landmark Capital Partners Solar Project will continue to provide a living lab for students and a model for institutions seeking to purchase large-scale renewable energy. Another focus will be continuously expanding sustainable purchasing in the GW supply chain. The university will also develop an adaptation plan to prepare for the weather, infrastructure and health impacts that come with a changing climate.

*All years are fiscal years except for those noted with an asterisk.

MAPPING **GW'S PROGRESS** TOWARD
URBAN SUSTAINABILITY

THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, DC

SPOTLIGHT ON ACHIEVING 50% SOLAR POWER THROUGH INNOVATIVE PARTNERSHIPS

In January 2017, GW celebrated the university's first full year of receiving half our electricity from three solar farms in North Carolina. The solar project, a key part of meeting our commitment to reduce campus greenhouse gas (GHG) emissions by 40 percent by 2025, was conceived, financed and built through an innovative partnership formed by GW. This project has become a model for other institutions seeking to leverage their buying power and expand their renewable energy options.

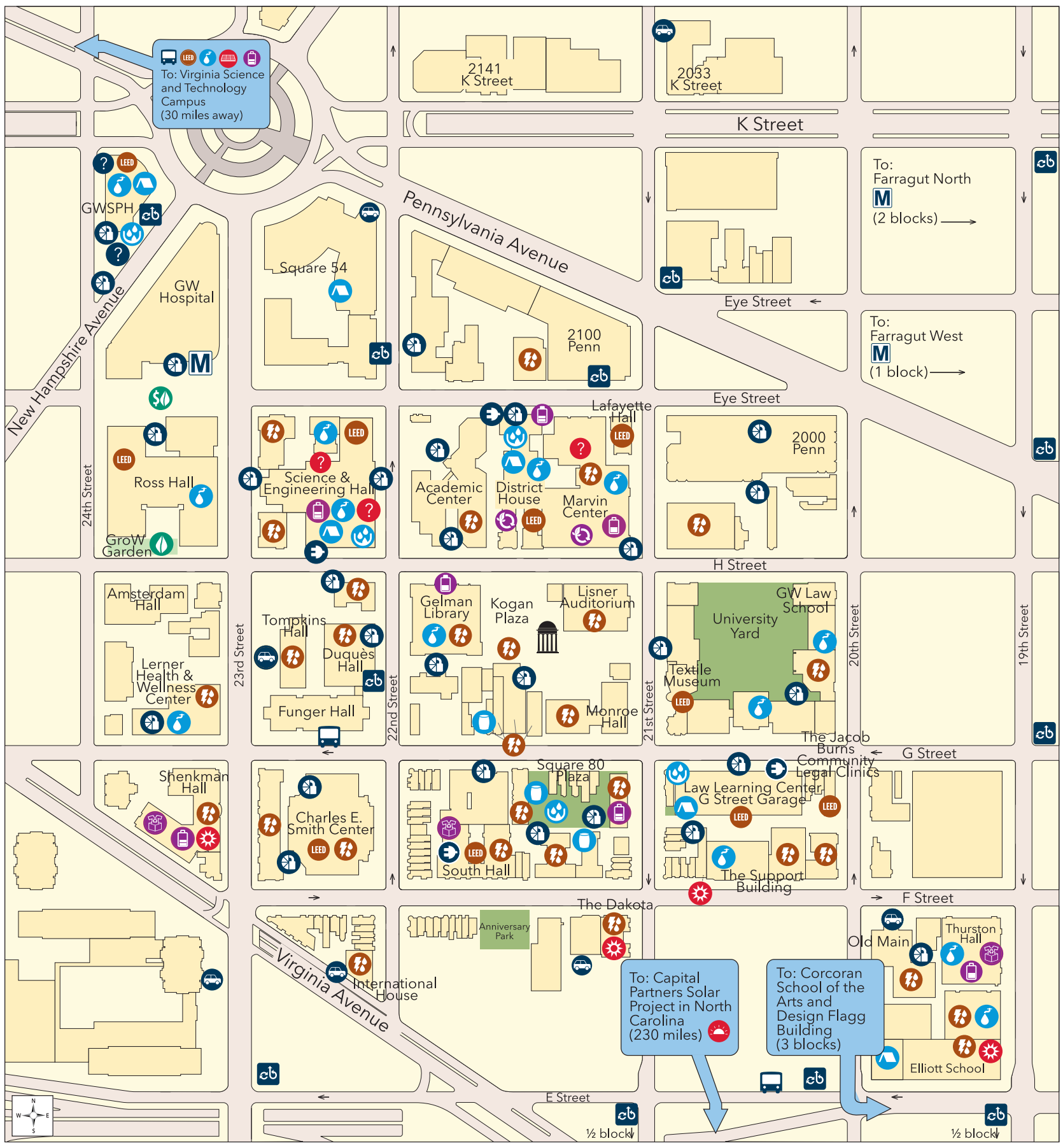
In our close urban quarters, GW lacks the space to make a meaningful dent in electricity consumption using on-site solar, so we had to look elsewhere. Together with the George Washington University Hospital and American University – collectively the Capital Partners Solar Project – we purchase 100 percent of the output from a 53.5-megawatt solar photovoltaic system, cutting our collective carbon footprints by the equivalent of 18,000 cars. When fully operational in 2017, GW will reduce its GHG footprint by an estimated 39 percent compared with 2008.

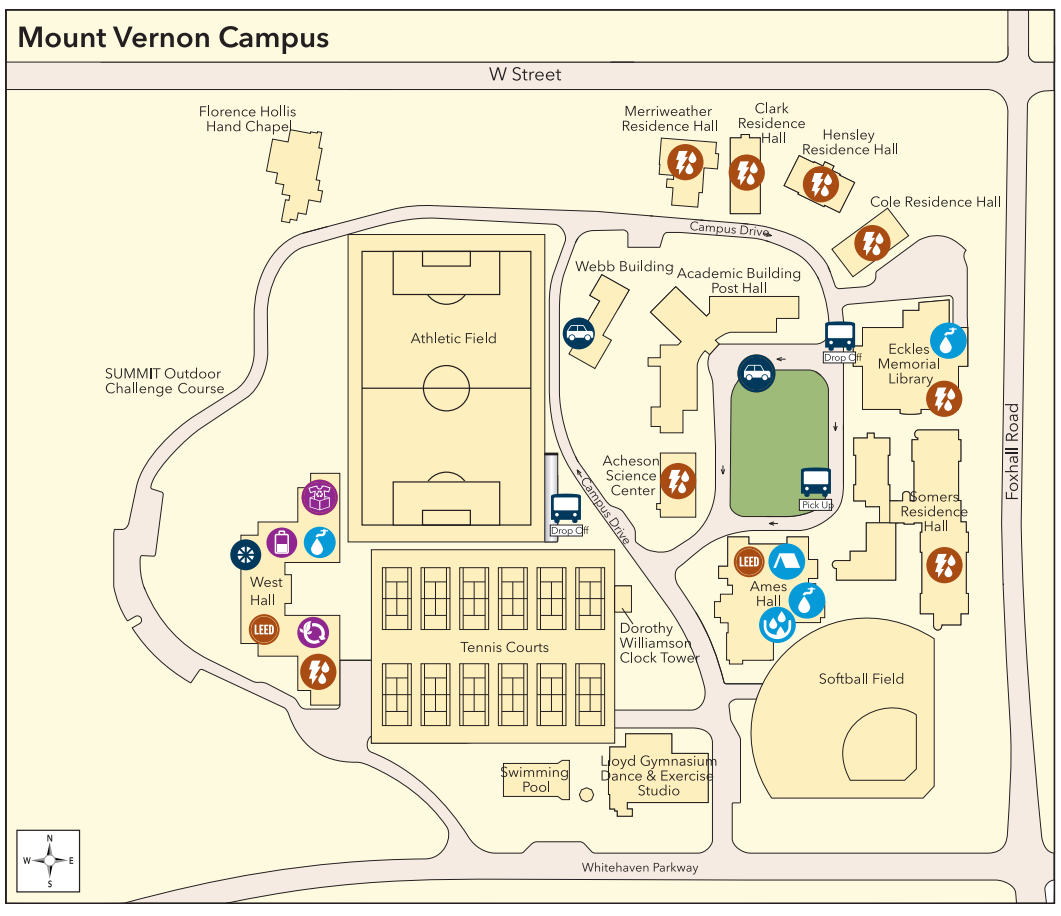
SPOTLIGHT ON LEED-ING THE WAY TO MORE SUSTAINABLE BUILDINGS

In 2007,* GW pledged that all new buildings would meet a high standard of sustainability – specifically, Leadership in Energy and Environmental Design (LEED) Silver or better. Ten years later, we have made good on the commitment: There are 12 LEED-certified buildings and two LEED-certified interiors on GW's campuses, including eleven Gold and one Platinum.

In some ways, improving the efficiency of existing buildings is even more difficult than designing efficiency in from the start. Yet the vast majority of GW's energy and water use occurs in existing buildings rather than new construction. Inspired in part by student interest, faculty and staff took up the challenge and established a fund to finance sustainability improvements within existing buildings, which evolved into the Eco-Building Program. In its first six years, the program invested more than $20 million to address 48 buildings, representing over half of GW's square footage. Projects included retrofitting tens of thousands of lights and modifying or replacing more than 1,800 toilets, 1,600 showerheads and 2,800 aerators. The university plans to continue these efforts for another four years.

SUSTAINABILITY AT GW





KEY

TRANSPORTATION
- Metrorail Station
- Electric Car Charging
- Bike Racks
- University Shuttles
- Capital Bikeshare
- Carshare
- Employee Shower Pass
- Transportation Kiosk

GREEN BUILDINGS
- LEED Building
- Eco-Building Program Enhancements

WATER
- Water Bottle Filler
- Storm Water Capture
- Green Roof
- Rain Barrels

WASTE
- Composting
- E-cycling
- Clothing Bins
- Recycling centers are located at all facilities

ENERGY
- Solar Thermal Hot Water Systems
- Eco-Building Kiosk
- Capital Partners Solar Project
- Solar Walkway

FOOD
- Farmers Market
- Community Garden

SPOTLIGHT ON EMBEDDING SUSTAINABILITY IN OUR ACADEMIC PROGRAMS

GW is committed to enhancing and promoting sustainability research, academics and programs. Interdisciplinary problem solving is the key to finding solutions for challenges such as climate change, clean energy, biodiversity loss and sustainable agriculture. At GW, students have the opportunity to choose from 470 courses with sustainability-related content and a number of degree programs at both the undergraduate and graduate levels.

The university also established a sustainability minor – GW's first interdisciplinary degree program, which attracts 150 students each year. Led by the GW Sustainability Collaborative and team-taught by faculty from five different schools within the university, the minor introduces students to the concepts, principles and issues that inform the sustainability paradigm. It integrates classroom and community-based learning and research to prepare students to make meaningful contributions as they enter the professional world.

SPOTLIGHT ON LINKING STUDENTS TO THE COMMUNITY THROUGH ECO-EQUITY CHALLENGE

Many students come to GW wanting to change the world for the better. Through the Eco-Equity Challenge, GW encourages undergraduate and graduate students to put their passions to work by finding solutions to environmental and social justice issues. The program provides funding and other support to help student entrepreneurs pursue projects that deliver positive environmental and social impact in underserved or low-income neighborhoods in Washington, D.C. To qualify, projects must also raise awareness within the GW community about environmental or climate justice. The program links students to the broader community, helping build their understanding of challenges in an urban environment – and how to solve them – and sharing what they learn with others at the university. Past projects have included community-based mapping and geography education for middle school students, establishing a peace garden for an elementary school afterschool program and working with high school students to monitor emissions in underserved neighborhoods.

*All years are fiscal years except for those noted with an asterisk.

For more information on GW's sustainability efforts, visit: **sustainabilityoffice.gwu.edu**

To read the full sustainability report, visit:
go.gwu.edu/UrbanSustainabilityProgress