RIVERSIDE COMMUNITY COLLEGE DISTRICT

SUSTAINABILITY AND CLIMATE ACTION PLAN

RCCD | RIVERSIDE COMMUNITY COLLEGE DISTRICT

MORENO VALLEY COLLEGE | NORCO COLLEGE | RIVERSIDE CITY COLLEGE

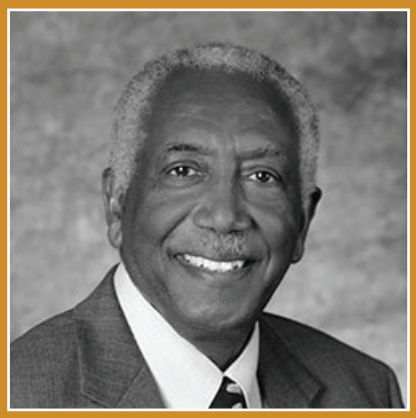
JUNE 2023

THE THREE LEAVES OF RIVERSIDE COMMUNITY COLLEGE DISTRICT'S SUSTAINABILITY LOGO REPRESENT THE THREE COMPONENTS OF SUSTAINABILITY - ENVIRONMENTAL STEWARDSHIP, SOCIAL EQUITY AND FISCAL RESPONSIBILITY. THE COMPREHENSIVE APPROACH TO SUSTAINABILITY AT RCCD IS THE INTERSECTION OF THOSE COMPONENTS.

Riverside Community College District believes sustainability is a cultural transformation.

This plan that reflects the cultural shifts required to enact real impact around climate change.

Together we can make a difference.



The challenge of developing a sustainable, healthy, resilient world has never been more urgent. We must all take ownership in solutions that will move the needle toward a more sustainable future. Riverside Community College District recognizes its responsibility to operate in a socially, environmentally, and economically conscious way, protect regional waterways and natural ecosystems, preserve our resources, and contribute to social mobility and well-being. To set this recognition into action, RCCD has recently completed a Sustainability and Climate Action Plan – an implementable road-map toward sustainability goals that establish RCCD as a leader in addressing environmental stewardship and climate change.

The plan defines the long-term vision and cultural reset for a sustainable future. Reflecting the contributions of hundreds of stakeholders thorough out the process, our plan brings together the range of ideas and initiatives that were identified as critical to our campus and community. Ten impact areas connect our sustainability work across academics, operations, and community partnerships. The plan will help the District and Colleges develop greater action and collaboration and make progress in areas we need to further invest.

Climate hazards and environmental risks require education awareness and action. Southern California is at risk for environmental and climate-related hazards. In the past few years, wildfires, extreme heat waves, historic drought, and aging utilities and facilities have threatened Californian's health and economic livelihood. These challenges will only become more difficult to deal with if we hesitate to address them now. The impact of these crises is more significant for vulnerable communities, many of which exist in the Inland Empire and within RCCD's service area. As a large entity in the Southern California region and an institution of education, RCCD has a unique opportunity to be impactful by operating more sustainably and educating our community about climate risks, and the critical importance of sustainability.

We recognize that this plan will continue to evolve. The planning indicates not the end but rather the beginning.

WOLDE-AB ISAAC, PH.D
Chancellor, Riverside Community College District

DLRGROUP

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01

PURPOSE OF THE PLAN

The Goal of the Sustainability and Climate Action Plan is to identify ways for environmental, social, and environmental sustainability to be fostered within Riverside Community College District.

About the Plan

This Sustainability and Climate Action Plan (S-CAP) is a strategic planning document created for Riverside Community College District (RCCD) and its three Colleges – Moreno Valley College (MVC), Norco College (NC), and Riverside City College (RCC) with a full engagement of constituents represented by students, faculty and staff. The District hired DLR Group in March 2021 who assisted the District in the development of the plan and facilitated the process among stakeholders.

The S-CAP builds upon the legacy of integrated planning and will propel RCCD into a more sustainable and resilient future.

This plan aims to outline a roadmap for RCCD to live sustainably and take an active leadership role in the community in responding to evolving environmental and climate challenges and addressing social, economic, and environmental issues.

This work aims to advance RCCD as a sustainability leader among its peer institutions.

The California Community Colleges Chancellor's Office Climate Action and Sustainability Goals were updated in 2021. This plan addresses those Goals, but also creates its framework to implement unique sustainability initiatives and find ways to go above and beyond the Chancellor's Office Goals.

The plan defines the long-term vision and culture of sustainability.

The goals included in this plan establish aspirational thinking and long-term vision for the District. These evergreen Goals are visionary and will likely be aligned with RCCD sustainability initiatives in perpetuity.

This plan balances the vision with achievable and measurable objectives.

Several objectives and actions are set to a timeline that will advance RCCD toward the long-term Goals. These objectives are measurable and include several actions that provide a framework for the Colleges to implement the plan over the next decade and beyond.

This plan believes climate hazards and environmental risks require education awareness and action.

Southern California is at risk for environmental and climate-related hazards. In the past few years, wild fires, extreme heat waves, historic drought, and aging utilities and facilities have threatened Californian's health and economic livelihood. As a large entity in the region and an institution of education, RCCD has a unique opportunity to be impactful by operating more sustainably, educating our community about climate risks, and the critical importance of sustainability.

Triple Bottom Line Sustainability

RCCD believes sustainability moves beyond a singular association with the environment and is founded on three main aspects: Environmental, Social, and Economic. True sustainability balances all three systems forming RCCD's holistic definition of triple bottom line sustainability, balancing Goals and objectives to address all three lenses.

1

ENVIRONMENTAL

Environmental sustainability encompasses ecological systems and the natural resources required to sustain them. RCCD has committed to reducing resource use and encouraging environmental stewardship through its commitment to achieving climate neutrality by 2030 and promoting research and educational efforts that address the impact of climate change on the RCCD community.

2

SOCIAL

Social sustainability means respecting and sustaining cultures, social systems, and human well-being worldwide. Community resilience is built through strong connections, shared values, and the protection of human health and well-being for all—decisions made at RCCD impact the local community and neighboring communities. RCCD policies, practices, and initiatives play a role in creating a more socially vibrant and just world.

3

ECONOMIC

Economic sustainability requires decision-making principles that lead us to sustain our resources without negatively impacting environmental or social systems. Economic systems produce the goods and services that enable survival and well-being and are essential to achieving sustainable development.

Embedding Resiliency

Resiliency planning holistically accounts for the impacts of climate change across the Riverside Community College District. Understanding climate hazards and environmental risks around the district requires education, awareness, and action. The Riverside community faces several climate risks such as excessive heat waves, drought, wildfire, air quality, drinking water contamination, toxic release from facilities, unemployment, poverty, housing burden, education attainment, etc. Planning for these risks and understanding how to continue the mission of the district and continuity of operations will allow RCCD to adapt and thrive, even under challenging conditions. Rather than being assessed as a stand-alone impact area, resiliency is embedded in the analysis and planning for all impact areas.

Sustainability within Riverside Community College District focuses on the integration between the environment, society, and economics and how these components work together allowing us to achieve long-term prosperity and quality of life.

Sustainability History at RCCD

Riverside Community College District has three colleges and one center — Moreno Valley College, Norco College, and Riverside City College, and Ben Clark Training Center — which serve and enrich diverse communities and help students achieve their educational and career goals. RCCD is the fifth-largest and seventh oldest community college district in the State of California. The District impacts the social and economic mobility of its students by promoting access, success, and equity for everyone who wishes to take advantage of the educational opportunities offered by the colleges.

The district sustainability stewardship was formalized in 2011 when the Board of Trustees adopted board policy 5775, Sustainability and Environmental Responsibility.

In addition, sustainability has been integrated into the District Strategic Plan.

- RCCD recognizes its responsibility to exercise environmental stewardship and to economically manage the use of buildings, land, and natural resources
- Thoughtful utilization of land under the District control
- Strive to make District facilities as energy efficient as economically practical
- All new facilities in the District will be planned, designed, and constructed to meet LEED (Leadership in Energy and Environmental Design)
- Promote initiatives that advance a sustainable environment by partnerships with public and private entities
- Sustainable management and operations practices
- Encouragement of curriculum in environmental sustainability

As a higher educational institution, RCCD must operate sustainably and lead the community in responding to evolving social, economic, and environmental changes. As a District, RCCD believes sustainability is a cultural transformation. Therefore, this Sustainability and Climate Action Plan reflects the cultural transformation needed in the District to have real change. To this end, RCCD has adopted a new board resolution and revised board policy that reflect RCCD's current and comprehensive sustainability initiatives.

“RCCD believes sustainability requires a cultural transformation.”

Hussain Agah
Associate Vice Chancellor,
Facilities Planning & Development

Deliverables and Tools

The planing process for the district sustainability initiative includes four deliverables: Sustainability and Climate Action Plan, Integrated Energy Master Plan, Total Cost of Ownership Model, and AASHE Stars Alignment.

Sustainability and Climate Action Plan
An implementable roadmap toward holistic sustainability Goals, which establishes RCCD as a leader in addressing Environmental Stewardship and Climate Change.

AASHE Stars Alignment
Association for the Advancement of Sustainability in Higher Education (AASHE) Stars is a third-party reporting framework connecting sustainability in the built environment and academics. Planning intentionally infuses the AASHE Stars framework into the Sustainability and Climate Action as a roadmap towards peer group recognition of each College's sustainability efforts.

Integrated Energy Master Plan (IEMP)
Establish an implementable roadmap toward Carbon Neutrality and Net Zero Energy at each campus. The plan will benchmark against established and future Goals.

Total Cost of Ownership (TCO) Model
Develop a framework for cost-effective decision-making that identifies human and capital resources needed to address the Goals of the S-CAP and IEMP. The TCO is also included with the College's accreditation requirements.

INTEGRATED PLANNING

These deliverables will connect to other plans across the District, such as District Strategic Plan, the College's Strategic Plan, Educational Master Plan, Facilities Master Plan, and more.

District Strategic Plan
College's Strategic Plan
College's Educational Master Plan
College's Facilities Master Plan
Five-year Capital Construction Plan
Operational and Maintenance Plan
Fiscal Plan
Solar Planning Initiative
Student Equity Plan
Guided Pathway Plan
Affordable Housing Planning

The S-CAP Planning Process

The project timeline was broken out into several phases.

1 **PROJECT INITIATION** involved coordinating the engagement of all the voices across the District to inform the S-CAP development and implementation. The planning team also gathered a prioritization of data collected to inform the plan and help the team analyze where the District is today concerning sustainability and climate action.

2 **VALUES AND VISION** involved a large amount of engagement across the District and College stakeholders, including faculty, staff, and students. Over eight sessions, stakeholders prioritized sustainability values that then translated them into the framework of the S-CAP. Finally, the results of the VALUES sessions and the reveal of the S-CAP impact areas were reported back to each College's shared governance structure.

3 **PRIORITIZATION AND GOALS** focused on establishing goals and measurable objectives for each impact area. The District Sustainability Committee reviewed and discussed each of the goals and objectives throughout the phase.

4 **ACTION PLAN AND IMPLEMENTATION** began to set actions that would address each objective. These actions are primarily district-wide, but baselines are aligned with each College's unique sustainability journey. During this phase, a progress report of the S-CAP draft was provided to both the College's shared governance committees and the District's board committees.

5 **FINAL PLAN** consisted of the documentation and approval of the S-CAP.

6 **VERIFICATION AND MONITORING** will occur on an annual basis after adopting the S-CAP and its deliverables by the board.

The Integrated Energy Planning Process

An integrated energy master plan (IEMP) is a plan for a large portfolio of buildings to reduce resource consumption through quantified optimizations. Recommendations are presented in an interactive storyboard dashboard to allow all stakeholders to view the path to Net Zero Carbon through a series of optimizations. The process of plan development has three phases:

1 **DISCOVERY**
Involves quantifying current conditions by conducting a site walk-through, conducting facility manager interviews, and assessing building systems.

2 **ANALYSIS**
Seeks to benchmark the operational performance of the portfolio against similar age building types, identify deviation from expected performance, compare to new construction expectations, and quantify the impact of areas for improvement toward long term performance goals.

3 **RECOMMENDATIONS**
Bundles Energy Conservation Measures and Water Conservation Measures into low-cost, medium-cost, and high-cost measures.

The Total Cost of Ownership Planning Process

The TCO process followed adhered to the following steps:

- Understanding existing efforts between the three colleges and identified similarities and differences in their approach, focus, and application of total cost of ownership
- Framework Development defines a holistic approach to TCO, using a framework from APPA-Leadership in Education Facilities
- Discussions included several conversations with key stakeholders such as the VP of Business Services; facilities directors; operations and maintenance directors, and capital planning leaders led to the development of Goals and objectives
- User Experience and User Story Mapping with key stakeholders led to the development of the TCO Application
- Development of an online application to access the TCO model and interact with it using the framework

Project Schedule

		TASKS	S-CAP	IEMP	TCO
2021	JUN	1 PROJECT INITIATION	PROJECT INITIATION	PROJECT INITIATION	PROJECT INITIATION
	JUL				
	AUG				
	SEP				
	OCT	2 RESEARCH AND ANALYSIS	VISION AND VALUES	DISCOVERY	UNDERSTANDING
	NOV				
	DEC				
2022	JAN	3 IMPLEMENTATION	GOALS AND OBJECTIVES		FRAMEWORK + APPROACH
	FEB				
	MAR				
	APR		ACTION PLANNING	ANALYSIS	DISCUSSIONS
	MAY				
	JUN				
	JUL				
	AUG				
	SEP				
	OCT		CAMPUS AND DISTRICT FEEDBACK AND APPROVALS		USER EXPERIENCE
	NOV				
	DEC			RECOMMEND-ACTIONS	
2023	JAN	4 FINAL PLAN			APP DEVELOPMENT
	FEB				
	MAR				
	APR				
	MAY				
	JUN				

District Sustainability Committee

As the district strategic planning council is progressing to formalize its operational guidelines and structure, the District Strategic Planning Council (DSPC) approved the Sustainability as Climate Action Sub-Committee (SCAC) as permanent sub-committee in February 2023.

SCAC serves as the primary advisor on sustainability and climate action matters to the Resources Committee and then the DSPC. SCAC provides a collaborative forum for the exchange of information necessary in setting goals and priorities regarding sustainability and climate action procedures, policies, compliances, leadership, advocacy, implementation, monitoring and communication. SCAC works towards continuous evaluation and quality improvement to support and advance the institutional mission of the district that promotes sustainability decision-making and resiliency-thinking for climate action, social justice and resources conservation.

SCAC Membership:

- Associate Vice Chancellor, Facilities Planning and Development - co-chair (1)
- Sustainability and Energy Manager (1)
- Director, Capital Planning (1)
- District Director, Business Services (1)
- Director, Government Relations (1)
- Vice Presidents, Business Services (3)
- Directors, Facilities Maintenance and Operations (3)
- Academic Senate Presidents, (3)
- Classified Professional representatives (4)
- Student representative from each college (3)

1. Associate Vice Chancellor, Facilities Planning and Development; Director, Capital Planning; District Director, Business Services; Director, Government Relations; Vice Presidents, Business Services; and Directors, Facilities Maintenance and Operations are permanent members.
2. All other members serve two-year terms, with the exception of the student representatives who will serve a one-year term.
3. College Academic Senates will appoint faculty members.
4. District Academic Senate President will serve as faculty co-chair.
5. Co-chairs vote on recommendations only in the event of a tie.
6. CSEA will appoint Classified Professional representatives.
7. The Associated Students will appoint the student representatives.

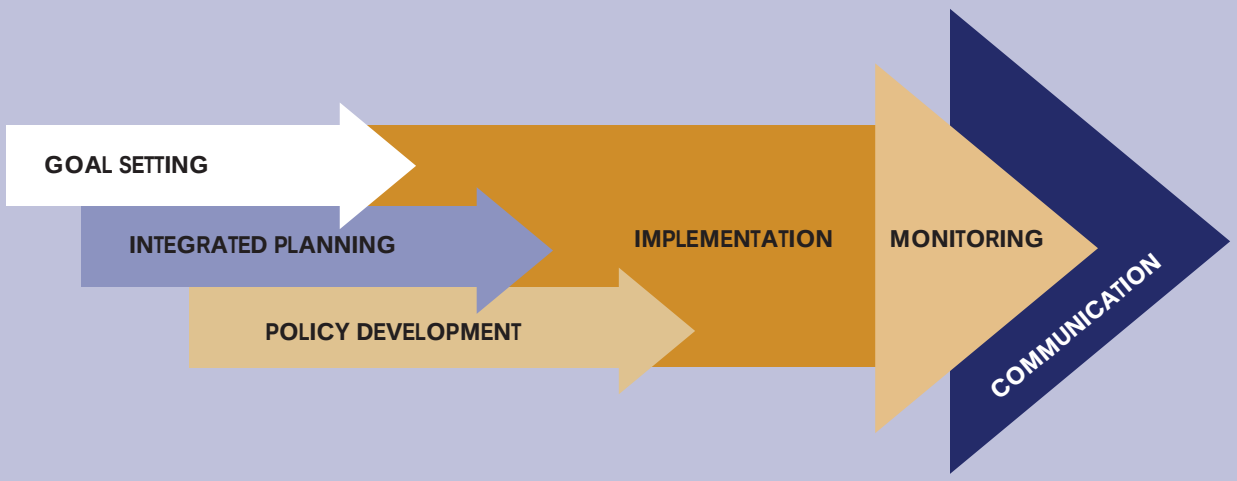
Through a collective process, the District Sustainability Committee established its mission, vision, and charge for providing direction during the ongoing implementation of the Sustainability and Climate Action Plan.

MISSION

The Riverside Community College District Sustainability Committee creates and advances the Sustainability and Climate Action Plan by providing advocacy, leadership, and direction as the plan is developed, updated, and implemented.

VISION

We envision an RCCD where sustainability and resiliency-thinking are integral aspects of our culture and decision-making. We will demonstrate leadership in climate action, social justice and resource conservation.



CHARGE

- **Goal Setting:** Build visionary and achievable Goals, objectives, and actions.
- **Integrated Planning:** Support institutional planning activities by articulating sustainable actions, practices, and principles in all aspects of the institution.
- **Policy Development:** Develop and/or recommend appropriate policies that promote sustainability and resiliency.
- **Implementation:**
    - Recognize the differences of each College in its sustainability journey;
    - Build consensus around the prioritization and implementation of sustainability initiatives;
    - Helping people to understand the opportunities, process, limits and costs of sustainability.
- **Monitoring:** Track sustainability progress and performance in each impact area annually.
- **Communication:** Provide an annual report that summarizes progress and future priorities.

Engagement

RCCD's shared governance process demonstrates engaging all voices in the planning process. A major driver of the planning process was to gather unique voices and experiences across the District to truly achieve a holistic approach and scale of impact. Throughout this project, the engagement process explored various sustainability topics, asking stakeholders to prioritize where they wished to have their impact and develop actions to meet short-, mid-, and long-term actions.

The engagement process included the VALUES framework linking planning to sustainable priorities through gamification (hands-on activity that helps stakeholders prioritize, set targets for goals and metrics for success). **VALUES** stands for **V**iewing **A**rchitecture through the **L**ens of **U**ser **E**xperience and **S**ustainability. This approach focuses on how sustainable design solutions impact the way users interact with and experience their surroundings. A VALUES session is an important planning and project visioning session used to establish sustainability and wellness Goals, while also taking into consideration planning- and project- specific challenges and resources. VALUES helps the project team and stakeholders identify top project Goals, determine how success of these Goals will be measured, and create a values-based roadmap for project decision-making.

SUSTAINABILITY VALUES SESSIONS

Eight VALUES sessions were held across the district, including District Sustainability Committee, Moreno Valley College's Resources Council and Associated Students, Norco College's Resources Council and Associated Students, and Riverside City College's Physical Resources Council and Associated Students. The priorities from all sessions were synthesized into the top impacts areas that stakeholders agreed were most important to address in the Sustainability and Climate Action plan.

LINK TO VALUES REPORT

OPEN HOUSE TAKEAWAYS

Following the VALUES sessions, Open Houses at each College were hosted to generate deeper conversations around the top VALUES: Decarbonization and Climate Justice, Waste and Procurement, Water and Ecosystems, Community Vitality, and Resiliency.

Decarbonization and Climate Justice

Address lack of convenient public transportation

Improve bike safety

Energy efficiency within campus buildings and systems

Provide solar covered parking and EV charging station

Human behavior impacts energy use

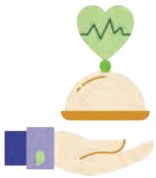
Waste Minimization and Procurement

Create a consistent recycling program

Focus on reduction of waste - paperless courses, less dining packaging

Add composting

Create trust in the system



Community Vitality

Formalize pathways and trails on campus

Use gardens on campus to promote learning, healthy eating, socializing, rejuvenation, etc.

Social Equity and inclusion are key links into sustainability planning

Water and Ecosystems

Invest in efficient building plumbing systems

Plant native and drought tolerate species to reduce water usage

Support reduction in meat consumption

Invest in recycled water infrastructure

Resiliency

Addressed in all VALUES

Support policies and partnerships that advocate for community health

Continue to be a resource to the community (housing, food, etc.)

Implementation of the Plan

The District and College shared governance process reviewed the draft plan and was updated to reflect comments from this review period. As a result, the plan was approved in June of 2023 by the RCCD Board of Governors.

The implementation of the plan is key to success. This plan seeks to create a culture of sustainability – setting the tone for the future and focusing on managing the data needed to prove success. **Because each College is on its unique sustainability journey, a majority of the implementation will occur there – new sustainability task forces at each College will help to guide that work.**

IMPLEMENTATION WILL OCCUR BY THE DISTRICT AND COLLEGES

As the plan developed, engagement with the District Sustainability Committee and College Sustainability Task Forces formulated how each College will customize its actions toward the District-wide goals and objectives. Therefore, the actions within this document are aligned with current and planned College initiatives.

YOU CANNOT MANAGE WHAT YOU CANNOT MEASURE

The goals included in this plan are evergreen. These are visionary long-term milestones and will likely be aligned with RCCD's sustainability initiatives in perpetuity. The objectives and actions will guide the measure of success and accomplishment in the short, mid, and long-term, and the quality of data is imperative to measure success. Today, the quality of data is lacking to establish baselines for many of the objectives in the plan. RCCD should prioritize data management to create baselines that become the starting point for each objective in the plan. Strategies include sub-metering buildings and utilities, documenting the tonnage of waste collected and creating staff positions that can keep track of data annually for each impact area.

IMPLEMENTATION DEPENDS ON AVAILABLE RESOURCES

It is recognized that substantial funding for sustainability initiatives is currently unavailable from the District and the State. Therefore, RCCD must consider Total Cost of Ownership strategies to implement more expensive systems that help achieve energy, carbon, and water goals. In addition, RCCD should consider grants and partnerships to aid in funding the initiatives within this plan.

UPDATE BOARD POLICY AND ADOPT BOARD RESOLUTION

An updated board policy and resolution will prescribe sustainability thinking in the district so that sustainability is ingrained into the culture and operations within RCCD.

Document Organization

The remainder of this document is organized into chapters that align with the process and scope of the plan:

SECTION 2
Includes the Sustainability and Climate Action Plan with sub-sections addressing each impact area. Impact areas are organized by their uniqueness to sustainability.

SECTION 3
A high-level overview of the Integrated Energy Master Plan, including the phase of Discovery, Analysis, and Recommendations. The final deliverable is an interactive dashboard and provided as an exhibit in the IEMP section.

SECTION 4
A high-level overview of the Total Cost of Ownership model. The final deliverable is an interactive application and provided as an exhibit in the TCO section.

SECTION 5
Contains Appendix information, including acknowledgments, a glossary of terms, resources, and document coordination. This section also includes a framework crosswalk to track impact areas against Climate Change and Sustainability Policy by the California Community Colleges Board of Governors and AASHE Stars.

02

SUSTAINABILITY AND CLIMATE ACTION PLAN

The Ten Impact Areas

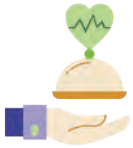
Through the large scale engagement effort with campus users 64 VALUES cards were distilled down to ten topics that were collectively identified as most important to constituents. These topics are identified as Impact Areas. The ten Impact Areas were then organized into three tiers:

- The top-tier impact areas include the creation of goals, objectives, and actions unique to the Sustainability and Climate Action Plan.
- The middle-tier includes impact areas related to other District or College plans. The goals and objectives crafted for these impact areas create a sustainability lens to influence future District and College plans.
- The final tier includes impact areas where no goals and objectives are formed but connects to other plans and initiatives to help reinforce Community Partnerships and efforts around Equity and Social Justice.

INCLUDED

Includes the creation of Goals and Metrics within the S-CAP

Decarbonization and Climate Justice



Community Vitality

Water and Ecosystems

Waste Minimization

Resiliency

INFLUENCED

Influences the updates of planning with a sustainability lens

Engagement

Academics

Trust and Transparency

REINFORCED

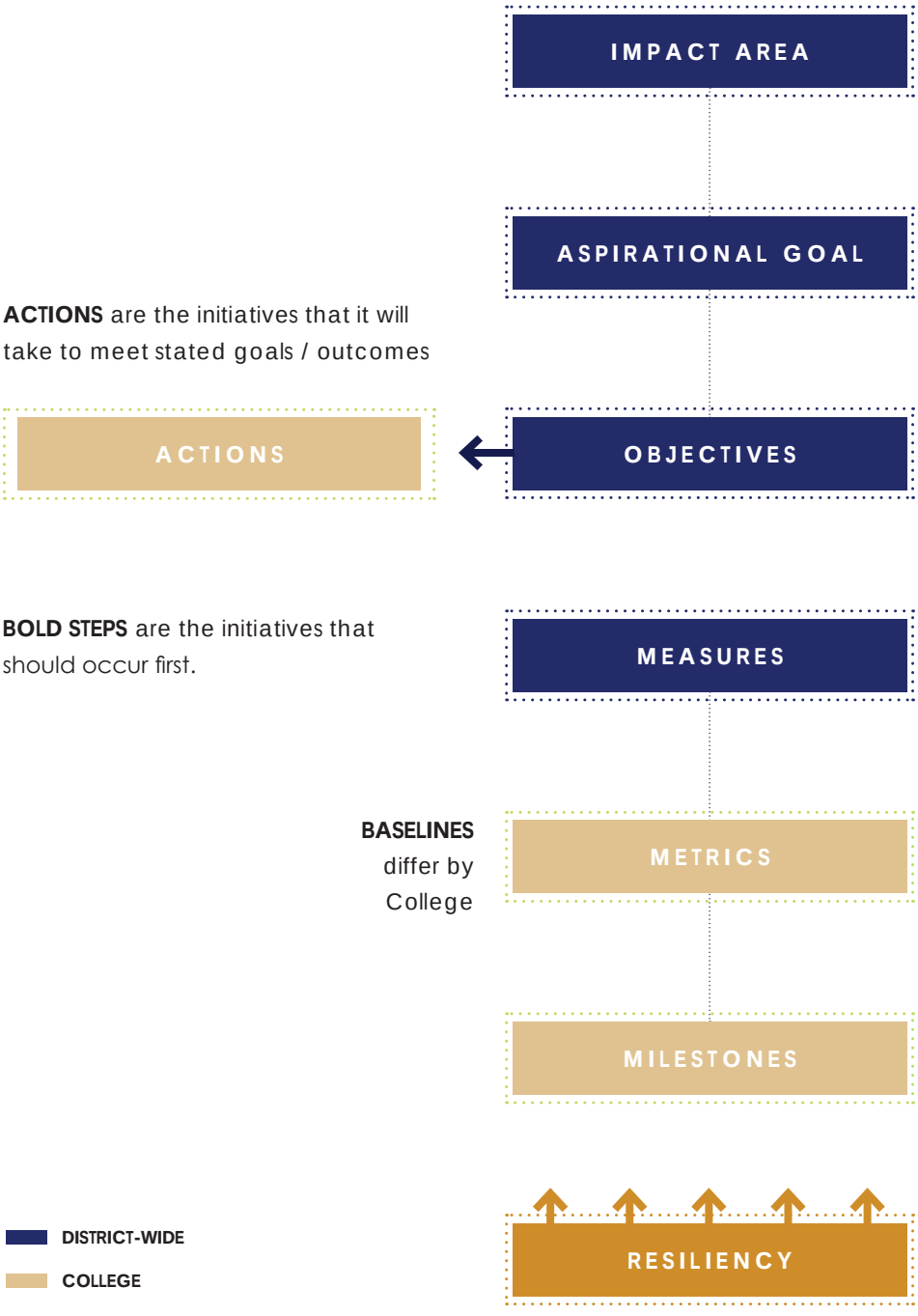
Reinforces planning and Metrics already exist in other plans

Equity and Social Justice

Community Partnerships

Sustainability and Climate Action Plan Organization

This document is structured in ten impact areas and organized into a hierarchical series of goals, objectives, and actions as outlined below.



IMPACT AREAS are the top VALUES as created collectively by the District.

GOALS establish aspirational thinking that the District will work toward. These were established by cross-referencing CCCCO goals and AASHE Stars frameworks with Impact Areas.

ACTIONS are the initiatives that it will take to meet stated goals / outcomes

OBJECTIVES outline measurable actions were established by from stakeholder engagement, CCCCO goals, and Higher Education best practices.

BOLD STEPS are the initiatives that should occur first.

MEASURES align with the objectives to manage what success will look, and establish baselines for data collection moving forward.

BASELINES differ by College

METRICS outline how the objective will be measured based on the baseline data available.

MILESTONES represent the timeline associated with each objective. These outline short-, mid-, and long-term actions.

RESILIENCY overlays risk-management and the five dimensions of resiliency (Ecosystem, Financial, Human Health, Infrastructure, Social) into each Impact Area

Establishing a Unique Framework

As an institution of higher education, RCCD must live sustainably, actively lead our communities, and respond to today's evolving climate challenges. As a district, RCCD could have simply adopted the California Community College's Chancellor's Office Climate Action and Sustainability Goals, but we believe sustainability is a cultural transformation and the District and its Colleges need a plan that reflects the cultural shifts required for genuine impact.

Creating our own plan of action does not mean we abandon other frameworks. In the development of our action plan, we heavily cross-referenced two frameworks: California Community College's Chancellor's Office Climate Action and Sustainability Goals and AASHE Stars Reporting Tool. RCCD's top Impact Areas were cross-referenced to these frameworks where alignment of objectives or actions towards the desired goal of each impact area was accounted for. During this process, gaps in these were identified giving RCCD the opportunity to lead in these impact areas. These gaps were reflective of the top areas RCCD stakeholders wanted the S-CAP to create goals and action around.

Establishing benchmarks is critical to measure success. In order to get where RCCD is going, the institution first must understand where it stands today. Establishing benchmarks or baselines, for reference points, will allow RCCD to systematically evaluate their progress, and is a critical step to implementing this plan. Throughout the document, many short-term metrics and milestones identify the need to establish benchmarks. Each objective will have unique measures, and the measure is what RCCD should use to develop benchmarks. **A majority of the measures are aligned with AASHE Stars framework.** This is intentional, so the data is consistent as RCCD begins to create baselines and report progress into that framework. Additional information is written within Impact Areas to describe the methodology of establishing benchmarks.

RCCD S-CAP IMPACT AREAS	STATE CHANCELLOR'S OFFICE	AASHE STARS
1 Decarbonization and Climate Justice		OPERATIONS
2 Community Vitality		
3 Water and Ecosystems		
4 Waste Minimization and Procurement		GAP
5 Resiliency	GAP	ACADEMICS AND CURRICULUM
6 Academics		
7 Engagement		ENGAGEMENT
8 Community Partnerships		
9 Trust and Transparency		PLANNING AND ADMINISTRATION
10 Equity and Social Justice		INNOVATION AND LEADERSHIP (ALL)

ALIGNMENT WITH ESTABLISHED FRAMEWORKS

LINK TO DETAILED FRAME-WORK

LINK TO DETAILED FRAME-WORK

CALIFORNIA COMMUNITY COLLEGE CHANCELLORS OFFICE CLIMATE ACTION AND SUSTAINABILITY GOALS

The California Community Colleges Chancellor's Office (CCCCO) Climate Action and Sustainability Goals were updated in 2021. This plan addresses those Goals, but also creates its framework to implement unique sustainability initiatives and find ways to go above and beyond the Chancellor's Office Goals. The following table outlines the CCCCO goals, and their alignment with the S-CAP objectives within each Impact Area.

STARS Category	Subcategory	2025 Benchmark		2030 Build and Institutionalize		2035 Improve and Reassess	
Operations	Greenhouse Gas Emissions Reduction	• Conduct emissions inventory baseline and create a climate action plan.	-	• Reduce greenhouse gas emission to 75% below baseline.	1.1	• Reduce greenhouse gas emission to 100% below baseline.	1.1
Impact Area		***Decarbonization + Climate Justice***		***Decarbonization + Climate Justice***		***Decarbonization + Climate Justice***	
Operations	Green Buildings	• Benchmark energy usage intensity for each building. • Develop Zero Net Energy (ZNE) and campus electrification strategy. • Conduct Leadership in Energy and Environmental Design (LEED) and/or WELL assessment of existing buildings.	1.5 - 1.1/5	• All new buildings and major renovations constructed as ZNE ready. • All new buildings certified LEED or WELL Gold. • Use of natural gas in buildings reduced by 30%.	1.1 1.1 1.2	• All new buildings and major renovations constructed as ZNE. • All new buildings certified Zero Carbon. • All existing buildings LEED O&M Gold or WELL Gold equivalent. • Use of natural gas in buildings reduced by 75%.	1.1 1.1 1.1 1.2
Impact Area		***Decarbonization + Climate Justice***		***Decarbonization + Climate Justice***		***Decarbonization + Climate Justice***	
Operations	Energy	• Establish a campus Energy Use Intensity (EUI) score. • Conduct Effective Useful Life (EUL) analysis of all gas using appliances and systems; plan for electrification of systems with EUL of <10 years.	1.5 1.2	• Decrease EUI by 25% compared to the campus benchmark. • Produce or procure 75% of site electrical consumption on an annual basis using renewable energy.	1.5 1.4	• Decrease EUI by 40% compared to the campus benchmark. • Accomplish Net Zero Energy Campus.	1.5 1
Impact Area		***Decarbonization + Climate Justice***		***Decarbonization + Climate Justice***		***Decarbonization + Climate Justice***	
Operations	Water	• Benchmark potable water usage and create a water balance. • Identify potential non-potable water resources. • Create a landscape zoning map and irrigation metering strategy. • Adopt the California Community College Model Stormwater management program.	3.1 3.1 3.2 3.2	• Reduce potable water usage from baseline level by 25%. • Landscape irrigation systems of 2500 square feet or greater shall be separately metered (unless using local or municipal reclaimed water system). • Landscape planting materials shall be 90% native species to the climate and geographical area of the college. • Follow MS4 requirements. • Irrigated turf grass shall not exceed 50% of the landscaped areas on campus.	3.1 3.1 3.1 3.2 3.1	• Reduce potable water usage from baseline level by 50%. • Stormwater runoff and discharge shall be limited to predevelopment levels for temperature, rate, volume and duration of flow through the use of green infrastructure and low impact development for the campus. • Stormwater runoff and discharge shall be limited to predevelopment levels for temperature, rate, volume and duration of flow through the use of green infrastructure and low impact development for new buildings and major modifications.	3.1 3.2 3.2
Impact Area		***Water and Ecosystems***		***Water and Ecosystems***		***Water and Ecosystems***	

included as an objective or action | included as a goal | completed at the time of this plan | non-applicable

STARS Category	Subcategory	2025 Benchmark		2030 Build and Institutionalize		2035 Improve and Reassess	
Operations	Waste	• Conduct waste categorization assessment. • Benchmark and comply with Title 14, Division 2, Chapter 5 (Beverage Container Recycling and Litter Reduction Act). • Benchmark and comply with Title 14, CCR Division 7. • Conduct an AB 341 compliance assessment. • Centralize reporting for waste and resource recovery. • Conduct total material consumption benchmark.	4.1 4.1 4.1 4.1 4.1/2 4.2	• Achieve zero waste to landfill. • Conduct circularity analysis. • Reduce total material consumption compared to the benchmark by 10%.	4 4.1 4.2	• Maintain zero waste to landfill. • Increase material circularity by 25%. • Decrease consumption of materials by 25%.	4 4.1 4.2
Impact Area		***Waste Minimization***		***Waste Minimization***		***Waste Minimization***	
Operations	Purchasing and Procurement	• Benchmark sustainability characteristics of existing products and services. • Adopt a sustainable procurement policy and administrative procedure. • Purchase environmentally and socially preferable electronic products.	4.7 4.7 4.7	• Increase procurement of sustainable products and services by 25% compared to benchmark levels.	4.7	• Increase procurement of sustainable products and services by 50% compared to benchmark levels.	4.7
Impact Area		***Waste Minimization***		***Waste Minimization***		***Waste Minimization***	
Operations	Transportation	• Conduct accounting and conditions assessment of fleet vehicles. • Assess remainder rolling stock for potential electrification. • Develop Electric Vehicle (EV) charging infrastructure to encourage faculty, staff and students to use EVs. • Promote accessible shared transport methods. • Make pedestrian and bicycle access improvements.	1.4 - 1.6 1.6 1.6	• 50% of new fleet vehicles are zero emission vehicles. • 50% of rolling stock are zero emissions. • Consider implementing green parking permits.	1.3 - 1.6	• 100% of new fleet vehicles are zero emission vehicles. • 100% of rolling stock are zero emissions.	1.3 -
Impact Area		***Decarbonization + Climate Justice***		***Decarbonization + Climate Justice***		***Decarbonization + Climate Justice***	
Operations	Food Systems	• Consider signing the Real Food Campus Commitment. • Benchmark and track sustainable food purchases in alignment with the Real Food Challenge guidelines, or equivalent.	2.4 2.4	• Strive to increase campus sustainable food purchases v. baseline by 20%.	2.4	• 80% of food served on campus meets the requirements of the Real Food Challenge or equivalent.	2.4
Impact Area		***Health and Well-being***		***Health and Well-being***		***Health and Well-being***	

1

Decarbonization and Climate Justice

GOAL | Become a Net Zero Carbon campus. *(Per Chancellor's Office Goal)*

CLIMATE CHANGE refers to long-term shifts in temperatures and weather patterns. Human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil, and gas.

DECARBONIZATION involves increasing the prominence of low-carbon power generation and a corresponding reduction in the use of fossil fuels. This consists of using renewable energy sources, designing more efficient and sustainable buildings, transitioning to electric fleets, and decreasing the use of single occupancy vehicles, among other strategies.

DEFINING EMISSIONS

Carbon emissions are the release of carbon into the atmosphere, one of the main contributors to climate change. Carbon is released by burning fossil fuels, therefore RCCD seeks to decarbonize the campus fuel supply by becoming less energy-intensive and then will obtain its fuel from zero-carbon renewable sources. Carbon emissions are typically identified based on their source:

Scope 1 carbon emissions are direct emissions from on-site fuel combustion.

Scope 2 carbon emissions are indirect emissions from the generation of purchased energy from a utility provider.

Scope 3 allows for the treatment of other indirect emissions that are a consequence of the activities of RCCD, but occur from sources owned or controlled by another entity, such as students and employees commuting to and from work, employee business travel, transportation of products, materials, and waste, and outsourced activities.

Others that are not included in this S-CAP are contract manufacturing, and franchises, emissions from waste generated by RCCD when the point of GHG emissions occurs at sources or sites that are owned or controlled by another company, e.g. methane emissions from landfilled waste.

CLIMATE JUSTICE

Climate justice is the fair treatment of all people and the freedom from discrimination in the creation of policies and projects that address climate change as well as the systems that create climate change and perpetuate discrimination. RCCD seeks to be climate justice advocates by decarbonizing operation, and educate students to become future climate justice advocates.

ESTABLISHING BASELINES: SELECTING THE BASELINE YEAR: 1990 VS 2019

California Assembly Bill 32 (AB 32) and the interim Executive Order B-30-15, refer to greenhouse gas emissions (GHG emissions) reduction compared to a 1990 baseline, with an ultimate goal as recently amended by Executive Order B-55-18 of achieving a statewide carbon neutrality goal by 2045 or sooner.

The 2021 Climate Action and Sustainability Goals issued by California Community Colleges Chancellor's Office, sets a GHG emission goal for community colleges to conduct emissions inventory baseline and create a climate action plan by 2025. And the goal establishes interim 2030 target of 75% reduction from the set baseline to achieving carbon neutrality by 2035.

Norco College and Moreno Valley College were not established until 1991. RCCD as a district has grown in the past three decades by over 200% in conditioned square footage, significantly increasing the need for energy resources. Although, a ratio of district's current carbon emissions based on Gross Square Footage in 2015 was used to derive at the 1990 baseline, the 2019 dataset is used to set the baseline for the interim reduction target by 2025 and 2030 for the following reasons:

- 1991 baseline carbon emissions are too low and a 75% reduction by 2030 is a very aggressive target to achieve against the constrained resources available to the district.
- There are no records of energy, fleet and other data to accurately calculate the 1991 baseline for carbon emissions.
- The district is committed to the ultimate goal of achieving carbon neutrality by 2035. Hence, a more achievable interim target using the 2019 baseline will provide a practical path to meeting such aspirational goals.
- 2019 provides the best representative year for enrollment prior to the pandemic.

SCOPE 1 EMISSIONS

District owned and operated vehicles as well as Natural Gas usage in buildings contribute to direct GHG emissions under Scope 1. For fleet, an estimated fuel usage per mile was used in combination with the odometer data to estimate fuel usage and equivalent GHG emissions. For Natural Gas usage, the utility data collected for 2019 is used to set the baseline.

SCOPE 2 EMISSIONS

Scope 2 emissions are from electricity purchase across the District. The utility data collected for 2019 is used to set the baseline.

SCOPE 3 EMISSIONS

Measuring Scope 3 emissions is more complex than Scope 1 &2. Scope 3 is a significant portion of an organization's carbon footprint. The distance-based method involves collecting data from campus users on commuting patterns and applying appropriate emission factors for the modes used. Through scheduled surveys, RCCD can gain information including the number of days per week that employees commute and information on modes of transit (car, bus, train, bicycle, walking) In addition, documenting policies and practices to document district or college -funded travel to be quantified.

It is also important to balance the reduction of Scope 3 emissions with the amount of energy used from teleworking (e.g., kBtu of gas, electricity consumed)

Decarbonization and Climate Justice
SCOPE 1: ON-SITE FUEL COMBUSTION & FLEET VEHICLES

1.1 OBJECTIVE | **Reduce total carbon emissions including scope 1,2, and 3.**

MEASURE

Percentage reduction in total carbon emissions, carbon emissions per person and carbon emissions per SF compared to 2019 baseline

METRICS | MILESTONES

6,735 GHG (MT-CO2)
(2019 Baseline)

30% reduction by 2025

75% reduction by 2030
(Per Chancellor's Office Goal)

100% reduction by 2035
(Per Chancellor's Office Goal)

ACTIONS

Short-term (2 years):

- **BOLD STEP: Publicly disclose greenhouse gas emissions that result from institutional activities**
- Create a Climate Action Plan - Acquire resources to manage and monitor the integrated energy plan and dashboard. *(Per Chancellor's Office Goal)*
- Conduct Leadership in Energy and Environmental Design (LEED) and/or WELL assessment of existing buildings. (Per Chancellor's Office Goal)

Mid-term (5-10 years):

- Require new construction and major renovations to be zero-net energy ready. (Per Chancellor's Office Goal)
- Require new construction design projects to achieve a minimum of LEED Gold. (Per Chancellor's Office Goal)

Long-term (10-15 years):

- Require new construction design and major renovation projects to achieve zero-net energy. (Per Chancellor's Office Goal)
- All new building certified Zero Carbon. (Per Chancellor's Office Goal)
- Align operation of existing buildings in accordance with LEED O&M. (Per Chancellor's Office Goal)

1.2 OBJECTIVE | **Reduce carbon emissions caused by on-site fuel combustion for building operations.**

MEASURE

Percentage reduction in total carbon emissions, carbon emissions per person and carbon emissions per SF compared to 2019 baseline

METRICS | MILESTONES

2,542 GHG (MT-CO2)

30% reduction by 2030
(Per Chancellor's Office Goal)

75% reduction by 2035
(Per Chancellor's Office Goal)

ACTIONS

Short-term (2 years):

- **BOLD STEP: Conduct a natural gas appliance inventory and identify a timeline for end of life. (Per Chancellor's Office Goal)**
- Explore the opportunities of high efficiency central plant alternatives for electric heat beyond electric boilers.

Mid-term (5-10 years):

- Implement energy conservation measures to reduce heating energy need of buildings and central plant.
- Evaluate the feasibility of new buildings to be all electric.
- Replace all natural gas appliances at end of life with electrical alternatives. (Per Chancellor's Office Goal)

1.3 OBJECTIVE | **Reduce total carbon emissions caused by fleet vehicles and maintenance and operations equipment.**

MEASURE

Percentage reduction in natural gas consumption compared to 2019 baseline

METRICS | MILESTONES

48.9% of fleet vehicles are zero emission (2019) *(Achieves Chancellor's Office Goal)*

75% of new fleet vehicles are zero emission vehicles by 2025

100% of new fleet vehicles are zero emission vehicles by 2030 *(Per Chancellor's Office Goal)*

ACTIONS

Short-term (2 years):

- **BOLD STEP: Conduct a fleet inventory and identify a timeline for end of life. (Per Chancellor's Office Goal)**
- Develop Electric Vehicle (EV) charging infrastructure to encourage campus users to use EV's. (Per Chancellor's Office Goal)

Mid-term (5-10 years):

- Develop on site infrastructure for electric charging of District-owned vehicles.
- Replace fleet of vehicles with low emissions and/or electric vehicles.

Long-term (10 years):

- Require all new company vehicles purchased to be electric.
- Expand on site infrastructure for electric charging of company vehicles.
- Expand solar generation to support electric charging of company vehicle.
- Explore Vehicle-to-Building charging technology that supports electricity peak demand management.

RESILIENCY IN ACTION

By gradually transitioning away from fossil fuels, the District is reducing their carbon footprint and enhancing the resilience of their campus. As our local and global economies decarbonize, institutions face a risk of potentially stranded fossil fuel assets that are no longer serviceable or no longer cost effective energy solutions. For example, if a carbon tax were to roll out, natural gas boilers or gasoline powered vehicles may become prohibitively expensive for the campus to support.

Investment in solar energy to reduce greenhouse gas emissions from energy production can offer multiple benefits. Energy savings from the investment in solar can be reinvested in additional energy efficiency projects. Solar that is tied to a localized micro-grid can reduce dependence on the main energy grid that can become stressed during heat waves and can experience shutdowns during high wind public safety power shutoffs that reduce fire risk.

Decarbonization and Climate Justice
SCOPE 2: GRID PURCHASED ELECTRICITY

1.4 OBJECTIVE | **Supply energy needs with solar PV.**

MEASURE

Percentage of fuel mix from renewables

METRICS | MILESTONES

0% renewables (2019)

75% by 2030
(Per Chancellor's Office Goal)

100% by 2035

ACTIONS

Short-term (2 years):

- **Bold Step: Execute the District-wide Solar Project approved by the Board of Trustees** to provide 7 MW Solar PV system along with around 6000 kWH Battery Energy Storage system.

Mid-term (5-10 years):

- To achieve zero net energy, consider the following options:
  - Procure renewable energy off-site, ideally within the electricity grid servicing the District.
  - Explore participating in community solar projects offered by Utility companies.

Long-term (10 years):

- Evaluate percent fuel mix from renewables and reassess the next steps for procuring additional addition renewable energy systems.

CONCEPTUAL RENDERING OF SOLAR COVERED PARKING PLANNED AT RIVERSIDE CITY COLLEGE

1.5 OBJECTIVE | **Reduce campus operational energy use intensity (EUI).**

MEASURE

Percentage reduction of energy usage per conditioned area (SF) compared to 2019 baseline

METRICS | MILESTONES

123 (kBtu/GSF) (2019 baseline)

25% reduction by 2030 *(Per Chancellor's Office Goal)*

40% reduction by 2035 *(Per Chancellor's Office Goal)*

ACTIONS

Short-term (2 years):

- **BOLD STEP: Benchmark energy usage intensity of each building. (Per Chancellor's Office Goal)**
- Assess building level sub-metering for electricity, gas and water to measure each energy end use that consumes more that 20% of the total separately
- Assess building level sub-metering for building level central plant take-offs
- Develop Zero Net energy (ZNE) and campus electrification strategy. (Per Chancellor's Office Goal)
- Conduct Leadership in Energy and Environmental Design (LEED) and/or WELL assessment of existing buildings. (Per Chancellor's Office Goal)
- Where compact fluorescent lamps (CFL) remain, upgrade to light emitting diodes (LED).
- Assess photocell technology and associated controls to dim LED lighting when daylighting is sufficient to illuminate the classrooms.
- Add Variable Frequency Drive (VFD) to remaining exhaust fans that have yet to receive VFDs.
- Assess power strips that will turn off receptacles usage during unoccupied times.
- Remove manual overrides on the building automation controls and restore controls automations within the building automation system.
- Explore Monitoring Based Commissioning for more proactive maintenance and optimization.

Mid-term (5-10 years):

- Install building level sub-metering for electricity, gas and water to measure each energy end use that consumes more that 20% of the total separately
- Install building level sub-metering for building level central plant take-offs All new buildings certified LEED and/or WELL Gold. (Per Chancellor's Office Goal)
- All new buildings and major renovations must be design as ZNE ready. (Per Chancellor's Office Goal)
- Install photocell technology and associated controls to dim LED lighting when daylighting is sufficient to illuminate the classrooms.
- Install power strips that will turn off receptacles usage during unoccupied times Upgrade or replace building automation system for more efficient operations.
- Replace chillers with high efficiency air cooled chillers, where a coincident heat load allows explore implementation of heat recovery chiller.

Long-term (10 years):

- All new buildings and major renovations constructed as ZNE. (Per Chancellor's Office Goal)
- Replace equipment at end of life with more energy efficient alternatives.
- Require all new buildings designed to be Zero Net Energy.

1.6 OBJECTIVE | **Reduce carbon emissions due to commuting.**

MEASURE

Percentage reduction in commuting carbon emissions

SCOPE 3 EMISSIONS

Measuring Scope 3 emissions is more complex than Scope 1 & 2. Scope 3 is a significant portion of an organization's carbon footprint. The distance-based method involves collecting data from campus users on commuting patterns and applying appropriate emission factors for the modes used. Through scheduled surveys, RCCD can gain information including the number of days per week that employees commute and information on modes of transit (car, bus, train, bicycle, walking) In addition, documenting policies and practices to document district or college -funded travel to be quantified.

It is also important to balance the reduction of Scope 3 emissions with the amount of energy used from teleworking (e.g., kBtu of gas, electricity consumed)

ACTIONS

Short-term (2 years):

- **BOLD STEP: Establish a baseline for scope 3 emissions from a commuter footprint survey.**
- **BOLD STEP: Track impact of green transportation programs on commuter carbon footprint.**
- Promote accessible shared transport methods. (Per Chancellor's Office Goal)
- Conduct pedestrian and bicycle access improvements. (Per Chancellor's Office Goal)
- Provide preferential parking or other incentives for fuel efficient vehicles.
- Provide Level 2 or 3 EV infrastructure for commuters.

Mid-term (5-10 years):

- Create a green parking permit system. (Per Chancellor's Office Goal)
- Explore smart parking system to identify the number of personal vehicles arriving to the campus per day.
- Create a bicycle-sharing program.

Long-term (10 years):

- Implement smart parking system to identify the number of personal vehicles arriving to the campus per day.
- Provide incentives or programs to encourage employees to live close to campus.

1.7 OBJECTIVE | **Reduce carbon emissions due to business travel.**

ABOUT THIS OBJECTIVE

This objective would require new policies and practices to require district or college -funded travel to be documented and quantified in order to establish a baseline. This would likely begin as a smaller pilot for willing departments and later roll out more broadly once initial logistical challenges are addressed.

As a result of the Covid-19 pandemic, RCCD and its Colleges have transitioned inter-college meetings to a Zoom platform, reducing the amount of travel for staff and faculty between campuses. This initiative has reduced carbon emissions over the past two years. This policy is recommended to remain in place as a strategy to maintain lower carbon emissions due to business travel.

In addition, promote teleworking and virtual classes where feasible to reduce the carbon footprint for commuting.

* OBJECTIVE | **Reduce carbon emissions due to purchased goods and services.**

SEE WASTE MINIMIZATION AND PROCUREMENT SECTION

LINK TO THIS SECTION

RESILIENCY - MICROGRIDS

RCCD should explore the feasibility of microgrids applied at its colleges as a backup power source. A microgrid is a small network of electricity users with a local source of supply (solar, battery, or generator) that is usually connected to the centralized power grid, but able to function independently in the event of an outage in the centralized grid.

Planning for potential power outages (which are inevitable in the Inland Empire's high wind and fire-prone environment) will help colleges reduce losses from outage events. Potential losses can include disruption of classes and research, campus closures, and damage to buildings. Effective energy planning will determine the priority of buildings to remain online (such as the emergency operations center, public safety, etc.) to be powered by backup power, whether that be generators or a solar or battery powered microgrid. Planning will also determine the required number of days of backup energy supply in case of power outage for essential functions and full functionality.

Climate Justice

Southern California is at risk for environmental and climate-related hazards. In the past few years, wildfires, extreme heat, historic drought, and aging utilities and facilities have threatened Californian's health and economic livelihood. These extreme situations have a profound impact on the people living the communities affected.

Climate Justice is the fair treatment of all people and the freedom from discrimination in the creation of policies and projects that address climate change as well as the systems that create climate change and perpetuate discrimination. **RCCD supports climate justice by decarbonizing operations, and by educating students to become future climate justice advocates.**

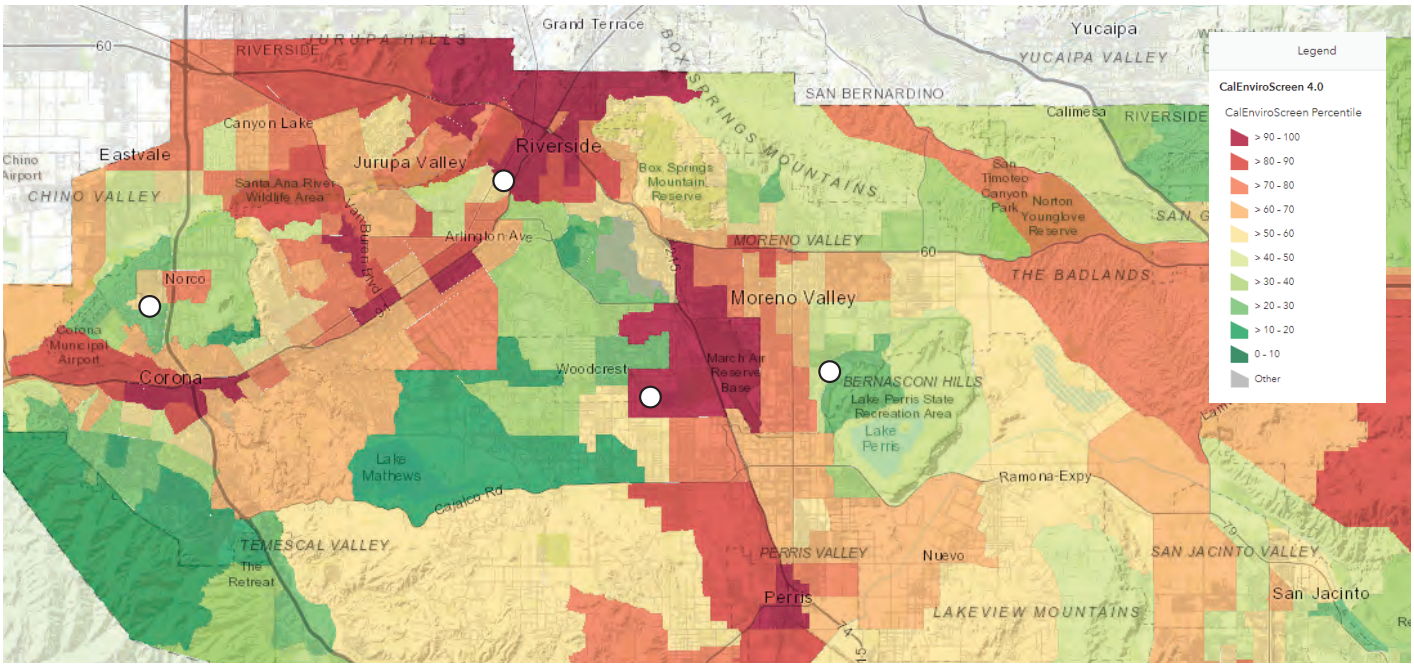
Riverside Community College District and each of its colleges serve a richly diverse population. When assessing climate vulnerability, RCCD must look at potential climate impacts to their physical campus and their community, but also must dig deeper to understand which segments of their community might be disproportionately affected by each potential climate hazard. Not all of RCCD's students, faculty, and staff are equally able to prepare for, adapt to, and bounce back from climate hazards. Groups that tend to be especially vulnerable include older adults (those over 65 years of age), children, people of color, people with limited English proficiency, people with low or no income, people with disabilities, and people with chronic and acute medical illness.

Vulnerability is a function of demographic characteristics of the population, as well as environmental and community conditions such as healthcare provision, social capital, access to social networks, and social isolation. For example, a student who lives in a home without air conditioning is more vulnerable to dangerous heat wave conditions than a student who does have air conditioning. A groundsworker whose days are spent outdoors tending to campus landscapes is also more vulnerable to extreme heat than someone who works in an air conditioned office. These different vulnerabilities also layer with an individual's ability to access information regarding their climate risks and knowledge and access to resources that can help them mitigate their risk.

Climate hazards will impact everyone, but they will not impact all communities equally. The social, economic, and public health impacts of climate change will be disproportionately born by vulnerable populations.

Decarbonization and Climate Justice

CLIMATE JUSTICE



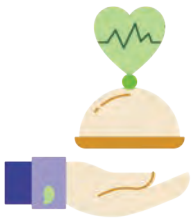
CAL ENVIRO SCREEN 4.0, CALIFORNIA OFFICE OF ENVIRONMENTAL HEALTH AND HAZARD, OCTOBER 2021

CalEnviroScreen is a screening methodology that can be used to help identify California communities that are disproportionately burdened by multiple sources of pollution. This tool applies a framework for assessing cumulative burdens and vulnerabilities affecting California communities. The model combines information about pollution burden based on known exposures and environmental effects of those exposures (ozone, drinking water, traffic, and cleanup sites) with data about population characteristics (health conditions, education, housing, poverty, unemployment) by zip code that help understand locations of vulnerable populations from a demographic or socio-economic perspective.

A large portion of RCCD's service area is within the highest level of vulnerability. The Inland Empire has long had poor air quality because natural air currents bring gaseous pollutants and particulate matter from the Los Angeles area while the warehousing and logistics boom has potentially increased emissions from diesel trucks and trains. Inhaling traffic-related pollutants like diesel particulate matter makes people more susceptible to a range of respiratory health problems.[1] In addition, Western Riverside County has several areas with a history of industrial and military uses (high historical and current use of chemicals, generation of emissions, etc) which represents the highest CalEnviroScreen scores.

[1] *Poor air quality and warehouses linked to Inland Empire Covid-19 inequities*

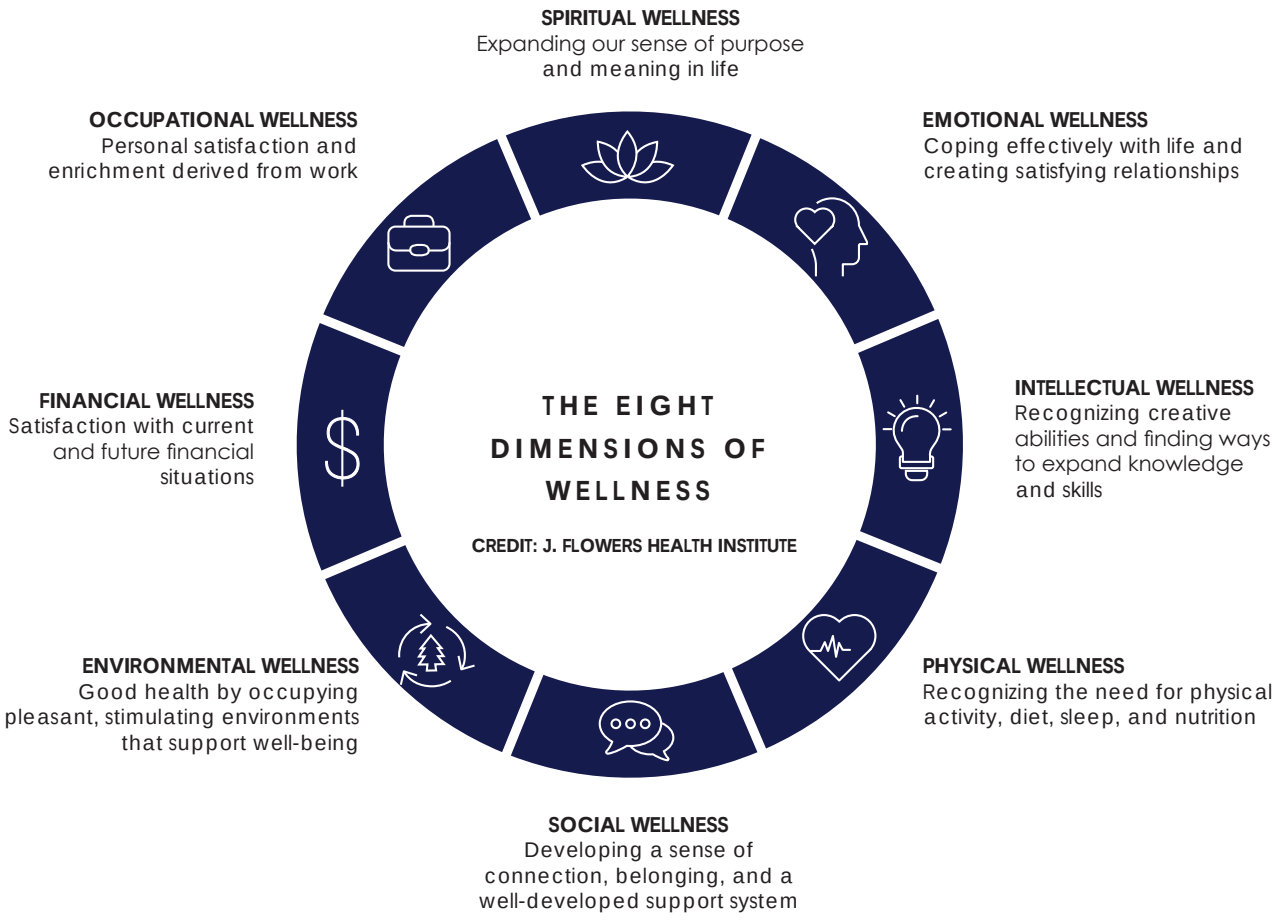
2



Community Vitality

GOAL | Create a culture of community vitality for Riverside Community College District.

Community vitality can be compromised as environmental, economic, and social stressors increase. Many members of the RCCD community already face a myriad of stressors; the pandemic, economic uncertainty, and climate change have only intensified them. They exacerbate new challenges that affect students' ability to learn and succeed, and employee's ability to bring their whole selves to work. Supporting the eight dimensions of vitality is critical to help students, faculty, and staff adapt to our changing planet and fast-paced environments.



2.3 OBJECTIVE | **Increase amount of available indoor and outdoor space dedicated to supporting community vitality.**

MEASURE

Measure amount of physical spaces in square footage that support wellness

WELLNESS AND PHYSICAL SPACE IDEAS

- Create and/or maintain campus community gardens
- Improved spaces for physical activity including walking trails
- Improved outdoor spaces for education or breaks
- Continuous monitoring of indoor/ outdoor environmental quality at each College to better understand air quality, acoustic comfort, traffic impact, weather, etc.

SUSTAINABILITY IN ACTION

Norco College is currently in the design process for a new Kinesiology and Health Building. The building will feature new spaces for recreation, wellness, and athletics.

SUSTAINABILITY IN ACTION

Moreno Valley College received a grant for Experiential Learning: Closing the STEM Talent Gap, to address education delivery techniques with the Goal of increasing transfer opportunities for Latinx and low-income STEM students. The Experiential Learning: Closing the STEM Talent Gap will build an Outdoor Learning Laboratory and leverage the innovative use of virtual and augmented reality to tackle historically challenging classes to engage students in the learning process, building upon their interests in gaming, simulation, and other virtual environments.

This grant will create an outdoor STEM classroom with a health and wellness component. There will be an outdoor garden dedicated to educating students how to grow food and understand the art of composting. This space will also support the Moreno Valley community to help with social issues like transnational food-ways and food justice in the Inland Empire. This grant is a great example of the objectives within the Community Vitality, Waste Minimization, and Academic Impact Areas.

2.2 OBJECTIVE | **Support food systems that strengthen local economies, respects human rights, and ensures ecological sustainability.**

MEASURE

Procurement of Real Food in accordance of the metrics outlined in the Real Food Commitment

METRICS | MILESTONES

Establish a baseline of food procured today that meet the requirements of the Real Food Commitment by 2025. (The commitment is buying at least 20% Real Food annually.)

Increase Real Food procurement by 20% by 2030
(Per Chancellor's Office Goal)

Increase Real Food procurement by 80% by 2035
(Per Chancellor's Office Goal)

ACTIONS

Short-term (2 years):

- **BOLD STEP: Sign the Real Food Campus Commitment and follow required commitment tasks outlined for the first 12 months of the commitment by College. (Per Chancellor's Office Goal)**
- Benchmark food purchases across the District compared to the Real Food Commitment guidelines. (Per Chancellor's Office Goal)

Mid-Long-Term (5-10 years):

- Update food policies to address the following:
  - Food procurement and supply chain
  - Operations and Facilities
  - RFP and contract processes
  - Transparency and accountability
  - Community involvement
  - Labor, immigration and human rights related to food procurement
- Create a 5-year plan of action to implement metrics of the Real Food Campus Commitment.

REAL FOOD CATEGORIES

The Real Food Commitment defines Real Food as food that fulfills at least one of four categories:

1

LOCAL & COMMUNITY BASED

These foods can be traced to nearby farms, ranches, boats, and businesses that are locally-owned and operated. Supporting small- and mid-size food businesses challenges trends towards consolidation in the food industry and supports local economies.

2

FAIR

Individuals involved in food production work in safe and fair conditions, receive fair compensation, are ensured the right to organize and the right to a grievance process, and have equal opportunity for employment.

3

ECOLOGICALLY SOUND

Farms, ranches, boats, and other operations involved with food production practice environmental stewardship that conserves biodiversity and ecosystem resilience and preserves natural resources, including energy, wildlife, water, air, and soil. Production practices should minimize toxic substances, greenhouse gas emissions, natural resource depletion, and environmental degradation.

4

HUMANE

Animals have their mental, physical, and behavioral needs met in a low-stress environment and throughout their life are only administered drugs for treatment of diagnosed illness or disease.

SUSTAINABILITY IN ACTION

The Real Food Campus Commitment commits to buying at least 20% Real Food annually and using purchasing power to support a food system that strengthens local economies, respects human rights, and ensures ecological sustainability. RCCD is piloting the Real Food Campus Commitment. District-wide collaboration already underway to benchmark the food procurement and supply chain. Food Service Directors are evaluating how does their current procurement practices align to the Real Food Categories and what it would take to align food procurement to meet the commitment.

3

Water and Ecosystems

GOAL | Demonstrate stewardship for water and land management.

An Ecosystem is a biological community of interacting organisms (plants, animals, and other organisms) and their physical environment. The built environment has an impact on the ecosystem it is in and cold positively influence the health of it through sustainable strategies. Water is perhaps the most important component of an ecosystem. **RCCD seeks to conserve water, improve the quality of stormwater run-off and preserve its immediate ecosystem in alignment with the California Community College Chancellor's Office goals.**

LOW WATER USE PLANT LIST

- Agave attenuata
- Agave desmettiana
- 'Variegata'
- Agave scabra
- Aloe 'Silver Ridge'
- Aloe 'Hercules'
- Aloe striata
- Anigozanthos'Harmony'
- Arctostaphylos'Howard
- McMinn'
- Berbers repens
- Bougainvillea 'La Jolla'
- Dragon Tree
- Narrow-Leaved
- Glaucous Spurge
- Long John Grevillea
- Red Hooks Grevillea
- Lion's Ears
- Texas Ranger
- Spiny-Headed Mat-Rush
- Beard Tongue
- Jerusalem Sage
- Cleveland Sage
- Feather Grass

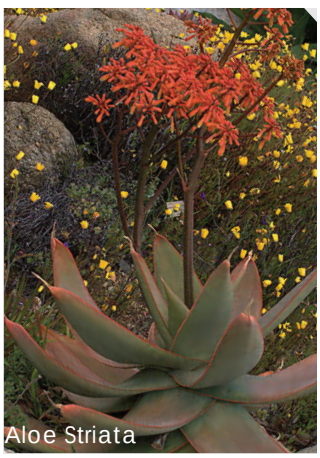
Texas Ranger

McMinn's

Aloe 'Hercules'

Red Hooks Grevillea

Lion's Ears


Aloe Striata

3.1 OBJECTIVE | **Decrease water use (potable and non-potable water).**

MEASURE

Indoor water-use gallons

METRICS/MILESTONES

Set the baseline at 2019 water consumption level - 56M* gallons.
(Per Chancellor's Office Goal)

25% reduction by 2027

40% reduction by 2030

60% reduction by 2035

ACTIONS

Short-term (2 years):

- **BOLD STEP: Through sub-metering and other irrigation control systems, identify water usage for each building and landscape irrigation systems of 2,500 sf or greater. (Per Chancellor's Office Goal)**
- Identify potential non-potable water resources. (Per Chancellor's Office Goal)
- Develop standards (industry best practices) for plumbing fixtures, irrigation, and process water use (such as for ceramics lab etc.).
- Create a landscape zoning map and irrigation metering strategy. (Per Chancellor's Office Goal)
- For existing buildings and site conditions, investigate funding opportunities such as M&O budget to replace existing water infrastructure including plumbing fixtures and irrigation controls to water-efficient fixtures.
- Ensure new landscape planting materials align with the system goal that 90% should be low water use species.

Mid-term (5-10 years):

- Convert turf-grass to native landscape areas or landscape meadows to align with system goal that turf-grass shall not exceed 50% of the landscaped areas on campus. (Per Chancellor's Office Goal)
- For all major renovation and new construction achieve 50% water use reduction to a comparable baseline building per LEED Gold rating system requirements.
- Replace existing plumbing fixtures and irrigation controls per new District standards or latest CalGreen Mandatory Measures for Water.

Long-term (10 years):

- With all new construction and major renovation projects, install reuse systems to reduce potable water use.
- With all new construction and major renovation projects, meet Enhanced Tier 2 requirements in the latest CalGreen voluntary measures related to indoor water use.
- Investigate the use of recycled water for water-intensive uses and functions including student housing and labs.

MEASURE

Outdoor water-use usage (gal) for irrigation.

METRICS/MILESTONES

Set the baseline at 2019 water consumption level - 20M* gallons.

25% reduction by 2027

40% reduction by 2030

60% reduction by 2035

3.2 OBJECTIVE | Decrease stormwater runoff and increase quality of stormwater.

MEASURE

% of campus impervious surfaces

METRICS | MILESTONES

Today 24% of campus surfaces are impervious.

Maintain this percentage of impervious surfaces as the campuses develops over the next decade and beyond.

ACTIONS

Short-term (2 years):

- **BOLD STEP: Adopt the CCC Model Stormwater Management Program. (Per Chancellor's Office Goal)**
- Create a landscape zoning map and irrigation metering strategy. (Per Chancellor's Office Goal)
- Find opportunities through planned projects to improve the quality of stormwater runoff by the use of Best Management Practices (BMPs).
- Design and install educational signage at existing stormwater areas.
- Identify a stormwater management champion on each campus.

Mid-Term (5 years)

- Landscaping planting materials shall be increased by 90% native species to the climate and geographical area. (Per Chancellor's Office Goal)
- Follow Municipal Separate Storm Sewer System (MS4) requirements. (Per Chancellor's Office Goal)
- Create a campus stormwater infrastructure plan, which includes LID (low-impact development) projects, storm drain outfalls, receiving water bodies, and overall storm drain network.
- Design and construct an exemplary project that show cases stormwater storage and reuse as a pilot project in the District.

Long-Term (10 years):

- Stormwater runoff and discharge shall be limited to pre-development levels for temperature, rate, volume and duration of flow through the use of green infrastructure and low impact development for the campus. (Per Chancellor's Office Goal)
- Stormwater runoff and discharge shall be limited to pre-development levels for temperature, rate, volume and duration of flow through the use of green infrastructure and low impact development for new buildings and major modifications. (Per Chancellor's Office Goal)
- With all new construction and major renovation projects, install stormwater capture and reuse systems to effectively address stormwater discharge in accordance with California Stormwater Pollution Prevention Plan (SWPP) requirements

Water and Ecosystems

STORMWATER MANAGEMENT PRACTICES

CORNELL UNIVERSITY, CORNELL CHRONICLE

BIOSWALES AND RAIN GARDENS:

Stormwater runoff becomes polluted by transiting hardscape, introducing contaminants into ecologically productive streams and rivers, causing flooding, and creating erosion unless channeled and slowed by stormwater management features such as engineered bioswales and rain gardens. Engineered bioswales direct and channel stormwater away while rain gardens collect water and infiltrate it in place. In either case, these landscape elements primarily filter silt and pollution from the first 1.5" of rainfall in any given storm event. These features can be engineered to include water storage substrates and native, deep-rooted vegetation.

Strategically placing these stormwater management features could help the Colleges remediate polluted water before it makes its way into underground infrastructure and add aesthetic value to the campus's overall landscape vision. The native planting these features use would also create habitat for birds, butterflies, and insects. Engineered bioswales and rain gardens could be successfully used in medians, parking lot edges, and buffers between sidewalks and vehicle traffic. When supported by signage, bioswales and rain gardens offer great public education opportunities.

GEORGE MASON UNIVERSITY

DRY DETENTION PONDS:

Used primarily to prevent flooding, this BMP typically holds water for 24 hours or less and otherwise appears as a grassy field. The short duration of inundation keeps mosquito larvae from reaching maturity, but if a dry detention pond holds water for longer than 24 hours, aerators, agitators, or other mechanisms should be employed to discourage mosquito populations. When used, designers should look for opportunities to allow future improvements in the bottom of the basin. Options include, but are not limited to, running tracks, fixed fitness equipment, and play fields. The bottom of the basin will be under water during and after storm events, so improvements must consider fully saturated soils and include signage for safety.

STORMWATER MANAGEMENT PRACTICES

UNIVERSITY OF WISCONSIN - MADISON

PERMEABLE PAVING:

While traditional hardscape materials do not allow water to infiltrate the soil, permeable paving allows stormwater to percolate and infiltrate the ground surface. The goal of permeable paving is to control and mitigate stormwater at the source, reducing runoff and improving water quality in substrata layers.

MISSISSIPPI WATERSHED MANAGEMENT ORG.

TREE WELLS OR TRENCHES:

Tree wells and trenches are a stormwater management technique that uses trees planted in amended soils and rocks to capture runoff from surrounding hard surfaces and store it underground. These features can be single (tree wells) or interconnected (tree trenches) and may have grates over the top to allow pedestrians to walk up to the trees or be open earth when protected from foot traffic by seat walls or other barriers. Tree trenches may be very effective in areas of campus that have limited space to manage stormwater such as along streets, major pedestrian corridors, and parking lots.

The presence of this type of landscaping also breaks up large, improved surfaces, and if trees are tall enough could provide shade to pedestrians and improve the campus experience. When trenches are used, it also provides an opportunity, much like the bioswales, to invite the public to learn about their use.

WESTERN KENTUCKY UNIVERSITY

RAINWATER HARVESTING:

Rainwater harvesting is the collection and redistribution of rainwater for reuse on-site. Cisterns can be above or below grade and have been used effectively on campus in multiple projects. By capturing rainwater from roofs before it crosses the ground, rainwater is kept cleaner and thus is appropriate for reuse in irrigation. This alternative water supply can be particularly important during times of drought when mandatory water restrictions may be in place. Reducing the demand for potable water on campus decreases expense and minimizes the strain communities experience when potable water supplies are overused.

LEVINE CANCER INSTITUTE EXPANSION

VEGETATED OR GREEN ROOFS:

Green roofs manage the urban heat island effect, retain stormwater, provide habitat for insects and birds, add aesthetic value, lengthen the life of roofing materials, and add insulation to decrease heating and cooling costs. These systems can be extensive or intensive depending on the amount of growing medium required to support plant life year round. Extensive systems are typically 4 inches (10 cm) in depth or less, can be built-in-place or pre-planted in trays, and support the growth of sedums and other small plant species with limited implication on a building's structural system. Intensive systems are typically 8 inches (20 cm) or more in depth and can support a greater variety of plant species.

Intensive systems require significant coordination with a building's structural system. These areas can be marketed as amenity spaces for buildings and can showcase sustainable design while being popular small gathering spaces.

RESILIENCY

Effective stormwater management has a multitude of benefits for the ecological health and overall resilience of a campus. Reducing stormwater runoff reduces the risk of campus drainage systems becoming overwhelmed and reduces the probability of flooding or damage to property. Extreme rain events are projected to increase in frequency, intensity, and duration, even as California is projected to have lower overall rainfall. In Southern California's drought-stricken environment, maximizing the amount of rainfall that returns to the water table (rather than running off into storm drains and eventually to the oceans) will help improve water quality and water supply. Green infrastructure used to manage stormwater also has additional benefits, such as reducing the amount of impervious surface and lowering urban heat island effect.

3.3 OBJECTIVE | Practice ecological landscape management.

MEASURE

Landscape managed organically in accordance with Integrated Pest Management principles

METRICS | MILESTONES

Set baseline inventory of all ground management practices across the District by 2024

50% of all grounds managed organically by 2027

100% of all grounds managed organically by 2032

Organic maintenance practices for grounds management include the elimination of toxic synthetic pesticides and fertilizers and reducing the amount of water used in landscape.

ACTIONS

Short-term (2 years):

- **BOLD STEP: Develop an Integrated Pest Management Program.**

Mid-Term (5 years)

- Develop a list of pesticides and herbicides used and identify opportunities to replace them with EPA Safe Choice products.
- Identify and leverage opportunities for using grounds keeping waste and kitchen waste for mulching and composting.

Long-Term (10 years):

- Develop education programs around organic grounds management and integrated pest management best practices that the immediate community can implement to effect the ecosystem positively.

SUSTAINABILITY IN ACTION

Moreno Valley College is currently using owls for natural rodent control on their campus. This avoids the use of poisons that can harm native wildlife that eat rodents (owls, hawks, bobcats, fox, etc.) and avoids the potential that poisoned rodents die in building walls or basements.

3.4 OBJECTIVE | Rewild undeveloped areas.

MEASURE

Protected areas owned or managed by the College, identified as opportunities for increasing biodiversity

METRICS | MILESTONES

Set baseline biodiversity of species at each College by 2024

Establishing at least ONE protected area for each campus by 2027

30% increase in biodiversity of species (trees, planting, insects, pollinators etc.) by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Perform a biodiversity survey.**
- Identify ecologically sensitive areas and their biodiversity importance on land owned or managed by the District.
- Align site design and planning across the District with biodiversity goals.
- Becoming an Arbor Day Foundation designated Tree Campus. This programs aligns with many of the actions within this plan.

Mid-Term (5 years)

- Identify partnership opportunities with ecological preservation organizations such as the Society for Ecological Restoration.
- Develop awareness and education program around the ecology at each college site.

Long-Term (10 years):

- Design and construct an exemplary project that promotes urban agriculture and ecologically diverse landscape as a pilot project in the District.

4

Waste Minimization and Procurement

GOAL | Achieve zero waste to landfill.

(Per Chancellor's Office Goal)

WASTE MANAGEMENT addresses the total volume of RCCD's waste stream, how the total volume can be minimized, and how waste can be diverted from landfills. "Waste" includes many things: organic materials such as food and landscape waste, recyclables such as plastic bottles, hazardous waste such as lab chemicals and electronic waste, durable goods such as furniture and equipment, and construction waste from campus development. In addition, procurement plays a role in promoting sustainable purchasing and waste reduction. **Zero Waste is defined as 90% diversion rate. To make this achievable, RCCD and it's Colleges must reduce the amount of waste it generates, not solely just diversion.**

RECYCLABLES AND WASTE MINIMIZATION

4.1 OBJECTIVE | Reduce the weight of total non-construction waste.

MEASURE

Percent (%) reduction of tons of non-construction waste generated annually

METRICS | MILESTONES

Total material consumption benchmark per College by 2025

10% reduction by 2030
(Per Chancellor's Office Goal)

25% reduction by 2035
(Per Chancellor's Office Goal)

ACTIONS

Short-term (2 years):

- **BOLD STEP: Conduct total material consumption benchmark. (Per Chancellor's Office Goal)**
- Centralize reporting for waste and resource recovery. (Per Chancellor's Office Goal)
- As beverage provider contracts are being renegotiated, Colleges should include a request for plastic free packaging in the RFPQ.
- Cooperation between the library, faculty, and bookstore to expand the loan/E-book programs for text books and supplies.

Mid-term (5-10 years):

- Provide water bottle refilling stations in all new buildings + major renovations.
- Place digital event boards in major campus buildings.
- Implement waste reduction policies, such as:
  - Reusable containers and cutlery for catering on campus
  - Paperless courses
  - Expanded paperless processes to all departments
  - Digital business cards

Long-term (10 years):

- Provide each student with a reusable beverage container.
- Provide water bottle refilling stations in all buildings.
- Implement waste reduction policies, such as:
  - Eliminate all plastic beverage bottles on campus
  - Reusable containers and cutlery for all dining on campus

Waste Minimization and Procurement
RECYCLABLES AND WASTE MINIMIZATION

4.2 OBJECTIVE | Increase diversion rates for non-construction waste.

MEASURE

Diversion rate (%) of non-construction waste annually

METRICS | MILESTONES

Set baselines per College by 2025*

15% reduction by 2030

25% reduction by 2035

ACTIONS

Short-term (2 years):

- **BOLD STEP: Conduct waste categorization assessment. (Per Chancellor's Office Goal)**
- Benchmark and comply with beverage container recycling and litter reduction act. (Per Chancellor's Office Goal)
- Benchmark and comply with Title 14, CCR Division 7. (Per Chancellor's Office Goal)
- Conduct an AB 341 compliance assessment; Centralize reporting for waste and resource recovery. (Per Chancellor's Office Goal)
- Conduct a total material consumption benchmark. (Per Chancellor's Office Goal)
- Place three-stream bins in each classroom, conference room, and lobby.

Mid-term (5-10 years):

- Conduct a circularity analysis to find opportunities. (Per Chancellor's Office Goal)
- Place paper recycling bins in all campus offices and workspaces.
- Increase exterior recycling bins.

Long-term (10 years):

- Increase material circularity by 25%. (Per Chancellor's Office Goal)
- Establish a District recycling center for campus and community use.

BENCHMARKING WASTE*

Objectives in this section should be benchmarked in alignment with the AASHE Stars requirements.

Waste and Diversion requires:

- *Waste Generation (materials recycled, composted, donated, residual conversion, and landfill)*
- *Weighted Campus User (full time enrollment for students and employees, split by on site and distance education)*

Construction Waste requires:

- *Total Construction and Demo Waste, separated by recovered and disposed*

Hazardous Waste requires:

- *Documented strategies and programs to safely dispose of and reduce hazardous waste*
- *Documented programs to recycle, reuse, or refurbish all electronic waste*

**Baseline data should be collected for 2019. The waste data is not accurate for 2020 and 2021 since the Colleges were not in full capacity due to the pandemic.*

CONSTRUCTION WASTE

4.3 OBJECTIVE | Increase construction waste diversion rate from landfill.

MEASURE

Diversion rate (%) of construction waste annually

ACTIONS

- Continue to meet the State or District requirement of 50% diverted.
- **BOLD STEP: Set stricter requirements for contractors that align with the District's sustainability Goals.**

METRICS | MILESTONES

Set baselines per College by 2025

65% diverted from landfill by 2030

80% diverted from landfill by 2035

HAZARDOUS WASTE AND ELECTRONIC WASTE

4.4 OBJECTIVE | Create programs and systems for hazardous and e-waste.

MEASURE

Number of programs offered

METRICS | MILESTONES

Audit and benchmark all existing hazardous waste programs by 2025

Create one annual E-Waste Collection program by 2030

Permanent District-wide chemical sharing and e-waste donation programs by 2035

ACTIONS

Short-term (2 years):

- **BOLD STEP: Benchmark programs that dispose of all hazardous, universal, and non-regulated chemical waste.**
- Benchmark products with label under a standard or EPEAT registered.

Mid-term (5 years):

- Create one annual electronic waste donation event for campus and community.

Long-term (10 years):

- Establish permanent electronic waste collection areas on campuses for campus and community use.
- Establish a District-wide chemical sharing program to decrease chemical purchasing.

Waste Minimization and Procurement

ORGANIC WASTE

4.5 OBJECTIVE | Increase diversion of organic wastes from landfill.

MEASURE

Percentage (%) of organic waste diverted from landfill annually

METRICS | MILESTONES

Set baseline for organic landscape waste to diverted by College by 2025

Increase diversion by 15% by 2030

Increase diversion by 25% by 2035

ACTIONS

Short-term (2 years):

- **BOLD STEP: Establish an organic waste diversion program.**
- Establish consistent signage to educate campus users on post-consumer composting.
- Continue to support on-campus dining in pre-consumer composting.
- Benchmark and comply with AB 1383.

Mid-term (5 years):

- Consider compostable requirements for food containers.
- 50% of campus dining locations have composting bins.
- Require that landscape waste be composted and used on-campus as fertilizer, mulch, wood chips, etc.
- 50% of landscape waste diverted.

Long-term (10 years):

- 100% of campus dining locations have composting bins.
- Explore opportunities to sell or donate compost.
- 100% of landscape waste diverted.

DURABLE GOODS

4.6 OBJECTIVE | Increase opportunities to share and donate durable goods.

MEASURE

Opportunities / programs for sharing and donation programs

METRICS | MILESTONES

Donation Bins and Surplus Property Tracking program by 2025

Add: E-Waste Event and Surplus Property Warehouse by 2030

Add: Residence Hall programs and Permanent E-Waste collection area by 2035

ACTIONS

Short-term (2 years):

- **BOLD STEP: In alignment with BP 5550 DISPOSAL OF SURPLUS PERSONAL PROPERTY, establish a "Buy Nothing" comprehensive durable goods sharing/donation program in lieu of disposal to landfill.**
- **BOLD STEP: place Share Bin/Area on each campus for students, faculty, and staff.**
- Invest in a system and polices to track data associated with surplus property.

Mid-term (5 years):

- Establish a District-wide surplus property program and warehouse space.

Long-term (10 years):

- In addition to the "Buy Nothing" program, as campuses build on-campus residence halls, provide mid-semester and move-out donation programs.

4.7 OBJECTIVE | Increase sustainable purchasing.

MEASURE

Proportion of funding spent on sustainable purchases

METRICS | MILESTONES

Set baselines per College by 2025

25% increase in sustainable purchases by 2030
(Per Chancellor's Office Goal)

50% increase in sustainable purchases by 2035
(Per Chancellor's Office Goal)

ACTIONS

- **Bold Step: Require vendors to provide data to support sustainability measures.**
- Work with procurement to benchmark and inventory the Districts and each Colleges sustainable purchases. (Per Chancellor's Office Goal)
- Purchase environmentally and socially preferable electronic products. (Per Chancellor's Office Goal)
- Adopt a sustainable procurement policy and administrative procedure. (Per Chancellor's Office Goal)
- Purchase recycled-content and third party certified office paper.
- Benchmark sustainability characteristics of existing products and services.
- Amend procurement practices to consider embodied carbon and waste generated by products.

BENCHMARKING PURCHASING

Objectives in this section should be benchmarked in alignment with the AASHE Stars requirements.

Report on current policies and practices at the time of submission.

- *Written policies, guidelines, or directives that seek to support sustainable purchasing*
- *Life Cycle Cost Analysis (LCCA)*
- *Published sustainability criteria for chemically intensive products and services, consumable office products, furniture and furnishings, information technology (IT) and equipment, food service providers (contractors, franchises, vending and catering services), garments and linens, professional service providers, and transportation and fuels*

5

Resiliency

GOAL | Create a more resilient institution in the context of climate change.

Resiliency is the ability to withstand adversity and bounce back from a variety of climatic and man-made events. Resilience accounts for the tools needed for individuals and organizations to not only bounce back from such events, but thrive.

Resiliency is a unique impact area as stand alone goals around resilience shall be written, but other impact Goals shall account for resilience as well. For example, in the Community Vitality Impact area there are Goals to foster a health campus culture, but infusing resiliency into this impact area creates Goals impacting health before, during and after a disrupting event such as ensuring access to potable drinking water or a cooling center for refuge during extreme heat events.

Resiliency is the capacity of individuals, communities, businesses and systems to survive, adapt and thrive no matter what type of potential acute and chronic climate and man-made impacts they experience. Climate change presents an increase in both acute and chronic impacts for the RCCD and its surrounding community, from increasing frequency, duration, and intensity of extreme heat waves to the ever present risk of wildfires.

Effective resiliency planning is multidimensional. Understand vulnerabilities in our systems to both climate and human hazards spans many disciplines, from emergency management to facilities operations, public health, infrastructure and energy planning. Requires coordination across institutional, municipal, state, utility, and community leaders to truly be prepared for potential acute disasters and chronic climate stressors.

Resiliency is impact area with its own specific goals, but resiliency also underpins objectives and actions proposed in many of the other impact areas.

DIMENSIONS OF RESILIENCY

SOCIAL EQUITY AND GOVERNANCE

This dimension references the systems of governance at each college and across the district's ability to adapt and respond to climate change. This dimension includes the leadership, transparency of the systems, and communication across the social fabric of the greater district community.

HEALTH AND WELLNESS

This dimension references the ability of different groups across the district and community to fulfill their basic health and wellness needs. These needs include multiple indicators of health: emotional, financial, social, spiritual, occupational, physical, intellectual, and environmental. These indicators should be measured on an ongoing basis and in the case of emergencies or climate-related impacts.

ECOSYSTEM SERVICES

This dimension references the environmental systems present across the district and in the greater Riverside County community. These systems may include natural or geographic features of the region, tree canopy, air quality, biodiversity, and native species. In addition to these systems, this dimension addresses the services to protect ecosystems such as conservation easements, stormwater management, or air quality management.

INFRASTRUCTURE

This dimension references physical structures across the district. These physical structures include transportation systems, buildings, utilities, and other key features on campus. The ongoing operations of these structures on a daily basis and in the case of emergencies are important to maintain continuity of business operations.

ECONOMICS

This dimension references the financial ability of the district to proactively adapt to changing climate and positively mitigate the impacts of climate change in the district and the greater community. Indicators of economic resilience include the existence of a climate adaptation fund or levels of financial consideration to plan for emergencies from climate events and/or accounting for the cost of inaction.

5.1 OBJECTIVE | Create infrastructure to support assessment and implementation of climate resilience measures.

MEASURE

Completion of district resilience assessment and college vulnerability assessments.

ACTIONS

Short-term (2 years):

- **BOLD STEP: Create a District Resiliency task force to understand the landscape of resiliency on campus and plan the Community Resilience Assessment.**

Mid-term (5 years):

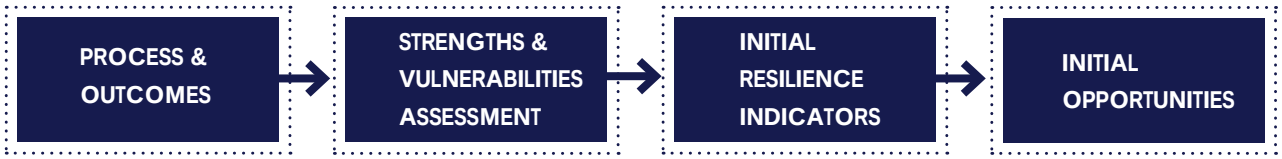
- RCCD's long-term capital facilities plan (LTCFP) that outlines several planning initiatives. The list should add the following studies:
  - Conduct a District - Community Resilience Assessment to assess baseline vulnerabilities and strengths within the district and the level of risk from climate hazards such as drought, extreme heat, stormwater flooding, wildfire, etc.
  - Perform a vulnerability assessment at each College to identify solutions and develop an implementation plan into capital planning and new construction guidelines.
  - Implement Facility and Infrastructure Continuity of Operations Plan. Infrastructure to include: transportation, technology, power, water/sewer, waste and security systems.

Long-term (10 years):

- Re-conduct Community Resilience Assessment to define the success of the center and redefine any new initiatives that need to be established.

DISTRICT-COMMUNITY RESILIENCE ASSESSMENT

The intent of a District-Community Resilience Assessment is to create a greater understanding of the impacts of changing climate has on the district and the greater community. This assessment will assess the five dimensions of resiliency to understand the baseline strengths and vulnerabilities across the district and community. The online tool for assessment can be found **here**.



THE RISKS OF EXTREME HEAT

One of the climate hazards sure to be identified in the resilience assessment from Objective 5.1 is heat. RCCD can take action on preparing for heat now, even before the overall assessment is complete.

Extreme heat is more than just an inconvenience or a discomfort—it negatively impacts our environment, our infrastructure, and our health. It means a loss of tree canopy, green space, and a degradation of air quality. It means more frequent power failures and transportation issues. It means more medical emergencies and heat related disease or illness. While extreme heat affects everyone, some of us are particularly vulnerable: our youngest and oldest residents and those with medical illnesses or disabilities are at elevated risk. Also at elevated risk are people in historically underserved and redlined neighborhoods; and those with low incomes or limited English skills. It is critical that we act now to keep our community members safe and cool.

Riverside County is projected to experience both an increase in average temperatures and more extreme heat events each year. Heat waves can cause risks to health, but the negative consequences of heat on the population can be mitigated with effective measures to prepare individuals and communities. Heat is especially dangerous to those with health challenges, and it puts strain on the natural and built environment, including through energy demands and damage caused by heat expansion in building and road materials.

BUILDING HEAT RESILIENCE

Heat resilience means preparing people, buildings, infrastructure, and the public realm to withstand extreme heat events. Firstly, this means ensuring that our students, faculty, and staff have the resources they need to stay cool and safe in hot summer months. It also means ensuring that indoor and outdoor spaces help preserve the health and comfort of residents in an equitable way.

- Maximize opportunities for shade on campus to create comfortable outdoor space and to reduce urban heat island effect
- Coordinate with local public health district to communicate risks and resources in advance of a heat wave
- Assess campus energy infrastructure and projected cooling loads as part of energy planning efforts

Extreme heat is the number one cause of weather-related deaths in the United States, more than tornadoes, hurricanes, flooding, and cold winter weather combined.

6

Academics

GOAL | Educate students about sustainability through coursework.

Riverside Community College District is committed to delivering academics that align student learning with addressing global issues. Sustainability-related courses and degree programs are critical to the creation of a student body of informed global citizens. RCCD students graduate with the knowledge to take on the challenges facing the Inland Empire, the State of California, the United States, and beyond.

COURSES

6.1 OBJECTIVE | Increase availability of academic courses on or related to sustainability.

MEASURE

Increase the percentage of courses offered that include sustainability content

METRICS | MILESTONES

Set baselines per College by 2024

Increase number of academic courses offered by 15% by 2027

Increase number of academic courses offered by 30% by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Conduct an inventory to identify sustainability course offerings.**

Mid-term (5 years):

- Have an ongoing program that offers incentives (micro-grants, time releases, etc.) or faculty to develop new sustainability courses and/or incorporate sustainability into existing courses or departments.
- Academic leadership and Academic Senate involvement at next education master plan process for each College.

Long-term (10 years):

- Maintain an accurate sustainability related course inventory.

LEARNING OUTCOMES

6.2 OBJECTIVE | Increase the percentage of students who take a course with a sustainability learning outcome.

MEASURE

Percentage (%) of students who take a course with a sustainability outcome during their time at RCCD

METRICS | MILESTONES

Set baselines per College by 2024

Increase percentage of students who take a course with a sustainability learning outcome to 10% by 2027

Increase percentage of students who take a course with a sustainability learning outcome to 20% by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Conduct an inventory to identify sustainability learning outcomes and how many students are enrolled within these courses.**
- Educate faculty about what sustainability learning outcomes are, how existing learning outcomes can be edited, and how new learning outcomes should be developed.

Mid-term (5 years):

- Identify courses in catalogs and other communication materials to illuminate sustainability subject matter.
- Have an ongoing program that offers incentives (micro-grants, time releases, etc.) For faculty to develop new sustainability courses and/or incorporate sustainability into existing courses or departments.

Long-term (10 years):

- Require students to graduate from degree programs that require an understanding of the concept of sustainability.
- Institute one (or more) required institution level sustainability learning outcomes.
- Academic Leadership and Academic Senate involvement at next Education Master Plan process for each College.

6.3 OBJECTIVE | Implement opportunities to use each campus as a living lab.

MEASURE

Number of space and places that tie to curriculum

METRICS | MILESTONES

Set baselines per College by 2024

Formalize at least one space and place at each College by 2027

Formalize at least one immersive, sustainability-focused educational study program by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Create College task forces to brainstorm, plan, and implement short-term solutions for using the campus as a teaching tool.**
- Explore feasibilty of grant program to support campus as a living lab.

Mid-Long-term (5-10 years):

- In alignment with the action to build highly sustainable buildings, select one building project at each campus to be designed and constructed as a showcase for all aspects of sustainability for students and the community.
- Utilize the institution's infrastructure and operations as a living laboratory for applied student learning for sustainability. Some potential applications of campus as a living lab:
  - Gardens and native landscaping - Increase edible landscaping (fruit trees) and make food available to students
  - Educational signs for native landscape (giving name of plant, adaptations for survival, uses by native people / various cultures)
  - Create an outdoor "sustainability center" that includes tables with solar charging stations, a small community garden area, informational signs, sustainable art created by students, etc.
  - Create immersive experience programs both on campus and through internships

SUSTAINABILITY IN ACTION

Riverside City College has recently added two new degree programs - Associate of Arts degree in Sustainability and Associate of Science degree in Sustainability. The degree is designed to fulfill IGETC requirements as well as basic requirements for the University of California, Riverside B.S. in Environment and Sustainability Studies and for Sustainability degrees at other institutions of higher education. Upon successful completion of this program, students should be able to:

- Define sustainability and identify major sustainability challenges
- Apply critical thinking skills, appropriate methodological and analytical tools, and diverse concepts of sustainable development to address sustainability challenges in a global context
- Demonstrate an understanding of complex relationships among ecological issues, economic growth, and social justice
- Demonstrate the ability to understand environmental changes, challenges, and solutions from a scientific, social, and/or economic perspective

DEGREE PROGRAMS

6.4 OBJECTIVE | Offer degree programs focused on sustainability. (AA, AS)

MEASURE

Number of degree programs

METRICS | MILESTONES

Set baselines per College by 2024

Offer at least one AA or AS degree program at each College by 2027

Establish partnerships with University Partners by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Form a working group for curriculum development across disciplines and course articulation with University partner institutions.**
- Collaborate for interdisciplinary and transfer pathways.

Mid-term (5 years):

- Have an ongoing program that offers incentives (micro-grants, time releases, etc.) for faculty to develop new sustainability courses and/or incorporate sustainability into existing courses or departments.

Long-term (10 years):

- Academic leadership and Academic Senate involvement at next education master plan process for each College.

CASE STUDY - CAMPUS AS A LIVING LAB AT CALIFORNIA STATE UNIVERSITY

Campus as a Living Lab is an integrative culture that seeks to use the physical and operational assets of the university as part of research and coursework. It joins academic study with facilities and other administrative units to provide students with direct research and project experiences that build campus engagement, increase student ownership, and create spaces for campus-community partnerships. Campus as a living lab creates transdisciplinary educational communities that have an important impact in embedding sustainability within an institution.

The California State University Chancellor's Office, using funding from a National Science Foundation grant, created a program by which faculty and campus employees could apply for funding to incorporate a specific university challenge into the curricula of active courses. Simply put, the program helps to address a sustainability goal while at the same time providing students with an opportunity to work to solve a real-world campus problem. Faculty present a project or redesign a course to incorporate student learning and activities that respond to that particular campus's challenge. To date, the California State University has funded 68 campuses as a living lab projects ranging from solar energy to building retrofits to ecosystem services mapping.

Sonoma State University
Students collected data about the ecology around Copeland Creek, which runs through the campus, to help inform future restoration of the area.

7

Engagement

GOAL | Expand the RCCD community's knowledge of sustainability to be inclusive of social, economic, and environmental factors while promoting resource conservation and socially just behaviors.

Campus Engagement is a critical component of the plan to educate campus users about how they can create an impact on the goals and objectives of this plan. Through on-campus events and initiatives, RCCD will work to deepen the campus community's sustainability expertise outside of the classroom.

RESILIENCY THROUGH SOCIAL COHESION

Engagement and transparency are critical to building capacity within the campus community to better withstand potential disaster events. Resilient communities must have critical infrastructure and policy planning to keep everyone safe, however, even in communities with similar socio-economic profiles and emergency preparedness, the ones with stronger social bonds weathered climate events better. Strong campus organizations reduce the risk of social isolation and help connect vulnerable students, faculty, and staff to resources and information regarding climate change impacts.

The better the community understands its climate risk and the benefits of checking on neighbors and friends, the better the response and recovery will be and the faster that students can return to their primary pursuit - getting an education.

7.1 OBJECTIVE | Increase the number of opportunities for campus stakeholders to be exposed to sustainability.

MEASURE

Number of Students Exposed to Sustainability Programs

METRICS | MILESTONES

Set baselines per College by 2024

Engage with at least 25% of students by 2027

Engage with at least 50% of students by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Set up campus sustainability websites.**
- Establish an annual sustainability outreach programs - ie. Campus sustainability day, etc.

Mid-term (5 years):

- Establish campus/District sustainability newsletters and social media outreach plan.
- Establish inter-District competition.
- Establish active student groups and/or student educator/champions programs focused on sustainability.
- Student and employee orientation activities that feature sustainability.

Long-term (10 years):

- Sustainable investment funds and initiatives through which students can develop socially, environmentally and fiscally responsible investment and financial skills. (Green Fund)

7.2 OBJECTIVE | Increase sustainability literacy for campus users.

MEASURE

A sustainability literacy assessment is administered to representative samples in both the pre-test and post-test.

METRICS | MILESTONES

Establish baseline by 2024

Improve by 2027

Improve again by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Conduct a sustainability literacy assessment per AASHE Stars guidelines.**

Mid-term (5 years):

- Publish results in communication materials.
- Establish programs through which students learn sustainable life skills.

Long-term (10 years):

- Sustainability-focused student employment opportunities and internships.
- Sustainability trainings and professional development opportunities available to staff - ie. flex day activities.
- Maintain annual sustainability literacy assessment.

LINK TO SAMPLE SUSTAINABILITY LITERACY ASSESSMENT

8

Trust and Transparency

GOAL | Designate the staffing and funding and resources required to implement the S-CAP.

TRUST AND TRANSPARENCY ensure that there are coordinated policies, processes, and procedures at an organizational level to amplify the individual efforts of the campus community to achieve sustainable outcomes. In addition, shared governance, staffing, and resources will help achieve the goals and objectives articulated across the plan.

8.1 OBJECTIVE | Create staff positions within the District and Colleges to oversee, coordinate, and report sustainability progress.

MEASURE

Number of staff positions that include sustainability-related objectives as part of their job responsibilities

METRICS | MILESTONES

Establish student internships by 2024

1.0 FTE Sustainability Coordinators /Energy Manager by 2023

ACTIONS

Short-term (2 years):

- **BOLD STEP: Hire a position within the District's Facilities Planning & Development department. This individual will be the custodian of the plan, implement sustainability projects across the district and report on progress.**
- Create a student internship and/or work study program that hires student workers to research and establish missing benchmarks throughout the S-CAP.
- RCCD and its colleges should become members of national sustainability organizations such as United State Green Building Council (USGBC) and AASHE.
- Where opportunity allows, RCCD should submit sustainability projects for recognition at the local, regional and state levels on an annual basis.

Mid-Long-term (5-10 years):

- Create positions within each College's facilities, maintenance & operations department.
- For each impact area in this S-CAP, identify staff positions to manage data and lead initiatives.

8.2 OBJECTIVE | Integrate sustainability champions into the District and College shared governance and integrated planning processes.

MEASURE

Number of sustainability champions involvement in shared governance committees and integrated planning process

METRICS | MILESTONES

Establish college tasks forces by 2022

Sustainability champions on all shared governance committees by 2025

Include sustainability champions in Integrated Planning updates by 2030

ACTIONS

Short-term (2 years):

- **BOLD STEP: Sustainability task force at each College to guide the direction of sustainability planning.**
- Include a sustainability champion from the sustainability task force on all shared governance committees at each College.

Mid-Long-term (5-10 years):

- Ensure sustainability champions are directly involved in updates to the District and College level integrated planning, including strategic plans, education master plans, fiscal plans, facilities master plans, equity and diversity planning, etc.

8.3 OBJECTIVE | Increase grant opportunities to implement sustainability initiatives.

MEASURE

Number of grants rewarded to RCCD and its Colleges tied to sustainability.

METRICS | MILESTONES

Per College, establish a course of action to research and apply for grants by 2024

One energy-related grant per College by 2027

Five sustainability-related grants per College by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Establish partnerships between Sustainability tasks forces and the Office of grants at each College to research potential grants.**
- Establish District-level involvement in applications for grants to ensure subject matter experts are included in the grant application process.

Mid-Long-term (5-10 years):

- Try to secure at least one grant with utility companies to fund energy projects.
- Try to secure at least one grant with local, state or federal organizations to fund initiatives across the S-CAP.

Long-term (10 years):

- Try to secure at least five grants with local state and federal organizations and companies to fund initiatives across the S-CAP.

9

Equity and Social Justice

GOAL | Create campus communities where all members can succeed.

Changing the RCCD's campus climate and culture is a collective undertaking that requires steady work, reflection, and accountability in the areas of Equity and Social Justice. A college campus is a microcosm of our larger society and world, and addressing systemic injustice requires consistent monitoring, commitment, resources, assessment, and ownership. Because of the focus on creating equity and access for students, RCCD is an ideal incubator for advancing an interdisciplinary conversation about social equity and its relationship to a comprehensive approach to sustainability.

9.1 OBJECTIVE | Establish ongoing collaboration between institutional sustainability and equity planning efforts.

ACTIONS

- Educate leaders on the importance of a shared approach to planning.
- Identify individuals from College Sustainability task forces to serve on the Student Equity Planning Committees.
- Identify equity champions on each campus to serve on College and District Sustainability Task Forces.

ALIGNMENT WITH STUDENT EQUITY PLANNING

Each College is updating its Student Equity Plan, focusing on Racial Equity. This work, which commenced in Fall 2022, is intended to shift the culture to be more intentional and purposeful about the specific needs of students. While the colleges are updating these plans, the S-CAP provides a sustainability lens to connect to the important equity work occurring at each College.

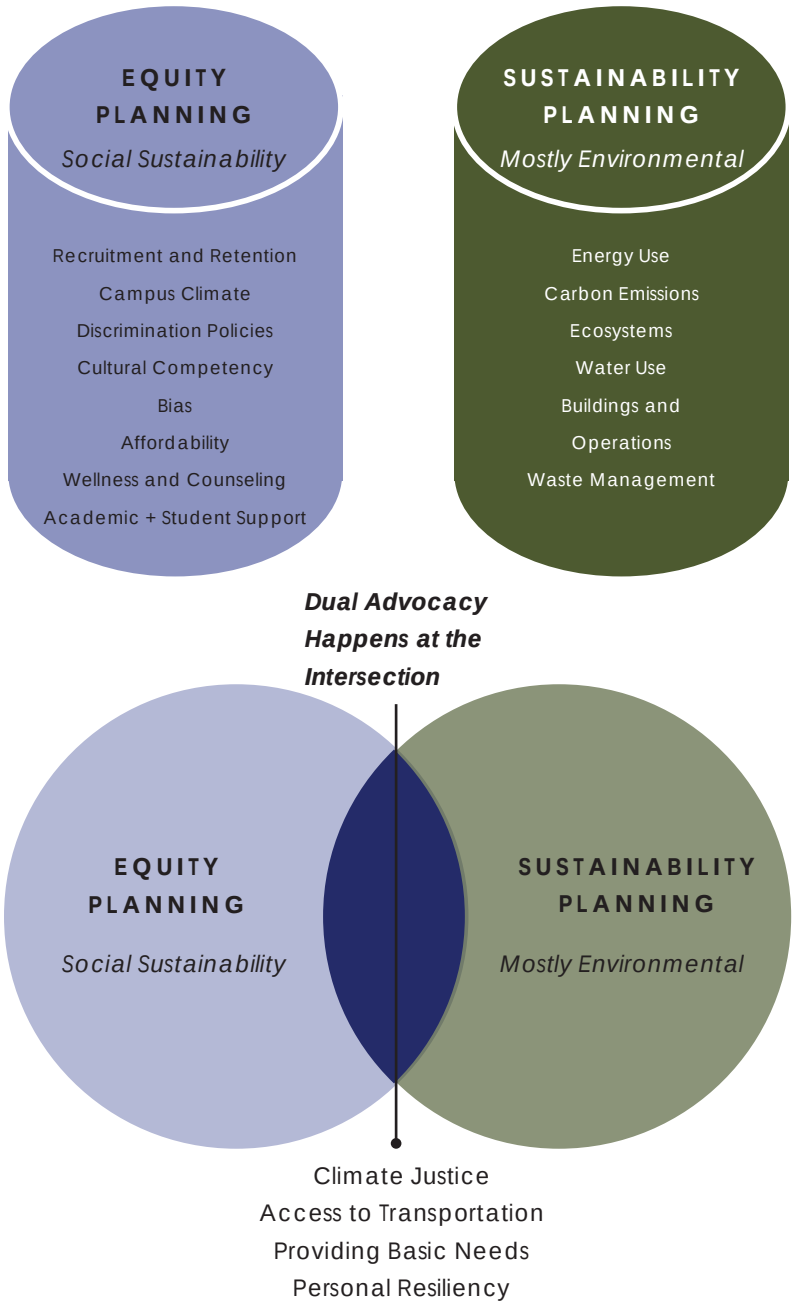
EMBEDDING EQUITY INTO THE S-CAP IMPLEMENTATION

As each College works to implement the S-CAP by establishing its Sustainability Task Force, equity champions should be identified that can provide current information on equity initiatives at the College. These include work around basic needs care, cultural representation, or supporting vulnerable populations.

Equity, as it aligns with sustainability, is in the lens of creating campus communities where all members can succeed.

Equity and Social Justice

A SILOED APPROACH VS. A COORDINATED APPROACH TO PLANNING



Social sustainability has largely been absent in mainstream sustainability debates as it is the most elusive of the three pillars. However, the conversation is evolving and higher education is investigating better ways to incorporate the topic. Social sustainability encompasses a broad range of ideas, attitudes, and initiatives and cannot be universally prescribed or measured in the same way as many standards for environmental and economic sustainability.

Sustainability at RCCD focuses on the connections between people, the economy, and the environment and how those connections work together to achieve long-term prosperity and continued quality of life. The S-CAP identifies social sustainability as an equally weighted tier. This plan intends to break down silos in sustainability efforts and create a more coordinated approach to realize greater impact from sustainability efforts across the campus community. The following pages identify several opportunities for coordinated planning and advocacy.

CONNECTION 01: PERSONAL RESILIENCY

Affordable Housing – RCCD is currently studying and applying for grants to add affordable housing to their campuses. Support for low-income students to live on-campus can help create stability and support higher rates of degree completion, particularly for students experiencing housing insecurity. Adding housing to the campuses also reduces the campuses' overall Vehicle Miles Traveled, reducing Scope 03 emissions due to personal commuting.

Financial Knowledge – Another factor related to affordable housing is ensuring that students receive financial education so they are prepared for life after completing their education at RCCD. There has to be thought behind encouraging students' long-term economic and housing security, especially in the expensive Southern California housing market.

Food Insecurity – Each College has food pantry locations to provide food for food-insecure students. Considerations to expanding these programs should be made to ensure they are commensurate with the true need of RCCD students.

Student and Academic Resources – The 2020 COVID-19 pandemic exposed gaps in student resources. As a response, RCCD has begun to integrate lower and zero-cost textbooks, technology lending, and expanded academic and mental health services to support students during their educational journeys.

CONNECTION 02: BUILDING COMMUNITY

Student Engagement Centers – RCCD is strengthened by the diverse groups and individuals on our campuses. Each College has several Engagement Centers and student groups that allow cultural groups and special interests to create a support network for people with similar interests and backgrounds. It is also important to think about how students who aren't connected with an engagement center connect culturally. Flexible gathering spaces should be dedicated to additional programs and organizations for students to find their community while on their academic journey at RCCD.

Current centers:

- ALLY: supports the LGBTQIA (Lesbian, Gay, Transgender, Queer, Intersex, Asexual) community on campus — encouraging individuals to provide a safe haven and empathetic ear to anyone concerned with sexual orientation or gender identity issues.
- Foster Youth Community: Special programs dedicated to serving and supporting foster youth and foster parents' unique needs both on campus and throughout Riverside County.
- La Casa: In-depth support program and engagement center to nurture Latinx culture and student success.
- Umoja: The Umoja Project, a Kiswahili word meaning unity, is a community-building and critical resource dedicated to enhancing students' cultural and educational experiences from a perspective that is responsive to the legacy of African American history and culture.
- Veteran's Center: Veteran's Resource Center provides support and guidance to help Veterans in their academic endeavors.

Representing Cultures – The colleges are actively working to find opportunities around the campuses to display and celebrate multi-culturalism. For example, adding elements such as artwork and murals can educate campus users, celebrate multi-culturalism, and provide beauty to the campus environment. In addition, community kitchens are a great space for students to connect over food and cultural traditions and provide space for events and programming.

CONNECTION 03: COMMITMENT TO SOCIAL JUSTICE

Supporting Special Populations – RCCD has been working to serve special populations with access to secondary education.

- Undocumented Students: The RCCD Board of Trustees approved a resolution in October 2019, supporting Undocumented and Deferred Action for Childhood Arrivals (DACA) students. In 2019 the California State Legislature approved, and the Governor signed legislation requiring a Dreamer Center at each community college. Each College currently has programs that provide legal services, funding, and academic support.
- Incarcerated and Justice-Involved Students: Since fall 2017, Norco College has partnered with the California Rehabilitation Center in Norco (CRC-Norco) to offer the Associate Degree for Transfer program to incarcerated individuals. Norco College serves 300-plus students per term and has awarded 88 associate degrees and ADTs. In addition, Moreno Valley College and Riverside City College established programs to help justice-involved students. Riverside County is home to approximately 6% of the state's parole population. Each of the Riverside Community College District colleges is engaged in serving the justice-involved population – by supporting those attending classes and by reaching out to individuals who may have never considered college.

Serving Disadvantaged Communities – The most vulnerable and economically disadvantaged members of any community are typically those most negatively affected by the impacts of climate change. Climate justice is the fair treatment of all people and the freedom from discrimination in the creation of policies and projects that address climate change as well as the systems that create climate change and perpetuate discrimination. RCCD supports climate justice by decarbonizing operations, and educating students to become future climate justice advocates.

10

Community Partnerships

GOAL | Create strategic connections that advance RCCD's sustainability initiatives.

Community partnerships are vital to moving the dial on sustainability and climate issues. Many sustainability challenges cross jurisdictional boundaries and require systemic changes beyond the capabilities of an individual organization. RCCD recognizes that it is part of a larger ecosystem, and the best approach is to find partners with similar values and agendas such as municipalities, local community organizations, and funding partners.

10.1 OBJECTIVE | Create strategic connections that advance RCCD's sustainability initiatives.

MEASURE

Number of partnerships established.

METRICS | MILESTONES

Establish baseline by 2024

At least one formal partnership by 2027

At least three formal partnerships by 2032

ACTIONS

Short-term (2 years):

- **BOLD STEP: Establish a formal campus/District/community partnership to advance sustainability.**

Mid to Long-term (5-10 years):

- Collaborate with other Colleges and universities to support and help build the campus sustainability community.

Long-term (10 years):

- Track student community service hours.
- Create a formal program to support employee volunteering.
- Establish an Inland Empire Higher Education collective environmental advocacy group.

03

INTEGRATED ENERGY MASTER PLAN

Integrated Energy Master Plan (IEMP)

An integrated energy master plan (IEMP) is a plan for a large portfolio of buildings to reduce resource consumption, including electricity, natural gas, and water, through quantified optimizations over 5-15 years. Plans of such nature are best served when paired with a solar master plan to be effective in decarbonization.

The process of plan development has three phases:

1

DISCOVERY

The first phase focuses on quantifying current conditions by conducting a site walk-through, conducting facility manager interviews, and assessing building systems. The most recent five (5) years of operation are evaluated by performing a:

- Electricity Bill Analysis
- Natural Gas Bill Analysis
- Water Bill Analysis

At the end of phase 1, the design team understands current conditions and operations to apply engineering principles in the next phase.

2

ANALYSIS

The second phase seeks to benchmark the operational performance of the portfolio against similar age building types, identify deviation from expected performance, compare to new construction expectations, and quantify the impact of areas for improvement toward long term performance Goals.

In this phase, the team:

- Establishes 1990 Baseline to align with state requirements and determine the energy and water savings to date
- Calculates Energy Use Intensity and Water use benchmarks
- Weather normalizes operations to understand anomalies
- Identifies Energy and Water Conservation Measures (ECMs & WCMs), which are design or operational changes that, when implemented, will reduce resource consumption
- Quantify the impact of ECMs and WCMs on ongoing performance by calculating energy, water, and operational cost savings.

3

RECOMMENDATIONS

The final phase is to bundle ECMs and WCMs into low-cost, medium-cost, and high-cost measures. Measures are clustered to define the path to:

- Natural Gas phase-out
- Energy and Water Intensity reductions
- Net Zero Carbon Emissions
- Recommendations are presented in an interactive storyboard dashboard to allow all stakeholders to view the path to Net Zero Carbon through a series of optimizations.

PATH TO CARBON NEUTRALITY

The Integrated Energy Master Plan (IMEP) Dashboard contains the information gathered during the preparation of the IEMP as well as recommendations. Information such as Greenhouse Gas emission, energy and water use, and district vehicle fleet information can be viewed through the interactive dashboard. These metrics may be viewed and compared in many ways including as historical comparisons, trends or as progress toward the S-CAP goals. This is an interactive tool intended to be updated with new data as it becomes available and used to guide the district in implementation of the Energy Conservation Measures (ECMs).

Business As Usual - Consists of no ECMs to existing buildings, no implementation of S-CAP carbon reduction measures, and the addition of new buildings that are in compliance with current code and more stringent future codes as well as future demolition of buildings.

Energy Conservation Measures - Consists of ECM recommendations to be selected and implemented at agreed dates, implementation of S-CAP carbon reduction measures, and consists of the addition and implementation of Solar Arrays at each campus. This pathway also takes into account the demolition of buildings and the addition of new buildings outlined by the district.

District Area - This shows the Growth of the District from 1990 to the present and projected growth to 2050. This takes into account proposed building additions and demolitions driven from the campus facilities master plans.

Proposed Energy Conservation Measures

Following the Discovery phase and included in the Analysis phase, Energy Conservation Measures (ECMs)were explored based on the energy analysis, benchmarking, and the site walk-through. Each ECM was identified based on the ASHRE Level 2 audits conducted by the DLR Group Engineering team looking at the overall health of a building and their applicable systems and sub-systems (HVAC, Envelope, Boilers & etc). This information was discussed with RCCD and vetted for final selection to be included in ECM recommendations.

Implementation of the recommended ECMs will result in a reduction of energy use and subsequently a reduction in Greenhouse Gas emissions, either through reduced grid electricity consumption or reduction or elimination of direct combustion on site. These ECMs have been grouped into low, medium, and high-cost categories to aid in the timeline of implementation as resources are available.

1 BOILER REPLACEMENT

Replace existing natural gas fired boilers used for building heating with electric heat pump boilers. The existing natural gas boilers' efficiencies are below a coefficient of performance (COP) of 1 while the heat pump boilers efficiency is in the range of a COP of 2 to 3. The replacement of the natural gas boilers not only reduces the energy consumed but eliminates the natural gas combustion on site. This is a key step towards decarbonization.

2 BUILDING ENERGY SUBMETERING

Install submeters at the buildings to monitor electricity, natural gas, and water. By measuring energy usage at the building level, high and low energy intensity buildings can be identified. This will allow waste energy usage to be identified, prioritized, and eliminated.

3 CHILLER REPLACEMENT

Replace the existing chillers with new higher efficiency chillers and where applicable incorporate heat recovery.
Replacement of older less efficient chillers with new high efficiency chillers reduces the energy consumption for cooling. Where it is possible recovering a portion of the waste heat from the heat rejection of the chillers to be used for building heating increases the overall efficiency of the system considerably.

4 DAYLIGHT HARVESTING

Install daylight controls and necessary photocell sensors in spaces with windows to control artificial lighting in multiple dimming zones arranged in relationship to the windows, adjusting each zone to maintain a consistent lighting level throughout the room. When sufficient daylight is available, it can be used to illuminate the room instead of artificial light. This reduces energy consumption used by artificial light and has also been proven to improve cognitive function of occupants.

5 GLAZING UPGRADE

Replace existing single glazed windows and frames with thermally broken frames and double-glazed insulated glass units equal to Viracon Solarban® 60 (2) Clear + Clear. Replacing the existing glazing with high efficiency double glazing will reduce cooling and heating energy, reduce building drafts and increase thermal comfort for occupants.

6 REDUCED LIGHT POWER DENSITY

Replace existing fluorescent bulb lighting fixtures with LED bulb lighting fixtures. Replacing existing incandescent and/or fluorescent bulb lighting fixtures with LED bulb lighting fixtures which are more efficient will reduce the energy consumption for artificial lighting. In addition, the waste heat from LED bulb technology is reduced from incandescent and fluorescent bulb technology reducing the cooling needed due to waste heat from lighting.

7 ROOF INSULATION

In addition to the existing roof insulation install new rigid insulation to bring the roof insulation value up to current Title 24 requirements. The addition of insulation at the roof will reduce the building heat loss and heat gain through the roof and improve occupant thermal comfort.

8 VAMPIRE LOAD REDUCTION

Install motion sensing power outlets for each outlet connected to an appliance in the building. Many devices are left powered on during time periods when they are used. Even when devices are in standby mode small amounts of power are still used. Installing smart power outlets with motion sensors will reduce this parasitic power consumption.

9 VARIABLE FREQUENCY DRIVE

Install variable frequency drive devices on the exhaust fans in the building to adjust the fan speed. Variable frequency drives prevent the waste of energy caused by fans running more than they need to. Installing the devices will allow the fan to meet the actual demand more closely by increasing and decreasing fan power proportionally, rather than being 100% on or off.

10 WALL INSULATION

In addition to the existing wall insulation, install new rigid insulation with plywood sheathing equivalent to an insulation value of R-8. The addition of insulation at the walls will reduce the building heat loss and heat gain through the walls and improve occupant thermal comfort.

Proposed Energy Conservation Measures

The application of the ECMs across the district is defined and is viewable in the IEMP dashboard. ECM application can be viewed by building, campus, cost level, ECM type and implementation year. This allows the dashboard viewer to understand ECM cost, payback period and impact on progress toward the SCAP energy and Greenhouse Gas reduction goals.

The timelines available in the dashboard give the viewer a graphical representation of the district's historical water and electricity use and estimated greenhouse gas emissions as well as future projected increases based on "business as usual". The timelines also include future projections based on implementation of the recommended ECMs that provide a path toward attaining the S-CAP goals. Planned photovoltaic solar renewable energy production is included in the EUI, energy, and carbon timelines. This is overlaid over historical and projected district growth by building square footage.

2025

2025 TARGET: 4,714 Metric tons CO2 equivalent

PATH TO ACHIEVING THIS TARGET: ***156 ECMs implemented across 74 buildings***

- Boiler replacement
- Building Energy Submetering
- Chiller Replacement
- Daylight Harvesting
- Reduced Light Power Density
- Variable Frequency Drive

ECM COST AND PAYBACK SUMMARY (all low Medium and High cost ECMs bundled together)

Implementation cost - $3,611,840
Annual operational cost savings - $1,254,433
Payback is estimated in year 2027

WHEN THE ECMS ARE IMPLEMENTED – THIS IS THE RESULTING CARBON EMISSIONS – BETTER THAN TARGET

2,687 Metric tons CO2 equivalent, or 57% better than the district established goal

2030

2030 TARGET: 1,683 Metric tons CO2 equivalent

PATH TO ACHIEVING THIS TARGET: ***ECMs implemented across 20 buildings***

- Boiler replacement
- Building Energy Submetering
- Chiller Replacement
- Daylight Harvesting
- Glazing Upgrade
- Reduced Light Power Density
- Roof Insulation
- Vampire Load Reduction
- Variable Frequency Drive
- Wall Insulation

ECM COST AND PAYBACK SUMMARY (all low Medium and High cost ECMs bundled together)

Implementation cost - $11,493,403
Annual operational cost savings - $913,164
Payback on investment is estimated in year 2042

WHEN THE ECMS ARE IMPLEMENTED – THIS IS THE RESULTING CARBON EMISSIONS – BETTER THAN TARGET

1,983 metric tons CO2 equivalent, or 17% above the district established goal

2035

2035 TARGET: Carbon Neutrality

The approach is to evaluate progress by 2035 and reassess the next steps.

2025

ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
Norco	Daylight Harvesting	Science & Technology - B	2	Not Started	2024
Norco	Daylight Harvesting	Theater - C	3	Not Started	2024
Norco	Daylight Harvesting	Humanities - D	4	Not Started	2024
Norco	Daylight Harvesting	Library (Airey) - G	9	Not Started	2024
Norco	Daylight Harvesting	Applied Tech - N	10	Not Started	2024
Norco	Daylight Harvesting	MULTI-PURPOSE W1 & W2 - L	14	Not Started	2024
Norco	Daylight Harvesting	Portable A - P	17	Not Started	2024
Norco	Daylight Harvesting	Portable B - P	18	Not Started	2024
Norco	Daylight Harvesting	Industrial Tech - Q	20	Not Started	2024
Norco	Daylight Harvesting	CTR FOR STU SUCCESS - S	23	Not Started	2024
Norco	Daylight Harvesting	Operations - T	25	Not Started	2024
Norco	Daylight Harvesting	Veteran Resource Center	40	Not Started	2024
Norco	Variable Frequency Drive	Library (Airey) - G	9	Not Started	2024
Norco	Variable Frequency Drive	Humanities - D	4	Not Started	2024
Norco	Variable Frequency Drive	Ctr For Stu Success - S	23	Not Started	2024
Norco	Variable Frequency Drive	Science & Technology - B	2	Not Started	2024
Norco	Variable Frequency Drive	Theater - C	3	Not Started	2024
Norco	Variable Frequency Drive	Central Plant F1	6	Not Started	2024
Norco	Variable Frequency Drive	Industrial Tech - Q	20	Not Started	2024
Norco	Building Energy Submetering	Science & Technology - B	2	Not Started	2024
Norco	Building Energy Submetering	Theater - C	3	Not Started	2024
Norco	Building Energy Submetering	Humanities - D	4	Not Started	2024
Norco	Building Energy Submetering	Library (Airey) - G	9	Not Started	2024
Norco	Building Energy Submetering	Applied Tech - N	10	Not Started	2024
Norco	Building Energy Submetering	Multi-Purpose W1 & W2 - L	14	Not Started	2024
Norco	Building Energy Submetering	Portable A - P	17	Not Started	2024
Norco	Building Energy Submetering	Portable B - P	18	Not Started	2024
Norco	Building Energy Submetering	Industrial Tech - Q	20	Not Started	2024
Norco	Building Energy Submetering	Ctr For Stu Success - S	23	Not Started	2024
Norco	Building Energy Submetering	Operations - T	25	Not Started	2024
Norco	Building Energy Submetering	Soccer Storage	36	Not Started	2024
Norco	Building Energy Submetering	Veteran Resource Center	40	Not Started	2024

2025

ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
MVC	Boiler Replacement	Humanities - 8	7	Not Started	2024
MVC	Chiller Replacement	Ph 2 Mechanical - 10	7	Not Started	2024
MVC	Chiller Replacement	Ph 2 Mechanical - 10	7	Not Started	2024
MVC	Daylight Harvesting	Library - 1	1	Not Started	2024
MVC	Daylight Harvesting	Student Services - 2	2	Not Started	2024
MVC	Daylight Harvesting	Science & Technology - 3	3	Not Started	2024
MVC	Daylight Harvesting	Humanities - 8	6	Not Started	2024
MVC	Daylight Harvesting	Admin Annex - 16	9	Not Started	2024
MVC	Daylight Harvesting	Student Activities Center - 5	11	Not Started	2024
MVC	Daylight Harvesting	Student Academic Srvs. - 20	60	Not Started	2024
MVC	Daylight Harvesting	Network Operations Ctr - 21	61	Not Started	2024
MVC	Reduce Lighting Power Density	Ph 1 Mechanical - 9	5	Not Started	2024
MVC	Reduce Lighting Power Density	Ph 2 Mechanical - 10	7	Not Started	2024
MVC	Reduce Lighting Power Density	Network Operations Ctr - 21	61	Not Started	2024
MVC	Variable Frequency Drive	Student Academic Srvs. - 20	60	Not Started	2024
MVC	Variable Frequency Drive	Humanities - 8	6	Not Started	2024
MVC	Boiler Replacement	Ph 1 Mechanical - 9	5	Not Started	2024
MVC	Boiler Replacement	Ph 1 Mechanical - 9	5	Not Started	2024
MVC	Building Energy Submetering	Library - 1	1	Not Started	2024
MVC	Building Energy Submetering	Student Services - 2	2	Not Started	2024
MVC	Building Energy Submetering	Science & Technology - 3	3	Not Started	2024
MVC	Building Energy Submetering	Humanities - 8	6	Not Started	2024
MVC	Building Energy Submetering	Admin Annex - 16	9	Not Started	2024
MVC	Building Energy Submetering	Student Activities Center - 5	11	Not Started	2024
MVC	Building Energy Submetering	Student Academic Srvs. - 20	60	Not Started	2024
MVC	Building Energy Submetering	Network Operations Ctr - 21	61	Not Started	2024
RCC	Boiler Replacement	Cutter Pool (Inactive)	19	Not Started	2024
RCC	Boiler Replacement	Cutter Pool (Inactive)	19	Not Started	2024
RCC	Boiler Replacement	Digital Library - 1	37	Not Started	2024
RCC	Boiler Replacement	Digital Library - 1	37	Not Started	2024
RCC	Boiler Replacement	Student Ctr (Bradshaw) - 13	24	Not Started	2024
RCC	Boiler Replacement	Student Ctr (Bradshaw) - 13	24	Not Started	2024

2025

ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
RCC	Building Energy Submetering	Aquatics Complex - 25	167	Not Started	2024
RCC	Building Energy Submetering	Aquatics Complex Mech - 25	206	Not Started	2024
RCC	Building Energy Submetering	Aquatics Complex Storage - 25	207	Not Started	2024
RCC	Building Energy Submetering	Autotech Storage	220	Not Started	2024
RCC	Building Energy Submetering	Center Social Justice	136	Not Started	2024
RCC	Building Energy Submetering	Coil School Of Arts	200	Not Started	2024
RCC	Building Energy Submetering	Culinary Arts Academy	198	Not Started	2024
RCC	Building Energy Submetering	District Office Downtown Riversi	137	Not Started	2024
RCC	Building Energy Submetering	Cutter Pool (Inactive)	19	Not Started	2024
RCC	Building Energy Submetering	Digital Library - 1	37	Not Started	2024
RCC	Building Energy Submetering	Early Childhood Ed - 17	31	Not Started	2024
RCC	Building Energy Submetering	Evans Sports CMPLX A Bsbl	161	Not Started	2024
RCC	Building Energy Submetering	Evans Sports CMPLX B Sfbl	162	Not Started	2024
RCC	Building Energy Submetering	Evans Sports CMPLX C Ltll	163	Not Started	2024
RCC	Building Energy Submetering	Evans Sports CMPLX D Grnd	164	Not Started	2024
RCC	Building Energy Submetering	Gymnasium (Wheelock) - 20	3	Not Started	2024
RCC	Building Energy Submetering	Landis Annex - 7A	47	Not Started	2024
RCC	Building Energy Submetering	Life Science (Inactive)	20	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #01 - 29	39	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #02 - 29	213	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #03 - 29	139	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #10 - 29	214	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #11 - 29	219	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #12 - 29	215	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #13 - 29	216	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #14 - 29	217	Not Started	2024
RCC	Building Energy Submetering	Lovekin Complex #B1 - 29	212	Not Started	2024
RCC	Building Energy Submetering	Maintenance Pt Shop	5	Not Started	2024
RCC	Building Energy Submetering	Math & Science - 12	197	Not Started	2024
RCC	Building Energy Submetering	Mlk High Tech CNTR - 8	21	Not Started	2024
RCC	Building Energy Submetering	Mod@ 161 Bb (Evans)	185	Not Started	2024
RCC	Building Energy Submetering	Mod@ 162 Sb (Evans)	186	Not Started	2024

2025

ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
RCC	Building Energy Submetering	Music Annex - 5A	196	Not Started	2024
RCC	Building Energy Submetering	Physical Science (Inactive)	22	Not Started	2024
RCC	Building Energy Submetering	Pilates Studio (Crabtree) - 31	36	Not Started	2024
RCC	Building Energy Submetering	Planetarium (Dixon) - 10	23	Not Started	2024
RCC	Building Energy Submetering	Portable 5	38	Not Started	2024
RCC	Building Energy Submetering	Quadrangle (Paul) - 3	1	Not Started	2024
RCC	Building Energy Submetering	School Of Nursing - 11	211	Not Started	2024
RCC	Building Energy Submetering	Stadium (Wheelock Field) - 21	2	Not Started	2024
RCC	Building Energy Submetering	Student Ctr (Bradshaw) - 13	24	Not Started	2024
RCC	Building Energy Submetering	Student Srvs/Admin (Kane) - 2A	201	Not Started	2024
RCC	Building Energy Submetering	Viewpoints - 9	34	Not Started	2024
RCC	Building Energy Submetering	North Hall (Inactive)	131	Not Started	2024
RCC	Building Energy Submetering	College House (Inactive)	130	Not Started	2024
RCC	Building Energy Submetering	Carriage House	138	Not Started	2024
RCC	Building Energy Submetering	Alumni House	132	Not Started	2024
RCC	Building Energy Submetering	Warehouse Annex B	25	Not Started	2024
RCC	Chiller Replacement	Math/Science Mech Bldg. - 12	168	Not Started	2024
RCC	Chiller Replacement	Math/Science Mech Bldg. - 12	168	Not Started	2024
RCC	Chiller Replacement	Mlk High Tech CNTR - 8	21	Not Started	2024
RCC	Chiller Replacement	Music Annex - 5A	196	Not Started	2024
RCC	Chiller Replacement	Quadrangle (Paul) - 3	1	Not Started	2024
RCC	Chiller Replacement	Student Ctr (Bradshaw) - 13	24	Not Started	2024
RCC	Chiller Replacement	Mlk High Tech CNTR - 8	21	Not Started	2024
RCC	Daylight Harvesting	Aquatics Complex - 25	167	Not Started	2024
RCC	Daylight Harvesting	Center Social Justice	136	Not Started	2024
RCC	Daylight Harvesting	Coil School Of Arts	200	Not Started	2024
RCC	Daylight Harvesting	Culinary Arts Academy	198	Not Started	2024
RCC	Daylight Harvesting	Cutter Pool (Inactive)	19	Not Started	2024
RCC	Daylight Harvesting	Digital Library - 1	37	Not Started	2024
RCC	Daylight Harvesting	Early Childhood Ed - 17	31	Not Started	2024
RCC	Daylight Harvesting	Gymnasium (Wheelock) - 20	3	Not Started	2024
RCC	Daylight Harvesting	Landis Annex - 7A	47	Not Started	2024

2025

ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
RCC	Daylight Harvesting	Lovekin Complex #01 - 29	39	Not Started	2024
RCC	Daylight Harvesting	Lovekin Complex #02 - 29	213	Not Started	2024
RCC	Daylight Harvesting	Lovekin Complex #03 - 29	139	Not Started	2024
RCC	Daylight Harvesting	Lovekin Complex #10 - 29	214	Not Started	2024
RCC	Daylight Harvesting	Lovekin Complex #11 - 29	219	Not Started	2024
RCC	Daylight Harvesting	Lovekin Complex #12 - 29	215	Not Started	2024
RCC	Daylight Harvesting	Lovekin Complex #13 - 29	216	Not Started	2024
RCC	Daylight Harvesting	Lovekin Complex #14 - 29	217	Not Started	2024
RCC	Daylight Harvesting	Lovekin Complex #B1 - 29	212	Not Started	2024
RCC	Daylight Harvesting	Maintenance Pt Shop	5	Not Started	2024
RCC	Daylight Harvesting	Math & Science - 12	197	Not Started	2024
RCC	Daylight Harvesting	Mlk High Tech CNTR - 8	21	Not Started	2024
RCC	Daylight Harvesting	Portable 5	38	Not Started	2024
RCC	Daylight Harvesting	Quadrangle (Paul) - 3	1	Not Started	2024
RCC	Daylight Harvesting	School Of Nursing - 11	211	Not Started	2024
RCC	Daylight Harvesting	Student Ctr (Bradshaw) - 13	24	Not Started	2024
RCC	Daylight Harvesting	Student Srvs/Admin (Kane) - 2A	201	Not Started	2024
RCC	Daylight Harvesting	Data Processing	11	Not Started	2024
RCC	Daylight Harvesting	North Hall (Inactive)	131	Not Started	2024
RCC	Daylight Harvesting	College House (Inactive)	130	Not Started	2024
RCC	Daylight Harvesting	Alumni House	132	Not Started	2024
RCC	Reduced Lighting Power Density	Digital Library - 1	37	Not Started	2024
RCC	Reduced Lighting Power Density	Evans Sports CMPLX A Bsbl	161	Not Started	2024
RCC	Reduced Lighting Power Density	Evans Sports CMPLX B Sfbl	162	Not Started	2024
RCC	Reduced Lighting Power Density	Evans Sports CMPLX C Ltll	163	Not Started	2024
RCC	Reduced Lighting Power Density	Evans Sports CMPLX D Grnd	164	Not Started	2024
RCC	Variable Frequency Drive	Gymnasium (Wheelock) - 20	3	Not Started	2024
RCC	Variable Frequency Drive	Digital Library - 1	37	Not Started	2024

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ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
Norco	Boiler Replacement	Central Plant F1	6	Not Started	2025
Norco	Boiler Replacement	Central Plant F1	6	Not Started	2025
Norco	Boiler Replacement	Central Plant F1	6	Not Started	2025
Norco	Boiler Replacement	Central Plant F1	6	Not Started	2025
Norco	Chiller Replacement	Central Plant F1	6	Not Started	2025
Norco	Chiller Replacement	Central Plant F1	6	Not Started	2025
Norco	Chiller Replacement	Central Plant F1	6	Not Started	2025
Norco	Chiller Replacement	Central Plant F1	6	Not Started	2025
Norco	Chiller Replacement	Central Plant F2	11	Not Started	2025
Norco	Chiller Replacement	Central Plant F2	11	Not Started	2025
Norco	Chiller Replacement	Central Plant F2	11	Not Started	2025
Norco	Boiler Replacement	Central Plant F2	11	Not Started	2026
Norco	Boiler Replacement	Central Plant F2	11	Not Started	2027
Norco	Vampire Load Reduction	Science & Technology - B	2	Not Started	2028
Norco	Vampire Load Reduction	Theater - C	3	Not Started	2028
Norco	Vampire Load Reduction	Humanities - D	4	Not Started	2028
Norco	Vampire Load Reduction	Library (Airey) - G	9	Not Started	2028
Norco	Vampire Load Reduction	Applied Tech - N	10	Not Started	2028
Norco	Vampire Load Reduction	Multi-Purpose W1 & W2 - L	14	Not Started	2028
Norco	Vampire Load Reduction	Portable A - P	17	Not Started	2028
Norco	Vampire Load Reduction	Portable B - P	18	Not Started	2028
Norco	Vampire Load Reduction	Industrial Tech - Q	20	Not Started	2028
Norco	Vampire Load Reduction	Ctr For Stu Success - S	23	Not Started	2028
Norco	Vampire Load Reduction	Operations - T	25	Not Started	2028
Norco	Vampire Load Reduction	Soccer Storage	36	Not Started	2028
Norco	Vampire Load Reduction	Veteran Resource Center	40	Not Started	2028
Norco	Roof Insulation	Portable A - P	17	Not Started	2030
Norco	Roof Insulation	Portable B - P	18	Not Started	2030
Norco	Wall Insulation	Portable A - P	17	Not Started	2030
Norco	Wall Insulation	Portable B - P	18	Not Started	2030
Norco	Glazing Upgrade	Science & Technology - B	2	Not Started	2030
Norco	Glazing Upgrade	Theater - C	3	Not Started	2030

2030

ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
Norco	Glazing Upgrade	Humanities - D	4	Not Started	2030
Norco	Glazing Upgrade	Library (Airey) - G	9	Not Started	2030
Norco	Glazing Upgrade	Applied Tech - N	10	Not Started	2030
Norco	Glazing Upgrade	Portable A - P	17	Not Started	2030
Norco	Glazing Upgrade	Portable B - P	18	Not Started	2030
Norco	Glazing Upgrade	Industrial Tech - Q	20	Not Started	2030
Norco	Vampire Load Reduction	Ctr. Applied & Comp Tech - K	13	Not Started	2028
MVC	Chiller Replacement	Ph 1 Mechanical - 9	5	Not Started	2025
MVC	Chiller Replacement	Ph 1 Mechanical - 9	5	Not Started	2025
MVC	Chiller Replacement	Ph 1 Mechanical - 9	5	Not Started	2025
MVC	Chiller Replacement	Humanities - 8	7	Not Started	2025
MVC	Boiler Replacement	Ph 2 Mechanical - 10	7	Not Started	2026
MVC	Boiler Replacement	Ph 2 Mechanical - 10	7	Not Started	2027
MVC	Vampire Load Reduction	Library - 1	1	Not Started	2028
MVC	Vampire Load Reduction	Student Services - 2	2	Not Started	2028
MVC	Vampire Load Reduction	Science & Technology - 3	3	Not Started	2028
MVC	Vampire Load Reduction	Humanities - 8	6	Not Started	2028
MVC	Vampire Load Reduction	Admin Annex - 16	9	Not Started	2028
MVC	Vampire Load Reduction	Student Activities Center - 5	11	Not Started	2028
MVC	Vampire Load Reduction	Student Academic Srvs. - 20	60	Not Started	2028
MVC	Vampire Load Reduction	Network Operations Ctr - 21	61	Not Started	2028
MVC	Glazing Upgrade	Library - 1	1	Not Started	2030
MVC	Glazing Upgrade	Student Services - 2	2	Not Started	2030
MVC	Glazing Upgrade	Science & Technology - 3	3	Not Started	2030
MVC	Glazing Upgrade	Humanities - 8	6	Not Started	2030
MVC	Glazing Upgrade	Student Activities Center - 5	11	Not Started	2030
MVC	Glazing Upgrade	Parkside Complex #05 Rr - 13	51	Not Started	2030
MVC	Glazing Upgrade	Parkside Complex #19 Rr - 13	52	Not Started	2030
MVC	Roof Insulation	Library - 1	1	Not Started	2030
MVC	Roof Insulation	Student Services - 2	2	Not Started	2030
MVC	Roof Insulation	Science & Technology - 3	3	Not Started	2030
MVC	Roof Insulation	Ph 1 Mechanical - 9	5	Not Started	2030

2030

ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
MVC	Roof Insulation	Ph 2 Mechanical - 10	7	Not Started	2030
MVC	Roof Insulation	Humanities - 8	6	Not Started	2030
MVC	Wall Insulation	Library - 1	1	Not Started	2030
MVC	Wall Insulation	Student Services - 2	2	Not Started	2030
MVC	Wall Insulation	Science & Technology - 3	3	Not Started	2030
MVC	Wall Insulation	Ph 1 Mechanical - 9	5	Not Started	2030
MVC	Wall Insulation	Ph 2 Mechanical - 10	7	Not Started	2030
MVC	Wall Insulation	Humanities - 8	6	Not Started	2030
MVC	Vampire Load Reduction	Early Childhood Ed Ctr - 18	13	Not Started	2028
MVC	Vampire Load Reduction	Dental Ed Center A - 19	53	Not Started	2028
MVC	Vampire Load Reduction	Dental Ed Center B - 19	54	Not Started	2028
MVC	Vampire Load Reduction	Dental Ed Center C - 19	55	Not Started	2028
RCC	Boiler Replacement	Aquatics Complex - 25	167	Not Started	2025
RCC	Boiler Replacement	Aquatics Complex - 25	167	Not Started	2025
RCC	Boiler Replacement	Culinary Arts Academy	198	Not Started	2025
RCC	Boiler Replacement	Culinary Arts Academy	198	Not Started	2025
RCC	Boiler Replacement	Gymnasium (Wheelock) - 20	3	Not Started	2025
RCC	Boiler Replacement	Math/Science Mech Bldg. - 12	168	Not Started	2026
RCC	Boiler Replacement	Math/Science Mech Bldg. - 12	168	Not Started	2026
RCC	Boiler Replacement	Math/Science Mech Bldg. - 12	168	Not Started	2026
RCC	Boiler Replacement	Mlk High Tech CNTR - 8	21	Not Started	2026
RCC	Boiler Replacement	Music Annex - 5A	196	Not Started	2026
RCC	Boiler Replacement	Quadrangle (Paul) - 3	1	Not Started	2027
RCC	Boiler Replacement	Quadrangle (Paul) - 3	1	Not Started	2027
RCC	Boiler Replacement	Stadium (Wheelock Field) - 21	2	Not Started	2027
RCC	Boiler Replacement	Student Srvs/Admin (Kane) - 2A	201	Not Started	2027
RCC	Boiler Replacement	Coil School Of Arts	200	Not Started	2027
RCC	Boiler Replacement	Coil School Of Arts	200	Not Started	2027
RCC	Boiler Replacement	Gymnasium (Wheelock) - 20	3	Not Started	2027
RCC	Chiller Replacement	Music Annex - 5A	196	Not Started	2026
RCC	Glazing Upgrade	Center Social Justice	136	Not Started	2030
RCC	Glazing Upgrade	Digital Library - 1	37	Not Started	2030

2030

ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
RCC	Glazing Upgrade	Gymnasium (Huntley) - 30	15	Not Started	2030
RCC	Glazing Upgrade	Mlk High Tech CNTR - 8	21	Not Started	2030
RCC	Glazing Upgrade	Quadrangle (Paul) - 3	1	Not Started	2030
RCC	Glazing Upgrade	Student Ctr (Bradshaw) - 13	24	Not Started	2030
RCC	Roof Insulation	Autotech Storage	220	Not Started	2030
RCC	Roof Insulation	Center Social Justice	136	Not Started	2030
RCC	Roof Insulation	Cutter Pool (Inactive)	19	Not Started	2030
RCC	Roof Insulation	Early Childhood Ed - 17	31	Not Started	2030
RCC	Roof Insulation	Early Childhood Mech - 17	209	Not Started	2030
RCC	Roof Insulation	Evans Sports CMPLX A Bsbl	161	Not Started	2030
RCC	Roof Insulation	Evans Sports CMPLX B Sfbl	162	Not Started	2030
RCC	Roof Insulation	Evans Sports CMPLX C Ltll	163	Not Started	2030
RCC	Roof Insulation	Evans Sports CMPLX D Grnd	164	Not Started	2030
RCC	Roof Insulation	Gymnasium (Wheelock) - 20	3	Not Started	2030
RCC	Roof Insulation	Life Science (Inactive)	20	Not Started	2030
RCC	Roof Insulation	Maintenance Pt Shop	5	Not Started	2030
RCC	Roof Insulation	Mlk High Tech CNTR - 8	21	Not Started	2030
RCC	Roof Insulation	Music Annex - 5A	196	Not Started	2030
RCC	Roof Insulation	Physical Science (Inactive)	22	Not Started	2030
RCC	Roof Insulation	Planetarium (Dixon) - 10	23	Not Started	2030
RCC	Roof Insulation	Portable 5	38	Not Started	2030
RCC	Roof Insulation	Quadrangle (Paul) - 3	1	Not Started	2030
RCC	Roof Insulation	Student Ctr (Bradshaw) - 13	24	Not Started	2030
RCC	Vampire Load Reduction	Aquatics Complex - 25	167	Not Started	2028
RCC	Vampire Load Reduction	Aquatics Complex Mech - 25	206	Not Started	2028
RCC	Vampire Load Reduction	Aquatics Complex Storage - 25	207	Not Started	2028
RCC	Vampire Load Reduction	Automotive Tech - 28	30	Not Started	2028
RCC	Vampire Load Reduction	Autotech Storage	220	Not Started	2028
RCC	Vampire Load Reduction	Center Social Justice	136	Not Started	2028
RCC	Vampire Load Reduction	Coil School Of Arts	200	Not Started	2028
RCC	Vampire Load Reduction	Culinary Arts Academy	198	Not Started	2028
RCC	Vampire Load Reduction	Cutter Pool (Inactive)	19	Not Started	2028

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ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
RCC	Vampire Load Reduction	Digital Library - 1	37	Not Started	2028
RCC	Vampire Load Reduction	Early Childhood Ed - 17	31	Not Started	2028
RCC	Vampire Load Reduction	Evans Sports CMPLX A Bsbl	161	Not Started	2028
RCC	Vampire Load Reduction	Evans Sports CMPLX B Sfbl	162	Not Started	2028
RCC	Vampire Load Reduction	Evans Sports CMPLX C Ltll	163	Not Started	2028
RCC	Vampire Load Reduction	Evans Sports CMPLX D Grnd	164	Not Started	2028
RCC	Vampire Load Reduction	Gymnasium (Wheelock) - 20	3	Not Started	2028
RCC	Vampire Load Reduction	Landis Annex - 7A	47	Not Started	2028
RCC	Vampire Load Reduction	Life Science (Inactive)	20	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #01 - 29	39	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #02 - 29	213	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #03 - 29	139	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #10 - 29	214	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #11 - 29	219	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #12 - 29	215	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #13 - 29	216	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #14 - 29	217	Not Started	2028
RCC	Vampire Load Reduction	Lovekin Complex #B1 - 29	212	Not Started	2028
RCC	Vampire Load Reduction	Maintenance Pt Shop	5	Not Started	2028
RCC	Vampire Load Reduction	Math & Science - 12	197	Not Started	2028
RCC	Vampire Load Reduction	Mlk High Tech CNTR - 8	21	Not Started	2028
RCC	Vampire Load Reduction	Mod@ 161 Bb (Evans)	185	Not Started	2028
RCC	Vampire Load Reduction	Mod@ 162 Sb (Evans)	186	Not Started	2028
RCC	Vampire Load Reduction	Music Annex - 5A	196	Not Started	2028
RCC	Vampire Load Reduction	Physical Science (Inactive)	22	Not Started	2028
RCC	Vampire Load Reduction	Pilates Studio (Crabtree) - 31	36	Not Started	2028
RCC	Vampire Load Reduction	Planetarium (Dixon) - 10	23	Not Started	2028
RCC	Vampire Load Reduction	Portable 5	38	Not Started	2028
RCC	Vampire Load Reduction	Quadrangle (Paul) - 3	1	Not Started	2028
RCC	Vampire Load Reduction	School Of Nursing - 11	211	Not Started	2028
RCC	Vampire Load Reduction	Stadium (Wheelock Field) - 21	2	Not Started	2028
RCC	Vampire Load Reduction	Student Ctr (Bradshaw) - 13	24	Not Started	2028

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ENERGY CONSERVATION MEASURE APPLICATION BY BUILDING - DISTRICT-WIDE

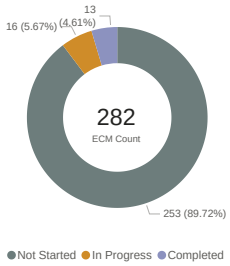
CAMPUS	ECM TYPE	PLANT LOCATION	BUILDING NUMBER	STATUS	YEAR
RCC	Vampire Load Reduction	Student Srvs/Admin (Kane) - 2A	201	Not Started	2028
RCC	Vampire Load Reduction	Viewpoints - 9	34	Not Started	2028
RCC	Vampire Load Reduction	North Hall (Inactive)	131	Not Started	2028
RCC	Vampire Load Reduction	College House (Inactive)	130	Not Started	2028
RCC	Vampire Load Reduction	Carriage House	138	Not Started	2028
RCC	Vampire Load Reduction	Alumni House	132	Not Started	2028
RCC	Vampire Load Reduction	Warehouse Annex B	25	Not Started	2028
RCC	Wall Insulation	Autotech Storage	220	Not Started	2030
RCC	Wall Insulation	Center Social Justice	136	Not Started	2030
RCC	Wall Insulation	Cutter Pool (Inactive)	19	Not Started	2030
RCC	Wall Insulation	Early Childhood Ed - 17	31	Not Started	2030
RCC	Wall Insulation	Early Childhood Mech - 17	209	Not Started	2030
RCC	Wall Insulation	Evans Sports CMPLX A Bsbl	161	Not Started	2030
RCC	Wall Insulation	Evans Sports CMPLX B Sfbl	162	Not Started	2030
RCC	Wall Insulation	Evans Sports CMPLX C Ltll	163	Not Started	2030
RCC	Wall Insulation	Evans Sports CMPLX D Grnd	164	Not Started	2030
RCC	Wall Insulation	Gymnasium (Wheelock) - 20	3	Not Started	2030
RCC	Wall Insulation	Life Science (Inactive)	20	Not Started	2030
RCC	Wall Insulation	Maintenance Pt Shop	5	Not Started	2030
RCC	Wall Insulation	Mlk High Tech CNTR - 8	21	Not Started	2030
RCC	Wall Insulation	Music Annex - 5A	196	Not Started	2030
RCC	Wall Insulation	Physical Science (Inactive)	22	Not Started	2030
RCC	Wall Insulation	Planetarium (Dixon) - 10	23	Not Started	2030
RCC	Wall Insulation	Portable 5	38	Not Started	2030
RCC	Wall Insulation	Quadrangle (Paul) - 3	1	Not Started	2030
RCC	Wall Insulation	Stadium (Wheelock Field) - 21	2	Not Started	2030
RCC	Wall Insulation	Student Ctr (Bradshaw) - 13	24	Not Started	2030
RCC	Wall Insulation	Cesar Chavez (Inactive) - 15	10	Not Started	2030
RCC	Wall Insulation	Facilities Maint. & Ops - 33	4	Not Started	2030
RCC	Wall Insulation	Technology B - 26	7	Not Started	2030
Norco	Daylight Harvesting	Science & Technology - B	2	Not Started	2030

IEMP Dashboard

ECM Implementation Status Tracking

Campus	Building Number	Plant Location	ECM Type	Implementation Year	Implementation Status
MVC	7	Humanities - 8	Boiler Replacement	2024	In Progress
MVC	60	Student Academic Srvs. - 20	Daylight Harvesting	2024	Completed
MVC	5	Ph 1 Mechanical - 9	Reduce Lighting Power Density	2024	Not Started
MVC	7	Ph 2 Mechanical - 10	Reduce Lighting Power Density	2024	Not Started
MVC	61	Network Operations Ctr - 21	Reduce Lighting Power Density	2024	Not Started
MVC	6	Humanities - 8	Variable Frequency Drive	2024	Not Started
MVC	5	Ph 1 Mechanical - 9	Boiler Replacement	2024	Not Started
MVC	5	Ph 1 Mechanical - 9	Boiler Replacement	2024	Not Started

ECM Implementation Status



Summary

Energy Conservation Measures (ECMS) are recommendations to reduce the energy used in buildings.

These **ECMs** can be as low cost to the owner as implementing controls, schedules, or occupancy sensors for lights, or major capital improvements such as whole HVAC replacement and Envelope Improvements.

For that reason, the **ECMs** have been Bundled into **Low**, **Medium**, and **High-Cost** categories to assist decision makers. Each **ECM** carries with it trade-offs in regard to their **Bundle**, the fuel type used, and the goals around **Green House Gas (GHG)** Reduction.

Note: Currently **Natural Gas** is currently less expensive than **Purchased Electricity**, but **Natural Gas** carries a higher **GHG Emission** value than **Purchased Electricity**. This will be a factor in selecting ECMs to meet the Goals outlined in the **IEMP** and **SCAP**.

Energy Conservation Measures (ECMs) - Information

ECM Type

- Boiler Replacement
- Building Energy Submetering
- Chiller Replacement
- Daylight Harvesting
- Glazing Upgrade
- Reduce Lighting Power Density
- Reduced Lighting Power Density
- Roof Insulation
- Vampire Load Reduction
- Variable Frequency Drive

ECM Benefits

- Boiler replacement will achieve heating efficiency improvements whilst switching from natural gas to electricity as a fuel source, which is a key step towards decarbonization.
- By installing smart power strips, waste energy due to leaving devices plugged in will be eliminated.
- By measuring energy usage at the building level, high and low energy intensity buildings can be identified. This will allow waste energy usage to be identfied, prioritized and eliminated.

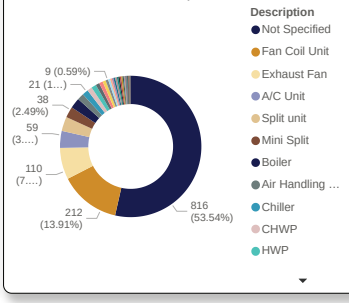
ECM Scope of Work

- Install 10 open loop daylight controls and necessary photocell sensors in spaces with windows to control multiple dimming zones arranged in relationship to the windows, adjusting each zone to maintain a consistent lighting level throughout the room
- Install 16 open loop daylight controls and necessary photocell sensors in spaces with windows to control multiple dimming zones arranged in relationship to the windows, adjusting each zone to maintain a consistent lighting level

Building Assets - Systems and Sub-Systems

Campus	Building Name	Bldg #	Asset Type	Description	Fuel Source	Make/Model #	Serial #
MVC	Library - 1	1	Lighting	Not Specif…	Electricity	Not Specif…	Not Specified
Lighting (Asset Type)							
RCC	QUADRAN…	1	Air	A/C Unit	Electricity	Fujitsu/AO…	CWN001354
Air (Asset Type)							
RCC	QUADRAN…	1	Air	A/C Unit	Electricity	Fujitsu/AO…	CWN001355
Air (Asset Type)							
RCC	QUADRAN…	1	Water	Boiler	Natural Gas	Raypak H9…	204194224
Water (Asset Type)							

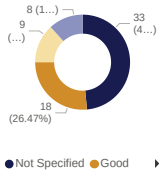
Asset Count and Descritption



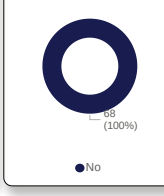
Building Overview

Campus	Building Name	Daylight Harvesting	Envelope Condition	Glazing Condition	Roof	Vacancy/Occupancy…
MVC	Admin Anne…	No	Poor	Not Specified	Not Specified	Yes
MVC	Humanities - 8	No	Good	Good	No Insulation	Yes
MVC	Library - 1	No	Good	Good	No Insulation	Yes
MVC	Network Ope…	No	Excellent	Not Specified	Not Specified	Yes
MVC	Ph 1 Mechan…	No	Good	Not Specified	No Insulation	Yes

Envelope Condition

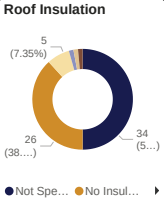


Daylight Harvesting

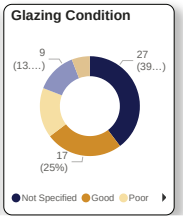


Campus	Building Name	Envelope	Glazing	Last Renovation	Lighting Type	Year Built
MVC	Admin Anne…	Not Specified	Double pane…	Not Specified	LED	2002
MVC	Humanities - 8	No Insulation	Single pane …	Not Specified	LED	1995
MVC	Library - 1	No Insulation	Single pane …	Not Specified	LED	1991
MVC	Network Ope…	Not Specified	Not Specified	Not Specified	Not Specified	2015
MVC	Ph 1 Mechan…	No Insulation	NA	Not Specified	Florescent	1991

Roof Insulation



Glazing Condition



ECM Status Filter

ECM Status: All

Asset Filter

Asset Type: All

Description: All

Make/Mod…: All

Serial #: All

Overview Filter

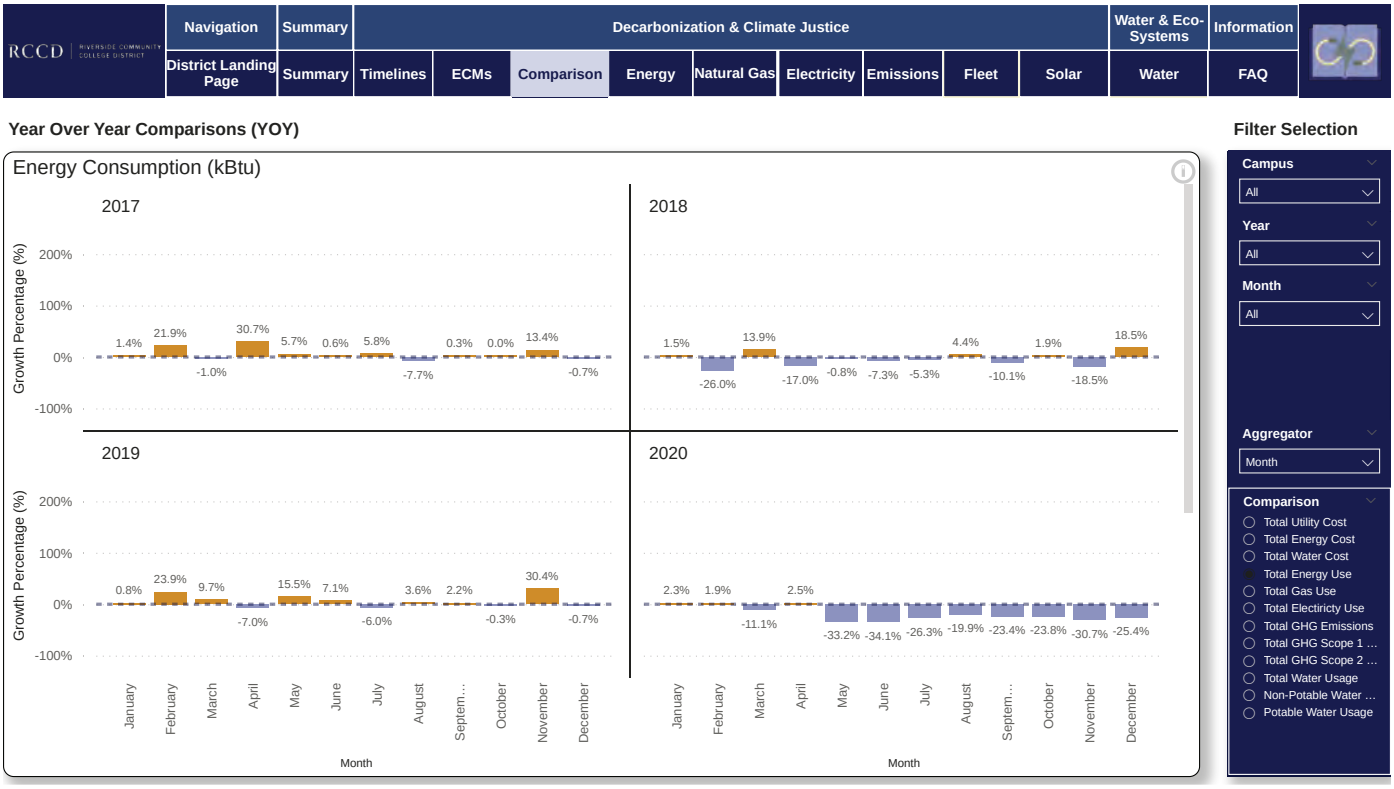
Roof: All

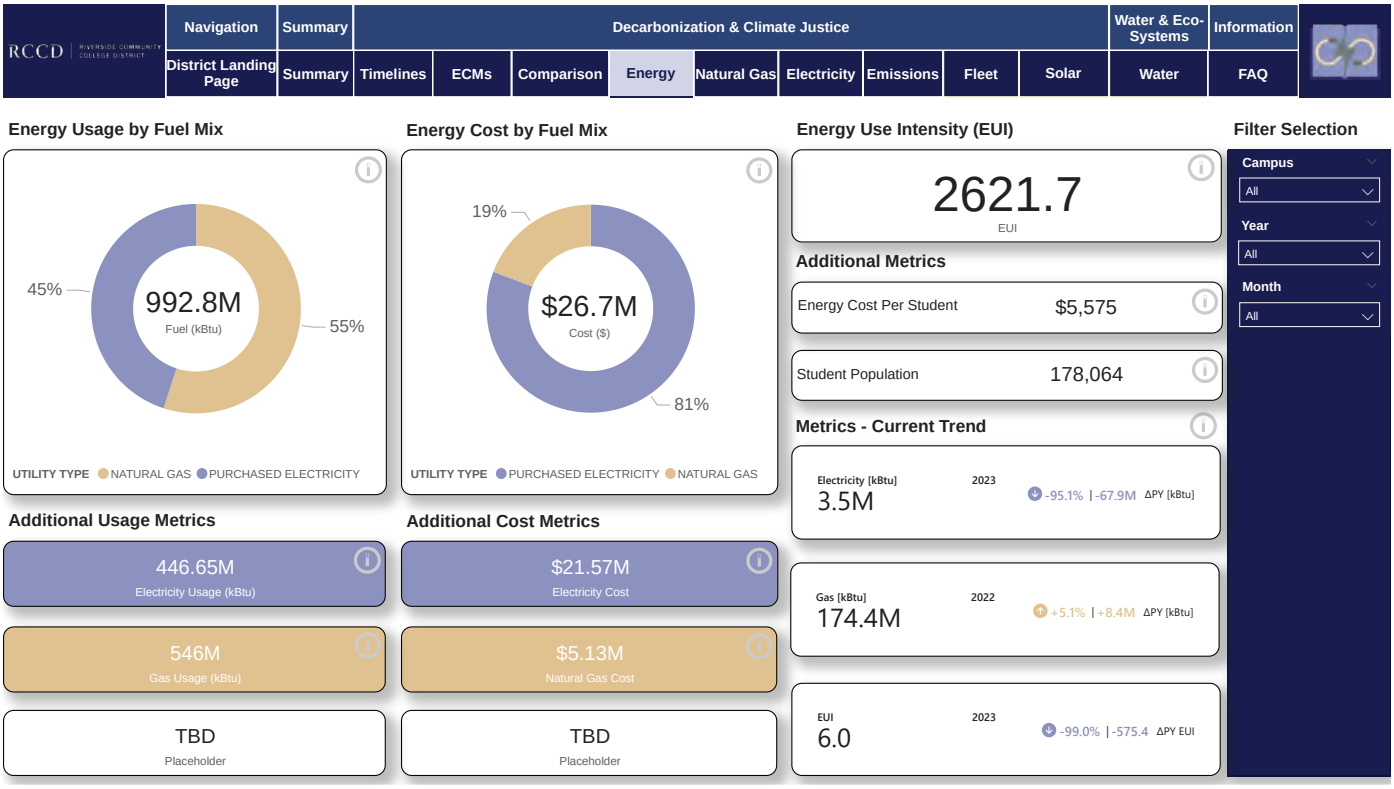
Glazing C…: All

Daylight H…: All

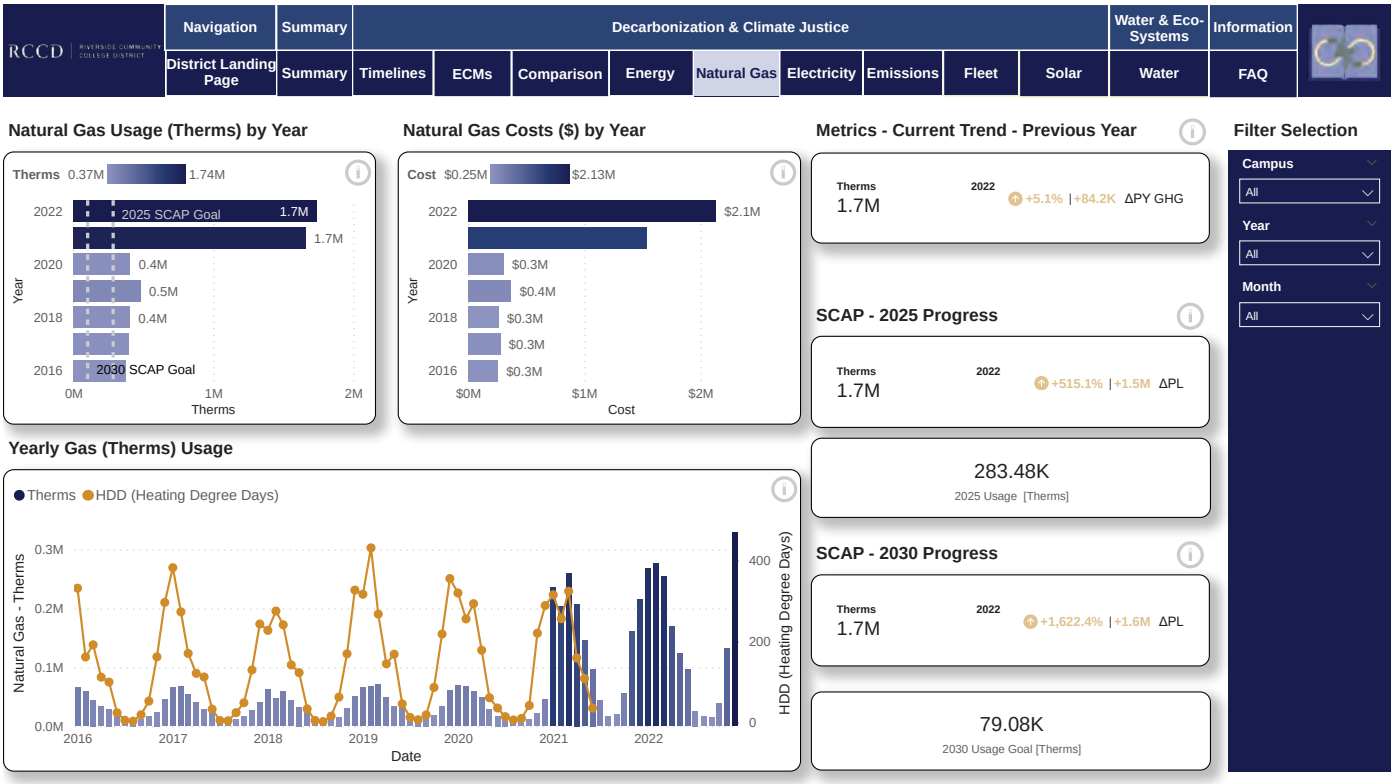
Envelope …: All

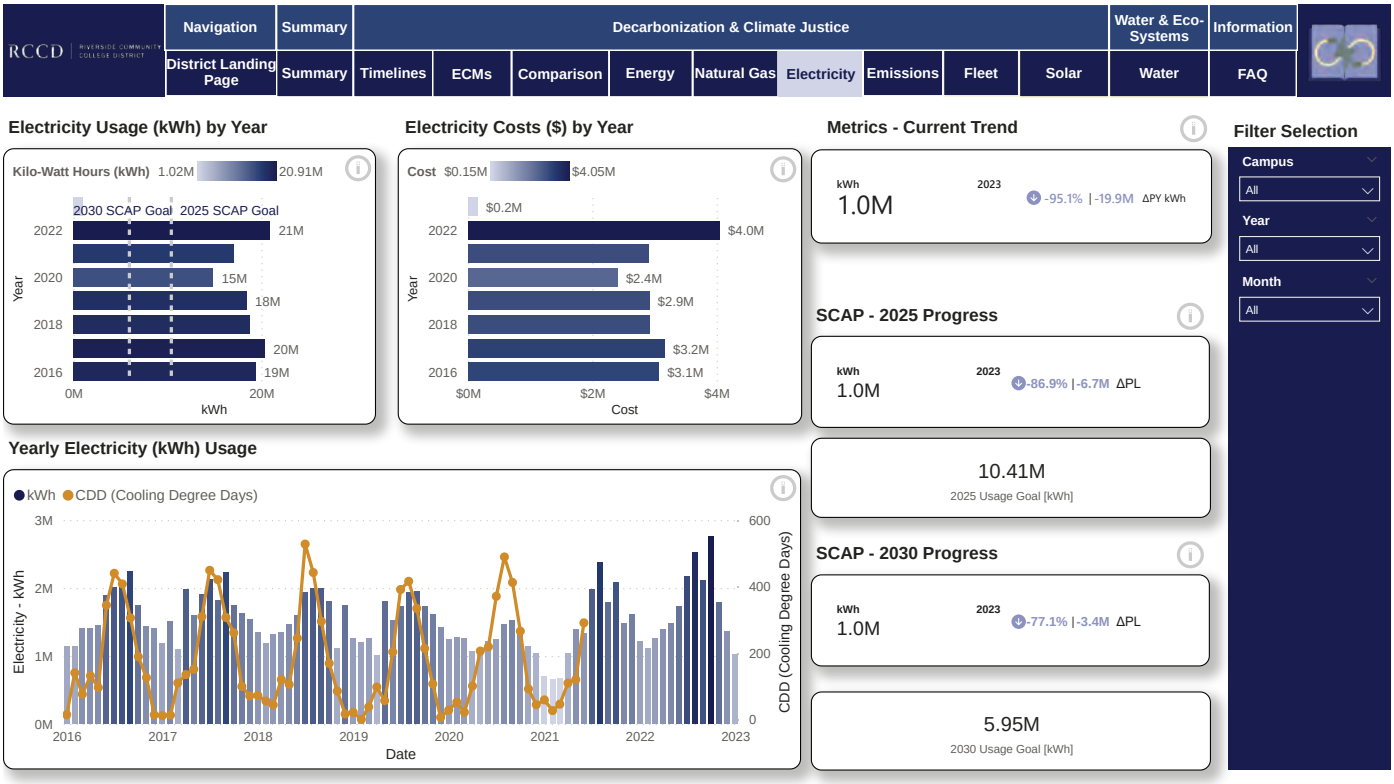
IEMP Dashboard




RCCD
Navigation
Summary
Decarbonization & Climate Justice
Water & Eco-Systems
Information
District Landing Page
Summary
Timelines
ECMs
Comparison
Energy
Natural Gas
Electricity
Emissions
Fleet
Solar
Water
FAQ
Energy Usage by Fuel Mix
45%
992.8M
Fuel (kBtu)
55%
UTILITY TYPE NATURAL GAS PURCHASED ELECTRICITY
Energy Cost by Fuel Mix
19%
$26.7M
Cost ($)
81%
UTILITY TYPE PURCHASED ELECTRICITY NATURAL GAS
Energy Use Intensity (EUI)
2621.7
EUI
Additional Metrics
Energy Cost Per Student
$5,575
Student Population
178,064
Metrics - Current Trend
Electricity [kBtu]
3.5M
2023
-95.1% | -67.9M ΔPY [kBtu]
Gas [kBtu]
174.4M
2022
+5.1% | +8.4M ΔPY [kBtu]
EUI
6.0
2023
-99.0% | -575.4 ΔPY EUI
Filter Selection
Campus
All
Year
All
Month
All
Additional Usage Metrics
446.65M
Electricity Usage (kBtu)
546M
Gas Usage (kBtu)
TBD
Placeholder
Additional Cost Metrics
$21.57M
Electricity Cost
$5.13M
Natural Gas Cost
TBD
Placeholder

IEMP Dashboard




RCCD
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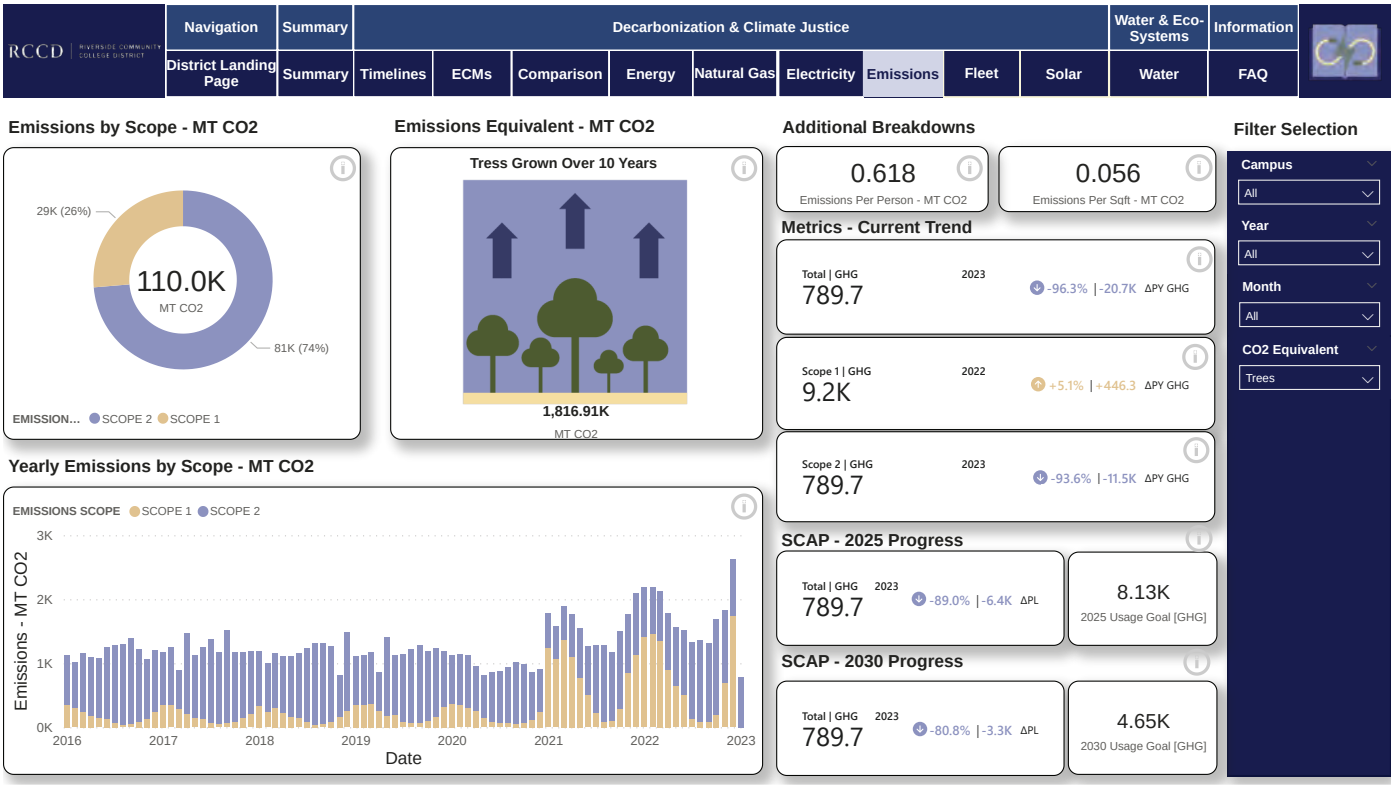
Solar
Water
FAQ
Electricity Usage (kWh) by Year
Kilo-Watt Hours (kWh) 1.02M 20.91M
2030 SCAP Goal
2025 SCAP Goal
2022 21M
2020 15M
2018 18M
2016 19M
20M
Year
0M
20M
kWh
Electricity Costs ($) by Year
Cost $0.15M $4.05M
$0.2M
2022 $4.0M
2020 $2.4M
$2.9M
2018 $3.2M
2016 $3.1M
Year
$0M
$2M
$4M
Cost
Metrics - Current Trend
kWh
1.0M
2023
-95.1% | -19.9M ΔPY kWh
Filter Selection
Campus
All
Year
All
Month
All
SCAP - 2025 Progress
kWh
1.0M
2023
-86.9% | -6.7M ΔPL
10.41M
2025 Usage Goal [kWh]
SCAP - 2030 Progress
kWh
1.0M
2023
-77.1% | -3.4M ΔPL
5.95M
2030 Usage Goal [kWh]
Yearly Electricity (kWh) Usage
kWh
CDD (Cooling Degree Days)
3M
2M
1M
0M
Electricity - kWh
600
400
200
0
CDD (Cooling Degree Days)
2016
2017
2018
2019
2020
2021
2022
2023
Date

IEMP Dashboard



RCCD
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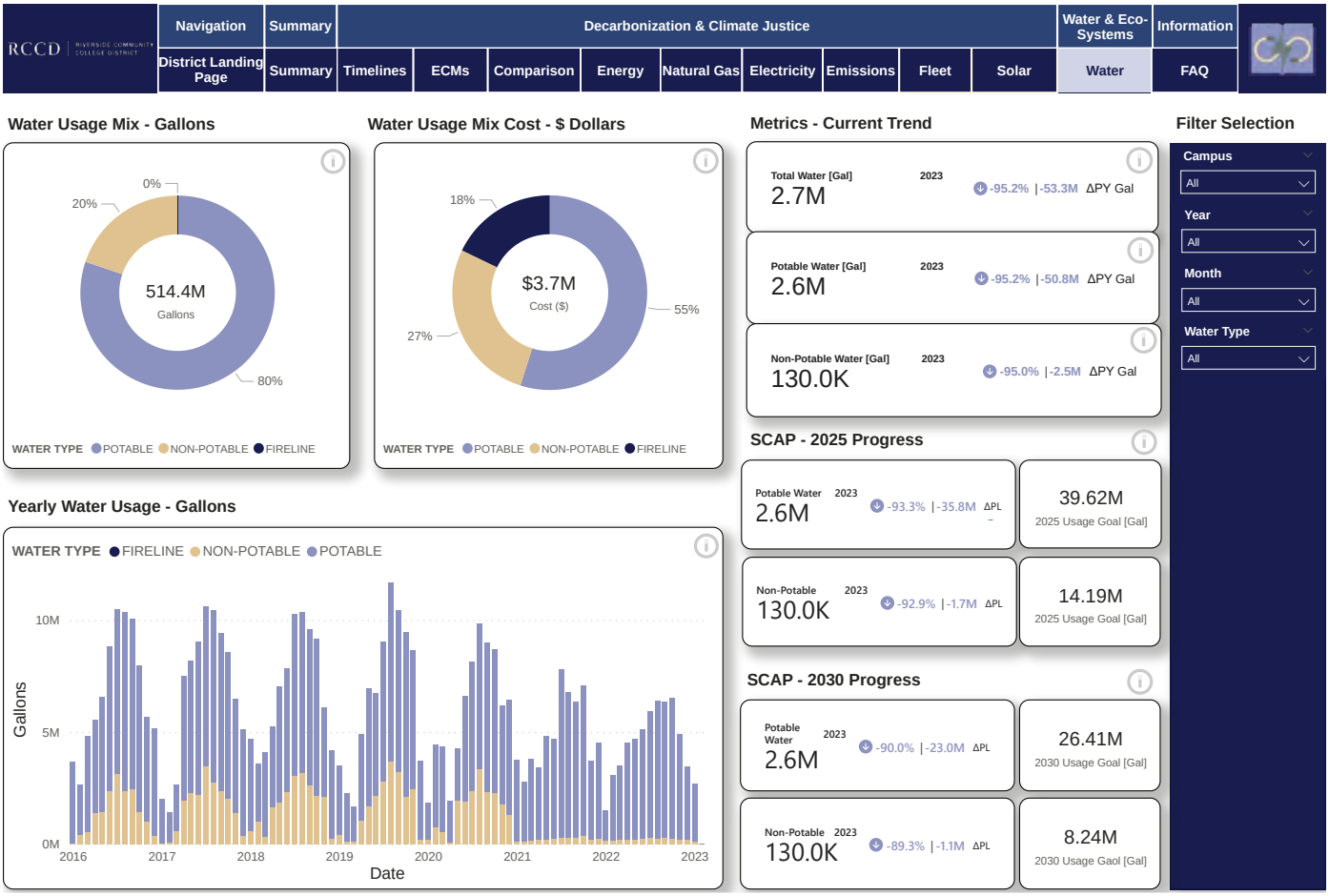
Timelines
ECMs
Comparison
Energy
Natural Gas
Electricity
Emissions
Fleet
Solar
Water
FAQ
Fleet Ratio by Vehicle Fuel Type
4%
135
Fleet Count
48%
45%
Fuel Type Electric Gasoline Diesel LPG
Fleet Ratio by Age Group
17%
40%
17%
26%
Age Group 11-20 6-10 0-5 21+
Additional Fleet Information
Arctic CAT 4X4
Make & Model
39771
Vehicle Number
Facilities
Department
Gasoline
Fuel Type
Scope I
Carbon Emission…
14
Age
Filter Selection
Campus
All
Fuel Type
All
Department
All
Make & Model
All
Age Group
All
Year
1990
2030
Metrics - Current Trend
Electrical Fleet Qty
2022
65.0
+1.6% | +1.0 ΔPY EV
Emissions Fleet Qty
2022
70.0
-68.9% | -155.0 ΔPY EM
Fleet Growth by Year and Fuel Type
Fuel Type Electric Emissions
Sum of Ru…
1990
1995
2000
2005
2010
2015
2020
SCAP Ratios for Fleet Vehicles
EV Ratio
2022
48.1%
+117.4% | +26.0pp ΔPY EV
EM Ratio
2022
51.9%
-33.4% | -26.0pp ΔPY EM
Fleet Additions by Year and Fuel Type
Fuel Type Diesel Electric Gasoline LPG
Fleet Total
Date
1995
2000
2005
2010
2015
2020

IEMP Dashboard



04

TOTAL COST OF OWNERSHIP MODEL

TOTAL COST OF OWNERSHIP

TCO is a tool to holistically understand the true cost of ownership of any asset or investment as it takes into account not only the initial capital costs required but the long term operations costs, including human resources, renewal, and replacements costs, as well as the end-of-useful life costs associated with demolition, and resale. As part of data gathering for S-CAP, DLR Group also collected data on maintenance budgets, operations, maintenance personnel, and long-term capital planning projects to understand the total cost of ownership for the District.

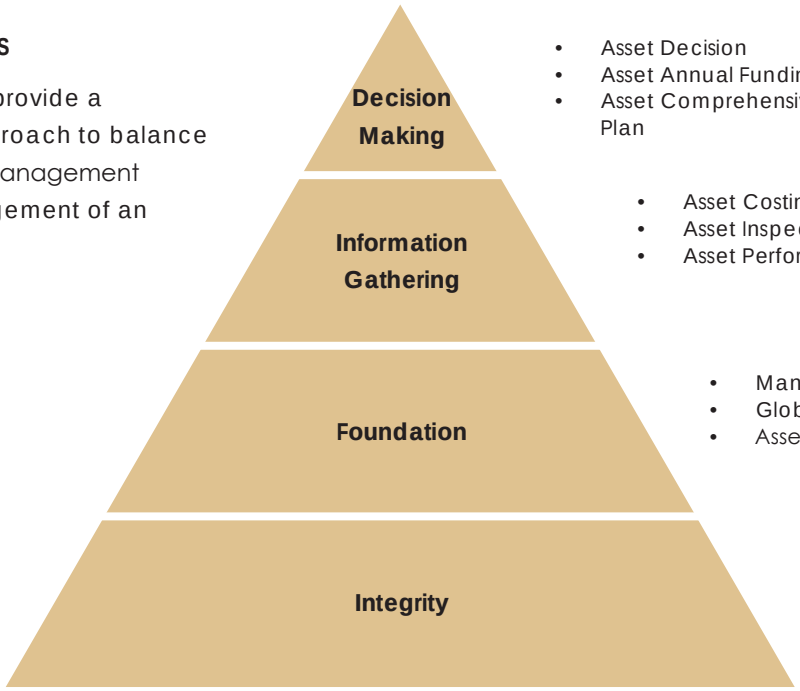
Implementing a holistic TCO model supports college accreditation efforts and future Bond Measures. Hence, the TCO model is intended to support the District with planning for new construction, existing building maintenance, infrastructure needs, and academic program and policy planning. The model also should offer historical and projected costs on all aspects of one-time and ongoing expenditures related to any planning decision and benchmark data from peer institutions.

As a first step, DLR Group collated existing efforts around TCO between the three colleges and identified similarities and differences in their approach, focus, and application. Then to develop a holistic approach to TCO, a framework from APPA-Leadership in Education Facilities was used. Next, APPA's 13 key principles to the TCO framework were adapted to District's preferences and practices through several conversations with key stakeholders such as the VP of Business Services; facilities directors; operations and maintenance directors at each college, and District capital planning leaders, which led to the development of an overarching Goal and objectives for the TCO model.

It is important to recognize the TCO model does not address current inefficiencies. Course and Lab scheduling impact the utilization of space. The expansion of the scheduling window will result in better use of space. In addition, Guided Pathways lays out the goal that each student completes their degree in two-years. As RCCD is working to implement Guided Pathways and put each student on a two-year pathway to degree completion, a significant amount of resources will be required including but not limited to physical space, staff, and faculty.

TCO PRINCIPLES

TCO Principles that provide a comprehensive approach to balance both the financial management and facilities management of an organization.



TCO GOAL:

Develop a comprehensive and consistent TCO model for all facility planning needs at RCCD

Objective #1: Use ONE consistent TCO model across the District.

Objective #2: Develop a flexible TCO model to address various cost management and planning needs such as capital planning, deferred maintenance, program, and policy management.

Objective #3: To predict future costs with reasonable confidence, use a historical baseline of actual costs and industry averages.

PLANNING - 5-10+ YEAR TCO

Capital Planning

TCO = IAC + OM + UTL + (Optional ESS budget)

Deferred Maintenance Planning

TCO = OM + UTL + REN + EUL

APPA BENCHMARK | **HISTORICAL AVERAGE** | **S-CAP TARGET ACHIEVEMENT**

NEW ASSETS - UNDER 5 YEAR TCO

New Building, Major Renovation

TCO = IAC + OM + UTL + UEL + ESS

APPA BENCHMARK | **HISTORICAL AVERAGE**

S-CAP TARGET ACHIEVEMENT | **CUSTOM TCO BUDGET**

EXISTING ASSETS - ANNUAL TCO

Operational Needs

TCO = OM + UTL

APPA BENCHMARK | **HISTORICAL AVERAGE**

Objective #4: Inform decision-making across the institutional committees.

Objective #5: Justify resource needs and level of services. DLR Group developed an online application to access the TCO model and interact with it using the TCO framework adapted from APPA. A user experience and user story mapping process with key stakeholders led to the development of the TCO App. The TCO App consists of three TCO models that follow the APPA TCO guidelines as the framework:

i. Existing Assets: This model will focus on holistic operations and maintenance of all the existing assets.

ii. New Assets: This model will focus on TCO considerations specifically for ONE new asset during planning for the asset and include APPA benchmarks for reference.

iii. Planning: This model will focus on near-term, mid-term, and long-term planning needs for the District and each campus by providing holistic TCO for current and future assets allowing the District to make informed planning decisions.

DLR Group proposed a custom formula for calculating TCO based on APPA guidelines and best practices from RCC's TCO spreadsheet/calculator, which was then modified to support District's preferences as listed below.

TCO Formula for New Assets:

i.TCO = IAC + OM + UTL + REN + EUL + ESS

TCO Formula for Existing Assets:

i.TCO = OM + UTL + REN + EUL where,

1. *TCO – Total Cost of Ownership of any asset (annualized costs)*
2. *IAC – Initial Asset Cost (one time cost)*
3. *OM – Operations and Maintenance Cost (annually recurring cost)*
4. *REN – Renewal Cost (periodic cost, annualized)*
5. *EUL – End of Useful Life Cost (one time cost, annualized)*
6. *ESS – Equipment, Supplies, and Services Cost (one*

TCO NEW ASSET MODEL

This model will enable the District to make the most informed planning decisions around any new asset. It offers the user benchmarking data from existing assets across the District and APPA standards for different components of the TCO formula. In addition, the model will also show the TCO if this new asset where to the S-CAP targets established by the timeline. Based on these three reference points, this model then allows the users to set a budget that is appropriate for new asset planning purpose. The user of this TCO Model within the TCO App will be able to create a new asset, print a summary, and share it with interested stakeholders to support various planning decisions.

TCO EXISTING ASSET MODEL

The Existing Asset Model forms the foundation of the other two models. This model will show the inventory of assets that the District owns and the related TCO of each asset. In this model, users can also understand the asset detail as it relates to deficiencies identified and corrective actions recommended per the Facility Condition Assessment (FCA) along with the raw cost of the correction. The model then brings this deficiency cost to value of money at the time of anticipated repairs and renewals using an assumed escalation rate. The existing asset model not only shows the annual recurring total costs but also the future anticipated costs as it relates to repairs/renewals and end of useful life costs. The asset detail also provides the IEMP opportunity as far as energy or water conservation measures identified and their total cost and anticipated savings.

This model will include the data gathered from the S-CAP and IEMP efforts related to major equipment and its conditions. This is a result of a desire for the District to achieve between "basic" and "mid level" of TCO maturity per APPA's guidelines.

TCO CAPITAL PLANNING MODEL

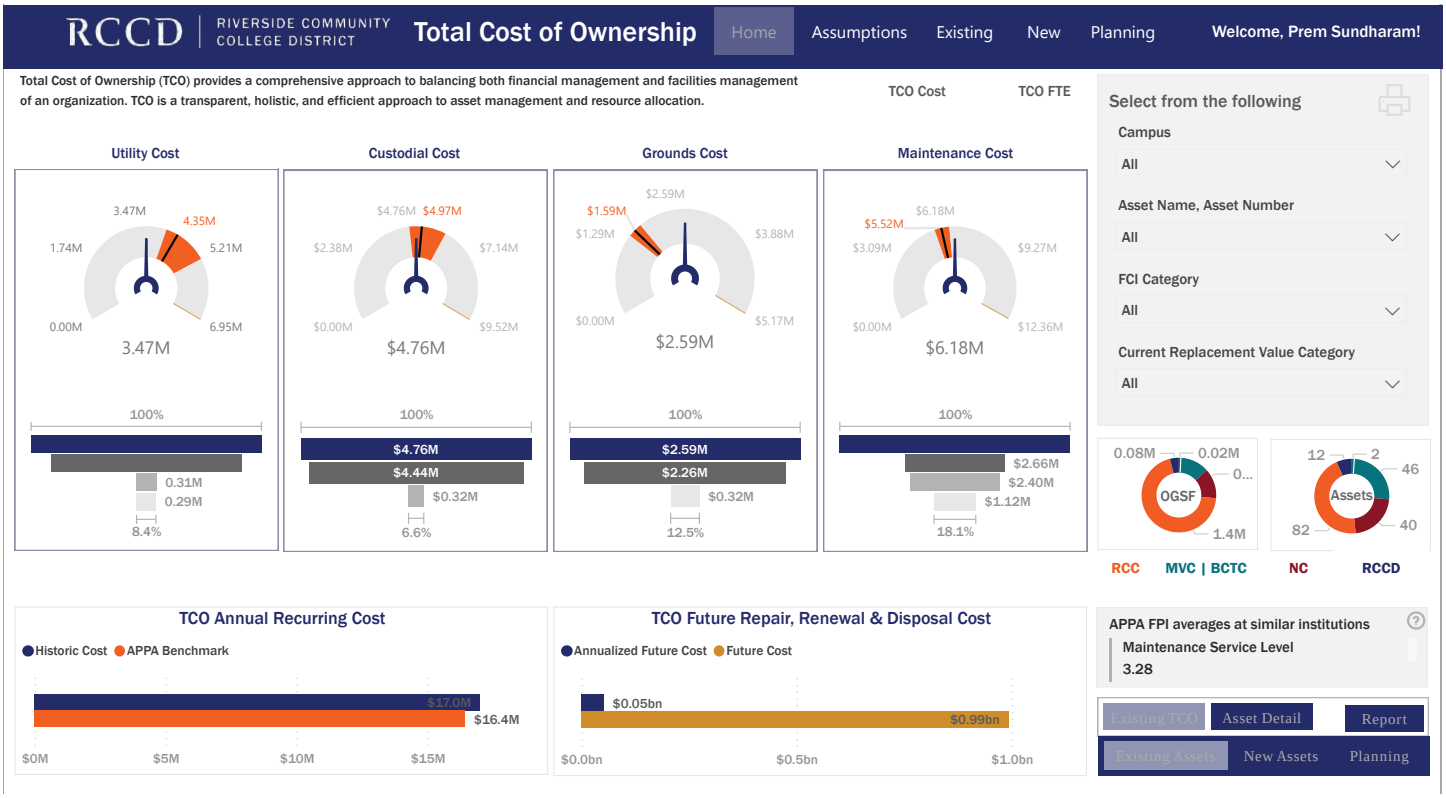
This model consists of capital planning for all new construction and major renovation, as well as deferred maintenance planning. To prioritize deferred maintenance, a criticality level of each asset by the FCI and the TCO was established. The criticality level then allows the district to make informed decisions on whether to sustain, divert, or continuously improve existing assets.

The capital planning model is very similar to the new asset model (see below) expect for the custom TCO budgeting aspect. The intent here is to provide a rough order of magnitude of impact on the TCO when capital planning projects are considered over a long period of time. The model captures information from the College Facility Master Plans.

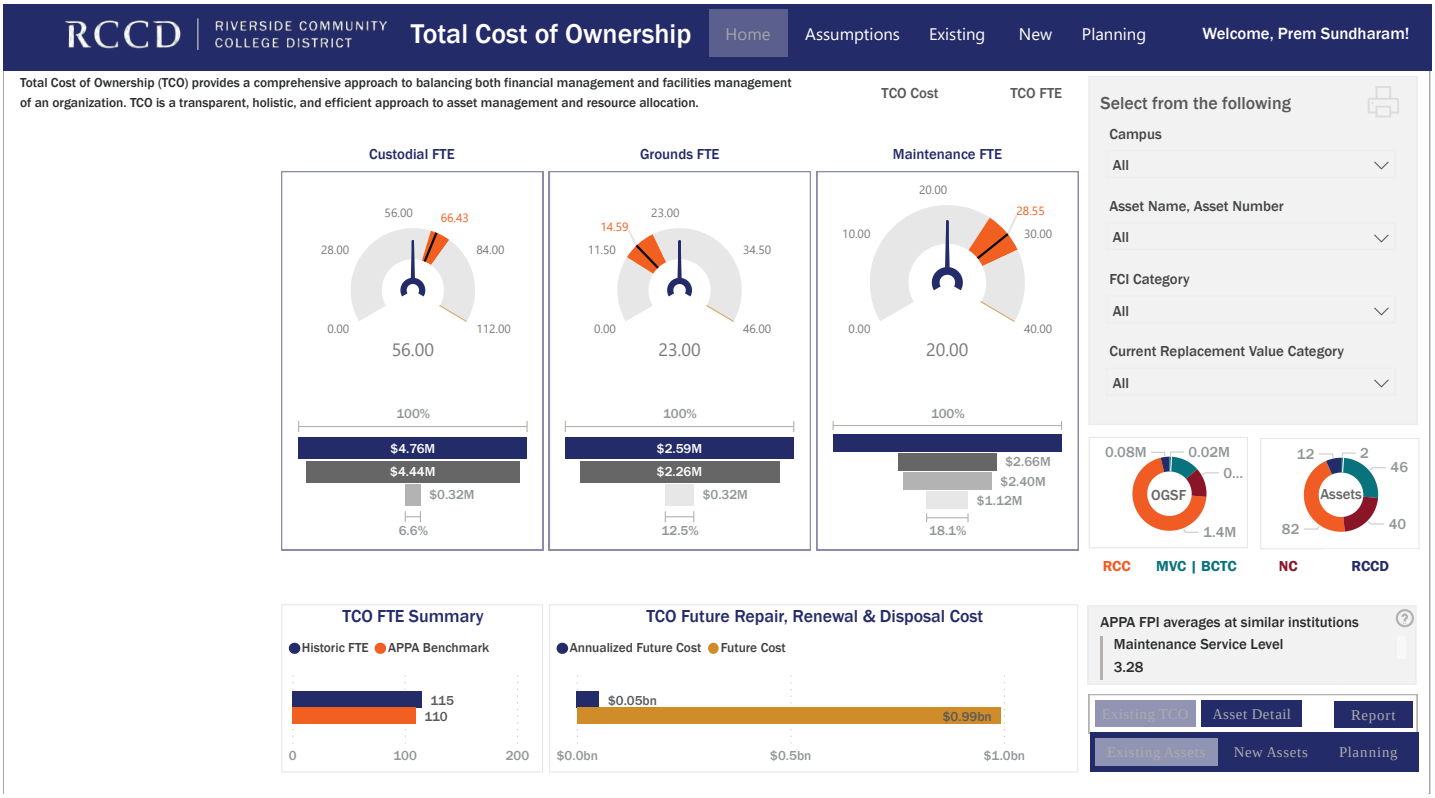
- Work Hours / Human Power Needs
- Materials / Supplies Needs
- Equipment / Tools Needs
- Systems / Process Needs
- Energy & Utilities Plan

- Additions
- Additional Buildings / Facilities
- Space Plan
- Property Expansion

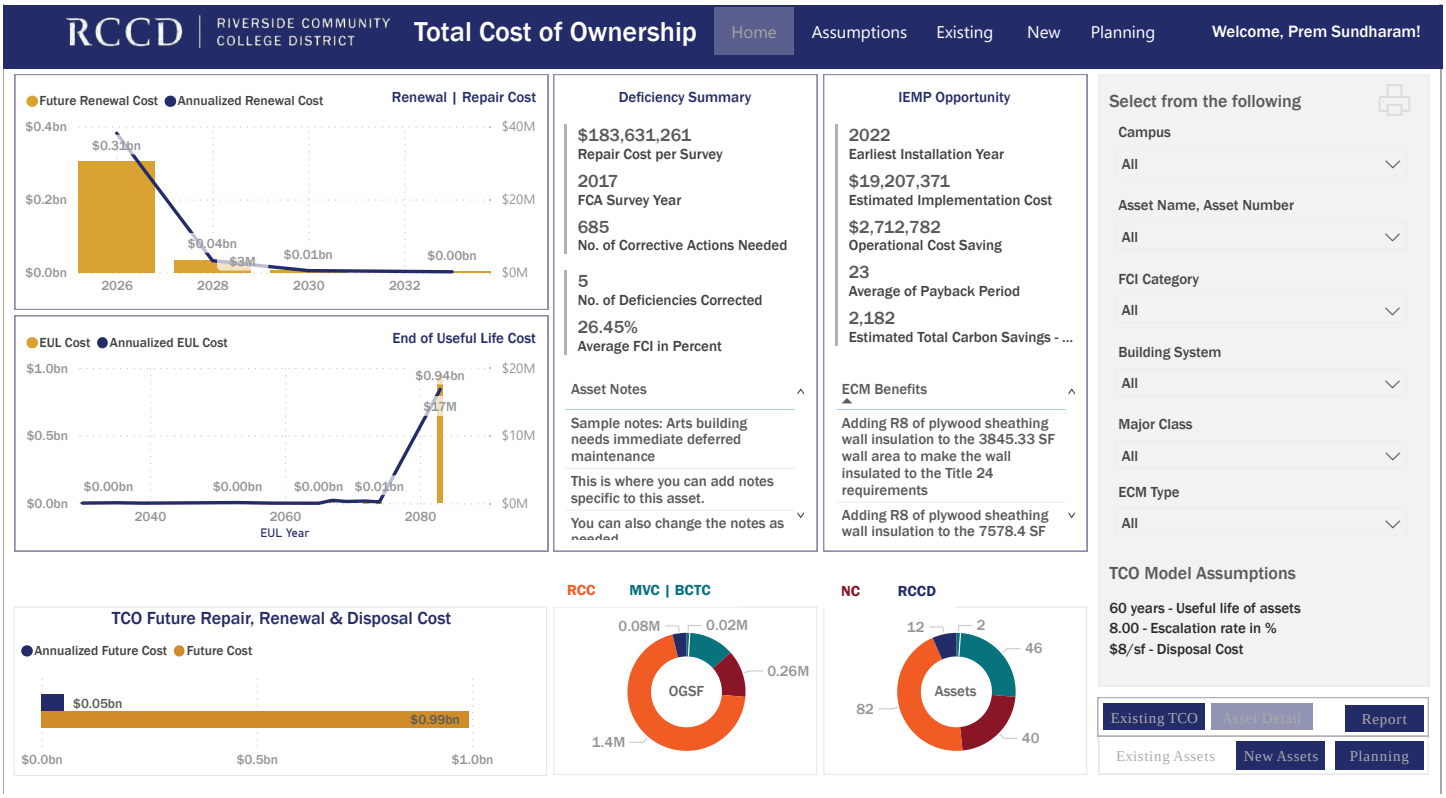
- Retrofit Project
- Improvement Projects
- Capital Renewal / Replacement
- Life-cycle Plan



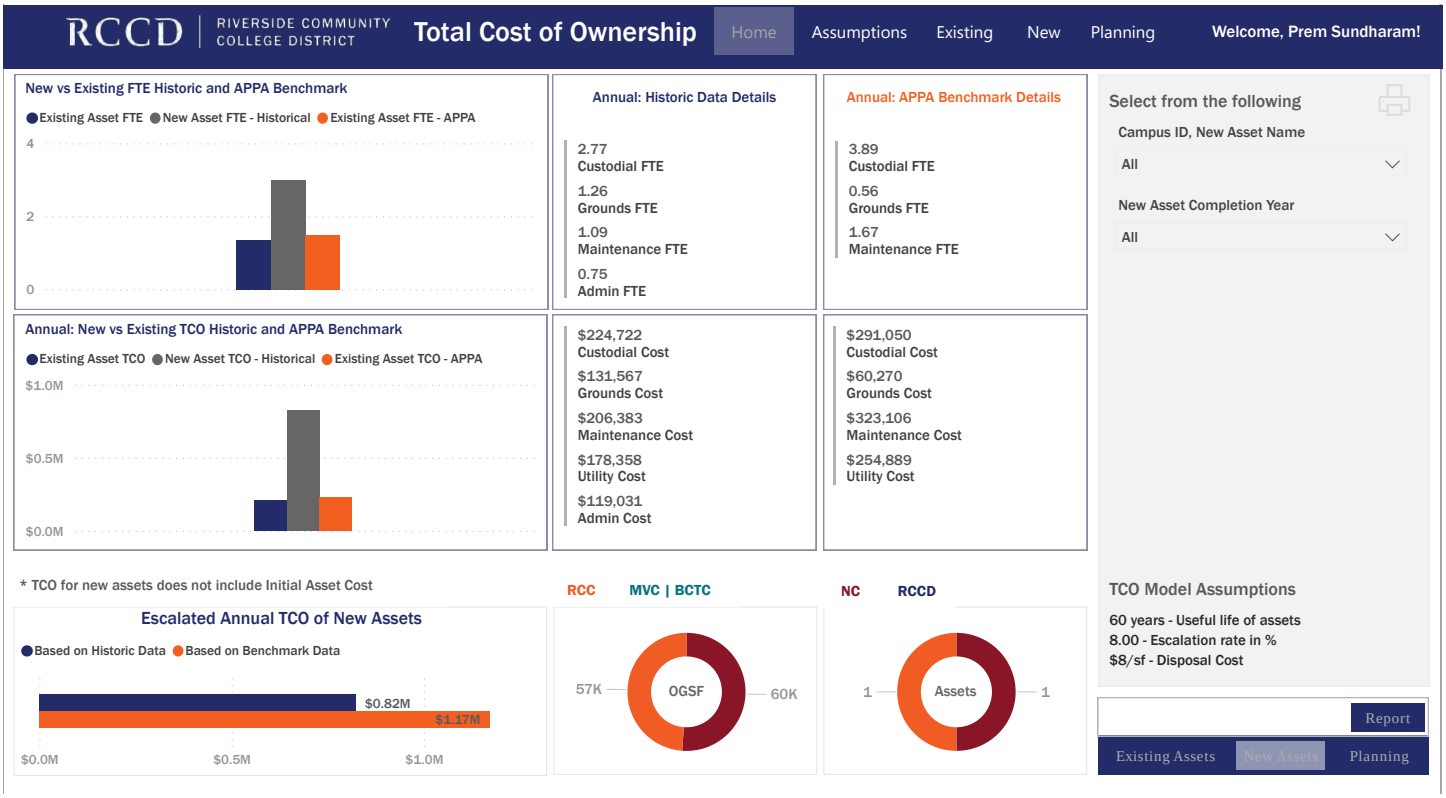
TCO EXISTING ASSET MODEL SHOWING THE ANNUAL REOCCURRING COST BROKEN INTO UTILITY COST, CUSTODIAL COST, GROUNDS COST, AND MAINTENANCE COST. THIS VIEW OF THE TCO APP ALSO SHOWS THE RELATIVE RANGE AND AVERAGE LEVEL OF EXPENSES BASED ON THE LAST FIVE YEARS OF DATA FROM APPA PACIFIC COAST REGION SPECIFIC TO COMMUNITY COLLEGES.



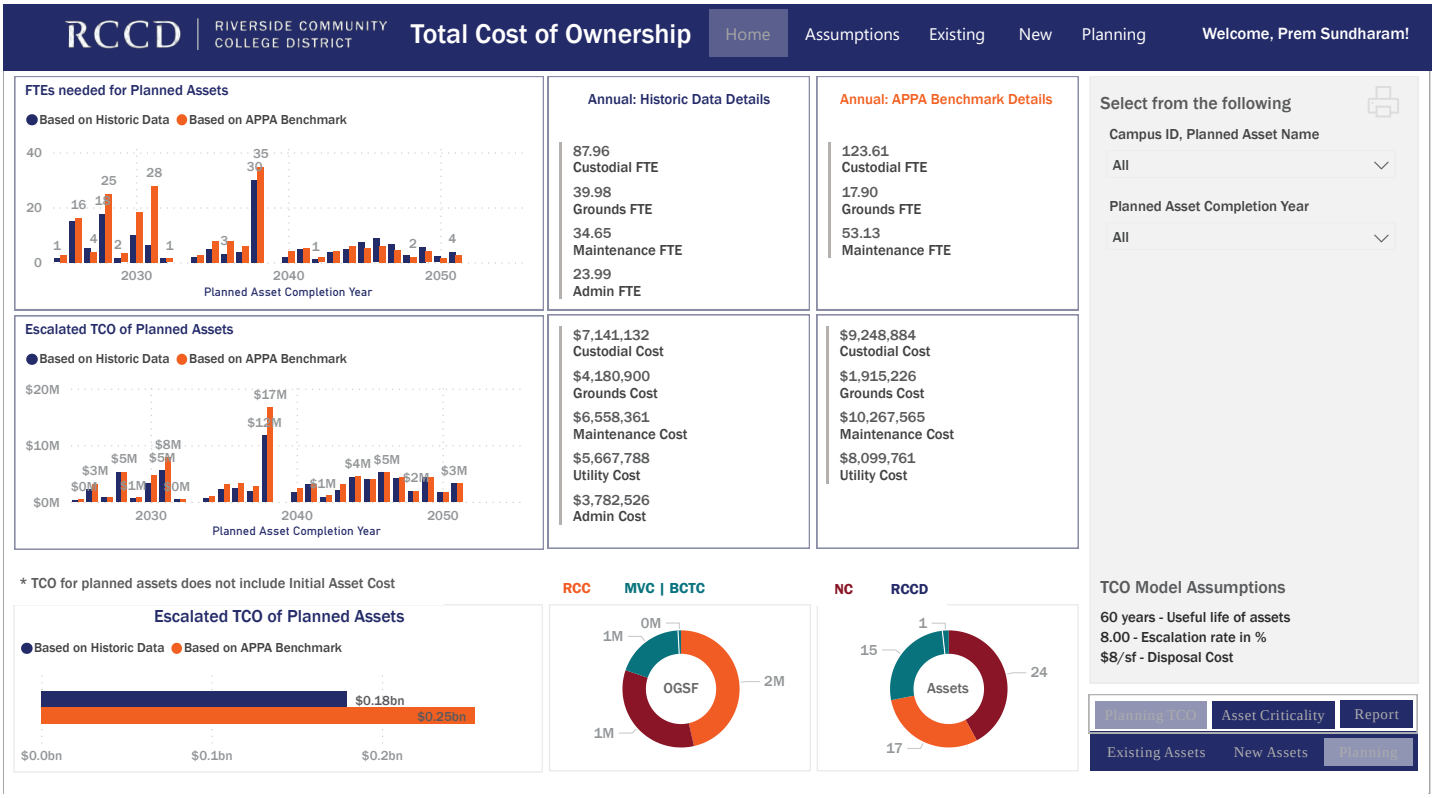
TCO EXISTING ASSET MODEL SHOWING THE PERSONNEL FOR CUSTODIAL, GROUNDS, AND MAINTENANCE. THIS VIEW OF THE TCO APP ALSO SHOWS THE RELATIVE RANGE AND AVERAGE LEVEL OF PERSONNEL BASED ON THE LAST FIVE YEARS OF DATA FROM APPA PACIFIC COAST REGION SPECIFIC TO COMMUNITY COLLEGES.



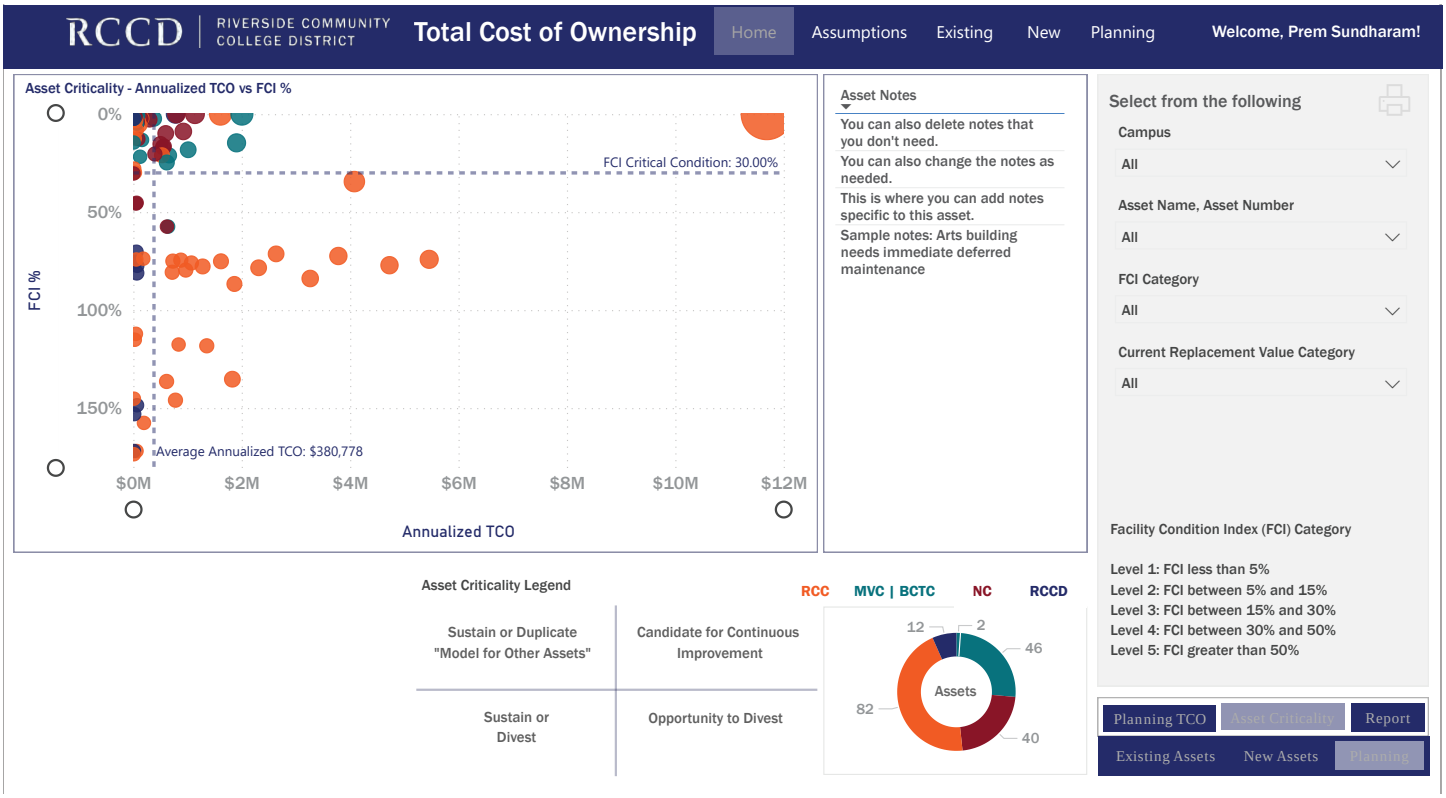
TCO EXISTING ASSET MODEL SHOWING THE FUTURE COSTS ANTICIPATED FOR REPAIR/RENEWALS AS WELL AS FOR END OF LIFE DISPOSAL COSTS. THIS VIEW OF THE TCO APP ALSO SHOWS THE DEFICIENCIES IDENTIFIED PER ASSET AND THE OPPORTUNITY IDENTIFIED THROUGH THE IEMP.



TCO NEW ASSET MODEL SHOWING THE ANNUAL TCO FOR BUILDING ASSETS UNDER CONSTRUCTION AND THE ANTICIPATED PERSONNEL NEEDED VS TCO COST AND PERSONNEL PER THE APPA BENCHMARK.



TCO PLANNING MODEL SHOWING THE PLANNED ASSETS PER THE DISTRICT'S PRIORITIZED BUILDINGS IN THE CAPITAL PLAN. THIS VIEW ALSO SHOWS THE PERSONNEL AND TCO COSTS BASED ON HISTORICAL SPENDING AS WELL AS AGAINST THE APPA BENCHMARK.



TCO PLANNING MODEL SHOWING THE EXISTING BUILDING ASSETS' CRITICALITY TOWARD REPURPOSING OR RENOVATION BASED ON THE FACILITY CONDITIONS INDEX AND THE ANNUALIZED TCO. THIS VIEW OF THE TCO APP INFORMS THE DISTRICT'S PLANNING PRIORITIES AS BUILDING ASSETS THAT NEED TO BE DISPOSED, MAINTAINED AS IS, IMPROVED UPON OR USED A CASE STUDY TO REPLICATE CAN BE IDENTIFIED.

LINK TO DASH-BOARD

05

APPENDIX

Acknowledgments

DISTRICT SUSTAINABILITY COMMITTEE

District Office

- Hussain Agah - Associate Vice Chancellor
- Mehran Mohtasham - Director, Capital Planning
- Bart Doering - Director, Facilities Development
- Myra Nava - Facilities Planning Specialist

Moreno Valley College

- Fabian Biancardi - Professor, Political Science
- Kemari Wofford - Student Representative
- Majd Askar - Vice President, Business Services
- Ron Kirkpatrick - Director, Facilities M&O
- Laurie Crouse - Administrative Assistant

Norco College

- Maxwell Murphey - Associate Faculty, Philosophy
- Isaac Nunez - Student Representative
- Michael Collins - Vice President, Business Services
- Travonne Bell - Director, Facilities M&O
- Jeff Buch - General Mechanics, Facilities Maintenance

Riverside City College

- Garth Schultz - Associate Professor, Counseling
- Tonya Huff - Professor, Biology & Life Science
- Jordyn Villanueva - Student Representative
- Albert Jaramillo - Student Representative
- Daniel Villanueva - (Interim) Vice President, Business Services
- Robert Beebe - Director, Facilities M&O
- Peter Lomas - Electrician, Facilities Maintenance

References and Resources

The Sustainability and Climate Action Plan references content from existing planning resources developed for Riverside Community College District and its colleges. The list below credits these resources and additional external content that reinforces the impact areas, the Goals and their objectives.

Introduction

RCCD Resources:
Riverside Community College District Strategic Plan, 2019-2024
Riverside City College, Facilities Master Plan, 2018
Norco College, Facilities Master Plan, February 2020
Moreno Valley College, Comprehensive Master Plan, February 2020
Outside Resources:
Second Nature, Climate Resilience Commitment
Association of Physical Plant Administrators, Total Cost of Ownership model
California Community Colleges Chancellors Office, Sustainability and Climate Action Plan
The Association for the Advancement of Sustainability in Higher Education, STARS Reporting Tool

Decarbonization and Climate Justice
RCCD Resources:
Riverside Community College District Solar Planning Initiative
Five years of Utility Data from RCC, MVC and Norco College
Riverside City College, Infrastructure Upgrade Project, June 2010
Norco College, Infrastructure Upgrade Project, June 2010
Riverside City College, Infrastructure Upgrade Project, June 2010
Moreno Valley College, Infrastructure Upgrade Project, June 2010

Outside Resources:
California Community Colleges Chancellors Office, Sustainability and Climate Action Plan
The Association for the Advancement of Sustainability in Higher Education, STARS Reporting Tool
Proposition 39, The California Clean Energy Jobs Act

Funding Opportunities:
Infrastructure Investment and Jobs Act (IIJA) Implementation Resources (gfoa.org)
Energy Research, Development and Demonstration
Transportation and Port Electrification
Building Electrification and Efficiency
Environment
https://www.grants.gov/web/grants/search-grants.html?keywords=FTA-2022-001-TPM-LWNO%2C%20FTA-2022-002-TPM-BUSC
Low or no emissions grant program
https://www.sce.com/evbusiness/chargeready

Waste Minimization and Procurement
RCCD Resources:
Riverside Community College District Solar Planning Initiative
Waste Hauler Data from RCC, MVC and Norco College

Outside Resources:
California Community Colleges Chancellors Office, Sustainability and Climate Action Plan
The Association for the Advancement of Sustainability in Higher Education, STARS Reporting Tool
USGBC LEED Rating System, Construction Waste Management

Community Vitality
RCCD Resources:
Riverside Community College District Strategic Plan, 2019-2024
Riverside City College, Facilities Master Plan, 2018
Norco College, Facilities Master Plan, February 2020
Moreno Valley College, Comprehensive Master Plan, February 2020

Outside Resources:
World Health Organization
J. Flowers Health Institute
Centers for Disease Control and Prevention, Workplace Health Model
American College Health Association's The Healthy Campus Framework.
California Community Colleges Chancellors Office, Sustainability and Climate Action Plan
The Association for the Advancement of Sustainability in Higher Education, STARS Reporting Tool
The Real Food Commitment
WELL Building Standard

Resiliency
RCCD Resources:
Riverside Community College District Strategic Plan, 2019-2024

Outside Resources:
Second Nature, Climate Resilience Commitment
Community Resilience Organizations, Assessment Tool
US Department of Commerce, NOAA. "Excessive Heat." NOAA's National Weather Service.

Ecosystems and Water
RCCD Resources:
Riverside Community College District Strategic Plan, 2019-2024
Riverside City College, Facilities Master Plan, 2018
Norco College, Facilities Master Plan, February 2020
Moreno Valley College, Comprehensive Master Plan, February 2020

Outside Resources:
Association of Physical Plant Administrators, Total Cost of Ownership model
California Community Colleges Chancellors Office, Sustainability and Climate Action Plan
The Association for the Advancement of Sustainability in Higher Education, STARS Reporting Tool

Funding Opportunities:
Infrastructure Investment and Jobs Act (IIJA) Implementation Resources (gfoa.org)
Water Infrastructure

Academics
RCCD Resources:
Riverside Community College District Strategic Plan, 2019-2024
College Education Master Plans
Outside Resources:
California Community Colleges Chancellors Office, Sustainability and Climate Action Plan
The Association for the Advancement of Sustainability in Higher Education, STARS Reporting Tool

Engagement
RCCD Resources:
Riverside Community College District Strategic Plan, 2019-2024
Outside Resources:
California Community Colleges Chancellors Office, Sustainability and Climate Action Plan
The Association for the Advancement of Sustainability in Higher Education, STARS Reporting Tool

Trust and Transparency
RCCD Resources:
Riverside Community College District Shared Governance

Community Partnerships
RCCD Resources:
Riverside Community College District Strategic Plan, 2019-2024
Outside Resources:
RPU
SoCal Edison
SoCal Gas

Equity and Social Justice
RCCD Resources:
Riverside Community College District Strategic Plan, 2019-2024
RCCD Affordable Housing Study
College Student Equity Plans
Student Engagement Centers
Outside Resources:
California Community Colleges Chancellors Office, Sustainability and Climate Action Plan
The Association for the Advancement of Sustainability in Higher Education, STARS Reporting Tool

Glossary

1990 Baseline - 1990, is a common baseline year for global agreements to track and reduce greenhouse gas emissions

AASHE - the Association for the Advancement of Sustainability in Higher Education.

AASHE STARS - the Association for the Advancement of Sustainability in Higher Education's (AASHE) Sustainability Tracking, Assessment, and Rating System (STARS) is a tool for evaluation of campus-wide sustainability efforts. The system recognizes achievements in five categories – Academics, Engagement, Operations, Planning and
Administration, and Innovation and Leadership.

Alternatively Fueled Vehicles - vehicles powered by an engine that does not solely run on petroleum, such as electric, hybrid, and hydrogen fuel cell engines.

APPA - Association of Physical Plant Administrators. APPA offers resources and knowledge sharing as well as networking opportunities for facilities professionals.

Best Management Practices - methods that have been determined to be the most effective and practical means of addressing desired objectives.

Biodiversity - the variety of life in the world or in particular habitat or ecosystems.

Building Envelope - the portion of a building that separates interior, temperature and humidity controlled space from exterior environmental conditions.

CalGreen Voluntary Measures - the CalGreen tiers are the so-called "voluntary" measures of the California Green Building Standards Code (CalGreen). The Tier requirements are only "voluntary" for the building department to adopt, or not adopt. If adopted, they are mandatory for your project.

Carbon Emissions - carbon dioxide emissions or CO2 emission are emissions stemming from the burning of fossil fuels which includes the consumption of solid, liquid, and gas fuels.

Carbon Offsets - a purchased commodity that compensates for, or offsets, an emission made elsewhere. Offsets are typically achieved through financial support of projects that reduce the emission of greenhouse gases in the short- or longterm. The most common project type is renewable energy, such as wind farms, biomass energy, or hydroelectric dams.

Climate Change - change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Climate Justice - a form of environmental justice, climate justice is the fair treatment of all people and the freedom from discrimination in the creation of policies and projects that address climate change as well as the systems that create climate change and perpetuate discrimination.

CO2e - an abbreviation for carbon dioxide equivalent. CO2e represents the impact of each greenhouse gas in terms of the amount of carbon dioxide that would create the same amount of global warming potential.

Carbon Neutrality - or having a net zero carbon footprint, refers to achieving net zero carbon emissions by balancing a measured amount of carbon released with an equivalent amount sequestered or offset, or buying enough carbon credits to make up the difference.

Ecologically Sensitive Areas - any land designated as habitat for threatened or endangered species; or area intended to encourage natural habitat development.

Energy Conservation Measures (ECMs) - upgrades, retrofits, repairs and replacements that businesses can implement

to become more energy efficient. These measures can significantly reduce operating costs while providing operational benefits by allowing businesses to replace old, outdated equipment.

Energy Use Intensity (EUI) - a measure of how much energy the square footage of campus buildings uses per year.

Environmentally Preferable Purchasing (EPP) - products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose.

EV Charging Stations - An electric vehicle charging station, also called EV charging station, electric recharging point, charging point, charge point and EVSE (electric vehicle supply equipment), is an element in an infrastructure that supplies electric energy for the recharging of electric vehicles, such as plug-in electric vehicles, including electric cars, neighborhood electric vehicles and plug-in hybrids.

EPEAT - a free and trusted source of environmental product ratings that makes it easy to select high performance electronics that meet an organization's IT and sustainability goals.

Full-Time Equivalent (FTE) - one FTE is equivalent to one employee working full-time, assuming a 40-hour work week.

Greenhouse Gas (GHG) Emissions - Any gas that contributes to the trapping of the sun's warmth in the atmosphere.

Grid-Purchased Electricity - Grid-purchased electricity is power that is purchased from the centralized power grid, rather than generated on campus via solar or other renewable power source.

Hardscape – a way of referring to impervious landscape surfaces of the built environment such as sidewalks and plazas.

Integrated Energy Master Plan - An Integrated Energy Master Plan is a comprehensive strategic plan that models current campus energy consumption and establishes Energy Use Intensity (EUI) metrics for setting building-by-building energy goals compared to external benchmarks. It is intended to achieve the energy goals of the College through the implementation of a wide range of energy related projects and methodologies, in alignment with the educational and facilities master plans and in support of the continued progression of the campus building and modernization program. The plan embodies a holistic approach to energy planning by recognizing the importance of coordinating short-term and medium-term energy cost savings with longer-term needs.

Integrated Pest Management - a systematic approach to managing pest problems using the least invasive measures first and scaling up intensity only as necessary.

Leadership in Energy & Environmental Design (LEED) - LEED is a green building certification program that recognizes best-in-class building strategies and practices. LEED is a program of the U.S. Green Building Council (USGBC).

Low Impact Development - refers to systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat.

Material Circularity - a product is created with its own end-of-life taken into account. In a circular economy, once the user is finished with the product, it goes back into the supply chain instead of the landfill.

Minimum Control Measures - develop, implement, and enforce a Stormwater Management Program designed to reduce the discharge of pollutants, protect water quality, and to satisfy the appropriate water quality requirements.

Glossary

Multi-Stream Recycling System - a collection method in which waste generators are required to source separate recyclables into two or more separate bins.

Natural Gas - Natural gas is an odorless, gaseous mixture of hydrocarbons that accounts for approximately 30% of energy used in the United States. The vast majority of natural gas in the United States is considered a fossil fuel.

Net-Zero Waste - 90 percent or higher diversion of solid waste from the landfill or incineration.

Non-Potable Water - water that is not of drinking quality but, depending on its quality, can be used for many other purposes.

On-Site Fuel Combustion - the combustion of fossil fuel at a building to provide building services, such as heating, hot water, or electricity.

Post-Consumer Composting – composting that occurs after a customer has made a purchase and finished their meal.

Potable Water - water of a quality suitable for drinking, cooking and personal bathing.

Pre-Consumer Composting – composting that occurs in kitchens prior to customers making their purchases.

Public Safety Power Shutoff - During a high wind event, winds may cause trees and debris to make contact with energized power lines and start a wildfire. To reduce this risk, utility companies may choose to turn of power as a last resort during dry, windy weather when fire risk is high.

Rainwater Recapture - the practice of collecting rainfall from impervious surfaces and storing it for future use.

Real Food Commitment and Procurement for the purposes of assessment and tracking, "real food" is defined by a particular set of third-party certifications and other independently verifiable criteria. The Real Food Commitment organizes these criteria into four categories: community-based/local, fair, ecologically sound and humane.

Renewable Energy – energy from sources that regenerate rapidly such as solar, wind, and hydroelectric.

Resiliency - the ability of a system or community to survive disruption and to anticipate, adapt, and flourish in the face of change.

Rewild - creating and managing protected areas, protecting and restoring ecosystems, working with Indigenous people on their land rights, and preventing wildlife crime.

Scope 01 Emissions - emissions from sources that an organization owns or controls directly – for example from burning fuel in our fleet of vehicles (if they're not electrically-powered).

Scope 02 Emissions - emissions that a company or institution causes indirectly when the energy it purchases and uses is produced. For example, for electric fleet vehicles, the emissions from the generation of the electricity that powers them would fall into this category.

Scope 03 Emissions - encompasses emissions that are not produced by the company itself, and not the result of activities from assets owned or controlled by them, but by those that it's indirectly responsible for, up and down its value chain.

Social Capital – Value expressed through the leveraging of social networks to generate positive and productive outcomes.

Socio-Economic Status (SES) - An economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to others, based on income, education, and occupation.

Softscape – a way of referring to landscape surfaces and other previous areas of the built environment.

Soil Percolation - the rate at which soil absorbs water.

Solar Photovoltaics (PV) - Photovoltaics (PV) is the conversion of light into electricity using semi-conducting materials that exhibit what is called the photovoltaic effect. Photovoltaic technology helps to mitigate climate change because it emits much less carbon dioxide than fossil fuels. Solar PV has specific advantages as an energy source: once installed, its operation generates no pollution and no greenhouse gas emissions.

Source and Site Energy - site energy is the electricity or fuel consumed within a property boundary. Source energy is the initial fuel consumed to produce either electricity or fuel. Below are the two Source Energy Conversion Factors from American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) Standard 105 that used in this IEMP. 1. Imported Electricity – Source Energy Conversion Factor = 3.15. i.e. 3.15 units of electricity are consumed at the source to produce one unit of site electricity for electricity generated by fossil fuels. 2. Natural Gas – Source Energy Conversion Factor = 1.09 meaning that the energy consumed through generation of the power is virtually equivalent to the energy distributed to the site with very minor losses along the way.

Sub-metering - the ability to individually monitor and measure utility usage and consumption.

Sustainability Literacy - the knowledge, skills and mindsets that allow individuals to become deeply committed to building a sustainable future and assisting in making informed and effective decisions to this end.

Total Cost of Ownership - an estimation of the expenses associated with purchasing, deploying, using and retiring a product or piece of equipment. TCO, or actual cost, quantifies the cost of the purchase across the product's entire lifecycle.

Triple Bottom Line Sustainability - the holistic definition of sustainability that moves beyond a singular association with the environment and is founded on balancing three main aspects: Environmental, Social, and Economic.

United Nations Sustainable Development Goals (UN SDGs) - a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. The Goals target the year 2030 for completion.

VALUES - this is a framework developed by DLR Group to expand the conversation of sustainability and connect to User Experience.

Vulnerability Assessment - measures how operations, infrastructure, and district-community populations may be at risk form and threatened by climate change

Waste Categorization Assessment, or Waste Audit - an analysis of a facility's waste stream. It identifies what types of recyclable materials and waste an institution generates and how much waste is recovered for recycling or sent to landfill.

Waste Diversion or Landfill Diversion - the process of sending waste to recycling facilities or other reuse infrastructure in lieu of sending it to landfills.

Water Conservation Measures (WCMs) - Water conservation measures are actions and policies that can help reduce overall water usage on a campus. These can span selection of water saving fixtures (sinks, toilets, showerheads), to the types of plants selected for landscaping that require lower water usage.

Glossary

Water Use Intensity - Water use intensity (WUI) generally refers to the rate at which water is used in a given area. Measuring water use intensity informs how a campus can sustainably allocate water. WUI is calculated in gallons per square foot per year for indoor and outdoor areas.

Wellness - wellness comprises of eight mutually co--dependence dimensions: emotional, spiritual, intellectual, physical, occupational, financial, environmental and social. In the context of wellness within the Sustainability and Climate Action Plan, how does changing climate impact the dimensions of wellness.

Weighted Campus User - a STARS-defined statistical measurement that is used to normalize information across campuses of varying populations. The measurement includes the number of on-campus residents and the numbers of full-time equivalent students, faculty, and staff.

Zero Emissions Vehicle (ZEV) a zero-emissions vehicle, or ZEV, is a vehicle that emits no exhaust gas from the on board source of power.

Zero Net Energy (ZNE) a building, or a group of buildings or a campus achieve Zero Net Energy when the energy produced through renewable energy technologies is equal to or greater than the fossil-fuel based energy consumed over the course of a year.

Legislation

Current CalRecycle regulations pertaining to all other nonhazardous waste management in California. Title 14, CCR Division 7

Beverage Container Recycling and Litter Reduction Act Title 14, Division 2, Chapter 5

City of Riverside Assembly Bill 341 requires all businesses, public entities, and multifamily residential dwellings with five or more units in California that generate four or more cubic yards of waste per week to establish and maintain recycling services as of July 1, 2020. AB 341

Education and Outreach Resources SB 1383 require that jurisdictions conduct education and outreach on organics recycling to all residents, businesses (including those that generate edible food that can be donated) haulers, solid waste facilities, and local food banks and other food recovery organizations. SB 1383

The California Clean Energy Jobs Act awarded more than $1.7 billion over five years, beginning in fiscal year 2013–14, to schools to plan and install energy efficiency upgrades and clean energy generation projects to school facilities. Proposition 39

Global Warming Solutions Act of 2006 Assembly Bill 32 requires California to reduce its GHG emissions to 1990 levels by 2020 — a reduction of approximately 15 percent below emissions expected under a "business as usual" scenario. AB 32

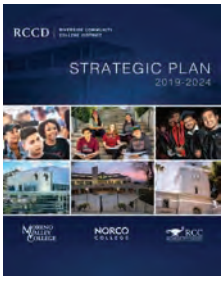
Energy Efficiency of State-Owned Buildings, EO B-18-12 states that all new State buildings and major renovations beginning design after 2025 be constructed as Zero Net Energy facilities with an interim target for 50% of new facilities beginning design after 2020 to be Zero Net Energy. State agencies shall also take measures toward achieving Zero Net Energy for 50% of the square footage of existing state-owned building area by 2025. EO B-18-12

Goal for Plug-In Vehicles, EO B-16-2012 states that all State entities support and facilitate the rapid commercialization of zero-emission vehicles. EO B-16-12

Reduction target of 40 percent below 1990 levels by 2030, EO B-30-15 is the most aggressive benchmark enacted by any government in North America to reduce dangerous carbon emissions over the next decade and a half. EO B-30-15

This Energy and Sustainability Policy of the Board of Governors of the California Community Colleges, EO S-12-04 provides goals and guidance for districts to achieve energy conservation, sustainable building, and physical plant management best practices necessary to reduce energy consumption EO S-12-04

Environmental Responsibility within the Integrated Planning Process



RCCD STRATEGIC PLAN

The District Strategic Plan outlines five Goals to enhance the Mission, Vision and Values of Riverside Community College District.

BOARD POLICY

BOARD POLICY 5775 (+ NEW): SUSTAINABILITY & ENVIRONMENTAL RESPONSIBILITY

The Riverside Community College District recognizes its responsibility to exercise environmental stewardship and to economically manage the use of buildings, land and natural resources.

RCCD SUSTAINABILITY & CLIMATE ACTION PLAN

The S-CAP builds upon the legacy of integrated planning and will propel RCCD into a more sustainable and resilient future. This plan aims to outline a roadmap for RCCD and its colleges to live sustainably and take an active leadership role in the community to respond to evolving environmental and climate challenges and address social, economic, and environmental issues.

RELATED FRAMEWORKS

California Community Colleges

stars a program of aashe

Stormwater Minimum Control Measures

CCC Model Stormwater Management Program identifies SIX Minimum Control Measures (MCMs) that align with EPA's guidelines.

MCM 01: EDUCATION AND OUTREACH ON STORM WATER ISSUES

Promote greater awareness and compliances throughout the District's Campuses for the storm water management program. Specifically, this minimum measure is intended to teach the District community (students, faculty, staff and visitors) and the District's contractors and consultants the importance of protecting storm water quality for the benefit of both the environment and human health.

MCM 02: CAMPUS COMMUNITY INVOLVEMENT AND PARTICIPATION

The Goal of this MCM is to foster active support for the Stormwater Master Plan (SWMP)and provide direction as to its implementation. Participation by the students, parents, faculty and staff will assist in developing a SWMP which reflects community Goals and priorities and thus has the highest potential for success.

MCM 03: ILLICIT DISCHARGE DETECTION AND ELIMINATION

The Goal of this MCM is to reduce pollutants in storm water runoff to receiving waters. It required the development and implementation of a program to identify and eliminate sources of illicit discharge and illegal dumping.

MCM 04: CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

The Goal of this MCM is to prevent sediment and construction waste at construction sites from entering the storm water conveyance system.

MCM 05: POST CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

The Goal for this MCM is to reduce non-point source pollution from urban runoff through planning and design, prior to development or redevelopment. Post-construction runoff control focuses consideration on the site, design and ultimate project use which are most effective when addressed in the planning and design stages of project development. Effective long-term management and maintenance are critical, so the best design opportunities are those needing the least amount of maintenance. The Goal of the program is to integrate basic and practical storm water management techniques into new development to protect water quality.

MCM 06: POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR FACILITIES MAINTENANCE AND OPERATION

The Goal of this MCM is to assure that District Facilities Maintenance and Operation activities occur in a manner protective of storm water quality. The District will develop and implement a maintenance and operations program that includes a training component and has the ultimate Goal of preventing or reducing pollutant runoff from District operations. The District will use training materials that are available from the U.S. EPA, State or other organizations, include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet building maintenance, new construction and land disturbance and storm water system maintenance.

Sustainability Literacy Example

Developed by Seattle University, this Sustainability Literacy Assessment Example can be used for both the Literacy and Culture assessment in AASHE Stars. This example survey is about climate change and sustainability issues. It attempts to measure knowledge, attitudes, and behaviors. This survey is one example of many developed by institutions. RCCD should build its unique survey that fits the culture of its Colleges and fulfills the Stars credit.

- How important was RCCD's commitment to sustainability issues (from academic offerings to practices concerning energy use, recycling, food purchases, investments, etc.) to your decision to apply?
- How important would it be to you for RCCD to go carbon neutral?
- Are you considering taking a sustainability-related course?
- Are you directly affected by climate change?

The first set of question is set on the scale of Strongly disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree. In many cases, there are no clearly correct answers.

- Most scientists believe that climate change is happening
- Human behavior plays a significant part in climate change.
- Climate and Weather mean pretty much the same thing.
- If we had a few colder-than-normal winters or cooler-than-normal summers, it would prove that climate change is not happening.
- Climate change is a threat to humans and to the natural environment.
- Fewer people in the world have access to clean water than have access to cell phones.
- We will always have enough resources. When something runs out, we find it somewhere else or find something else that works just as well.
- What we do today affects the lifestyles of future generations.
- My responsibility is to myself and my family, not to the world or to the future.
- What ends up in the garbage has no effect on global warming or climate change.
- The best measure of the quality of life for a society is gross national product.
- Abuses of the environment disproportionately diminish the lives of the poor.
- My decisions and actions affect me and those close to me, not other people or places around the globe.
- I know how to judge whether a business is socially responsible.
- I am willing to pay more for products from businesses that are socially responsible.
- People should recycle and reuse, even if it is less convenient.
- People should choose a method of transportation other than driving a car alone, even if it is less convenient.
- In general, I think climate change is the most important challenge in the world today.
- In general, I think social justice issue is the most important challenge in the world today.
- In general, I think I am very knowledgeable about sustainability.

The second set of questions asks respondents to think about their own behaviors over the past year and indicate how often (never, rarely, sometimes, often, every opportunity, and n/a) they do the following:

- Choose locally grown, organic, farm raised, or certified sustainable coffee/tea, produce, eggs, dairy, seafood, and meat
- Choose recycled products
- Choose mass transit, carpool ,bicycling, walking
- Considered the working conditions of a product before buying
- Boycotted a company because of its social practices
- Replaced items with newer versions while the older versions still work
- Used reusable bottle, containers, etc.
- Purchase carbon offsets

The last set of question require write in responses.

- What most gives you concern for the environment?
- What most gives you hope for the environment?
- How would you define "sustainability"

The results of the assessment should help shape campus activities and curricula better to prepare people for the future. Responses should be completely anonymous and used only to describe the RCCD community and monitor knowledge and opinions about sustainability.

06

THE PLAN-AT-A-GLANCE

AASHE STARS ALIGNMENT

Category	Subcategory	Credit Number	Credit Title	RCCD S-CAP Impact Area	Chancellor's Office	Level of Difficulty
Report Preface	Introduction	PRE 1	Executive Letter	-		
		PRE 2	Points of Distinction	-		
	Institutional Characteristics	PRE 3	Institutional Boundary	-		
		PRE 4	Operational Characteristics	-		
		PRE 5	Academics and Demographics	-		
Academics (AC)	Curriculum	AC 1	Academic Courses	Academics	Yes	
		AC 2	Learning Outcomes	Academics	Yes	
		AC 3	Undergraduate Program	Academics	Yes	
		AC 4	Graduate Program	-	-	
		AC 5	Immersive Experience	Academics	Yes	
		AC 6	Sustainability Literacy Assessment	Engagement	Yes	
		AC 7	Incentives for Developing Courses	Academics	Yes	
		AC 8	Campus as a Living Laboratory	Academics	Yes	
	Research	AC 9	Research and Scholarship	-	-	
		AC 10	Support for Sustainability Research	-	-	
		AC 11	Open Access to Research	-	-	
Engagement (EN)	Campus Engagement	EN 1	Student Educators Program	Engagement	-	
		EN 2	Student Orientation	Engagement	Yes	
		EN 3	Student Life	Engagement	-	
		EN 4	Outreach Materials and Publications	Engagement	Yes	
		EN 5	Outreach Campaign	Engagement	Yes	
		EN 6	Assessing Sustainability Culture	Engagement	Yes	
		EN 7	Employee Educators Program	Engagement	-	
		EN 8	Employee Orientation	Engagement	Yes	
		EN 9	Staff Professional Development and Training	Engagement	Yes	
	Public Engagement	EN 10	Community Partnerships	Engagement	Yes	
		EN 11	Inter-Campus Collaboration	Engagement	Yes	
		EN 12	Continuing Education	-	-	
		EN 13	Community Service	Engagement	Yes	
		EN 14	Participation in Public Policy	Engagement	Yes	
		EN 15	Trademark Licensing	-	-	
Operations (OP)	Air & Climate	OP 1	Emissions Inventory and Disclosure	Decarbonization	Yes	
		OP 2	Greenhouse Gas Emissions	Decarbonization	Yes	
	Buildings	OP 3	Building Design and Construction	Decarbonization	Yes	
		OP 4	Building Operations and Maintenance	Decarbonization	Yes	

Category	Subcategory	Credit Number	Credit Title	RCCD S-CAP Impact Area	Chancellor's Office	Level of Difficulty
Operations (OP) continued	Energy	OP 5	Building Energy Efficiency	Decarbonization	Yes	
		OP 6	Clean and Renewable Energy	Decarbonization	Yes	
	Food & Dining	OP 7	Food and Beverage Purchasing	Community Vitality	Yes	
		OP 8	Sustainable Dining	Waste + Procurement	Yes	
	Grounds	OP 9	Landscape Management	Water + Ecosystems	Yes	
		OP 10	Biodiversity	Water + Ecosystems	-	
	Purchasing	OP 11	Sustainable Procurement	Waste + Procurement	Yes	
		OP 12	Electronics Purchasing	Waste + Procurement	Yes	
		OP 13	Cleaning and Janitorial Purchasing	Waste + Procurement	-	
		OP 14	Office Paper Purchasing	Waste + Procurement	-	
	Transportation	OP 15	Campus Fleet	Decarbonization	Yes	
		OP 16	Commute Modal Split	Decarbonization	Yes	
		OP 17	Support for Sustainable Transportation	Decarbonization	Yes	
	Waste	OP 18	Waste Minimization and Diversion	Waste + Procurement	Yes	
		OP 19	Construction + Demolition Waste Diversion	Waste + Procurement	-	
		OP 20	Hazardous Waste Management	Waste + Procurement	-	
	Water	OP 21	Water Use	Water + Ecosystems	Yes	
			Rainwater Management	Water + Ecosystems	Yes	
Planning and Administration (PA)	Coordination & Planning	PA 1	Sustainability Coordination	Trust + Transparency	Yes	
		PA 2	Sustainability Planning	Trust + Transparency	Yes	
		PA 3	Inclusive and Participatory Governance	Trust + Transparency	Yes	
		PA 4	Reporting Assurance	Trust + Transparency	Yes	
	Diversity & Affordability	PA 5	Diversity and Equity Coordination	Equity + Social Justice	Yes	
		PA 6	Assessing Diversity and Equity	Equity + Social Justice	Yes	
		PA 7	Support for Underrepresented Groups	Equity + Social Justice	Yes	
		PA 8	Affordability and Access	Equity + Social Justice	Yes	
	Investment & Finance	PA 9	Committee on Investor Responsibility	-	-	
		PA 10	Sustainable Investment	-	-	
		PA 11	Investment Disclosure	-	-	
	Wellbeing & Work	PA 12	Employee Compensation	-	-	
		PA 13	Assessing Employee Satisfaction	Community Vitality	-	
		PA 14	Wellness Programs	Community Vitality	-	
		PA 15	Workplace Health and Safety	-	-	
Innovation & Leadership (IN)	Innovation & Leadership	IN --	Catalog of optional credits available	ALL		

DLRGROUP