



**GREEN PRACTICES COMMISSION
VIA VIDEOCONFERENCE
Thursday, January 13, 2022
5:30 p.m. – 7:00 p.m.**

**IMPORTANT NOTICE REGARDING
PUBLIC ACCESS & PARTICIPATION**

On March 20, 2020, City Manager Gregory Rose declared a State of Emergency for the City of University City due to the COVID-19 Pandemic. Due to the ongoing efforts to limit the spread of the COVID-19 virus, the January 13, 2022 meeting will be conducted via videoconference.

Observe and/or Listen to the Meeting (your options to join the meeting are below):

Webinar via the link below:

<https://us02web.zoom.us/j/87942185364?pwd=bUszRzgrMUVLOWVWSGxGbGJxaHQ4UT09>

Passcode: 902546

Audio Only Call

iPhone one-tap :

US: +13017158592,,87942185364# or +13126266799,,87942185364#

Or Telephone:

US: +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099 or +1 253 215 8782 or +1 346 248 7799 or +1 669 900 6833 or 877 853 5247 (Toll Free) or 888 788 0099 (Toll Free)

Webinar ID: 879 4218 5364

Citizen Participation and Public Hearing Comments:

Those who wish to provide a comment during the "Citizen Participation" portion as indicated on the agenda; may provide written comments to Sinan Alpaslan ahead of the meeting.

ALL written comments must be received **no later than 12:00 p.m. the day of the meeting**. Comments may be sent via email to: salpaslan@ucitymo.org, or mailed to the City Hall – 6801 Delmar Blvd. – Attention: Sinan Alpaslan. Such comments will be provided to Board/Commission member prior to the meeting. Comments will be made a part of the official record and made accessible to the public online following the meeting.

Please note, when submitting your comments, a **name and address must be provided**. Please also note if your comment is on an agenda or non-agenda item. If a name and address are not provided, the provided comment will not be recorded in the official record.

The City apologizes for any inconvenience the meeting format change may pose to individuals, but it is extremely important that extra measures be taken to protect employees, residents, and elected officials during these challenging times.



A G E N D A

GREEN PRACTICES COMMISSION MEETING

Thursday, January 13, 2021 at 5:30 – 7:00 p.m.

Via Zoom

- 1. MEETING CALLED TO ORDER**
- 2. ROLL CALL**
- 3. OPENING ROUND**
- 4. APPROVAL OF MINUTES:** 11/11/2021 draft minutes attached
- 5. SPECIAL PRESENTATION** – Veregy Preliminary Analysis Summary – Energy Assessment Report
(See Attachment #1)
- 6. CITIZEN PARTICIPATION**
- 7. NEW BUSINESS**
- 8. OLD BUSINESS**
 - a. Sustainability Strategic Plan in Draft Form – Discussion proposed to begin for Biodiversity and Energy/Emissions sections (See Attachment #2)
 - b. Mosquito Control (spraying and larvicide application) – Update from Commissioner Brain.
 - c. Dark Skies Ordinance – Update from Commissioner Brain.
- 9. COUNCIL LIAISON UPDATE**
- 10. CLOSING ROUND**
- 11. ADJOURNMENT**

Please call (314) 505-8572 or email salpaslan@ucitymo.org to confirm your attendance.



PRELIMINARY ANALYSIS SUMMARY

FOR A GUARANTEED ENERGY SAVINGS
CONTRACT

PREPARED BY VEREGY, FORMERLY CTS GROUP

PRESENTED BY ELLIE BLANKENSHIP AND JOHN SHAW

JANUARY 13, 2022

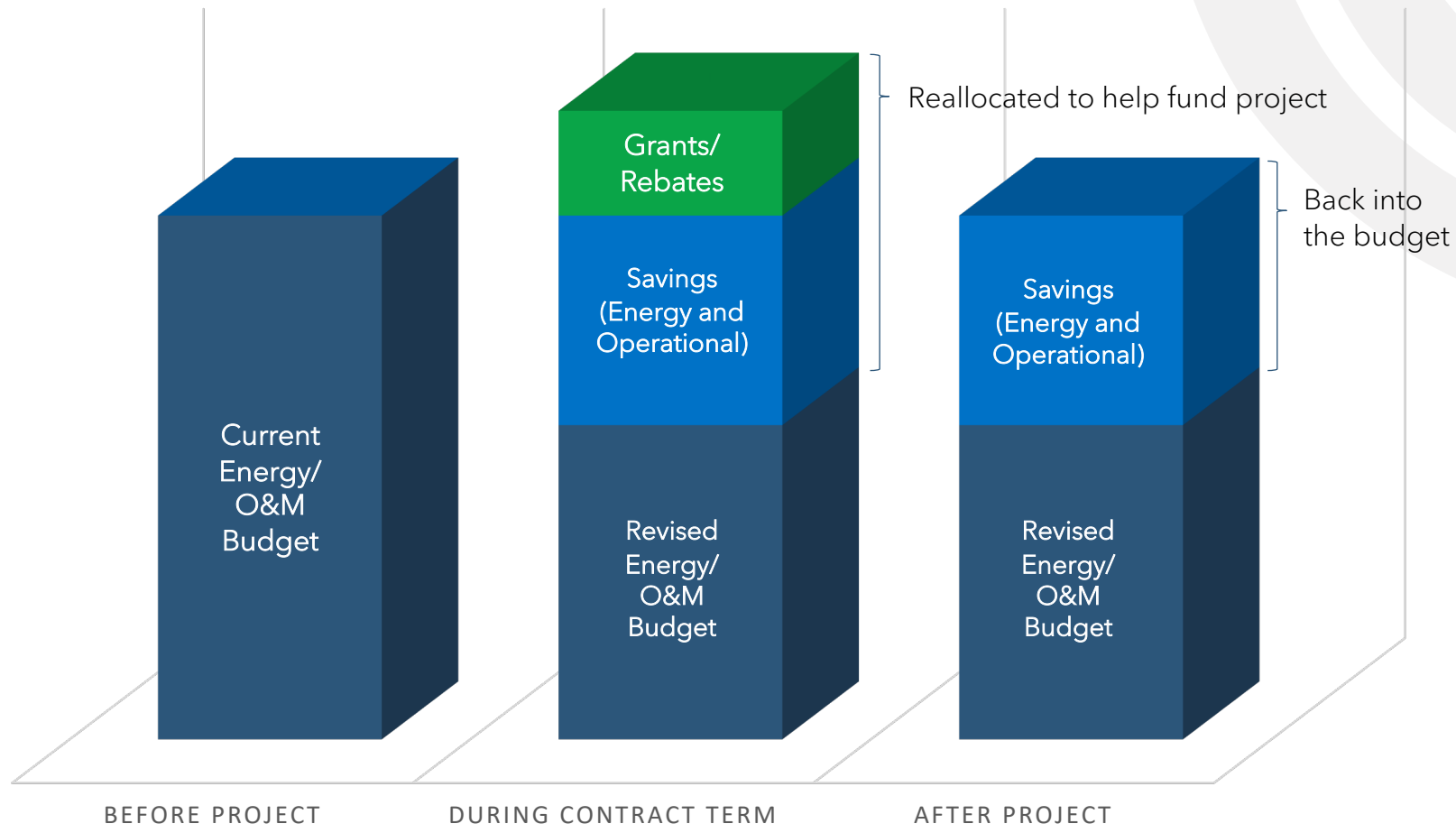
GUARANTEED ENERGY SAVINGS CONTRACTS

- Missouri Revised Statute 8.231
- Alternative procurement method
- Implementation of energy cost savings measures
- Addresses funding issues for capital projects
- Savings from project help pay for project
- No upfront money required
- Performance and savings are guaranteed
- Improves operating efficiency
- Flexible and unique for each customer
- Risk of performance belongs to Energy Services Company (ESCO)
- 15-year payback

PERFORMANCE BASED VS. TRADITIONAL

| Performance Based - Veregy | Traditional Design/Bid/Build |
|--|--|
| Bid awarded based on performance and lifecycle costs | Low bid awarded based on specifications |
| Payments for project are offset by guaranteed savings freeing up capital for other needs | Project costs funded by capital budget |
| Comprehensive approach | Piecemeal approach |
| No up-front fee required | Up-front fee for evaluation/studies |
| Long-term performance and savings are guaranteed | Performance and savings are not guaranteed |
| One contract, single point accountability | Multiple contracts with multiple vendors |
| Performance-based contractor is tied to providing savings over term of contract | Contractors have no accountability to reduce energy or maintenance costs |
| Performance contractor takes on risk | Owner assumes risk |

HOW THESE PROJECTS WORK



- Guaranteed Savings
- Fixed price
- No change orders!
- Best value
- Accountability
- ESCO takes on risk
- Low life cycle costs
- Proven systems
- Proven Results



BUILDINGS EVALUATED

- City Hall
- Annex Building
- Trinity Building
- Centennial Commons



UTILITY ANALYSIS

| University City Facilities Assessment Summary | | | Utility Baseline Calculations | | | | | | | | | | | | |
|---|--------------|-----------------|-------------------------------|-------------------|-------------------|-----------------|----------------------|------------------|---------------------|----------------|-------------------|----------------|---------|-----------|----------------|
| | Built (Year) | Floor Area (SF) | kwh/yr | Elec -\$/yr | Unit Costs \$/kWh | Elec (kBtu/ft2) | Gas Usage (therm/yr) | Gas Cost (\$/yr) | Unit Costs \$/therm | Gas (kBtu/ft2) | Total -\$ | Total kBtu/ft2 | kWh/ft2 | therm/ft2 | \$/ft2 |
| City Hall | 1903 | 39,900 | 315,520 | \$ 28,105 | \$ 0.089 | 27 | 21,832 | \$ 12,721 | \$ 0.58 | 55 | \$ 40,826 | 82 | 7.91 | 0.55 | \$ 1.02 |
| 6801 Delmar Blvd. | | | | | | | | | | | | | | | |
| Centennial Commons | 2005 | 67,000 | 1,123,200 | \$ 91,216 | \$ 0.081 | 57 | 13,277 | \$ 9,354 | \$ 0.70 | 20 | \$ 100,570 | 77 | 16.76 | 0.20 | \$ 1.50 |
| 7210 Olive Blvd. | | | | | | | | | | | | | | | |
| Totals: | | 172,340 | 1,438,720 | \$ 119,321 | \$ 0.08 | | 35,109 | \$ 22,075 | \$ 0.63 | | \$ 141,396 | | | | \$ 1.26 |
| | | | % of Usage: | 84% | | | % of Usage: | 16% | | | | | | | |

City Hall had an EUI of 82, with a similar building type (Office) in having an EUI of 52.

Centennial Commons had an EUI of 77, with a similar building type (Fitness Center) having an EUI of 51

Spent an additional \$53,610 in utilities at Trinity and Annex from the information we were provided

The utility information provided for Trinity Building was incomplete for the electrical usage. Additionally, the lack of occupancy at Trinity and the Annex during the analyzed period does not provide Veregy with an accurate profile of the normal building usage from which a proper baseline can be calculated. This issue will affect the energy savings estimated and therefore was excluded as to not communicate an inaccurate savings estimate. During a detailed audit of the facilities Veregy will be able to conduct a more thorough analysis of the facilities and provide the highest quality utility usage and savings information to the city.

EXISTING CONDITIONS – CITY HALL

HVAC

- Water Source Heat Pumps reaching 15 years
- Courtroom served by Unit Ventilators also appear to be +15 years old
- Cooling Tower installed in 2005
- All these items are reaching the end of their useful life
- Boilers have been replaced and are in good working condition

Controls

- Trane System that is not web-based

Electric/Lighting

- Some lighting has been converted to LED
- Still some that needs to be upgraded

Building Envelope

- Windows are original and some in poor condition
- Doors are in poor condition



EXISTING CONDITIONS – CENTENNIAL COMMONS

HVAC

- Packaged Rooftop Units (RTUs) and Air Handling Units (AHUs)
 - Exercise area and basketball served by two RTU units installed in 2005 – ASHRAE life span is 15 years
 - Outside air intake bolted shut – prevents fresh air coming into the building
 - Soccer area served by three Reznor heaters installed in 2005 – one unit is not working and there is a fourth unit that has not worked for a longer time.

Controls

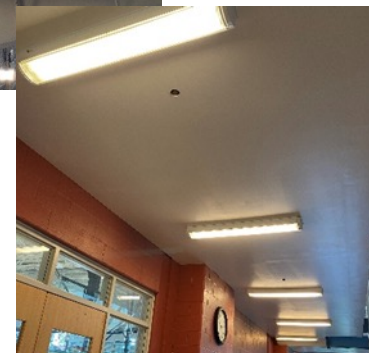
- Trane System that is not web-based and is need of upgrade

Electric/Lighting

- Some lighting has been converted to LED
- Still some that needs to be upgraded
- Issues with lighting Control

Building Envelope

- Appears to be in good condition , but weatherization would help



EXISTING CONDITIONS - ANNEX

HVAC

- RTUs, Split System Furnaces and Ductless Mini Splits
 - 3 Packaged RTUs: 4 ton - 2004, 5 ton -2007, 10 ton -1993
 - 5 Split System Furnaces of various ages with steam heating coil and remote DX condenser coiling
 - Two small ductless splits installed recently to provide cooling to server room and 911 dispatch



Controls

- Standalone thermostats

Electric/Lighting

- Mixtures of T8 and T-12

Building Envelope

- Windows have been upgraded
- Issues with roof or tuckpointing with some water infiltration -needs to be evaluated further



EXISTING CONDITIONS – TRINITY BUILDING

HVAC

- Heating/cooling accomplished with steam radiators and window units
- Heating system is two Trane Boilers manufactured in 2010 appear to be in good condition



Controls

- Onboard sensors for the radiators and window units

Electric/Lighting

- Mixtures of T8 and T-12

Building Envelope

- Windows in poor condition
- Masonry in fair condition
- Roof appears to be in poor condition



POTENTIAL RECOMMENDATIONS- NOW AND IN THE FUTURE

| <u>Building Name</u> | | Lighting - LED Upgrade | Lighting - Replace Automation Controls | HVAC - Replace RTUs/AHUs | HVAC - Replace WSHPs (as Required) | HVAC - Replace Split Systems/UVs/Radiators | Controls - Bi Polar Ionization | Controls - Upgrade/Install New BAS | Controls - Implement Controls Strategies | Building Envelope - Restore Front Entrance | Building Env - Replace Windows | Building Env - Roof Repair/Replacement | Building Env - Tuckpointing | Renovation - Interior Finishes/Space Planning |
|----------------------|--------------------|------------------------|--|--------------------------|------------------------------------|--|--------------------------------|------------------------------------|--|--|--------------------------------|--|-----------------------------|---|
| 1 | City Hall | X | | | X | X | X | X | X | X | | | | |
| 2 | City Hall Annex | X | | X | | X | X | X | | | X | X | X | |
| 3 | Trinity Building | X | | | | X | X | X | | X | X | X | X | |
| 4 | Centennial Commons | X | X | X | | | X | X | X | | | | | |

Items highlighted in green are projects recommended now other items after determination of usage of Trinity and Annex Buildings



FINANCIAL SUMMARY

- Currently focused on City Hall and Centennial Commons immediate needs (items highlighted in green)
- Veregy can help evaluate potential costs for any additional items the City would like to consider at this time and renovations of Trinity and/or Annex - City could include in a guaranteed energy savings contract along with the financing mechanism

| Estimated Costs | Estimated Annual Energy Savings | Estimated Annual Operational Savings | Estimated Annual Capital Cost Avoidance |
|-------------------------|---------------------------------|--------------------------------------|---|
| \$1,800,000-\$2,000,000 | \$20,000 - \$25,000 | \$20,000-\$25,000 | \$90,000-\$110,000 |

- Veregy will apply for all applicable rebates
- Energy savings will be guaranteed
- Operational savings will be verified through operational audit

| Estimated Annual Payment | 15 years @ 2.5% |
|--------------------------|-----------------|
| Low End Estimate | \$ 144,572 |
| High End Estimate | \$ 160,725 |

Sample 15 Year Cash Flow Analysis

| | Construction Period | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
|--|---------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Guaranteed Annual Avoided Energy Costs | \$0 | \$22,000 | \$22,880 | \$23,795 | \$24,747 | \$25,737 | \$26,766 | \$27,837 | \$28,950 | \$30,109 | \$31,313 | \$32,565 | \$33,868 | \$35,223 | \$36,632 | \$38,097 |
| Annual Maintenance and Repair Savings | \$0 | \$22,000 | \$22,660 | \$23,340 | \$24,040 | \$24,761 | \$25,504 | \$26,269 | \$27,057 | \$27,869 | \$28,705 | \$29,566 | \$30,453 | \$31,367 | \$32,308 | \$33,277 |
| Capital Cost Avoidance/Capital Contribution | | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 | \$100,000 |
| Total Annual Savings / Cost Avoidance | \$0 | \$144,000 | \$145,540 | \$147,135 | \$148,787 | \$150,498 | \$152,270 | \$154,106 | \$156,008 | \$157,977 | \$160,018 | \$162,132 | \$164,321 | \$166,589 | \$168,939 | \$171,374 |
| Annual Amortization Schedule | | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 |
| Annual Service and M&V Costs | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Annual Costs | \$0 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 | \$152,649 |
| Annual Guaranteed Net Cash Flow | \$0 | -\$8,649 | -\$7,109 | -\$5,514 | -\$3,862 | -\$2,151 | -\$378 | \$1,458 | \$3,359 | \$5,329 | \$7,369 | \$9,483 | \$11,673 | \$13,941 | \$16,291 | \$18,725 |

Financial Summary

Net Project Cash Flow \$59,966

Project Financial Assessment Criteria

Budgeted Capital Costs

Grant Funding *subject to other grant receipts

Utility Incentives or Rebates

Net Cost to Finance

Financial Amortization Criteria

Financial Term in Years

Interest Rate

Annual O&M Escalation

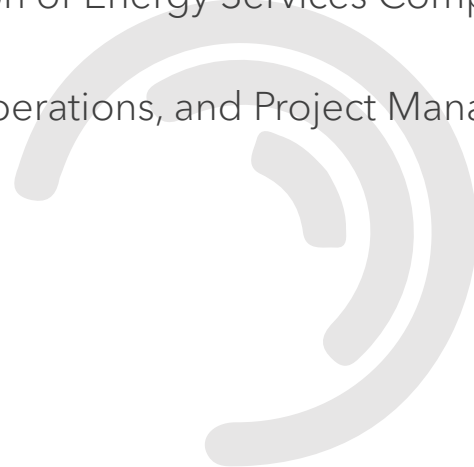
Annual Utility Escalation

Notes:

- 1) Capital Cost Avoidance includes future budgeted replacement expenditures for equipment beyond its useful life or does not meet minimum energy efficient regulations
- 2) Construction Period Interest or Savings not considered
- 3) Proportional Payments can be structured to achieve budget neutral on an annual basis
- 4) Financing Rates subject to credit approval and documentation review, subject to change prior to final contract

ABOUT VEREGY

- Veregy Midwest was founded in 2000 and is headquartered in St. Louis, Missouri
- Developed over \$769M of successful public sector performance contracting projects
 - \$130 Million in MO in the last 5 years (78 projects)
 - Average project size \$1.6M
 - \$10 Million in annual savings
 - Over 70% of continued business is from repeat or referral clients
- Dedicated Local Government Team with Previous City Manager and Parks and Recreation Director on staff
- Accredited Member of the National Association of Energy Services Companies (NAESCO), DOE certified, Energy Star Partner
- Experienced In-house Technical Resources, Operations, and Project Management
 - Experience with local contractors
- Vendor- Neutral



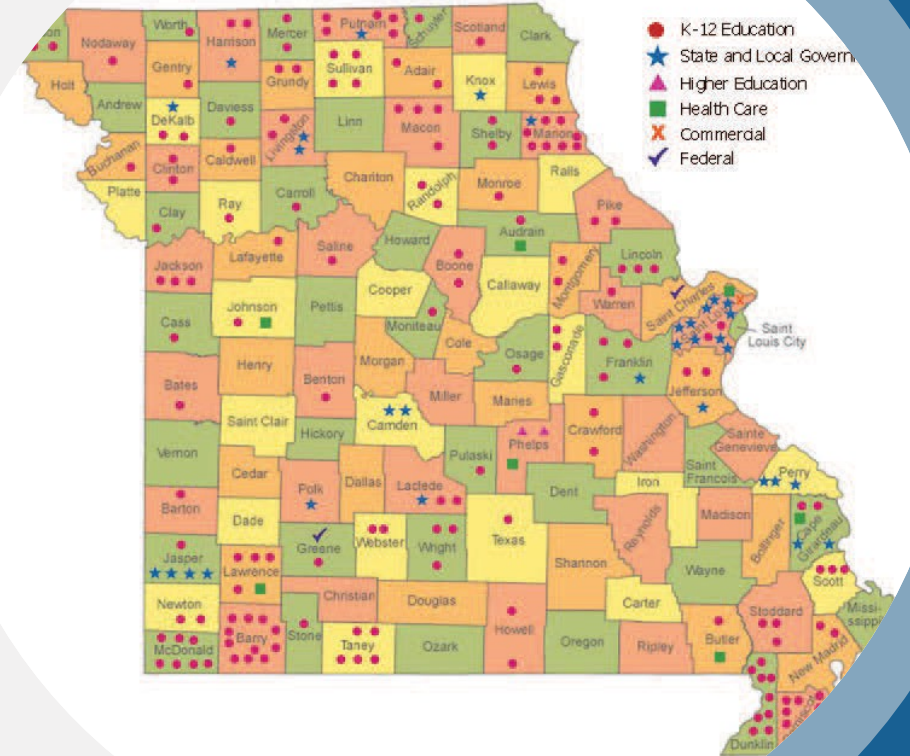
VEREGY MISSOURI REFERENCES

Cities

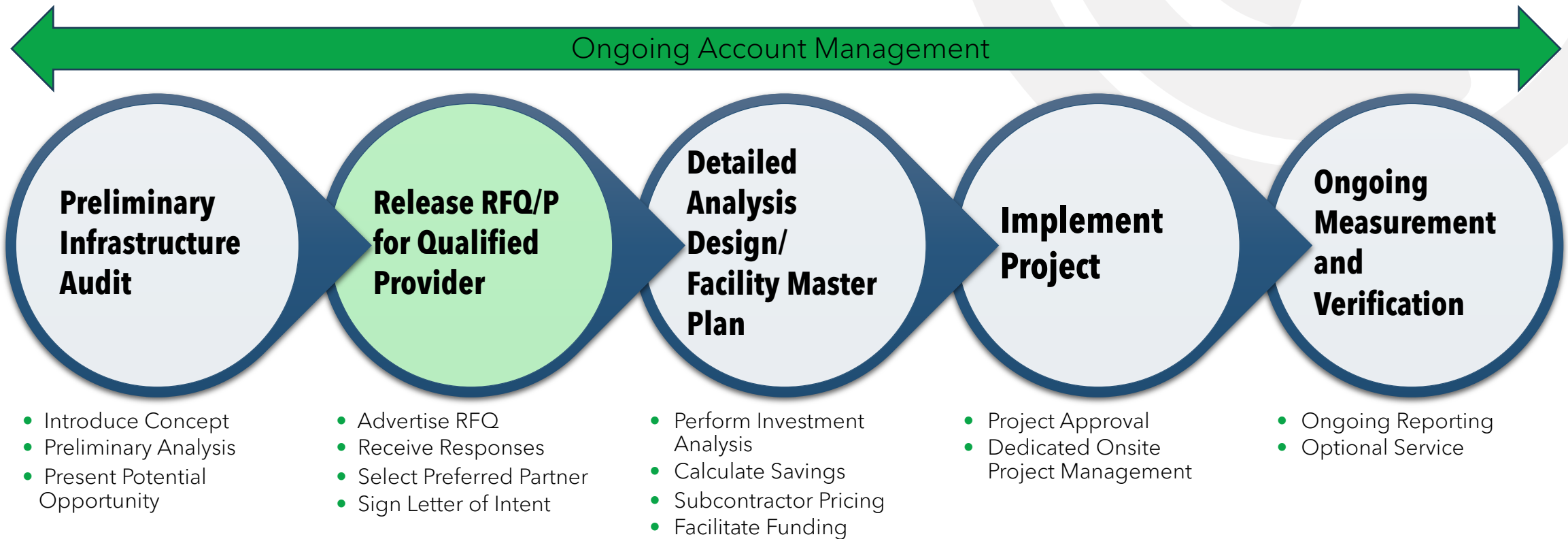
- Florissant (2)
- O'Fallon (2)
- Shrewsbury
- Maplewood
- Richmond Heights
- Perryville (2)
- Washington
- Richmond Heights
- Ballwin
- Hazelwood

Historic Courthouses

- Camden County, MO (2)
- Cape Girardeau County, MO (2)
- DeKalb County, MO
- Harrison County, MO
- Jasper County, MO (4)
- Jefferson County, MO (2)
- Knox County, MO
- Laclede County, MO
- Livingston County, MO (2)
- Polk County, MO
- Perry County, MO



PROVEN PROCESS



SUMMARY

Veregy program does the following for University City

- Create jobs
- Lowers energy costs
- Lowers operating costs
- Addresses long term capital improvement projects
- Improves marketability of facility
- Reduces carbon emissions
- Mitigates risk
- Creates healthier, safer and more comfortable environments
- Frees up capital for other needs



University City Sustainability Plan



2021

6801 Delmar Blvd

St. Louis, MO

63130

Phone: (314) 862 6767



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DRAFT

Executive Summary

The project focused on the creation of a new sustainability plan for University City. Through research and consultation with local experts, this plan was created to reflect the updated agenda of the citizens of University City and improve upon the previous targets of the 2012 Sustainability Plan. Jenny Wendt, the liaison for the University City Green Practices Commission and senior project manager, served as an advisor, along with Washington University in St. Louis Senior Lecturer Raymond Ehrhard to the two teams of Sustainability Exchange students.

In the Fall of 2020, a team of students created the foundation and background for the proposed University City Sustainability Plan. They divided the sustainability plan into six sections: Biodiversity, Energy & Emissions, Food Access, Waste & Materials Management, Healthy Transport, and Water & Green Infrastructure. Over the course of the Fall 2020 semester, they completed the Energy & Emissions and Water & Green Infrastructure sections. Additionally, they created transition materials to assist the Spring 2021 team in completing the remaining four sections of the sustainability plan.

During the Spring 2021 semester, the four remaining sections were completed, and all findings are summarized in this final report. Each section of the sustainability plan includes two to three main targets, along with a brief explanation of how they will be met. Relevant hyperlinks to additional information and resources are included throughout.

The finalized plan will be delivered to the University City Green Practices Commission and will be reviewed before implementation.

— *Sustainability Exchange Teams*

Why Create A Sustainability Plan?

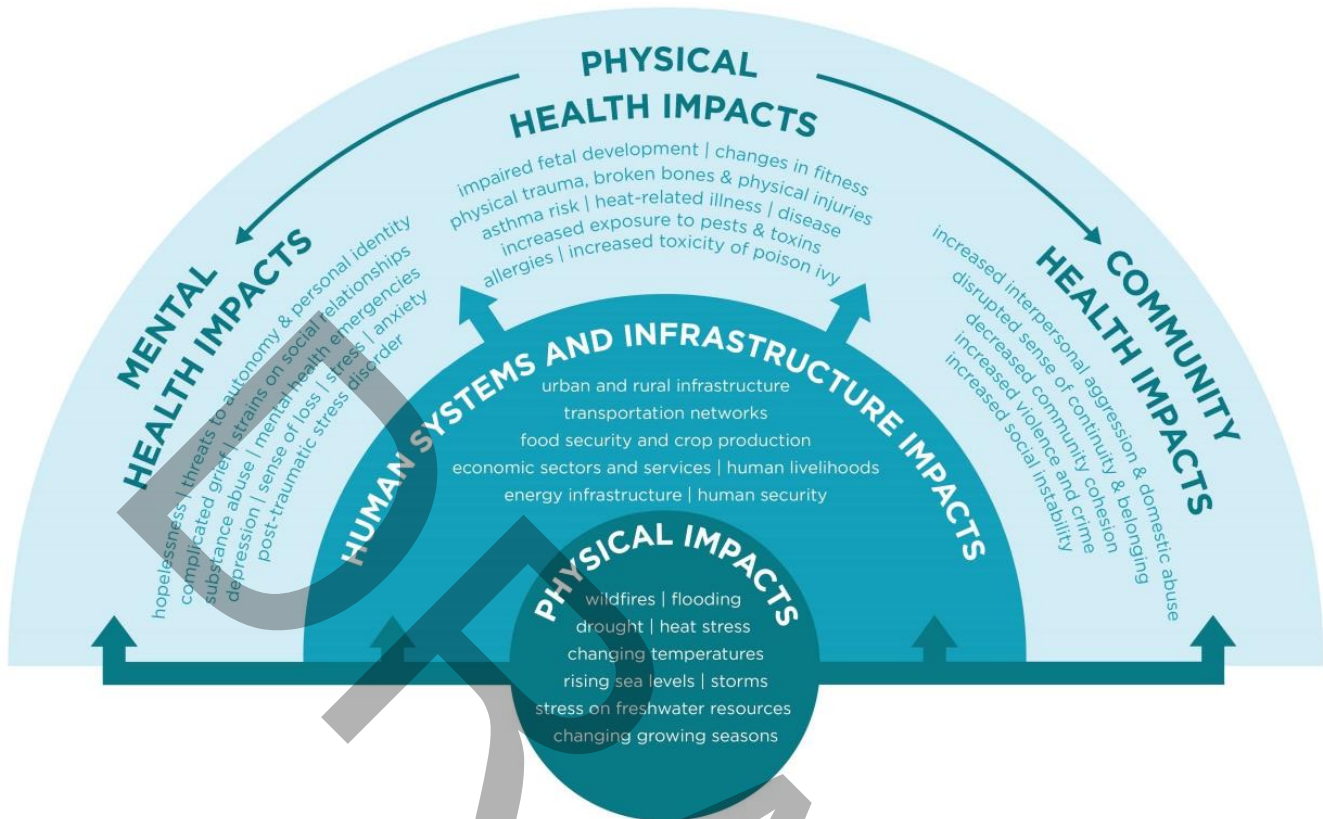
As members of the Green Practices Committee of University City, we believe that economic, environmental and social well-being (commonly known as the triple bottom line) are inextricably connected. In order to promote the quality of life of community members now, and for future generations, it is our duty to use available science, best practices, and partnerships to act as responsible stewards of the environment. In the age of globalization, we believe that local behavior and global welfare are linked: *this requires that we think globally, as we act locally.*

With these principles in mind, the Mission of the Green Practices Committee of University City is as follows:

“to encourage sustainable practices and programs that improve the health and quality of life of our community; restore and protect our natural resources; and strengthen our economy. It is widely recognized that there are local and global issues that threaten our ability to ‘meet the needs of the present without compromising the ability of future generations to meet their own needs’ (1987 Brundtland Commission). Therefore, it is imperative that we become sustainable, as individuals, as a community, and as a City”.

We are not simply acting out of principle. [Research](#) shows that, in the face of climate crisis, strategic sustainability efforts promote robust, equitable [economic development](#) and resilient [community health](#). A key [study](#) on the effects of climate change on mental, physical and community health show that public health and climate change effects are inseparable, and therefore must be dealt with simultaneously.

As climate change becomes more pressing each day, creating a plan is more vital now than ever. The [2017 EPA Midwest Climate Change](#) snapshot identifies the ways that climate change is already impacting the region, and how those impacts will amplify overtime. Overall, temperatures have already accelerated, leading to heavy rains alternating with very dry periods. This could lead to property damage, overflowing rivers and overwhelmed sewage systems, crop yield loss, and increased disease transmission. Additionally, increased temperatures pose risks to human health, from reduced air quality to increased allergens, to even more deaths from extreme heat waves.



Health Impacts Due to Climate Change - Effects of Climate Change impact the three main factors of health shown in this figure. These impacts affect People of Color, people in poverty, people with disabilities, women and people in rural areas more so than others as they do not have as many resources to combat the negative health effects of climate change. Image Source: Clayton, Susan, Christie, Manning, and Caroline Hodge. "Beyond Storms and Droughts: The Psychological Impacts of Climate Change." American Psychological Association, June 2014.

Additionally, as detailed in a recent report titled, "[Environmental Racism in St. Louis](#)," black residents in St. Louis are far more likely to suffer from energy burdens, food deserts, lead poisoning, asthma, air pollution, trash dumping, and vacant lots, than white St. Louisans. By creating a Strategic Sustainability Plan, we hope to further our local efforts and regional efforts towards ameliorating this disparity and uplifting environmental justice initiatives. *By creating, and actively engaging with, the University City Strategic Sustainability Plan, University City can act as a model for relieving environmental injustices through ongoing efforts for equitable sustainable development.*

In order to be a part of the global solution, we are focusing on the issues of biodiversity, energy and emissions, food access, waste and materials management, healthy transport, and water and green infrastructure, in hopes to enable the City and all of its constituents to have access to the means to improve their own wellbeing, as well as the wellbeing of the people, planet and community we have all grown to share and love.

Biodiversity

Why It Matters?

Fostering biodiversity in University City benefits both human and environmental health. Connecting residents to nature can give a reprieve from daily stresses and [improve quality of life](#). Preserving and restoring green space not only makes the city beautiful but protects natural ecosystems, flora, and fauna.

Target 1: Connect residents to the various natural spaces and their neighborhoods in University City

Collaborate with groups and organizations to create educational content

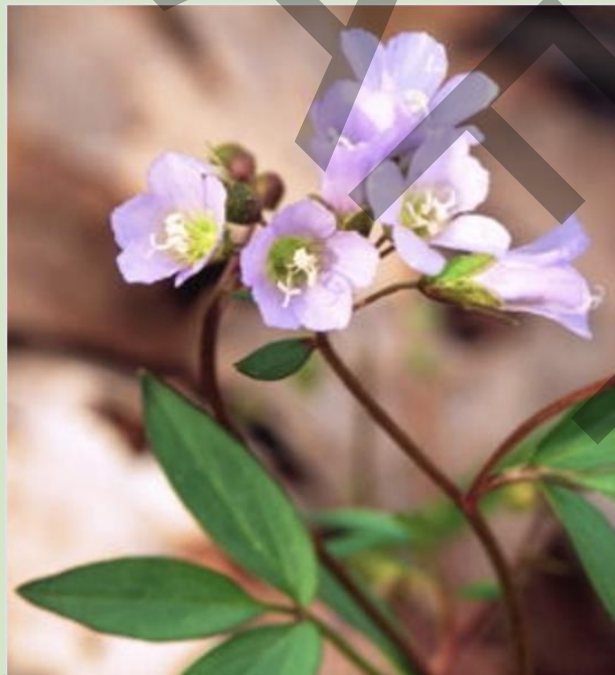
- Establish [programs](#) that connect youth and families to the surrounding wildlife and green spaces in the City
 - Work with the Missouri Botanical Gardens and Missouri Department of Conservation to promote a healthy, biodiverse community
 - Provide resources such as [Grownative](#) about promoting native plant species through platforms such as NextDoor and the City website
- Partner with surrounding organizations to develop content promoting the economic and health benefits of [tree canopies](#)
 - Use the [Columbus](#) and [Kansas City](#) initiatives to articulate the benefits of tree canopies
 - Create material that highlight the benefits of vegetation prevents erosion and improves the quality of surface and ground water

Did you know?

The [Missouri Botanical Garden](#) hosts nearly 1,000,000 visitors a year

Engage residents with ways they can promote biodiversity in their community

- Promote conservation from home programs with the assistance of the [Audubon Society](#)
 - Assist residents in removing grass and planting native gardens while reducing herbicide and pesticide use
- Develop workforce training programs for residents to restore and protect natural resources that lead to resident employment while actively avoiding community displacement
 - Advertise paid opportunities such as the [Youth Conservation Corps](#) that allow people to get experience while working directly on projects
 - Establish [community projects](#) with partner organizations that provide educational aspects while helping residents restore their surrounding green spaces
 - Remove [invasive species](#) along waterway buffers, replant with native species, and increase resources for management and maintenance expanding on previous initiatives in the 2012 University Sustainability Plan



An image of the native Jacob's ladder

GrowNative

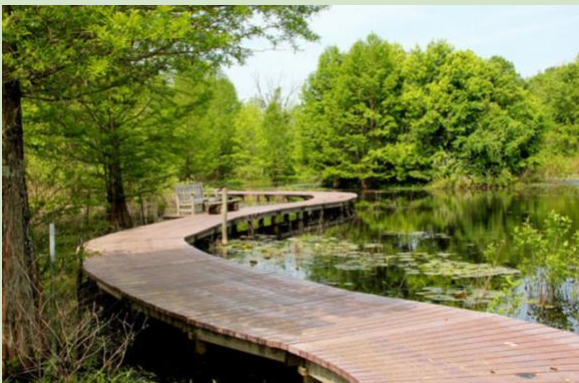
Target 2: Promote the planting and protection of species native to University City and the state of Missouri

Create “education gardens” full of native species in public green space

- Educate the public on the both the beauty and importance of native species
 - Work closely with [GrowNative](#) to plant appropriate native species that benefit local wildlife and pollinators
 - Refit eco-urban parks with native plant species
 - Use the education garden as a learning opportunity for schools, youth groups, and summer camps

Protect native species and critical habitat areas

- Encourage sustainable land management practices
 - Develop and implement organic land care policies to use safer and non-chemical alternatives
 - Work with businesses to reduce sale of invasive species
 - Monitor the presence of invasive and non-native species in green space
- Create a clear path for those seeking to participate in transforming city green space
 - Prioritize funding for projects lead by people of color
 - Develop programs for residents to restore and protect natural resources



A path in Shaw Nature Reserve

[Great Missouri Birding Trail](#)

Did you know?

Missouri Botanical Garden’s plant finder is a great resource to find Missouri native plants that meet your needs

Target 3: Ensure green space most effectively serves the needs of residents in the City

Conduct an open space assessment to categorize green space in the City

- Identify and designate the [purposes](#) for all potential corridors and green spaces
- Identify the [stressors](#), potential threats and protect natural resource and critical habitat areas
 - Create remediation strategies to mitigate stressors and maximize the natural life in the City
- Develop mandatory buffers for areas that can impact a surface watercourse
- Consult with [experts](#) to determine needs of each green space

Create ordinances to preserve the trees on private property

- Promote planting of trees and establish tree [protection](#) standards
 - Partner with organizations in the area to establish [adopt-a-tree](#) programs
- Fines for violating tree-property [requirements](#) such as chopping, damaging, and otherwise harming trees in the City
 - Require [replacements](#) when trees are damaged or removed

Establish a baseline of the current status of open green spaces in the City that is to be improved upon in the upcoming Sustainability Plan

- Create tangible ways to [measure](#) progress towards goals and establish milestones in sustainability plan
 - Establish short-term and long-term [greening](#) efforts that transform the City
 - Prioritize funding for projects led by [neighborhoods](#) that focus on the individualized needs of the community members
- Ensure all decisions and baselines are grounded in an [equity lens](#) that calls for connections and interactions between people and nature to be made with the intentional integration of sustainability and social justice

Energy and Emissions

Why It Matters?

As a precursor in the transition to renewable energy, improving energy efficiency is an imperative, affordable first step. By reducing GHG emissions, ameliorating the energy burden, and saving money overall, energy efficiency can engender a climate-resilient University City.

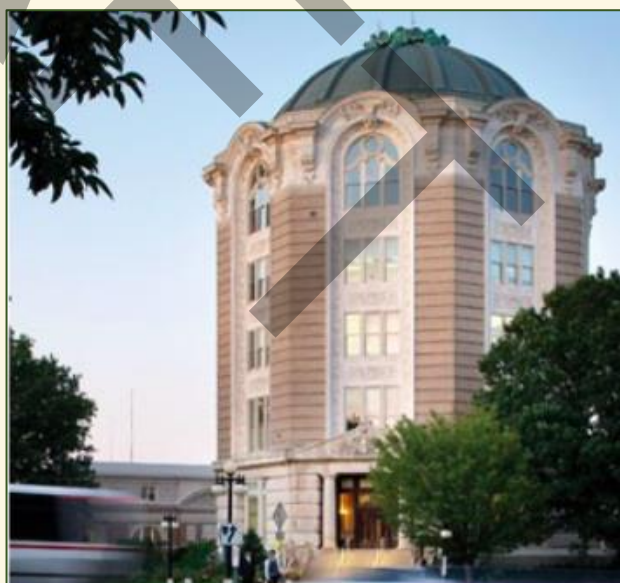
Target 1: Improve Community Energy Education

Provide relevant energy resources to University City residents and businesses to generate savings, ameliorate the energy burden, and reduce greenhouse gas emissions and pollution

- Solar and Renewables Resources: [Grow Solar STL](#), Rooftop Wind Turbines via [Midwest Green Energy](#), [Arcadia](#), DOE Property Assessed Clean Energy Programs ([PACE](#)) in accordance with [Ordinance No. 6998](#), [Ameren Community Solar Program](#) & [Neighborhood Solar Program](#)
- Energy Efficiency: Federal Tax Credit for Solar PV ([DOE](#)), Ameren Energy Efficiency rebates for residential and [commercial buildings](#), [Spire gas rebates](#), MO DOE Energy Loan [Program](#)
- Energy Burden: Missouri DNR Low Income Weatherization Assistance Program ([LIWAP](#)), [CAASTLC](#) utility restoration services

Did You Know?

The University City Hall renovation received LEED certification in 2008.



University City Hall post-renovation

[Architect Magazine](#)

Target 2: Update Municipal Energy & Energy Efficiency Policies

Find a baseline of energy usage and efficiency

- Employ online energy auditing and reporting software, such as [Dude Solutions Energy Manager](#), an updated Energy Star Portfolio, or [ClearPath](#) to facilitate energy benchmarking

Create a greenhouse gas reductions target

- Set benchmarking goals based on reasonable targets (See [EPA GHG reduction implementation program](#))
- Enforce a benchmarking deadline on all municipal buildings
- Utilize the US Green Building Council Missouri Gateway Chapter: [Resources for Local Governments](#)
- Explore financing options for example, Guaranteed Energy Savings Contracts ([MO Statute 8.231](#))

Update International Energy Conservation Code (IECC)

- Adopt 2018 or newer IECC code
- Utilize [DOE resource](#) to facilitate code update

Consider creating an integrated policy for energy efficiency and greenhouse gas reductions

- See 2007 St. Louis City [Ordinance N. 67803](#)

Did You Know?

The University City fire stations #1 and #2 have both had all of their lightbulbs switched to LEDs in 2018.



University City Fire House 1

[ArchImages STL](#)

Target 3: Become a Solar and EV-Ready City

Complete application for [SolSmart](#) certification to remove barriers to solar implementation in University City

- Create a website outlining solar certification process for University City

Create and adopt a Solar-Ready Ordinance

- Adopt a solar-ready ordinance similar to the recent St. Louis City Solar-Ready Ordinance (N.71063)

Make University City Electric Vehicle Ready

- Install public use car charging stations in strategic areas using [economic development retail sales tax funds](#) in conjunction with [Ameren rebates](#)
- Promote Ameren rebates to businesses to install electric car chargers

Did You Know?

University City was the first city to have an all-electric fleet of city vehicles!



Solar Array found at Washington University in St. Louis

WashU Sustainability