THE UNIVERSITY OF THE SOUTH

Climate Accountability Plan

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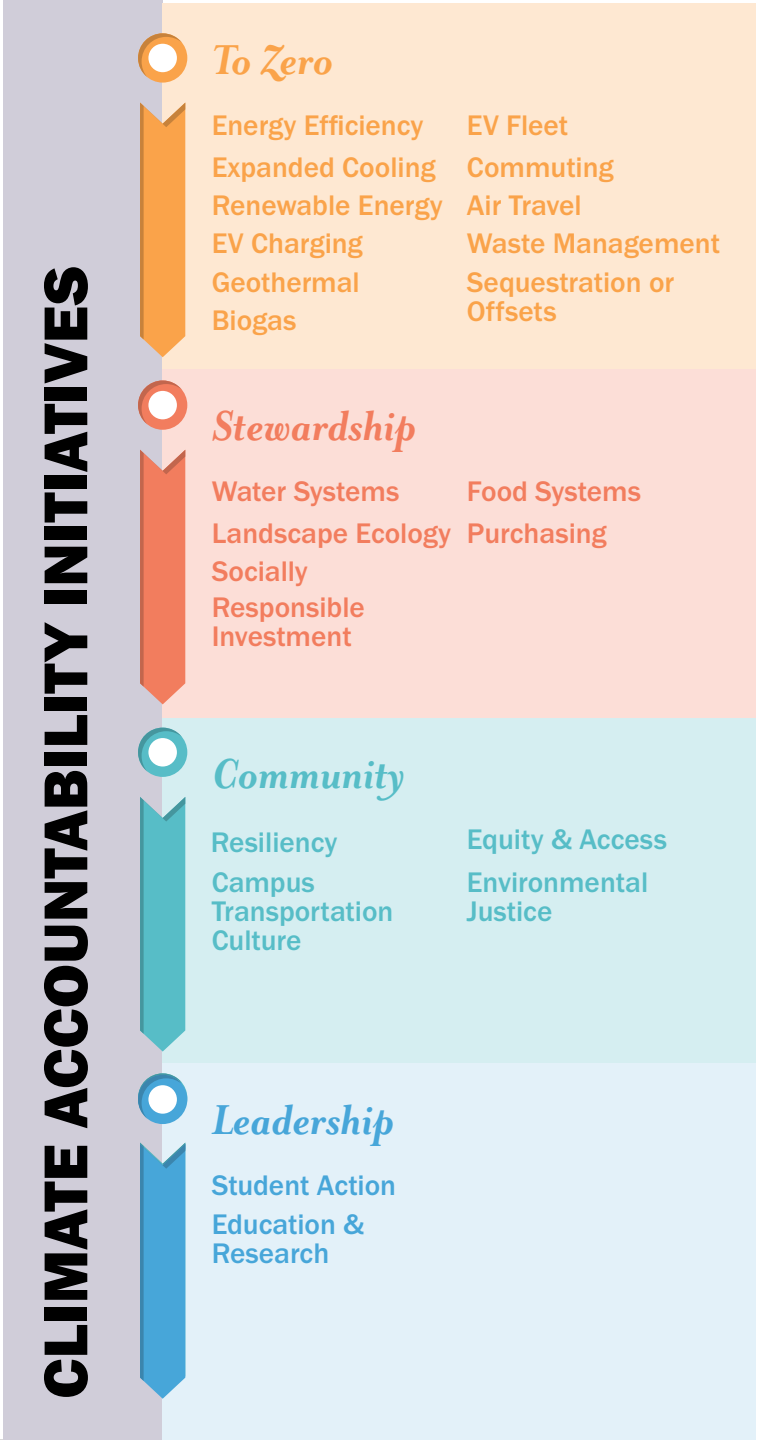
Nancy Berner
Acting Vice-Chancellor & President
William Henderson Professor of Biology



Emissions: Yesterday, Today & Tomorrow

Our current (measured) emissions at Sewanee are 14,600 metric tons of carbon per year (think 7.3 million fire extinguishers). In 2007 we made a commitment to be carbon neutral by 2030. Since 2008 we have successfully reduced our emissions by 36%. This climate accountability plan assumes we maintain 2020 emissions levels and then measures our necessary decarbonization activities against that annual total.

TYPES OF GREENHOUSE GAS EMISSIONS (GHG)

SCOPE 1

Scope 1 emissions: Everything not plugged in on campus. These are our direct emissions, eg. fuel combustion for boilers, fleet vehicle fuel consumption, HVAC leaks, etc.

SCOPE 2

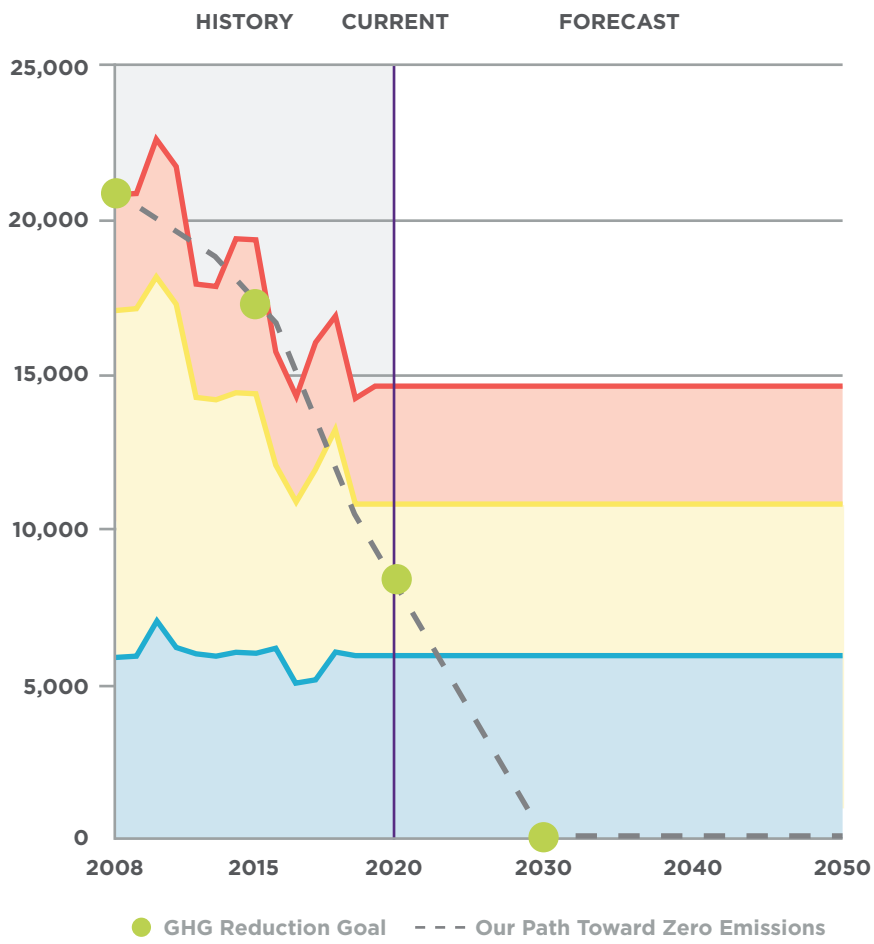
Scope 2 emissions: When we "plug in." How is the electricity we get from the grid generated -- eg. coal-fired, nuclear, water, etc.? Those emissions are counted here.

SCOPE 3

Scope 3 emissions: Emissions from "away" -- eg. flying, commuting, bus travel, waste: solid and water. Emissions from those types of activities are counted here.

**Scopes with no outline are classified as direct emissions, or emissions Sewanee has control over. Scopes with outlines represent indirect emissions, or emissions Sewanee does not have control over.*

SEWANEE'S HISTORICAL AND PROJECTED GHG EMISSIONS



CURRENT
METRIC TONS OF CO_2E EMISSIONS

3,800

4,900

5,900

△ *from '08 baseline*

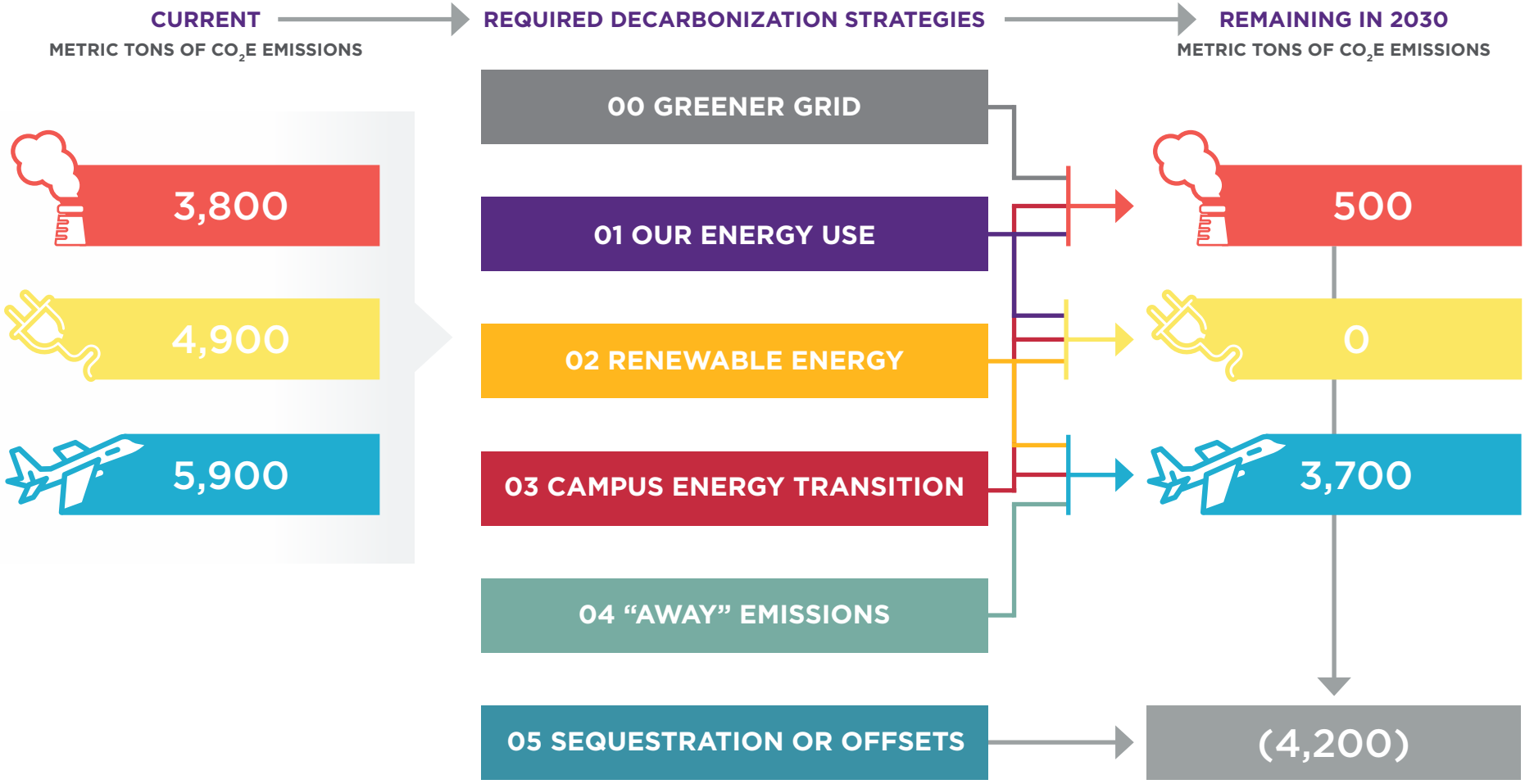
8%

56%

-0.99%

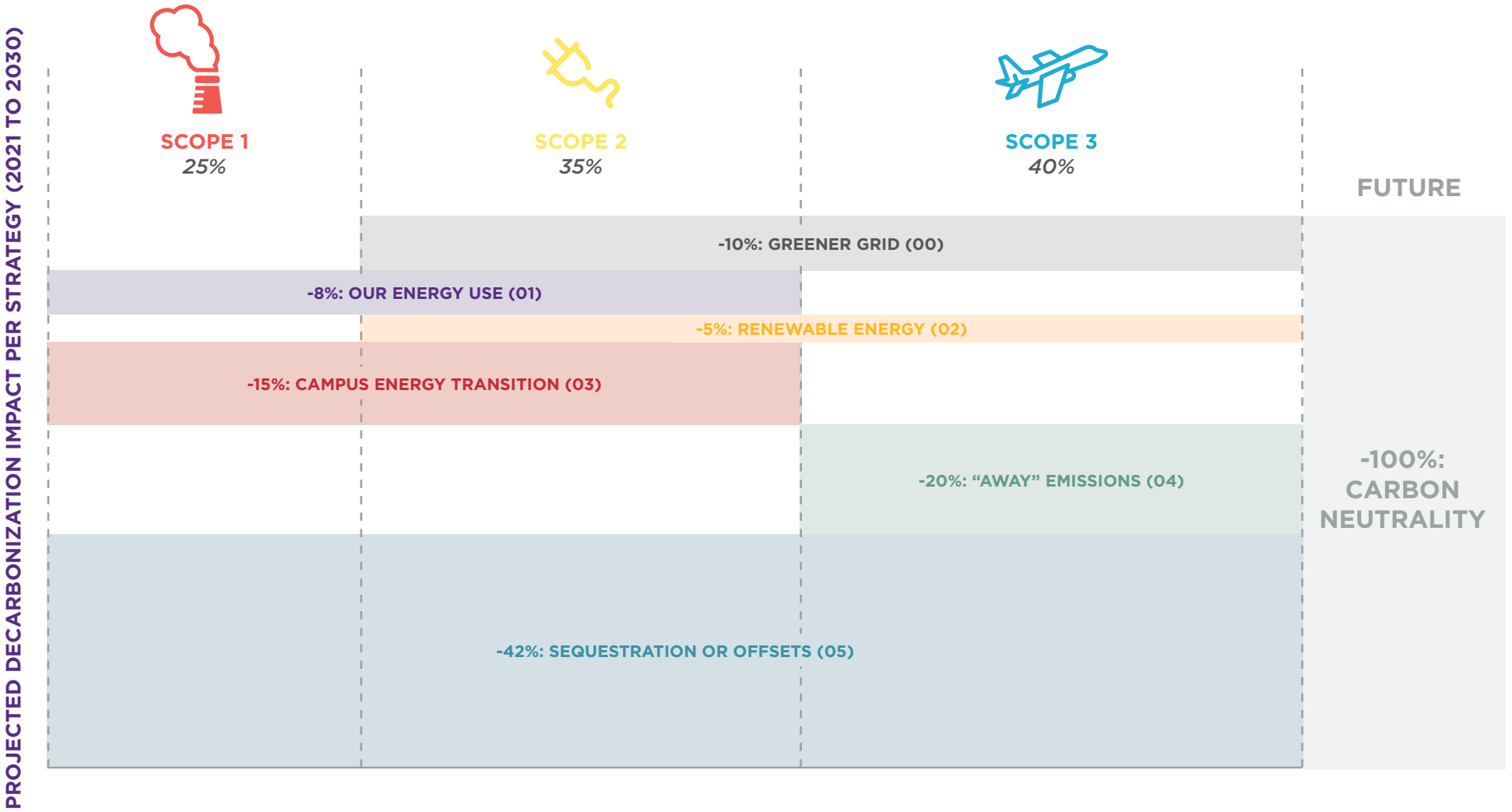
Strategizing to Zero

In order to reach neutrality we must implement several decarbonization strategies. We must rely upon TVA's commitment to providing us with cleaner energy via the grid (00), aggressively identify and implement energy efficiency projects across central campus (01), establish renewable energy sources (02), transition our current approaches to heating, cooling and campus fleet vehicles away from fossil-fuel-intensive systems (03) and mitigate our collective carbon impacts from commuting, air travel and waste management through improved policies and procedures (04). The remaining 4,200 metric tons of carbon emissions is cost-ineffective to mitigate at this time with the available technologies. Therefore, Sewanee must pursue either carbon sequestration on the Domain via forest management or purchase carbon offsets from the market (05) to meet our 2030 neutrality goal.



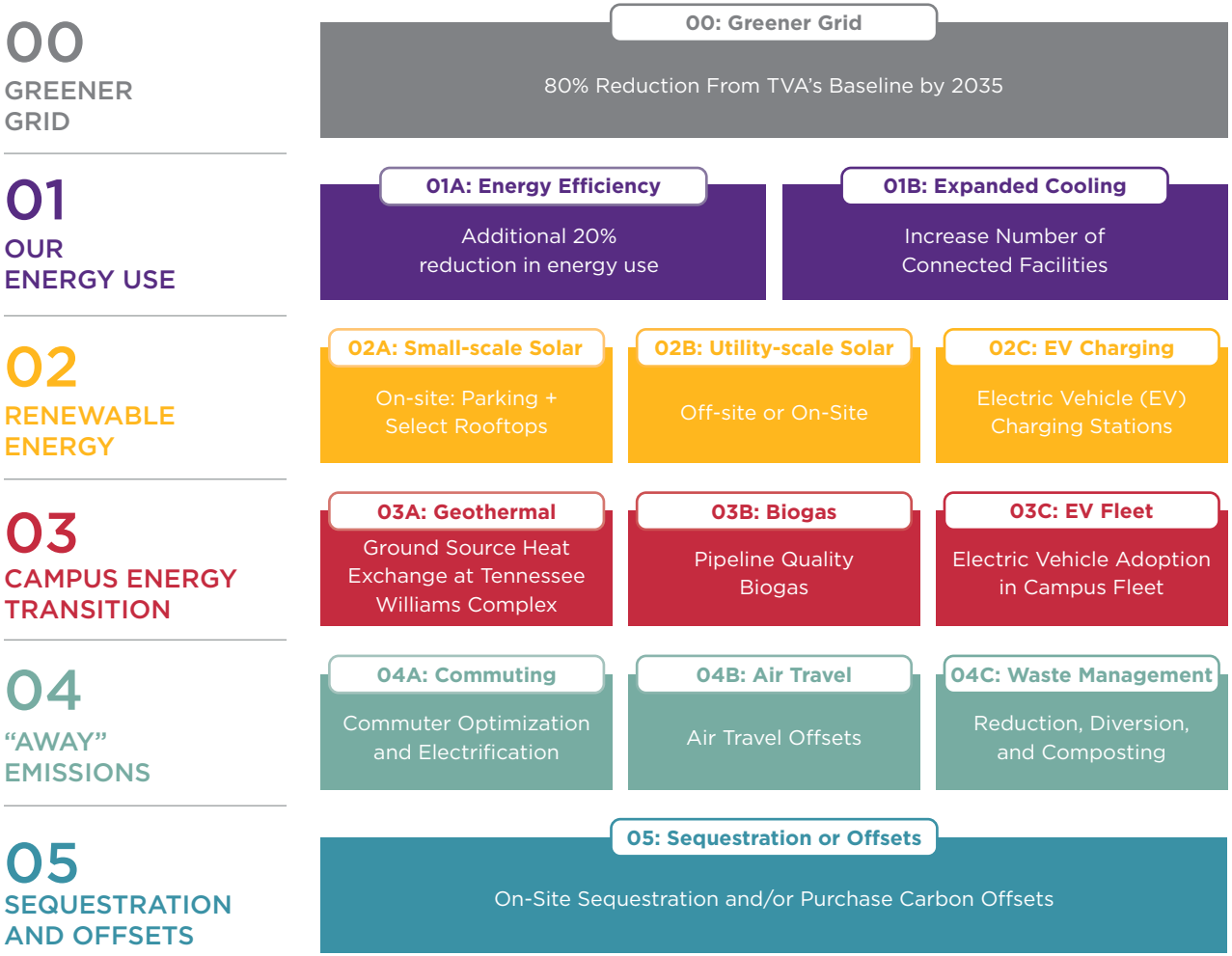
Impacting the Goal

Each strategy has a different impact on moving the needle toward zero carbon emissions. Additionally, each strategy impacts a unique combination of emission types, or scopes. All together the six strategies will enable us to achieve our carbon neutrality goal.



Specifics of Each Strategy

When we adopt a more granular view of how Sewanee can effectively pursue each strategy to maximum realistic and cost-effective effect, each of the 4 main strategies (01-04) breaks down into 2-3 initiatives.



00: Tennessee Valley Authority publicly committed to an 80% reduction in their GHG emissions from their 2005 baseline, which will make our energy consumption cleaner.

01A: Support expanded management efforts to aggressively identify and execute projects that achieve 20% more energy efficiencies across the Domain.

01B: Maximize the number of facilities connected to the central cooling system, which significantly reduces the energy required to cool campus buildings.

02A: Pursue at least one (1) megawatt of small-scale solar to address around 10% of the Domain's load profile through renewable energy.

02B: Pursue at least nine (9) megawatts of utility-scale solar projects to address around 90% of the Domain's load profile through renewable energy.

02C: Provide expanded on-campus EV charging infrastructure to accommodate and encourage community use of electric vehicles and to support future electrification of the campus fleet.

03A: Transition from a disconnected building complex with standalone energy systems to an interconnected system at the Tennessee Williams complex that utilizes renewable geothermal energy.

03B: Partner with and provide a commercial-scale digester with campus wastes to produce pipeline quality biogas as a natural gas replacement on campus.

03C: Electrify our vehicle fleet to reduce fossil fuel consumption.

04A: Reduce and optimize vehicle miles traveled, as well as reinforce electric vehicle use by providing on-campus charging stations.

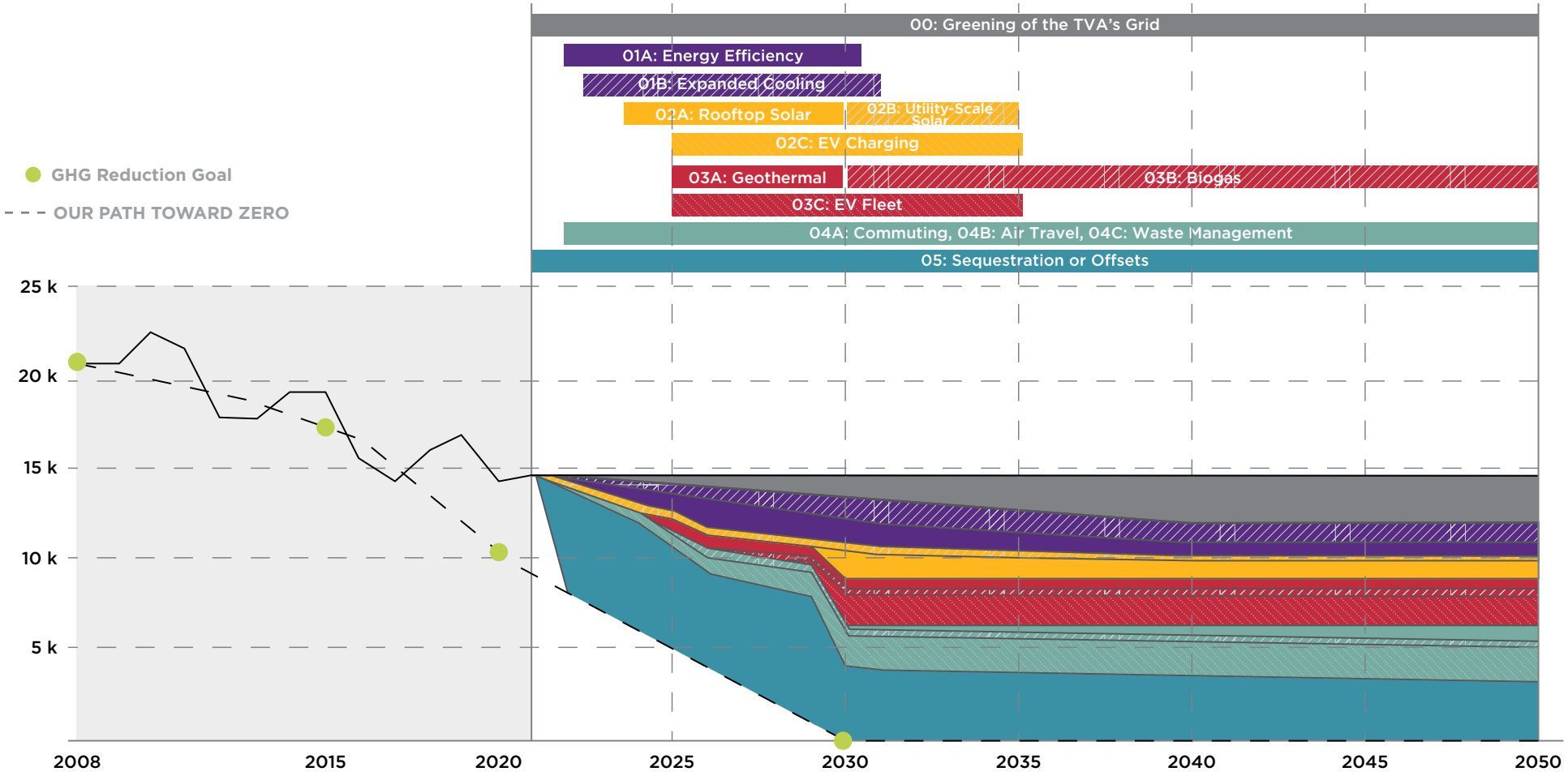
04B: Create an offset program for air travel and shipping.

04C: Achieve a 50% reduction in the GHG emissions related to solid waste management

05: Neutralize remaining emissions that are not cost-effective to address by pursuing carbon sequestration or offsets.

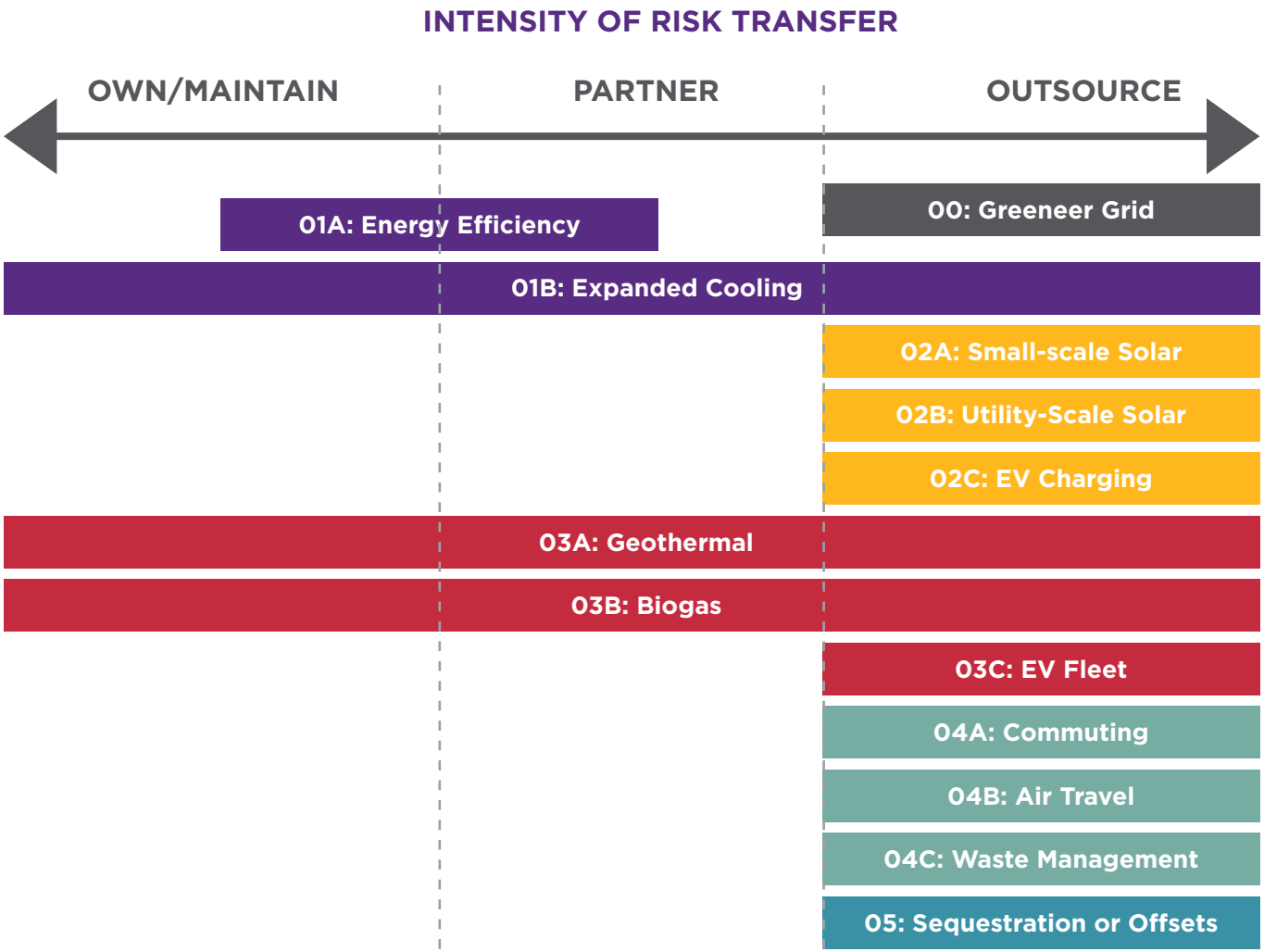
How Each Contributes to Zero

Expanding our timeline to 2050, we can see how each of the 13 initiatives' relative impacts change over time and the comparative carbon reduction ability of each initiative on our total emissions.



Risks & Responsibilities

Decarbonization need not be done in a vacuum. This plan allows ample opportunities for Sewanee to partner and contract with outside parties in order to both share the risk and the responsibility for the implementation and long-term management of the various initiatives. Indeed, such partnerships allow for maximization of overall financial and environmental returns on investment.



KEY RISK CONSIDERATIONS
Capital Intensity
Budget Predictability
Tax Implications
Design/Construction
Technology Maturity
Technical Complexity
Market Maturity
Performance
Human Capital

To Zero and Beyond

Sewanee does not stop at achieving the bare minimum. As the preeminent environmental university in the US our commitment to climate accountability goes beyond the numbers. Our accountability initiatives are grouped around four themes: to zero, stewardship, community and leadership.

TO ZERO: Decarbonization efforts to reduce and replace greenhouse gas emitting activities.

EXPANDED COOLING: 01B

GOALS. We will continue to expand our cooling system on the central part of campus and reduce our associated greenhouse gas (GHG) emissions.

- 80% of "central campus" connected to central chiller by 2030
- ensure those areas that are not "central campus" are benefitting from other energy savings systems (ex. Tennesse Williams complex and geothermal) such that <3% of campus buildings "escape" as exceptions to the rule
- create Utilities, Materials & Waste Master Plan (with standards/best practices)
- establish Buildings Maintenance, Renovation & Construction Master Plan

METRICS.

- % total sq footage of campus buildings utilizing sustainable heating/cooling technologies
- reduced electricity usage per sqft building space
- reduced maintenance & labor costs

EV CHARGING: 02C

GOALS. We will continue to investigate and implement renewable technologies to reduce our greenhouse gas (GHG) emissions totals and also provide opportunities for the community.

- develop a campus master plan evaluating transportation planning
- phase EV parking for students, employees and the public to match regional and national trends
- prioritize EV parking spaces in preferable locations; clearly and boldly label and sign the spaces
- develop a fleet and motor pool conversion plan to EV and hybrid vehicles
- evaluate feasibility of owning versus renting all EV equipment and infrastructure.
- incentivize employees to use EV vehicles.

METRICS.

- number of EV charging spaces
- reduced GHG impact of employee commuter mileage
- number of University owned EV/Hybrid vehicles

ENERGY EFFICIENCY: 01A

GOALS. We will continue to dramatically reduce our energy consumption and associated greenhouse gas (GHG) emissions through a 20% decrease in energy consumption (energy use index) from baseline year 2021 via facility enhancements and behavioral change by 2030. To include:

- 20% light conversion to LED annually;
- sustainable building design in 100% of major renovations & new construction;
- controlled kitchen ventilation;
- green labs;
- standardization of building automation controls; creation of Utilities, Materials & Waste Master Plan;
- establishing a Buildings Maintenance, Renovation & Construction Master Plan;
- a revolving fund for energy conservation and sustainability measures;
- making energy use transparent to community

METRICS.

- kWH/energy data;
- % LED lighting;
- public recognition of FM as resource stewards;
- more LEED or equivalent buildings;
- labor & materials savings;
- occupant satisfaction;
- decreased work orders;
- a public dashboard

RENEWABLE ENERGY: 02A & 02B

GOALS. To combat the serious threat of climate change, we aim to dramatically reduce energy consumption of fossil fuels and associated GHG emissions through renewable energy sources.

- develop a master plan for the installation of solar PV systems for utility scale, rooftop and solar thermal energy systems
- identify an appropriate large-scale solar renewable energy project, on or off campus, to reduce campus carbon footprint
- produce or procure 50% of the University's electric energy portfolio from renewable resources by 2030
- pursue emerging state and federal level funding & incentives to assist with efforts

METRICS.

- number of MW
- number of solar panels
- % renewable energy (KWh)
- GHG emissions (mt CO2e)
- site/source energy use intensity (EUI) kBtu/sf-yr
- number of classes that visit or incorporate the installation into curriculum

GEOTHERMAL: 03A

GOALS. We will strive to dramatically reduce energy consumption of fossil fuels and associated GHG emissions through the addition of renewable geothermal energy.

- » feasibility study of geothermal energy for the 7 building TN Williams complex
- » install renewable energy while also providing educational and co-curricular opportunities through classroom and dashboard involvement
- » investigate other buildings for geothermal as the opportunities arise

METRICS.

- » reduced natural gas or electricity use
- » reduction in heating and cooling costs
- » number of courses involved & number of students engage

BIOGAS: 03B

GOALS. We strive to reduce our GHG emissions through a reduction in waste and usage of biogas.

- » 100% conversion of natural gas to pipeline quality biogas by 2040
- » 75% businesses and homes in the area and 90% of eligible campus wastes contributed to digester
- » all biogas digestion support services supplied & managed by a third party
- » creation of a Utilities, Materials & Waste Master Plan (with standards/best practices)

METRICS.

- » drastic reduction in waste burning
- » using biogas as a natural gas replacement and the byproducts of digestion (ex. fertilizers)
- » drastic reduction of food and grounds waste to landfill
- » stark reduction of landfill-bound waste

SEQUESTRATION OR OFFSETS: 05

GOALS. We will continue to operationally engage in GHG emissions while continuing to be stewards of the Domain.

- » estimate the Domain's carbon stocks and equestration rates and consider the verification, registration and retirement of Domain based offsets
- » evaluate and choose offset/sequestration opportunities intentionally that meet multiple objectives including global justice, education, community mindset and meeting University carbon neutrality goals
- » involve our community and student body in the carbon accounting process by offering educational opportunities

METRICS.

- » certified carbon credits
- » decreasing purchase of offsets over time as our efficiency increases, culture changes and renewables portfolio increases over time
- » significant variable in University carbon neutrality by 2026

AIR TRAVEL OFFSETS: 04B

GOALS. We will create a culture of stewardship by reducing and offsetting the GHG emissions impacts of our air travel and shipping.

- » develop a university-wide advisory group to create a travel policy for university sanctioned activities with a goal of reducing GHG emissions
- » phase the carbon travel offset for employee and student university sanctioned travel; target implementation dates: voluntary by 2023 and mandatory by 2026
- » create a culture of event planning to reduce GHG by grouping speaking events, clustering performances & speakers,and considering alternative forms of engagement
- » evaluate the academic term and impact on carbon footprint
- » offset the travel of visiting speakers & performers with verified programs; faculty travel for conferences and research to also budget for and purchase offsets

METRICS.

- » reduced GHG
- » number of carbon offsets purchased
- » number of air travel offsets

EV FLEET: 03C

GOALS. We will develop and implement practices using the best available technology and science to reduce our GHG emissions and provide opportunities for the community.

- » create a plan for modernization and standardization of the University fleet and motor pool including expanded procurement of electric vehicles, timing and maintenance
- » create a baseline for University fleet and motor pool GHG and petroleum product consumption metrics
- » convert 50% of the light-duty vehicles in the fleet to fully electric by 2026 and 80% by 2030
- » reduce the demand for and consumption of petroleum products in the University fleet and motor pool by 80% by 2030
- » specially brand campus EV vehicles and equipment

METRICS.

- » decreased fuel expenses for University vehicles
- » reduced GHG emissions from University-owned transportation
- » decreased maintenance
- » gallons of gas and diesel fuel purchased

COMMUTING: 04A

GOALS. We will prioritize low-carbon modes of transportation and enhance a bikeable, walkable campus.

- incentivize biking, walking and carpooling
- 20% of commuters offset their commuting emissions by 2030; 50% by 2035
- evaluate parking fees and policies; consider location-based fees for all users; funnel parking fees to a fund to offset carbon and support implementation of transportation initiatives
- create a central campus parking plan to reduce driving
- allow for flexible work-from-home options
- create pedestrian/bike refuges to facilitate crossing 41A
- adopt technology and provide support to coordinate ridesharing
- implement a robust shuttles network for students and sewanee residents (campus, town, major cities); equip shuttles with bike racks
- explore park and ride options for commuting employees with a few "hubs" and several schedule options (2 or 3) for morning and afternoon routes to provide flexibility

METRICS.

- decreased number of single occupancy commuters - local and regional
- cap on student parking permits (ex <500)
- % reduction of student parking on campus
- all student parking reassigned to satellite lots; none central or proximal to residences
- all parking permitting enforced
- % reduction in parking spaces overall
- increased student parking permit fees, fees used to support campus transportation initiatives
- bicycle trainings biannually
- bike "swap" as part of Move-Out, decreased number of abandoned bikes

WASTE: 04C

GOALS. We strive for sustainable consumption by considering sourcing, usage and ultimate disposal.

- compost 90% pre consumer & 75% postconsumer campus food waste by 2030
- decrease recycle contamination 40% by 2030
- reduce landfill waste 40% by 2030 from 2021
- expand glass recycling and tech recycling infrastructure and support
- expand recyclable materials used by dining and events
- incentivize heavily BYO utensils/containers
- implement a single-use tax to orders/items that use single-use food/beverage containers
- create Utilities, Materials & Waste Master Plan
- hire & empower a materials management coordinator
- eliminate plastic beverage containers from all vending machines and campus events

METRICS.

- generate less waste & increase recycling %
- decreased tons of landfill waste
- increased tons of food composting
- FM has appropriate equipment to gather and lift materials
- materials manager and master plan

To Zero and Beyond

STEWARDSHIP: Leading with behavior and action to reach net zero carbon.

FOOD SYSTEMS

GOALS. We will build food systems that strengthen local economies and support a healthy planet while minimizing waste.

- decreasing the amount of animal-derived products sold by 25% by 2030; including campus-wide education along the way
- increase locally or regionally grown foods from 20% to 30% by year 2030
- reduce/reuse 90% of food waste by 2030 (see biogas and waste)
- certificate in Sustainable Food systems
- expand the utilization of University Farm
- support a sustainable food hub: young farmer support; conservation easements; farmland carbon credits; local meat processing

METRICS.

- using the "RealFood" metric
- 25% volume reduction of animal-derived products by 2030
- % students earning food systems certificate
- increased number of courses in food systems
- reduced food waste; what is produced is not landfilled

LANDSCAPE & ECOLOGY

GOALS. We encourage sustainable landscape practices that increase biodiversity and enrich all ecosystem services and those who depend upon them.

- develop a Landscape & Grounds Master Plan
- reduce grounds and landscaping emissions to carbon neutral by 2040
- capture/reuse rainwater for use in grey and black water systems
- adjust golf course practices per sustainabllity best practices
- communicate IPM and grounds practices, ensure they are environmentally sensitive
- increased student stewardship of Domain

METRICS.

- inventory of native species
- decreased water consumption
- increased water retention, capture and reuse
- elimination of landscape management GHG emissions by 2050
- IPM and Landscape best practices are readily available to public
- certified golf course through Audubon Cooperative Sanctuary Program
- Domain stewardship continues to earn sustainability certifications and the pertinent management practices are communicated and celebrated widely

WATER SYSTEMS

GOALS. We will maintain responsible consumption of potable and nonpotable water sources and use best-practice stormwater management and reuse on campus.

- 5% reduction in water use by 2030 from 2017 baseline
- utilize technology to detect leaks in lines, auditing, etc
- implement the Stormwater Master Plan
- improve stormwater control and plan for increasing stormwater events
- divert 25% of stormwater to rain gardens, bioswales and improved retention by 2030
- implement effective stormwater management in all new campus construction
- protect the integrity of the watersheds around our three drinking-water reservoirs
- provide educational opportunities through student and employee campaigns

METRICS.

- stormwater capture & filtration; plan implementation
- % gallon reduction in overall water use
- increase % of graywater use
- % storm- and rainwater diversion

SOCIALLY RESPONSIBLE INVESTMENT

GOALS. We will strive to engage the University in a discussion about socially responsible investment strategies.

- increase transparency of the endowment to make university investment holdings publicly available
- establish permanent committee on investor responsibility composed of students, faculty and administrators to facilitate dialogue about investment strategies
- evaluate University holdings in stocks and assets and their relationship to our institutional commitment to the environment and other values
- develop guidelines for evaluating University holdings and their relationship to our values
- create an accounting systems that values environmental and social impact in financial terms and balances negative impact versus real financial impact
- incorporate student research and advisement of possible investments
- facilitate institution-level discussion about the implications of investment holdings in fossil fuels and other potentially environmentally or socially problematic industries.

METRICS.

- transparency of investments that is easily trackable/discernable by 2025
- 100% divestment from fossil fuels by 2030 goals Support developing countries who are pushing toward sustainability and support soco lending banks.
- deconstruction of perceived community divide over soco investment

PURCHASING

GOALS. We will promote purchasing of more environmentally and socially responsible products.

- develop and formalize a comprehensive purchasing policies and plan to implement source reduction and environmentally-preferable purchasing initiatives in order to decrease waste before it occurs
- create a sustainable purchasing initiative and standards to guide waste diversion and sustainable sourcing
- instill the values of total cost of ownership and total life cycle cost in purchasing and decision-making
- develop a system to track and quantify sustainable purchases
- source products, preferentially, that are produced regionally
- increase and promote the use of recycled materials for construction
- promote a culture of reusing and repurposing materials
- reduce consumption by departments, offices and individuals in order to achieve institutional materials efficiencies
- create a green cleaning products policy

METRICS.

- decrease carbon footprint of equipment and materials purchases
- end-waste reduction
- % of materials purchased that are recycled or from sustainable sourcing
- use of life purchases; consider life cycle costs
- decrease waste
- recycled content products
- FSC-certified or salvaged wood use
- recycled packaging
- reusable or durable products
- biodegradable and compostable products

COMMUNITY: Care and compassion for others and ourselves.

ENVIRONMENTAL JUSTICE

GOALS. Sewanee will recognize environmental justice (EJ) is social justice.

- identify local communities suffering from inequitable environmental policy or unfair enforcement of environmental laws, regulations or policies
- support the Sewanee Environmental Justice Working Group (SEJWG)
- learn the specific challenges of these communities and work with them to find resolutions and restitutions
- identify the key factors that caused the inequities and work to prevent future instances
- incorporate EJ into curriculum, professional development offerings and employee trainings

METRICS.

- assess knowledge and awareness of EJ learning outcomes following trainings, prof dev opportunities and curricula which focus on EJ
- track racial climate on the campus and surrounding area using the National Assessment of Collegiate Campus Climate Survey
- EJ work in Sewanee and surrounding communities is being done, with campus support and participation, to achieve TBD specific goals
- robust and active SEJWG
- active partnership and collaboration with the Roberson Project, the DEI office, a future Council on Indigenous Engagement and other groups

COMMUNITY & CLIMATE RESILIENCY

GOALS. We will enhance the physical and mental health, and the future quality of life, of our campus and community.

- comprehensive Resilience and Climate Adaptation Plan; to survive disruption and anticipate, adapt and flourish in change
- improve the environmental quality of our indoor and outdoor spaces
- physical health through fitness access and active design principles
- support the mental health needs of our students, faculty and staff
- provide climate resilience training for all Sewanee community members
- integrate green building guidelines, recommendations and requirements in new construction and renovations on campus and in the community
- plan for strategic infrastructure improvements and maintenance

METRICS.

- number of participants in health and wellness programming
- number of LEED and sustainable building certifications
- resilience planning
- reduction in lost time from class and work
- rate of return to normal operations after disruptions

CAMPUS TRANSPORTATION CULTURE

GOALS. We move towards multi-modal access through our campus, prioritizing low-carbon modes and a walkable, bikeable campus to promote the health and safety of our community and the environment.

- » create a transportation board to develop guideline andexpectations to: minimize driving on and to campus, respect bike lane safety, enhance safety lighting, and provide robust shuttle service
- » robustly supported and incentivized commuting practices (see commuting)
- » robustly supported and incentivized alternate transportation use (see commuting)
- » robust shuttles network for students and sewanee residents (campus, town, major cities)
- » pedestrian/bike refuges to facilitate crossing 41A
- » two-way, clearly marked bike lane along University Ave from the Inn to the village and to the Mountain Goat Trail at both University Ave intersections
- » evaluate feasibility and impact of adjusted calendar to end on-campus classes at Thanksgiving so that students do not return to campus before spring semester to minimize travel and emissions
- » technology and support to coordinate ridesharing
- » develop a version of App State's RideBeep app
- » disincentivize car use (see parking permitting and student lots in Commuting)

METRICS.

- » robust shuttle system with ridership metrics; ex. free "swipe" for students, paid faculty, staff, community
- » number of persons using Ridebeep
- » number of student parking permits; ex. <500 annually, decrease from 2021 numbers
- » high satisfaction bike culture and local, non-Domain residents bike to work
- » remote lots for student parking
- » parking strictly and consistently enforced

EQUITY & ACCESS

GOALS. We will provide access and opportunity to all members of the Sewanee community.

- » resource net to proactively meet physical, social, financial and mental health needs
- » ensure benefits for all
- » greater transparency of institutional values
- » focus on attracting applications from under-represented demographics
- » evaluate employee compensation, focus on fairness and comparison, restructure to meet cost of living standards
- » sustainability module for employee orientation focused on dialogue, interest and engagement
- » promote and support a diverse campus, providing equal opportunities to people from a range of racial, socio-economic, and other backgrounds

METRICS.

- » recruitment, retention and satisfaction
- » student body reflects the "profile" of the US
- » every protected class represented & included
- » living wage for employees
- » % of students reporting feeling supported with regard to financial literacy and social supports

LEADERSHIP: Staying curious, sharing and acting on our values

EDUCATION & RESEARCH

GOALS. We integrate a culture of sustainability into the everyday fabric of our campus and community.

- » sustainability in all student programming and co-curricular experiences
- » leadership beyond the University on environmental stewardship, climate change, and sustainability issues
- » students involved with high-impact co-curricular sustainability actions
- » tools, workshops and incentives for faculty incorporation of sustainability
- » students participate in high-impact academic sustainability experiences
- » increased campus demographic and disciplinary diversity engaged in sustainability academia
- » integrate sustainability studies into curriculum at the course and programmatic level across the institution
- » assess sustainability literacy across the institution
- » research on climate change, energy, and sustainability with active learning programs on the same

METRICS.

- » number of sustainability-related courses
- » number of students engaged in co-curricular experiences
- » number of mentoring, networking and professional development opportunities, tools, workshops and incentives offered in sustainability
- » business minor track approved and students engaged
- » percent of students participate in environmentally related research

STUDENT LEADERSHIP

GOALS. We will develop a culture of sustainability throughout the entirety of our campus and community.

- » increase sustainability-related service learning opportunities
- » expand sustainability training and outreach for students
- » foster undergraduate and post-baccalaureate fellowships
- » develop collaborative planning for student sustainability engagement across programs and courses
- » support student sustainability activists
- » engage greek life in sustainability

METRICS.

- » increased sustainability awareness
- » number events and programs in co-curricular sustainability opportunities
- » mentoring, networking and development opportunities in sustainability
- » increased number and diversity of student organizations engaged in sustainability initiatives, events and programming
- » student leadership incentivized and diverse backgrounds reflected
- » students involved with high-impact co-curricular sustainability experiences

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FOR POSSIBLE FUTURE GROWTH RESULTING FROM FEEDBACK

History, Context & Supplements

The University of the South has been actively involved in sustainability initiatives and practices on campus for many years and is infusing sustainablitiy into the culture of Sewanee. Sustainability can be defined in a number of ways; we understand it as the intersection of three spheres - social, economic and environmental - and is best understood when considered through a long-term lens. Investing in sustainable practices is investing in the future. It also makes good business sense, as sustainability initiatives lead to energy and water cost savings, increased productivity and, overall, a more resilient organization. The Sustainability Steering Committee was convened in the Spring of 2021 to review and revise Sewanee's climate and sustainablity committments for the future.

Through the planning process and with the help of Brailsford and Dunlavey, consultants to the University, the committee developed strategies to achieve decarbonization as well as to advance sustainable practices on campus. Chaired by the Director of the Office of Environmental Stewardship and Sustainability, the committee has drafted the Climate Accountability Plan to carefully connect the previous Sustainability Master Plan (2013) and Climate Action Plan (2008 & 2010) while also keeping an eye on the future of Sewanee.

"With our combined efforts The University of South will continue to advance sustainability across our campus through innovative and thoughtful investment in carbon neutrality, stewardship, community and leadership."

- Sustainability Steering Committee

SUSTAINABILITY at Sewanee: **A BRIEF HISTORY**

- 2007 the University signed the American College & University Presidents' Climate Commitment (ACUPCC)
- 2008 the Climate Action Plan was written, with an updated in 2010 and the first Greenhouse Gas Inventory was published, with updates in 2010 through present, to monitor and reduce emissions
- 2010 the University began self-reporting to the Sustainability Tracking, Assessment & Rating System (STARS); submissions in 2010, 2013, 2016, 2019
- 2012 the University launched the Office of Environmental Stewardship and Sustainability, which is now an active voice in fostering awareness throughout the Sewanee community
- 2013 the University published the Sustainability Master Plan to provide operational and strategic goals directing sustainability efforts and achievements on campus
- 2021 the Sustainability Steering Committee was reinvigorated to establish cross-functional representation among faculty, staff, and students who serve as advocates for sustainability at the University

Sewanee's Climate Action Planning Process

Sewanee's CAP establishes the framework for achieving our stated commitment to carbon neutrality within our promised timeline. The formation of this plan was a collaborative process. The University engaged a diverse array of stakeholders and constituents to gather feedback about which climate accountability initiatives were most important to our community as we envision the future.

1

Established Criteria

- identified the role that energy and utility assets play when fully aligned with our culture, mission, and vision
- prioritized strategic outcomes
- identified quantitative and qualitative performance metrics to measure success

2

Developed the "Do Nothing" Reference Case

- gained detailed understandings of existing conditions and our functional paradigm
- calculated the results of "doing nothing" in energy and utility operations as the foundation for life-cycle cost modeling

3

Analyzed Technologies & Initiativees

- considered and evaluated a broad array of potential technical solutions and operational initiatives to determine the optimal activities for Sewanee
- developed and compared life-cycle cost models against "do nothing" to determine environmental and financial impacts per strategy
- combined the initiatives and technologies into test scenarios to clarify the interactions and synergies and to model how far each combination will move us toward neutrality

4

Developed a Roadmap

- Evaluated and identified the path and sequence of events that achieve the right mix of energy and utility assets (physical and operational) to achieve neutrality in alignment with the prioritized criteria

Folks Involved

STUDENTS

FACULTY & STAFF

ADMINISTRATION

FINANCE

FACILITIES

SUSTAINABILITY COMMITTEE

STUDENT GOVERNMENT

BOARD OF TRUSTEES & BOARD OF REGENTS

How We Got Here & Gratitude

Sewanee's CAP establishes the framework for achieving our stated commitment to carbon neutrality within our promised timeline. The formation of this plan was a collaborative process. The University engaged a diverse array of stakeholders' and constituents' feedback about which climate accountability initiatives were most important to our community as we envision the future.

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Glossary of Terms

CAMPUS ENERGY TRANSITION

Energy resources include fossil fuels such as coal, oil, and natural gas, and renewable energy such as wind and solar energy. These are turned into energy carriers, such as electricity or gasoline. The carriers are then supplied to energy converters, such as a compact fluorescent lightbulb or an automobile, and ultimately used to provide energy services such as lighting or transportation. An energy transition—a particularly significant set of changes to the patterns of energy use in a society—can affect any step in this chain, and will often affect multiple steps.

CARBON NEUTRALITY

carbon neutrality, as defined by the Presidents' Climate Leadership Commitments, is having no net greenhouse gas (GHG) emissions, to be achieved by either; a) eliminating net GHG emissions, or b) by minimizing GHG emissions as much as possible, and using carbon offsets or other measures to mitigate the remaining emissions.

CARBON OFFSETS

A carbon offset broadly refers to a reduction in GHG emissions – or an increase in carbon storage (e.g., through land restoration or the planting of trees) – that is used to compensate for emissions that occur elsewhere. A carbon offset credit is a transferrable instrument certified by governments or independent certification bodies to represent an emission reduction of one metric tonne of CO2, or an equivalent amount of other GHGs. The purchaser of an offset credit can "retire" it to claim the underlying reduction towards their own GHG reduction goals.

CARBON SEQUESTRATION

Carbon sequestration is the process of capturing, securing and storing carbon dioxide from the atmosphere. The idea is to stabilize carbon in solid and dissolved forms so that it doesn't cause the atmosphere to warm. The process shows tremendous promise for reducing the human "carbon footprint." There are two main types of carbon sequestration: biological and geological.

CLIMATE RESILIENCY

The ability to prepare for, recover from, and adapt to the significant impacts from more frequent and severe weather, ocean warming and acidification, extended periods of drought and extreme temperatures, and other deleterious effects of climate change.

DECARBONIZATION

The process by which countries, individuals or other entities aim to achieve zero fossil carbon existence. Typically, a reduction of the carbon emissions associated with electricity, industry and transport.

ELECRTIC VEHICLE (EV) CHARGING

An electric vehicle charging station where the battery charging equipment is located within reach of a barrier-free access aisle and the electric vehicle.

ENVIRONMENTAL JUSTICE

Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

GEOTHERMAL ENERGY

Geothermal energy is heat within the earth. Geothermal energy is a renewable energy source because heat is continuously produced inside the earth and can be used for bathing, to heat buildings and to generate electricity.

GREENHOUSE GAS EMISSION (GHG)

Any gas that has the property of absorbing infrared radiation emitted from Earth's surface and reradiating it back to Earth's surface, thus contributing to the greenhouse effect. Carbon dioxide, methane, and water vapor are the most important greenhouse gases. To a lesser extent, surface-level ozone, nitrous oxides, and fluorinated gases also trap infrared radiation.

GROUND SOURCE HEAT

Ground source heating and cooling, or geoexchange, is a technique that utilizes geothermal energy to heat or cool buildings, depending on the season. Using a series of underground pipes and water, a building uses the temperature from the ground to provide a baseline temperature that is cooler than the air in the summer and warmer than the outside air in the winter. This baseline temperature reduces the energy needed to heat or cool the building to comfortable temperatures.

PIPELINE QUALITY BIOGAS

Biogas is a form of gas composed of hydrocarbons, typically a mixture of mostly methane and carbon dioxide. Biogas forms as a natural breakdown process of organic waste through bacteria. Sources of biogas include organic wastes such as food scraps, yard waste, and animal manure. Biogas can be used in natural gas boilers, with minor to no modifications. This process has become a popular option to reduce natural gas dependency.

RENEWABLE ENERGY

Renewable energy is energy that is generated from natural processes that are continuously replenished. This includes sunlight, geothermal heat, wind, tides, water and various forms of biomass. This energy cannot be exhausted and is constantly renewed. Renewable energy sources are naturally replenishing but flow-limited; they are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time.

SCOPE 1

Scope 1 emissions are those that are physically produced on campus (e.g. on-campus power production, campus vehicle fleets, refrigerant leaks). These sources are "owned or directly controlled" by the institution.

SCOPE 2

Scope 2 emissions are mostly associated with purchased utilities required for campus operation. They are indirect emissions resulting from activities that take place within the organizational boundaries of the institution, but that occur at sources owned or controlled by another entity.

SCOPE 3

Scope 3 includes emissions from sources that are not owned or controlled by the campus, but that are central to campus operations or activities (e.g. non-fleet transportation, employee/student commuting, air travel paid for by the institution).

SOCIALLY RESPONSIBLE INVESTMENT

Socially Responsible Investing involves investing in companies that promote ethical and socially conscious themes including environmental sustainability, social justice and corporate ethics, and fight against gender and sexual discrimination.

SOLAR ENERGY

Solar power is energy from the sun that is converted into thermal or electrical energy. Solar can be used to generate electricity and to heat water for domestic, commercial, or industrial use.

STRATEGIC ENERGY MANAGEMENT (SEM)

Properly implemented, SEM is a self-perpetuating management system. SEM is a comprehensive suite of energy-management tactics and defines a holistic approach in which elements interact with, support and reinforce each other. SEM effectively spurs cultural change within the organization. Communication efforts increase awareness of energy management across whole organizations. Teams collaborate and cooperate to reduce energy use. Ultimately, SEM shifts the burden of change away from individuals to processes that can withstand business or personnel disruptions.

THE UNIVERSITY OF THE SOUTH