

Johns Hopkins University

# JHU CLIMATE ACTION & SUSTAINABILITY PLAN

Fall 2024



Climate & Sustainability



---

# TABLE OF CONTENTS

Letter from Co-Chairs	3
Overview	4
Community Engagement	5
Vision & Guiding Principles	6
Research, Teaching, & Scholarship	7
Climate Action	12
Built & Natural Environments	19
Responsible Consumption	25
Transportation & Mobility	29
Implementing the Plan	32
Acknowledgments	33

---

# LETTER FROM CO-CHAIRS

## Dear Members of the Johns Hopkins University Community,

It is with great pleasure that we share the final Climate Action and Sustainability Plan for Johns Hopkins University. The framework emphasizes the connections between, and commitment to, our environment, our university, and our communities in Baltimore and beyond. Embodying the One University focus in the *Ten for One* strategic vision, the process of developing this plan built relationships across schools and divisions, all united in a shared commitment linking operations, education, research, and community engagement in pursuit of a healthier and sustainable future for all.

Our gratitude goes out to the countless groups and individuals who helped to shape this framework. From those who participated in our advisory and working groups, to those who attended town halls or shared written comments—your input was invaluable in creating a plan reflective of the whole university and our partners.

We also recognize the importance of addressing our community's environmental footprint within the contexts of our region and shared history. This includes acknowledgment that our university is located on the unceded homelands of Indigenous Peoples, including the Piscataway and Susquehannock tribes, who served as stewards of the natural environment in our region for generations. It also means recognition of local, national, and international communities that have been disproportionately impacted by the effects of climate change, environmental degradation, and pollution—and committing ourselves to working toward a more equitable future through the actions identified in this plan.

Recognizing the gravity of the climate crisis for all life on our planet, this plan accelerates actions already underway. Through this plan, Johns Hopkins University commits to fast-track the development of solutions that draw on our strengths in research, academics, stewardship, and community engagement. Whether conducting research, educating the next generation of leaders, or transforming our campuses, JHU will play a key role in fostering change at all scales.

The publication of this plan marks the next chapter of a journey, not the end. We look forward to the challenging work ahead to implement this framework and achieve its stated goals—an effort that will forge and strengthen countless relationships and connections along the way.

Sincerely,

**Julian Goresko**, Director of Sustainability

**Megan Latshaw**, Associate Teaching Professor, Department of Environmental Health and Engineering

**Benjamin Zaitchik**, Professor, Department of Earth and Planetary Sciences

**Co-Chairs of the Climate Action and Sustainability Plan Steering Committee**

# OVERVIEW

## PURPOSE OF THE PLAN

Human-induced climate change and the sustainability of natural systems is one of the dominant global challenges of our time—one that will have far-reaching impacts, both at home and across the world. Climate change is already manifesting as extreme heat, poor air quality, and flooding events, all of which are threatening health, well-being, and vitality across the globe, including in JHU and our communities.

This is why JHU has chosen to act ambitiously to help mitigate climate change by reducing our emissions and addressing our full environmental footprint while we work to adapt to its unavoidable impacts. We will do this through our operations, in our research and education mission, and as part of our responsibility to advance healthy environments in our neighboring communities and around the world on a just and equitable basis.

This plan engages the concept of sustainability as the term was used by the United Nations Brundtland Commission on sustainable development: “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” This general definition informs the plan’s vision and goals and provides a foundation as it applies to the university’s academic mission, operations, and values.

To guide these efforts, the Climate Action and Sustainability Plan sets out the means for JHU to directly respond to climate change and to bolster our commitment to holistic sustainability. It outlines a series of strategic goals, objectives, and actions JHU seeks to advance over the next 10 years, and will prioritize in its philanthropic efforts, while laying the groundwork for initiatives that require longer planning and coordination. Addressing the areas of research, teaching, and scholarship; climate action; built and natural environments; responsible consumption; and mobility and transportation, this new universitywide plan will leverage JHU’s unique interdisciplinary expertise to create a clear and collaboratively developed vision for a sustainable future.

This is not a moment for complacency. We are poised at an inflection point for how life on our planet will look for the next several generations. JHU is no stranger to acting boldly in the face of society’s most pressing challenges, and climate action and sustainability should be no exception.

## HOW TO READ THIS DOCUMENT

### SCOPE OF THE PLAN

This plan was developed to address the entire university with a particular emphasis on Homewood, East Baltimore, the Applied Physics Laboratory, and Washington D.C. campuses.

### KEY TERMS

*The following terms are important to the plan’s organization:*



**VISION AND GUIDING PRINCIPLES:** The plan’s “north star” and the values with which all efforts should be aligned



**GOALS:** Specific ambitions that will help achieve the plan’s overall vision and align with its guiding principles



**OBJECTIVES:** Descriptions of the overall direction or effort needed to achieve the goal



**KEY ACTIONS:** Individual steps that guide implementation of the plan goals and objectives



**SPOTLIGHTS:** Summaries that add depth and detail to key initiatives included in the plan

## A Dynamic Stakeholder Engagement Process

The JHU Climate Action and Sustainability Plan was developed through extensive campus and local community stakeholder engagement over the course of two years. Led by the Sustainability Plan Steering Committee and supported by the Office of Climate and Sustainability, three advisory groups, and four technical working groups, this plan was shaped by nearly 2,000 students, faculty, staff, alumni, and regional community partners.

Throughout the process, there were multiple opportunities for stakeholders to learn about the plan and contribute to its development both in person and virtually. This initially included a campuswide survey to inform the vision and guiding principles and a series of 11 topical workshops to generate ideas and recommendations for the specific goals, objectives, and actions that comprise the plan. Once a draft was in place, two town hall events provided a forum for feedback and discussion, various academic partner events demonstrated the many climate- and sustainability-related teaching and research efforts, and an online interactive platform gave participants the opportunity to read and comment on the draft, which directly informed updates to the final plan.

The feedback received throughout the engagement process was essential to ensuring that the plan's priorities reflect the breadth of perspectives across the university—and that the needs and values of our campuses, our local communities, and the global audiences that our teaching and research reach are kept at the forefront.

# COMMUNITY ENGAGEMENT



Students and faculty engaging at the 2023 Academic Sustainability Fair

# VISION & GUIDING PRINCIPLES

## Vision

*Advance healthy, just, and sustainable environments in our communities and around the world*

## Guiding Principles



### **Innovation and Discovery**

*Leverage our research and teaching to accelerate sustainability innovations that contribute to solving the world's most pressing environmental challenges*



### **Urgency for Climate Action**

*Accelerate solutions that combat the climate crisis through education, research, and the rapid and responsible decarbonization of our campuses*



### **Community Partnership**

*Build transparent, collaborative, and lasting partnerships that embrace diversity, ensure all voices are heard, and address local community priorities*



### **Justice and Equity**

*Consider the impacts of our environmental footprint and ensure sustainability actions are undertaken on a just and equitable basis*



### **Environmental Stewardship**

*Foster a culture of stewardship, conservation, and resource efficiency in our daily operations*



### **Protecting Health**

*Champion solutions that protect the health of all people and our planet*



### **Accountability and Impact**

*Prioritize impactful outcomes that are scalable, cost-effective, and account for externalities*

# RESEARCH, TEACHING, & SCHOLARSHIP

JHU is at the forefront of best-in-class academic research. As an eminent institution of higher education, JHU is uniquely positioned to be a leader in spheres of sustainability and the environment.

Climate change, alongside other accelerating environmental stressors, poses daunting sustainability challenges for human health, security, and inclusive well-being. These challenges are at once global in scope and highly localized in impact, where local economies, communities, and marginalized groups are often at greatest risk. Importantly, these challenges are not amenable to singular technological or policy solutions. They are complex problems, in which stakeholders have radically different worldviews and different frames for understanding the problem, thereby demanding interdisciplinary solutions. Processes for building our collective knowledge, capacity, and solutions can matter as much as articulation of the problem itself.

As such, our goals for research, teaching, and scholarship are solutions oriented and build on JHU's people-centered approach to knowledge. The world needs innovative, democratic, equitable, and durable solutions. JHU has the right combination of cross-disciplinary expertise, institutional ethos and reputation, and geographic position to be a leading source of much-needed innovation—and to prepare its students and communities for a rapidly changing world.

# RESEARCH, TEACHING, & SCHOLARSHIP

## GOAL 1

Establish JHU as a leading source of solutions in the transition to a low-carbon, healthy, and resilient future

### OBJECTIVE 1.1

Accelerate cross-disciplinary collaboration for planetary health and environmental justice, locally and globally

#### KEY ACTIONS

- **Launch a Johns Hopkins Institute for Planetary Health** to further establish JHU as a global leader in addressing the health and humanitarian dimensions of the climate crisis
- **Partner with national, state, and local governments and organizations** in the U.S. and internationally to generate and evaluate innovative sustainability interventions, programs, and policies
- **Establish translational research relationships beyond JHU** to advance bold new adaptations that protect society from the worst impacts of climate change

### OBJECTIVE 1.2

Develop transformative innovations in climate science and energy systems

#### KEY ACTIONS

- **Through the Ralph O’Conner Sustainable Energy Institute and other university initiatives**, lead in sustainable energy and green systems innovation with scientific breakthroughs, tools, policy solutions, and training of climate leaders
- **Leverage the Applied Physics Lab and other JHU capabilities** to expand climate-informed science and decision making by monitoring planetary change, including new threats such as climate tipping points
- **Stimulate and incubate sustainability entrepreneurship** through Johns Hopkins Tech Ventures and other start-up mechanisms





# RESEARCH, TEACHING, & SCHOLARSHIP

## OBJECTIVE 2.1

Host transformative programs in multiple sustainability-oriented fields, including undergraduate and graduate degree programs and outreach programming

## KEY ACTIONS

- **Develop and strengthen cross-disciplinary and cross-divisional undergraduate, masters, and PhD programs** for students in sustainability, resilience, and environmental justice
- **Leverage JHU's strengths in health education and research** to become a global leader in advancing sustainability in medical, nursing, and public health training
- **Raise the profile of JHU's academic sustainability programs** through multisector partnerships that expand the impact of community leaders and experts and enhance regional outcomes
- **Advance community engagement for collaborative research and training** in sustainability and climate resilience, and build capacity for sustainability education locally, nationally, and in low- and middle-income countries

## GOAL 2

Develop the next generation of climate and sustainability leaders

## OBJECTIVE 2.2

Ensure that sustainability thinking infuses the academic experience, such that every JHU student can think critically about sustainability, knows what JHU is doing to advance sustainability, and has opportunities to actively participate

## KEY ACTIONS

- **Develop core sustainability, resilience, and environmental justice competencies** for all interested students
- **Establish incentives and seek philanthropic support** for faculty and students to engage in sustainability teaching, scholarship, and campus-based innovations, including through the Campus as a Living Laboratory program
- **Expand sustainability internship and service-learning programs** that enhance on-campus and community-based connections and provide students with meaningful applied learning and professional experiences
- **Strengthen sustainability-focused career service offerings** to enhance student knowledge of postgraduate career opportunities and competency requirements, and to foster green job career pipelines

## ***An Innovative, Multidisciplinary Initiative to Address the Climate Crisis***

Human activity is causing a planetary health crisis that is threatening humanity and the rest of life on Earth. Addressing this crisis demands urgent action and transformative innovation across nearly every dimension of human activity, from food and energy systems to manufacturing and the built environment. JHU is poised to become a global leader in planetary health—and doing so will require deep and sustained collaboration across our schools and disciplines.

To catalyze this effort, the university has launched a new Johns Hopkins Institute for Planetary Health (JHIPH). JHIPH will connect faculty, staff, and students across the university to understand and address the planetary health crisis through initiatives in four domains: research, education, policy, and practice—drawing on the immense strength of existing centers and institutes that include the Ralph O'Connor Sustainable Energy Institute, the SNF Agora Institute, the Applied Physics Laboratory, the Center for a Livable Future, and diverse departments and degree programs.

JHIPH will include collaborative working groups, new academic programs, and an interdisciplinary fellows program. It will cultivate an environment of purpose-driven innovation through seminars, workshops, and other events. The institute will also enhance the impact of JHU scholarship by connecting its affiliates and working groups with opportunities for policy outreach and community engagement. This includes working with the Planetary Health Alliance, a consortium of more than 466 institutions in over 76 countries that recently relocated its secretariat to JHU and is developing policy-oriented communications and collaborations in Baltimore, Washington, D.C., and beyond.

# THE JOHNS HOPKINS INSTITUTE FOR PLANETARY HEALTH

 **SPOTLIGHT**



*Students conducting field research with the Earth and Planetary Sciences Department*

# CAMPUS AS A LIVING LAB

## SPOTLIGHT



Students conducting field research in a first year seminar course with Dr. Katalin Szlavecz

## **Leveraging JHU Campuses for Innovation through Applied Sustainability Research and Teaching**

To support the plan's priorities spanning research, teaching, and operations, a new Campus as a Living Lab program was launched in early 2024. The program seeks to foster a culture of on-campus sustainability innovation by bringing together researchers, instructors, students, and staff to test sustainability solutions using JHU's physical campuses as learning tools.

The Campus as a Living Lab program was developed by an interdisciplinary working group of the Sustainability Leadership Council alongside the Office of Climate and Sustainability with the aim of harnessing JHU's identity as the nation's leading research institution and utilizing our campuses to inform solutions at the local and global scale. The program will take a variety of forms, including building mutually beneficial connections between faculty, students, and staff through applied course projects, collaborative research, grant funding opportunities, and more.

The program will include annual grant awards aimed at cultivating projects to advance JHU's Climate Action and Sustainability Plan's goals. Through on-campus sustainability projects, teaching, and research, the Campus as a Living Lab program will build a community of sustainability scholarship, innovation, and engagement within the very campuses where we live, work, and learn.

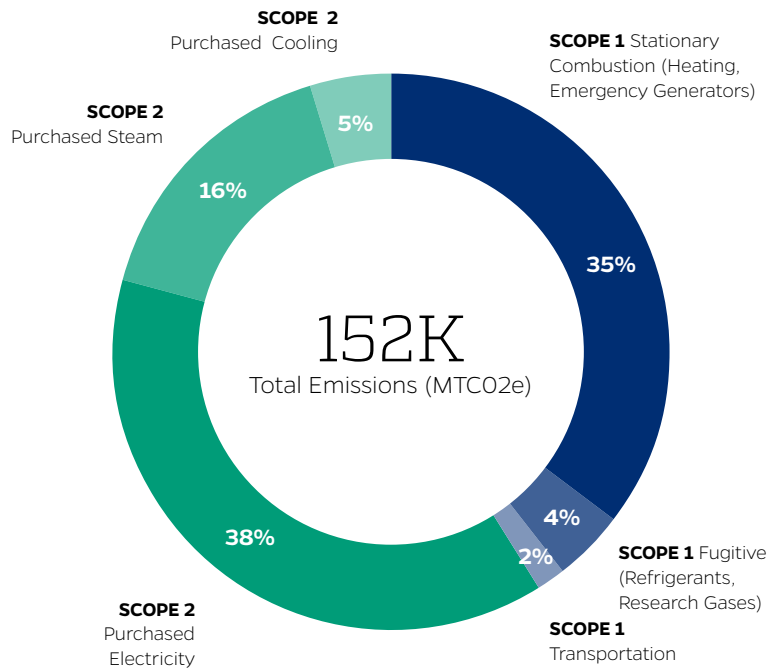
# CLIMATE ACTION

Climate change is a complex challenge requiring urgent action across all levels of society. In 2007, the President's Task Force on Climate Change was formed to develop a set of recommendations for reducing greenhouse gas emissions at JHU. At that time, students, faculty, staff, and regional partners strategized pathways to address climate change mitigation, culminating in a 51% greenhouse gas emissions reduction goal by 2025, which the university achieved early in 2022 following a landmark solar agreement. Since then, JHU has invested considerably in its infrastructure and buildings to utilize technologies that reduce emissions and increase energy efficiency. These initiatives have resulted in a steady decrease in the university's carbon footprint, but more accelerated action is needed.

JHU now commits to a target of net zero greenhouse gas emissions by 2040, with a series of interim targets along the way, to drastically reduce our carbon footprint in advance of regional targets in Maryland, D.C., and Baltimore City. We also commit to enhancing our ability to anticipate and adapt to a changing climate through careful planning and collaboration with local and regional partners. The impacts of climate change are already being felt and will increasingly challenge our health, operations, and infrastructure. Planning now will ensure the university is prepared for the long-term risks associated with climate change and the threats to our community and region.

# CLIMATE ACTION

## Baseline GHG Emissions Inventory (2022)



JHU's climate mitigation goals are based on a historic baseline from 2008 and updated in 2022 as part of the university's membership with the Climate Registry, which requires institutions to have their emissions verified by a third party and measured in accordance with the global Greenhouse Gas Protocol. Most of JHU's emissions come from buildings, with the main sources being heating, cooling, and the purchase of electricity.

## GOAL 3

**Boldly act to reduce greenhouse gas emissions**

### OBJECTIVE 3.1

Achieve net zero scope 1 and 2 greenhouse gas emissions by 2040

### KEY ACTIONS

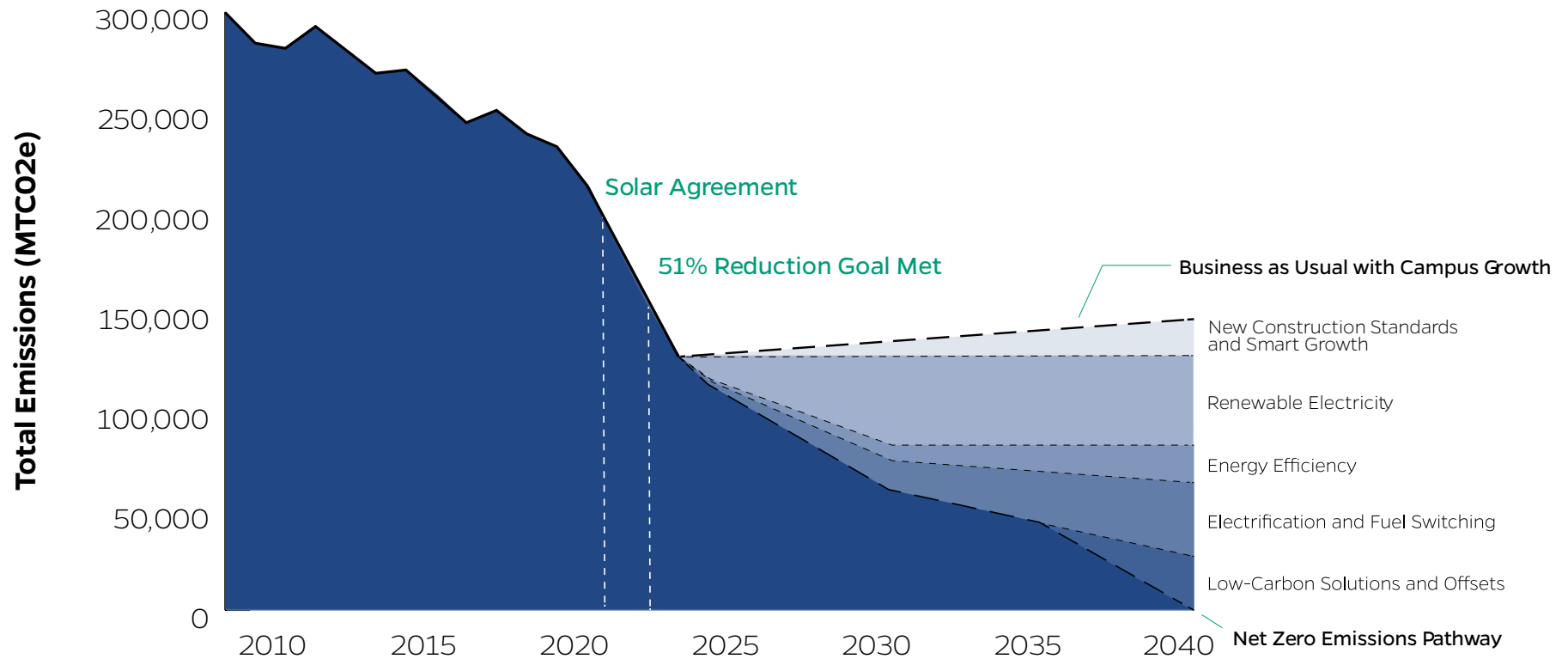
- **Reduce scope 1 GHG emissions 20% by 2030 and 100% by 2040 from a 2022 baseline**, emphasizing the phase-out of on-campus fossil fuels
- **100% of purchased electricity will be from renewable energy sources by 2030**
- **Develop decarbonization master plans and on-site renewable energy feasibility studies** for all JHU campuses
- **Publish and audit JHU's GHG inventory annually** in partnership with third-party verifiers to ensure data transparency and accuracy

# CLIMATE ACTION

## Pathway to Net Zero

### GOAL 3

Boldly act to reduce greenhouse gas emissions



JHU's pathway to net-zero, studied as part of the Carbon Roadmap, relies on the following strategies: new construction standards and smart growth, renewable electricity, energy efficiency, electrification and fuel switching, and low-carbon solutions and offsets.

The university's net-zero goal builds upon significant historic reductions in GHG emissions, including exceeding the goal set by the 2008 President's Task Force on Climate Change to reduce emissions 51% by 2025, which was achieved several years earlier in 2022, thanks to the largest renewable electricity agreement in the state of MD at the time of its signing.

# CLIMATE ACTION

## GOAL 3

**Boldly act to reduce greenhouse gas emissions**

### OBJECTIVE 3.2

Accelerate decarbonization and energy efficiency in existing buildings

#### KEY ACTIONS

- **Develop a prioritized action plan and continuous building commissioning program** to ambitiously reduce energy and emissions in existing buildings at each campus
- **Expand a JHU Green Labs program** to engage researchers, reduce emissions, and improve resource efficiency in laboratory spaces
- **Develop a dashboard** to track, report, and incentivize building energy and emission performance

### OBJECTIVE 3.3

Establish a scope 3 greenhouse gas emissions reduction initiative

#### KEY ACTIONS

- **Initiate data collection and measurement of scope 3 GHG emissions categories**, such as purchased goods and services, food, construction, commuting, business travel, and waste
- **Develop an implementation plan** to report and reduce scope 3 GHG emissions
- **Develop criteria for local, value-aligned carbon offsets** that reflect environmental justice and equity priorities



Solar panels on the Homewood Campus Recreation Center

# CLIMATE ACTION

## GOAL 4

Prepare our campuses and communities for future climate conditions

### OBJECTIVE 4.1

Integrate climate change impacts and adaptation strategies into campus plans and policies

#### KEY ACTIONS

- **Embed climate adaptation priorities into campus planning, design and construction, and health and safety policies**, accounting for regional community needs
- **Carry out climate risk assessments** for vulnerable campus locations and identify adaptation opportunities
- **Ensure the resiliency of campus locations** to anticipated climate hazards, and partner with surrounding neighborhoods to coordinate plans
- **Integrate projected cost savings and risk reductions** from adaptation-oriented decision making in capital project analyses

### OBJECTIVE 4.2

Partner to advance equitable climate adaptation in Baltimore and beyond

#### KEY ACTIONS

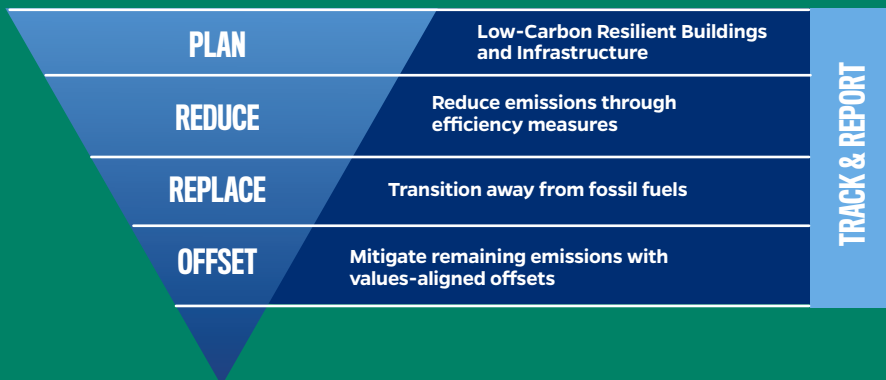
- **Advance neighborhood-scale climate resilience** through regional partnerships, such as Baltimore's Community Resilience Hub program
- **Collaborate with the City of Baltimore to increase community awareness** of natural hazards and climate change through the development of educational resources
- **Support acute disaster response with a working group** to develop a plan for identifying on-campus, community-accessible refuge spaces for extended disaster events and other ways to coordinate health care and services during shock events
- **Learn from our work with the City of Baltimore** to foster climate adaptation partnerships in other areas where JHU campuses are located



# Outlining a Plan to Reduce Energy and Emissions across JHU Campuses

As part of the planning process, a carbon roadmap was developed to explore pathways for reducing energy consumption and emissions, ensure that JHU’s climate goals are technically and economically feasible, and inform next steps and decision making. A working group consisting of 15 JHU staff, faculty, and students was convened to provide insights on local context, identify the unique challenges and opportunities that exist across JHU’s campuses, and collectively develop the vision to achieve net zero GHG emissions by 2040.

The carbon roadmap was grounded in a well-established hierarchy of steps (plan, reduce, replace, offset) to decarbonize portfolios of assets in a way that harnesses efficiencies and reduces costs. The analysis demonstrates that net zero emissions can be achieved cost effectively through the implementation of energy efficiency measures and the decarbonization of both JHU’s district energy systems and standalone buildings. The recommendations included in the report have informed numerous actions in this plan and have been incorporated into other policy documents, such as JHU’s High Performance and Healthy Building Requirements. Moving forward, decarbonization master plans and feasibility studies will be required to implement the carbon roadmap recommendations at JHU’s campuses in the coming years.



Net Zero Emissions

# CARBON ROADMAP

## SPOTLIGHT



Skipjack Solar Center, VA. Photo courtesy of the AES Corporation.

# CLIMATE ADAPTATION

## SPOTLIGHT



A rainstorm on the Homewood Campus

## ***A Proactive Approach to Understanding Climate Change Risks and Building Resilience***

The Climate Adaptation Report was developed in parallel to the plan to identify key climate-related vulnerabilities, risks, and priorities for JHU to address over the next 10 years and beyond. The climate risk assessment included in the report presents the likely risks that current and future climate conditions and hazards (e.g., extreme heat, severe storms, flood events) pose to JHU buildings, built and natural infrastructure, and university services.

Understanding how these hazards are projected to become more severe in the future will allow the university to take a science- and value-informed approach to identify the highest priority areas to prepare for and mitigate hazards before they occur. The Climate Adaptation Working Group, composed of 20 students, staff, faculty, and representatives of the City of Baltimore, took an equity-centered approach to this study to understand how future climate impacts could disproportionately affect vulnerable groups within the university and the broader surrounding community. The recommendations from this report have been integrated into the goals, objectives, and key actions of the plan and related scopes of work, and will continue to support future, climate adaptation, and resilience planning at JHU.

# BUILT & NATURAL ENVIRONMENTS

Addressing sustainability in our buildings is critical to meeting JHU's climate action goals and protecting occupant health and well-being. While approximately 90% of JHU's greenhouse gas emissions come from its buildings, JHU has not established a consistent approach to integrating sustainability into building projects across divisions. Creating and enforcing green building standards will embed sustainability through all stages of every project across the institution, enhance positive outcomes for occupants and the environment, and reduce cost premiums associated with sustainability measures. Ensuring the sustainability of our buildings, the sites they occupy, and the infrastructure they rely on will also add to the academic experience on campus and serve as teaching tools that complement curricular learning for students.

As JHU works to address sustainability in its buildings, we also commit to improving and expanding access to greenspace on our campuses that supports the surrounding regional ecosystems. JHU will continue to recognize and protect the role of greenspace in providing ecosystem services and social benefits including increased habitat and biodiversity, resilience to climate change, human health and well-being, and improved community linkages.

# BUILT & NATURAL ENVIRONMENTS

## GOAL 5

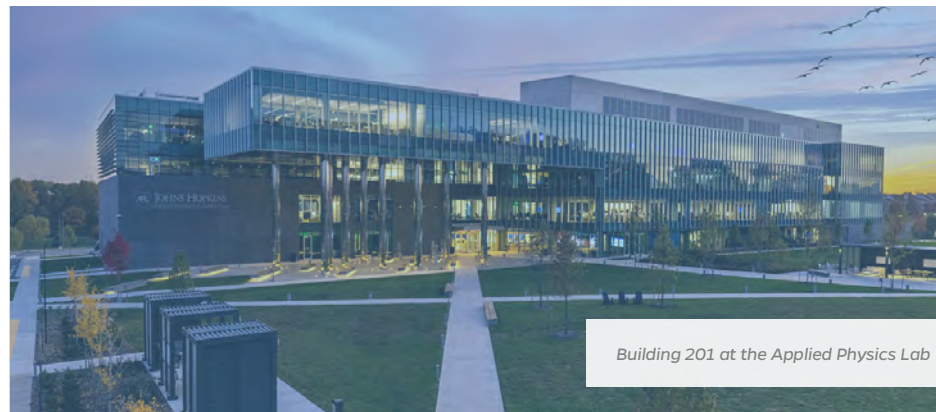
Plan, design, and operate buildings and campuses to safeguard environmental and human health

### OBJECTIVE 5.1

Embed sustainability and health into all campus planning

#### KEY ACTIONS

- **Ensure campus plans are developed, updated, and maintained regularly** to reflect best practices in sustainability and well-being
- **Standardize a range of workplace strategies and space use policies** to prioritize collaboration, adaptability, and efficient use of space
- **Collaborate with local communities** to identify sustainability planning priorities that align with regional co-benefits



### OBJECTIVE 5.2

Design and operate buildings to reduce emissions and provide healthy environments in which to work, learn, and thrive

#### KEY ACTIONS

- **Implement all-electric building standards** aligned with JHU's High-Performance and Healthy Building Requirements
- **Establish LEED Gold minimum certification** for major capital projects, and **pilot additional green building rating systems** to advance healthy and low-carbon design practices
- **Integrate sustainability priorities into campus design standards and guidelines at all JHU locations**, including tracking of embodied carbon in major capital projects
- **Enhance building standards, targets, and evaluation protocols for occupant well-being**—including thermal comfort, air quality, lighting, and acoustics
- **Implement design and operational strategies** to improve building performance and address occupant needs, including green cleaning practices

# BUILT & NATURAL ENVIRONMENTS

## GOAL 5

Plan, design, and operate buildings and campuses to safeguard environmental and human health



The Carey Business School in Harbor East

### OBJECTIVE 5.3

Align our leased spaces with climate and sustainability goals

### KEY ACTIONS

- **Account for emissions of leased spaces in JHU’s GHG inventory and prioritize decarbonization strategies** that support the university’s net zero goal
- **Evaluate feasibility and benefits of green leasing contract language** that aligns tenants, owners, and property managers around shared sustainability goals
- **Develop guidelines and metrics that aid decision-makers** in evaluating sustainability considerations in new and existing leases

# BUILT & NATURAL ENVIRONMENTS

## GOAL 6

Design and steward landscapes that enhance biodiversity, health, and community connections

### OBJECTIVE 6.1

All campuses have accessible greenspace to enhance biodiversity, support well-being, and increase climate resilience

#### KEY ACTIONS

- **Establish universitywide sustainable landscape guidelines** that address vegetation selection, grounds operations, and ecologically beneficial practices
- **Develop a university tree inventory, assess the viability and benefits of establishing Homewood Campus as a designated arboretum, and increase our tree canopy to support Baltimore’s goal of 40% tree cover**
- **Enhance access and quality of greenspaces, and build lasting partnerships and learning opportunities** among students, employees, and community members
- **Seek philanthropic support for expanding vegetable gardens and food production spaces**, partnering with local community organizations to share fresh produce with those in need

### OBJECTIVE 6.2

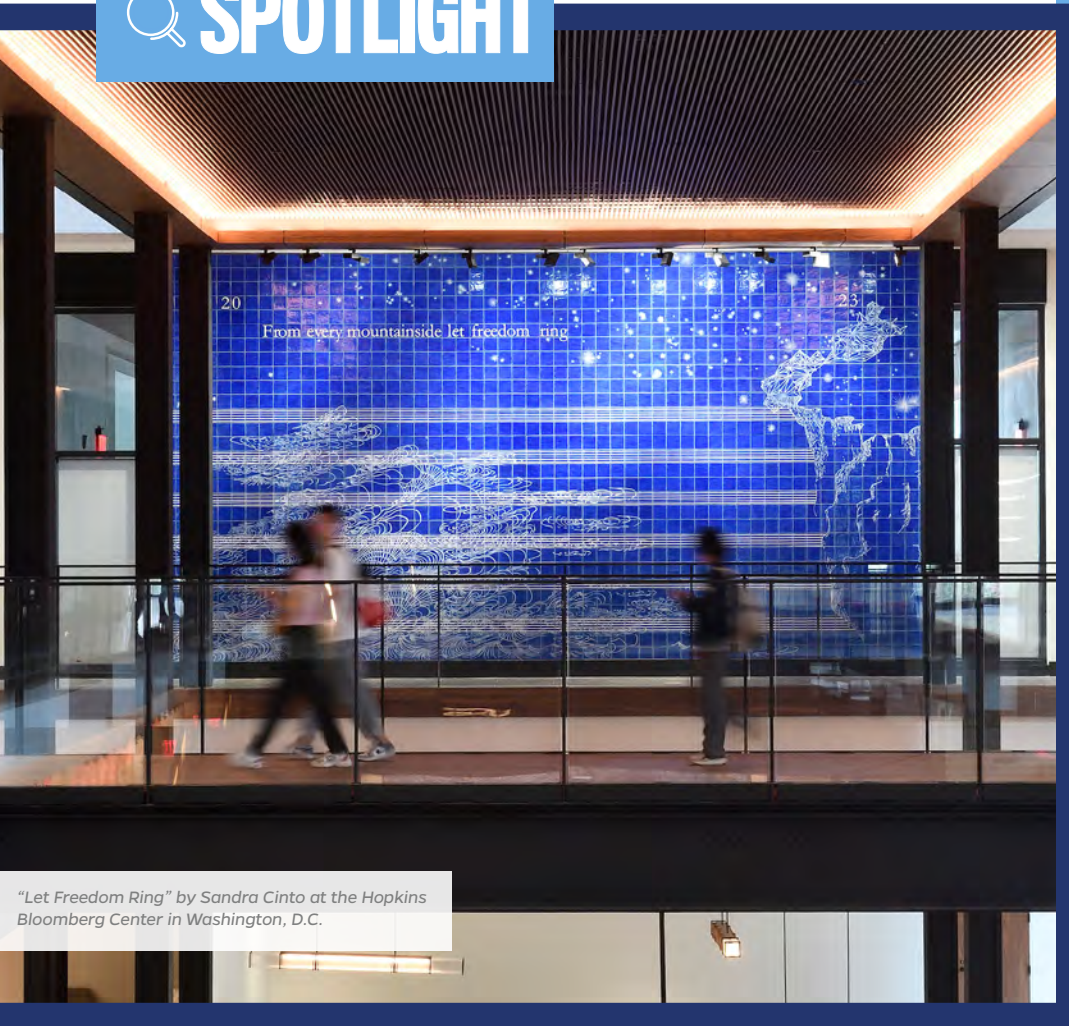
Protect local water resources through conservation and stormwater management best practices

#### KEY ACTIONS

- **Implement meters and begin tracking and measuring water use data** to set a universitywide reduction target and develop water conservation plans
- **Assess feasibility of developing a water reclamation facility** at the Applied Physics Laboratory and Homewood campus to reduce potable water use
- **Develop or update stormwater plans for all university campuses**
- **Establish consistent protocols for maintenance and monitoring of stormwater management infrastructure**

# HIGH PERFORMANCE & HEALTHY BUILDINGS

## SPOTLIGHT



## Meeting JHU's Ambitious Sustainability, Health, and Well-Being Goals for All Buildings

As of the publication of JHU's Climate Action and Sustainability Plan, the university will adopt a new set of high-performance and healthy buildings (HPHB) requirements to integrate sustainability practices consistently within our capital projects—including new construction, major renovations, and building modifications.

The HPHB requirements were developed by a cross-divisional, multidisciplinary working group composed of 15 staff, faculty, and students to support the goals of the plan and to implement JHU's priorities for the built and natural environment. The requirements are designed to address Maryland's Climate Solutions Now Act and its forthcoming Building Energy Performance Standards while also aligning with and exceeding carbon neutrality commitments set by the City of Baltimore, the state of Maryland, and the District of Columbia. The document also incorporates the recommendations of the Carbon Roadmap and Climate Adaptation Working Groups by including provisions for all-electric buildings and by requiring project teams to review climate risks and apply related adaptation and resilience strategies.

The HPHB requirements are broken out into six priority areas: energy and carbon, climate resilience, water, site, health and well-being, and responsible consumption. Each section includes specific requirements and recommended best practices that reflect industry-leading guidance and directs project teams to meet JHU's ambitious sustainability goals. Highlights of this document include LEED Gold certification as a minimum for new construction and major renovation projects, an emphasis on decarbonization in alignment with regional climate commitments, and a greater focus on supporting health and well-being for all building occupants. By adopting the HPHB requirements, JHU will implement a critical set of plan actions and establish a consistent approach to integrating sustainability into all JHU building projects regardless of size.

"Let Freedom Ring" by Sandra Cinto at the Hopkins Bloomberg Center in Washington, D.C.

## ***A Transformative Initiative to Strengthen Collaboration between JHU and Local Baltimore Communities***

JHU's history, community, and future are inextricably linked to Baltimore through its relationships, locations, and role as a regional anchor institution. As JHU re-envision efforts to infuse sustainability into university life, it will do so with consideration for and in partnership with the people of Baltimore. Through such partnerships, the university seeks to support the communities of which we are a part, to support the sustainability goals our neighbors have defined for themselves, and to co-create opportunities for thriving communities in the city we call home.

The Climate Action and Sustainability Plan presents opportunities to strengthen collaboration between the university and Baltimore communities and to honor the work of the Community Advisory Group that has contributed to the development of the Plan. To do so, the university and its divisions will seek philanthropic support for the creation of an environmental justice initiative that leverages JHU's academic strengths while addressing the needs of communities in Baltimore and beyond who are disproportionately impacted by climate change, environmental degradation, and pollution.

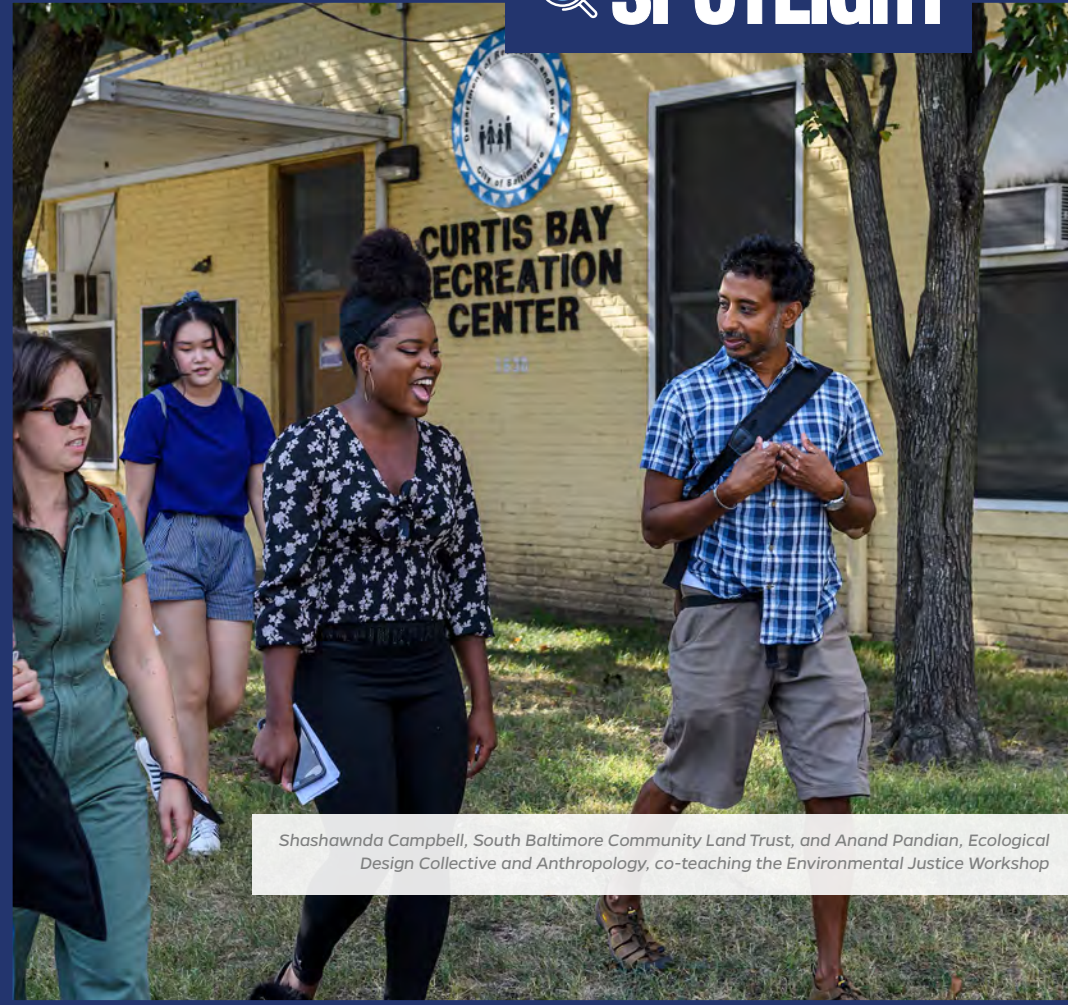
A new environmental justice initiative will build upon the university's many existing community-based efforts to strengthen coordination and collaboration while reducing fragmented or overlapping efforts and confusion among community partners. This flagship initiative will advance community health, build trust, and deliver impactful outcomes to improve the livelihoods of Baltimoreans through scalable partnerships in alignment with JHU's academic and service missions and commitment to our city.

# BALTIMORE

## ENVIRONMENTAL JUSTICE



## SPOTLIGHT



*Shashawnda Campbell, South Baltimore Community Land Trust, and Anand Pandian, Ecological Design Collective and Anthropology, co-teaching the Environmental Justice Workshop*



# RESPONSIBLE CONSUMPTION

As a large purchaser of goods and services, JHU has a responsibility to integrate sustainability practices into our entire value chain, including areas of procurement, food systems, and waste management. Minimizing waste and responsibly managing our purchases through end-of-life is essential to reducing our impact on the environment and improving public health, particularly as it relates to environmental justice concerns in Baltimore.

One important area is food and dining, which contributes significantly to climate change and sustainability through greenhouse gas emissions, land and water use, and transportation. Students and employees are also increasingly interested in healthy and sustainable food options and want to support local vendors, growers, and entrepreneurs, offering impactful solutions for the health of our planet and communities.

Throughout our business activities, our purchasing decisions present a significant opportunity to align with our sustainability values, which include a greater emphasis on supporting our HopkinsLocal vision and regional economic partnerships. JHU recognizes the importance of these opportunities and is committed to strengthening a culture of responsible consumption.

# RESPONSIBLE CONSUMPTION

## GOAL 7

Commit JHU on a pathway to zero waste

### OBJECTIVE 7.1

Increase our waste stream diversion to 50% by 2030

#### KEY ACTIONS

- **Measure and reduce total waste per capita 10%** from a 2022 baseline
- **Develop a comprehensive waste reduction and diversion program** aligned with regional zero waste priorities, including guidelines for campus events
- **Establish universitywide waste management infrastructure standards and data processes**
- **Implement innovative pilot initiatives** to address hard-to-reduce waste streams

### OBJECTIVE 7.2

Achieve zero preconsumer food waste at all dining and retail locations

#### KEY ACTIONS

- **Implement food waste prevention solutions and trainings** in all dining and retail locations
- **Establish food rescue and donation partnerships** with local nonprofits and Hopkins Food Pantry
- **Pledge JHU's business support for local composting infrastructure** in Baltimore with regional community partners
- **Expand compost collection at all campuses** to ambitiously reduce food waste

### OBJECTIVE 7.3

Eliminate single use plastics in dining and retail locations with available alternatives

#### KEY ACTIONS

- **Launch a universitywide campaign** emphasizing reusable and compostable products and the reduction of single-use plastics
- **Increase the number and accessibility of bottle filling stations** at all campuses
- **Eliminate the sale of plastic bottled water** and replace with alternative packaging

# RESPONSIBLE CONSUMPTION

## GOAL 8

Leverage our food systems to enhance sustainable production, consumption, and local economies

### OBJECTIVE 8.1

Increase sustainable food procurement and consumption habits

#### KEY ACTIONS

- **Increase the proportion of Hopkins Dining food** that meets industry sustainability standards to 35% by 2030
- **Measure and reduce greenhouse gas emissions** from Hopkins Dining food procurement 25% by 2030
- **Increase plant-forward meal options** and promote healthy and sustainable diets

### OBJECTIVE 8.2

Expand local food procurement in JHU dining programs

#### KEY ACTIONS

- **Source 40% of Hopkins Dining food locally**, including at least 15% from Baltimore businesses by 2030
- **Work with HopkinsLocal team and partners** to build strategic partnerships with local farmers, vendors, and entrepreneurs
- **Increase procurement of local and sustainable foods** by developing and implementing sourcing guidelines for food service partners across the university

### OBJECTIVE 8.3

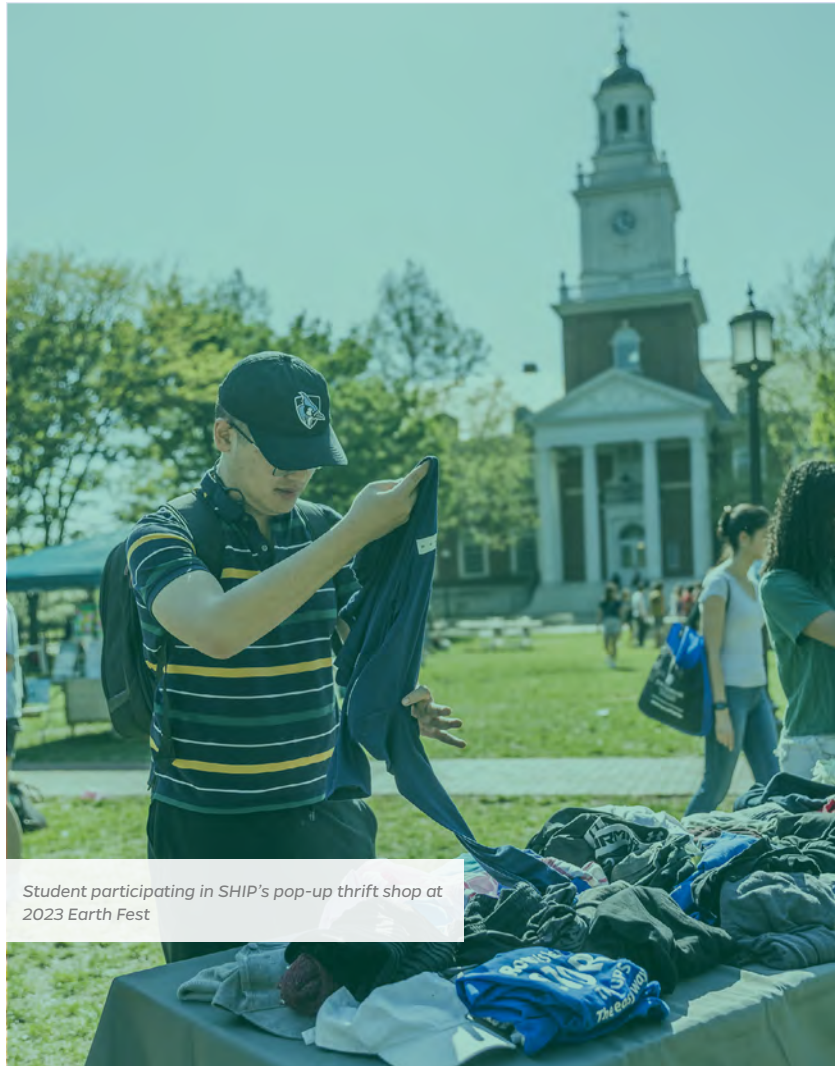
Leverage JHU dining programs for translational education and research

#### KEY ACTIONS

- **Implement living lab projects in dining** that convene researchers, students, and staff for applied research, education, and innovation
- **Leverage our membership in the Menus of Change University Research Collaborative** to impact food systems innovation at JHU and beyond
- **Facilitate faculty partnerships for research and student mentorship** to accelerate healthier, more sustainable food choices



# RESPONSIBLE CONSUMPTION



Student participating in SHIP's pop-up thrift shop at 2023 Earth Fest

## GOAL 9

Foster a culture of responsible procurement

### OBJECTIVE 9.1

Adopt sustainable procurement practices and education

### KEY ACTIONS

- **Develop sustainable purchasing guidelines** to inform and influence university buyers
- **Leverage procurement platforms and offer trainings** to inform buyers of sustainable products and purchasing criteria and measure and report on activity
- **Review vendor sustainability commitments and incorporate language** in strategic contracts and solicitations that prioritizes sustainable products and services

# TRANSPORTATION & MOBILITY

With campuses located throughout the Baltimore and Metropolitan D.C. region, multimodal transportation options are essential to the daily lives of the JHU community. Transportation also accounts for 25% of Baltimore's greenhouse gas emissions and is a primary contributor to regional air quality, making the reduction of these emissions a critical component of JHU's action on climate and environmental justice.

To guide emissions reduction efforts, JHU commits to aligning with regional priorities to transition to zero-emission vehicles over the coming decade. Achieving these goals will be greatly supported by the rapid shift of the transportation sector toward electrification, with new models of light and medium/heavy duty electric vehicles entering the market. As a highly visible extension of the institution throughout the region, the electrification of JHU's own fleet can serve as a powerful signal of the university's commitment to sustainability, to be supported by an expanding charging infrastructure network.

JHU also recognizes that supporting sustainable transportation options such as biking, public transit, and other modes has multiple benefits beyond reducing emissions, including enhancing health and well-being, reducing traffic congestion, and improving local air and noise quality.

# TRANSPORTATION & MOBILITY

## GOAL 10

Increase the use of sustainable transportation to reduce emissions and improve health and well-being

### OBJECTIVE 10.1

All newly purchased light duty and passenger vehicles will be all-electric by 2030

#### KEY ACTIONS

- **Develop a plan for fleet electrification** based on vehicle class, right-sizing for intended use, and vehicle-retirement date
- **Establish procurement targets for all-electric vehicle purchases** culminating in a 100% requirement by 2030
- **Incorporate expanded electric vehicle charging infrastructure** to support fleet electrification and commuter needs in future projects

### OBJECTIVE 10.2

Reduce greenhouse gas emissions and parking demand from single occupancy vehicles

#### KEY ACTIONS

- **Increase the number of employees using alternative commuting practices 10% by 2030**
- **Implement a Transportation Demand Management strategy** that incentivizes alternative transportation such as walking, biking, carpooling, and public transit
- **Regularly evaluate the impacts of university policies and benefits** that support alternative commuting practices
- **Distribute a commuter survey every other year to gather data** on employee and student commuting trends



# TRANSPORTATION & MOBILITY

## GOAL 10

Increase the use of sustainable transportation to reduce emissions and improve health and well-being



Students walking and biking on the Homewood Campus

### OBJECTIVE 10.3

Expand partnerships to increase the use of sustainable transportation regionally

### KEY ACTIONS

- **Build on regional partnerships with governmental, advocacy, and community organizations** to advance common transportation goals
- **Support the City of Baltimore’s alternative transportation planning efforts**, such as enhanced bicycle infrastructure and complete streets
- **Partner with MDOT MTA** to increase the frequency of routes going to light rail, metro, bus hubs, and Penn Station

## Key Considerations for Accountability

It is important for JHU to build on the engagement efforts of the past two years by continuing to involve campus and local community stakeholders in the implementation of the plan. This will be done through public tracking and reporting on progress, which will communicate our progress and challenges, promote transparency, and inform future updates and planning efforts.

The plan's implementation will be measured through both quantitative and qualitative indicators that track progress toward achieving the plan's goals. In most cases, the plan's working groups have already identified focus-area-specific metrics that will be used to measure success. Many structures already exist on campus for tracking and reporting on key metrics, but where gaps exist, actions have been included in the plan that establish methods for doing so (e.g., building performance dashboard, water meters, commuter survey). The Office of Climate and Sustainability will leverage these methods to publish annual reports on the plan's implementation and related outcomes.

In addition to annual reporting, the plan will be reviewed at least every five years to evaluate overall progress, ensure that evolving campus and regional community priorities are being addressed, and incorporate the latest climate science and best practices. During reviews, updates to the plan will be considered, the outcomes of which will inform subsequent updates to other plans and policies on campus.

# IMPLEMENTING THE PLAN



Environmental Health and Engineering Professor Ben Hobbs lectures in his "Energy Policy and Planning Models" class.



# ACKNOWLEDGMENTS

We would like to thank the following individuals who contributed meaningfully to this plan's development:

## Co-Chairs

Julian Goresko, *Director, Office of Sustainability*  
Megan Latshaw, *Associate Teaching Professor, Environmental Health & Engineering*  
Benjamin Zaitchik, *Professor, Earth & Planetary Sciences*

## Project Team

Elizabeth Egan, *Environmental Sustainability Program Manager, APL*  
Julian Goresko, *Director, Office of Sustainability*  
Lizzie Grabowski, *Sustainability Program Specialist, Office of Sustainability*  
Teresa Healy, *Communications Associate, Office of Sustainability*  
Alexa Heidrich, *Senior Project Manager, Design & Construction*  
Megan Latshaw, *Associate Teaching Professor, Environmental Health & Engineering*  
Agathe Pierot, *Sustainability Manager, Office of Sustainability*  
Chi Yan, *Architect, Planning & Architecture*  
Benjamin Zaitchik, *Professor, Earth & Planetary Sciences*

## Steering Committee

Julia Comeau, *Graduate Student*  
\*Julian Goresko, *Director, Office of Sustainability*  
Rachel Huang, *Undergraduate Student*  
Alex Kolodkin, *Professor, Neuroscience*  
\*Megan Latshaw, *Associate Teaching Professor, Environmental Health & Engineering*  
Sally MacConnell, *Senior Vice President, Facilities, School of Medicine & Health System*  
Bob McLean, *Vice President, Facilities, Johns Hopkins Facilities & Real Estate*  
Ed Schlesinger, *Dean, Whiting School of Engineering*  
Brian Smith, *Chief Procurement Officer*  
Lanise Stevenson, *Graduate Student*  
Maria Tildon, *Vice President, Government, Community, & Economic Partnerships*  
Alicia Wilson, *Vice President, Economic Development*  
Denis Wirtz, *Vice Provost for Research & Professor, Chemical & Biomolecular Engineering*  
\*Benjamin Zaitchik, *Professor, Earth & Planetary Sciences*

## Community Advisory Group

Nat Adams, *Graduate Student*  
Jack Boyson, *Past President, Wyman Park Community Assoc. & Friends of Stony Run*  
Shashawnda Campbell, *Environmental Justice Coordinator, SBCLT*  
LaQuida Chancey, *Founder & Director, Smalltimore Homes*  
Julian Goresko, *Director, Office of Sustainability*  
Chris Heaney, *Associate Professor, Environmental Health & Engineering*  
Alexa Heidrich, *Senior Project Manager, Design & Construction*  
Jenny Hope, *Executive Director, Historic East Baltimore Community Action Coalition*  
Deborah Howard, *President, Baltimore Orchard Project*  
Nicole Labruto, *Assistant Research Professor, Anthropology*  
Mac McComas, *Senior Program Manager, 21st Century Cities Initiative*  
Jennifer Mielke, *Director, Local Government & Community Affairs*  
Anand Pandian, *Professor, Anthropology*  
Ava Richardson, *Sustainability Director, Baltimore City Government*  
Miller Roberts, *President, Charles Village Civic Assoc.*  
Kevin Shea, *Board Member, Blue Water Baltimore*  
\*Alicia Wilson, *Vice President, Economic Development*

## Business & Operations Advisory Group

Chris Bauman, *Senior Associate Dean for Finance & Administration, KSAS*  
Coretta Bennett, *Director of Operations, Design & Construction*  
William Blair, *Undergraduate Student*  
Tony Breeze, *Operations & Maintenance Group Supervisor, APL*  
David Coomber, *Graduate Student*  
Elizabeth Egan, *Environmental Sustainability Program Manager, APL*  
Anatoly Gimburg, *Vice President of Facilities, School of Medicine & Health System*  
Julian Goresko, *Director, Office of Sustainability*  
Karen Grzeika, *Budget Officer, University Administration*  
Alexa Heidrich, *Senior Project Manager, Design & Construction*  
Yasmine Issah, *Graduate Student*  
Marty Kajic, *Senior Director, Facilities*  
Sally MacConnell, *Senior Vice President, Facilities, School of Medicine & Health System*  
Seth Margolis, *Associate Professor, Biological Chemistry*  
Jamie Martinez, *Undergraduate Student*  
\*Bob McLean, *Vice President, Facilities, Johns Hopkins Facilities & Real Estate*  
Jay Murphy, *Senior Director, Facilities Operations*  
Kofi Ofori, *Senior Associate Dean of Finance & Administration, KSAS*  
\*Brian Smith, *Chief Procurement Officer, University Administration*  
Rosie Wolkind, *Undergraduate Student*

# ACKNOWLEDGMENTS

## Research & Academic Advisory Group

Shere Abbott, *Research Professor, Environmental Health and Engineering*  
Nat Adams, *Graduate Student*  
Isaiah Chen, *Graduate Student*  
Meghan Davis, *Associate Professor, Environmental Health & Engineering*  
Ben Hobbs, *Professor, Environmental Health & Engineering*  
Marisa Hughes, *Assistant Program Manager, APL*  
Nicole Labruto, *Assistant Research Professor, Anthropology*  
Anand Pandian, *Professor, Anthropology*  
Rachel Marie Santospirito, *Graduate Student*  
Kellogg Schwab, *Professor, Environmental Health & Engineering*  
Stephanie Wilcox, *Graduate Student*  
D'Ann Williams, *Assistant Scientist, Center for a Livable Future*  
Peter Winch, *Professor, International Health*  
\*Benjamin Zaitchik, *Professor, Earth & Planetary Sciences*  
Cathy Zhang, *Undergraduate Student*

## Climate Adaptation Working Group

Bianca Corpuz, *Graduate Student*  
Tyler Derreth, *Associate Director, SOURCE*  
Elizabeth Egan, *Environmental Sustainability Program Manager, APL*  
Dave Fisher, *Director of Commissioning*  
Aubrey Germ, *Climate & Resilience Planner, Baltimore City Government*  
John Groopman, *Professor, Preventive Medicine*  
Ciaran Harman, *Associate Professor, Earth & Planetary Sciences*  
Aaron Hodukavich, *ADA Compliance Officer, Office of Institutional Equity*  
Marisa Hughes, *Assistant Program Manager for Human & Machine Intelligence, APL*  
Jarron Jackson, *Associate Vice President, Public Safety*  
Shirlene John, *Undergraduate Student*  
\*Jon Links, *Chief Risk Officer & Professor, Environmental Health & Engineering*  
Agathe Pierot, *Sustainability Manager, Office of Sustainability*  
Jacki Stone, *Executive Director, Student Well-Being*  
Jessica Tung, *Undergraduate Student*  
Demere Woolway, *Executive Director, Inclusive Excellence Education & Development*  
\*Benjamin Zaitchik, *Professor, Earth & Planetary Sciences*

## Sustainable Food & Dining Working Group

Daphene Altema-Johnson, *Senior Program Officer, Center for a Livable Future*  
Elizabeth Blair, *Associate Director, Real Estate*  
Graham Browning, *Sustainability Manager, Hopkins Dining*  
Hamilton Goss, *Director of Culinary Innovation, Hopkins Dining*  
Clare Lochary, *Communications Associate, Health Promotion & Well-Being*  
Matthew Moss, *Assistant Vice Provost, Hopkins Dining & Auxiliary Services*  
Agathe Pierot, *Sustainability Manager, Climate Action, Office of Sustainability*  
\*Becky Ramsing, *Senior Program Officer, Center for a Livable Future*  
Raychel Santo, *Program Officer, Center for a Livable Future*

## Carbon Roadmap Working Group

\*Zach Bley, *Director, Facilities, School of Medicine & Health System*  
\*Tony Breeze, *Operations & Maintenance Group Supervisor, APL*  
Andy Cary, *Environmental Systems Specialist*  
Amy Cones-Pratt, *Assistant Director of Finance, University Budget Office*  
Elizabeth Egan, *Environmental Sustainability Program Manager, APL*  
Jeremy Giles, *Undergraduate Student*  
Suzanne Kozarski, *Asset Manager, Real Estate*  
Jay Murphy, *Senior Director, Facilities Operations*  
Isabella Park, *Undergraduate Student*  
Agathe Pierot, *Sustainability Manager, Office of Sustainability*  
Emily Sperring, *Undergraduate Student*  
Bena Zeng, *Energy Engineer*

## High-Performance & Healthy Building Working Group

Elizabeth Blair, *Associate Director, Real Estate*  
Brian Cornell, *Supervisor for Campus Development & Planning, APL*  
Elizabeth Egan, *Environmental Sustainability Program Manager, APL*  
Ross Fischer, *Director of Asset Management, Real Estate*  
\*Dave Fisher, *Director of Commissioning*  
\*Marty Kajic, *Senior Director, Facilities*  
Rishiraj Mathur, *Graduate Student*  
Gregory Moormann, *Energy Manager, APL*  
Taylor Osborne, *Graduate Student*  
Agathe Pierot, *Sustainability Manager, Office of Sustainability*  
Shannon Ryan, *Associate Director, Planning Design & Construction*  
Martin Sharpless, *Program Director, Design & Construction*  
Ryan Weeks, *Senior Sustainability Specialist, Office of Sustainability*  
\*Chi Yan, *Architect, Planning & Architecture*

## Additional Contributors

Debi Denney, *Assistant Director, Office of Sustainability*  
Tanvi Gadhia, *Sustainability Manager, Office of Sustainability*  
Leana Houser, *Sustainability Manager, Office of Sustainability*  
Claire Runquist, *Senior Sustainability Specialist, Office of Sustainability*

## Consultant

Introba (formerly Integral Group)

