

MAPPING GW'S PROGRESS TOWARD SUSTAINABILITY

2017-2018

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 roughly 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 (CPSP) – 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. In 2017, when CPSP became fully operational, GW reduced its building-related energy emissions by 49 percent compared with 2008. This reduction is primarily attributed to CPSP and Eco-Building measures.

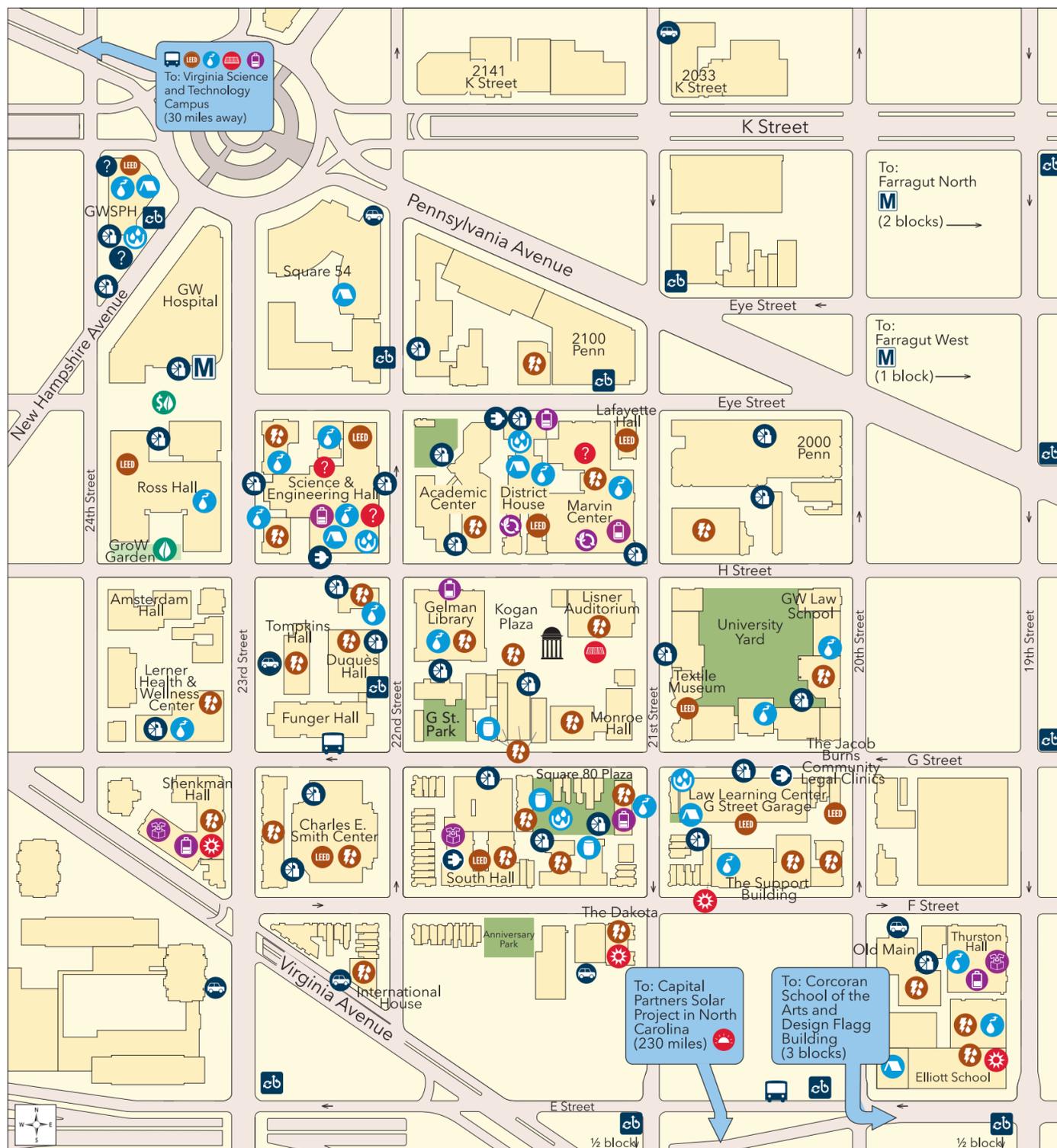
SPOTLIGHT ON LEED-ING THE WAY TO MORE SUSTAINABLE BUILDINGS



In 2007,* GW pledged that all new buildings would meet a high standard of sustainability – specifically, Leadership in Energy and Environmental Design (LEED). Ten years later, we have made good on the commitment: There are 12 LEED-certified buildings and three LEED-certified interiors on GW's campuses, including twelve 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 \$25 million to address 62 buildings, representing over 70 percent of GW's square footage. Projects included retrofitting tens of thousands of lights, upgrading HVAC systems, fixing or replacing more than 2,100 toilets, 1,700 showerheads and 3,100 aerators – with plans to continue these efforts for another four years.

SUSTAINABILITY AT GW



KEY

TRANSPORTATION

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

WATER

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

ENERGY

- Solar Thermal Hot Water Systems
- Eco-Building Kiosk
- Capital Partners Solar Project
- Solar Charging Station

WASTE

- Composting
- E-cycling
- Clothing Bins

FOOD

- Farmers Market
- Community Garden

GREEN BUILDINGS

- LEED Building
- Eco-Building Program Enhancements

- Recycling centers are located at all facilities

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 781 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 hundreds of students each year. 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 after school program and working with high school students to monitor emissions in underserved neighborhoods.

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



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

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

GW'S PROGRESS TOWARD 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 can be found here:

go.gwu.edu/SustainabilityProgress

FROM THE CAMPUS TO THE WORLD: THINKING STRATEGICALLY

From climate change to natural resource depletion to the loss of biodiversity, living sustainably on earth 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 in emerging fields and effective financial policies that truly account for the value of natural resources.

As an institution of higher education in the heart of the nation's capital, GW has a unique contribution to make to address these challenges. GW is committed to developing, piloting and demonstrating models for urban sustainability and resilience. 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 and financial resources, as well as academics and research; sets ambitious goals and targets; and seeks to extend our influence beyond GW's campuses to mitigate risk and seize opportunities for innovations that will benefit the university, society and the planet.

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 energy and dedication of our students, faculty and staff to use the platform a university provides for sharing insights and increasing the impact on and off campus.

Practice what we teach Our campuses provide living laboratories for exploring approaches to sustainability challenges. By setting ambitious goals and targets, testing ways to meet them and reporting on our progress, we can help advance urban sustainability and resilience.

Run on student energy Students influence sustainability issues at GW. They drove our initial sustainability initiatives and remain engaged in many ways through campus activism, academics and community service.

Starring our faculty Through our faculty's provocative research and challenging courses, they provide insight and knowledge to both students and local and global partners, in and out of the classroom. Their work is impacting areas ranging from urban sustainability to energy law and from engineering to public health to corporate responsibility.

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 insecticides.



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.



OF OUR ELECTRICITY COMES FROM SOLAR ENERGY

22% ↓

REDUCTION IN GREENHOUSE GAS EMISSIONS BETWEEN 2008 AND 2017



GREENHOUSE GAS EMISSIONS Progress Toward Target



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 1,380,000 BOTTLES FILLED



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

8 LOCATIONS ON CAMPUS OUTFITTED TO COLLECT STORMWATER FOR REUSE WITH A RETENTION CAPACITY OF APPROXIMATELY 99,000 GALLONS²

WATER CONSUMPTION Progress Toward Target



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 Community Garden to a local food kitchen that aims to end chronic homelessness. 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.



14%

"REAL FOOD" LOCAL, ECOLOGICAL, FAIR AND HUMANE SERVED IN INSTITUTIONAL DINING VENUES DURING 2016³



STUDENTS CAN BUY FOOD FROM LOCAL FARMS USING DINING CASH⁴



500



POUNDS OF FOOD FROM THE GroW COMMUNITY GARDEN CONTRIBUTED ANNUALLY TO HELP PROVIDE MEALS TO INDIVIDUALS EXPERIENCING HOMELESSNESS

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 students, catering services, the dining hall at the Mount Vernon Campus and for several of the food vendors operating on campus.



23% ↓

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



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 2017...



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. In early 2018, in response to student interest, the university committed to creating a \$2 million sustainable investment fund to direct a portion of the endowment to investments meeting environmental, social and governance (ESG) criteria. We also 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.

\$22 MILLION+

INVESTMENT IN FUNDS IN 2017

WITH SUSTAINABILITY-FOCUSED AND COMMUNITY-ORIENTED INITIATIVES

LOOKING AHEAD

As an anchor institution in Washington, D.C., GW has a steadfast commitment to sustainability. The results presented here reflect nearly a decade 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 campus will continue to provide a living lab for students and faculty alike, and we will expand sustainable purchasing and enhance the biodiversity of GW's urban landscapes. The university will also develop an adaptation plan to prepare for the impacts of a changing climate. And we will evaluate new approaches to sustainable food.

GW's biggest impacts arguably result from the work of its students and alumni on and off campus. GW will continue to invest in its students and their efforts as change agents for sustainability, and we will enhance alumni engagement on sustainability.

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