



**GRAND VALLEY
STATE UNIVERSITY®**

**Collective Sustainability Impact Report
2015**

Prepared by:
The Office of Sustainability Practices
Grand Valley State University

BACKGROUND

Grand Valley State University began focusing on sustainability best practices in 2004, when the university defined sustainability as “meeting the needs of today without compromising the ability of future generations to meet their own needs.” Students added the perspective from the Native American Indian, “we do not inherit the earth from our fathers; we borrow it from our children.” This background helped GVSU define the guiding principles of sustainability and focus on the social, environmental, and economic impact—called the “triple bottom line” (TBL) of applied sustainable development best practices. Sustainability in the marketplace today is viewed as a set of best practices, tools, and processes that enable better decision making both on campus and in the community, while providing improved social, environmental, and economic impact.

In 2005, Grand Valley issued its first Sustainability Indicator Report, which covered 18 TBL impact areas and used over 75 sustainability measurements to establish sustainability baseline data, both on campus and in the community. More than 50 students, faculty, and staff members contributed to that report, which helped determine Grand Valley’s sustainability efforts and gaps that needed to be addressed. In essence, this initial sustainability report provided an overall sustainability assessment with baseline data, information, and key performance indicators (KPIs).

In 2008, Grand Valley issued its second Sustainability Indicator Report that established the university’s overall progress in sustainability. During this time, the university developed and issued a Student Sustainability Guide that identified 10 major sustainability impact areas where students could help make a difference through continuous improvement.

In 2008, Grand Valley became a signatory to the American College and University Presidents Climate Agreement (ACUPCC), as well as a charter member of the American Association of Sustainability in Higher Education (AASHE) Sustainability Tracking Assessment and Reporting System (STARS). In 2010, sustainability became a value in the university’s 2010-2015 strategic plan. It was also written into the Seidman College of Business’ honor code.

In 2012, Grand Valley issued its first report on the collective economic impact of its sustainability efforts.

In June 2014, GVSU’s Sustainable Community Development Initiative became the Office of Sustainability Practices, indicating a shift from an initiative to integrated sustainable development best practices across the campus and in the community. GVSU is committed to a sustainable future, and, in 2015, developed new marketing materials including a Sustainability Guide and marketing brochure. Today, a Campus Sustainability Advisory Council, composed of 11 work group areas, is empowered to develop specific sustainability objectives and targets that are being embedded into the GVSU 2016-2021 strategic plan.

INTRODUCTION

The 2015 Grand Valley State University Collective Sustainability Impact Report provides an updated look at the economic impact of GVSU's sustainability efforts. It has been developed using much of the data that was submitted through the university's AASHE STARS reporting process. All data and key performance measurements have been converted to one primary metric, economic impact, in order to provide a longer term view of the overall effectiveness and value created by applied sustainability best practices on campus and in the community. Collective sustainability economic impact is defined as the total costs and benefits that various sustainability initiatives, programs, and activities have on the local economy.

Grand Valley's collective sustainability impact has been determined on a best efforts basis by estimating the total avoided costs and value created in economic impact dollars for FY2015 from its various sustainability programs, both on campus and in the community in the following areas:

1. Education for Sustainable Development
2. Sustainable Food Systems
3. Waste Minimization
4. Energy Conservation and Management
5. Water Conservation and Management
6. Alternative Transportation and Fuels
7. Sustainable and Local Purchasing
8. Fiscal Sustainability
9. Health, Wellness, and Nutrition
10. Sustainable Building and Land Use
11. Community Engagement and Service

The primary data for this report has been compiled for the fiscal year 2015. It should also be noted that some of this data and information may have appeared in other GVSU reports and documents that have been published. However, this report specifically applies to the collective impact of sustainability best practices on campus and in the local community.

1. EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

An increasing number of students continue to enroll in ESD courses and curriculum at Grand Valley. Its eight colleges offer sustainability-related emphases, certificates, themes, majors, minors, and general education issue areas that attract students to growing sustainability fields and disciplines in West Michigan. Examples include a liberal studies degree with an emphasis in sustainability, a green chemistry certificate, an environmental studies minor, a major and minor in natural resource management, a sustainability certificate in the public and non-profit administration master's program, an MBA in sustainable enterprise, and a sustainable urban and regional planning certificate. Additional ESD programs are currently under development.

FY2015 highlights:

- 198 sustainability-related courses were offered that contain one, two, or all three sustainability content areas (social, economic, and environmental, known as the triple bottom line or “TBL”)
 - 110 undergraduate and 11 graduate courses include sustainability topics
 - 52 undergraduate and 8 graduate courses are specifically sustainability courses
- Student credit hours in sustainability-related courses totaled 73,775 hours, or 12% of all student credit hours taken at GVSU
- Tuition revenue in sustainability-related courses and curriculum totaled \$50,231,074, based on \$470 per undergraduate student credit hour and \$583 (in-state) and \$779 (out-of-state) per graduate student credit hour
- Just based on tuition revenue, \$287,040,000 total for FY2015, the impact of ESD is 17.5%

2. SUSTAINABLE FOOD SYSTEMS

Campus Dining and its student Green Team continue to lead environmental stewardship for all food service operations. Dining venues have seen increased sales as more healthy food options have been made available. One example is the “Meatless Monday” menu option that creates awareness about vegetarian and vegan menu options. Campus Dining has implemented several different sustainable development best practices including compostable dishware, the use of a flex-fuel vehicle for food deliveries, the use of eco-friendly cleaning products, and much more. Additionally, Campus Dining has instituted a farm-to-table concept, working with the student driven Sustainable Agriculture Project (SAP) to purchase produce for select Campus Dining locations on campus. Campus Dining’s “Engrained” restaurant has earned a 3-star Green Restaurant Certification.

In 2009, Grand Valley started a community garden project that has since evolved into the Sustainable Agriculture Project (SAP) on the Allendale campus that supports student interest in sustainable agriculture. The SAP includes several acres of intensive vegetable production; one 30-by-72 foot hoop house and one 30-by-96 foot hoop house that use passive solar heating and provide growing conditions that are 10-15 degrees above outdoor temperatures; and a small heated greenhouse to grow seedlings and other small starter plants. Sales outlets for the SAP include: Community Supported Agriculture (CSA) shares, a farm stand at the GVSU Farmers Market, raised community garden beds, and select produce for Campus Dining. There are plans to develop an additional two to three acres of mixed orchards with support from the Farm Club, a student organization dedicated to promoting the principles and best practices of sustainable agriculture. In 2016, the Sustainable Agriculture Place-based Project Grant Program, a collaboration between Brooks College and the Office of Undergraduate Research, was launched to support student scholarly and creative projects.

Gordon Food Service is also now the vendor for Aramark Food Services and Campus Dining, offering a more local source of food purchasing options. Due to that transition, most of the data available is for FY2014.

CAMPUS DINING

FY2014 highlights:

- Campus Dining used retail, catering, and residential standards, and the AASHE STARS criteria, to purchase 930,500 pounds of local food, totaling \$2,205,676
- Campus Dining increased the number of sustainability-certified vendors, including 23+ local farms that are local produce partners, 31 local suppliers, one local dairy farm that offers hormone-free milk, two Monterey Bay Seafood Watch vendors, three organic-certified vendors and one cage-free egg vendor
- 164,000 pounds of Michigan produce were purchased, totaling \$221,489
- 1,114 pounds of certified seafood products were purchased, totaling \$6,117
- 11,000 pounds of Fair Trade coffee were purchased, totaling \$76,790
- Compostable products and serviceware were purchased, totaling \$159,692

SUSTAINABLE AGRICULTURE PROJECT (SAP)

FY2015 highlights:

- Currently, 4 courses are taught directly at the Luce Street site of the SAP (aka “the farm”) and over ten courses use the SAP as a resource for curriculum and as a laboratory for field experience; examples include BIO 319 Global Agriculture Sustainability, ENS 492 Sustainable Agriculture Practicum, GPY/ENS 362 Farmers, Crops, and Our Challenging Agricultural World, LIB 330 Idea of Nature, ENS 201 Introduction to Environmental Studies, HNR 280 Food for Thought, HNR 280 Social Product Innovation, LIB 342 Food Matters, and WGS 335 Women, Health, and Environment
- Over 400 unique student volunteer visits were accommodated, allowing students to learn about soil conservation, nutrition, irrigation, crop rotation, and overall sustainable agriculture best practices
- Students were responsible for growing 2,500 pounds of organic produce with no harmful fertilizers, pesticides, or herbicides
- The SAP sold 37 Community Sustainable Agriculture (CSA) shares, totaling \$7,081
- \$11,431 of produce from the farm fields and hoop houses was sold through the local farmer’s market, CSA shares, and Campus Dining
- \$6,500 was received from the Sustainable Reinvestment Fund to purchase various farm equipment including a walking tractor, a cooler, and other various farming tools to improve the overall productivity of SAP operations

3. WASTE MINIMIZATION

Over the last ten years, Grand Valley has focused on recycling and minimizing various waste streams. The driving force has been the importance of environmental stewardship to students, faculty, and staff members. Recycling and composting rates have more than doubled, due to GVSU's participation in the national RecycleMania competition among colleges and universities. In 2015, GVSU took 6th place in the nation in the composting category, and took first in Michigan and 24th in the nation as overall Grand Champion.

Students continue to push for improved recycling and waste minimization initiatives through awareness and education programs. One student-driven program brought water bottle filling stations to campus. Each water bottle filling station accounts for 10,000 - 12,000 fewer plastic water bottles consumed annually, each saving \$12,000- \$15,000 in avoided student costs per year. The university continues to compost food waste as well.

The university has advanced waste minimization techniques across various individual waste streams both on campus and in the community. Today, many programs on campus and in the community strive to be "zero waste" events, such as Grand Valley convocation ceremonies and home football games. For home football games, Grand Valley has been able to divert from landfills approximately 80 % of the waste generated.

In 2014, Grand Valley created a Surplus Store to help reduce environmental impact by providing items that have reached the end of their shelf life for sale to the general public, as well as providing an avenue for educating students in the field of business. Since it opened, the Surplus Store has recycled nearly 60 tons of scrap metal and 5.5 tons of e-waste.

FY2015 highlights:

- GVSU generated 2,063 tons of total waste excluding hazardous materials; 484.9 tons were recycled for a recycling rate of 23.5 %, and, combined with composting, these practices saved the university approximately \$30,000 on landfill tipping fees including:
 - 90.2 tons of paper, cardboard, glass and plastic
 - 21.3 tons of scrap metal
 - 15.6 tons of computers
 - 1.2 tons of batteries
 - 30.5 tons of pallets
 - 0.7 tons of light bulbs
 - 4.2 tons of "Project Move Out" donations from students
- 448.9 tons of food waste were composted for a compost rate of 22%
- 1,129.5 tons were sent to the landfill for a landfill disposal rate of 55.3%
- There are 31 water bottle filling stations on campus that collectively saved students approximately \$387,500 through avoided costs of purchasing bottled water, although bottled water is available through vending machines on campus

4. ENERGY MANAGEMENT AND EFFICIENCY

Grand Valley has made great strides to improve overall energy efficiency, conservation and optimization strategies through energy system management best practices. Since 2005, the overall consumption of electricity and natural gas has decreased, even though the student population has grown and the university has increased the total building square footage. The university is replacing older equipment and purchasing Energy Star rated equipment; controlling the speed of pumps, fans, and other machinery; lowering temperature, mixed air, and heating and cooling set points in rooms and buildings when unoccupied; installing new lighting and retrofit systems; improving refrigeration, chiller, and compressor control systems; and conducting boiler tune-ups and replacements.

The university has removed all pneumatic controls and installed direct digital controls for HVAC control in many buildings. Additional insulation was added to the main campus tunnel steam piping system in an effort to reduce heat loss. The target payback period for all energy projects to date has been four years or less.

The university has previously experimented with many renewable energy demonstration projects such as solar photovoltaic and wind systems at its Michigan Alternative Renewable Energy Center (MAREC) located in Muskegon, Michigan. Also, the Kelly Family Sports Center on the Allendale campus contains a geothermal heat pump system that uses the constant temperature underground to heat and cool the building. Moreover, several campus buildings have green roof systems that help lower the temperature for improved energy optimization and lessen the demand for peak energy. Grand Valley has 20 LEED certified building projects on its campuses, to date, including the first LEED platinum library in Michigan.

Grand Valley's Board of Trustees voted to approve and support the Consumers Energy Community Solar Garden project to be built on university property on the Allendale, Michigan campus. When completed, the Solar Garden project will produce up to three megawatts (MW) of safe, quiet, and emission-free solar energy. This project broke ground in October of 2015 and will be operational as of April 2016. The Solar Garden contains over 11,000 panels, covering 17 acres, and will provide Consumers Energy customers with renewable energy purchase and credit options, including Grand Valley who will benefit from a bill credit over the next 25 years. Additionally, GVSU has received funding for educational purposes with the first year's funding covering costs of engineering, procurement, and installation of three 5 kilowatt (KW) systems, as well as ongoing costs to help develop and administer the energy related curriculum for students, community members, first responders, and local officials. Michigan residents are also able to purchase one block units of solar energy from the Solar Garden for individual homes and receive rebate credits as well. This Solar Garden is expected to be the largest of its kind in Michigan.

FY2015 highlights:

- During the last 15 years, GVSU has implemented more than 250 energy-saving projects, which total \$2.1 MM annually in cost avoidances from long-term, energy-efficient projects
- Over the last 16 years, annual one-time energy cost avoidance projects have reached \$1.5 MM from energy conservation programs and initiatives, which change each year, such as with energy competitions on campus
- All energy projects for FY2016 are completed or will be completed by April 2016 with an aggregate payback of 6 years on the energy alone, without taking into account any operational savings
- GVSU has subscribed to 500KW of the Solar Garden annually for 25 years, enough energy for ninety homes on a yearly basis

5. WATER MANAGEMENT AND EFFICIENCY

Grand Valley continues to improve its water conservation and efficiency measures. One initiative is a goal set by the university during its 50th anniversary celebration to return the Allendale Campus stormwater runoff conditions to the same conditions as of 50 years ago. A faculty and staff member research study resulted in a number of new initiatives such as the use of irrigation and retention ponds, as well as groundwater and drainage systems that prevent water runoff into the adjacent ravines. The university has developed a natural landscape plan that also reduces the need to water by planting drought-resistant native plant species, and by installing green roofs on several campus buildings, as well as constructing permeable pavement to prevent stormwater runoff. Grand Valley has also invested in water efficient products for buildings, such as low flush toilets and low flow showerheads.

FY2015 highlights:

- “Going Trayless” in Campus Dining has saved 1,040 gallons of water, 15 pounds of detergent, and 15 gallons of sanitizer per week since 2008; in FY2015 alone, that resulted in a savings of 31,200 gallons of water, 450 pounds of detergent, and 450 gallons of sanitizer
- Irrigation and retention ponds on the Allendale Campus accounted for 15 million gallons of water that were used for the Meadows Golf Course and other sports complexes
- GVSU reduced water consumption by 20 MM gallons from FY2013-2014, saving an estimated \$85,000

6. ALTERNATIVE TRANSPORTATION AND FUELS

Grand Valley and the Interurban Transit Partnership (ITP) Rapid formed a partnership more than 10 years ago, and bus ridership between the Allendale and Pew Grand Rapids campuses has continued to grow over the years. Bus ridership reached 2,898,032 in 2015. There has also

been an increase in bike ridership, due to more bike racks being made available and the capability of the buses to accommodate bikes during transit.

Facilities Services and Campus Dining are adding electric and hybrid vehicles as replacements for older vehicles in their fleets. Campus Dining also recycled approximately 3,000 gallons of cooking oils, which were turned into biodiesel fuel. Additionally, the Meadows Golf Course uses biodiesel fuel to power grass mowers, tractors, and other maintenance equipment.

FY2015 highlights:

- GVSU reinvested \$2,660,319 in the ITP Rapid bus partnership including upgrades for bus vehicles and improved routing to ensure sustainable and alternative transportation options continue
- Total avoided car vehicle miles were 19,996,421 with an estimated \$11,797,000 in avoided vehicle operating costs including fuel, maintenance, and insurance
- Approximately 6,807 metric tons of carbon dioxide equivalents were avoided, significantly reducing greenhouse gas emissions (GHG); these avoided emissions account for approximately 20% of GVSU's climate inventory of Scope 3 (transportation-related) GHG gases and approximately 7% of GHG gases overall
- As part of Chevrolet's Campus Clean Energy Efficiency Campaign, GVSU committed to continue its efforts to reduce carbon dioxide from entering the atmosphere; these carbon reductions will be certified as voluntary carbon credits and Chevrolet will pay the university for its reductions and permanently retire them to benefit the climate
- GVSU will be pursuing the Bicycle Friendly University recognition from League of American Bicyclists in 2016, as part of its efforts to reduce overall Scope 3 emissions

7. SUSTAINABLE AND LOCAL PURCHASING

Grand Valley makes a concerted effort to increase expenditures on sustainable, green, and local products and services. One of the driving forces has been the Leading Environmental and Energy Design (LEED) certification standards that are earned from building construction, such as products and services that are purchased within a 500-mile range. Another driving force is the abundance of certified green and sustainable products and services that are available at the local and regional level, including building and construction materials, industrial sustainable furniture, recycled paper products, green cleaning products and services, clothing, fair trade products, and many others. The university supports green vendor fairs on campus and seeks qualified minority-owned vendors. It recently purchased 48 sustainably made t-shirts from Clothing Matters, a local sustainable fashion boutique.

FY2015 highlights:

- \$400,000 on Adidas, a Fair Labor Association Member, athletic apparel and merchandise
- \$215,905 expenditures on recycled paper products and lab paper

- \$1.7MM of apparel for the university bookstores was purchased from vendors that meet the Code of Conduct requirements for the Worker Rights Consortium, of which the university is a member
- Minority owned business vendor purchases from Hispanic, African American, Women, and Veteran owners totaled \$5,256,548
- Sustainable and green maintenance items such as cleaning and paper supplies totaled \$2,279,020
- Surplus Store revenues generated \$48,775, even though the store has been closed since August 2015 due to construction in the immediate area

8. FISCAL SUSTAINABILITY

Grand Valley has always embraced cost efficiency and fiscal sustainability in its ongoing operations, fiscal year budget cycles, and strategic plans. The university has been recognized by Institutional Research and Evaluation, Inc., as one of “America’s 100 Best College Buys” for 20 years.

Grand Valley also has several sustainability related funds, including a “Sustainability Reinvestment Fund” for faculty, staff, and students, as well as an “Energy Reinvestment Fund” for Facility Services regarding energy efficiency and conservation projects. Both funds reinvest cost savings into future sustainability and energy related projects on campus.

FY2015 highlights:

- The annual economic impact that GVSU created in the West Michigan region was \$730 MM; a separate economic impact report highlighting these specific efforts has been issued by the university
- 10,707 jobs in West Michigan can be attributed to Grand Valley’s presence and 86.3% of graduates who are employed remain in West Michigan
- GVSU maintained an A+ Standard and Poor’s credit rating and received an A1 credit rating from Moody’s Investor Service
- The Sustainability Reinvestment Fund processed five projects including equipment for the Sustainable Agriculture Project, Bicycle Repair Stations, a student-led vermicomposting project, Surplus Store furnishings for the Seeds of Promise Neighborhood Innovation Center, and compostable supplies to be used toward zero waste efforts at the Lubbers Cup Regatta
- GVSU, through its energy reinvestments, has achieved \$500K in permanent annual base budget reductions
- GVSU has over \$1.2 B of assets in the community
- Net capital assets increased \$17.1 MM, primarily for sustainability related construction projects
- Endowment cash and equivalents reached \$105.9 MM

9. HEALTH, WELLNESS, AND NUTRITION

Grand Valley continues to create awareness on the importance of preventative health and wellness programs and activities for the campus community. Some of the important health and wellness programs include pedometer challenges, exercise fitness programs, and “Know Your Numbers,” where faculty and staff members learn their baseline health statistics. “Know Your Numbers” participation will begin to show more dramatic positive effects on overall healthcare costs in the long term.

FY2015 highlights:

- More than 1,300 people participated in both group fitness programs and pedometer challenges
- Average annual participation of the Know Your Numbers program by benefit eligible faculty and staff was 880
- Grand Valley’s Michigan Universities Coalition on Health membership resulted in leveraged health cost savings of \$216,000
- GVSU employees pay 20% for health insurance, saving the university approximately \$5,096,365 each year

10. LEED BUILDING AND LAND USE

The first Grand Valley building to become LEED certified in 2004 was the Michigan Alternative and Renewable Energy Center which is now known as the Muskegon Innovation Hub. Other LEED certified buildings that followed include Lake Ontario Hall, John C. Kennedy Hall of Engineering, Russel H. Kirkhof Center Addition, Kelly Family Sports Center, Frederik Meijer Honors College, Glenn A. Niemeyer Living Center, Mackinac Hall Addition and Renovation, Bicycle Factory Renovation, South Apartments, The Connection, L. William Seidman Center, Mary Idema Pew Library Learning & Information Commons (GVSU’s first LEED platinum building, and the first LEED platinum library in Michigan), Robert B. Annis Field Station, Zumberge Hall Addition, Au Sable Hall Addition, and A. Robert Kleiner Commons. The P. Douglas Kindschi Hall of Science and the Laker Marketplace are currently in the certification process. Additionally, Housing 2016, the Rec Center Addition, and the Performing Arts Center are under construction/renovation to LEED standards.

Grand Valley has established building policies and procedures that seek a LEED silver rating or better for all new or renovated building projects. The LEED certification program focuses on energy efficiency, the interior environment, waste reduction and recycling, as well as minimizing the impact of the newly constructed or renovated buildings. LEED building features include green roofs, intensive storm water management, and improved occupant health and safety.

FY2015 highlights:

- 20 LEED-certified building projects have been completed to date totaling 1,391,128 square feet
- 2 projects are currently in the certification process, 2 projects are under construction with the intent to gain LEED certification, and 2 projects are in the design process
- LEED buildings typically use 30% less energy, 40% less water, and produce 75% less waste when compared to traditional buildings on average
- Of the 20,306 tons of building construction waste created in 2015, 19,765 tons were recycled, donated, or otherwise recovered with an estimated cost savings of \$494,125 in landfill tipping fees
- \$133,535,694 was spent on construction projects, contributing to the creation of 2,919 jobs in 2015

11. COMMUNITY ENGAGEMENT AND SERVICE

Grand Valley encourages community service for its students and faculty and staff members, which positions the university as a leader to address key regional issues while helping to build regional areas of expertise in sustainable practices.

- GVSU students volunteered 63,439 hours with an economic impact of \$1,404,539 using the national value of volunteer time
- 8,060 students participated in internships, practicums, and student teaching, which saved employers more than \$25 million
- The Community Sustainability Partnership (CSP; www.grpartners.org), which was founded by GVSU, the City of Grand Rapids and three other academic institutions currently has more than 260 endorsing stakeholder partner organizations; there are now six CSPs in the West Michigan region
- GVSU was instrumental in establishing Seeds of Promise (www.seedsofpromise.net), a grassroots Grand Rapids sustainable neighborhood initiative that seeks to empower local residents as community leaders. Key programs include tutoring students at Dickinson Elementary School, providing leadership training for local residents, leveraging neighborhood community governance structures, mentoring family members, and empowering and equipping residents to obtain jobs. Residents in the community provide the leadership strategies and decision making for six self-identified community impact areas that improve their overall wellbeing and quality of life.

MOVING FORWARD

For Grand Valley, in 2015, the estimated annualized positive economic impact to the West Michigan region through the use of sustainable development best practices was approximately \$265 million (MM) in direct economic impact and avoided costs. Additional metrics will be used in the future to further develop and determine the full impact of Grand Valley's sustainability initiatives across campus and in the community. In a separate report, GVSU's total economic impact to the region is estimated to be \$730 MM in 2015, which may be inclusive of some, but not all, of the economic impact represented in this report. The estimated overall sustainability collective economic impact includes:

- Education for Sustainability: \$50.1 MM
- Sustainable Food Systems: \$2.7 MM
- Recycling and Waste Minimization: \$0.4 MM
- Energy Efficiency and Optimization: \$3.6 MM
- Water Efficiency and Conservation: \$0.1 MM
- Alternative Transportation and Fuels: \$14.5 MM
- Sustainable and Local Purchasing: \$9.5 MM
- Fiscal Sustainability: \$17.6 MM
- Health and Wellness: \$5.3 MM
- Green and LEED Buildings: \$134 MM
- Community Engagement and Service: \$26.4 MM

Grand Valley has made significant progress, but the challenges today are even more demanding and difficult than in past years. The Office of Sustainability Practices looks forward to partnering with colleges and departments at the University, as well as other organizations in the community, in helping lead the way to sustained growth and prosperity in the West Michigan region in the years ahead.