

BURO HAPPOLD



ROWAN UNIVERSITY
**ROADMAP TO A SUSTAINABILITY
MASTER PLAN**

JULY 2020

TABLE OF CONTENTS

- 3 **INTRODUCTION**
- 4 **THE ROADMAP**
- 6 Existing Conditions Assessment
- 10 Stakeholder Engagement
- 12 Set a Vision
- 14 Identify Focus Areas and Develop Goals and Targets
- 18 Set Metrics
- 22 Develop Actions
- 28 Develop an Implementation Framework
- 36 Develop a Communications and Progress Reporting Plan
- 38 Create and Release a Sustainability Master Plan
- 42 **CONCLUSION**

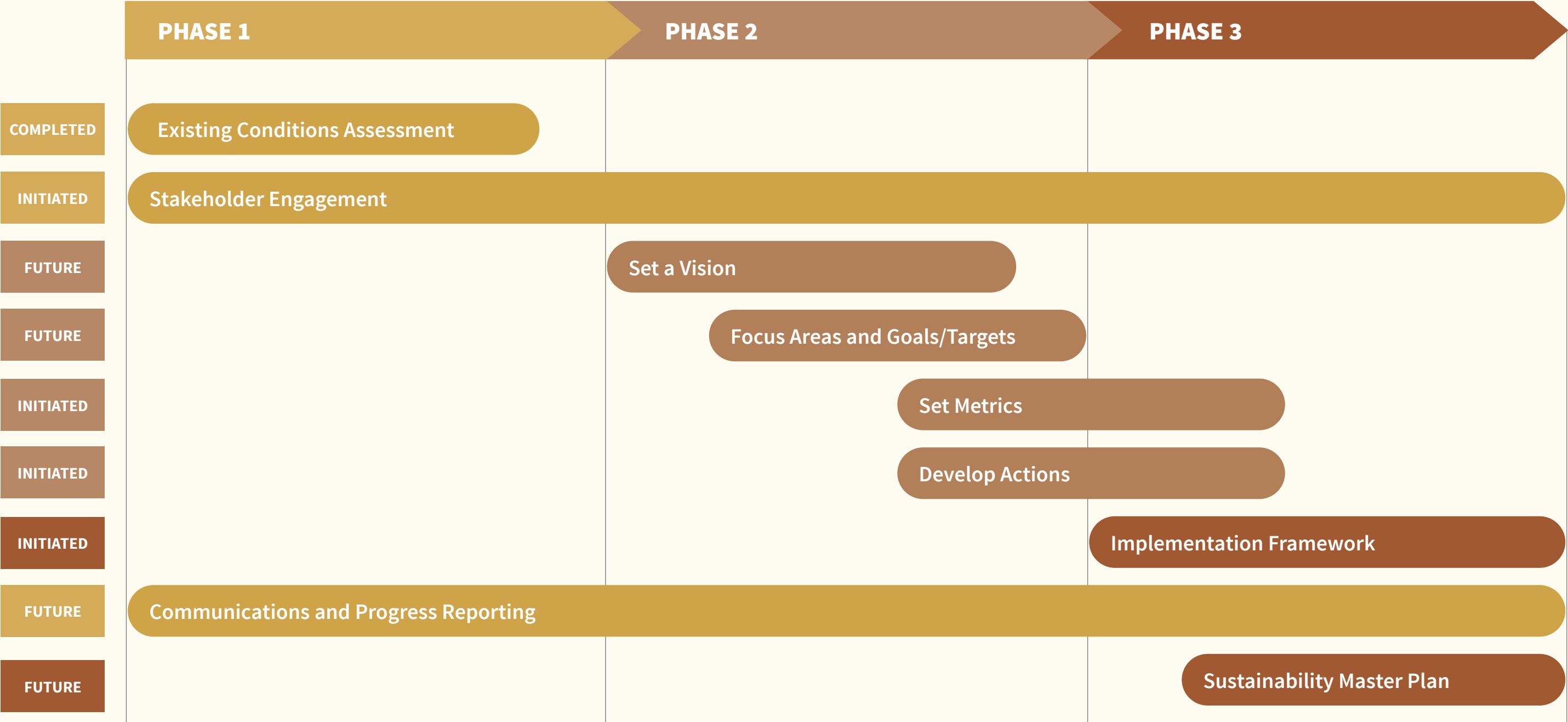
INTRODUCTION

Rowan University is working towards the development of a Sustainability Master Plan. To inform the development of the Sustainability Master Plan, Buro Happold has put together a Roadmap that outlines the process and key elements needed for successful planning. At Rowan University there are already a good number of sustainability initiatives that can be elevated and carried through planning as the foundation for future work.

This Roadmap to a Sustainability Master Plan includes nine key elements for the master planning process. Where applicable, each element includes the work done to date and recommended next steps. Equipped with this Roadmap, Rowan University will be on the way to planning for and achieving future sustainability goals.

ROADMAP

Rowan University’s Roadmap to a Sustainability Master Plan outlines the following steps as key elements in the master planning process. Each of these elements will be introduced with its respective purpose, what has been collected and completed so far, and recommended next steps to complete the Sustainability Master Plan. For an idea of how these elements fit together in the planning process, refer to the timeline below for what is typical for sustainability planning.



EXISTING CONDITIONS ASSESSMENT

PURPOSE

An existing conditions assessment is useful for understanding successes, constraints, gaps, and opportunities for campus sustainability. The assessment often involves a detailed review of existing plans, facilities and operations, campus programs and initiatives, and resource consumption trends (i.e., energy, waste, water, and/or GHG emissions) which serve as the basis for target setting. The information collected in this phase helps inform strategies and recommendations that build off existing work and align with the University’s long-term sustainability goals.

STATUS: *Completed*

An existing conditions assessment was conducted by Buro Happold and includes a review of energy and waste consumption and waste generation on campus, a list of currently tracked metrics, as well as a qualitative assessment of existing sustainability initiatives and programs at Rowan.

WORK COMPLETED TO DATE

In developing an organization-wide sustainability effort, it is important to look through three lenses: Strategy and Leadership, Facilities and Operations, and Education and Engagement. Taken together, these three lenses provide a holistic approach to sustainability that goes beyond the typical elements of operations and resource consumption. Institutions that demonstrate balanced success across these three areas achieve environmental, social, and financial sustainability in the long-term, as opposed to those that focus on only one or two categories, which may achieve results in the short-term, but eventually slide back to non-sustainable practices.

Organizational-Wide Sustainability Lenses



Within the three sustainability lenses, there are a range of topic areas that can provide sustainability coverage throughout the University. These topic areas are provided in Table 1.

Table 1: Sustainability Lenses and Topic Areas

Strategy & Leadership	Facilities & Operations	Education & Engagement
Governance structure	Built environment	Outreach and behavior change
Budget integration and funding	Waste infrastructure	Academics and education
Change management	Transportation and mobility	Student groups and engagement
Transparent reporting	Natural environment	Partnerships and community
	Health and wellness	Inclusive and equitable approaches
	Climate and resilience	Credibility and awards
	Supply chain	

Using this approach, Rowan University sustainability efforts can be assessed and gaps can be identified as areas of improvement. Through engagement and research, Buro Happold was able to collect a list of current initiatives and programs at Rowan University that are related to sustainability as of May 2020. These items are presented in Table 2 organized by topic area and sustainability lens.

Table 2: Existing Sustainability Programs and Initiatives at Rowan University

Existing Assets	Topic Area	Strategy & Leadership	Facilities & Operations	Education & Engagement
Sustainability Facilities Center (Engineering School)	Academics and Education	●		●
Sustainability-related curriculum	Academics and Education			●
Environmental and Sustainability Studies program	Academics and Education			●
School of Earth and Environment with a Dean that is passionate and active on sustainability	Academics and Education			●
Cogeneration Facility (steam heat; steam turbines; steam absorption and electric chillers)	Built Environment		●	
Winder Power Purchase Agreement (national and local wind power sources)	Built Environment		●	
Tables with solar canopies near Chamberlain Student Center	Built Environment		●	●

Draft Carbon Neutrality Report (2009)	Climate and Resilience	●	●	
Holly Pointe Commons LEED Silver	Credibility and Awards		●	●
Cooper Medical School building LEED Gold	Credibility and Awards		●	●
Campus pepper farm that produces hot sauce for scholarships	Natural Environment	●	●	●
Sustainable landscaping practices like native plantings, green infrastructure, outdoor study spaces, etc.	Natural Environment		●	●
Campus clean-up day to pick-up garbage around campus	Partnerships and Community			●
Rowan Environmental Action League (REAL)	Student Groups and Engagement			●
Food Recovery Network (FRN)– recovered 700 lbs of food that would have been sent to landfill and was instead donated to local charitable organizations	Student Groups and Engagement		●	●
Sustainability Report Card (2011)	Transparent Reporting	●	●	●
Low speed electric vehicles (27 purchased in Dec. 2019 by Facilities that reduced operation GHG emissions by 34,000 lbs/yr)	Transportation and Mobility		●	
New waste/recycling company (RTS)	Waste Infrastructure		●	
Composting program with two Rowan-owned composting bins behind the Central Plant; take food scraps from dining halls; compost is not used now but will be used in gardens and landscaping)	Waste Infrastructure		●	●

NEXT STEPS

The existing conditions assessment is complete and includes a qualitative analysis of sustainability offerings at Rowan as well as a quantitative assessment of historical energy, water, and waste data. In the future, Rowan University may choose to further this assessment by layering in utility costs and analyzing resource consumption by square footage or FTE (full time equivalent).

STAKEHOLDER ENGAGEMENT

PURPOSE

Stakeholder engagement is a key component for developing a shared vision across campus for long-term sustainability. Engaging university departments, facilities staff, faculty, students and student groups, and the wider community throughout the planning process is necessary for building a plan that is inclusive and considerate of all campus stakeholders. Establishing a strong stakeholder network in the planning process can set up Rowan for successful implementation and quicker realization of goals. Rowan can not accomplish meaningful sustainability improvement without the collaboration and commitment from the entire community.

STATUS: *Initiated*

During the development of this Roadmap, stakeholder engagement was conducted by Buro Happold primarily through the Executive Sustainability Committee at Rowan. An initial review of sustainability wishlist actions was conducted by the Committee as well as a group of student representatives from the Rowan Environmental Action League (REAL) and the Food Recovery Network organizations. Initial feedback from these groups is provided under the “Develop Actions” Section.

NEXT STEPS

To begin the master planning process, it is recommended that Rowan University develop and facilitate a campus survey and deepen stakeholder engagement. Some proposed next steps include:

- Survey campus stakeholders (students, faculty, and staff) on their awareness of existing sustainability initiatives and their interest in future programs/initiatives on campus. Where possible, provide opportunities for further engagement in campus sustainability in the survey, oftentimes provided through websites, social media, or ongoing events.
- Compile findings from the survey to better understand the current status of sustainability on campus and to inform future planning efforts.
- Consider hosting a series of workshops to further engage with the campus community. These workshops could garner support for the Master Plan and provide valuable input on the direction of the campus’ sustainability vision, proposed goals, and actions.

SET A VISION

PURPOSE

Sustainability is a multifaceted concept that can have different interpretations and be difficult to define. Developing a shared vision is essential for providing a clear direction, guiding decision-making, and avoiding the marginalization of some stakeholders. A good vision statement embodies the purpose, ambition, and core values of a sustainability plan and the University at large.

STATUS: Future Work

Throughout the development of the Roadmap, Buro Happold has heard from stakeholders regarding their hopes and ambitions for sustainability at Rowan. As a starting point, these initial ideals are summarized in this section.

WORK COMPLETED TO DATE

From previous engagements, we have heard that the following key themes are important to the University:

- Engagement and behavior change
- Transparency and effective communication
- Clear goals and quantifiable targets
- Implementation and monitoring

These themes could start to formulate the basis for a campus sustainability vision. Some sample sustainability vision statements are included below from other campus sustainability plans that can guide the development of the vision statement.

“The University of Pittsburgh will continue to advance sustainability on our campuses through innovative and thoughtful investment in stewardship, community, culture, and exploration.”

-University Sustainability Committee, University of Pittsburgh Sustainability Plan

“The Harvard Sustainability Plan recognizes that creating a sustainable campus strengthens our core research and teaching mission, and it acknowledges that the challenges before us are complex and interconnected, demanding an ever-developing approach to sustainability.”

-Harvard University Sustainability Plan

NEXT STEPS

To further the development of the Rowan sustainability vision, the following steps are recommended:

- Host listening sessions with the campus community to discover what is most important to them (insight can be collected through a survey or through live events).
- Consolidate input and workshop vision statements among the Sustainability Executive Committee.
- Finalize and publish the sustainability vision statement.

IDENTIFY FOCUS AREAS AND DEVELOP GOALS AND TARGETS

PURPOSE

Focus areas serve as the foundation of a sustainability plan and serve as the organizing structure for achieving the vision. Focus areas provide a coherent structure for framing goals/targets, actions, and metrics. Goals reflect long-term outcomes that a sustainability plan aims to accomplish and are often qualitative. Targets are quantifiable goals that can be easily tracked with metrics. Goals and targets help measure progress over a defined timeframe.

STATUS: Future Work

Buro Happold has shared some examples of campus sustainability frameworks that include focus areas and goals/targets and actions for each. These can be used to inform Rowan’s plan development.

WORK COMPLETED TO DATE

A few sustainability frameworks are provided below as examples and inspiration.

Figure 3: Sample Sustainability Framework and Focus Areas - University of Pittsburgh Sustainability Plan

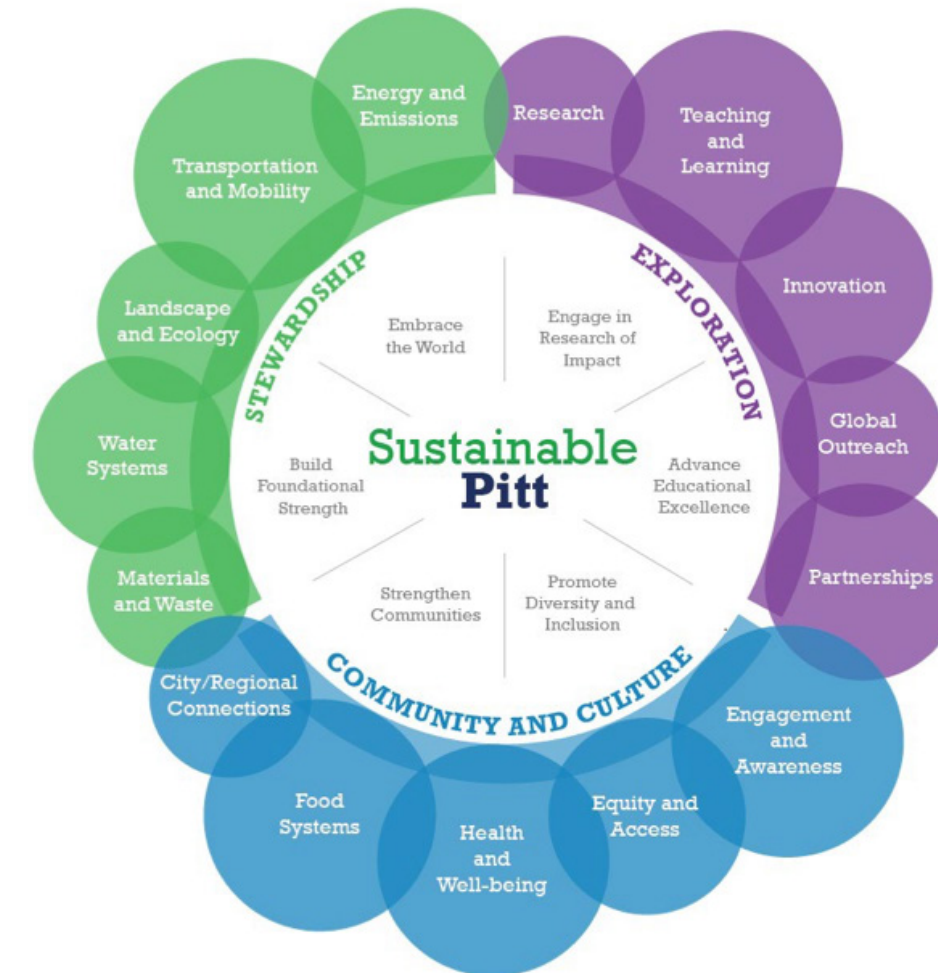


Figure 4: Sample Sustainability Framework and Focus Areas - Oregon Museum of Science and Industry Master Plan



NEXT STEPS

The next steps for this step may be iterative and can happen in any order– either, focus areas are decided first and then goals/targets or goals/targets first which would dictate the focus areas. To determine focus areas and goals and/or targets for the Rowan Sustainability Master Plan, the following steps can be taken:

- Based on stakeholder engagement and feedback to date, determine which focus areas are relevant for Rowan– keep in mind that the focus areas provide the organizing framework for the plan so for each focus area there will be a set of strategies/actions to achieve goals/targets.
- Based on the set of identified focus areas, workshop goals and targets for each– can be a combination of goals (qualitative) and targets (quantitative) depending on the focus area.
- Use the Sustainability Lenses and Topic Areas identified in Existing Conditions Assessment to make sure the chosen focus areas holistically cover key topics and do not leave any gaps.
- Finalize the focus areas and goals/targets for the Sustainability Master Plan.



Photo Credits to Rowan University

SET METRICS

PURPOSE

Sustainability metrics are measures used for comparing performance across focus areas. Metrics are indicators that can be measured and monitored over time. They illustrate the effectiveness of sustainability actions and are used to track progress towards goals and targets. Metrics can be useful for internal and external reporting.

STATUS: *Initiated*

Based on feedback from a workshop with the Executive Sustainability Committee, Buro Happold compiled a list of existing metrics. These are metrics that are currently being tracked by Rowan University predominately by Facilities. Additionally, Buro Happold has compiled a list of wishlist metrics that the University hopes to start tracking and monitoring in the future that would require collaboration across multiple departments at Rowan.

WORK COMPLETED TO DATE

The following metrics are currently measured (or estimated) and tracked by Rowan or its partners.

Table 3: Existing Sustainability Metrics at Rowan University

Existing Metrics	Currently Collected?	Strategy & Leadership	Facilities & Operations	Education & Engagement
Campus energy consumption	Yes		•	
Off-site renewable procurement	Yes		•	
Campus water consumption	Yes		•	
Campus waster generated	Yes		•	
Campus waste recycled	Estimated		•	
Campus waste diversion rate	Estimated		•	
Volunteer hours committed by Rowan community	Yes	•		•

The following metrics are wishlist metrics, or those that the University hopes to begin tracking in the near term.

Table 4: Wishlist Sustainability Metrics at Rowan University

Wishlist Metrics	Currently Collected?	Strategy & Leadership	Facilities & Operations	Education & Engagement
Campus waste recycled	Estimated, but can be measured		•	
Campus waste composted	No		•	
Campus waste donated (i.e. food waste, clothing, etc.)	No	•	•	•
Campus waste diversion rate	Estimated, but can be made more accurate		•	
Food waste diverted	No		•	
Electric vehicles in campus fleet	No		•	
Landscaping-related metric (open space, tree canopy, habitats, etc.)	TBD		•	
Average distance traveled to campus (as % who live on campus or commute changes)	No		•	

Method used to commute to Rowan (bus, carpool, single occupancy vehicles, bike, etc.)	No		•	
Campus GHG emissions	No	•	•	

NEXT STEPS

To build off of work done to date and finalize metrics for the Sustainability Master Plan, the following next steps are recommended:

- Align existing metrics with the list of final goals and/or targets for the Sustainability Master Plan.
- Identify gaps and fill gaps based on wishlist metrics for campus.
- Where there are still gaps, identify new metrics that could be measured by the University to track progress on goals/targets – keep in mind what data is readily available to the University or could be made easily available– and assign responsibilities for data tracking and management.
- Finalize list of metrics for the plan and identify responsible groups for monitoring and maintaining a database of metrics for keeping track of progress.



Photo Credits to Rowan University

DEVELOP ACTIONS

PURPOSE

Sustainability actions are those activities that integrate sustainability principles and practices into aspects of campus operations, planning, and culture. Sustainability actions often institutionalize the processes needed for managing, reducing, and tracking GHG emissions and resource consumption on campus. For driving transformative change, sustainability actions should be attainable, evidence-based, and time-sensitive, and updated periodically based on progress and shifting goals.

STATUS: *Initiated*

Buro Happold has compiled a list of wishlist sustainability initiatives and programs for Rowan. These wishlist items are based on feedback from the Executive Sustainability Committee and some student representation and are not all inclusive.

WORK COMPLETED TO DATE

The following table provides a list of wishlist sustainability actions for Rowan. Based on feedback collected so far from the Rowan University Sustainability Executive Committee, actions have been grouped by priority: Immediate Priority Actions, Further Priority Actions, and Other Potential Actions.

Furthermore, initial feedback was provided by student representatives to inform which actions are seen as priorities from the student perspective. These actions are marked by a yellow star in the following table.

★ *Student priority, as informed by student group representatives from the Rowan Environmental Action League (REAL) and the Food Recovery Network (FRN)*

Table 5: Potential Sustainability Actions for Rowan University

Sustainability Actions	Topic Areas	Strategy & Leadership	Facilities & Operations	Education & Engagement
Immediate Priority Actions				
★ Identify grants that can support the development of a campus-wide Sustainability Master Plan	Budget Integration and Funding	•		
Prioritize deferred maintenance that will reduce energy, water, waste and the usage of other natural resources	Built Environment		•	
Install irrigation controllers with optimization software based on soil conditions, weather forecasts, etc.	Natural Environment		•	
Survey multiple campus audiences/ stakeholders on their awareness and opinions of, challenges and pain points, etc. regarding sustainability	Outreach and Behavior Change	•		•
★ Behavior change campaign for sustainability issues (turn off lights, close windows, take the stairs, carpool)	Outreach and Behavior Change			•
★ Behavior change campaign for waste disposal (need to decrease the amount of contamination in recycling bins)	Outreach and Behavior Change			•
★ Switch from single-use containers to reusable and reduce overall plastic use (straws, packaging, utensils, bags, etc.) and institute trayless dining to reduce waste associated with campus dining	Supply Chain		•	
★ Campus dashboard for public view and real-time decision making	Transparent Reporting		•	•
★ Improve and expand composting program	Waste Infrastructure		•	

Sustainability Actions	Topic Areas	Strategy & Leadership	Facilities & Operations	Education & Engagement
Future Priority Actions				
★ Establish a green fund, and an interdisciplinary committee to monitor it, to pay for energy savings technologies on campus	Budget Integration and Funding	●		
Conduct a long-term energy master plan (to optimize energy-reduction on campus e.g., geothermal HVAC as used as Stockton)	Built Environment	●	●	
Implement cool or green roofs	Built Environment		●	
Solar array for all new buildings and on West Campus	Built Environment		●	
New buildings to be LEED Silver	Credibility and Awards		●	●
★ Dedicated faculty and staff for championing and organizing sustainability efforts at Rowan	Governance Structure	●		
Develop policy and guidance for procurement of sustainable materials and supplies	Supply Chain	●	●	
Provide bike storage locations	Transportation and Mobility		●	
Provide additional campus EV charging stations (for e-scooters, e-bikes and EVs)	Transportation and Mobility		●	●
★ Expand bike paths	Transportation and Mobility		●	
Other Potential Actions				
Raise the visibility of sustainability-related research projects at Rowan	Academics and Education	●		●
★ Incorporate sustainability funding into capital and operations budget requests and analysis	Budget Integration and Funding	●		
Create sustainable design guidelines laying out requirements for the design, construction and operation of campus facilities and infrastructure	Built Environment	●	●	

Sustainability Actions	Topic Areas	Strategy & Leadership	Facilities & Operations	Education & Engagement
Develop plan for regularly conducting energy audits and retro-commissioning of existing buildings	Built Environment	●	●	
Develop long-term capital plan for renovating buildings to improve efficiencies and reduce GHG emissions and energy consumption/costs	Built Environment		●	
Perform an on-site renewable energy feasible study, examining rooftop and ground-mounted potential	Built Environment		●	
Install water-efficient fixtures and appliances across campus, especially as spaces are renovated	Built Environment		●	
Develop long-term plan for decarbonizing the central plant	Built Environment		●	
Train staff on how to be more sustainable in their day-to-day work at Rowan and create an associated incentive program	Change Management		●	●
Develop a Scope 1, 2 and 3 GHG Inventory for Rowan University	Climate and Resilience	●	●	
Create practicum courses that facilitate professors and students assessing the impacts of future climate hazards (flooding, extreme heat, etc.)	Climate and Resilience	●		●
Develop a Campus Climate Resilience Plan to prepare for climate hazards	Climate and Resilience	●	●	
Identify a sustainability reporting platform, such as STARS, to streamline and bolster ongoing tracking and transparency	Credibility and Awards	●		
Identify internal leadership structure (responsibilities, meeting cadence, reporting, etc.) for sustainability efforts at Rowan	Governance Structure	●	●	●
Consider making the Real Food Campus Commitment to establish a program for “real food” on campus that prioritizes natural resources, climate, food producers, health and access, and more	Health and Wellness	●	●	

Sustainability Actions	Topic Areas	Strategy & Leadership	Facilities & Operations	Education & Engagement
Integrate health and wellness concerns into building upgrade and renovation plans as well as new construction buildings; consider WELL certifications for new buildings	Health and Wellness		•	
Create a committee (or utilize an existing one, perhaps related to the Rowan Center for Responsible Leadership) to ensure multiple stakeholder perspectives and needs are incorporated into sustainability plans and initiatives	Inclusive and Equitable Approach	•		•
Survey Rowan stakeholders regarding their opinion of existing social sustainability initiatives and potential future initiatives	Inclusive and Equitable Approach			•
Create a social equity plan, in conjunction with the SMP, to assess current progress and develop an action plan to improve	Inclusive and Equitable Approach	•		•
Develop tree canopy master plan for campus to determine tree canopy coverage and condition of existing trees on campus	Natural Environment		•	
★ Ensure consistent signage for all waste disposal streams and expand communications to ensure proper disposal	Outreach and Behavior Change		•	•
Develop an outreach and communications plan for sustainability at Rowan University (social media, website, etc.), including responsible parties	Outreach and Behavior Change			•
Create a web-based or other interactive information system to share best practice sustainable behaviors, tailored to multiple Rowan stakeholder audiences	Outreach and Behavior Change	•		•
★ Identify opportunities to collaborate with NJ communities on sustainability initiatives and act as a thought leader for sustainability in the region	Partnerships and Community	•		•
Work with student groups to conduct regular waste audits to determine and report on disposal rates	Student Groups and Engagement			•
★ Work with student groups to develop a program for collecting donatable goods from move-out and reduce the amount of waste sent to landfill from these activities	Student Groups and Engagement		•	•

Sustainability Actions	Topic Areas	Strategy & Leadership	Facilities & Operations	Education & Engagement
During vendor contract reviews, institute sustainability requirements prior to awarding contracts and identify internal knowledge experts for each type of vendor review: catering, waste, landscape, etc.	Supply Chain		•	
Give out reusable bags (at freshman orientation, sustainability events, etc.) and institute a “bring your own bag” campaign to minimize the use of plastic bags and encourage sustainable behavior change	Supply Chain		•	•
Compile and release regular updates to GHG inventory	Transparent Reporting		•	
Publicly state reporting timeframes to provide updates on progress of Sustainability Master Plan	Transparent Reporting	•	•	
Create a Transportation Demand Management Program	Transportation and Mobility	•	•	•
Create a safe carpooling program for students, staff, and faculty groups to share rides to and from campus	Transportation and Mobility		•	•
★ Develop a plan to electrify campus shuttle buses	Transportation and Mobility		•	

NEXT STEPS

To finalize the list of actions, Rowan should accomplish the following tasks:

- Organize the wishlist items by focus areas.
- Expand the list of potential sustainability actions where there are gaps or based on further stakeholder engagement, ensuring that the list of actions can achieve the sustainability goals/targets and encompasses all parts of the sustainability vision.
- Consider workshopping the first draft of actions with the campus community to receive feedback on its completeness.
- Finalize the list of sustainability actions.

DEVELOP AN IMPLEMENTATION FRAMEWORK

PURPOSE

An implementation framework links sustainability actions with responsible groups, timeframes, and potential internal and external funding sources. The framework used to plan for and provide resources upfront so that once the plan is published, the University is ready to move straight into the implementation phase.

STATUS: *Initiated*

Buro Happold has matched the wishlist sustainability items with high-level timeframes (short-term, medium-term, long-term, or ongoing) and organized actions by sustainability sub-committee. This first pass of providing implementation details for sustainability actions can help Rowan in finalizing this task and set up sustainability sub-committees to take on leadership and oversight of certain sustainability actions, as assigning responsible groups or parties to each item is imperative to their achievement.

WORK COMPLETED TO DATE

The following tables organize the Rowan sustainability wishlist actions by sustainability sub-committee and provide for each action: the topic area, priority (based on feedback from the Executive Committee), and an estimated implementation timeframe. Where notes were provided by the Sustainability Executive Committee or the student groups, these have been added below to provide direction as these actions are further developed.

Table 6: Potential Actions for Sustainability Executive Committee Responsibility

Sustainability Executive Committee				
Action #	Sustainability Actions	Topic Area	Priority	Timeframe
SEC-1	Identify grants that can support the development of a campus-wide Sustainability Master Plan	Budget Integration and Funding	Immediate	Short-term
	<i>Notes from Exec Committee: Can be performed by consultant or internally</i> <i>Notes from Student Reps: We believe the creation of an in-house grant program for student clubs and projects that have to do with sustainability is also key. This supports project learning and gives students an active role in innovating our campus.</i>			
SEC-2	Campus dashboard for public view and real-time decision making	Transparent Reporting	Immediate	Short-term
	<i>Notes from Exec Committee: Guidance from consultant on what raw data to get, how to input, and what benchmarks are appropriate. Could include information on: recycling, energy use and costs, carbon footprint, commuting, and waste management</i> <i>Notes from Student Reps: Yes! It is often brought up in club meetings that Rowan's Sustainability portion of the site is outdated and unhelpful. This is key in building diverse partnerships that leads to better success.</i>			
SEC-3	Establish a green fund, and an interdisciplinary committee to monitor it, to pay for energy savings technologies on campus	Budget Integration and Funding	Future	Long-term
	<i>Notes from Exec Committee: Data tracking; get Rowan public excited; requires minimal initial funding</i> <i>Notes from Student Reps: We definitely agree with this; in our list of items we suggested a green revolving fund. Energy efficiency savings go directly towards sustainability master plan items. Going even further we would like to devote a portion of the fund to social justice issues on campus; mainly mental health and anti-racist initiatives- consider expanding available funding to provide stipends to students to attend sustainability conferences and events</i>			
SEC-4	Develop process for integration of sustainability funding into capital and operations budget	Budget Integration and Funding	-	Ongoing
SEC-5	Identify a sustainability reporting platform, such as STARS, to streamline and bolster ongoing tracking and transparency	Credibility and Awards	-	Short-term
SEC-6	Identify internal leadership structure (responsibilities, meeting cadence, reporting, etc.) for sustainability efforts at Rowan	Governance Structure	-	Short-term

SEC-7	Create a web-based or other interactive information system to share best practice sustainable behaviors, tailored to multiple Rowan stakeholder audiences	Outreach and Behavior Change	-	Long-term
SEC-8	Publicly state reporting timeframes to provide updates on progress of Sustainability Master Plan	Transparent Reporting	-	Ongoing

Table 7: Potential Actions for Sustainability Energy Reduction Sub-Committee Responsibility

Energy Reduction Sub-Committee				
Action #	Sustainability Actions	Topic Area	Priority	Timeframe
ER-1	Prioritize deferred maintenance that will reduce energy, water, waste and the usage of other natural resources	Built Environment	Immediate	Short-term
ER-2	Conduct a long-term energy master plan to optimize energy-reduction on campus e.g., geothermal HVAC as used as Stockton)	Built Environment	Future	Short-term
	<i>Notes from Exec Committee: A future priority but worth looking into now; will save energy on campus; plan for a 10-year horizon</i>			
ER-3	Implement cool or green roofs	Built Environment	Future	Long-term
	<i>Notes from Exec Committee: White, reflective roofs on new construction</i>			
ER-4	Solar array for all new buildings and on West Campus	Built Environment	Future	Long-term
	<i>Notes from Exec Committee: Identify where and when to implement; cheaper to install on new construction buildings</i>			
ER-5	New buildings to be LEED Silver	Credibility and Awards	Future	Ongoing
	<i>Notes from Exec Committee: Rowan Leadership wants LEED “certifiable” buildings but not interested in spending the money to become certified but there are discrepancies as the Executive Committee believes it can be worth the cost.</i>			
ER-6	Develop plan for regularly conducting energy audits and retro-commissioning of existing buildings	Built Environment	-	Short-term
ER-7	Develop long-term capital plan for renovating buildings to improve efficiencies and reduce GHG emissions and energy consumption/costs	Built Environment	-	Short-term
ER-8	Perform an on-site renewable energy feasibility study, examining rooftop and ground-mounted potential	Built Environment	-	Short-term
ER-9	Develop long-term plan for decarbonizing the central plant	Built Environment	-	Long-term
ER-10	Create sustainable design guidelines laying out requirements for the design, construction and operation of campus facilities and infrastructure	Built Environment	-	Short-term

Table 8: Potential Actions for Environmental Sustainability Sub-Committee Responsibility

Environmental Sustainability Sub-Committee				
Action #	Sustainability Actions	Topic Area	Priority	Timeframe
ES-1	Install irrigation controllers with optimization software based on soil conditions, weather forecasts, etc.	Natural Environment	Immediate	Short-term
	<i>Notes from Exec Committee: Consider moisture sensors vs. timed sprinklers</i>			
ES-2	Switch from single-use containers to reusable and reduce overall plastic use (straws, packaging, utensils, bags, etc.) and institute trayless dining to reduce waste associated with campus dining	Supply Chain	Immediate	Ongoing
	<i>Notes from Exec Committee: Work with Gourmet Dining and Staff and combine with sustainability campaign</i> <i>Notes from Student Reps: Students have been working to get Gourmet Dining to switch to a green2go container that is returned, washed, and reused. Before we left campus, they agreed to test a dine-in option that would use significantly less single-use items. We see the single-use take out and dining system as a whole as the most wasteful aspect of campus and is a top priority for a lot of students – consider banning the sale of plastic water bottles and use of single-use plastic bags on campus</i>			
ES-3	Improve and expand composting program	Waste Infrastructure	Immediate	Short-term
	<i>Notes from Exec Committee: Improve communication with Gourmet Dining; educate Gourmet Dining staff; engage new waste removal company</i> <i>Notes from Student Reps: The composting initiative has to have a better opening for students. Many students are excited and want to be part of this program. Composting could be integrated into education programs (engineering clinics, potentially a class in school of earth & environment). It would also be great to include the Glassboro community in a meaningful way (possible for community projects like back to the boro)</i>			
ES-4	Develop policy and guidance for procurement of sustainable materials and supplies	Supply Chain	Future	Ongoing
	<i>Notes from Exec Committee: Can be part of overall sustainability campaign; work with Procurement office</i>			
ES-5	Provide bike storage locations	Transportation and Mobility	Future	Short-term
ES-6	Provide showers and changing areas for people who bike to campus	Transportation and Mobility	Future	Short-term
ES-7	Provide additional campus EV charging stations (for e-scooters, e-bikes and EVs)	Transportation and Mobility	Future	Long-term
	<i>Notes from Exec Committee: Identify where and when to implement; the environmental, health, and safety and facilities/ operations departments are utilizing electric vehicles</i>			

ES-8	Expand bike paths	Transportation and Mobility	Future	Long-term
	<p><i>Notes from Exec Committee: Work with County and Township on creating bike circulation network and identify areas to put bike lanes</i></p> <p><i>Notes from Student Reps: This is a high priority for students, especially in route to the SJ Tech Park as 322 is dangerous</i></p>			
ES-9	Install water-efficient fixtures and appliances across campus, especially as spaces are renovated	Built Environment	-	Ongoing
ES-10	Develop a Scope 1, 2 and 3 GHG Inventory for Rowan University	Climate and Resilience	-	Short-term
ES-11	Update Carbon Neutrality Plan	Climate and Resilience	-	Short-term
ES-12	Develop a Campus Climate Resilience Plan to prepare for climate hazards	Climate and Resilience	-	Short-term
ES-13	Consider making the Real Food Campus Commitment to establish a program for “real food” on campus that prioritizes natural resources, climate, food producers, health and access, and more	Health and Wellness	-	Short-term
ES-14	Integrate health and wellness concerns into building upgrade and renovation plans as well as new construction buildings; consider WELL certifications for new buildings	Health and Wellness	-	Ongoing
ES-15	Develop tree canopy master plan for campus to determine canopy coverage and condition of existing trees on campus	Natural Environment	-	Long-term
ES-16	Ensure consistent signage for all waste disposal streams and expand communications to ensure proper disposal	Outreach and Behavior Change	-	Short-term
	<p><i>Notes from Student Reps: The recycling bins also have to be better labeled, more accessible and standardized. We were waiting to hear if the student centers switch to dual stream recycling has shown less contamination. If the data proves to be meaningful we believe campus-wide these changes should be made.</i></p>			
ES-17	During vendor contract reviews, institute sustainability requirements prior to awarding contracts and identify internal knowledge experts for each type of vendor review: catering, waste, landscape, etc.	Supply Chain	-	Short-term
ES-18	Compile and release regular updates to GHG inventory	Transparent Reporting	-	Ongoing
ES-19	Create a Transportation Demand Management Program	Transportation and Mobility	-	Short-term
ES-20	Develop a plan to electrify campus shuttle buses	Transportation and Mobility	-	Medium-term

Table 9: Potential Actions for Social Sub-Committee Responsibility

Social Sub-Committee				
Action #	Sustainability Actions	Topic Area	Priority	Timeframe
S-1	Survey multiple campus audiences/stakeholders on their awareness and opinions of, challenges and pain points, etc. regarding sustainability	Outreach and Behavior Change	Immediate	Short-term
	<p><i>Notes from Exec Committee: Can create internally and distribute with assistance from consultant; find surveys online distributed by other institutions; key in getting administrative support</i></p>			
S-2	Behavior change campaign for sustainability issues (turn off lights, close windows, take the stairs, carpool)	Outreach and Behavior Change	Immediate	Ongoing
	<p><i>Notes from Exec Committee: Get faculty, staff, and students involved; push from administration needed; utilize social media; hold events on campus</i></p> <p><i>Notes from Student Reps: This has been talked about before by holding competitions between dorms or floors within dorms. Winners could get some kind of prize and there can be ongoing public education throughout</i></p>			
S-3	Behavior change campaign for waste disposal (need to decrease the amount of contamination in recycling bins)	Outreach and Behavior Change	Immediate	Ongoing
	<p><i>Notes from Exec Committee: Notes from Exec Committee: Get faculty, staff, and students involved; push from administration needed; utilize social media; hold events on campus</i></p> <p><i>Notes from Student Reps: This has been talked about before by holding competitions between dorms or floors within dorms. Winners could get some kind of prize and there can be ongoing public education throughout</i></p>			
S-4	Dedicated faculty and staff for championing and organizing sustainability efforts at Rowan	Governance Structure	Future	Short-term
	<p><i>Notes from Exec Committee: Sustainability requires full department which is not in the funds/plans at the moment</i></p> <p><i>Notes from Student Reps: A sustainability coordinator role is a high priority for students. We see how understaffed key departments are and we believe a sustainability coordinator will help to guarantee that sustainability is a focus. We believe there should be either an AVP of Sustainability or a sustainability committee on SGA</i></p>			
S-5	Raise the visibility of sustainability-related research projects at Rowan	Academics and Education	-	Ongoing
S-6	Incorporate sustainability education (recycling, climate change, etc.) into Rowan Core classes	Academics and Education	-	Short-term
S-7	Train staff on how to be more sustainable in their day-to-day work at Rowan and create an associated incentive program	Change Management	-	Short-term
S-8	Create practicum courses that facilitate professors and students assessing the impacts of future climate hazards (flooding, extreme heat, etc.)	Climate Resilience	-	Short-term

S-9	Create a committee (or utilize an existing one, perhaps related to the Rowan Center for Responsible Leadership) to ensure multiple stakeholder perspectives and needs are incorporated into sustainability plans and initiatives	Inclusive and Equitable Approach	-	Short-term
S-10	Survey Rowan stakeholders regarding their opinion of existing social sustainability initiatives and potential future initiatives	Inclusive and Equitable Approach	-	Short-term
S-11	Create a social equity plan, in conjunction with the SMP, to assess current progress and develop an action plan to improve	Inclusive and Equitable Approach	-	Long-term
S-12	Develop an outreach and communications plan for sustainability at Rowan University (social media, website, etc.), including responsible parties	Outreach and Behavior Change	-	Short-term
S-13	Identify opportunities to collaborate with NJ communities on sustainability initiatives and act as a thought leader for sustainability in the region <i>Notes from Student Reps: Glassboro has a resolution committed to achieving 100% renewable energy and transportation by 2035. Unfortunately, it's not an ordinance but Rowan should be a partner in achieving this goal. Potential through including student interns to help work with the town on this initiative and of course through changing operational practices</i>	Partnerships and Community	-	Ongoing
S-14	Work with student groups to conduct regular waste audits to determine and report on disposal rates	Student Groups and Engagement	-	Short-term
S-15	Work with student groups to develop a program for collecting donatable goods from move-out and reduce the amount of waste sent to landfill from these activities <i>Notes from Student Reps: Student waste when moving out is ridiculous as well. There has to be a way to divert some of this, maybe running campaigns before spring break encouraging people to take stuff home or having more consistent access to donation bins or item swaps, etc. This would be a good thing to work with RLUH and hopefully RTS</i>	Student Groups and Engagement	-	Short-term
S-16	Give out reusable bags (at freshman orientation, sustainability events, etc.) and institute a “bring your own bag” campaign to minimize the use of plastic bags and encourage sustainable behavior change	Supply Chain	-	Ongoing
S-17	Create a safe carpooling program for students, staff, and faculty groups to share rides to and from campus	Transportation and Mobility	-	Short-term

NEXT STEPS

To develop the implementation framework and finalize, Rowan should follow these steps:

- Narrow down the long list of potential sustainability actions based on short-term priority for a more manageable and focused final list of actions. Other actions can be moved to a holding pen for future evaluation.
- Determine which implementation details are needed for the Sustainability Master Plan (details may include: start time, end time, funding source, responsible department/group) and establish the SMP as a guiding framework.
- Using the final list of sustainability actions, go through and determine responsible groups for each action. Current groups may have to be reorganized and new groups may have to be formed.
- Where appropriate, in creating new groups or providing new missions to existing groups, it will be important to write charters for these groups to outline guiding principles and criteria for governance. It is important that responsible groups or departments have their own dedicated budgets and resources for implementing sustainability initiatives.
- Convene proposed responsible groups to workshop remaining implementation details including funding sources and implementation timeframe.
- Finalize implementation framework.

DEVELOP A COMMUNICATION AND PROGRESS REPORTING PLAN

NEXT STEPS

As the Sustainability Master Plan is developed, it is important to keep communications and progress reporting in mind. Throughout the planning process, particularly through stakeholder engagement, it is important for Rowan to communicate and share. To initiate the planning process, Rowan should develop a consistent messaging approach and determine where resources will be located online. One way to ensure this is championed is to identify a communications committee for the Plan. Progress reporting will also need to be a consideration throughout the development of the plan. As Rowan selects goals/targets and metrics, it is important to think about how they will translate to regular progress reports and how often Rowan will want to report on sustainability progress.

PURPOSE

For continued success, it is important that Rowan University develop a plan for communicating the sustainability master plan process and contents as well as for regularly reporting on progress. Oftentimes, communications are centralized on a University website that is engaging and interactive with information on ongoing efforts, available resources, and relevant events and activities. For reporting, the University could consider external reporting platforms, such as [Second Nature](#), that help Rowan stay accountable.

STATUS: *Future Work*

Buro Happold has completed the Existing Conditions Assessment and initiated several other items that can stand as the foundation for initiating communications around the planning process for the Sustainability Master Plan.

CREATE AND RELEASE A SUSTAINABILITY MASTER PLAN

PURPOSE

As the final step in the process, Rowan University will work together to complete the plan based on the efforts outlined in this Roadmap. The final plan should be an easy-to-follow document (or website) that can garner excitement and motivation across the many stakeholder groups on campus.

STATUS: Future Work

Guided by the Roadmap, Rowan University will need to build and construct the elements for the Sustainability Master Plan and combine together into a single, publishable document.

WORK COMPLETED TO DATE

A few sustainability plans are provided below as examples and inspiration.

University of Pittsburgh Sustainability Plan



COMMUNITY AND CULTURE

Pitt will strengthen its campus and communities by creating a culture of shared responsibility for our impact on surrounding communities, the region, and the world. This will be achieved by supporting and facilitating opportunities for students, faculty, and staff to be active participants in advancing the University's social, economic, and environmental sustainability goals.



ENGAGEMENT AND AWARENESS

We will weave a culture of sustainability into the everyday fabric of our campus and community.

GOALS AND ASPIRATIONS

- Incorporate the tenets of sustainability into all student programming.
- Create an online sustainability education module for staff and develop departmental Green Teams.
- Train all staff (incoming and retained) on how to infuse the tenets of sustainability into their everyday work at Pitt.
- Create and deploy a comprehensive campus survey on student, staff, and faculty sustainability literacy by 2020.
- Share our stories of impact as leaders on a national scale and promote our model of sustainability.

KEY PERFORMANCE INDICATORS

- Responses to the campus-wide sustainability survey
- % of staff trained by the online sustainability education module and the # of departmental Green Teams

SUCCESS STORIES

A result of a sustainability-related class project, the University of Thirtsburgh is a student-run thrift store co-founded by Anna Greenberg (AAS '16) and Paul Hertenan (AAS '15). The store's mission is to be a working model of sustainability, encouraging students to think about how to reuse and recycle in a whole new way while also supporting fair labor practices and campus-wide sustainability efforts through donations to the Pitt Green Fund.



HEALTH AND WELLBEING

We will strive to enhance the physical and mental health as well as the quality of life of our campus community.

GOALS AND ASPIRATIONS

- Identify and improve the environmental quality of our indoor and outdoor spaces.
- Support physical health through fitness access and active design principles.
- Support the mental health needs of our students, faculty and staff.
- Embrace LEED and WELL Building Certifications, and WELL Communities for our built environment.

KEY PERFORMANCE INDICATORS

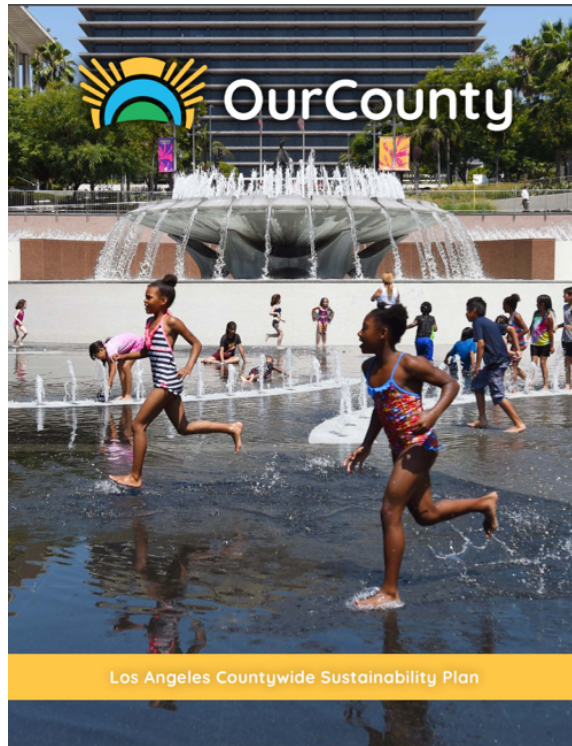
- # of participants in health and wellness programming
- # of LEED and WELL building certifications

SUCCESS STORIES

The Stress Free Zone is a space where students can learn and regularly practice evidence-based mind/body stress reduction skills. These skills are primarily taught through mindfulness meditation, a form of attention training that involves an intentional, nonjudgmental observation of the present moment.



Los Angeles Countywide Sustainability Plan



NEXT STEPS

To finalize the Sustainability Master Plan, the following steps are recommended:

- Develop a narrative for each of the elements included in the Roadmap intended for publishing in the final plan.
- Pull together graphics, charts, and images that can be used in the plan.
- Consider releasing a draft plan for review and comment from the campus community.
- If a draft is released, compile feedback from the community and make any edits to the plan.
- Finalize the plan and publish.

1 2 3 4 5 6 7 8 9 10 11 12

Goal 2: Buildings and infrastructure that support human health and resilience

Buildings and infrastructure, such as our water system and tree canopy, are integral components of our daily lives. It is critical that these systems enable and support the well-being of the communities they serve. In the past, buildings were often constructed without consideration for sustainability, resilience, and health. For example, older buildings built without proper insulation and with large south-facing windows heat up quickly. This requires a significant amount of cooling and contributes to unhealthy environments.

Further, our infrastructure systems often lack resiliency and redundancy, such as a diverse range of water sources during droughts, use of open space to manage flooding, or cool surfaces and canopies that mitigate urban heat. The buildings and infrastructure of both yesterday and tomorrow will need to utilize more efficient technologies and practices that reduce resource use, improve health, and increase resilience. For example, floodplain buybacks can restore natural functions and reduce flood impacts.

As the climate changes, our built environment will experience more shocks and stresses. We will need to ensure our buildings and infrastructure can adapt, or adjust and moderate impacts, cope with potential consequences, and even take advantage of potential opportunities that climate events may create. OurCounty will help create a built environment that supports healthy, active lifestyles and adapts to provide protection against climate risks, now and in the future.

How will we work towards achieving this goal?

Strategy 2A
Integrate climate adaptation and resilience into planning, building, infrastructure, and community development decisions
Strategy 2B
Require sustainable and healthy building design and construction
Strategy 2C
Create an integrated and resilient water system
Strategy 2D
Ensure a climate-appropriate, healthy urban tree canopy that is equitably distributed

OurCounty | 47

CONCLUSION

Rowan University has already set the foundation for a robust sustainability program on campus. By following the steps in this Roadmap, Rowan will strengthen campus relationships and develop a progressive, yet achievable plan for the University to reach its sustainability goals. There are many considerations for Rowan to evaluate as it executes the master planning process. For one, it will be important to build up momentum around sustainability throughout the process from engagement to action development, maintaining a clear, transparent line of communication between Rowan and the community. This effort will strengthen the planning process and the outcomes. Furthermore, it is critical for sustainability planning efforts to get buy-in from Rowan leadership and for the team to secure a long-lasting internal structure for implementing sustainability actions. With the Roadmap, Rowan University is on its way to developing a holistic Sustainability Master Plan that will deliver meaningful change to the campus community.



Photo Credits to Rowan University

Cover Image Photo Credits to Rowan University



ROADMAP TO A SUSTAINABILITY MASTER PLAN