



SUSTAINABILITY DIVISION

2024 YEAR END SUMMARY



MISSOURI BOTANICAL GARDEN

The Garden's sustainability division enriches lives and protects plants and our environment by implementing sustainable solutions on all Garden campuses; as well as in the community by educating and connecting people to practical sustainable solutions where they live, learn, work and play.

The sustainability division plays a pivotal role in the Garden's efforts to address challenges such as climate change, biodiversity loss, habitat vulnerability. We work to improve the well-being of plants, people, and all living communities. Bridging the gap between understanding these issues and implementing practical solutions, the sustainability division's work supports clean air, water, and soil. These are the necessary building blocks for the triple bottom line of thriving and sustainable natural environments, robust and prosperous economies, and supportive and resilient communities. As a leader, the Garden continuously pushes the boundaries of innovation and commitment for sustainability with internal sustainable practices showcasing effective actions that make a difference. By engaging diverse audiences, the sustainability division empowers others to become environmental stewards and problem-solvers, contributing to the collective efforts to accelerate regional growth towards a more sustainable future.



"In 2024 we prepared to welcome a new President to the Garden. It's been exciting to pull background materials on the sustainability efforts and accomplishments over the years. We've increased tracking of energy and resource use on Garden grounds, expanded and celebrated several of our community programs, and returned the annual Green Living Festival to the main Garden after several years on the road due to construction at the Garden. Such a full year, and we eagerly look towards 2025 when we'll celebrate the incredible accomplishments associated with EarthWay's 25th Anniversary!"

Glenda Abney, Vice President of Sustainability
Missouri Botanical Garden

Highlights of the Division's Accomplishments in 2024:

- The division worked to develop a strategic direction focused on four themes to accelerate regional transition towards a more sustainable future for all. These themes include: advanced Garden greening, community sustainability, green workforce development, and climate connections.
- The Garden continued its efforts to track building energy and resource use through ENERGY STAR Portfolio Manager and added new dashboards powered by Microsoft's Power BI program to track additional resource metrics. The Bertha Pfautch Annex Building received ENERGY STAR certification for building energy performance indicating that this building operates more efficiently than at least 75% of similar buildings nationwide.
- The 2024 Green Living Festival returned to the Missouri Botanical Garden as a signature, one-day event, helping more than 2,500 visitors explore sustainable solutions. The event expanded its footprint to fully use the facilities of the Jack C. Taylor Visitor Center, including Bayer Event Center and the Kooyumjian Family Event Terrace.
- The St. Louis Green Business Challenge celebrated its 15th year of programming and received the Program of Excellence Award by the American Public Gardens Association. Since the beginning of the program over 300 companies, non-profits and municipalities have taken the Challenge engaging over 730,000 employees and residents in sustainability work. In 2024, the Challenge worked with 45 companies and 15 municipalities for increased sustainability efforts. Seven companies, including the Garden, received recognition as Green Vanguard Champions for their sustainability leadership and participation in all 15 years of the Challenge.
- Our work in green workforce development continued with programs such as Outdoor Youth Corps (OYC), Outdoor Leadership Corps (OLC), BPI certification trainings, facilitating Roots of Success trainings with community partners, workshops, paid internships, and more. Together these green industry programs provided sustainability-learning experiences to 433 youth, emerging leaders, and green industry professionals.
- The Garden partnered with Webster University and Cold Springs Harbor Laboratory to make Missouri Botanical Garden the fifth hub of the Citizen DNA Barcode Network. The National Institute of Health funded Cold Springs Harbor Laboratory to develop community scientist hubs throughout the United States to inventory



biodiversity of ants, beetles, and mosquitos. Scientists are particularly interested in these species because they are the foundations of many ecosystems, can be agricultural pests, and are disease vectors. However, these insects are so small that they are challenging even for entomologists to identify through traditional methods. DNA Barcoding allows us to definitively identify species by comparing their genetic code to a worldwide database. The best part is that as a community scientist project, anyone can participate in hands-on laboratory science to extract, amplify, and sequence the DNA!

- The Sustainability Education team continued to expand its work in climate change education. In early spring, Maggie McCoy took on the role of Climate Change Education Coordinator. In this new role, she worked to develop new programs, trained in climate change communications, and collaborated with the Science and Conservation Division to help translate their work into learning experiences for all ages. The Sustainability Education team will also lead the Garden's Plants and Climate Change Education (PLACCE) project having been selected as one of six botanic gardens and arboretums to participate in this peer-learning program coordinated by the U.S. Botanic Garden and American Public Gardens Association.

EDUCATION AND COMMUNITY ENGAGEMENT

18,998 PEOPLE ENGAGED IN SUSTAINABLE SOLUTIONS

2,531 FESTIVAL GUESTS

50 EXHIBITOR AND VENDOR PARTICIPANTS, 12 EDUCATIONAL TOURS AND WORKSHOPS, AND 9 SUSTAINABILITY-SUPPORTING SPONSORS

Each year, the Green Living Festival brings sustainability to the public through workshops, exhibitors, behind-the-scenes tours, and family-friendly activities that focus on the many ways plants improve air, water, soil and energy of our environment and sustain our homes, health, and planet. For the first time since 2019, the 2024 Green Living Festival returned to the Missouri Botanical Garden as a signature, one-day event. Support for the 2024 Green Living Festival included: Presenting Sponsor – Ameren Missouri, Naturescaping Sponsor – Deer Creek Watershed Alliance, and Festival Friends – Missouri Department of Natural Resources, Missouri Gateway Green Building Council, MSD Project Clear, Perennial, Renewal by Anderson, St. Louis Composting, and the St. Louis-Jefferson Solid Waste Management District.

9,233 COMMUNITY LEARNERS AND PARTNERS

OVER 261 COMMUNITY EVENTS, CLASSES, PROJECTS, AND REGIONAL INITIATIVES

The sustainability division continued to serve as a community resource connecting individuals and community organizations to sustainable solutions through classes and tours, projects, and support of regional sustainability initiatives. Staff expertise helped advance food waste reduction, promote recycling educational campaigns, engage in climate change education, educate about energy efficiency improvements, and much more.

60 GREENER BUSINESSES AND MUNICIPALITIES

7 COMPANIES RECOGNIZED AS GREEN VANGUARD CHAMPIONS

The St. Louis Green Business Challenge, a program of Missouri Botanical Garden, celebrated its 15th year of programming in 2024. The Challenge helped deliver Triple Bottom Line results (fiscal, social, and environmental) to businesses and municipalities of all types and sizes across the St. Louis region. The Garden participated at the Champion level for the innovative work in advancing sustainability through collaborations. With this project, the Garden hosted a ProShred staff event, donated nearly 8,000 plastic pots to University of Missouri-St. Louis for a planting project, hosted the Living Earth collaborative Urban Biodiversity Symposium, increased food waste compost collection at major events, and more. The Garden is one of seven companies to be recognized as a Green Vanguard Champion for having participated in the Challenge for all 15 program years.

5,094 SUSTAINABLE STUDENTS

163 CLASSES AND PROGRAMS TAUGHT

The sustainability education programs team hired a part-time sustainability instructor and increased student engagement by 21%. Student programs provided engaging hands-on learning experiences and community resources for K-12 students in topic areas including: climate change, energy efficiency, waste reduction, recycling, composting, non-point source pollution and stormwater management.

239 EMPOWERED EDUCATORS

14 WORKSHOPS

Engaging workshops helped regional educators build a better understanding of sustainability issues and how to bring these topics to life through classroom projects, activities, and integrated curriculum.

122 RAINSCAPING PROJECTS INSTALLED

\$599,895 IN RAINSCAPING REBATES AND GRANTS AWARDED

MSD Project Clear and Deer Creek Watershed Alliance's programs, coordinated by sustainability division staff, helped facilitate the installation of 100 lawn alternatives, 30 rain gardens, 15 rain barrel installations, 9 bioswales, 6 permeable paver features, and 5 woodland restoration projects through grants and rainscaping rebates. Each of these projects helps capture rain where it falls, helping reduce runoff and flooding, prevent pollution, and restore water quality and stream habitat.

869 COMMUNITY VOLUNTEERS ENGAGED

60 COMMUNITY VOLUNTEER OPPORTUNITIES OFFERED

With programs such as Honeysuckle Sweep, City Nature Challenge, and Outdoor Leadership Corp's Community Volunteer Engagement Days, the sustainability division engaged volunteers from the community to help build better biodiversity throughout the St. Louis region. Volunteers hacked honeysuckle, planted trees, and made iNaturalist observations to track species present in the St. Louis region.

50 YOUTH AND EMERGING PROFESSIONAL PARTICIPANTS

5,002 PAID HOURS WORKED

Sister programs, Outdoor Youth Corps (OYC) and Outdoor Leadership Corps (OLC), offered paid workday training experiences across 44 unique work and field trip sites throughout the St. Louis region. Together, these crews removed more than 7.74 cubic yards of trash, planted 367 native plants, removed invasive species from public lands and waterways, and helped maintain established garden areas across the St. Louis region.

ADVANCING OUR GARDEN GREEN INITIATIVES

70% OF WASTE DIVERTED FROM LANDFILLS AT GARDEN EVENTS

5 EVENTS

In 2024, the Garden averaged a waste diversion rate of approximately 70%—meaning 70% of the waste collected at selected events, Japanese Festival and Best of Missouri Market, was sent to a recycling center or commercial compost facility instead of to the landfill. This work is only made possible by the Zero Waste Ambassador (ZWA) volunteer program, which supported a total of five (5) Garden events in 2024. Of these events, ZWA volunteer's helped to collect 15.7 tons of food waste and compostable serveware and 6.2 tons of single stream recycling at the three largest annual Garden events: Chinese Culture Days, Japanese Festival, and Best of Missouri Market. A combined 92,303 visitors attended Garden events that featured a Zero Waste station.

598 HOURS OF SUSTAINABILITY VOLUNTEERS SERVICE TO THE GARDEN | \$20,027 VALUE OF SUSTAINABILITY VOLUNTEER SERVICES

Volunteers contributed significantly to Garden sustainability projects including supporting the Green Living Festival, Green STEM (science, technology, engineering, mathematics) and education events, serving as Zero Waste Ambassadors at signature events, helping to sort recycling behind the scenes and more!

295.29 MEGAWATT-HOURS OF SOLAR ENERGY PRODUCED

EQUIVALENT TO THE ELECTRICITY USED BY 28 HOMES IN ONE YEAR

The Garden's many solar arrays including systems installed on the Jack C. Taylor Visitor Center, Commerce Bank Center for Science Education, William T Kemper Center for Home Gardening pergola, and Brookings Interpretive Center all serve as part of the Garden's commitment to renewable energy.

62 TONS OF GREENHOUSE GAS EMISSIONS REDUCED BY USE OF GARDEN'S EV STATIONS | OVER 3,368 UNIQUE USERS

In 2024, the use of the Gardens EV stations increased by 30%! The amount of use across all 10 Garden EV charging stations highlights the growing adoption of EVs and their positive environmental impact.

91 GARDEN STAFF MEMBERS ATTENDED GRUB N' GREEN LEARNING SESSIONS | 6 GRUB 'N GREEN LUNCH AND LEARNS HELD

The Garden's Grub 'n Green Lunch and Learn series provided opportunities for Garden staff to learn more about a range of sustainability topics. This year, Grub 'n Green topics included sustainable bee keeping, Missouri Botanical Garden's conservation horticulture efforts, green burial, the Mosquito Alert program, Stephen and Peter Sachs Museum's *Kernels of Corn: Maize Around the World* exhibition, and sustainable fashion.

MISSOURI GATEWAY GREEN BUILDING COUNCIL (MGGBC)

Missouri Gateway Green Building Council (MGGBC) spent much of this year updating their strategic plan, which was approved by the board in November 2024. The newly approved strategic plan addresses two key areas: connecting green building practitioners and advocates and leveraging buildings as climate solutions. With these strategic directives, MGGBC hopes to bring people together to learn, collaborate, and advocate for implementing green building practices and take action to reduce buildings' impact on the environment and climate change.



This year's educational event schedule provided ample opportunities to network, learn, and earn continuing education. Highlights from the 2024 MGGBC educational programming include a LEED Tour of Soldiers Memorial Military Museum, a partnered event with U.S. Green Building Council on a LEEDv5, and a Forum on Climate Action which convened several building industry stakeholder organizations to discuss ways to work together to make our buildings climate solutions. New this year, MGGBC added monthly "Green Building Breaks" with two Green Building Break summer tours of Five Oaks on Warson Community Center and the St. Louis County Library Clark Family Branch.

In 2024, several Green Schools Quest veteran school participants volunteered to mentor new school participants from their district and MGGBC is developing a model for high school students to mentor elementary and middle school students as they join the school sustainability movement. Students of MGGBC's Green Schools programs presented professional development to school leaders across the state highlighting their Green Schools Quest projects as replicable models of school sustainability. Student leadership has increased each year in MGGBC programming as students continue to impress us with their passion and creativity!

The Building Energy Exchange-St. Louis (BE-Ex STL) significantly raised its profile this year, while also supporting several local initiatives. BE-Ex STL worked with the Community Builders Network of Metro St. Louis, other local stakeholders, Community-Based Organizations, and the Institute for Sustainable Communities (ISC) on the Advancing Equitable Building Decarbonization (AEBD) project which included presenting decarbonization expertise to St. Louis, Philadelphia, and Oakland AEBD Teams and authoring blog posts for ISC. BE-Ex STL's Director, Malachi Rein, spoke at the St. Louis Regional Green Business Challenge Launch, Midwest Energy Policy Series, Missouri S&T courses, as the introductory keynote at the Midwest Energy Efficiency Alliance's Members Meeting and delivered "Unveiling the Hidden Potential of Our Buildings" TEDx at Missouri S&T. BE-Ex STL also supported the City of St. Louis' successful Bloomberg American Sustainable Cities application and a number of federal grant applications locally and nationally, including an \$11.8 million dollar Renew America's Schools Grant award to St. Louis Public Schools.

28 EVENTS | 860 ATTENDEES

Attendees participated in educational and networking events, learning about and touring local green building projects, net-zero, lighting and justice, LEEDv5, and more.

12 OWNER AND OPERATOR TRAININGS

BE-Ex STL hosted trainings to help owners and operators of buildings in the region improve performance in their buildings. This included three (3) Benchmarking & Help sessions co-hosted with the City of St. Louis Office of Building Performance.

3,600 STUDENTS, FACULTY AND STAFF ENGAGED IN GREEN SCHOOL QUEST 66 SCHOOL/MENTOR TEAMS

School and mentor teams participated in the 2023-2024 Green Schools Quest, implementing low and no cost sustainability projects at local schools. In addition to these teams, Quest schools reported engaging 47,000 community members in school sustainability projects as a result of their Quest projects. This year's Annual Green Schools event, hosted by University City High School, saw its largest turnout ever with 175 attendees.

43 MISSOURI GREEN SCHOOLS RECOGNIZED | 1 GREEN RIBBON SCHOOL HONOREE

Missouri Green Schools is a free statewide recognition program fostering a systems-based approach towards holistic, school-wide, and long-term sustainability. In 2024, Forsyth School earned Flowering Dogwood recognition – the highest-level achievement in the program. Additionally, Missouri Green Schools helped support the U.S. Department of Education's Green Ribbon award program. This year, Nerinx Hall High School won national recognition as a U.S. Department of Education Green Ribbon awardee marking a significant milestone in the institution's commitment to sustainability and environmental stewardship.

OUR 2024 TEAM

Glenda Abney	Kassie Knight
Emily Andrews*	Jennifer Krause
Stacy Arnold	Jill Maes
Deborah Rogers Curtis*	Anna McAtee
Olivia Dove	Maggie McCoy
Maeve Elder*	Joshua Moore
Fletcher	Elijah Narimalla
Hannah Gibson	Angelina O'Donnell
Katherine Golden	Jean Ponzi
Joyce Gorrell	Richard Reilly
Taylor Heuermann	Malachi Rein*
Jaclyn Jezik	Jessica White
Allison Joyce	

*Missouri Gateway Green Building Council staff

INTERNS AND OUTDOOR LEADERSHIP CORPS

Kinsey Bakameyer	Jared Lyeki
Julia Beckner	Grace Martinez
Samuel Bowers	Kylie Patrico
Joseph Caya	Pam Taylor
Payton Ginestra	
Nora Jennings	
De'Nonna Jones	

**SPECIAL THANKS TO OUR
WONDERFUL VOLUNTEERS
AND ZERO WASTE
AMBASSADORS!**



 **MISSOURI BOTANICAL GARDEN**
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To discover and share knowledge about plants and their environment in order to preserve and enrich life. —mission of the Missouri Botanical Garden

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